SCOTTISH HOSPITALS INQUIRY

Bundle of documents for Oral hearings commencing from 16 September 2025 in relation to the Queen Elizabeth University Hospital and the Royal Hospital for Children, Glasgow

Bundle 52 – Volume 2

Miscellaneous Documents

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From: Mike Baxter <[redacted]>
Sent: 18 April 2008 09:08
To: Baxter M (Mike) (Health); Kinnear N (Norman)
Subject: Fw: Briefing for Shona Robison
Attachments: new southern hospitals - briefing for SR visit - 22 April 2008.doc; new southern hospitals - ministerial visit - speaking note -22 april 2008.doc

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For info
----- Original Message -----
From: Mike Baxter
To: David.Hastie[redacted]
Sent: Friday, April 18, 2008 9:02 AM
Subject: Briefing for Shona Robison

David

Speaking note and briefing attached. You may wish to sense check before forwarding. Have left heading for car parking at Section 8.

Mike

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THE Q&A HAS BEEN STRUCTURED INTO THE FOLLOWING THEMED SECTIONS:

1. CONTRIBUTION OF PROJECT TOWARDS NATIONAL OUTCOMES
2. BENEFITS OF THE PROJECT – HEALTH AND BROADER
3. CAPITAL COST BREAKDOWN AND CAPITAL FUNDING FOR NHSSCOTLAND
4. SCOTTISH FUTURES TRUST/ PPP
5. MANAGEMENT OF RISK
6. OVERALL ACUTE AND RELATED SERVICES STRATEGY
7. EMBEDDING SUSTAINABILITY INTO THE PROJECT
8. KEEPING THE GOVERNMENT INFORMED ON PROGRESS
9. CAR PARKING

SECTION 1

CONTRIBUTION TOWARDS NATIONAL OUTCOMES

KEY LINES

This project supports a broad range of our National outcomes.

- **Healthier** through equitable access to world class health services
- **Wealthier and Fairer** through investment, employment, and skills development
- **Safer and Stronger** through supporting broader regeneration activity within Govan and South Glasgow.
- **Greener** through committing to best practice in sustainable design, energy usage, and integrated transport
- **Smarter** through world class medical and nursing education facilities

SECTION 2

NEW SOUTHERN GENERAL HOSPITAL - EXPECTED BENEFITS OF THE INVESTMENT

LINES TO TAKE

IN TERMS OF HEALTH CARE:

Once developed the new Southern site will be one of the largest clinical campuses in the UK in terms of the range and volume of clinical activity.

The new hospital will ensure the provision of high quality services which are timely, accessible and consistently available

It will use state of the art high tech equipment and information technology

It will support the reduction of waiting times for treatment through the provision of better ways of working

There will be rapid, one stop services

It will enable improved retention and recruitment of staff due to a radically improved working environment and better links with the University

IN TERMS OF UNIVERSITY LINKS

In addition to clinical activity once developed the new Southern site will be one of the largest clinical campuses in the UK in terms of its staff profile.

There is a clear recognition by NHS Greater Glasgow and Clyde, the University of Glasgow and other Universities and educational partners that the site will require to sustain, and be supported by, an active programme of on-site education and research.

Planning is already underway for provision of an academic centre and a clinical skills and education centre on or immediately adjacent to the southern site.

As well as creating major opportunities in regard to training and education the presence of the academic centre and the clinical skills and education centre will increase the attractiveness and potential to support collaboration between academic, public and private sector partners to realise opportunities in research and development, bio-medical and life sciences

IN TERMS OF WIDER BENEFITS:

The development will result in between 3000 and 4000 additional jobs coming to the site which will contribute substantially to the local economy.

The construction will generate an average of 1700 jobs on site each year.

NHS Greater Glasgow and Clyde are committed to ensuring local people will have opportunities through education and skills training initiatives to benefit from the jobs created

In partnership with other bodies such as the Council and Scottish Enterprise a social benefits analysis was carried which showed that the development will have a combined direct, indirect and induced economic impact of between:

- £30 and £40m in South West Glasgow
- £110 and £140m in the City economy
- £240 and £290m across the Glasgow City region

Initiatives around the Glasgow Waterfront will provide timely housing opportunities to encourage the relocation of staff to South West Glasgow and hence potentially contributing to the sustainability of local communities.

In short the Southern General development is seen as a catalyst for wider social and regeneration activity contributing to the creation of higher aspirations for the physical development of the local area.

NHS Greater Glasgow and Clyde therefore has plans to bring regeneration proposals together by establishing a partnership group with all relevant stakeholders to co-ordinate planning and resources to ensure opportunities are maximised.

BACKGROUND INFORMATION

WIDER GLASGOW REGENERATION AND CROSS PORTFOLIO LINKS

Analysis undertaken with partners in South West Glasgow and Glasgow City has identified the potential for the development to impact positively across a number of government portfolios such as Economy, Skills and Training, Community Planning, Enterprise, Housing and Regeneration, Social Inclusion. In each of these areas NHS Greater Glasgow has engaged with partners in the City to identify opportunities to work in partnership in contributing to the socio-economic regeneration of the city.

It is anticipated that relocation of services to the South Glasgow Campus will result in between 3000 and 4000 additional jobs coming to the NSGH site contributing substantially to the local economy. Once complete, the Southern General site is anticipated to contribute £40 million the economy of South West Glasgow and £140 million to the city per annum. The construction of the new hospitals will generate an average of 1700 construction jobs on site each year. Working with partners NHS Greater Glasgow and Clyde will ensure that local communities are appropriately skilled and trained to take advantage of these opportunities when they arise. This will include working with education to support school leavers from South West Glasgow into positive destinations and with local employability agencies in providing 'More Choices, More Chances' for young people in South West Glasgow.

The Southern General development is seen as a catalyst for wider social and regeneration activity contributing to the creation of higher aspirations for the physical development of the local area. Improvements in key infrastructure such as transport can support broader regeneration objectives in connecting communities along the waterfront to opportunities. Scottish Enterprise West Central recognise the significance of the development in relation to Bio-medical/Life Sciences industries. The analysis undertaken with partners outlines the strategic significance of the Southern General at a regional level in supporting the growth of these industries. In order to capture this potential, Scottish Enterprise West Central has committed to developing a 'Medi-Park'

facility adjacent to the Southern General site and has undertaken preliminary work to determine the scope for further investment, including public realm works to facilitate the growth of life sciences/ bio-medical industries.

The Clyde Waterfront is undergoing a significant period of regeneration and the proposals for the redevelopment of the Southern General site will contribute positively to the existing local regeneration plans in the area. For example, proposed investment in housing in Central Govan will benefit from NHS staff looking to relocate. NHS Greater Glasgow and Clyde is working with local housing providers to support NHS staff to relocate to South West Glasgow, contributing to the sustainability of local communities.

In order to bring these regeneration strands together, NHS Greater Glasgow and Clyde has proposals in place to establish a partnership group, bringing together key stakeholders from across the city to co-ordinate planning and resources to realise the potential benefits identified. This group will be supported by existing partnership structures in South West Glasgow and at a City level.

2. UNIVERSITY LINKS – WORKING WITH ACADEMIC PARTNERS

Once developed the new Southern site will be one of the largest clinical campuses in the UK in terms of the range and volume of clinical activity and the accompanying staff profile. As well as creating major opportunities and responsibilities in regard to training and education the pattern of co-located services will facilitate collaborative and innovative research activities across the spectrum of maternal, child and adult health and disease.

Against that background there is a clear recognition by NHS Greater Glasgow and Clyde, the University of Glasgow and the other Universities and educational partners with whom the Health Board engages, that the site will require to sustain, and be supported by, an active programme of on-site education and research. Planning is already underway with key academic partners for provision of an academic centre and a clinical skills and education centre on or immediately adjacent to the southern site. The following describes each in more detail.

2.1 Clinical Skills and Education Centre

A planning group with membership from Glasgow University, Glasgow Caledonian University, NHS Greater Glasgow and Clyde, NES and

chaired by the Royal College of Physicians and Surgeons (Glasgow) has been set up to develop plans for a new joint clinical skills and education centre. Work is currently being undertaken to identify a suitable site near the Southern Campus with a view to the facility being available in line with the opening of the New Children's Hospital.
The planned facility will support clinical research programmes, ensure a modern educational environment for undergraduate teaching across the clinical disciplines and provide clinical skills and associated accommodation to facilitate the professional development of all staff groups.

In addition to enabling the development of existing staff, the creation of high quality educational facilities on and around the site will significantly enhance the ability to recruit and retain the numbers and quality of staff required to maintain excellence in clinical service provision.

2.2 Academic Centre

Glasgow University are planning to support the development of the Southern Campus by building new academic centre on the New southern campus, this will provide a modern academic facility to support teaching and research. An area of land close to the new hospital build has been identified by the Health Board for this purpose.
The presence of the academic centre and the clinical skills and education centre will increase the attractiveness and potential to support collaboration between academic, public and private sector partners to realise opportunities in research and development, bio-medical and life sciences.

SECTION 3

CAPITAL COST ESTIMATE BREAKDOWN AND NHSSCOTLAND CAPITAL FUNDING

Q - Please summarise how the project is to be funded?

- The total cost is £842m. The sources of funding are £270 million from NHS Greater Glasgow and Clyde allocations and capital receipts, £20 million from locally held endowments with the balance of £552 million being provided by the Scottish Government.

CAPITAL FUNDING FOR NHSSCOTLAND

LINES TO TAKE

- Total health capital spend in recent spending review is the largest ever for NHSScotland.
- Net capital spend will be £1.676 bn compared to £1.398 bn in previous period an increase of £278m over 3 years or 19.9%
- Gross capital expenditure for health across the next 3 years will be £1.816 bn. Capital receipts of £140m are anticipated from the disposal of surplus assets and will be directly reinvested in NHSScotland premises, equipment and technology.

Allocations to Boards in full for 2008/9 are:

NHS BOARD	2008-09 £(m)
Ayrshire & Arran	21.161
Borders	5.983
Dumfries & Galloway	9.069
Fife	17.412
Forth Valley	14.433
Grampian	27.832
Greater Glasgow	97.608
Highland	18.533

Lanarkshire	28.390
Lothian	48.644
Orkney	0.774
Shetland	0.860
Tayside	24.347
Western Isles	1.954
TOTAL	**317.000**

*Island NHS Boards will receive an additional uplift to obtain parity

The balance of the allocation of £525m is held for centrally funded schemes such as e-Health, Primary Care and Dental provision etc

RECENT MAJOR SCHEMES AND THEIR FUNDING

With the exception of the Aberdeen Children's Hospital (£27m), West of Scotland Cancer Centre (£87m) and the State Hospital (£95m) all major schemes (£20m+) in NHSScotland since 1997 have been delivered using PFI.

Completed major developments funded through PFI include Edinburgh Royal Infirmary (£182m), Hairmyres (£68m) and Wishaw (£100m).

Projects in construction funded through PFI include Glasgow ACAD's (£195m), Larbert Acute Hospital (£300m) Hospital, Alloa Community Hospital (£20m) and the St Andrew's Community Hospital £20m

Those schemes that were in procurement pre May 2007 and that have yet to reach financial close are NHS Fife (Victoria Hospital) and NHS Lothian (Midlothian Community Hospital).

A number of smaller facilities circa £20-30 million have been funded using PFI. These include Mid Argyll Community Hospital (Lochgilphead), Carseview Mental Health Facility (Dundee), Whitehills Community Resource Centre (Forfar)

The only PPP health scheme to commence since May 2007 is the Tayside Mental Health Scheme which is progressing as a Non Profit Distributing form of PPP which eliminates significant gains for equity providers by limiting sources of funding to other cheaper forms of debt.

SECTION 4

SCOTTISH FUTURES TRUST/ PPP

LINES TO TAKE

- The Scottish Government are committed to introducing an alternative form of funding mechanism to the traditional ‘standard form’ of PFI. The main new proposal the government wishes to see is the Scottish Futures Trust (SFT).

- The SFT is intended to provide a better deal for taxpayers by combining opportunities for maximising investment levels and reducing costs.

- The development of the SFT is making good progress. Whilst it is being worked on, we are now using as a preference the Non-Profit Distributing (NPD) model which was piloted successfully in the Scottish schools projects. This provides for capped equity returns, thus ending the very high gains seen in the 'standard PFI' model via the secondary market. It is now being developed into other sectors, for example in the health sector in Tayside for their Mental health development.

- Design and implementation of the SFT will take time. The consultation on the SFT closed recently and the responses are currently being assessed. An announcement on further developments will be made when Ministers are ready to inform Parliament.

- A variety of investment routes are available to public sector managers. It is important that all appropriate routes are appraised on a value for money basis and that the selected path represents the best approach for the taxpayer.

- Ministers have already said that PPP could continue while SFT is being designed – private investment into Scotland’s infrastructure is a vital element in growing Scotland’s economy.

- Work was recently completed on the Scottish Government Infrastructure Investment Plan which was published last month and reflects current investment and economic policies following the outcome of the recent Spending Review.

Q Does this decision undermine the development of SFT?

- No. It is difficult to prejudge at this time the outcome of SFT development and any impact of timing.

- Our position is that at this time we are required to take a decision based on value for money grounds. Until SFT is developed we cannot stop planned developments. Given current levels of construction inflation to delay this project by a month would cost £5-6m in capital terms.

- At this stage it is considered that a ministerial statement would lead to a wider debate on funding of capital projects is likely to raise wider issues around the development of the Scottish Futures Trust before the evaluation of consultation responses is complete and Cabinet has had a chance to consider. Clearly this would not be helpful.

Q Why is this being publicly funded as opposed to Non Profit Distributing?

Following identification of the preferred service option a value for money and affordability analysis comparing a public capital option against a Non Profit Distributing (NPD) PPP model was undertaken. The results showed a negligible margin between the two routes and therefore in value for money terms either route could be justified.

In affordability terms however, given the impact of resource accounting and budgeting, the impact of the two routes is markedly different with the additional revenue costs of the public capital option amounting to £53.8m per annum against the £76m per annum for the NPD route.

For no additional vfm benefit, the NPD route would require an additional £22m of service reductions to be achieved.

Given the impending introduction of International Financial Reporting Standards in 2009-10 it is likely that this project, if funded through an NPD route is likely to be on the public sector balance sheet. A capital budget would be required to allow this to happen and the existing affordability issues would still remain.

Since May 2007 no new PFI schemes have been commenced in Health. The NHS Tayside Mental Health Project is the first health project pursuing a NPD route.

The project involves substantial new build which would be attractive to a PPP or NPD procurement. However the Southern site will involve retained estate (including an existing PFI scheme) and there would be significant interface issues between the new and old estate.

In terms of overall risk and facilities management the use of PPP would therefore add a degree of complexity to the project that the proposed solution would avoid.

SECTION 5

MANAGEMENT OF RISK

LINES TO TAKE

- Managing risk is a key aspect of the delivery of this project.

- The outline business case provides considerable detail on both the risk identification and management strategies employed by the Board.

- The capital cost estimates include a quantified risk contingency which is considered to be appropriate at this stage of the project's development.

- In accordance with extant option appraisal methodology and best practice a provision has been made for optimism bias. Optimism bias is the systematic tendency in developing projects to under estimate costs and over estimate benefits.

- Government economists have reviewed the detailed economic assumptions and are content that the approach taken is both appropriate and prudent

- The Board in considering detailed procurement options are seeking to minimise risk through the contractual structures put in place to reach a guaranteed maximum price as quickly as possible.

- The project itself has established robust governance arrangements that have been subject to independent review. Given the scale and complexity of this project we are advising NHS Greater Glasgow to incorporate external commercial expertise on to the Project Board as a source of independent challenge.

Q By publicly funding this project all risk is retained by the public sector. What happens if costs escalate beyond the £842m?

- The Board, as part of their planning have applied appropriate risk contingency within both the cost capital cost and quantified risk assessment.

- In addition the Board have applied optimism bias to the capital cost. Optimism Bias recognises a demonstrated systematic tendency to underestimate costs and over estimate benefits in delivering public projects. It is a key part of the option appraisal methodology set out in the HM Treasury Green Book and Scottish Government Guidance.

- The optimism bias provision included within the capital cost estimate of £842m is 24%. This is considered prudent.

- The approach to risk and optimism bias has been reviewed and approved by Government economists. There is therefore considered to be sufficient headroom within the capital cost estimate at this stage.

- The choice of procurement route and contract structure is currently being finalised by the Board and their technical advisors. The core objectives of the Board in selecting a contractual structure will be aimed at risk identification and sharing at an early stage.

SECTION 6

ACUTE AND RELATED SERVICES STRATEGY

Q – When was the Acute and Related Services Strategy approved?

NHS Greater Glasgow and Clyde had their Acute and Related Services Review approved in 2002 by the then Minister for Health and Community Care (Malcolm Chisholm). Since that time the NHS Board have been progressing plans to reconfigure the nature of services.

Q - What elements of the Acute and related services strategy have been delivered to date?

The first phase involved three major capital developments. These were the new West of Scotland Cancer Centre at Gartnaval Hospital which opened in 2007 and the two new Ambulatory Care Hospitals at Stobhill and Victoria which are currently in construction and due to open in summer/ 2009.

The Cancer centre cost £87m and was developed using public capital. The two new Ambulatory Care Hospitals at Stobhill and Victoria were procured using PFI.

The New Southern Hospitals project is pivotal to the delivery of the overall strategy and will completely redevelop the Southern General Hospital and also provide a new state of the art Children's Hospital for the West of Scotland.

SECTION 7

EMBEDDING SUSTAINABILITY INTO THE PROJECT

LINES TO TAKE

- The OBC contains undertakings from the NHS Board to "promote economic, social and environmental sustainability" through increased energy efficiency, maintaining biodiversity and encouraging green travel.

- The Board are actively working with the Carbon Trust to increase energy efficiency in the new hospital design and with the Waste and Resources Action Programme (WRAP) to enable more efficiency in the use of building materials for the new hospitals and enhance recycling.

- The view has also been taken that the new hospitals Design Solution should at least meet the NHS and Building Regulation standards with regard to energy use current at the time the buildings are built or that are economically and technically viable to include.

Q - How has the transport impact of the project been assessed?

- A traffic impact assessment has been undertaken in accordance with the guidance contained within Scottish Planning Policy (SPP 17) - Planning for Transport

- In discussion with Glasgow City Council, Strathclyde Passenger Transport, First Bus, Arriva and other transport providers and operators, the Board is planning to improve new and improved bus routes to the site. It will build upon the work undertaken in recent years to improve routage, frequency and quality of bus services.

- Discussions are currently taking place with Glasgow City Council and SPT (Strathclyde Public Transport) to look at options to route the proposed state of the art public transport facility, the Clyde Fastlink, from the city centre, through the Southern General site. To accommodate this, the Campus plan incorporates a dedicated Fastlink route through the site with passenger bus stops at the Adult, Children's and A&E entrances.

- A Travel Plan is being developed to outline the Board's Strategy to encourage people to access the site through greener, cleaner travel choices for example, walking, public transport, cycling and car share will be promoted. The design and layout of the site will improve the ease of access by non-car modes for example pedestrian and cycle routes throughout the site, bus stops near the main entrances, facilities for cyclists such as bike sheds, lockers and showers.

SECTION 8

KEEPING THE GOVERNMENT INFORMED ON PROGRESS

Q - The arrangements for keeping the Directorate of Health and Wellbeing informed of progress or arising issues; and

KEY LINES

- The Directorate is already represented on the Acute Services Strategy Programme Board to which this project will report.

- The project is subject to Gateway Review, which is an independent peer review carried out at key stages in the project's development. A review was successfully conducted prior to submission of the OBC. DG Health as Accountable Officer receives a copy of such reports.

- The Directorate through a Service Level Agreement with Architecture and Design Scotland continues to work with the Board in respect of master planning for the site and supporting the design development process

- The project itself has established robust governance arrangements that have been subject to independent review. Given the scale and complexity of this project we are advising NHS Greater Glasgow to incorporate external commercial expertise on to the Project Board as a source of independent challenge.

SECTION 9

CAR PARKING

SPEAKING NOTE
New Southern Hospitals Project – Outline Business Case Approval

- Delighted to be here to announce Scottish Government approval and support for this major new hospital development in Glasgow will make a huge impact on the quality of healthcare in the city and in the west of Scotland well into the future.

- At a capital cost of £842m it is the largest project in the history of NHSScotland. The Scottish Government is committing £552m of funding in addition to that from NHS Greater Glasgow and Clyde capital allocations and anticipated capital receipts

- The project will see the redevelopment of the Southern General Hospital and provision of a new state of the art Children's Hospital for the West of Scotland. This is pivotal to delivering modern, long term sustainable health services for Greater Glasgow and Clyde and beyond.

- This project supports a broad range of our National outcomes.

    - **Healthier** through equitable access to world class health services

    - **Wealthier and Fairer** through investment, employment, and skills development

    - **Safer and Stronger** through supporting broader regeneration activity within Govan and South Glasgow.

    - **Greener** through committing to best practice in sustainable design, energy usage, and integrated transport

    - **Smarter** through world class medical and nursing education facilities

- Both the NHS Board and Scottish Government have sought to ensure that the project is deliverable, affordable, sustainable and represents best value for money for the taxpayer.

- I would like to commend the work of staff within NHS Greater Glasgow and Clyde on the quality of work undertaken to date.

- Health Directorates and the NHS Board will manage risk vigorously to deliver the project on time and on budget. This will be achieved through robust governance structures, ongoing progress reviews between us and the Board, and regular independent gateway reviews.

From: Syme M (Margaret)
Sent: 21 March 2018 12:15
To: First Minister; Cabinet Secretary for Health and Sport; ET FMQ/PQ Mailbox; Stringer T (Tabitha); First Minister FMQs; Hutchison D (David)
Cc: Communications Healthier; Berry MA (Michael)(Communications); Gilfether H (Holly); Morrison A (Alan); Birch J (Jason); Goodfellow M (Melanie); Gray P (Paul) (Health); Leitch J (Jason); Calderwood C (Catherine); Smith G (Gregor); Aitken L (Louise); Robertson A (Alice); Johnson C (Christopher); Communications Duty Box; Rafferty D (Donna); Innocent E (Emma); Minister for Public Health and Sport; McLaughlin C (Christine); Higgins K (Kate); Hunter A (Alan); McQueen F (Fiona); FM Policy Team Mailbox; Dunk R (Rachael); Murray D (Diane); Holmes A (Ann); Birch J (Jason); Goodfellow M (Melanie); Watson E (Emma); Minister for Public Health and Sport; Minister for Mental Health
Subject: RE: For clearance: NHS GGC water contamination
Attachments: national-support-framework-2017.pdf; Media Articles.docx; HCAI-AMR - Royal Hospital for Children - NHS GGC - key questions - 21 March 2018.docx; HCAI-AMR Royal Hospital for Children - NHSGGC - timeline - 21 March 2018.docx; FMQ - HCAI-AMR - Royal Hospital fo Children - NHS GGC - 21 March 2018.docx; Milngavie M3 March 2017-2018.pdf

Tracking:

Recipient	Read
First Minister	
Cabinet Secretary for Health and Sport	
ET FMQ/PQ Mailbox	Read: 21/03/2018 12:16
Stringer T (Tabitha)	Read: 21/03/2018 12:15
First Minister FMQs	Read: 21/03/2018 12:29
Hutchison D (David)	Read: 21/03/2018 12:16
Communications Healthier	
Berry MA (Michael)(Communications)	Read: 21/03/2018 16:00
Gilfether H (Holly)	Read: 21/03/2018 12:20
Morrison A (Alan)	
Birch J (Jason)	Read: 21/03/2018 12:16
Goodfellow M (Melanie)	
Gray P (Paul) (Health)	
Leitch J (Jason)	Deleted: 21/03/2018 18:19
Calderwood C (Catherine)	
Smith G (Gregor)	
Aitken L (Louise)	
Robertson A (Alice)	Read: 21/03/2018 12:19
Johnson C (Christopher)	
Communications Duty Box	
Rafferty D (Donna)	Read: 22/03/2018 00:52
Innocent E (Emma)	
Minister for Public Health and Sport	
McLaughlin C (Christine)	Read: 21/03/2018 12:33
Higgins K (Kate)	Read: 21/03/2018 13:13
Hunter A (Alan)	
McQueen F (Fiona)	

Recipient	Read
FM Policy Team Mailbox	Read: 21/03/2018 16:51
Dunk R (Rachael)	
Murray D (Diane)	
Holmes A (Ann)	Read: 21/03/2018 12:16
Birch J (Jason)	
Goodfellow M (Melanie)	
Watson E (Emma)	
Minister for Public Health and Sport	
Minister for Mental Health	Read: 21/03/2018 12:16

Tabitha

Please find attached a detailed briefing pack as requested:

- FMQ
- Key questions
- Timeline
- Scottish Water report
- National Support Framework
- Media coverage

The Cabinet Secretary is meeting with representatives from Health Protection Scotland and NHSGGC at 2pm today so there may be further updates to the FMQ.

Please let me know if you need anything else.

Regards

Margaret

From: Somers J (John) **On Behalf Of** First Minister
Sent: 20 March 2018 19:30
To: Syme M (Margaret); First Minister; Cabinet Secretary for Health and Sport; ET FMQ/PQ Mailbox; Stringer T (Tabitha); First Minister FMQs; Hutchison D (David)
Cc: Communications Healthier; Berry MA (Michael)(Communications); Gilfether H (Holly); Morrison A (Alan); Birch J (Jason); Goodfellow M (Melanie); Gray P (Paul) (Health); Leitch J (Jason); Calderwood C (Catherine); Smith G (Gregor); Aitken L (Louise); Robertson A (Alice); Johnson C (Christopher); Communications Duty Box; Hutchison D (David); Rafferty D (Donna); Innocent E (Emma); Minister for Public Health and Sport; McLaughlin C (Christine); Higgins K (Kate); Hunter A (Alan); McQueen F (Fiona); FM Policy Team Mailbox; Dunk R (Rachael); Murray D (Diane); Holmes A (Ann); McQueen F (Fiona); Birch J (Jason); Goodfellow M (Melanie); Watson E (Emma)
Subject: RE: For clearance: NHS GGC water contamination
Importance: High

Margaret,

Thanks for the FMQ brief.

FM has asked for full briefing with as much detail as we have outwith the constraints of an FMQ template. Could you liaise with Tabitha Stringer and get us something for tomorrow (21st) morning (before noon)?

Thanks again.

John

John Somers
Principal Private Secretary to the First Minister
Scottish Government

Work: [redacted]
Mob: [redacted]

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FirstMinister.gov.scot
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From: Syme M (Margaret)
Sent: 20 March 2018 16:42
To: First Minister; Cabinet Secretary for Health and Sport; ET FMQ/PQ Mailbox
Cc: Communications Healthier; Berry MA (Michael)(Communications); Gilfether H (Holly); Morrison A (Alan); Birch J (Jason); Goodfellow M (Melanie); Gray P (Paul) (Health); Leitch J (Jason); Calderwood C (Catherine); Smith G (Gregor); Aitken L (Louise); Robertson A (Alice); Johnson C (Christopher); Communications Duty Box; Hutchison D (David); Rafferty D (Donna); Innocent E (Emma); Minister for Public Health and Sport; McLaughlin C (Christine); Higgins K (Kate); Hunter A (Alan); McQueen F (Fiona); FM Policy Team Mailbox; Dunk R (Rachael); Murray D (Diane); Holmes A (Ann); McQueen F (Fiona); Birch J (Jason); Goodfellow M (Melanie); Watson E (Emma)
Subject: RE: For clearance: NHS GGC water contamination

Dillon

Please find attached updated FMQ.

We are awaiting a further update from Health Protection Scotland regarding Scottish Water, and a response following the subsequent question
raised by the Cabinet Secretary this afternoon on the accusation that parents were not informed about the water issues and how this was being handled.

We will update the FMQ as soon as we receive a response.

Regards

Margaret

From: Stringer T (Tabitha) **On Behalf Of** First Minister
Sent: 20 March 2018 15:46
To: Dunk R (Rachael); Cabinet Secretary for Health and Sport

Cc: First Minister; Communications Healthier; Berry MA (Michael)(Communications); Gilfether H (Holly); Morrison A (Alan); Syme M (Margaret); Birch J (Jason); Goodfellow M (Melanie); Gray P (Paul) (Health); Leitch J (Jason); Calderwood C (Catherine); Smith G (Gregor); Aitken L (Louise); Robertson A (Alice); Johnson C (Christopher); Communications Duty Box; Hutchison D (David); Rafferty D (Donna); Innocent E (Emma); Minister for Public Health and Sport; McLaughlin C (Christine); Higgins K (Kate); Hunter A (Alan); McQueen F (Fiona); FM Policy Team Mailbox
Subject: RE: For clearance: NHS GGC water contamination

Rachael

Thank you for copying to the First Minister. The First Minister has noted that Scottish Water do not appear to have a central role in the investigation. Ms Watt indicated at Cabinet this morning that she thought this was due to the water tanks having already received a clean bill of health and that the issue was in the piping between the tank and the end tap/shower? Grateful if we could get further advice clarifying this and providing a further update on the situation.

Thanks
Tabitha

Tabitha Stringer
Private Secretary to the First Minister
The Scottish Government
5th Floor | St Andrew's House | Regent Road | Edinburgh | EH1 3DG | **T:** [redacted] | **M:** [redacted]

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Scottish Ministers, Special advisers and the Permanent Secretary are covered by the terms of the Lobbying (Scotland) Act 2016. See www.lobbying.scot

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From: Dunk R (Rachael)
Sent: 19 March 2018 08:46
To: Cabinet Secretary for Health and Sport
Cc: First Minister; Communications Healthier; Berry MA (Michael)(Communications); Gilfether H (Holly); Morrison A (Alan); Syme M (Margaret); Birch J (Jason); Goodfellow M (Melanie); Gray P (Paul) (Health); Leitch J (Jason); Calderwood C (Catherine); Smith G (Gregor); Aitken L (Louise); Robertson A (Alice); Johnson C (Christopher); Communications Duty Box; Hutchison D (David); Rafferty D (Donna); Innocent E (Emma); Minister for Public Health and Sport; McLaughlin C (Christine); Higgins K (Kate); Hunter A (Alan); McQueen F (Fiona); FM Policy Team Mailbox
Subject: RE: For clearance: NHS GGC water contamination

PO/Cabinet Secretary.

I have spoken to Health Protection Scotland this morning. They have been supporting the Board with managing this incident and had regular teleconferences with them over the weekend. They have assured us that the Board are dealing with the incident appropriately and put in place control measures to resolve this.

There is a further IMT today at 12 pm and we will provide a further update later today.

The latest position is:
2 new patients cases linked to ward 2A identified.
1 new patient case identified linked to PICU.
5 in total affected.

New cases:
1: Stenotrophomonas identified in blood culture and line from patient who has been in ward 2A for 5 weeks. Patients line has been removed. This patient showered in the unit.
2: Pseudomonas/Stenotrophomonas identified in patient (blood culture) on admission, the patient has been at home for 7 days but previously in ward 2A and attended ward 2b for line care.
3: Stenotrophomonas identified in blood culture from a child in PICU who has been in PICU for 40 days and not linked to ward 2A.

None of these children are giving cause for concern as a direct result.

It is possible that these three cases were acquired prior to the additional control measures implemented by NHSGGC when the other affected cases were identified.

Investigations:
As part of their ongoing investigations, and to establish if other wards were affected NHSGGC have tested water outlets in other areas of the hospital.
Cupriavidus was isolated from outlets within wards 2A, 2B, 2C, 3C and PICU (RHC) and from a single shower head in ward 4b (adult haem-onc).
Samples were obtained from the water tank which supplies both QEUH and RHC and are negative.

Ongoing investigations:
Scottish water were contacted to identify whether they test for Cupriavadis and if they were reporting any issues. They do not test for this and reported no issues.
Sampling of areas from an alternative water tank have been undertaken: these areas include NNU, maternity, staff offices and Ronald McDonald house. The purpose of this sampling is to identify or eliminate any external water contamination.

Repeat sampling will take place of the water tank, wards 2A,B,C, 3C, PICU, 4B and additional wards across the two sites.

Control measures in place:
- Ward 2A will accept admissions however where possible planned admissions will be relocated elsewhere.
- All haem-oncology patients within ward 2A will commence on prophylactic anti-biotics
- Pall filters will be fitted to all wash hand basins and showers over the weekend in ward 2A.
- Showers will not be used by patients.
- Wash hand basins will not be used by patients, they will continue to use the portable sinks which are supplied by bottled water.
- Staff will use alcohol gel following any hand washing using the wash hand basins
- Steriliium gel has been provided for staff to use when undertaking any aseptic procedure.
- NHSGGC have requested support from HPS/HFS into this incident and to support identification of a hypothesis/source and are involved in the incident management team meetings.

SG comms have been liaising with NHSGGC comms over the weekend.

It is not possible at this stage to advise when the incident will be de-escalated, as further bacterial sampling is underway and results awaited.

Please let me know if any further information is required at this stage.
Rachael

From: McQueen F (Fiona)
Sent: 18 March 2018 16:32
To: Hunter A (Alan); Higgins K (Kate); Cabinet Secretary for Health and Sport; McLaughlin C (Christine); Dunk R (Rachael)
Cc: Communications Healthier; Berry MA (Michael)(Communications); Gilfether H (Holly); Morrison A (Alan); Syme M (Margaret); Birch J (Jason); Goodfellow M (Melanie); Gray P (Paul) (Health); Leitch J (Jason); Calderwood C (Catherine); Smith G (Gregor); Dunk R (Rachael); Aitken L (Louise); Robertson A (Alice); Johnson C (Christopher); Communications Duty Box; Hutchison D (David); Rafferty D (Donna); Innocent E (Emma); Minister for Public Health and Sport
Subject: RE: For clearance: NHS GGC water contamination

Will do thanks Alan

#hello my name is...
Fiona McQueen | Chief Nursing Officer |
Chief Nursing Officer's Directorate | Scottish Government | 1E.14 St Andrew's House |
Regent Road | Edinburgh | EH1 3DG |☎ [redacted] | [redacted]
[redacted]

follow me on twitter @FionaCMcQueen

From: Hunter A (Alan)
Sent: 17 March 2018 22:12
To: Higgins K (Kate); Cabinet Secretary for Health and Sport; McLaughlin C (Christine); McQueen F (Fiona); Dunk R (Rachael)
Cc: Communications Healthier; Berry MA (Michael)(Communications); Gilfether H (Holly); McQueen F (Fiona); Morrison A (Alan); Syme M (Margaret); Birch J (Jason); Goodfellow M (Melanie); Gray P (Paul) (Health); Leitch J (Jason); Calderwood C (Catherine); Smith G (Gregor); Dunk R (Rachael); Aitken L (Louise); Robertson A (Alice); Johnson C (Christopher); Communications Duty Box; Hutchison D (David); Rafferty D (Donna); Innocent E (Emma); Minister for Public Health and Sport
Subject: Re: For clearance: NHS GGC water contamination

Fiona and Rachael,

Are you able to pick this up with HPS/GGC?

Alan

Sent from my BlackBerry 10 smartphone.

From: Higgins K (Kate)
Sent: Saturday, 17 March 2018 21:45
To: Cabinet Secretary for Health and Sport; Hunter A (Alan); McLaughlin C (Christine)
Cc: Communications Healthier; Berry MA (Michael)(Communications); Gilfether H (Holly); Hunter A (Alan); McQueen F (Fiona); Morrison A (Alan); Syme M (Margaret); Birch J (Jason); Goodfellow M (Melanie); Gray P (Paul) (Health); Leitch J (Jason); Calderwood C (Catherine); Smith G (Gregor); Dunk R (Rachael); Aitken L (Louise); Robertson A (Alice); Johnson C (Christopher); Communications Duty Box; Hutchison D (David); Rafferty D (Donna); Innocent E (Emma); Minister for Public Health and Sport
Subject: RE: For clearance: NHS GGC water contamination

I'll forward to FM. Grateful if someone from policy could confirm they've picked up Cab Sec's request

Sent with BlackBerry Work
(www.blackberry.com)

From: Cabinet Secretary for Health and Sport <[redacted]>
Date: Saturday, 17 Mar 2018, 9:43 pm
To: Hunter A (Alan) <[redacted]>, McLaughlin C (Christine) <[redacted]>
Cc: Communications Healthier <[redacted]>, Berry MA (Michael)(Communications) <[redacted]>, Gilfether H (Holly) <[redacted]>, Hunter A (Alan) <[redacted]>, McQueen F (Fiona) <[redacted]>, Morrison A (Alan) <[redacted]>, Syme M (Margaret) <[redacted]>, Birch J (Jason) <[redacted]>, Goodfellow M (Melanie) <[redacted]>, Gray P (Paul) (Health) <[redacted]>, Leitch J (Jason) <[redacted]>, Calderwood C (Catherine) <[redacted]>, Smith G (Gregor) <[redacted]>, Higgins K (Kate) <[redacted]>, Dunk R (Rachael) <[redacted]>, Aitken L (Louise) <[redacted]>, Robertson A (Alice) <[redacted]>, Johnson C (Christopher) <[redacted]>, Communications Duty Box <[redacted]>, Hutchison D (David) <[redacted]>, Rafferty D (Donna) <[redacted]>, Innocent E (Emma) <[redacted]>, Minister for Public Health and Sport <[redacted]>
Subject: Re: For clearance: NHS GGC water contamination

Colleagues

Ms Robison has cleared the lines as below but would like an urgent update on the current position and when it will be resolved.

Grateful if this could also be copied to FM .

Please circulate more widely as appropriate.

Thanks

Lynn

PS to Shona Robison MSP
Cabinet Secretary for Health and Sport
[redacted] / [redacted]

From: Innocent E (Emma)
Sent: Saturday, 17 March 2018 19:26
To: Cabinet Secretary for Health and Sport; Minister for Public Health and Sport
Cc: Communications Healthier; Berry MA (Michael)(Communications); Gilfether H (Holly); Hunter A (Alan); McQueen F (Fiona); Morrison A (Alan); Syme M (Margaret); Birch J (Jason); Goodfellow M (Melanie); Gray P (Paul) (Health); Leitch J (Jason); Calderwood C (Catherine); Smith G (Gregor); Higgins K (Kate); Dunk R (Rachael); Aitken L (Louise); Robertson A (Alice); Johnson C (Christopher); Communications Duty Box; Hutchison D (David); Rafferty D (Donna)
Subject: RE: For clearance: NHS GGC water contamination

For the benefit of the copylist, the Cab Sec has cleared.

Emma Innocent | Communications
Senior media manager
Scottish Government, St Andrew's House
e: [redacted]
t: [redacted] **m:** [redacted]
www.scotland.gov.uk | @ScotGov

From: Innocent E (Emma)
Sent: 17 March 2018 18:27
To: 'Robison S (Shona), MSP'; Cabinet Secretary for Health and Sport; Minister for Public Health and Sport

Cc: Communications Healthier; Berry MA (Michael)(Communications); Gilfether H (Holly); Hunter A (Alan); McQueen F (Fiona); Morrison A (Alan); Syme M (Margaret); Birch J (Jason); Goodfellow M (Melanie); Gray P (Paul) (Health); Leitch J (Jason); Calderwood C (Catherine); Smith G (Gregor); Higgins K (Kate); Dunk R (Rachael); Aitken L (Louise); Robertson A (Alice); Johnson C (Christopher); Communications Duty Box; Hutchison D (David); Rafferty D (Donna)
Subject: For clearance: NHS GGC water contamination

Ms Robison,

We have been asked by STV for a response to Anas Sawar's comment about an issue that NHS GGC identified with the water supply to a ward for immunosuppressed children.

He said:

"It is completely unacceptable that child cancer patients at the Royal Hospital for Children have acquired infections from bacteria in the water supply.
"This should have been dealt with as a matter of urgency. I can completely understand the shock and upset the parents and children are feeling.
"I am aware that as a result there has been no hot water in the ward for almost two weeks and that some children have been unable to bathe.
"This merits an immediate solution, but we also need an investigation into how this situation has even be allowed to develop in the first place.
"There are serious questions for the health board and SNP health secretary Shona Robison to answer."

Our suggested response is below. Grateful for clearance.

A Scottish Government spokesperson said:

"Our primary concern is the wellbeing of children. We recognise that this will be a worrying time for them and their families. We understand that the health board has proactively provided information to let them know about the situation.

"The board has assured us that it acted immediately to address this incident and that it is being managed appropriately with support from Health Protection Scotland. We will continue to closely monitor the situation."

NHS GGC's proposed statement is below for your information. I have discussed this with spads and I am working with them about improving the tone of their response.

Emma
(SG duty comms)

NHSGGC statement regarding water provision on Royal Hospital for Children Ward 2A

It's not unusual for children in this type of ward to suffer infections and we are carrying out tests to determine whether the bacteria detected in the water are linked to any of the three patients. As a result, staff are aware that patient safety is always our paramount concern and are acting accordingly.

Patients on the Ward have access to portable sinks in their rooms. These sinks have a heating element enabling bottled water to be heated for use by patients. Wet wipes are also being provided for use in cleaning patients. This is standard practice in paediatric intensive care and is entirely appropriate for patients whose immune systems are compromised.

Hot water has been available for use by staff and parents during this time apart from three occasions where the water was being treated, which meant it was unavailable for 4-6 hours. This was explained to parents at the time as was the reason for treating the water.

The National Support Framework 2017

The National Support Framework ('the Framework') is a structure that sets out the roles and responsibilities of organisations in the event that a healthcare infection outbreak/incident, data exceedance or Healthcare Environment Inspectorate (HEI) report deems additional support to a NHS Board is required. This framework supersedes CNO algorithm (2015).

The National Support Framework may be invoked by the Scottish Government HAI /AMR Policy Unit or by a NHS Board to optimise patient safety during or following: any healthcare incident/outbreak(s)/data exceedance or HEI inspectorate visit/report.

Section 1: Criteria for invocation

Healthcare infection incident/outbreak(s)/data exceedance

This is contained within the National Infection Prevention and Control Manual (NIPCM) Chapter 3:

- an infectious agent that has major infection control/public health implications and control measures put in place locally have been unsuccessful; or
- a higher than expected number of cases in a given healthcare area over a specified period of time and control measures put in place locally have been unsuccessful; or
- ongoing exposure of individuals to infectious agent as a result of healthcare system failure.
- three consecutive mandatory surveillance data exceptions e.g. *clostridium difficile.*

HEI Inspection

If as part of the inspection process:

- it is observed that there are serious HAI issues that have a direct impact on care provision which cannot be addressed through local resolution or warrants direct escalation or;
- there is a pattern of failure to implement sufficient actions to resolve HAI related issues or;
- there is a pattern of unsustainable improvements that cause concern to the inspectorate that cannot be resolved or;
- there are concerns regarding the implementation of national policies throughout the Board area which require resolution at a national level.

Section 2: Actions and Communication

When the SG HAI/AMR Policy Unit invoke the Framework they will:

1. Inform the appropriate NHS Board Executive Lead or deputy that the National Support Framework is being invoked and the rationale for this.
2. Inform Health Protection Scotland (HPS) of the invocation citing the reason: this would normally be to the Lead Consultant for HAI or Associate Director who will then assign to a NCIC. The NCIC will inform the HPS HAI IPCT.
3. Request HPS action, a healthcare infection situation needs assessment to be completed within 5 working days http://www.hps.scot.nhs.uk/resourcedocument.aspx?resourceid=3177.
4. Instruct HPS on the expected leadership and coordination of all national activity and communicate with the SG HAI/AMR Policy Unit accordingly.

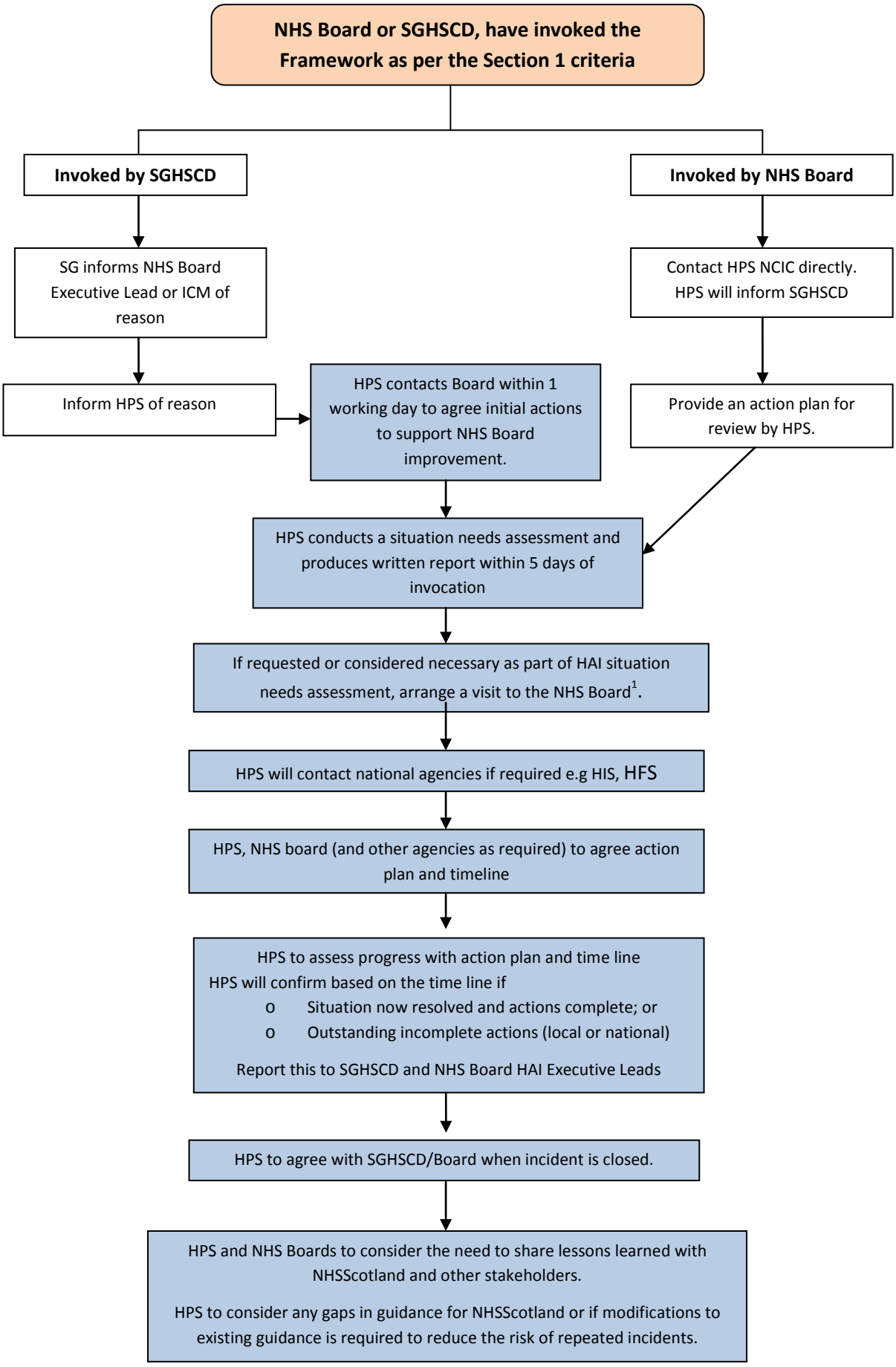
When the Framework has been invoked by SG HAI/AMR Policy Unit**, HPS will:**

1. Contact the NHS Board within one working day and agree initial actions to determine if sufficient actions have been planned to support NHS Board improvement
2. Produce a written assessment – healthcare infection situation needs assessment - within 5 working days of any invocation. This will be sent to SG HAI/AMR Policy Unit and appropriate NHS Board Executive lead or deputy for information.
3. If requested or considered necessary, as part of HAI situation needs assessment, arrange a visit to the NHS Board. This visit will take place within 10 working days of invocation. The NHS Board should be informed of all urgent recommendations on the day of visit either verbally or written.
4. Send a written report of the visit to the NHS Board within 5 working days. The NHS Board will have 2 working days to respond before HPS forwards the agreed report to SG HAI/AMR Policy Unit and the NHS Board. The report should be sent to SG HAI/AMR Policy Unit within 10 working days of the visit. Any variation in timeline will be agreed on behalf of SG HAI/AMR Policy Unit by HPS.
5. Contact other national agencies e.g. Health Facilities Scotland (HFS), Healthcare Improvement Scotland (HIS), HEI to request support or clarification if required.
6. Support the NHS Board until all actions are completed and identify any gaps in national guidance and tools as appropriate.
7. Report any failures to complete actions as planned/agreed to SG HAI/AMR Policy Unit and appropriate NHS Board Executive Lead.
8. Agree/confirm with SG HAI/AMR Policy Unit when the incident is closed and lessons to reduce risk have been made and/or update SG HAI/AMR Policy Unit on any residual risk/incomplete actions.
9. Consider the need to share lessons with NHSScotland and other stakeholders.

When a NHS Board invokes the Framework they will:

1. Contact HPS ICT nurse consultant directly to declare that they are invoking the Framework and the rationale for this. HPS will inform SG HAI/AMR Policy Unit .
2. Provide a related action plan, any relevant epidemiological data, incident/outbreak reports and/or requested information for review by HPS.
3. HPS will produce a written situation needs assessment within 5 working days of any invocation. This will be sent to SG HAI/AMR Policy Unit for information
4. Consider and discuss with HPS the need for a Board visit. This visit will take place within 10 working days of invocation.
5. Agree specific objective(s) of the site visit and agree a timeline of actions with HPS.
6. Implement urgent recommendations (written and verbal) provided by HPS and agree a timeline for any further recommendations/actions identified.
7. Discuss and agree with HPS the need for other national agency support or clarification e.g. HFS, HIS, HEI.
8. Liaise and communicate with HPS until all actions are completed and identify any gaps in local guidance, tools as appropriate.
9. Report any incomplete planned/agreed actions to HPS .
10. Agree/confirm with HPS when the incident is closed and lessons to reduce risk have been made. HPS will inform SG HAI/AMR Policy Unit of any residual risk/incomplete actions.
11. Consider the sharing of lessons with NHSScotland and other stakeholders.

The National Support Framework Algorithm



[1] This visit will take place within 10 working days of invocation: on the day of the visit the NHS Board will be informed of urgent recommendations with a written report sent to them within 5 working days. The Board will then have 2 working days to respond before the report is forwarded to SGHSCD. Any variation to timescales must be agreed by HPS on behalf of SGHSCD.

Media Articles: Water Contamination Incident – NHSGGC – March 2018

BBC Scotland:

16 March 2018

Bacteria found in water at Glasgow Royal Hospital for Children

Three children are being treated for infections that may be linked to bacteria in the water supply at a Glasgow hospital.

NHS Greater Glasgow and Clyde is investigating after the microorganisms were discovered at the Royal Hospital for Children.

Health officials said the bacteria could pose harm to patients with "compromised" immunity.

The source of the bacteria is not yet known.

The health board said the bacteria posed "very low risk" to anyone with a healthy immune system.

It said tests were ongoing to confirm if the infections the three children have are linked to the water contamination issue.

Sterilised water

Dr Teresa Inkster, infection control doctor, said: "It's not unusual for children in this type of ward to suffer infections but we are carrying out tests to determine whether these bacteria are linked to any of the three patients.

"However, we can confirm none of the three patients are giving any cause for concern as a consequence of their infection."

The hospital has sought advice from Health Protection Scotland, Health Facilities Scotland and Scottish Water.

Alternatives to tap water supplies have been brought in for paediatric patients in wards 2A, 2B, 3C and the hospital's intensive care unit.

The health board has also given out oral antibiotics due to the low immune system of patients on these wards.

Sterilised water is being supplied for drinking and bottled water for brushing teeth.

Portable sinks stocked with bottled water have been supplied to all patient rooms in the affected wards.

The health board said: "Staff and others in these wards are able to use the tap water safely although we have taken an extra precaution of fitting taps and showers with filters to ensure no cross transmission from staff and visitors to patients."

20 March 2018

Water bacteria probe extended to Queen Elizabeth Hospital

Tests for bacteria in the water supply at the Royal Hospital for Children have been extended to the neighbouring Queen Elizabeth University Hospital.

Four children are now receiving treatment for infections which may be linked to the water supply at the RHC in Glasgow.

NHS Greater Glasgow and Clyde (NHSGGC) has confirmed testing has been extended to four wards at the QEUH.

Infection control measures are also in place for patients with low immunity.

Health Secretary Shona Robison has apologised to patients and families affected.

In a statement to MSPs at Holyrood on Tuesday afternoon, she said "appropriate precautionary measures" were being taken by NHSGGC to protect patients.

NHSGGC said it is working with experts from Health Protection Scotland, Health Facilities Scotland and Scottish Water.

The health board revealed the probe had been extended after a source told BBC Scotland that taps and showers had been taped up in QEUH wards and only bottled water was allowed.

On Friday it emerged **three children were receiving treatment at the RHC** but a fourth has now shown symptoms.

An NHSGGC spokesman said: "These bacteria can pose a risk to patients whose immunity is compromised, however we have put in place robust infection control measures to protect our patients.

"We have now extended this testing and infection control measures to four wards treating the most immunity compromised patients in the Queen Elizabeth University Hospital to ensure that we take every precaution."

The board also confirmed the children who became ill last week are still recovering.

The spokesman added: "Three children continue to receive treatments for infections that may be linked to bacteria found in the water supply.

"Tests are ongoing to confirm if they are indeed linked.

"A fourth patient has shown symptoms and has been readmitted to the RHC.

"There are no reports of any patients being infected by bacteria from water in the adult wards."

A series of infection control measures were introduced to the affected RHC wards at the weekend and water filters are to be installed.

'Worry and concern'

The statement concluded: "As a result, it is hoped that the full water supply will return to normal within 48 hours after appropriate testing has been carried out and it is anticipated this will be mirrored at the QEUH.

"We would like to thank the patients and families in the wards affected in the RHC for their continuing patience and support while the testing was carried out and fitting of filters is being undertaken."

During the health secretary's statement to the Scottish Parliament Labour MSP Anas Sarwar said parents had told him the problem had been ongoing for almost three weeks.

He said it had resulted in the inability of young cancer patients to bathe properly, with some taking taxis to other sites to use facilities, he said.

He added: "The news of contamination of the water supply in the cancer ward at the children's hospital in Glasgow has caused understandable worry and concern for parents of very sick children."

Ms Robison said she had first been made aware of the matter on 11 March, with Scottish government officials informed prior to that.

"I absolutely understand the worry and concern of parents," she said.

"I have been assured by the health board that they have indeed been keeping parents informed.

"Of course I would apologise to the parents and the children for the inconvenience that they have experienced, but I am sure everyone would understand the most important thing here is safety, and if the shower heads and taps are being tested and investigated then that has to take its course."

STV News:

16 March 2018

Water supply contamination probe at children's hospital

Bacteria may have caused infections in three patients at the Royal Hospital for Children in Glasgow.

Health: NHS Greater Glasgow and Clyde confirmed tests are being carried out to see if the bacteria is linked to the patients. **Google 2017**

Three children are receiving treatment for infections which may be linked to the water supply at the Royal Hospital for Children in Glasgow.

NHS Greater Glasgow and Clyde confirmed it is investigating the presence of bacteria in the water supply to wards.

The health board said it poses a very low risk to anyone with a healthy immune system but it can harm patients whose immunity is compromised.

Dr Teresa Inkster, infection control doctor, said: "It's not unusual for children in this type of ward to suffer infections but we are carrying out tests to determine whether these bacteria are linked to any of the three patients.

"However, we can confirm none of the three patients are giving any cause for concern as a consequence of their infection."

The source of the bacteria is as yet unknown but the board said it is taking advice from Health Protection Scotland, Health Facilities Scotland and Scottish Water.

In the meantime alternatives to tap-water supplies to paediatric patients in wards 2A, 2B, 3C and the hospital's intensive care unit have been put in place.

Patients in the ward have also been given oral antibiotics as they have a low immune system.

Sterilised water is being supplied for drinking and bottled water for brushing teeth.

In addition, portable sinks stocked with bottled water have been supplied to all patient rooms in the affected wards.

Taps and showers have also been fitted with filters to ensure no cross transmission from staff and visitors to patients.

20 March 2018

Children still treated after bacteria in hospital water

Three children are continuing to receive treatment for infections which may be linked to bacteria in the water supply at a hospital.

Bacteria was found at the Royal Hospital for Children (RHC) in Glasgow on Friday.

A fourth patient has been readmitted to the RHC after displaying symptoms of infection.

Officials said testing and infection control measures have also been extended to four wards at the Queen Elizabeth University Hospital (QEUH).

Experts from Health Protection Scotland, Health Facilities Scotland and Scottish Water have been involved in the investigation.

An NHS Greater Glasgow and Clyde spokesman said: "Three children continue to receive treatments for infections that may be linked to bacteria found in the water supply.

"Tests are ongoing to confirm if they are indeed linked. A fourth patient has shown symptoms and has been readmitted to the RHC.

"There are no reports of any patients being infected by bacteria from water in the adult wards."

'Tests are ongoing to confirm if they are indeed linked. A fourth patient has shown symptoms and has been readmitted to the RHC'

NHS Greater Glasgow and Clyde

The spokesman added: "Health chiefs say bacteria can pose a risk to patients whose immunity is compromised and robust infection control measures have been put in place to protect patients.

"They have also extended testing and infection control measures to four wards treating the most immunity-compromised patients in the QUEH.

"Infection control measures were introduced to affected RHC wards at the weekend and water filters are being installed.

"As a result, it is hoped that the full water supply will return to normal within 48 hours after appropriate testing has been carried out and it is anticipated this will be mirrored at the QEUH.

"We would like to thank the patients and families in the wards affected in the RHC for their continuing patience and support while the testing was carried out and fitting of filters is being undertaken."

The Herald Scotland:

20 March 2018

Four wards at Queen Elizabeth hospital Glasgow probed over bacteria in water in wake of children's hospital alert

FOUR wards at **Scotland**'s flagship new hospital have had their water supplies taped off amid fears that bacterial contamination poses a risk to patients.

Testing and infection control measures have been extended to four wards at **the Queen** Elizabeth **University** Hospital in **Glasgow** where patients with the most compromised immune systems are being treated.

It is understood to include respiratory wards where patients with conditions such as cystic fibrosis are cared for.

It follows similar measures in place since Friday at the adjacent Royal Hospital for Children (RHC) after bacteria was detected in the water.

Four children are being treated for symptoms of infection possibly linked to consuming contaminated water.

READ MORE: Immigrants 'not a strain on NHS' as study reveals worse mortality for white Scots

A spokesman for **NHS** Greater Glasgow and Clyde said: "We are continuing to investigate the presence of bacteria in the water supply to some wards in the Royal Hospital for Children (RHC) with experts from Health Protection Scotland, Health Facilities Scotland and Scottish Water.

"These bacteria can pose a risk to patients whose immunity is compromised, however we have put in place robust infection control measures to protect our patients.

"We have now extended this testing and infection control measures to four wards treating the most immunity compromised patients in the Queen Elizabeth University Hospital (QEUH) to ensure that we take every precaution.

"Three children continue to receive treatments for infections that may be linked to bacteria found in the water supply. Tests are ongoing to confirm if they are indeed linked. A fourth patient has shown symptoms and has been readmitted to the RHC. There are no reports of any patients being infected by bacteria from water in the adult wards.

Analysis: 'People worry about the burden on the health system from immigrants. It's just not that simple'

"A series of infection control measures were introduced to the affected RHC wards at the weekend and water filters are set to be installed. As a result, it is hoped that the full water supply will return to normal within 48 hours after appropriate testing has been carried out and it is anticipated this will be mirrored at the QEUH.

"We would like to thank the patients and families in the wards affected in the RHC for their continuing patience and support while the testing was carried out and fitting of filters is being undertaken."

Glasgow Live:

20 March 2018

Health secretary apologises to patients affected by Glasgow hospital water bacteria probe

Four children are receiving treatment for infections which may be linked to the water supply at the RHC and testing has now been extended to four wards at the QEUH.

Health Secretary Shona Robison has apologised to patients and families affected by testing for bacteria in the water supply at two Glasgow hospitals.

Four children are now receiving treatment for infections which may be linked to the water supply at the Royal Hospital for Children (RHC).

Testing has also been extended to four wards at the neighbouring Queen Elizabeth University Hospital (QEUH).

Ms Robison told MSPs that "appropriate precautionary measures" were being taken by NHS Greater Glasgow and Clyde (NHSGGC) to protect patients.

The issue emerged on Friday but Scottish Labour MSP Anas Sarwar said parents had told him it had been ongoing for almost three weeks.

It has resulted in the inability of young cancer patients to bathe properly, with some taking taxis to other sites to use facilities, he said.

He added: "The news of contamination of the water supply in the cancer ward at the children's hospital in Glasgow has caused understandable worry and concern for parents of very sick children.

"Parents who tell me they learned more about the problem from a newspaper than any communication from the health board.

"They also tell me this issue has been running for three weeks but has only come into the public domain in the last few days."

Ms Robison said she had first been made aware of the matter on March 11, with Scottish Government officials informed prior to that.

"I absolutely understand the worry and concern of parents," she said.

"I have been assured by the health board that they have indeed been keeping parents informed.

"Of course I would apologise to the parents and the children for the inconvenience that they have experienced, but I am sure everyone would understand the most important thing here is safety, and if the shower heads and taps are being tested and investigated then that has to take its course.

"These are complex issues and they need to be fully, fully investigated, this bacteria is very, very rare indeed.

"Absolutely everything has been done to get to the bottom of this."

NHSGGC said it is working with experts from Health Protection Scotland, Health Facilities Scotland and Scottish Water.

A statement from the health board said: "Three children continue to receive treatments for infections that may be linked to bacteria found in the water supply.

"Tests are ongoing to confirm if they are indeed linked. A fourth patient has shown symptoms and has been readmitted to the RHC.

"There are no reports of any patients being infected by bacteria from water in the adult wards."

Infection control measures were introduced to affected RHC wards at the weekend and water filters are being installed.

The spokesman added: "As a result, it is hoped that the full water supply will return to normal within 48 hours after appropriate testing has been carried out and it is anticipated this will be mirrored at the QEUH."

Evening Times:

20th March

Fourth child treated for infection linked to contaminated water at Glasgow hospital

A FOURTH child is being treated for an infection which may be linked to contaminated water at **Glasgow**'s children's hospital.

Tests on the water supply at the Royal Hospital for Children (RHC) have now been extended to four wards after traces of a bacteria were found which can pose a risk to seriously ill children, including those undergoing treatment for cancer.

NHS Greater Glasgow and **Clyde** said "robust infection control measures" were in place to protect patients.

Scottish Water and Health Protection **Scotland** are carrying out the tests.

A health board spokesman said: "Three children continue to receive treatments for infections that may be linked to bacteria found in the water supply.

"Tests are ongoing to confirm if they are indeed linked.

"A fourth patient has shown symptoms and has been readmitted to the RHC.

"There are no reports of any patients being infected by bacteria from water in the adult wards.

"A series of infection control measures were introduced to the affected RHC wards at the weekend and water filters are set to be installed.

"As a result, it is hoped that the full water supply will return to normal within 48 hours after appropriate testing has been carried out and it is anticipated this will be mirrored at the QEUH.

"We would like to thank the patients and families in the wards affected in the RHC for their continuing patience and support while the testing was carried out and fitting of filters is being undertaken."

Daily Record:

21 March 2018

Fourth child in cancer ward infected by contaminated hospital water prompts Shona Robison to apologise

Patients have been unable to bathe for almost three weeks following the discovery of bacteria in the water supply in Glasgow's Royal Hospital for Children.

Health Secretary Shona Robison apologised yesterday to parents and children hit by the contamination of water at a flagship hospital.

Patients have been unable to bathe for almost three weeks following the discovery of bacteria in the supply on wards 2a, 2b and 3c in the Schiehallion Unit in Glasgow's Royal Hospital for Children.

The Record told on Friday how three child cancer patients were affected. Hospital bosses yesterday confirmed a fourth child is showing symptoms and has been readmitted.

Questioned by Labour MSP Anas Sarwar at Holyrood yesterday, Robison admitted she had been aware of the situation since March 11.

She told MSPs "appropriate precautionary measures" were being taken by NHS Greater Glasgow and Clyde (NHSGGC) to protect patients.

All patients in the wards were given oral antibiotics because the bacteria can be harmful to those whose immunity is compromised.

Testing has also been extended to four wards at the neighbouring Queen Elizabeth University Hospital (QEUH).

Robison said: "I absolutely understand the worry and concern of parents.

"Of course I would apologise to the parents and the children but I am sure everyone would understand the most important thing here is safety.

“These are complex issues and need to be fully investigated.”

NHSGGC said: “Three children continue to receive treatments for infections that may be linked to bacteria in the water supply.

“Tests are ongoing to confirm if they are indeed linked. A fourth patient has shown symptoms and has been readmitted.

“There are no reports of any patient being infected by bacteria from water in the adult wards.”

Sarwar said: “Parents have had to take children with cancer in taxis to other facilities to wash.

“That is unacceptable – and the lack of transparency from NHS Greater Glasgow and Clyde has made the situation worse.”

CONTAMINATION OF THE WATER SYSTEM WITHIN WARD 2A (HAEMATO-ONCOLOGY WARD) AT THE ROYAL HOSPITAL FOR CHILDREN, NHS GREATER GLASGOW AND CLYDE

Key questions

1. There appears to be conflicting information about the number of patients and wards affected?

Six children are affected and none are giving any cause for concern for any bacterial infections associated with this incident. There are no positive cases in adults.

There are 2 wards with confirmed positive results (haemato-onocology, adults and children.) However the Board has reassured us that they have identified all high risk patient groups in both hospitals and applied control measures.

2. How has this incident arisen, what are the likely causes?

Contamination of a water supply can occur in several different ways. As this is an on-going incident and testing is still underway to identify the extent of contamination, it is too early to identify a definite cause. There are a number of issues identified which may be considered as contributing factors. Health Protection Scotland is working closely with the Board and Health Facilities Scotland to establish the cause and source.

3. How long until the situation is resolved?

The purpose of the control measures the Board has put in place in ward 2A (which is a children's haemato-onocology ward) and other high risk areas should prevent any further transmission. Currently there is no indication that these control measures have failed as there have been no new cases in any of the high risk areas since their introduction.

The focus has been on preventing further transmission and identification of the extent of the contamination.

Until the full extent has been identified, it is difficult to estimate the length of time this will take to resolve. These particular isolates can normally be removed by sanitation. The Board has undertaken this action by the use of silver hydrogen peroxide on several occasions. Whilst the counts have reduced, the bacteria remains present in the system. This suggests the problem is wider than, or originating at, a further point from where the sanitisation has taken place.

4. Was this acted upon immediately without delay?

On identification of the first case, the priority of the Board was to identify the source and to minimise and prevent further transmission. We have been reassured that the appropriate control measures and investigations were implemented immediately.

However, as this is an on-going incident and further water testing is underway, additional actions may still be required.

5. How will this be monitored in future?

There are a number of actions required by the Board including replacement of existing taps in high risk areas. Further actions may be taken once the current extent of contamination is known.

6. Are there any further cleaning improvements that could prevent this in future?

Enhanced cleaning has already been put in place in the affected areas. Further cleaning improvements to prevent this in the future have been discussed, but it is too early in the investigation to make any firm recommendations. However, if any recommendations are made as a result of this incident I would expect the Board to fully implement these.

7. Will there be a full report into this at some point which can be made public?

As part of the incident management process, a debrief with lessons learned will be undertaken by the Board. The Board will share this with Health Protection Scotland so that any lessons learned can be shared across NHS Scotland. The Cabinet Secretary for Health and Sport has also asked HPS to undertake a detailed review of the incidence.

8. Is this incident unusual for a relatively new build hospital?

It is unusual for a new build hospital to experience an incident like this. The control measures put in place by the Board, including exchanging taps, installing filters and dosing the water system, should help prevent this.

9. Who is liable?

It is not possible to ascertain where the liability rests until HFS has spoken to the lead designer. Urgent advice has been requested from HPS on the point. HPS and HFS were involved with NHSGGC in 2014 regarding these taps and this will be included within the review the Cabinet Secretary has asked HPS to undertake.

HPS will undertake this review in a systematic fashion ensuring firstly the risks to patients are minimised, the water contamination is eradicated and likelihood of recurrence minimised. It is important that they have the time to do this so we can all be assured lessons can be learned for the wider NHS.

10. What is Scottish Water's position about the water supply?

Scottish water were contacted by HPS on Friday 16 March and confirmed that they do not test for Cupriavidus or Stenotrophomonas.
They confirmed that of the testing they do undertake that results have been within acceptable limits. **A copy of their analysis is attached separately.**

Scottish water have not been involved further as the testing results point to this being a local issue with the outlets There is therefore no evidence of contamination at the point of entry, however NHSGGC has decided to identify the low level organisms present to ensure they have explored every possible hypothesis. **They hope to have provisional results this afternoon.**

11. Are there any plans to test the taps in other wards across the QEUH / RHC sites?

Yes, testing is being rolled out to other areas. Laboratory capacity has been increased to deal with the increased workload. Last night HPS worked with estates colleagues to risk assess the entire site and they now have a plan for water testing moving forward. This will include higher risk areas such as ICU and theatres.

12. How long was the water supply cut off? Have the children in the affected wards been able to bathe or shower for two weeks as is alleged in the media?

Our understanding is that the children in ward 2a have not had access to tap water in showers since 8pm 10th March.

The Chief Executive and Medical Director of NHSGGC assured the Cabinet Secretary for Health and Sport on 20 March that filters would be in place by close of play Tuesday 20 March, and sampling will be undertaken following installation of the filters in four locations. This is to ensure the water is deemed safe. Prior to this patients were asked to use wipes and also had access to warm water via the portable sinks supplied with bottled water.

13. What information has been provided to the patients and families? There are accusations that that parents were not informed about the water issues and questions about how this was being handled.

The parents of all children with positive results were spoken to by their Consultant as soon as laboratory reports were received. Verbal briefings were provided on March 1st, and again on March 9th, 12th, 16th and 20th. The content of the initial brief is set out below and was updated as the incident progressed. Dr. Inkster (Lead Infection Control Doctor NHSGGC) has been available to speak to families of positive patients and has spoken to two so far, explained the likely source of the infection is the water and has apologised.

<u>Parent information</u>

"Water testing has revealed the presence of bacteria in the water supply. This bacteria is not harmful to a healthy individuals but can cause infections in people who have a low immune system. Immediate chemical treatment of the water supply is being undertaken today. Taps and showerheads will be replaced. In the meantime we have supplied bottled water for patients for washing and brushing teeth. Sterile water will be supplied for patients to drink."

14. Did the parents of children (not affected) receive any information? Was there information readily available to them? And to the patients/families in ward 4b? If so, when was this made available? If not, are there plans to issue hospital wide information as a precaution?

All parents not just those with an affected child were spoken to and given verbal updates frequently. This took place on March 1st. Patients on 4B were told on March 19th the same day when the positive water results were received.

15. What has the Scottish Government done about the situation?

Officials have been liaising with HPS and the Board and we have robust reporting mechanisms in place to ensure that incidents and outbreaks are reported. The Cabinet Secretary for Health and Sport has met with Board members to seek assurance about the actions taken. The Cabinets Secretary for Health and Sport has also asked HPS to coordinate a thorough investigation as a matter of urgency, which in due course will be reported to Parliament.

16. In their meeting with the Cabinet Secretary for Health and Sport, NHSGGC mentioned that they had asked Public Health England (PHE) for assistance, what does this relate to?

HPS confirmed that there are occasions when they recommend Boards seek advice from PHE. The relevant national expert from PHE dialled into the Incident Management Team meeting last weekend, so it can be seen as a positive that their national expert is involved.

17. Have there been similar issues with taps/showerheads in hospitals since 1998?

We are currently checking the position as a matter of urgency.
We have also asked HPS to contact Dumfries & Galloway to find out if there are any problems in their new hospital – and if necessary HPS will go out to across Scotland to find out if any similar issues in the newer hospitals.

18. What will the HPS Review encompass?

As part of the review being co-ordinated by HPS, the taps in use in the high risk areas including their commission, installation and maintenance will be covered.
We understand that the taps procured by NHSGGC were considered to be compliant with the guidance in place at the point of procurement of the hospital.

HPS will liaise with HFS and NHSGGC to undertake a review into the procurement, installation and maintenance of the taps across QEUH/RHC NHSGGC. The current focus of their support is on prevention and control and exploring potential hypothesis, of which the taps may be considered.

HPS and HFS were involved with NHSGGC in 2014 regarding these taps and this will included within the review. The Cabinet Secretary for Health and Sport also expects the review to consider wider aspects of the situation.

19. Would we be able to get the HFS testing and maintenance plans for the taps? Have HFS contacted the lead designers to find out about the spec of the taps before they were installed?

We have asked HPS to confirm the point to us as a matter of urgency

20. What control measures has the Board put in place?

- Ward 2A will accept admissions however where possible planned admissions will be relocated elsewhere.
- All haemato-oncology patients within ward 2A and ward 4B will commence on prophylactic ciprofloxacin
- Pall filters are being fitted to all wash hand basins and showers in ward 2A
- Pall filters are being fitted to all wash hand basins across RHC where there are immunocompromised children
- Pall filters will be fitted to wash hand basins and showers in ward 4B
- Showers will not be used by patients in wards 2A, 2b, 3c or 4B.
- Wash hand basins will not be used by patients, they will continue to use the portable sinks installed supplied by bottled water.
- Twice daily cleans of affected areas are being undertaken using Actichlor plus
- Staff will use alcohol gel following any hand washing using the wash hand basins
- Steriliium gel has been provided for staff to use when undertaking any aseptic procedure.

21. What bacteria are included in this incident and in what numbers?

In this current incident there are: 1 Cupriavidus, 4 stenotrophomonas and 1 pseudomonas. The definitions are as follows:

Cupriavidus pauculus is a Gram-negative bacterium, which isolated from water ultrafiltration systems and bottled mineral water.

Pseudomonas aeruginosa is a Gram-negative bacterium, which is found in water and opportunistically infects people who are immunocompromised.

Stenotrophomonas is a Gram-negative bacterium, which is found in water and is an uncommon bacterium, making human infection is difficult to treat.

Further background information

Health Facilities Scotland, looks after the NHS Scotland estate, provides facilities management and is responsible for decontamination of equipment. The Facilities Monitoring Tool is a national coordinated system, which provides support to Boards to maintain their Central Decontamination Units. The Time to Clean module provides a systemised way for boards to assess the resource required to maintain the high level of cleanliness for refurbished or new build hospital areas.

NHS Education Scotland have developed (with funding from the Chief Nursing Officer's Directorate) a national training programme; Scottish Infection Prevention Control Pathway. This is a structured and coordinated approach to Healthcare Associated Infection education and training for staff in health and social care settings. This training includes modules on decontamination.

Tackling Healthcare Associated Infections (HCAI) and containing Antimicrobial Resistance (AMR) are key priorities for the Scottish Government. Scotland's work on HCAI and AMR is globally recognised, but this remains a constant challenge. AMR is a global health threat and we in Scotland have been working hard to tackle this over a number of years.

The rapid spread of multi-drug resistant bacteria means that we could be close to reaching a point where we may not be able to prevent or treat everyday infections or diseases. To tackle this, the Scottish Government has been working with national key stakeholders to minimise this threat.

We have made great strides in reducing healthcare associated infections. C. difficile infections (in people aged 65 years and over) and MRSA have reduced by 86% and 92% respectively since national monitoring began in 2007.
Table to set out high level timeline and actions

21 March 2018

CONTAMINATION OF THE WATER SYSTEM WITHIN WARD 2A (HAEMATO-ONCOLOGY WARD) AT THE ROYAL HOSPITAL FOR CHILDREN, NHS GREATER GLASGOW AND CLYDE

Timeline

29 January - Patient case of Cupriavadis identified in a blood culture and reported to Infection and Prevention of Control Team on 29th January 2018 by microbiologist.

Policy team would not anticipate being told about one patient case at this stage.

Between 30 January and 27 February NHSGGC carried out their internal Infection Prevention and Control investigations – which is normal practice.

30 January - Investigations began in Aseptic pharmacy having had a case associated with the pharmacy in Feb 2016.

5 February – Problem Assessment Group (PAG) convened to review findings from patient review and actions resulting from the investigations into the aseptic pharmacy in Feb 2016. Water samples obtained from the aseptic pharmacy as an action from this PAG were negative and all standard operating procedures were being followed in relation to handling of medicines and water outlets on the aseptic pharmacy.

9 February – Focus of potential source shifted to ward 2A, haemato oncology ward, RHC. The patient case had been nursed on ward 2A in the days prior to the positive blood culture. Water samples were obtained initially from treatment room and prep room as these were the rooms where IV medications are reconstituted.

15 February – Results of water testing available showing Cupriavadis. Treatment/prep room sinks removed from use until adequate dosing could take place by estates.

19 February – Second PAG held to discuss water results and control measures required. Testing extended to patient rooms including those occupied by the positive patient isolate. Some additional random patient rooms tested also.

20 February – Dosing of the affected outlets complete and re-sampling carried out. Main hospital tanks sampled.

27 February – Further 2 positive isolates from patient sinks and showers in ward 2A reported by water lab. Cupriavadis isolated from a number of outlets. Pseudomonas isolated from one outlet in room 3 on 2A. IPCT noted a patient blood culture was positive for Pseudomonas from a sample obtained on 21 February. A Water safety checklist was carried out as per NHSGGC Pseudomonas aeruginosa standard operating procedures in response to a Pseudomonas blood culture. Findings reported back to clinicians at the time of audit. The patient bedrooms from which water outlets were positive were taken out of use until dosing could be carried out.

1 March – More widespread Cupriavadis reported in water samples from ward 2A. Incident Management Team (IMT) meeting held over telephone due to adverse weather conditions. Agreed that patients would not use showers and instead should be washed in bottled water. Patients also instructed to drink bottled water and not mains water. Staff and parents allowed to use hand wash basins for washing hands but must follow with alcohol based hand rub. Parents could also use the showers. Comms for parents prepared and issued by Senior charge nurse on the ward 2A.

Water tanks negative suggesting that the outlets (horne taps) are the source of the contamination. Infection Prevention and Control nurse present on ward to support hand hygiene practice following roll out of control measures.

HPS notify Scottish Government about the contamination of the water system, and that their support was not requested by the Board at this stage. This is in line with our usual reporting arrangements.

Officials brief the Chief Nursing Officer. The decision was taken not to brief the Cabinet Secretary at this stage as the severity of illness was moderate, and impact on services minor and at this stage only two patients affected.

2 March – IMT re-convened although some members still unable to attend due to adverse weather conditions. Tap and showerhead components removed and sent to micro lab for testing. Hypothesis is that outlets are the source and that seeding of others has taken place. Flow straighteners contained within the taps which encourage biofilm formation are known to be high risk and have been implicated in outbreaks previously. Dosing of entire 2A water system planned for same day however only half the system could be dosed due to broken valve. Full control measures remained in place until entire system dosing could take place.

5 March – Cupriavadis grown from tap components and shower heads.

6 March – Further IMT held. Request to change all shower heads to disposable shower heads. Request for remainder of the system on 2A to be dosed. Requested that flow straightners replaced in taps followed by chemical and thermal disinfection of the individual taps. Cupriavadis added to IPC alert organism list from whole of RHC. Review of domestic cleaning practice to help understand how contamination may have spread from one tap/showerhead to another. No concerns identified although it was accepted that the same cloth could have been used to go between outlets when cleaning. Domestic practice reviewed by facilities management. Ongoing enhanced IPC presence on ward.

7 March – Agreed that water outlets could be used to bathe/shower children on the basis that the hot supply was where the positive isolates had been found and the hot supply had been fully dosed. It was only the cold supply dosing which was still awaited.

HPS provided an update to Scottish Government.

9 March – Further IMT held. IMT held. No new patient cases. A program of tap exchange, thermal disinfection and replacement of flow straighteners was ongoing. Chemical disinfection of system planned once disinfection of taps complete. Resampling to take place after chemical disinfection. Water testing extended to ward 2B which is the outpatient area.

9 March (late evening) – IPC informed of preliminary results which showed cupriavadis still in water following the silver peroxide dosing on 2 March. In addition, Stenotrophomonas isolated from 2 outlets in 2A. Relevant SMT and clinicians contacted and requested that full control measures be re-instated including removal of showers and mains outlet use for all patients in ward 2A and 2B. Patients to be bathed in bottled water and all staff and parents to use alcohol based hand rub after hand washing in mains sinks.

10 March – Sampling of second half of water system now completed (cold supply), no access to tap water in showers since 8pm.

11 March – Officials briefed the Cabinet Secretary for Health and Sport as potential media interest following information being given to parents.

12 March – Teleconference held first thing in morning with Lead ICD, South Sector Facilities associate director, RHC General manager and medical director. IMT re-convened Monday lunchtime with following. All shower heads replaced by 10.00pm same evening. In depth discussions around water testing, results and sanitisations to date. Contingency in case ward 2A water was still positive following further sanitisation - Bone Marrow Transplant patients could move to ward 3C. Agreed to test water supply in ward 3C first. Also tested ward 4B in adult hospital (this ward will become the adult BMT unit).

HPS provide further update to Scottish Government.

FMQ prepared and submitted.

13 March – Further sanitation of system completed with Sanisil at a dilution rate of 3000ppm. Sampling of water outlets then repeated. Portable Wash Hand Basins installed on ward 2A and mains hand wash basins taken out of use all together. Replacement of taps ongoing. Ongoing enhanced IPC presence.

HPS provide further update to Scottish Government.

14 March – Additional measure of sterilium gel to be used after hand hygiene.

15 March – New patient cases. Stenotrophomonas in a blood culture. Patient required antimicrobial therapy and line removal.

Home patient: Stenotrophomonas/Pseudomonas aeruginosa in blood culture. Blood culture positive on admission. Attended Ward 2b as an outpatient (78 days at home)
PICU: Stenotrophomonas in blood culture. Patient on antimicrobials and required line removal. (40 days in hospital)

Water outlets in 2A remained positive despite sanisil dosing on 13th March. Positive Cupriavadis water sample now also from ward 3C and adult ward 4B (QEUH). Ward 4B only had 1 positive outlet. Control measures rolled out to all wards which housed immunocompromised patients – 2A, 2B, 2C, 3A, 3B, 3C and PICU. IPC support and advise rolled out to all wards on 15 March 2018.

Fileda filters to be fitted to taps of the sinks which contained immunocompromised patients.
Ciprofloxacin cover for all immunocompromised patients.

Support sought from HFS, HPS, public health and Scottish water.

16 March – Board hold a further IMT, 2 new cases linked to ward 2A identified, 1 new patient linked to PICU. As part of ongoing investigations in an attempt to find a contingency ward should this be required, NHSGGC took the decision to test water outlets in other areas of the hospital.

Scottish Water contacted.

HPS provide further update to Scottish Government.

17 March *– Anas Sarwar MSP releases a media statement:*
"It is completely unacceptable that child cancer patients at the Royal Hospital for Children have acquired infections from bacteria in the water supply. This should have been dealt with as a matter of urgency. I can completely understand the shock and upset the parents and children are feeling. I am aware that as a result there has been no hot water in the ward for almost two weeks and that some children have been unable to bathe. This merits an immediate solution, but we also need an investigation into how this situation has even be allowed to develop in the first place. There are serious questions for the health board and SNP health secretary Shona Robison to answer."

Lines cleared by the Cabinet Secretary (not used):
"Our primary concern is the wellbeing of children. We recognise that this will be a worrying time for them and their families. We understand that the health board has proactively provided information to let them know about the situation.

"The board has assured us that it acted immediately to address this incident and that it is being managed appropriately with support from Health Protection Scotland. We will continue to closely monitor the situation."

NHSGGC statement:
It's not unusual for children in this type of ward to suffer infections and we are carrying out tests to determine whether the bacteria detected in the water are linked to any of the three patients.

As a result, staff are aware that patient safety is always our paramount concern and are acting accordingly. Patients on the Ward have access to portable sinks in their rooms.

These sinks have a heating element enabling bottled water to be heated for use by patients. Wet wipes are also being provided for use in cleaning patients.

This is standard practice in paediatric intensive care and is entirely appropriate for patients whose immune systems are compromised.

Hot water has been available for use by staff and parents during this time apart from three occasions where the water was being treated, which meant it was unavailable for 4-6 hours.

This was explained to parents at the time as was the reason for treating the water.

Both the BBC and STV news reported on this.

19 March – Further IMT held. 1 new patient case of Stenotrophomonas positive on admission to ward. Inpatient on ward before control measures rolled out.

Ongoing fitting of Fileda filters to tap outlets and showerheads. Once filters fitted to all tap outlets, water will be retested. If negative, Sinks can be used as per normal practice and control measures discontinued.

Both the BBC and STV news reported on this.

20 March - Policy officials request details of tap testing and maintenance plans. HPS coordinating with Health Facilities Scotland.
FMQ prepared and submitted.

HPS confirm that filters are currently being installed and due to be in place by close of play on Tuesday 20 March. Sampling will be taken post filter fitment from four locations to ensure the water is deemed safe. Patients are being asked to use wipes and also have access to warm water via the portable sinks supplied with bottled water

Topical PQ - S5T-00987 (20 March 2018), Anas Sarwar MSP
To ask the Scottish Government whether it will provide an update on the response to, and the impact of, the contamination of water at the cancer ward at the Royal Hospital for Children in Glasgow.

Answered by the Cabinet Secretary for Health and Sport:
Presiding Officer, I welcome this opportunity to update the chamber on the work being done by NHS Greater Glasgow and Clyde and the incident management team to address this issue.

I am sure for all of us our overriding concern is the wellbeing of the children and families in the affected areas. I have spoken today with the Board's Chief Executive and they were clear that no patients are giving any cause for concern as a result of bacterial infections associated with this incident.

However, the Board, with support from Health Protection Scotland, are taking appropriate precautionary measures to ensure that any infection is contained and addressed.

Following identification of the bacteria, testing from the water tank supplying both the Queen Elizabeth University Hospital and the Royal Hospital for Children has tested negative.

A range of control measures have been put in place, including some taps and showerheads being taken out of use for chemical disinfection, and point of use filters are in the process of being installed.

Filters are due to be in place by close of play today, and sampling will be undertaken to ensure that the water is deemed safe.

I have asked Health Protection Scotland to coordinate a thorough investigation as a matter of urgency to review all these matters and make any recommendations for the NHS going forward. I will ensure that this review is then reported to Parliament.

The Cabinet Secretary spoke with John Brown, Chair of NHS GGC – the Cabinet Secretary requested that all information relating to this incident is passed to her officials.

Officials met with the Cabinet Secretary prior to her answering the topical question in the chamber. Jane Grant, Chief Executive and Jenifer Armstrong, Medical Director of NHS GGC dialled in to this meeting. The Chief Executive and Medical Director advised the Cabinet Secretary that the taps were being fitted with filters that day and would be tested, with the intention that they would be safe and functional the following day (Wednesday 21 March).

The Chief Nursing Officer invokes the National Support Framework (escalation process) following the Cabinet Secretary's request that the policy unit works with Health

Protection Scotland to coordinate a thorough investigation as a matter of urgency, in particular to review the installation and maintenance of the taps and shower heads, within the Queen Elizabeth University Hospital and the Royal Hospital for Children. This will be reported to Parliament in due course. This is being invoked under section 1: criteria for invocation Healthcare Infection incident/outbreak(s)/data exceedance: 'ongoing exposure of individuals to infectious agent as a result of healthcare (water) system failure'.

Part of the incident management process, will require the board to undertake a debrief with lessons learned shared with Health Protection Scotland so that any lessons learned can be shared across NHS Scotland.

NHSGGC confirm they are rolling out testing to other areas, and have increased lab capacity to 100 samples a day. Along with estates colleagues, they risk assessed the entire site and have a plan for water testing moving forward. This will include higher risk areas such as ICU and theatres.

21 March – The Cabinet Secretary is meeting with officials and representatives from HPS and NHSGGC: Professor Jacqui Reilly, Lead Consultant at HPS, Annette Rankin, Nurse Consultant, Infection Control, Built Environment and Decontamination Programme, HPS, and Dr Teresa Inkster, Lead Infection Control Doctor NHSGGC.

ISSUE:- On 20 March, the Cabinet Secretary for Health and Sport answered a topical question tabled by Anas Sarwar MSP about the bacterial contamination of the water system in ward 2A of the Royal Hospital for Children in Glasgow. This was reported in the media on Saturday 17 and Tuesday 20 March following a statement by Anas Sarwar MSP calling for an investigation as to how this happened. Six patients have been affected (initially two). Results from wider ongoing water sampling have identified that ward 4B (adult haematology oncology) also has a number of positive outlets. Samples from the water tank supplying both the Queen Elizabeth University Hospital and the Royal Hospital for Children are negative.
Taps and shower heads are likely sources. An incident management team has been established, and the health board have requested the help of Health Protection Scotland. A range of control measures have been put in place, including some taps and showerheads being taken out of use for chemical disinfection, and point of use filters are in the process of being installed.
No further patients have tested positive for the infections but, there are patients who are immuno-compromised.
The Cabinet Secretary made a commitment to provide a report to Parliament in due course.

Top Lines

- I am sure for all of us our overriding concern is the wellbeing of the children and families in the affected areas.
- The Cabinet Secretary for Health and Sport has spoken with the Chair, the Chief Executive and the Medical Director of NHS Greater Glasgow and Clyde.
- The Board members were clear that no patients are giving any cause for concern and that patient safety is their primary concern.
- The Board, with support from Health Protection Scotland, are taking appropriate control measures to ensure that any contamination is contained and resolved.
- The Cabinet Secretary has asked Health Protection Scotland to coordinate a thorough investigation as a matter of urgency to review all these matters and make any recommendations for the NHS going forward.
- This review will be reported to Parliament in due course.

General lines

- We have made great strides in reducing healthcare associated infections. C. difficile infections (in people aged 65 years and over) and MRSA have reduced by 86% and 92% respectively since national monitoring began in 2007.
- Scotland's work on Antimicrobial Resistance (AMR) and Healthcare Associated Infection (HCAI) is globally recognised.
- However, AMR is a global health threat and we in Scotland have been working hard to tackle this over a number of years.

- The rapid spread of multi-drug resistant bacteria means that we could be close to reaching a point where we may not be able to prevent or treat everyday infections or diseases.
- To tackle this, the Scottish Government has been working with our national key stakeholders to minimise this threat.

Topical PQ - S5T-00987 (20 March 2018), Anas Sarwar MSP

To ask the Scottish Government whether it will provide an update on the response to, and the impact of, the contamination of water at the cancer ward at the Royal Hospital for Children in Glasgow.

Anas Sarwar MSP, full statement:

"It is completely unacceptable that child cancer patients at the Royal Hospital for Children have acquired infections from bacteria in the water supply. This should have been dealt with as a matter of urgency. I can completely understand the shock and upset the parents and children are feeling. I am aware that as a result there has been no hot water in the ward for almost two weeks and that some children have been unable to bathe. This merits an immediate solution, but we also need an investigation into how this situation has even be allowed to develop in the first place. There are serious questions for the health board and SNP health secretary Shona Robison to answer."

NHS Greater Glasgow and Clyde statement:

- It's not unusual for children in this type of ward to suffer infections and we are carrying out tests to determine whether the bacteria detected in the water are linked to any of the three patients.
- As a result, staff are aware that patient safety is always our paramount concern and are acting accordingly.
- Patients on the Ward have access to portable sinks in their rooms.
- These sinks have a heating element enabling bottled water to be heated for use by patients.
- Wet wipes are also being provided for use in cleaning patients.
- This is standard practice in paediatric intensive care and is entirely appropriate for patients whose immune systems are compromised.
- Hot water has been available for use by staff and parents during this time apart from three occasions where the water was being treated, which meant it was unavailable for 4-6 hours.
- This was explained to parents at the time as was the reason for treating the water.

Water Register

Sample taken on or after 17/03/2017

Regulation Zone = Milngavie M3

Determinand	No. of Results	PCV	Units of Measure	Results Failing PCV (%)	Min	Mean	Max
1,2 Dichloroethane	8	3	µg/l	0	< 0.03	0.082	0.1
2,4-D	7	0.1	µg/l	0	< 0.002	<0.002	<0.003
2,4-DB	7	0.1	µg/l	0	< 0.004	<0.005	<0.005
Aluminium	48	200	µgAl/l	0	12	21.396	36
Ammonium	50	0.5	mgNH4/l	0	< 0.02	0.02	0.02
Antimony	7	5	µgSb/l	0	< 0.02	0.031	0.04
Arsenic	7	10	µgAs/l	0	< 0.2	<0.2	<0.2
Benzene	7	1	µg/l	0	< 0.03	0.031	0.04
Benzo (a) pyrene	8	0.01	µg/l	0	< 0	<0	<0
Boron	7	1	mgB/l	0	< 0.02	<0.02	<0.02
Bromate	7	10	µgBrO3/l	0	< 0.3	<1.014	<1.3
Cadmium	7	5	µgCd/l	0	< 0.02	0.02	0.02
Chloride	8	250	mgCl/l	0	6	6.75	7
Chromium	7	50	µgCr/l	0	< 0.2	<0.2	<0.2
Clostridium perfringens (incl. spores)	50	0	CFU in 100ml	0	0	0	0
Coliform bacteria	136	0	CFU in 100ml	0	0	0	0
Colony count at 22°C	50		cfu/ml	0	0	0.06	2
Colony count at 37°C	50		cfu/ml	0	0	0.08	3
Colour	50	20	mg/l Pt/Co	0	< 2	2	2
Conductivity	50	2500	µS/cm at 20°C	0	39	52.38	60
Copper	7	2	mgCu/l	0	0.001	0.005	0.01
Cyanide	7	50	µg/l	0	< 0.8	0.843	1.1
Dicamba	7	0.1	µg/l	0	< 0.003	<0.005	<0.008
E. coli	136	0	CFU in 100ml	0	0	0	0
Enterococci	7	0	CFU in 100ml	0	0	0	0
Fluoride	7	1.5	mgF/l	0	< 0.036	<0.04	<0.042
Free chlorine	136		mg/l	0	0.07	0.332	0.7
Gross alpha	7		Bq/l	0	< 0.04	<0.04	<0.04
Gross beta	7		Bq/l	0	< 0.02	<0.02	<0.02
Hydrogen ion	50	6.5 to 9.5	pH value	0	7	7.876	8.6
Iron	48	200	µgFe/l	0	< 7	9.521	42
Lead	7	10	µgPb/l	0	< 0.2	0.214	0.3
MCPA	7	0.1	µg/l	0	< 0.002	<0.003	<0.004
MCPB	7	0.1	µg/l	0	< 0.004	<0.004	<0.005
MCPP	7	0.1	µg/l	0	< 0.003	<0.003	<0.003
Manganese	48	50	µgMn/l	0	< 1	1.229	3
Mercury	7	1	µgHg/l	0	< 0.02	<0.021	<0.03
Nickel	7	20	µgNi/l	0	< 0.2	0.386	1.1
Nitrate	8	50	mgNO3/l	0	< 0.5	0.659	0.84
Nitrite	8	0.5	mgNO2/l	0	< 0.01	<0.01	<0.01
PAH - total	8	0.1	µg/l	0	< 0.005	<0.005	<0.006
Pesticides: Total	7	0.5	µg/l	0	0	0	0
Quantitative odour	50	0	Dilution number	0	0	0	0
Quantitative taste	50	0	Dilution number	0	0	0	0
Selenium	7	10	µgSe/l	0	< 0.3	<0.3	<0.3
Sodium	7	200	mgNa/l	0	4	4.429	4.8
Sulphate	7	250	mgSO4/l	0	8.3	8.729	9.2
THM: Total	8	100	µg/l	0	23.5	30.812	43.6
TON ratio	8			0	0	0.011	0.02
Tetra & Trichloroethene	7	10	µg/l	0	< 0.2	<0.343	<0.4
Tetrachloromethane	7	3	µg/l	0	< 0.03	0.08	0.1
Total chlorine	136		mg/l	0	0.09	0.401	0.77
Total organic carbon	7		mgC/l	0	0.7	1.5	4.7
Turbidity	50	4	NTU	0	< 0.2	0.206	0.4

NHS Greater Glasgow and Clyde

Core brief

Thursday, 06 December 2018

Introduction

This issue of Core brief brings you an update on the paediatric cancer ward.

Update on paediatric cancer ward

Our engineering experts have now completed work to resolve the water and drainage issues in the two paediatric cancer wards at the Royal Hospital for Children.

This work has included chemical treatment and the replacement of drains, taps and sinks in wards 2A (inpatient) and 2B (outpatient).

The patients were transferred to ward 6A of the neighbouring Queen Elizabeth University Hospital during this work which allowed our technical staff to carry out a more detailed examination of the overall environment of the two wards.

Following this work we have decided to upgrade the ventilation system in this area. This will cost [redacted] and will deliver the highest standards of ventilation for our young patients. During the 12 month programme to design and install the upgraded system, our young patients will continue to receive their expert care from our paediatric clinical teams in the adult hospital.

Kevin Hill, RHC hospital director, said: “As our patients and staff had already relocated to another ward, this provided a good opportunity to carry out this upgrading of the system. We have informed patients, their families and our staff about the plans for the ward and I am grateful for their understanding.

“While the BMT unit has already had a ventilation upgrade its proximity to ward 2A means that the best option is for those patients also to remain in the adult hospital until all work is completed.”

Are your contact details up-to-date? Click here to check

New South Glasgow Hospitals Executive Board

Terms of Reference and Membership

Introduction

The New South Glasgow Hospitals Executive Board will have delegated authority to make executive decisions on critical points in the project process. The role of the Board will be to oversee the overall process of the project and to co-ordinate the work streams of the two groups. The Board will meet bi-monthly or more frequently depending upon the stage of the project and will report into the ASR Programme Board.

Role and remit

The New South Glasgow Executive Board (NSGEB) will ensure that all activities of the ASR Systems Redesign Group and Procurement & Finance Group (PFG) are co-ordinated and achieving the appropriate progress.

The NSGEB will have appropriate delegated authority to take forward necessary negotiations to ensure objectives are achieved, progress is maintained and business is concluded especially where time is critical to the ASR2 viability with respect to financial aspects and the implementation programme.

The NSGEB will report and advise the Acute Services Review Board (ASRPB) on all aspects of the implementation of ASR2.

The NSGEB will monitor all aspects of performance of the implementation of ASR2.

The NSGEB will provide change management control in that any change which impacts upon the project must be authorised by this Board before it can be implemented.

The NSGEPB will meet regularly (every 2 months) to assess programme progress. The NSGEPB will also meet as often as necessary when critical factors that may be detrimental to the progress of implementation of ASR2 require to be addressed.

Membership

Chair: Helen Byrne	Director of Acute Services Strategy Implementation & Planning
Alan Seabourne	Project Director
Alex McIntyre	Director of Facilities
Brian Cowan	Medical Director
Douglas Griffin	Director of Finance
Peter Gallagher	Director of Finance - Acute Division
Robert Calderwood	Chief Operating Officer
Rosslyn Crocket	Director of Women & Children's Directorate
Eunice Muir	Acute Director of Nursing
Technical Advisor	
Legal Advisor	
Financial Advisor	
Commercial Advisor	

ACUTE SERVICES STRATEGY BOARD

Terms of Reference and Membership

Terms of Reference

- Overseeing the delivery of the Acute Service Review
- Oversee the performance of the Acute Services Acceleration Plan
- Report and advise the Performance Review Group on all aspects of the implementation of Acute Services Review
- Monitor all aspects of performance of the implementation of the New South Glasgow Hospital Development.
- Approve change control in that any change which impacts upon the project must be authorised by this Board before it can be implemented.
- Ensure that progress is maintained and business is concluded especially where time is critical to the New South Glasgow Hospital Development with respect to financial aspects and the implementation of works programme and exercise appropriate delegated authority to enable the progress on the contract
- Ensure that all activities of the Acute Services Review Systems Redesign Group are co-ordinated and achieving the appropriate progress.
- Review updates regarding all aspects of planning and implementation of Acute Services Review
- Consider the wider implications of implementing the Acute Services Review including any impact on local communities
- Ensure necessary linkages between elements of Acute Services Strategy are in place to enable delivery of Acute Service Review
- Ensure financial control is being managed and kept within the agreed parameters.
- Approve and monitor the appropriate governance is in place to ensure successful outcome for each major element of the Acute Services Review.
- Approve Full Business Case for New South Glasgow Development and any subsequent Business Cases for associated projects such as; car parks; education centre and academic centre etc

Membership

Robert Calderwood (chair)	Chief Executive – NHS GG&C
Alan McCubbin	Head of Finance – Capital & Planning
Alan Seabourne	Project Director – NHS GG&C
Barry White	Chief Executive – Scottish Futures Trust
Brian Cowan	Medical Director – NHS GG&C
Douglas Griffin	Director of Finance – NHS GG&C
Jane Grant	Chief Operating Officer – NHS GG&C
Jim Rundell	Audit Scotland Representative
Mike Baxter	Deputy Director (Capital Planning and Asset Management) - Scottish Government
Rosslyn Crocket	Board Nurse Director – NHS GG&C
Stephen Gallagher	Deputy Director Health Delivery - Scottish Government

Frequency

The Acute Services Strategy Board will meet Bi-monthly

Interim Chief Nursing Officer for Scotland
Anne Armstrong

T: 0300 244 4000
E: cno@gov.scot

The Scottish Government
Riaghaltas na h-Alba

Dear Colleague

ARHAI (Antimicrobial Resistance and Healthcare Associated Infections) Scotland and Healthcare Associated Infection (HCAI) Related Incidents, Outbreaks and Data Exceedance: Reporting and Communication Requirements

1. I am writing in advance of the winter period to communicate information which I hope will be helpful, reiterating our expectations on HCAI reporting as per the National Infection Prevention and Control Manual (NIPCM) and how you work with our national infection prevention and control (IPC) experts, ARHAI Scotland.

ARHAI Scotland

2. Scottish Government recently commissioned independent analysis to support a review of the location of ARHAI Scotland within the health landscape. Having considered the report produced and the broader context, with particular reference to the ongoing Public Inquiries, we decided not to make any changes to current structures at this time. I'd like to thank colleagues for their input into this process.

3. As Scotland's national-level clinical IPC experts, ARHAI Scotland is responsible for providing expert intelligence, support, advice, evidence-based guidance, clinical assurance and tailored national leadership to stakeholders in response to outbreaks and incidents. This informs and enables local capability and the development of epidemiological intelligence, underpinned by available evidence.

4. Therefore, NHS Boards are required to provide information on infection incidents, outbreaks, and data exceedances directly to ARHAI Scotland, as set out within the NIPCM, to ensure comprehensive national-level infection incident data is available.

5. Scottish Government expects NHS Boards to engage openly with ARHAI Scotland as appropriate in respect of their role as national-level clinical leaders in relation to the prevention and control of HCAI.

From the Interim Chief Nursing Officer for Scotland

Anne Armstrong

24 October 2024

DL (2024) 24

Addresses
NHS Scotland Chairs
NHS Scotland Chief Executives
Medical Directors
Nurse Directors
Primary Care Leads
Directors of Pharmacy
Directors of Public Health
Directors of Dentistry
Health Protection Teams
Optometric Advisors
Infection Control Managers
Infection Control Doctors
Infection Control Nurses
Scottish Microbiology and Virology Network

Further Enquiries to:

Scottish Government
Directorate for Chief Nursing Officer
Email: cno@gov.scot

INVESTOR IN PEOPLE
POSITIVE ABOUT DISABLED PEOPLE

National Infection Prevention and Control Manual

6. Scottish Government expects all NHS Boards to adopt the NIPCM. NHS Boards will maintain local assurance of compliance with, and implementation of, the guidance through continuous monitoring in all healthcare settings. Local compliance and assurance processes should be supported by robust governance arrangements.

7. The Healthcare Infection Incident Assessment Tool (HIIAT) should be used to assess every healthcare infection incident i.e. all outbreaks and incidents (including exposure incidents, decontamination incidents or near misses) in any healthcare setting (that is, the NHS, independent contractors providing NHS services as stated in Chapter 3 of the NIPCM).

8. As you will be aware, early detection and timely assessment of a possible incident, outbreak or data exceedance supports implementation of appropriate control measures to prevent ongoing transmission. An early and effective response to an actual or potential healthcare incident/outbreak is crucial. Your local infection prevention and control team and health protection team should be aware of and refer to the national minimum list of alert organisms/conditions in Appendix 13 of the NIPCM.

9. Whilst there is provision for NHS Boards to derogate from the NIPCM, Scottish Government expects that NHS Boards continue to ensure safe systems of work by the completion of a risk assessment and escalation approved and documented through local governance procedures.

Scottish Government oversight

10. ARHAI Scotland notify the Scottish Government HCAI/Antimicrobial Resistance (AMR) Policy Unit of all Red and Amber assessed incidents/outbreaks and Green assessed incidents/outbreaks where ARHAI Scotland support has been requested.

11. The HCAI/AMR Policy Unit – which includes Professional Advisers - review each incident reported to the Scottish Government. Depending on a range of factors including the ongoing risk to patients, the type of pathogen and the nature of the incident - will provide briefing to the Chief Nursing Officer, and/or other relevant Scottish Government Directors and Ministers.

12. The national systems and processes we have in place on HCAI are there to support you in your roles in delivering high quality safe care to your local populations.

I would like to take this opportunity to thank you and all your valued colleagues for your leadership, continued resilience

and ongoing commitment to supporting your patients and colleagues.

Yours Sincerely



Anne Armstrong
Interim Chief Nursing Officer

INVESTOR IN PEOPLE

Supplementary Support to QEUH & RHC Wards 2A & 2B refurbishment (water services)

HFS Role & Remit for Support

Background

Health Facilities Scotland's (HFS) Senior Engineer (water), has previous knowledge and experience of the refurbishment project of wards 2A and 2B at Royal Hospital for Children (RHC) on the Queen Elizabeth University (QEUH) campus. NHS GGC have requested that some of the senior engineer (water)'s time can be allocated to providing support from HFS. The following proposal outlines the type and extent of support that could be made available for this project by HFS.

Proposed support for completion of wards 2A and 2B.

It should be noted that this support proposal is purely an advisory role as per normal HFS interaction with NHS Scotland Boards. NHS GGC should employ the necessary professional technical support as required/necessary under the contract.

The senior engineer (water) shall:

- Attend fortnightly progress meetings on a Tuesday (via MS Teams) when available. Copies of minutes to me made available via email to HFS.
- Attend fortnightly technical meetings on the alternate Tuesdays (via MS Teams) when available. Copies of minutes to be made available via email to HFS.
- Attend weekly testing and commissioning meetings on a Wednesday (via MS Teams) when available. Copies of minutes, commissioning certificates and microbiological results to be made available via email to HFS.
- Site inspection visits when available. The aim will be to attend weekly subject to other commitments

NHS GGC shall confirm the current status of the project and anticipated completion date. This specific agreement shall terminate at the project handover unless specifically agreed by both parties.

The input from Senior Engineer (water) will be provided on the basis that he can directly alert the NHS GGC Estates of anything of concern. HFS will not adopt similar duties, responsibilities and liabilities that exist between NHS GGC and their MEP Clerk of Works/Technical Advisor (CoW/TA). HFS will not produce any documentation during the support, other than record photographs and confirmation of items raised during site visit reviews.

From: Huddleston, James <[redacted]>
Sent: 27 July 2021 11:09
To: Richard Beattie
Cc: erik. evans[redacted] ([redacted]); Stephen Kerr
Subject: FW: 2021-07-27 QEUH Ward 2A site HFS walk round
Attachments: 20210722_112741.jpg; 20210722_115643.jpg; 20210722_124335.jpg; 20210722_113518.jpg; 20210722_120727.jpg; 20210722_114437.jpg; 20210722_120752.jpg

Thanks Richard,

I've coped in Erik but I'm sure much of your notes below will already have been picked up for the next CoW report.

I note your comments at the bottom re. Elecore so will pick that up. Enhanced water testing will be undertaken by DMA before the ward is preoccupied in line with what is currently in place in the level 6 decant ward and I'm fairly sure this covers pseudomonas but I will certainly check.

James

James Huddleston
Assistant Head of Capital Planning
Property & Capital Planning
t: [redacted]
m: [redacted]

NHS Greater Glasgow & Clyde
Admin Building, Gartnavel Royal Hospital
1055 Great Western Road, Glasgow, G12 0XH

From: Richard Beattie [[redacted]]
Sent: 27 July 2021 10:41
To: Huddleston, James <[redacted]>
Subject: 2021-07-27 QEUH Ward 2A site HFS walk round

Hi James

Please see below a list of observations made from my walk round (22/07/2021) for consideration:

1- Ward 2A, new flooring being installed, yet no blue shoe coverings are being worn.
2- HOTCT, work gloves sitting on rim of WHB bowl. WHB bowls not covered to site dust/ debris. Due to the bowls being exposed to work debris etc has it been discussed further about the contractor checking all drainage traps?
3- HOTCT bedroom grilles installed, some grilles are not covered to prevent ingress of site dust. It is our understanding that the duct cleaning in this part of the ward is complete. Therefore, appropriate cleaning measures should be considered/ undertaken and then validated by the CoW before the ventilation systems goes live.
4- Ward 2A, HOTCT, the domestic cold water connection has been made to the basebuild live system, and isolated. The CoW advised that the leachate flushing will commence shortly. Has the level of backflow protection to the basebuild existing system been assessed and agreed with relevant stakeholders before water is allowed into ward 2A?
5- Ward 2A, HOTCT patient break out/ games room. It was noted that a supply duct insulation is resting on a sprinkler pipe.

6- Ward 2A, BMT ensuite. It was noted that a WHB was disconnected from the pipework and left lying on the floor with no operative in the space. The installed pipework had not been temporarily capped, the pipe end of the tap attached to the WHB was exposed to floor debris, and no disinfection fluid was seen before the outlet could be reinstalled. It would be suggested that tools/ tap pipework that have not been installed are placed on a clean surface before being used and also that the outlet installation method as per the RAMS are being followed and validated by the CoW.
7- Ward 2A, BMT bedroom grilles have been installed along with the terminal filters, some of these have not been covered to protect from site dust. Therefore, appropriate cleaning measures will need to be undertaken and then validated by the CoW before the ventilation systems goes live. Also, please take into consideration that the filters installed (that have not been protected) could now potentially be contaminated and may require removal and replacing- AP(vent) / AE Vent could advise on this.
8- Ward 2A, it was noted that a ductwork access hatch in BMT corridor may be impeded by electrical installation. CoW advised access hatches for fire dampers or similar will be videoed. Has consideration been given to recording all access hatches that appear to be impeded and for the need for the contractor to demonstrate how access is achieved?
9- Ward 2A, BMT DSR / cleaners room sink. Blue bottle caps at the drain of upper bowl. Sink below, appears to have rust. Current cleaning measures should be reassessed.
10- Ward 2A, BMT DSR / cleaners room WHB, appears to have rust in bowl at drain outlet. Current cleaning measures should be reassessed.
11- Ward 2A BMT, WHB taps are wrapped and covered from site debris/ dust. The spout of the tap appeared to be slightly exposed. Has this been reviewed as a potential hygiene risk?
12- Level 4 existing plantroom. New pipework beside new BMT AHU, horizontal screwed rod bending. Is this due to weight of pipework. CoW should review hanging measures in place.
13- AHU borosilicate traps, will these have a 15mm clear air gap independent from the drainage system? – see photo

Also.
Regarding Elecore going into administration and James Frews hiring some (if not all) the previous electricians workforce. We would raise the following as a note for consideration:

NHS GG&C should seek assurance from James Frew, that all electrical work completed to date by Elecore will be tested, commissioned and certified in accordance with BS7671, by James Frew.

We would suggest the above are raised with the Board's project team for their information and discussion.

Further, can you confirm whether consideration has been given to a need for a pseudomonas risk assessment for the ward?

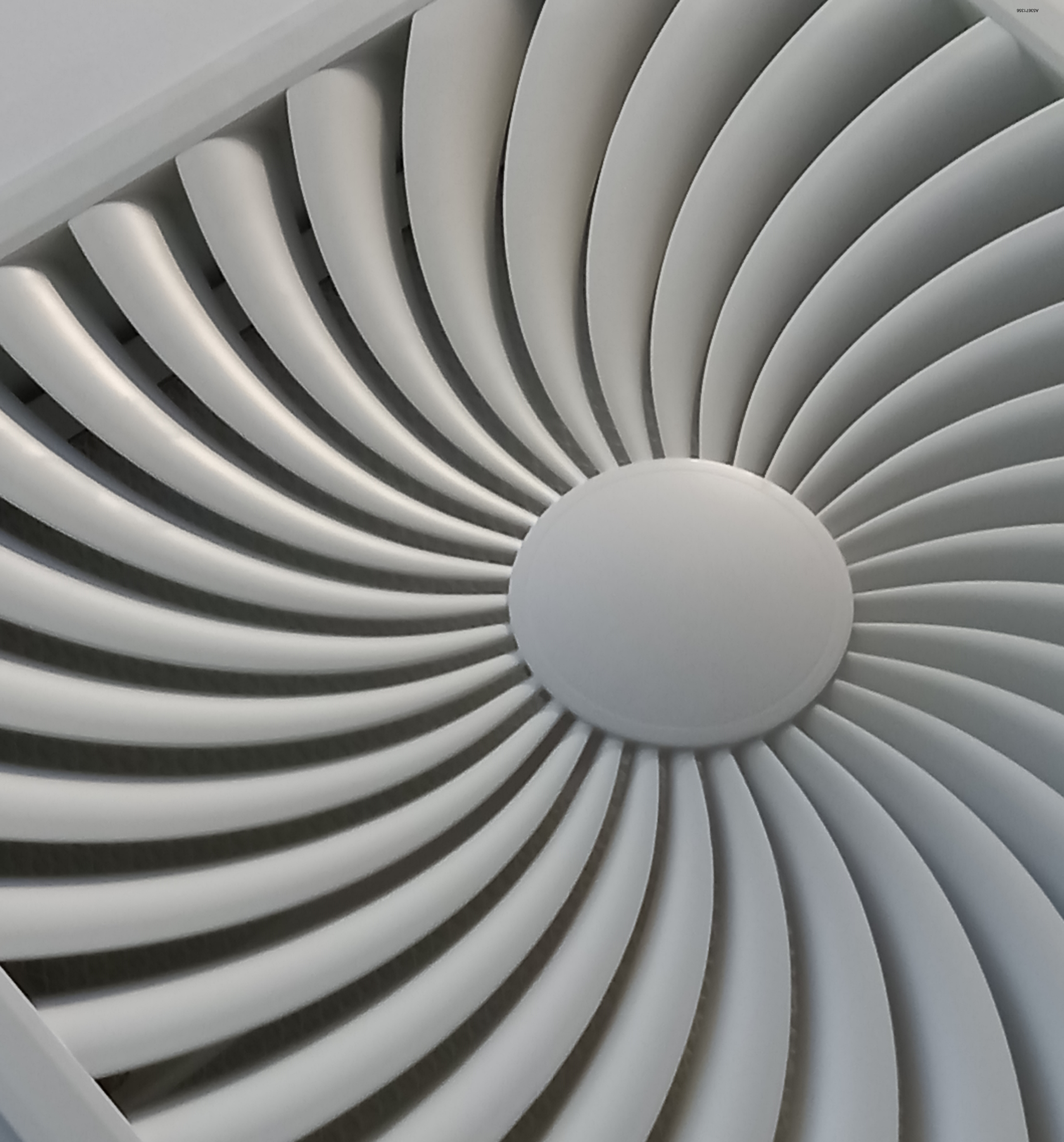
Kind regards

Dr Richard Beattie
Eur Ing B.Eng(Hons) MSc PhD CEng IntPE(UK) FCIBSE FIHEEM FSoPHE M.WMS
Senior Engineer - Health Facilities Scotland
Procurement, Commissioning and Facilities

NHS National Services Scotland
3rd Floor
Meridian Court
5 Cadogan Street
Glasgow
G2 6QE

M: [redacted]
E: [redacted]
W: www.nhs.nss.org











From: Richard Beattie
Sent: 10 August 2021 12:19
To: Huddleston, James
Subject: 2021-08-10 QEUH Ward 2A site HFS walk round
Attachments: 2021-08-05 HFS Walk round photos.pdf

Hi James

Please see below a list of observations made from my walk round (05/08/2021) for consideration. Also, due to the file size of associated photos I have inserted into the attached PDF.

1- Upon entry to the children's hospital, I noted the MPMH van parked in the fire brigade route. If the van is not being used for collection or offloading this could cause a risk to the Hospital by impeding the fire brigade.
2- Within ward 2B, there was a WHB with a black grime/ water mark.
3- Within ward 2B, the cleaners room WHB had tape stuck in the WHB.
4- Within Ward 2A BMT the DSR/ cleaners WHB had black dirt/ detritus in the WHB /drain outlet.
5- Within Ward 2A BMT the DSR / cleaners sink there were 2 blue plastic bottle caps at the drain outlet.
6- It was unclear whether the building works fire penetrations mastic has been checked and certified as there was no fire stopping labels installed onsite.
7- Within Ward 2A treatment room, trough sink, there appeared to be a tap cartridge or similar lying in the bowl trough.
8- Ward 2B site entrance, its acknowledged that the site is busy, but the slide bolt on the door was open. We suggest a further discussion with the contractor to remind them of their responsibility with respect to site safety.
9- Ward 2A, MIBG, ductwork hatch is in line with builders works. How will access be gained when the boxing has been finished?
10- Ward 2A MIBG, it was noted that some of the Geberit isolation handles have green plates whilst some are blue. Can the contractor clarify what the green represents?
11- Ward 2A we note some bedheads are not fully covered and are exposed to site dust. We recommend these are inspected to ensure no dust is present within the bedhead trunking.
12- Ward 2A BMT staff rooms, plastic sheeting has been placed over the sink basins with a hole to allow for flushing. This could represent a hygiene risk e.g. associated splashing and the cleaning of the sinks. The spout of the tap also appears contaminated.
13- Ward 2A HOTCT, disinfection of the domestic water system was ongoing at time of visit, yet several of the bedroom taps are dusty.
14- Ward 2A HOTCT, a new flooring has been laid in the corridor, no blue shoes are being worn.
15- Ward 2A HOTCT corridor. It appeared that some ceiling access hatches are not flush with the ceiling.
16- Ward 2A TCT, disinfection of the domestic water system was ongoing at time of visit, yet the outside of WCs are not all clean and are dusty. Also, an unknown brown staining was noted within one.
17- Ward 2A TCT corridor, sensor has red paint on surround. Contractor should clarify if this is being replaced or cleaned?
18- Ward 2A, in general the new ventilation diffusers installed are covered, however regular checks should be made as the covering did appear to be loose on some.
19- Level 4 existing plant room, the flooring under the temporary plant room doors leading to the nurses station, is damaged has this caused a fire safety risk or HAI risk?
20- Several operatives within the site areas had face masks pulled beneath their nose and pulling the mask over their nose when I'm seen. We would suggest that MPMH remind their staff and their sub-contractors of the COVID policy in place.
21- Ward 2A HOTCT staff toilet, the WC has been removed but the drain pipe is not plugged to prohibit any materials falling into the drainage system.

22- Ward 2A HOTCT, during the disinfection procedure water is flushed to drain, a shower drain plug had been reinstalled before all water had drained down and had left a very small pool of water on top of the drain plug. Also, is it possible the flooring finish can allow for water underneath? Is the rough cut edges of the flooring around the drain the final product? In its current state this could represent a HAI risk. We suggest the CoW reviews all floor drain outlets in respect to the fabric finish.

23- Ward 2A HOTCT, domestic water connection. The Hospitals live cold water domestic system has been straight coupled to the Ward 2A cold/hot and hot return. Several queries.

   a. as there is further pipework to be installed for the domestic hot water flow and return pipework from the live system to the Ward 2A system, has this process been discussed and RAMS agreed?
   b. SHTM 04-01 Part E Clause 2.59 *'No section of a pipework system should be connected to a 'live' system prior to disinfection, nor should it be connected to a 'live' system while the disinfection process is in process. A full physical break must be provided between it and any 'live' system'*. Was this considered and agreed with the appropriate stakeholders including the AP(water)? As the installed piping arrangement for disinfection is not compliant with the SHTM.
   c. SHTM 04-01 Part E Clause 2.59 (Note): *'A closed isolating valve is not acceptable as a physical break. All outlets shall be clearly marked with disinfection in progress, do not use.'* Was this considered and agreed with the appropriate stakeholders including the AP(water)? As the installed piping arrangement for disinfection is not compliant with the SHTM.

Based on the observations above we would suggest that the site cleaning regimes and methods are reviewed and all cleaning signed/ check sheets are reviewed by the CoW.

Another observation was made during the Ward 2A disinfection of the domestic water system:
Firstly, I asked the Phoenix operative pumping in the disinfectant how long will it will sit in the system, he did not know but to ask his colleague. Adherence to the manufacturers contact times, PPMs etc is crucial to ensure disinfection does not have detrimental effects on pipework materials. Based on my observation on site it was unclear what control measures were in place and to what levels the operatives involved in the disinfection process had been briefed. We recommend that NHS GG&C seek further assurance from the contractor that appropriate control measures were in place during the disinfection process.
Secondly, there were only small notices hung in the corridor of HOTCT not to use the water, SHTM 04-01 Part E Clause 2.59 '*All outlets shall be clearly marked with Disinfection in Progress. Do not use.*' If a unaware operative opened a tap, that pipe length disinfection method has changed from the rest of the system.
Thirdly, I did not see either James Frew's, MPMH or the CoW witnessing this process whilst I was walking about the HOTCT. This ties in with Point 1 and the following point.
Therefore, due to the sensitive nature of this project and as a matter of client reassurance, we would suggest that the CoW/MPMH/James Frews provide reassurance to NHS GG&C that the works are being undertaken to the RAMS/SHTMs and to provide signed witnessing certificates now of the works undertaken (including leachate certificate) before the system is deemed suitable for balancing and general use. We would also suggest that the sequence of events and dates are checked by the CoW to ensure the system commissioning process has offered the most hygienically clean system possible, if the CoW has not already done so.

We would also suggest the above are raised with the Board's project team for their information and discussion.

Further, can you confirm what is happening with the tea point boiler and dishwasher within Ward 2A? Subsequently, any dead end pipework caused by unwanted appliance removals will need to be appropriately modified with written RAMS in place before doing so.

Kind regards

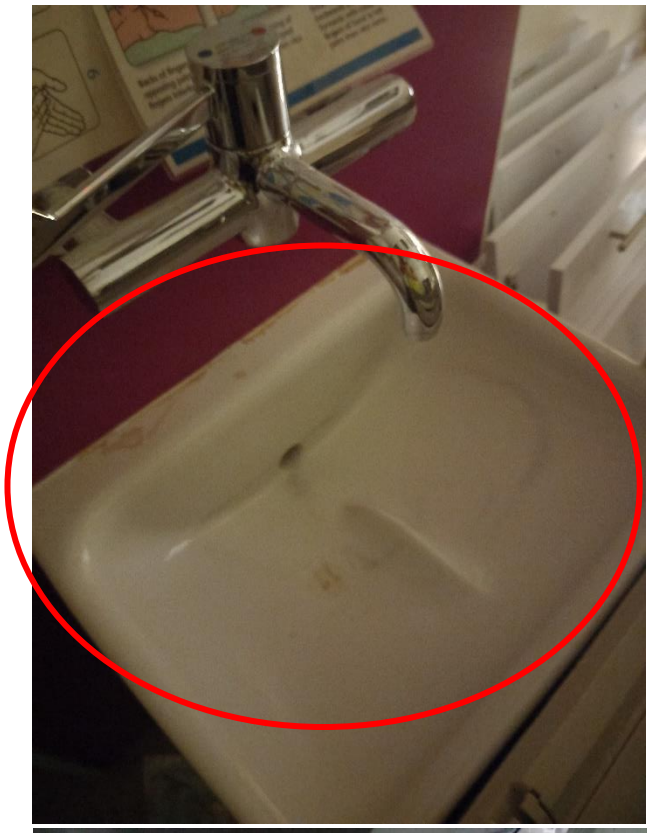
Dr Richard Beattie
Eur Ing B.Eng(Hons) MSc PhD CEng IntPE(UK) FCIBSE FIHEEM FSoPHE M.WMS
Senior Engineer - Health Facilities Scotland
Procurement, Commissioning and Facilities

NHS National Services Scotland
3rd Floor
Meridian Court

5 Cadogan Street
Glasgow
G2 6QE

M: [redacted]
E: [redacted]
W: www.nhs.nss.org

Photos taken: 05/08/2021
Refer to HFS email for comments





Photos taken: 05/08/2021
Refer to HFS email for comments





Photos taken: 05/08/2021
Refer to HFS email for comments





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Refer to HFS email for comments





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Refer to HFS email for comments





Photos taken: 05/08/2021
Refer to HFS email for comments





Photos taken: 05/08/2021
Refer to HFS email for comments





Photos taken: 05/08/2021
Refer to HFS email for comments





From: Richard Beattie
Sent: 18 October 2021 15:40
To: Huddleston, James
Subject: 2021-10-18 QEUH Ward 2A site HFS walk round
Attachments: 2021-10-08 HFS Site Observations.pdf

Hi James

Please see attached a list of observations made from my walk round (08/10/2021) for consideration. Due to the file size of photos I have inserted into the attached PDF to make it easier.

It's acknowledged the observations listed may have been captured by the contractors room snagging or CoW. However, some of these are general housekeeping issues that have knock on effects. As for example, Item 9 showing screws and other items in the WHB, can the contractor confirm for certainty nothing is now within the drainage trap? Will the trap be rechecked? Has the traps been checked? Has the contractor in place similar measures for rechecking other items as listed?

As discussed onsite, we are now aware there are ongoing snags being rectified; such as the grille plenum boxes being levelled to the ceilings, a risk assessment is being undertaken by others for some damaged plenum boxes in which the plenum box has been punctured, and the failing of the DOP/ filter integrity testing. We trust that all precautionary measures are being undertaken during these rectification works to ensure no contamination into the ventilation system. As such, has consideration been given to swab testing the vent system again due to these works?

We trust the above is helpful in ensuring quality and safety elements for the project.

Kind regards

Dr Richard Beattie
Eur Ing B.Eng(Hons) MSc PhD CEng IntPE(UK) FCIBSE FIHEEM FSoPHE M.WMS
Authorising Engineer (AE) Water – IHEEM Registered
Senior Engineer - Health Facilities Scotland
Procurement, Commissioning and Facilities

NHS National Services Scotland
3rd Floor
Meridian Court
5 Cadogan Street
Glasgow
G2 6QE

M: [redacted]
E: [redacted]
W: www.nhs.nss.org

Photos taken: HFS walk round 08/10/2021

Item number	Photograph	Observation
1		Upon entry to the children's hospital, it was noted the contractor vans parked again in the fire brigade route. If the vans are not being used for collection or offloading this could cause a risk to the Hospital by impeding the fire brigade.
2		Ward 2B, Consultants room 3: black grime around base build WHB bowl. Its acknowledged that when discussed onsite the contractor immediately cleaned.

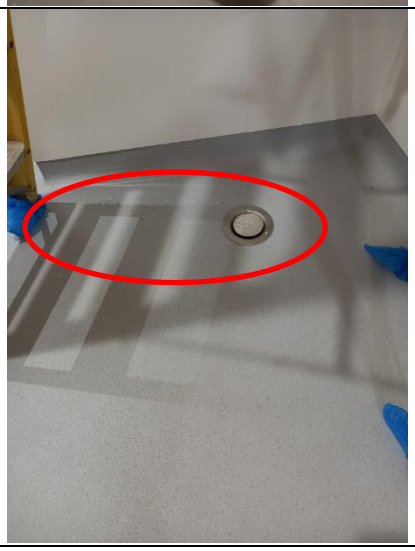
Photos taken: HFS walk round 08/10/2021

3	 	Ward 2B, Dirty utility: Mess around sink and brown substance within sink.
4		Level 2 plant room: Blue paper towels at high level on cable trunking. This could be deemed a fire risk.

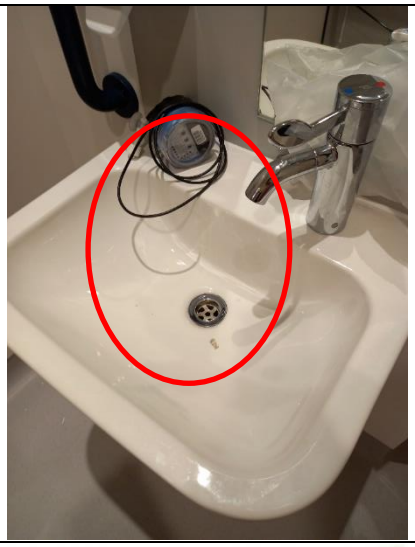
Photos taken: HFS walk round 08/10/2021

5		Level 2 plant room: Heating pipe work horizontal screwed rods are bending under the weight of the pipework.
6		Ward 2A BMT treatment room. Base build cabinet top is not angled to enable ease of cleaning.
7		Ward 2A BMT, one of WC has orange staining within the bowl. Please advise if the pipe circled is to be reattached to the boosted cold water system? And if so, are RAMS in place? Please advise that NHSGG&C are assured that all sanitary ware throughout wards 2A/2B are WRAS approved and compliant with Scottish Water Byelaws.

Photos taken: HFS walk round 08/10/2021

8		Ward 2A. General observation. There are tap auto flushers at WHBs (not installed). Has the use of these been risk assessed? Are these new?
9		Ward 2A TCT ensuite. Box of screws, and other metallic small fittings sitting in one WHB. Will the drain trap be rechecked for unwanted items? Have the drain traps been checked?
10		Ward 2A TCT. One ensuite, looks like white plaster flakes on the floor, please be aware of the proximity of the shower floor drain.

Photos taken: HFS walk round 08/10/2021

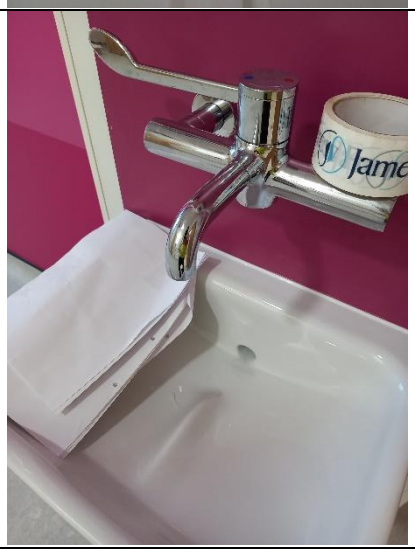
11		Ward 2A TCT public WC. Some sort of paper at WHB drain. Is the WHB bowl suitable or has the fin type been considered by the Boards WSG?
12		Ward 2A play room behind nurses station. It was discussed on site that the material of the seating has been assessed by IPC. Was consideration given to how it will be cleaned? Or how long it will take before the seating area is dry after cleaning? If the material is wetted for cleaning, does this in itself pose a risk? Will the wooden surround be sealed to the walls and floor?
13		Ward 2A HOTCT public WC. WC bowl was dirty.

14		Ward 2A HOTCT public WC. Domestic water pipework penetrating the IPS to the WHB was not collared. The snag sheet in the room, had no note on this.
15		Ward 2A TCT contingency space/ patient tea room. It does not appear that the domestic water pipework is insulated below the sinks.
16		Ward 2A HOTCT one of WC had orange staining within the bowl.

Photos taken: HFS walk round 08/10/2021

17		Ward 2A HOTCT one of WHB had blue cellophane and paper work in the bowl, the tap was also dripping.
18		Level 4 new plant room – crosslink. Its acknowledged the site areas are still working areas, but the plant room door was unlocked and no operative within (lights were off). We suggest a further discussion with the contractor to remind them of their responsibility with respect to site safety. Also, the floor is incomplete beneath the plant room doors, similar to the observation raised previously with the damaged floor to the existing plant room level 4, has IPC commented?
19		Level 4 existing plant room, pipe work horizontal screwed rods are bending under the weight of the pipework.

Photos taken: HFS walk round 08/10/2021

20			Ward 2A BMT staff room. Thick bleach left on corner of sink unit. Please advise what the thick bleach is being used for and is it in line with the Hospital cleaning policy?
21			Ward 2A BMT one of shower unit does not appear to be sealed at joints? Builders work seal incomplete on the ceiling around face plate.
22			Ward 2A HOTCT one of WHB had sub-contractor tape role sitting on the tap arrangement and paperwork on the edge of the bowl.

23			Level 4 existing plant room, new BMT AHU. Finishing/ cornering incomplete.
24			Ward 2A Wifi points. Has consideration been given to sealing or collaring the oversize hole that the cable slips through for the WIFI?

NHS Scotland Assure

Pathway

NHS GGC

QEUH Wards 2A and 2B Water

20th February 2022

Version d0.01

Draft

No.	Suggested considerations for NHSGGC	Reviewed by (NHSGGC): (Name/designation)	Date	Sign off/completed by (NHSGGC): (Name/designation)	Date
	General **This document considers the water system for Wards 2A and 2B.** **All documents should be signed, dated and validated & reviewed by the NHS GGC water safety Group. These documents should be part of NHS GGC quality management system.**				
1.	Sight of the Legionella risk assessment: including when this was last undertaken, the state of completion and the action points • Risk assessment are required: including evidence that this has been undertaken by an accredited inspection service, the asset register has been updated, action plan of remedial actions completed and agreed by the NHS Board water safety group. Copies of risk assessment- ***See Teams Ref 1.1 Risk assessment zip file.*** New separate risk assessment to be carried out specifically on 2A/2B Feb 22	**Euan Smith** **Euan Smith**		Estates/Facilities/Infection Control/Microbiology/H&S	28/2/2022

No.	Suggested considerations for NHSGGC	Reviewed by (NHSGGC): (Name/designation)	Date	Sign off/completed by (NHSGGC): (Name/designation)	Date
	Full new risk assessment of the entire Estates is being arranged via Compliance in 2022 • Evidence of compliance with BS 8580-2019 DMA included training records etc and registration with the LCA to demonstrate "competency" in this area. Within the 2015 L8 RA DMA included training records for David Watson and Allan McRobbie DMA are LCA Registered (specifically with reference to L8 Risk Assessments) and a copy of this was included within the 2015 L8 RA ***See Teams Ref 1.2 DMA Training Records (zip file)*** Within BS8580:2010 section 6.2.5 advises on the actions required to appraise the safe operation of the water system. On each of the points within this section we have highlighted how we complied with these points. As this was a new system with no previous records, and we only had limited access to the commissioning records, and at the time of the original assessment there was no management structure for L8 control in place at the time, appraising the safe operation of the new system was where our works were concentrated. BS 8580:2010 6.2.5 Appraisal of the safe operation of the systems			Estates/Facilities/Infection Control/Microbiology/H&S	28/2/2022

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No.	Suggested considerations for NHSGGC	Reviewed by (NHSGGC): (Name/designation)	Date	Sign off/completed by (NHSGGC): (Name/designation)	Date
	a) includes a description of the correct operation of the plant and any precautions taken *At the beginning of each section of the DMA RA – normal operating parameters are described for the water system* b) details any start-up and shut down procedures, and plant rotation and flushing requirements for little used outlets *Section 10 of the DMA RA describes various procedures for start-up and shut downs, with task frequencies for L8 control regime also within this section and other individual sections describing actions required for different plant items and outlets (with recommendations made also compiled into section 2)* c) includes where appropriate method statements e.g. for major tasks such as cleaning operations *Example method statements are incorporated into Section 10 of the DMA RA.* d) outlines any tests that are to be completed on the system, along with the require frequency of the tests and the acceptable control parameters *Section 10 of the DMA RA tasks highlights with frequencies for L8 control regime (along with normal control parameters). Any tests carried out by DMA as part of the RA are included within the RA.* e) details defects or out of control parameters; *the individual sections for each of the plant items and outlets highlight all survey and control readings carried out by DMA during the RA and any recommendations made (Including remedial actions) and these are then also compiled into Section 2. Within Section 2 all recommendations*			Estates/Facilities/Infection Control/Microbiology/H&S	

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No.	Suggested considerations for NHSGGC	Reviewed by (NHSGGC): (Name/designation)	Date	Sign off/completed by (NHSGGC): (Name/designation)	Date
	are also given a "priority rating" to allow for works to be prioritised (Running from 1 (Highest Priority) to 4 (Lowest Priority) f) logs appropriate corrective actions *see response to e) above* Section 7 of the document covers the site survey – all the details of our survey are included within the RA Section 8 covers the reporting – copies of the RA were submitted to the appropriate persons when the works were complete. • Scheme of control has been reviewed and actioned Written scheme is in place and reviewed regularly (and audited annually by AE) • All outstanding actions on action plans should have been satisfactorily resolved AE audits, risk assessments actions and PPM completion information shared with Senior Management and Sector Water Meetings and minuted. • Note: recommissioning this ward will necessitate a review the legionella and pseudomonas risk assessments. New risk assessment for 2A and full review of risk assessment whilst new risk assessment for site is being arranged	**Euan Smith** **Euan Smith** **Mel MacMillan** **Alan Gallacher**		Estates/Facilities/Infection Control/Microbiology/H&S	

Draft

No.	Suggested considerations for NHSGGC	Reviewed by (NHSGGC): (Name/designation)	Date	Sign off/completed by (NHSGGC): (Name/designation)	Date
	IC have a Pseudomonas risk assessment in place for all high risk areas. ***See Ref 1.3 Water Safety Risk Assessment***	**Sandra Devine**		Estates/Facilities/Infection Control/Microbiology/H&S	
2.	Report on Temperature control including the thermal mapping system including tertiary and subordinate loops throughout the building to ensure the temperature of the water is sufficient to control pathogens • The above is required for both hot and cold water from the point of entry • The document provided only considered mixed outlets. NHS GGC should assure themselves that the temperature of the hot and cold water systems is sufficient to control pathogens. The A&C spreadsheets, DMA provided show sampling throughout the buildings (full spreadsheets to be saved into teams folder as only first page appeared as PDF) this includes cold and hot – ***See Teams Ref 2.1 2021 NHS QEUH A&C Sample Login Sheet zip file.*** DMA sheets record both ClO_2 and temperatures at designated locations and includes both TMT and direct hot/cold outlets within these records. EOL sensors on the floors and calorifier temperatures are checked on each shift and shift report completed. Copy of blank Shift report. – ***See Ref 2.2 Shift Report Template 2022.*** DMA take temperatures at all sample points on hot cold and mixed as per A&C spreadsheet, 6A and PICU monthly.			Estates/Facilities/Infection Control/Microbiology/H&S	

Draft

No.	Suggested considerations for NHSGGC	Reviewed by (NHSGGC): (Name/designation)	Date	Sign off/completed by (NHSGGC): (Name/designation)	Date
	DMA take temperatures at all agreed previous CL02 monitoring points weekly Estates take temperatures at all sentinel points monthly. Daily shift report which records that Calorifier have been checked for correct operation Temperatures are taken at every outlet during 6 monthly/annual TMT maintenance. ***See Teams Ref 2.5 CWS Bult Tank Temperatures 2021 2022*** ***See Team Ref 2.6 CWS EOL Sensor 1 Level 6 Jan to Feb*** ***See Teams Ref 2.7 HWS EOL Sensor 1 Level 6 Jan to Feb*** Hot water is provided at **65c** to direct hots and identified with hot water signs. BMS EOL sensors. ***– See Teams Ref 2.4 Examples of EOL sensors for Wards*** DMA take temperatures at all sample points on hot cold and mixed as per A&C spreadsheet, 6A and PICU monthly. DMA take temperatures at all agreed previous CL02 monitoring points weekly Estates take temperatures at all sentinel points monthly. Daily shift report which records that Calorifier have been checked for correct operation Daily shift report which records that EOL sensors dump valves are checked for correct operation. Temperatures are taken at every outlet during 6 monthly/annual TMT maintenance.			Estates/Facilities/Infection Control/Microbiology/H&S	

Draft

No.	Suggested considerations for NHSGGC	Reviewed by (NHSGGC): (Name/designation)	Date	Sign off/completed by (NHSGGC): (Name/designation)	Date
3.	Chlorine dioxide dosing levels at both tanks and outlets • There must be a risk assessment for non-tuberculosis mycobacterium (NTMs) (Chlorine dioxide will not mitigate against NTMs) It is understood that non-tuberculosis mycobacterium can be less susceptible to the use of chlorine dioxide than many other microorganisms. As a consequence of this understanding, mitigation steps are in place including the use of the 0.2 micron water filters on the incoming mains water to the hospital and a final barrier to microbial escape from the water systems with the use of the 0.2 micron POU filters on the tap outlets. Additionally, there is a rolling programme of analyses of water samples for the presence of NTM's in the QEUH water systems. • Both chlorine and chlorate measurements should be taken including proportional dosing checks. DMA to start carry out CL02 and chlorite monitoring as part of the A&C sampling, Scotmas carry out monthly maintenance checks on CL02 equipment and carry out remote monitoring • A trend analysis should be undertaken. Insite & BMS monitors all tanks and all Alpha and Bravo units and trends data • There must be a decision tree for action when out of specification	Dennis Kelly Awaiting clarification from NHS Assure - Does Assure mean Chlorine or do the mean Chlorite. Mel MacMillan		Estates/Facilities/Infection Control/Microbiology/H&S	

Draft

No.	Suggested considerations for NHSGGC	Reviewed by (NHSGGC): (Name/designation)	Date	Sign off/completed by (NHSGGC): (Name/designation)	Date
	BMS monitors and shuts down dosing if thresholds are reached. In discussion with Scotmas on more formalised procedure, however evidence uploaded to Teams page.. NB Cl02 levels are monitored as part of shift report. Any major plant failures then Estates would inform Infection Control. ***See Teams Ref 3.3 Decision Tree*** **Testing methodology should be approved and validated by the NHS Board water safety group** • Test kits must be calibrated DMA/Estates/Scotmas carry out annual calibration of testing equipment • A risk assessment is in place for the recorded high hot water temperatures. (as per requirements of SHTM04-01) Hot water is provided up to **65c** to direct hots and identified with hot water signs and none are in patient areas. All rooms with taps at 65c will have a sink with TMT mixer tap for handwashing. These are not patient areas. • The level of chlorine dioxide in the tanks is sufficient and compliant with legislation (no information provided in the response). Scotmas remote monitor tanks and there are automatic alarms, DMA check monthly and Shift Supervisors check status of CL02 via BMS.	Mel MacMillan **Estates** **Mel MacMillan** **requested RA template to be created** **Mel MacMillan**		Estates/Facilities/Infection Control/Microbiology/H&S	

Draft

No.	Suggested considerations for NHSGGC	Reviewed by (NHSGGC): (Name/designation)	Date	Sign off/completed by (NHSGGC): (Name/designation)	Date
	The A&C spreadsheets, DMA provided show sampling and CL02 levels within tanks which are taken each month (full spreadsheets to be saved into teams folder). - ***See Teams Ref 2.1 2021 NHS QEUH A&C Sample Login Sheet zip file*** Any location where there are direct hot outlets are in non-patient areas within the hospital (e.g. DSR, Kitchens etc.) and the vast majority of the direct hot outlets have "Caution Hot Water Stickers" at outlet. Outlets which are supplied via TMV/TMT which present a scald risk are notified to Estates who will implement remedial actions (A tolerance of ±2°C has been identified as being "within spec" for TMV/TMTs). ClO_2 levels are measured at CWSTs as part of routine sampling every month. ClO_2 readings were discussed early in the Ward 2A renovations and deemed not really necessary if a flushing regime was in place and ClO_2 levels being monitored in rest of building. As of October 21 when sampling regime restarted within 2A ClO_2 is monitored as part of the sampling regime in this ward Anaesthetics Room was supplied via a TMV so no remedial action was required at this temperature. This TMV has now been removed by other contractor (unsure of date this was replaced. No remedial actions were recommended for any TMTs within Ward 2A/2B during the construction phase as all TMTs were to be serviced and temperatures reset prior to ward reopening. In the end a full			Estates/Facilities/Infection Control/Microbiology/H&S	

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No.	Suggested considerations for NHSGGC	Reviewed by (NHSGGC): (Name/designation)	Date	Sign off/completed by (NHSGGC): (Name/designation)	Date
	swap out of all Markwik 21+ taps was carried out in January 2022 and all showers have had a service/temperature reset carried out in January/February as and when hot water to ward was reinstated. DMA carry out CL02 monitoring and will check chlorite monitoring as part of the A&C sampling at agree points. Scotmas carry out monthly maintenance checks on CL02 equipment and carry out remote monitoring. DMA check monthly and Shift Supervisors check status of CL02 via BMS. Scotmas Insite & BMS monitors all tanks (Cl02 and Chlorite) and all Alpha and Bravo units create trends data with appropriate alarms set. Tank results in A&C spreadsheets. ***See Teams- Ref 2.1 2021 NHS QEUH A&C Sample Login Sheet zip file*** CL02 reports. ***– See Teams Ref 2.3 Cl02 Testing Results zip file.*** CL02 information from remote monitoring system attached – ***See Teams Ref 3.1 Extract from Scotmas Insite Monitoring Systems which monitors Cl02 levels.*** ***See Teams Ref 3.2 Cl02 Scotmas Maintenance Schedule***			Estates/Facilities/Infection Control/Microbiology/H&S	

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No.	Suggested considerations for NHSGGC	Reviewed by (NHSGGC): (Name/designation)	Date	Sign off/completed by (NHSGGC): (Name/designation)	Date
4.	Further detail on the drain cleaning protocol including chemical usage, timings and if testing would be considered • Staff must be trained on both the drain sanitising process and the appropriate use of drains (appropriate disposal of items) When the drain dosing process was introduced, Sharon Johnstone / Pat Coyne management attended training sessions which were provided by the Boards Water Management Contractor. Sharon Johnstone / Pat Coyne' management then trained 2 Domestic Assistants to complete this task. The staff who were trained at this time continue to complete this task. No training documentation from this time is available however these two staff members will undergo a competency check to provide assurance of their ability to undertake this task correctly in full compliance with the process and requirements. • This training must be documented As above • Movement of pathogens between areas via drains should be considered • A risk assessment in high risk areas on drain use and risk of drains to the high risk patient population should be undertaken During an IMT in 2019 the entire patient pathway for the paediatric haematology/oncology was assessed by the Lead Infection Prevention and Control Nurse to ensure that POU	**Sharon Johnstone / Pat Coyne** **Sharon Johnstone / Pat Coyne** **Sandra Devine** **Sandra Devine**		Estates/Facilities/Infection Control/Microbiology/H&S	

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No.	Suggested considerations for NHSGGC	Reviewed by (NHSGGC): (Name/designation)	Date	Sign off/completed by (NHSGGC): (Name/designation)	Date
	filters were attached to all outlets the patients could be in contact with. This assessment was used to determine which drains should be dosed and this has been in place since that time. No formal risk assessment has been completed as there are no nationally agreed standards to inform this process. • Protocol for management of blockages, including those from hair loss is required If blockage is on top of drain, Sharon Johnstone / Pat Coyne remove this as part of SOP, however in the pipework blockages which require access or jetting are carried out under SCRIBE. • Protocol for staff, patient, relative education on risks from draining and safe discard of items should be developed. This poster is was developed by the IPCT to address this issue and is located at each sink in 6a and PICU. • A risk assessment is in place for drain cleaning frequency and methodology. Frequency was agreed by the IMT. During the enhanced supervision and other checks drains are visually checked and if additional cleaning or dosing is required is arranged immediately. Documented evidence on drain cleaning. ***See Teams Ref 4.4 IMT Minutes 10.9.18 Final*** • There is no evidence of education/training provided or any review/audit. What risk assessment has been undertaken to assess the requirement and frequency of drain cleaning? If	**Sandra Devine** **Sharon Johnstone / Pat Coyne** **Sandra Devine** **Sandra Devine** **Sharon Johnstone / Pat Coyne** **Sandra Devine**		Estates/Facilities/Infection Control/Microbiology/H&S	

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No.	Suggested considerations for NHSGGC	Reviewed by (NHSGGC): (Name/designation)	Date	Sign off/completed by (NHSGGC): (Name/designation)	Date
	drain disinfection is required on a weekly basis consideration should be given to assessment of drain use/practice that necessitates regular disinfection. Each month to support IPC practice in this area an enhanced supervision assessment takes place. This is a multidisciplinary process with senior nursing staff from the service, IPCT, estates and Sharon Johnstone / Pat Coyne who review the ward and identify any areas for improvement in terms of IPC practice/standards cleanliness and estates issues that require attention (template attached). With regards to drain cleaning specifically, no formal risk assessment has been completed as there are no nationally agreed standards to inform this process. ***See Teams Ref 11.2 Enhanced Supervision 6A*** The SOP was produced in September 18, reviewed annually and is due for its next review in August 22. The chemical which is used for the sanitising process is Hysan. This detail has been incorporated into the SOP - ***See Teams Ref 4.1 Drain Sanitising Process revised 21.02.22*** ***See Teams Ref 4.2 Hysan HSSC MSDS Issue 6.*** Contact time for product is 2 minute and is detailed within SOP. COSHH safety data has also been incorporated into the SOP. This task is undertaken by the same two staff members who are fully trained, one of whom is a Supervisor. Copy of RHC Drain sanitising weekly schedule attached for information. ***See Teams Ref 4.3 RHC Weekly Dosing Schedule Template updated Feb 22***	**Sandra Devine** **Sharon Johnstone / Pat Coyne** **Sharon Johnstone / Pat Coyne**		Estates/Facilities/Infection Control/Microbiology/H&S	

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No.	Suggested considerations for NHSGGC	Reviewed by (NHSGGC): (Name/designation)	Date	Sign off/completed by (NHSGGC): (Name/designation)	Date
5.	Management of toilets (flushing) if unfiltered water is considered a risk to immunocompromised patients • In high risk settings consideration to be given to providing rimless toilets with a lid, remove toilet brushes (patient use) 2A/2B have lids although they could be flushed when lid was open. Push button mounted higher and/or back from the lid. No toilet brushes in rooms. ***See Teams Ref 5.1 Flush Poster*** • The flushing times noted in the records were protracted. NHS GGC should assure themselves that an appropriate time for flushing of all outlets in considered. WC's are flushed at the same time that the WHB's and Showers are flushed. The start and end time should be recorded as the same as only one flush takes place per WC. This will be recorded in this manner going forward. Staff member records all errors on flushing record and currently communicates these verbally to the Capital Team in Ward 2A. Going forward all errors will be reported to the Domestic Manager who will email details of errors to Capital team. When the ward is occupied going forward Domestic staff will escalate any issues which prevent them flushing to the SCN in the ward. • All maintenance issues have been resolved. Work requests are raised by Clinical for Estates to address these issues subject to access.	**Sandra Devine** **Sharon Johnstone / Pat Coyne** **Euan Smith** **Sandra Devine**		Estates/Facilities/Infection Control/Microbiology/H&S	

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No.	Suggested considerations for NHSGGC	Reviewed by (NHSGGC): (Name/designation)	Date	Sign off/completed by (NHSGGC): (Name/designation)	Date
	• A risk assessment is in place for this unfiltered WC water. ***See Teams Ref 5.2 Risk Assessment 2A - Toilets***				
6.	Review of installation, maintenance and cleaning of the Point of Use filters • The NHS Board must ensure there is sufficient activity space following the installation of point of use filters to allow hand washing, filling bowls for personal hygiene (ensuring base of bowls don't touch sink or drain) Balance of risk between retrograde contamination and splash .This was recognised during previous Water Technical Group Meetings. Cost benefit analysis is being carried out to look at additional POU filters. CHECK VISUAL • Ensure all staff involved in filter management (cleaning and installation) have been appropriately trained. DMA (install) and Sharon Johnstone / Pat Coyne (cleaning) ensure staff are appropriately trained. • IPC teams must be involved in reviewing suitability of outlets and fittings for POU filters. All taps for consideration for filters (or selection of taps) are discussed between Estates, IPC,DMA and filter supply and approved at Water Technical Group. • No leakage, however small, is allowed from POU filters. **Agreed DMA procedure indicated this.**	**Sandra Devine** **DMA** **Sharon Johnstone / Pat Coyne** **Sandra Devine / Estates / DMA** **DMA**		Estates/Facilities/Infection Control/Microbiology/H&S	

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No.	Suggested considerations for NHSGGC	Reviewed by (NHSGGC): (Name/designation)	Date	Sign off/completed by (NHSGGC): (Name/designation)	Date
	• The POU filters on showers are adequately risk assessed and controlled in a similar manner to the taps. Facilities ensure that through the process of cleaning that all taps are run and that there are no access issues. On checking the water flushing sign off no access issues were reported. ***See Teams Ref 6.4 WHB POUF SOP 01.03.2022 PJ*** ***See Teams Ref 6.5 Showers SOP 2020 – updated 01.03.2022*** • Once removed a filter should never be reused. **Filters are never re-used. Full tracking records for filter changes.** • (Note: any positive microbiological results through a POUF should be investigated). **Correct all out of specs on filters are investigated. DMA automatically replace filters when an out of spec occurs and will continue to re-sample this point until a minimum of 3 not detected.**	Sharon Johnstone / Pat Coyne **DMA** **DMA** **Sandra Devine / Kerr Clarkson / DMA**		Estates/Facilities/Infection Control/Microbiology/H&S	
7.	Discussion on locally agreed acceptable levels of micro-organisms to provide assurance the water system is under control • NHSGGC must have documented agreed acceptable levels of micro-organisms to provide assurance the water system is under control which has been approved by the Board ICC. The above has not yet been actioned as ICPT are awaiting a response from NHS Assure. • (Note: it is our opinion that there is no safe level of microorganism) **SHTM guidelines should be reviewed to reflect**	Currently being reviewed by BICC although ICPT are awaiting a response from NHS Assure from previous communication		Estates/Facilities/Infection Control/Microbiology/H&S	

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	guidance as it is for legionella so that this is consistently applied across all boards. **Agreed limits are within Water Management Procedure at QEUH and was previously agreed between Estates and Microbiology.** However Susanne Lee indicates that Environmental opportunistic pathogens such as *Legionella* species, *P. aeruginosa* (as well as other Gram negatives), and Nontuberculous (environmental *Mycobacteria*) are all part of the normal heterotroph population in water supplied to premises and it should be assumed these are present even when the supply water complies with all the parameters specified in national drinking water legislation. They are not contaminants, but part of the natural microbiome attached to surfaces within constructed piped water distribution systems and their component parts, replicating within biofilms. Their growth is limited by grazing protozoa and the sheer forces of the moving water within the pipework. The temperature within such distributed water supply systems also is a limiting factor for growth and microbial virulence so microorganisms entering the building are likely to be those detached from biofilms, in low numbers, of low virulence and susceptible to disinfectant residuals in the supply water. Infections from waterborne pathogens especially in a susceptible population.			Estates/Facilities/Infection Control/Microbiology/H&S	
8.	Confirmation of Cleaning regime and process for cleaning TMT's/TMV's	Mel MacMillan			

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	• There must be a documented protocol for cleaning and disinfection of protective sieves • Contractors must provide a certificate or evidence of effective disinfection **TMT SOP's for DMA for both 6 monthly and annual. Copies of maintenance records for TMT's are sent to LAP. Disinfection is as per procedure.** ***See Ref 8.1 QEUH Campus 6monthly TMV in Service Test RAMS (V4 2012)*** ***See Ref 8.2 2202 QEUH TMV Servicing Rams (d1)***	Mel MacMillan		Estates/Facilities/Infection Control/Microbiology/H&S Estates/Facilities/Infection Control/Microbiology/H&S	
9.	Confirmation of sampling methodology and Pre flush water samples from ward 6A and 2A/B. SHTM 04 – 01 requires boards to collect pre-flush water samples from patient areas which are deemed as augmented care, which would include this cohort of patients. • To avoid false negative results, pre flush samples must be undertaken when the outlet has not been in use for several hours. **This is not achievable in a live ward without shutting rooms or preventing use of taps or showers however this was implemented in 2A/2B to demonstrate results before Ward is placed back in use.** When the issues with Ward 2A were first highlighted in Ward 2A back in 2018, a comprehensive sampling regime across the	Sandra Devine /Microbiology/Estates/ DMA/ Dennis Kelly			

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	entire Adult and Children's hospital was instigated (along with sampling in other parts of the retained estate) testing for multiple different organisms and we were requested to take large volumes of samples on a daily/weekly basis across the campus, which were submitted to the GRI lab for analysis "as requested by between Microbiology and Estates". Pre and post flush samples were discussed at this stage and some issues were highlighted which made obtaining both for the various analysis requested problematic. When taking pre-flush samples the outlet to be sampled should not be used for a period of at least 2 hours prior to taking a sample. When it was discussed that DMA would require clinical staff to advise patients not to use water in their room for 2 hour periods (or potentially longer if the Service Provider were working in various areas and didn't get to the room at exactly the right time) this was deemed not really feasible on an ongoing basis. If you factor in at any point taking pre flush samples for both Pseudomonas and Legionella, with a 2 hour wait before each sample then this could potentially increase the out of use period for taps/showers to 4 – 5 hours which obviously was deemed not practical in a live ward. The Optitherm taps hold approx. 250ml of water within the body of the tap. Due to the Pseudomonas sampling protocol requiring a mix of 250ml of cold water and 250ml of hot/blended water it becomes very difficult to actually obtain the correct sample from this tap type (the initial 250ml would			Estates/Facilities/Infection Control/Microbiology/H&S Estates/Facilities/Infection Control/Microbiology/H&S	

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	be what was held in the tap body being ejected when the cold inlet run, with the next 250ml being the cold water being ejected by the hot/blended water when the hot inlet run). By the time a 500ml sample is obtained it may not contain the correct quantities of water of hot/cold required for the sampling protocol. DMA were also requested to sample from drain points within risers and plantrooms so a comparison could be drawn with the water being delivered to ward areas and the water being discharged from outlets within the wards. Risers and plantrooms by their very nature can be not as clean as the clinical environment. This meant that a sampling protocol which allowed for dust/dirt etc. to be removed from the drain points prior to sampling had to be established. A standard sampling protocol for all samples was deemed to be the most desirable outcome of this, which would allow direct comparison of samples no matter where they were taken and which type of outlet they were taken from. Based on all of the above a sampling protocol was created by DMA and submitted to Estates and Microbiology for the sampling works required. This still forms the basis for our sampling protocols for sampling within the Adult and Children's hospital – some alterations have been made in the intervening period but the general principle remains. It was agreed that when sampling all sampling points should be cleaned/disinfected so that external/environmental "contamination" on sample points within risers, plantrooms etc. could be eliminated (or reduced so far as reasonably practical),			Estates/Facilities/Infection Control/Microbiology/H&S	

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	with the sample point then flushed so that no disinfectant was washed into the sample bottle, interfering with the analysis. This had the added benefit that when sampling from Optitherm taps the flushing of the outlet after disinfection cleared the chamber within the tap body and ensured that sample collected was a "true" cold or hot/mixed sample, and meant that when sampling in live wards the disruption to patients was minimised so far as possible, with taps not being put out of use for prolonged periods. This created a standardised protocol and allowed the analysis from all samples to be directly compared with minimal interpretation of results based on their location etc. having to be taken into account. On occasion where ICT specifically request sampling for specific organisms, or we are sampling only for legionella we will use the standard sampling protocols and take first flush samples, but when we are being requested to sample for multiple organisms simultaneously we use the "hybrid" protocol as described. **WQS 017 V5 Water Management Procedure.docx (002)** is the agreed document which list those area which are sampled and the actions taken. This uses the above previous agreed limit as the basis. **QEUH Micro Sampling W2A-B (2202-D1).docx** The document referenced is a draft method statement DMA issued for consultation/approval by Estates, ICT and			Estates/Facilities/Infection Control/Microbiology/H&S	

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	Microbiology. Upon consultation it was agreed that this methodology was not entirely suitable (particularly the pre-flushing sampling) and a new methodology was created. As the sampling methodology for this site has been created as a bespoke methodology based on the site conditions and the specific. Swan neck taps are only fitted on Mop Sinks (Part of original construction) and new swan neck taps fitted in locations to be filtered where pillar taps could not take a filter and suitable alternative pillar taps not able to be sourced. **QEUH Pseudo (HTM) Sampling 1910.** This document clearly states it is "Based on protocol as described in HTM 04-01 (Part B Operational Management – Appendix E)". When these samples were to be taken the sampling protocol was written to reflect the microbiological analysis requested by GGC and in conjunction with the processing laboratory samples were initially to be sent to (Intertek). **SRAMS-18-006 Micro Sampling (General) (V4 2010)** This is not a document from 2010 – this "2010" is an internal DMA document name only. It is correct this is not specific to QEUH, but is provided to DMA staff as the normal protocol for microbiological sampling (and may be used in other buildings out with the A&C where there are			Estates/Facilities/Infection Control/Microbiology/H&S	

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	not specific RAMS generated for microbiological sampling). **AC CWST Filter Unit RAMS Micro Sampling (V1 2102)** This document was issued as the sampling protocol to be used for sampling from CWSTs and Filtration units with the A&C. All DMA RAMS are generated to provide guidance for DMA operators on how sampling should be undertaken. These are not designed to be a replacement for a British Standard. DMA sampling protocols have been audited on numerous occasions by the Legionella Control Association Auditor and other accrediting bodies who have never raised any concerns with the fact no British Standard is referenced within the documentation. **Current extant guidelines do not take into consideration the need or impact of taking multiple samples within the patient occupied environment and requires to be reviewed to reflect this.** • There must be a sampling plan which identifies where samples should be taken, by who, how, when, and where and the parameters to be analysed, how samples should be stored and transported, the frequency of sampling, remedial actions where results are out of target as well as escalation procedures and chains of communication. **Refer to WQS 017 V5 Water Management Procedure.docx (002) this is agreed document between Estates/Microbiolog and IC.**			Estates/Facilities/Infection Control/Microbiology/H&S	

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No.	Suggested considerations for NHSGGC	Reviewed by (NHSGGC): (Name/designation)	Date	Sign off/completed by (NHSGGC): (Name/designation)	Date
	• The testing of all outlets and other samples ae taken accordance with current British Standards (this should include pre and post flush tests). See above explanation why BS standards are not practicable given the sampling requirements and this was approved by Estates/Microbiology • NHS GGC should risk assess the methodology for taking samples through a filter and if this method is appropriate. ***See Teams Ref 9.1 SRAMS 18-006 Mirco Sampling (General) (V4 2010)*** • Samples should only be taken by competent, trained personnel. DMA provided training evidence ***See Team Ref 1.2 DMA Training Records zip file***	DMA DMA DMA		Estates/Facilities/Infection Control/Microbiology/H&S	
10.	Remedial action, if any, between the positive Stenotrophomonas maltophilia, Cupriavidus spp readings on ward 2a/b and the subsequent negative results Follow up sampling plans must be devised - ***See Teams Ref 10.1 WQS 017 V5 Water Management Procedure*** • The Board must have developed communication chains agreed by the water safety group	**Sandra Devine / DMA**		Estates/Facilities/Infection Control/Microbiology/H&S	

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	See Teams Ref 10.1 WQS 017 V5 Water Management Procedure ***See Teams Ref 10.2 Water Governance - QEUH*** • No documentation was provided for this question. NHS GGC should assure themselves that a risk assessment and SOP is carried out when adverse results are identified. (Note: this applies to any adverse microbiological result) ***See Teams Ref 10.1 WQS 017 V5 Water Management Procedure*** ***See Teams Ref 10.2 Water Governance - QEUH*** All Markwik Taps were exchanged w/c 10/01/22 across Ward 2A & 2B. All showers had strainers removed and Thermostatic cartridge disinfected. A comprehensive flushing regime was carried out in the intervening period.			Estates/Facilities/Infection Control/Microbiology/H&S	
11.	Detail on proposed ongoing monitoring including monitoring (auditing) of practices, surveillance of cases, training. • There must be a robust surveillance protocol including early triggers of gram negative infections/colonisations within the patient population approved by the Board ICC. ***See Teams Ref 11.5 SOP Environmental Organisms in high risk areas V2 amended Sept 20*** • There must be a robust audit of practice protocol including feedback and development of action plan approved by the Board ICC. **This is in place although not to BICC, ICPT reviewing as this is new. Enhanced supervision carried out and can share the action plan with BICC.**	Sandra Devine /Microbiology Sandra Devine /Microbiology			

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	See Teams Ref 11.2 Enhanced Supervision 6A • The water results are monitored and audited and reported to the WSG and Board ICC. Proper processes are in place for escalation where required from Sector Group to BWSG to BICC with all relevant participants sighted. All Domestic staff carry out water flushing as part of their cleaning tasks. Training is provided to Domestic staff via a Tool Box talk for this purpose. All Domestic staff provide sign off upon receipt of training – Tool Box Talk attached – ***See Teams Ref 11.1 Water Flushing Tool Box Talk.*** Note ongoing sampling is as per WQS 017 V5 Water Management Procedure.docx (002) and supersedes the original document, although the thresholds for bacterial levels are still used. Please see item 7 Since 2012 an electronic patient management system (ICNet) has been used in NHSGGC. This system links information from hospital systems, e.g. Virology including Lighthouse labs, microbiology, theatres and TrakCare. This ensures that results are received in real time (every 15 minutes) by the teams who in turn can act upon this promptly. A full record of the patients' diagnosis and management is included in the system which facilitates documentation audit. The system allows IPCT SMT to view the records of any patient referred via this system in any hospital across the board. ICNet (IPC	Sandra Devine /Microbiology Sharon Johnston / Pat Coyne Sandra Devine /Microbiology		Estates/Facilities/Infection Control/Microbiology/H&S	

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	surveillance software) links directly with the NHSGGC Microbiology & Virology labs. All patients with alert organisms or conditions (AO/AC) are referred to the Infection prevention and Control Teams directly from the laboratories. Patients with alert conditions/organisms are visited by an infection prevention and control nurse, who explains the condition and the precautions necessary to prevent spread, e.g. the requirement for isolation. Ward staff are given care plans or check list with the precautions required to prevent spread and they are asked to review this daily Antimicrobial Resistance Healthcare Associated Infection Group (ARHAI) methodology has been used to monitor gram negative bacteraemias in this specific group of patients since 2019. The chart below is based on this methodology and is updated in real time and includes all children treated by the haematology/oncology department irrespective of location. Rates and not cases are charted. For the past two years every gram negative bacteraemia has triggered a clinical review and the assessment used has thoroughly investigated whether if there has been any positive environmental samples with the same organism as that identified in the patients' blood cultures. All clinical reviews are discussed and reviewed monthly at the Women and Children's Case Note Review Meeting. In addition, to support IPC practice in this area, each month an enhanced supervision assessment takes place. This is a multidisciplinary process with senior nursing staff from the service, IPCT, estates and Sharon Johnstone / Pat Coyne who review the ward and identify any areas for improvement in terms of IPC practice/standards cleanliness and estates issues that require			Estates/Facilities/Infection Control/Microbiology/H&S Estates/Facilities/Infection Control/Microbiology/H&S	

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	attention. This is over and above normal IPC systems, e.g. Standard Sandra Devine Precautions (SICPs) and hand hygiene audits. ***See Teams Ref 11.2 South Sector Water Safety Meeting minutes 10.02.22*** ***See Teams Ref 11.3 WTG 2A Results Discussion 31.01.22*** ***See Teams Ref 11.4 Enhanced Supervision 6A***				
12.	information on water testing that has gone through the GGC water safety group • All microbiological results have governance by the NHS GGC full water safety group with suitable documented escalation procedures. ***See Teams Ref 10.1 WQS 017 V5 Water Management Procedure*** • All positive results should be discussed by the Water Safety Group and actions agreed in a timely manner. **All out of specs results are shared and minuted at Water Safety Group meetings** • Does the water safety group include clinicians' leads from high risk areas? **IC attend on clinical behalf** 2A/2B minute results will be submitted as per minutes below to Water Board Meeting.	Kerr Clarkson Kerr Clarkson		Estates/Facilities/Infection Control/Microbiology/H&S	

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No.	Suggested considerations for NHSGGC	Reviewed by (NHSGGC): (Name/designation)	Date	Sign off/completed by (NHSGGC): (Name/designation)	Date
	Water Governance PowerPoint. – ***See Teams Ref 12.1 Water Governance - QEUH*** DMA are following the principles of WQS 017 V5 Water Management Procedure.docx (002) as agreed at various meeting for 2A and instigating local disinfection of outlets before re-sampling. All sample results are incorporated into DMA sampling sheets submitted to GG&C.			Estates/Facilities/Infection Control/Microbiology/H&S	
13.	Additional information that has been provided by GGCs external authorising engineer who has had sight of and supported the actions being taken. • All records associated with the CLO2 system are available. Copy of final version will be uploaded to teams – ***See Teams Ref 13.1 Doc A for NHS GGC Maintenance QEUH RHC ver1.1*** ***See Teams Ref 13.3 QEUH and RHC Audit B Template for NHS GGC ver1.1*** Copy of Smartsheet AE audit. ***See Teams Ref 13.2 QEUH & RHC Audit 2021 (1) from Smartsheet.*** **See Point 3**			Estates/Facilities/Infection Control/Microbiology/H&S Estates/Facilities/Infection Control/Microbiology/H&S	
14.	There must be a water safety plan to BS 8680:2020 in place				

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	• There must be a board water safety group (normally chaired by the board ICM) as per attached Governance and policy. **Water Safety plan being developed for 2A/2B after agreed list with Assure.**	**Mark Riddell / Tom Steele**			
	• Water safety should be a standing agenda item on IPC, Risk and Estates meetings. Meeting held as per attached Governance including Sector Water Safety Group, AICC ICBEG, BICC, CMT where water results are tabled.	**Euan Smith/ Sandra Devine / H&S**			
	• There is evidence of the board reviewing and commenting on the WSG activities and regular review of the structure and competencies of the WSG Meeting held as per attached Governance including Sector Water Safety Group, AICC ICBEG, BICC, CMT where water results are tabled.	**Mark Riddell / Tom Steele**		Estates/Facilities/Infection Control/Microbiology/H&S	
	Back Shift Flushing records One set of flushing records provided dated 09-02-2022 for 2A and 2B. One area no access (staff kitchen) and one WC not flushing (2A room 20). No note of any remedial action. Staff member records all errors on flushing record and currently communicates these verbally to the Capital Team in ward 2A. Going forward all errors will be reported to the Domestic Manager who will email details of errors to Capital team. When the ward is occupied going forward Domestic staff will escalate any issues which prevent them flushing to the SCN in the ward.	**Sharon Johnstone / Pat Coyne**			
	211029 QEUH AC W2A Injection C_D DMA disinfection report for 2A2B using Chlorine. Reports have been submitted to GG&C.	Sandra Devine			

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No.	Suggested considerations for NHSGGC	Reviewed by (NHSGGC): (Name/designation)	Date	Sign off/completed by (NHSGGC): (Name/designation)	Date
	211213 QEUH AC W2A Injection C_D DMA disinfection report for 2A2B using silver hydrogen peroxide Reports have been submitted to GG&C. 2022-02-18_RHC_2A_updated_water_testing_figures Indicates that in 2A/2B that the MEAN count of Cupriavidus and Sphigomonas are less than 10 CFU/100ml. In floor 1 it would appear that this is circa 15 CFU/100ml Slides 7 and 8 of 2022-02-18_RHC_2A_updated_water_testing_figures use data visualisation methods that summarise large numbers of data points to help identify spatial and temporal trends. In both these slides, each point represents all the samples collected from that area on that day - slide 7 shows prevalence (the proportion of all the samples with any count of the named organism), whereas slide 8 shows mean counts (the mean of all samples collected that day from that area). When discussing means of specific taxa, it is important to specify the time period. For example, yes, it is correct that on Feb 9, the mean count of Sphingomonas on floor 1 was shown as being around 15. That is because eight samples were collected from floor 1 that day, and one was found to have >100 Sphingomonas paucimobilis (as previously explained, e.g. on slides 12 and 20 of 2022-02-07_RHC_2A_Assure_updated_figures.pdf, there is reporting ceiling with named taxa, and values >100 are recoded as 101 for analysis purposes). The mean Sphingomonas count for floor 1 is therefore shown as 101/8 (12.625), though given the reporting ceiling, this is likely an underestimate. In contrast, Sphingomonas prevalence for floor 1 that day was 1 sample out of 8, so 0.125.	/Microbiology		Estates/Facilities/Infection Control/Microbiology/H&S	

Draft

No.	Suggested considerations for NHSGGC	Reviewed by (NHSGGC): (Name/designation)	Date	Sign off/completed by (NHSGGC): (Name/designation)	Date
	However, eight samples were also collected from floor 1 on Feb 7 and again on Feb 8, and none had any named organisms. It would be incorrect to say that 'the MEAN count of Cupriavidus and Sphingomonas [...] is circa 15 CFU/100ml' on floor 1, without specifying that this only applies to Sphingomonas, and only for the eight samples collected on Feb 9. The mean would be much lower if a longer time period were used. ***See 14.1 2021 NHS QEUH 3rd & 4th Flr Sample Login Sheet 2022-02-18*** ***See 14.2 2021 NGS QEUH Ground & 1st Flr Sample Login Sheet 2022-02-18*** ***See 14.3 2021 NHS QEUH Ward 2A-B Sample Login Sheet 2022-02-18*** Maintenance procedures taken from Written scheme. Document not dated. Describes the frequency of maintenance operations. It is not clear if this requires to be updated with the recommendations from AE 2021 Audit. Document not dated. Describes the frequency of maintenance operations. It is not clear if this requires to be updated with the recommendations from AE 2021 Audit. Attached is the most recent written scheme, currently under review for minor changes including names. ***– See Teams Ref 14.4 Written Scheme QEUH Campus – 2021 Rev C*** Attached Maintenance Planner for A&C only. ***– See Teams Ref 14.5 QEUH (all) Planner 2022 A&C only***			Estates/Facilities/Infection Control/Microbiology/H&S	

Draft

No.	Suggested considerations for NHSGGC	Reviewed by (NHSGGC): (Name/designation)	Date	Sign off/completed by (NHSGGC): (Name/designation)	Date
	220131 W2A-2B flushing report (10406). It is noted that outlets flushed until temp is stable but there is no record of temperatures. There is no note of flushing times. It is noted that outlets flushed until temp is stable but there is no record of temperatures. There is no note of flushing times **2021 NHS QEUH A&C sample login sheet.** There is no date on this document but appears to record samples from January 2021 to December 2021 covering all areas of QEUH. moulds/yeast identified with some GNB and high TVC. This is correct this document is sent weekly to Estates, IC and Microbiology when new results are obtained and copies saved in SCART folder. This lists all samples by sample dates. **2021 NHS QEUH Ward 6A samples.** Samples noted as 1st flush = preflush. No post flush samples are noted. Shower temperatures and Clo2 levels not recorded. Some high temps…no note of remedial action. All microbiological sampling is carried out by either NHS GRI Water Lab or Intertek Laboratories. Samples submitted to Intertek are prefixed INT, with all other prefixes submitted to GRI (Ward 6A samples prefixed with W6A). The water flushing records for this date do not report any access issues for cleaning /flushing. Therefore the appropriate cleaning procedures would have taken place. 06/07/2021 testing according to Excel spreadsheet revealed presence of gram-negative rods in water sample from Ward 6. No results of water tester provided. A request that cleaning procedures are reviewed was made. Could the follow-up documentation please			Estates/Facilities/Infection Control/Microbiology/H&S	

Draft

No.	Suggested considerations for NHSGGC	Reviewed by (NHSGGC): (Name/designation)	Date	Sign off/completed by (NHSGGC): (Name/designation)	Date
	be made available? OOS reports are received from Estates colleagues to request confirmation that the appropriate cleaning processes are in place. The water flushing records for this date, 06/07/21, do not report any access issues for cleaning /flushing. Therefore the appropriate cleaning procedures were completed. A Robust QA audit process is in place for all wards to provide assurance of the required standards of cleanliness which include monthly FMT audits, additional sample audits and audits by the Boards external auditor. Note as per agreed procedure and in the absence of national standards POU filters on taps are changed by DMA automatically. – ***See Teams Ref 14.6 6A Room 4 Records Extract*** – ***See Teams Ref 14.7 6A Room 8 Records Extract.*** – ***See Teams Ref 14.8 Out of Spec 6A Room 4 & 8 Correspondence*** Filter exchange sheets submitted to GG&C as evidence of filters being exchanged. Mould has been noted at a number of outlets- there was a historical issue with basement tanks and mould. Please explain what these findings are thought to represent. Fungi (including yeasts and moulds) are part of the microbial diversity found in water systems, though they have received relatively little attention, as water research, guidance, and regulations have focused largely on bacteria. Given their prevalence in these environments, as with bacteria, we would expect sporadic detection of fungi. However, any outlets with water samples registering counts of 10 or higher on			Estates/Facilities/Infection Control/Microbiology/H&S	

Draft

No.	Suggested considerations for NHSGGC	Reviewed by (NHSGGC): (Name/designation)	Date	Sign off/completed by (NHSGGC): (Name/designation)	Date
	SAB22 or SAB30 tests are flagged as out-of-spec and dealt with as outlined in WQS 017 V5 Water Management Procedure.docx, and our ongoing trend analyses will show if any named taxa appear enriched in specific areas, even if counts remain below this threshold. Optitherm outlets as of July last year were still in adult CCU. Please verify if there is an ongoing issue with these outlets and if so are they still present in augmented care areas. Optitherm taps flow straighteners are changed quarterly and no visible signs of bio-film. 16/07/2021 filter was replaced as it was defective. Please provide integrity report to show filter was defective or other evidence to support filter was defective. Room 9 Records. – ***See Teams Ref 14.9 6A Room 9 Records Extract*** Evidence of Filter Change. – ***See Teams Ref 14.10 6A Evidence of Filter Change.*** 2021 NHS QEUH Ward 1D PICU samples. Philipshill Spinal ward ground floor room high count of Legionella – please provide details to show how this high count was investigated. This is within a separate building and on a separate water supply. This is not within the A&C and is in Spinal. ***– See Team Ref 14.11 Incident 21-118 Phillipshill Spinal***			Estates/Facilities/Infection Control/Microbiology/H&S	

Draft

No.	Suggested considerations for NHSGGC	Reviewed by (NHSGGC): (Name/designation)	Date	Sign off/completed by (NHSGGC): (Name/designation)	Date
	Samples noted as 1st flush = preflush. No post flush samples are noted. Shower temperatures and Clo2 levels not recorded. Some high temps…no note of remedial action. The samples are taken without any disinfection as they are being taken through the filters (Pall advised we should not spray any disinfectant on the filters). They get labelled as pre/1st flush to differentiate from the full disinfect/flush protocol we normally work to. When sampling from showers DMA have not been recording the temperature or the ClO_2 readings as this is "mixed" sample This mix differs from a "TMV mixed" in that it is not collected at the full hot setting, rather at a point between the hot/mixed and cold. This can vary slightly depending on who takes the sample and on the valve handle position setting and it is difficult (if not impossible) to be highly accurate on how much of the sample is from hot/mixed and how much is from the cold supply. Any reading may therefore not be reflective of either the hot or cold system temperatures provided due to mixed nature. It should also be noted that generally when showers are being sampled there are other samples being taken within the room from Clinical Taps (Optitherm/Markwik 21+) or from bathroom Taps (Contour 21/Markwik 21+) which will have readings taken for temperature and ClO_2 which will be more representative of the system.			Estates/Facilities/Infection Control/Microbiology/H&S	

Draft

No.	Suggested considerations for NHSGGC	Reviewed by (NHSGGC): (Name/designation)	Date	Sign off/completed by (NHSGGC): (Name/designation)	Date
				Estates/Facilities/Infection Control/Microbiology/H&S	
15.	There is documented evidence that all those involved in the water system 2A and 2B refurbishment and commissioning are trained and competent All plumbers and system installers working on the water systems in Ward 2A were required to hold the following certification as requested by Mel at the project outset: • L8 and HSG 274 Part 2 awareness training. • SHTM 04-01 awareness training • LCA approved code of practice	**James Huddleston**		Estates/Facilities/Infection Control/Microbiology/H&S	

Draft

No.	Suggested considerations for NHSGGC	Reviewed by (NHSGGC): (Name/designation)	Date	Sign off/completed by (NHSGGC): (Name/designation)	Date
	As well as CP training they then had to obtain signoff from the site Water LAP which took the form of an on-site 'interview' with the LAP.				
16.	SUSANNE RISK ASSESSMENT V2 MAL This documents is not all inclusive and requires a multi-disciplinary risk assessment for all routes of transmission for environmental pathogens.				

Draft

From: Julie Critchley
Sent: 21 February 2022 13:15
To: Ian Storrar; Michael Weinbren; Annette Rankin; Laura Imrie
Subject: Quick update

Hi just out of the meeting with CNO and Glasgow

I went through in detail the paper you sent Ian and we did agree that the way forward was for us to provide a pathway and for Glasgow to get sign off from their AE and IPC team that they were able to fully mitigate those risks, we were asked if there were any show stoppers for us.
I followed up by saying that we would provide the pathway/routemap by 5pm.
Glasgow will also share with us their wider risk assessment into all the risks around reopening or not
Mary will join us at 2 pm
Thanks for you continued work
J

Julie Critchley
Director of NHS Scotland Assure
Procurement Commissioning and Facilities

NHS National Services Scotland
3rd Floor Meridian Court
5 Cadogan Street
Glasgow G2 6QE
T: [redacted]
M: [redacted]
E: [redacted]

PA: [redacted]

Twitter: @nhshfs

Please consider the environment before printing this email.

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SCOTTISH CAPITAL INVESTMENT MANUAL

NHSScotland Design Assessment Process (NDAP)



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1 Overview

The purpose of the NHSScotland Design Assessment Process (NDAP) is to promote design quality and the service outcomes realised through this. It does this by mapping design standards to the key investment deliverables plus Scottish Government objectives and expectations for public investment, then demonstrating their delivery via self, and independent, assessments. NDAP supports continuous investment improvement, through sharing design standards and learning from comparable projects, thus building upon the best of what has gone on before.

1.1 Introduction

NHSScotland Design Assessment Process (NDAP) has been an integral part of the Scottish Capital Investment Manual (SCIM) since the 1st July 2010. The full SCIM suite of business case guidance is available at www.scim.scot.nhs.uk.

This guidance answers the following questions:

- how are project specific design standards established,
- when are the design assessments carried out,
- what are the submission requirements and responses,

Although the full process described below, and the requirement to refer projects to the NHSScotland Design Assessment Process (NDAP), applies only to projects that are to be considered by Capital Investment Group (CIG), it is intended and expected that Boards/ Client will develop Design Standards and utilise the assessment methodologies described below on all development projects.

NDAP supports Boards/ Clients achieve sustainable and best value investment. Early and regular dialogue at key project decision points will ensure this aim is achieved within an appropriate programme for each project.

NDAP support commences at the end of IA, and runs through-out OBC and FBC stages. Board/ Client submit their Business Case to CIG only following appropriate consideration of the formal NDAP responses. CIG approval is conditional on the level of support verified in the formal NDAP report sent at OBC or FBC submission. Feedback at Project Monitoring & Evaluation will ensure continuous improvement.

2 How are project specific design standards established ?

	Question	Response
HOW	How are project specific design standards established?	Prepare Brief: AEDET benchmark & target; map objectives into Design Statement; Design guidance & technical requirements.

There are two complimentary key aspects of quality consideration in the design of healthcare buildings. These can broadly be described as healthcare specific design - those aspects generally covered by NHSScotland Design Guidance; and general good practice in design – incorporating the whole human experience and effective resource use. Both aspects are key to delivering Board /Client investment objectives and Scottish Government /NHSScotland policy, they must work together to be sustainable, including providing whole life value for money (VfM).

Towards the close of IA stage, NDAP requires NHS Board/ Client to establish Design Standards in their brief. Architecture & Design Scotland (A&DS) and NHS Health Facilities Scotland (HFS) collaborate across the two aspects above, and on request, may be able to provide support. The bespoke Design Standards will incorporate NHSScotland Guidance, technical standards, AEDET benchmark and target, BREEAM and energy targets, plus a Design Statement; see details below. These form the first design control documents and establish the key demonstrable targets used to assess the design proposals at each key stage. The first NDAP report is a joint HSF/ A&DS review of the Board/ Client IA stage brief, recording their incorporation of appropriate Design Standards, i.e. in-line to deliver Board /Client investment objectives and Scottish Government /NHSScotland policy, plus any aspects of best practice. The report will state any recommendations; essential for attaining NDAP ‘supported’ status, or advisory ones to achieve good practice.

2.1 Design Standards -compliance with NHSScotland Design Guidance

"*The SGHD must provide guidance on compliance with those aspects of statutory and mandatory requirements which are particular to the procure-ment, design and delivery of healthcare buildings and guidance on best practice. This will be effected through the support to be provided by HFS and A&DS under the tripartite working partnership with SGHD*."
NHS CEL 19 (2010) A Policy on Design Quality for NHSScotland.

NDAP will assess for compliance with current published Design Guidance. To facilitate this, Boards/ Clients must submit, at IA business case stage, a project specific list of the guidance they consider applicable to their development (see inset box below). This will be updated at OBC and FBC stage and will include any derogations, together with the technical reason for this proposed mitigation.

Projects submitted for NDAP will be assessed for compliance with:

a) NHSScotland current guidance:

NHSScotland policy letters (DLs,CELs, CMOs)	Scottish Government: Health and Social Care; Chief Medical Officer directorates
Scottish Health Planning Notes (SHPN)	Health Facilities Scotland
Scottish Health Facilities Notes (SHFN)	Health Facilities Scotland
Scottish Health Technical Memoranda (SHTM)	Health Facilities Scotland
Health Building Notes (HBN)	Dept of Health (England)
Health Technical Memoranda (HTM)	Dept of Health (England)
Health Facilities Notes (HFN)	Dept of Health (England)

plus relevant UK construction industry bodies best practice or design guidance publications: e.g. HSE, CIBSE, BRE, safety, sustainability, dementia, and equality.

Note: where there is a current SHPN or SHTM relating to a subject then it takes precedence over the equivalent HBN or HTM. Where there is no Scottish version of a document the English or Welsh document may be used. For further information on the current guidance status refer to Health Facilities Scotland (HFS) website: www.hfs.nhs.scot.uk/publications .

Including, but not limited to:

b) Statutory requirements
Planning permission
Building Regulations compliance
Equality Act compliance
Health and Safety Executive (HSE) compliance
Construction (Design and Management) Regulations compliance

c) Other mandatory NHSScotland requirements – use of:
Activity Data Base (ADB): www.adb.dh.gov.uk
Achieving Excellence Design Evaluation Tool (AEDET): www.hfs.nhs.scot.uk
#BREEAM Healthcare (BRE environmental & sustainability tools) www.breeam.org

"All NHSScotland bodies engaged in the procurement of both new build and refurbishment of healthcare buildings must carry out an independent environmental accreditation for projects. The Scottish Capital Investment Manual requires that all new build above £2m are required to obtain a BREEAM Healthcare (or equivalent) 'Excellent' rating; all refurbishments above £2m to obtain a 'Very Good ' rating. If the capital costs are less than £2m, projects should undertake a BREEAM pre-assessment to establish whether BREEAM is a viable option."

BREEAM - NHS CEL 19 (2010) Annex A - Mandatory Requirement 6.

NDAP will assess for ADB, AEDET, and BREEAM/ energy sustainability compliance and optimisation for Value for Money (VfM). To facilitate this, Boards/ Clients must submit at IA stage, a statement of project compliance and targets. At OBC and FBC business case stages, the Board/ Client must provide evidence of their progress or compliance and the technical reasons for any project specific mitigations. On request, HFS may be able to provide support..

2.2 Design Standards –development of the Design Statement

The development of a Design Statement is intended to assist Boards / Clients in using good design to get the most out of their development projects. The project specific Design Statement will link directly to Board / Client Strategic Assessment service outcomes, or a Design Action Plan, which sets the investment objectives for the development. The Design Statement is produced by the Board / Client, with initial workshops undertaken near the end of IA stage. These will map out what the physical and environmental solution must do in order to deliver success. The stakeholders agree a series of clear statements of intent, describing the essential issues in a 'day in the life of' their user groups. They then define demonstrable benchmarks i.e. the parameters for what success might look like for each user group, without pre-determining the actual design outcome. Thirdly, they agree an action plan, stating how their Design Statement will inform key decision-making throughout the project, including OBC and FBC stages, plus the evaluation of its ultimate success post-occupancy at Project Monitoring & Evaluation (PME) stage.

NDAP will assess if the Design Statement is line with Board /Client investment objectives and Scottish Government/ NHSScotland policy expectations. Boards/ Clients must submit their draft Design Statement towards the end of at IA stage. NDAP 'supported' formal report is then submitted to CIG in IA submission and on approval, establishes the design control document/ criteria for future NDAP review. On request, A &DS may be able to support your Design Statement development. We strongly recommend early discussions, to ensure NDAP integrated into your project programme, particularly if project is novel/ unusual.

The final 'supported' Design Statement is a key, project specific, design quality control document. It also supports the project as a user-friendly tool for:

- **briefing**: it describes the design intent, or design vision (to be included in the HLIP -High Level Information Pack). This is subsequently developed into the final design brief, supplemented by more detailed briefing materials such as schedules of accommodation, key adjacencies and room data sheets as and when prepared. Public sector briefing is often identified as under-developed and therefore the Design Statement is intended to address this.

- **communication**: it starts a conversation on the project direction with a wide range of stakeholders, in non-technical language. It captures a consensus view of benefits and benchmarks. It builds momentum, obtaining early buy-in and allays some frequent concerns on public sector commissioning.

- **promotion**: it will stimulate interest in the market in the direction and viability of the project. The Design Statement raises the profile of design to deliver outcomes; and will motivate the market to bring its best and most appropriate skills to the table

Appendix B provides guidance on the form and content of a 'Design Statement'. **Appendix C** describes how to develop your statements of intent and benchmarks, including 'non- negotiables' workshop.

3 When is the design assessment carried out?

	Question	Response
WHEN	When is the design assessment carried out?	IA: draft Design Standards /Statement etc -late OBC: strategy/ site/ OA -early; evidence IA met -late FBC: pre-down selection –mid; evidence IA met -late

The NHSScotland Design Assessment Process (NDAP) for all projects over the delegated value, sits in an advisory role to decision makers in both the Board / Client commissioning the project, and in the Capital Investment Group (CIG) within the Scottish Government Health & Care Directorate (SGHCD). This service is at no cost to NHS Boards under SGHCD's tripartite partnership with HFS and A&DS.

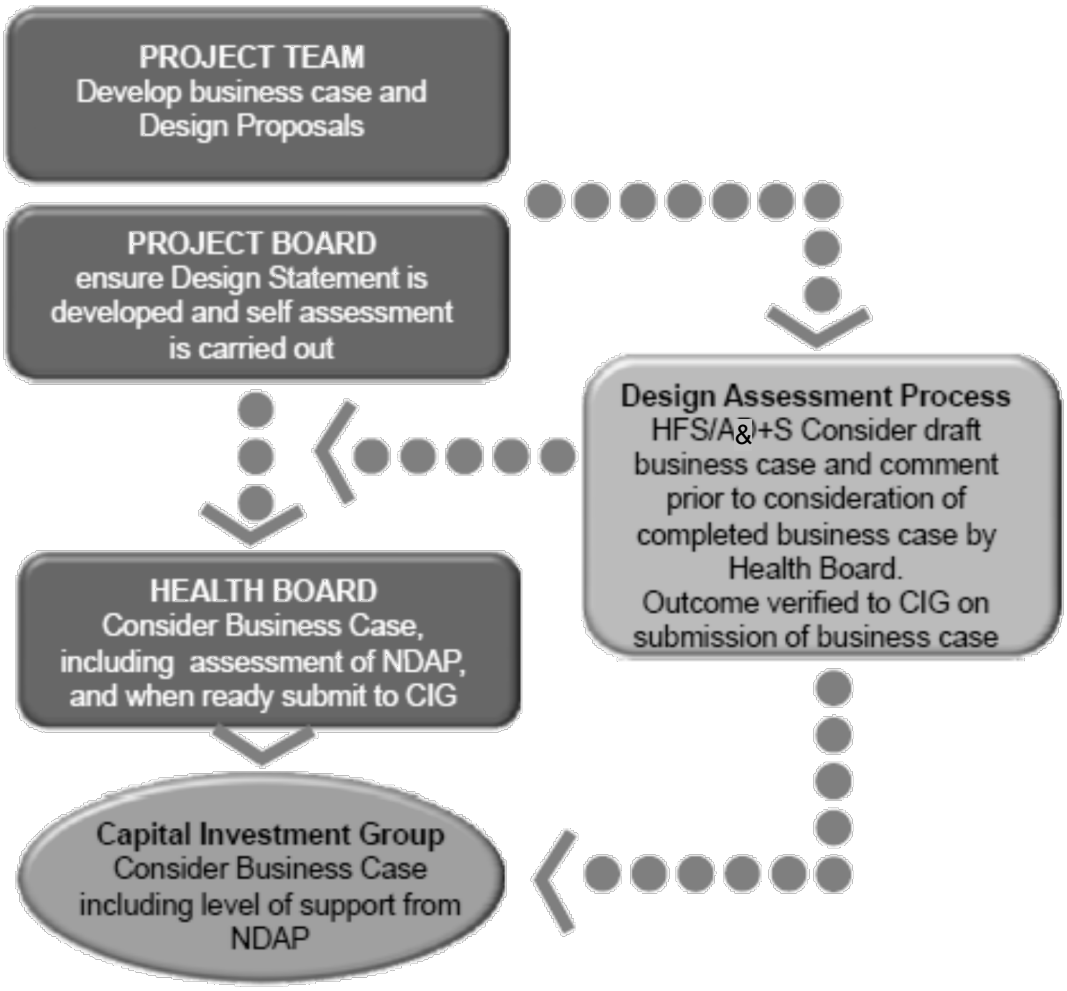


Figure 1: NHSScotland Design Assessment Process (NDAP) role in Business Case governance

The NHSScotland Design Assessment Process (NDAP) commences at IA stage. The development of project specific Design Standards, incorporating the Board/ Client bespoke Design Statement, provide the key criteria for future NDAP reviews. Formal NDAP reports are submitted to CIG at IA, OBC and FBC stage with Board/ Client submissions. Interim NDAP responses are available on request at strategic design stages. Interim response will be sought at early in OBC at site selection/ option appraisal; plus mid FBC pre-down-selection; to provide comfort/ confidence. We strongly recommend early discussions, to ensure NDAP integrated into your project programme, particularly if project is novel/ unusual.

3.1 NDAP programme and time periods

It is recognised that different projects and different Boards/ Clients will require different lead-in and consultation periods, from the point of notification and to the submission to the Capital Investment Group (CIG). Therefore In order to provide NDAP services in a timely manner project teams are advised to establish an early dialogue with HFS and keep them informed of the project programme and key dates. Teams are encouraged to maintain the dialogue, particularly at key design development points, rather than waiting always until the formal reporting points in the business case, to ensure that risks can be identified and addressed timeously. **Appendix A** contains the NDAP pro-forma for both Notification and Submission. NDAP Activities and Information Flow diagrams are in **Appendix D**.

There are two methods of NDAP assessment at formal reporting points:

- **Desktop** assessment by staff at HFS and A+DS, based on submitted information, supplemented by project team conversations to clarify any matters.

- **Panel** assessment, based on submitted information and supplemented by presentation by, and discussion with, the project team including designers.

All schemes at IA will be viewed as a desktop assessment. Some schemes at OBC and/or FBC stage will be taken to a larger panel. If this is anticipated it will be notified to the Board/ Client in the response to the IA or OBC submitted previously. Teams are encouraged to maintain a dialogue between these reporting points to

ensure that risks can be identified and addressed timeously.

Notification Period: is the notice given by the Board to HFS that a scheme is to be submitted to the NDAP to allow resources for a timeous turn-around.

- **desktop** assessment: 14 days.
- **panel** assessment: 28 days. Submission information must be submitted 7 days in advance of the panel assessment to allow the panel to digest and prepare.

Period of consideration (from receipt of full information to NDAP response issue to Board/ Client): This is dependent on the scale of data and the group required to consider the proposals.

- **desktop** assessment: 14 days (unless extended discussions are necessary)
- **panel** assessment: 21 days(i.e. circa 14 days from panel discussion)

Note: a slightly quicker turn-around may be possible by prior consultation, and a verbal response will be provided at any panel meeting to allow work to progress whilst the paperwork is being done.

The Board/ Client is responsible for ensuring that the consultation is sought in a timeous manner to allow the NDAP response to be appropriately considered, and where necessary designs and costs to be updated, prior to Board/ Client approval, and in-line with their overall programme. We would recommend contingency time allowances for both the in-complete information at submission, plus design / cost incorporation of any NDAP response. This should be prior to the Board/ Client’s CIG submission of each business case stage.

4 What are the submission requirements?

	Question	Response
WHAT	What are the submission requirements?	IA: set Design Standards, incl. IA Design Statement. OBC: concept design info. to evidence IA met FBC: detail design & VfM info. to evidence IA / OBC met.

The aim of the NHSScotland Design Assessment Process (NDAP) is to provide confidence that each project's key investment deliverables, plus general Scottish Government policy are met. Each project team must satisfy itself that their brief is optimally met. NDAP is therefore not an additional information burden, but merely formalises both the self- and independent assessments, of each project teams own evidence of their design's optimisation. Other than **Appendix A**'s pro-forma, NDAP deliverables will vary depending on scale, complexity and risks. **Appendix D** and tables below, follow RIBA guidance on expected level information at key stages.

		INITIAL AGREEMENT
IA	**Stage -late**	Late in the IA process when a facility investment project appears to be a serious possibility
	Methodology	Desktop assessment based on submitted information, supplemented by project team conversations to clarify any matters
	Submission requirements	Completed IA notification NDAP form (**Appendix A**) Design Statement in line with the enclosed guidance, and a note of the stakeholders involved at each stage (**Appendix B & C**) Commitment to Sustainability incl. BREEAM targets Commitment to Equality, incl. Access, Dementia, Health Promotion, etc. Initial list of key NHSScotland design guidance & technical Standards to be followed – e.g. SHPNs, SHTMs, SHFNs, HBNs; Activity Data Base; CIBSE etc Initial NHSScotland AEDET or equivalent healthcare Design Quality Indicator (DQI) incl. IA Target for proposed service investment; plus, IA Benchmark (for the existing service -if appropriate

		OUTLINE BUSINESS CASE
OBC	**Stage-early***	Early in the OBC process an informal consultation on strategy/ site/ option appraisals –*as required.
	Methodology	Interim assessment based on submitted information, supplemented by panel if appropriate, and project team conversations to clarify any matters
	Submission requirements	Completed OBC notification NDAP form (Appendix A) Strategic context and Masterplan - (e.g. ≥ 1:1000). If a project is one of a series or a key development for a site, a masterplan is required to demonstrate the potential interaction on other services & infrastructure. Site Selection /Option Appraisal- analysis of each option (e.g. ≥ 1:500, photos, 3Ds, risks, HAI, VfM,); state strength/ risks for achieving the brief e.g. SWOT/; incl AEDET & Design Statement; plus HAI Scribe & WLC Initial concept sketches & sustainable design strategy Any key derogations, and their technical reasons Evidence of stakeholder engagement on option quality, incl AEDET, Design Statement self-assessment Confirmation Activity Data Base (ADB) use optimised
	Stage-late	Late in OBC development, when the design is nearly formed yet is still open to influence – consultation and response /formal report to use in CIG and Planning.
	Methodology	Will be as advised in the IA NDAP response, either: **Desktop** assessment based on submitted information, supplemented by conversations with project team to clarify any matters. **Panel** assessment, based on submitted information and supplemented by presentation by, and discussion with, project team including designers.
	Submission requirements	Completed OBC submission NDAP form (Appendix A) Concept Design incl. Arch, M&E, C&S, Fire, Landscape Outline drawings (≥1:200, key ≥1: 50) & specifications Outline sustainability strategy Outline construction strategy incl. HAI, CDM H&S Plan

OBC	**Submission requirements (cont)**	3D sketches of key Design Statement spaces Completed Design Statement OBC self assessment Completed AEDET OBC self assessment Photographs of site showing broader context Evidence of Local Authority Planning consultation and/or alignment with Local Development Plan. Extract of draft OBC detailing benefits& risks analysis Evidence of HAI & CDM consultation Evidence Sustainability commitments will be met. e.g. accurate & NCM models (DSM). BREEAM, .CAB files and BRUKL; show how design will be optimised Evidence Equality & access commitments will be met. Evidence of VfM e.g. WLC on key design options Evidence Activity Data Base (ADB) use optimised. Evidence NHS guidance & technical standards will be met; list any derogations, with their technical reasons. OBC design report evidencing all above & IA brief met ≥1:500, ≥1:200, key ≥1: 50; diagrams, sections plans, 3Ds, specs, comfort & energy DSMs, to RIBA Stage 2 Concept plus key elements developed to Stage 3 For SFT schemes, also include: Design/ VfM/ Benefits related extracts of additional info required under current SFT procurement guidance

		FULL BUSINESS CASE
FBC	**Stage-mid#**	In mid FBC process an informal consultation, prior to competition or bidder down selection –#as required.
	Methodology	Interim assessment based on submitted information, supplemented by panel if appropriate, and project team conversations to clarify any matters
	Submission requirements	Completed FBC notification NDAP form (Appendix A) Evidence of development incorporation of OBC NDAP Developing Design incl. Arch, M&E, C&S, Fire, Landscape, plus specialists e.g. acoustics, biodiversity Developing drawings (≥1:200, key ≥1: 50) & spec's Developing equality strategy incl. Access, Health Promo

		FULL BUSINESS CASE
		Developing sustainability strategy incl. BREEAM RAG ratings, BRUKL, accurate thermal & energy DSMs Developing construction strategy incl. HAI, CDM Developing commissioning strategy incl BIM, Soft Land'gs Update list of derogations, & their technical reasons
	Stage-late	Late in FBC development, when the design is nearly formed yet is still open to influence – consultation and response /formal report to use in CIG and Planning.
	Methodology	Will be as advised in the OBC NDAP response, either: **Desktop** assessment based on submitted information, supplemented by conversations with project team to clarify any matters. **Panel** assessment, based on submitted information and supplemented by presentation by, and discussion with, project team including designers.
	Submission requirements	Completed FBC submission NDAP form (Appendix A) Developed & coordinated design incl. Arch, M&E, Fire C&S, Landscape, plus any specialists e.g. acoustics 3D images of key Design Statement spaces Contract drawings (≥1:200, key ≥1: 50) & spec's Developed sustainability plan incl. BREEAM RAG ratings, BRUKL, accurate thermal & energy DSMs Developed equality plan incl. Access, Health Promo Developed construction plan incl. HAI, CDM Developed commissioning plan (CMP) incl BIM, Soft Landings, Equipping Responsibility Matrix, Evidence OBC /Interim NDAP response incorporated Completed Design Statement FBC self assessment Completed AEDET FBC self assessment Evidence of Local Authority Planning & Warrant status Extract of draft FBC detailing benefits& risks analysis Evidence of HAI & CDM consultation Evidence Equality & access commitments are met. Evidence of VfM e.g. WLC on key design options

		FULL BUSINESS CASE
FBC	**Submission requirements (cont)**	Evidence Sustainability commitments are met. e.g. accurate & NCM models (DSM). BREEAM, .CAB files and BRUKL; show how design is optimised Evidence Activity Data Base (ADB) use optimised Evidence NHS guidance & technical standards are met; list any derogations, with their technical reasons. FBC design report evidencing all above & IA brief met ≥1:500, ≥1:200, key ≥1: 50; diagrams, sections plans, 3Ds, specs, comfort & energy DSMs, to RIBA Stage 3 Developed Design, plus key elements to Stage 4. For SFT schemes, also include: Design/ VfM/ Benefits related extracts of additional info required under current SFT procurement guidance

Project teams are encouraged to maintain a dialogue with NDAP at key project decision points to allow smooth information flow and reduce programme risks.

4.1 Standard Business Case (SBC)

This is a combination of OBC and FBC into one Business Case Stage. Therefore the design assessment is a combination of both, and the level of final information submitted should be as FBC in tables above. NDAP IA stage report will confirm whether panel or desktop assessment is anticipated. Early NDAP engagement is required to determine the exact requirements to suit an SBC project programme.

4.2 NDAP response

The outcome of the assessment will be encapsulated in a brief report to cover:
Joint Statement of Support (one of following options):

SUPPORTED : this may include recommendations as follows:

- Essential Recommendations: those areas requiring amendment or alteration in order to meet either national guidance or established benchmarks but which, in the opinion of the panel, can be amended without significant re-working. The Board will be required to submit agreed evidence to the panel before the ‘supported’ statement will be verified to the CIG.

- Advisory Recommendations: areas of potential for further improvement for the board's consideration, including notes on aspects which (though not falling short of standards set in the Design Statement) are potential risks in relation to the development planning process.

- Notes of potential to deliver good practice: where the panel sees that the project is demonstrating the potential to deliver best practice in a particular area of design this will be noted.

UNSUPPORTED: this will include a statement of the areas of concern that leads the panel to consider that the project is likely to fall seriously short of either the benchmarks set by the Board / Client, the standards established for healthcare buildings, or the expectations established in national policy (i.e. if the benchmarks established by the board do not address significant areas of policy or are low). Such areas of concern are considered, by the panel, to require significant reworking or reconsideration and are therefore unable to be resolved using the 'essential recommendations' above.

Next Stage Process: the notification required for the next assessment stage and the methodology of assessment that will be applied which will vary depending on the scale and complexity of the project.

Where a project is 'unsupported' it is anticipated that a further dialogue will be established to promote improvement in the areas identified. An amended submission, addressing these areas, would allow the report to be updated and the support status amended prior to progressing the project further through the business case process and prior to any verification to CIG.

4.3 NDAP sustainability response

NDAP supports sustainability by combining the mandatory BREEAM requirement and whole life value for money (VfM) brief with an independent assessment of the integrated design proposals. This allows BREEAM credits to be assessed on a project specific basis; and only where NDAP agreed unsustainable, eliminated from final target score. The NDAP formal report for each project and stage will confirm the 'equivalent' BREEAM scheme and minimum credits, for Board/Client

compliance with CEL19(2010) BREEAM Healthcare 'Excellent' or 'Very Good'.

4.4 Interaction with Capital Investment Group (CIG) process

HFS will notify the CIG when the process is completed and verify, to the CIG, the recommendation given to the Board. The submission sent, by the Board, to the Capital Investment Process (CIG) should include the information sent previously to the NHSScotland Design Assessment Process (NDAP) and the response received.

CIG will take the NDAP's response into consideration as follows:

- Supported with no qualifications: CIG can approve.
- Supported with Essential or Advisory Recommendations: Evidence of how these will be addressed is required prior to CIG approval.
- Supported with notes of potential to deliver good practice : CIG can approve
- Unsupported: CIG will not approve.

Post occupancy Project Monitoring & Evaluations (PME) submitted to the CIG should have design related information copied to HFS to inform future projects and NDAP. This will include a PME AEDET and a 'Design Statement' self-assessment for those projects that incorporated these.

4.5 NDAP information publication

SGHD requires Boards to publish the outcome of Business Cases within one month of the CIG meeting. After the business case is in the public realm; key information submitted to the Design Assessment Process will be added to the NHSScotland Project Resource (Pulse) on the Healthier Places website www.healthierplaces.org .

The published information will include key project details, selected images and design documents such as the Design Statement. This is to aid briefing, shared learning between Boards/ Clients and to raise the profile of NHSScotland's developing estate. See Appendix B for further details on the web-based resources'.

4.6 NDAP Support, notifications and submissions

For NDAP **Notification** fill-in top 6 (min) rows and email the Appendix A pro-forma to:
NDAP: nss.hfsdesignassessment@nhs.net;
plus [redacted] and health@ads.org.uk

For NDAP **Submission** complete and email the pro-forma in Appendix A as above. Plus, email (as above), or send (2no electronic copies e.g. CDs, USB; and on request 2no scaled hardcopies), all stage specific information relevant to submission to:

- **NHSScotland Design Assessment Process**
  c/o Director, Health Facilities Scotland
  3rd Floor, Meridian Court, 5 Cadogan Street, Glasgow G2 6QE
  Tel: 0141 207 1600 Fax: 0141 221 5122

Support and advice is available from HFS and A+DS staff, contact firstly:

- **Principal Architect** (Susan Grant)
  Health Facilities Scotland, PCF part of NHS National Services Scotland
  3rd Floor, Meridian Court, 5 Cadogan Street, Glasgow G2 6QE
  T: [redacted] or [redacted]; F: [redacted]
  [redacted] or nss.hfsenquiries@nhs.net

For support and advice on the development of Design Statements see www.healthierplaces.org and contact A+DS directly:

- **Healthcare Design Team** (Heather Chapple –Head)
  Architecture and Design Scotland
  Bakehouse Close, 146 Canongate, Edinburgh EH8 8DD
  T: 0131 556 6699 F: 0131 556 6633
  health@ads.org.uk

Appendix A

NHSScotland Design Assessment Process (NDAP)

Notification & Submission Pro-forma

APPENDIX A: NDAP NOTIFICATION & SUBMISSION PRO-FORMA	
PROJECT NAME	
NHSScotland Board/ Client	
Other client partners (such as Local Authority)	
Business Case Stage (*IAs will be desktop, thereafter as advised in previous NDAP response)	IA / OBC / FBC
Type of assessment anticipated*	desktop / panel
Client Contact (person who can respond to queries during review period)	name: phone: e-mail:
Additional Contact (such as the lead designer or design manager -if applicable)	name: phone: e-mail:
Project general details: (broad estimates)	GIFA construction value: procurement route:
Project Website (if available)	
Key dates	
• Target date for business case to be submitted to own Board	
• Target date for business case to be submitted to CIG	
• Date notification pro-forma submitted to NDAP	
• Target date Information submitted to NDAP	
• (if applicable) pre-agreed date for panel assessment	
• Date NDAP response needed	
Any other relevant information	

for Notification: complete 6 top rows (as a minimum); for Submission: ALL rows;
e-mail completed form to NDAP: nss.hfsdesignassessment@nhs.net ;
plus: [redacted] and health@ads.org.uk

Note: key information submitted to NDAP will, after the business case is made public, be used in the NHSScotland project resource: www.healthierplaces.org

Appendix B

NHSScotland Design Assessment Process (NDAP)

Design Statement Guidance and examples

APPENDIX B: Design Statement Guidance and examples

The Design Statement sets out your approach to the project and how it will be delivered. The Design Statement should have three basic elements:

- The Non- Negotiables
- The Benchmarks
- The Self- Assessment Process

Design Statement Elements – The Non-Negotiables

As we use buildings, for the most part, to house and support human activity, the Design Statement is built around the needs of the people who the facility will directly impact upon and whole life value for money. It is then expanded to consider the elements needed to deliver on the broader responsibilities of using public money – that of addressing local and national needs – for the public purse to achieve economies of benefit .



Figure 2: People and Policy Areas for the 'Non-negotiables'

These are incorporated into the Design Statement by establishing, early in the project's development, agreed statements that give the core objectives of the project: non- negotiables that all key stakeholders can sign up to that derive from and articulate the Investment Objectives. These are the fundamental aspects that define

the success of the scheme - the criteria which, if you cannot achieve them, will seriously call into doubt the viability of the project.

It is anticipated that the non- negotiables will be established and agreed by the Project Board to encapsulate a broad consensus - from a range of points of view, from strategic planners to those with a more intimate and ongoing relationship with the proposed facility - rather than be written by one person. Appendix D suggests a series of questions that might be helpful in debating the non- negotiables with key stakeholders. Once established, these non negotiables encapsulate an agreed direction and as such can help resist incremental change in the brief due to external pressures or subjective opinions.

Design Statement Elements – The Benchmarks

One of the strategies that could bring real change, but which the public sector generally under-utilises, is benchmarking developments. The private developer knows that it has to surpass its competitor to obtain market advantage. The advantage to the public sector is less clear as we have yet to fully use the lessons learnt through POE's to understand the impact of a good design on the people and policy factors described previously. However benchmarking against the best and most relevant that NHSScotland and its sister bodies have delivered, and in doing so learning from the work of others, is perhaps the single most helpful tool available to improve both the standard of care environment and the image of the NHS in the community.

There are three basic ways of benchmarking:

- **Number** - by giving a numerical minima or maxima ...the entrance space must be at least 100m2 in area

- **Relative** - by describing how you want it to be different to something that already exists ...the entrance space should be much bigger than the one in the current facility...

- **Comparator** - by pointing to something you want it to be like ...the entrance space should be like the one provided elsewhere...

Each of these has its benefits and pitfalls in terms of the extent of description and even prescription given to the designer and therefore this must be balanced in the methods and skills being employed to assess if this benchmark is being achieved. When setting a benchmark by using a comparator it is important to bear in mind that the purpose of choosing comparators is not to choose a predetermined design solution; it is to provide an example (or better still a range of examples) of 'what success might look like'.

The setting of benchmarks requires an understanding of what has gone before, and this is likely to require the project team to do some research and carry out site visits to learn from what others have done. As an initial step into this there are a number of web resources that can be used for scoping and as a source of reference projects or criteria. The most likely to be relevant are:

Healthier Places - www.healthierplaces.org
This website has been commissioned by SGHCD, HFS and A+DS to house information on good healthcare design to assist Boards/ Client in brief development and to raise awareness of the good practice being developed and delivered across NHSScotland and elsewhere. In addition to providing guidance on the development of 'Design Statements', and articles on healthcare design topics, the website holds a project resource (called 'pulse') that can be used in two main ways:

- Search by project type: to find out about recent and current developments in NHSScotland, and elsewhere, that are of a similar type to the one being considered by the client team. This will provide basic details on the project, the key team members involved and images where available. Key design documents, such as the 'Design Statement' and post occupancy Project Monitoring & Evaluations (PME) will be included once they are in the public realm to allow greater learning from what has gone before. It is envisaged client teams will use this search primarily at the outset of a project to:
    - to Establish similar works by colleagues in other Boards /Clients
    - Facilitate contact to allow shared learning
    - Establish possible visit lists for the client team and key stakeholders to raise awareness and understanding.
- Search by area: to find photographs of different areas of the healthcare

estate (such as entrance areas and consulting rooms) to raise awareness of what has been achieved elsewhere. It is envisaged client teams will use this search primarily to assist benchmarking within the Design Statement being developed for projects.

This resource will be maintained by A+DS using project information submitted to the NHSScotland Design Assessment Process (once the Business Case is in the public realm), case studies of completed developments, and supplemented by images submitted by users of the site. NHS Boards are encouraged to upload photographs taken during visits to inspirational developments (especially those outwith Scotland) to assist knowledge transfer between project teams.

Ideas - http://ideas.dh.gov.uk
Developed by NHSEstates in England this site describes design challenges of particular built elements (such as bedrooms or consulting rooms) and numerous examples of completed buildings that respond to these challenges.

Macmillan Quality Environment Mark -
www.macmillan.org.uk/HowWeCanHelp/CancerEnvironments/MQEM/MQEM.aspx
This self- assessment toolkit establishes aims for cancer care environments and views of what success might look like. Though designed particularly with cancer patients in mind many objectives have a much wider applicability. Case studies of environments that have been awarded the mark may be added to the site over time.

Over recent years, some well- designed developments have been delivered in Scotland and elsewhere that are supporting care and improving community infrastructure in the areas they serve. The purpose of mapping design into the business case is to extend this higher level of design quality across NHSScotland, and to promote a culture of continuous improvement by facilitating learning from what has gone before. Boards are expected to seek out and choose examples of good practice in design against which to benchmark their projects, such as those given in the example statements attached.

Benchmarks can be refined, as the project develops and more information is understood, or if better benchmarks become available. It is anticipated that the

benchmarks set at IA may be revisited in advance of the OBC and FBC to check that they are still the most relevant and useful means of checking that the project is achieving real value. The benchmarks should also be used in the Post Occupancy and Post Project Evaluation processes.

Design Statement Elements – The Self Assessment Process

This section of the Design Statement should establish the key design milestones for the project; then for each milestone set out the methodology and authority of the assessment, and the information and skills needed to carry it out. There are three areas to cover, **when**, **who** and **how**:

When

The business case process is designed to seek approval at key financial milestones, however these do not always coincide with key design milestones. Therefore the client team must consider and set out the key milestones that are most appropriate to their particular project. These may move relative to each other and relative to the business case milestones, dependant on the procurement route chosen, but are likely to include the following key milestones:

- Strategic Context, Site selection, or Option Appraisal
- Completion of Brief (inc. Public Sector Comparator if relevant) or High Level Information Pack (HLIP)
- Selection of Delivery/Design Team or pre-down selection
- Approval of early design concept / feasibilities (approx. RIBA stage 2)
- Approval of design to submit to Planning.
- Approval of design and specification to allow construction.
- Post occupancy Project Monitoring & Evaluations (PME)

Who

This is likely to be different depending on the milestone reached, the decision being made, and the risk associated with that decision.

The first thing to be decided therefore is the position of the particular assessment within the project governance - i.e. does the assessment sit within the project team (a matter that the project manager handles and reports to the project board on), or is the Project Board looking to undertake this function either itself or by seeking an

opinion that is independent from the reporting being given by the project manager and forms part of the Project Board's assurance process.

Thereafter the skills set of the people, process or advisor assessing the options or proposals must be established. It is likely that specific design training and/or expertise would be of value in assessing the information being given and in differentiating between alternatives.

> *For example: A common issue in design team selection is that many people do not feel they have the competence or confidence to differentiate strongly between the ability of different designers to design. This can result in them assessing the 'quality' aspect of the scoring in terms of the clarity and coverage of the written information submitted - their essay writing skill – rather than their potential to design a facility of lasting value.*

How

Firstly, and most importantly, the decision making process for these key points must allow you to ascribe a value to the elements needed to achieve the benchmarks you have set yourself.

Secondly, set out how you will approach the assessment. This would include both the tools you might use (such as an AEDET or ASPECT workshop) and the information you will need to inform the decision: i.e. the shortlist of sites for selection are likely to require some level of design feasibility study to provide reliable information on whether the 'Non- negotiables' can be delivered on the site and the implications of doing so.

> *For example, a site that is ideal in terms of transport connections and immediate availability may be very close to a busy road and therefore building on that site will require significant investment in the building envelope (wall and window construction) to attenuate sound, and a more sophisticated building layout and section is likely to be needed to allow the use of natural ventilation to keep the development within the sustainability criteria. This knowledge may either prompt the choice of a different site, where all of these factors are more easily achieved, or if this site is still the preferred option will allow the proper planning and budgeting of a project on this site.*

The information required to make good and informed decisions at these key points needs to be allowed for in the programme and budget of the project and therefore the process of self- assessment must be understood early in the project to allow the proper planning of this.

Example Design Statements

The following three example Design Statements have been worked up based on real NHSScotland projects.

They are included in this guidance both as an illustration of the likely form and content of such statements, but also as a demonstration of the standard of benchmark that is 'deemed to satisfy' policy. Projects submitted to the NDAP that set benchmarks below these standards will be unsupported by the Process.

As stated previously - it is expected that the Design Statements developed for each project will be the product of cross disciplinary working and represent the core objectives and benchmarks that have been agreed by a broad spectrum of stakeholders including those involved in strategic planning for the board and those with a more intimate link to the particular facility under consideration. A list of those persons involved in the development of the statement should be appended to the initial submission. The self- assessment process may more readily be written by the project manager, but must be agreed by the project board.

- **Example Primary Care Design Statement**
- **Example Acute Care Design Statement**
- **Example in-patient Design Statement**

Appendix C

NHSScotland Design Assessment Process (NDAP)

Design Statement Workshop

- the ‘Non-Negotiables’

APPENDIX C: Design Statement Workshop the 'Non-Negotiables'

Appendix B includes recommended headline areas (Figure. 2 people and policy) under which to consider and set the objectives of the project, but how these are used or interpreted will be specific to the aims of the project. To assist, the headline areas are expanded upon below by a series of questions and prompts, the responses to which should inform the development of project specific 'non- negotiables' .

PEOPLE

PATIENTS ...a welcoming, healing and reassuring place

Converting patient pathways into the patient experience, from leaving their home to returning home.

- Accessibility and approachability - Is this facility to be somewhere that is part of their experience of the community structure; a familiar place they go past when shopping, maybe even pop into for information or coffee, or somewhere that is likely to be a special trip for a significant purpose?
  Therefore how important is location in terms of prominence, links with public transport, parking space etc. Is it something that's an integral part of the built fabric of the community or a place apart from it? What should the initial impression be like? Can we say that drivers (other than those with a specific physical need or urgency) will not be given priority over those arriving by other means - that the facility will not face the world through a sea of car parking?
- Welcome and wayfinding - a place that doesn't stress you out just finding where you have to be.
  A single entrance space from which you can see all secondary reception points has been achieved in a number of primary and acute buildings - is this a non- negotiable for your project?
- The overall ethos and appearance of the facility.
  A place that gives me confidence that I'll receive good care/treatment, and where I can retain some sense of myself rather than feel subsumed by the system - see also notes above on ethos.
- The patient environment - evidence based design links basic placemaking aspects such as views (positive distractions), control over your environment (noise, heat, ventilation and light etc), and a sense of privacy and human dignity to improved recovery. Can you pick a few key location types (reception/waiting areas, bedroom, and social space) and benchmark these?
- Will there be somewhere nearby I can escape to if there's an opportunity – a breath of fresh air on a difficult day.

PATIENTS ...a place that supports life

- For a children's hospital - a play space I can get to from my bed – an external space I can get to every day if I want - a place my family or friends can be with me....
- For a dementia unit - a place that doesn't add to my confusion, that is reassuring and somehow familiar. A place I can still do some things for myself.
- For many wards - a place I can rest, where I can think, where I can talk in confidence or be comforted in private. A place to get away for a moment to feel I've still some choices and control.
- For outpatient facilities - a place that doesn't depress me / stress me to go to and where those that have to come with me (a carer / a driver / my children) can be kept occupied.

STAFF ...a place that supports the work

- What is the working model that is to be supported by the new/altered facility? Does it transpose current working practices or are new more integrated working methods to be used?
  Can this be embodied in any specifics such as only one reception point (as opposed to one for NHS, one for social work etc) or a commonality of room specification to allow space to be used as a resource rather than a territory?
- Is it a stand-alone facility, or are links to other services/ departments/ community facilities critical?
  This will affect both the location and the facilities that will be needed within the development.
- What do staff need to function effectively in terms of accessibility of the facility, functionality of working space and places to escape. Are there particular spaces you wish to benchmark?
  e.g. deciding early days that there's a particular theatre design that you wish to benchmark (perhaps open plan with windows) will inform very early design approaches to ensure a view that cannot be reciprocated.
- What is the ethos of the facility? What messages is it trying to convey and what behaviours are you looking to engender? The physical nature of the building (imposing or friendly) both embodies and influences the staff/patient relationship and the types, places and modes of communication.
- What level of efficiency are you looking for and how will you approach it? Does 'lean design' mean concentrating solely on staff walking distances (and potentially making the building deep plan and artificially lit/ventilated) or are you really looking at making the briefing and design work harder so that you get more than one benefit from any space (internal and external) that you build?

e.g. - Designing areas that have more than one use such as combined circulation/waiting spaces with something such as an atrium that assists with daylighting and ventilation: or, placing accessible external spaces (which may be need as lightwells etc) where they can have others uses such as formal and informal therapy, play space, additional waiting, respite and contribute to the biodiversity commitment?

- What are the additional benefits you're looking for from the development?
  Are you looking for it to help with staff retention or event to attract new staff - if so which facilities does it have to beat to attract the skilled employees you want?

STAFF ...a place that'll not constrain future work

- How serious are you about future flexibility?
  Will you require all consulting rooms to be the same, and a proportion of such rooms serviceable from more than one sub-reception to allow different users to occupy different areas as needs change? Will you require services to be routed such that walls can be removed/reconfigured more cheaply and the building refurbished on a floor by floor basis? What does flexibility mean in terms of your project?
- Is expansion space an absolute?

VISITORS ...a place to meet and discuss...a place that I can leave loved ones

- Do those accompanying, or visiting patients have a significant impact on the building function and the experience of patients?
  Will they take residents for a walk, or need space to meet and chat with in-patients? Will they be waiting for loved ones to come out of treatment, and need information and reassurance? Will they be there for extended periods and need a breath of fresh air whilst not feeling too out of touch?
- How important are play and even crèche facilities to allow patients to attend and keep accompanying children occupied?
- Are there complimentary facilities or services that'd help meet broader objectives of community perception or accessibility of services / encouraging healthy lifestyles? Are there any other visitors you'd wish to encourage by facilities such as drop-in information point?
  One of the community health facilities in Belfast has a cafe for use by those attending the GP, but it's so nice that it's popular with other locals and helps maintain the vibrancy and 'normality' of the place as it's a familiar part of the community structure rather than a place you go only when unwell.

POLICY

LOCAL NEEDS ... regeneration, community context and development

- **Local Board context**: how does this project link into the board's wider strategic asset management plan? Is it a piece in the onward development of a larger site and therefore must include elements that deliver on broader site masterplanning and infrastructure elements or set a standard for future developments on the site?
- What additional benefits does the board want from the project in terms of public perception?

- **Community Context:** The project is undoubtedly a significant investment in the community it serves, how should that be used to support the community structure including local needs for healthier places, regeneration and sustainable growth in the community?
  e.g. The construction of a facility in a run-down area is a chance to develop local civic pride and a feeling of worth (thereby potentially increasing community ownership and reducing vandalism as well as setting a benchmark for future projects in the area) as opposed to developing something that is simply 'in keeping' with the current dilapidated nature.

- **Planning and Local Development:** In broad terms, the new Planning Act shifts the emphasis of planning to consider and plan "what goes where and why" and therefore local development plans should be supporting the identification and protection of community facilities, such as those for health. This, combined with Single Outcome Agreements, is a real opportunity to plan the location of facilities to support local development rather than in response to it.
  An agreed 'non-negotiable' objective that requires the facility to be placed in a location the supports local regeneration or a planned shift in population, on a project commissioned jointly with the local authority, is likely to be a very powerful tool.

- **Local Board context**: how does this project link into the board's wider strategies such as commitments under the Single Outcome Agreement or local initiatives on health promotion, carer support etc?
  How does the project fit into the board's strategic asset management plan? Is it a piece in the onward development of a larger site and therefore must include elements that deliver on broader site masterplanning and infrastructure elements or set a standard for future developments on the site?
  What additional benefits does the board want from the project in terms of public perception of the board?

e.g. the location and approachability of the facility can increase or reduce the likelihood of people walking or cycling to the facility and even using it.

NATIONAL NEEDS ... NHSScotland Policies

- **Better Health Better Care**: how does the project support the shift in care patterns and embody the concept of mutuality.
- **Sustainability and Asset Management**: how the project will allow you to improve your reporting on these elements.
- **Design Quality:** This is unlikely to need a specific objective as it should be met in achieving the others.

NATIONAL NEEDS ... Broader Governmental Objectives

- **The 5 Strategic Outcomes and 45 National Indicators:** Health boards, as bodies spending the public purse, are expected to contribute across all of these outcomes.
- **National policies on placemaking and design**: the call for leadership by example in the public sector.

Scotland's Infrastructure Investment Plan 2008 establishes that good design is key to achieving best value from all public sector investment.

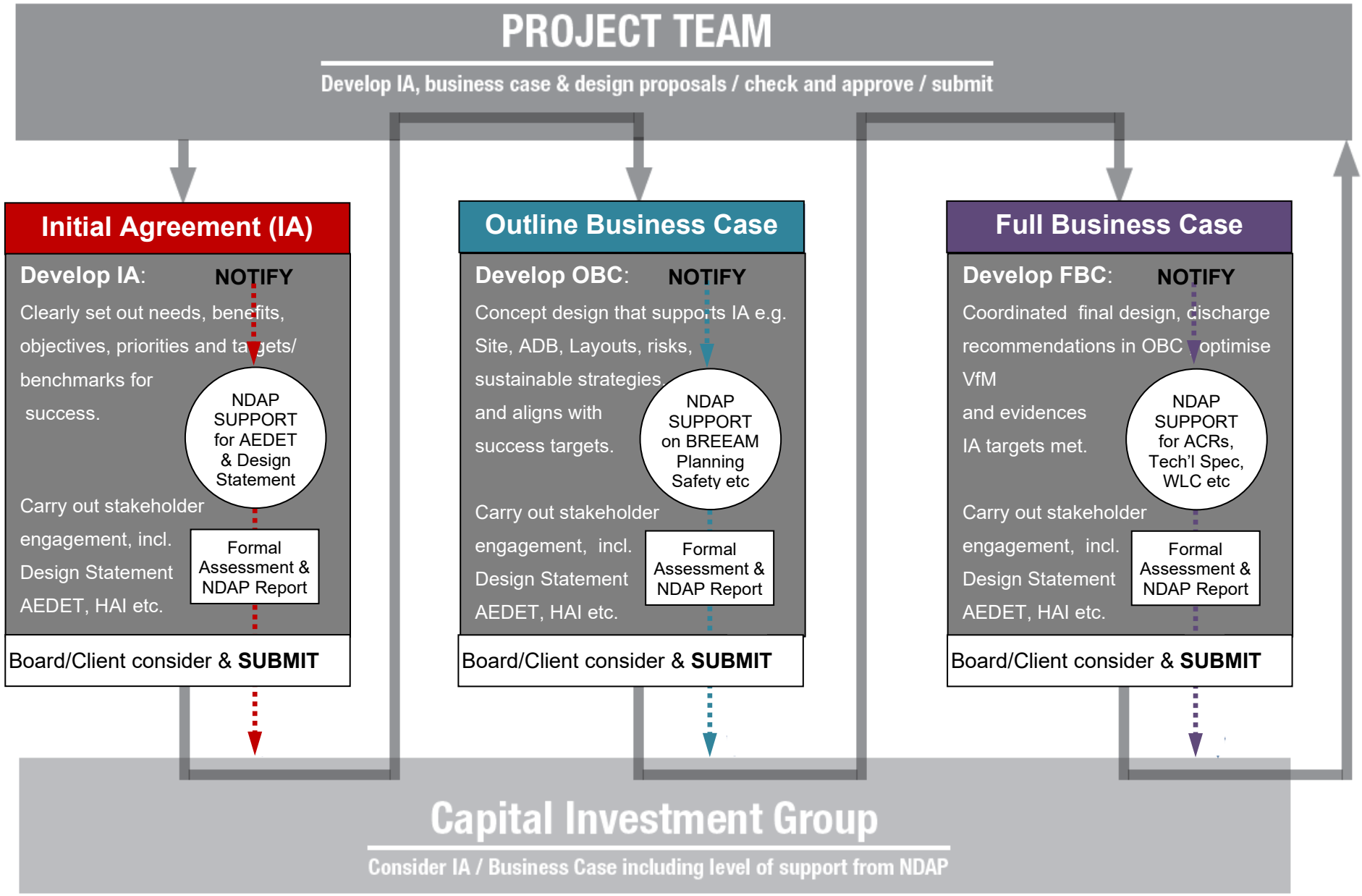
"In developing Scotland's infrastructure, the Scottish Government recognises that good building design should be responsive to its social, environmental and physical context. It should add value and reduce whole life costs. Good building design should be flexible, durable, easy to maintain, sustainable, attractive and healthy for users and the public; and it should provide functional efficient adaptable spaces ... Equally important to the design of individual buildings is the design of sustainable places. Well-designed buildings and places can revitalise neighbourhoods and cities; reduce crime, illness and truancy; and help public services perform better".

It is this approach - which is underpinned by national policies on Architecture and on Place Making - that will inform appraisal of all projects.

Appendix D

NHSScotland Design Assessment Process (NDAP)

Activity and Information Flow Charts


PROJECT TEAM
Develop IA, business case & design proposals / check and approve / submit
Initial Agreement (IA)
Develop IA:
NOTIFY
Clearly set out needs, benefits, objectives, priorities and targets/ benchmarks for success.
NDAP SUPPORT for AEDET & Design Statement
Carry out stakeholder engagement, incl. Design Statement AEDET, HAI etc.
Formal Assessment & NDAP Report
Board/Client consider & SUBMIT
Outline Business Case
Develop OBC:
NOTIFY
Concept design that supports IA e.g. Site, ADB, Layouts, risks, sustainable strategies and aligns with success targets.
NDAP SUPPORT on BREEAM Planning Safety etc
Carry out stakeholder engagement, incl. Design Statement AEDET, HAI etc.
Formal Assessment & NDAP Report
Board/Client consider & SUBMIT
Full Business Case
Develop FBC:
NOTIFY
Coordinated final design, discharge recommendations in OBC optimise VfM and evidences IA targets met.
NDAP SUPPORT for ACRs, Tech'l Spec, WLC etc
Carry out stakeholder engagement, incl. Design Statement AEDET, HAI etc.
Formal Assessment & NDAP Report
Board/Client consider & SUBMIT
Capital Investment Group
Consider IA / Business Case including level of support from NDAP

Strategic Assessment	Initial Agreement (IA)		Outline Business Case (OBC)	Full Business Case (FBC)		Project Monitoring & Evaluation (PME)	
0 – Strategic Definition	1 – Preparation & Brief		2 – Concept Design	3 – Developed Design	4 – Technical Design	6 - Handover	7 – In Use
RIBA Stages : 2013 ⇧ 2007 ⇩	A	B	C	D	E	F	L
	Appraisal	Design Brief	Concept	Design Development	Technical	Production Info.	Post Practical Completion
PM & Technical Information:	PM & Technical Information: Establish Objectives: • Project Benefits • Quality Objectives • Sustainability Aspirations Establish PM Documents: • Stakeholder groups • Initial Brief, incl. Design Standards • Initial Programme • Initial Risk Register • Cost Plan, incl. WLC • Project Execution Plan (PEP) Submit: • NDAP: pro-forma (appendix A) • NDAP: Draft IA, incl. Design Info below • CIG: Board verified NDAP report		PM & Technical Information: Early Stage: • Outline Brief , incl. Strategic Context & IA stage NDAP report • High Level Information Pack(s) for Contracted Service(s) • Site(s) Information • Site Selection & Option Appraisal* Process Develop: • Master Programme • Master Risk Register • Cost Plan, incl. WLC • Project Execution Plan (PEP) • Commissioning, O&M and Soft Landing Strategy • Responsibility matrix & Communications plan Submit: • NDAP: *Early Stage: interim feedback on Design Info below • NDAP: pro-forma (appendix A) • NDAP: Draft IA, incl. Design Info below • CIG: Board/ Client verified NDAP report	PM & Technical Information: Finalise: • Down-selection of any bidders/ competitors # • Final Brief, incl. OBC (& Interim) stage NDAP report(s) • Site Information incl. investigations • Master Programme • Master Risk Register • Cost Plan, incl. WLC • Project Execution Plan (PEP) • Commissioning, O&M and Soft Landing Strategy • Responsibility matrix & Communications plan Submit: • NDAP: #pre-down-selection: interim feedback on Design Info below • NDAP: pro-forma (appendix A) • NDAP: Draft IA, incl. Design Info below • CIG: Board/ Client verified NDAP report		PM & Technical Information: Handover: • Confirm compliance e.g. Commissioning, O&M and soft landing & sustainable Submit: • CIG: post occupational Project Monitoring & Evaluation (PME) reports, incl. Design Info below
Design Information:	Design Information -Brief: Establish: • AEDET or equal, healthcare (DQI) Design Quality Indicator, Target & Benchmark • Design Statement to realise all Project Objectives, & list of stakeholders present • Commitment to Sustainability incl. BREEAM Healthcare target statement. • Commitment to Equality, incl. access, Dementia Health Promotion targets. • list NHS guidance/ & technical standards to follow e.g. SHPNs, SHTMs, CIBSE etc. • Accommodation Schedules based on above & NHS Activity Data Base • Strategic Context: SA, PAMS, CPS, EAMS, Planning, Masterplan, etc.		Design Information -Concept Design: Early Stage: • Strategic Context & Masterplan studies e.g. ≥ 1:1000 . • Site & Option Appraisal e.g. ≥ 1:500, photos,3Ds, HAI,CDM, VfM • Initial concept sketches & sustainable design strategy • Evidence of stakeholder consultation & DQI on preferred option Late Stage: • Concept Design incl. Arch, M&E, C&S, Fire and Landscape • Outline drawings & specifications • Outline sustainability strategy • Outline Construction Strategy incl. HAI, CDM H&S Plan • Completed Design Statement OBC self assessment • Completed AEDET OBC self assessment • Photographs of site showing broader context • Evidence of Local Authority Planning consultation and/or alignment with Local Development Plan. • Extract from draft OBC detailing benefits and risks analysis • Evidence of HAI & CDM compliance • Evidence Sustainability commitments will be met. (e.g. accurate & NCM model information e.g. BREEAM, .CAB files and BRUKL • Evidence Equality commitments will be met. • Evidence of VfM e.g. outline WLC on key design options • Evidence that Activity Data Base (ADB) is being fully utilised. • Evidence design guidance will be met; list any derogations. • Design Report evidencing above - ≥ 1:500, ≥ 1:200, key ≥ 1: 50; diagrams, plans, sections, 3Ds, specs, comfort & energy DSMs.	NDAP Information -Developed Design: Mid - Late Stage: • IA Design Standards, with any updates in benchmarks highlighted. • Completed Design Statement FBC self assessment • Completed AEDET FBC self assessment • Evidence Local Authority Planning & other consents, plus any risks • Draft FBC incl. benefits and risks analysis e.g. SCIM appendix 3. • 3D images for key spaces identified in Design Statement. • Evidence of HAI & CDM compliance and design optimised • Evidence Sustainability compliance and design optimised, e.g. NCM plus accurate comfort & energy models (DSMs), BRUKLs, CAB files • Evidence Equality and accessibility compliance & design optimised • Evidence design coordination in place and resilient e.g. BIM • Evidence commissioning, O&M & soft landings in place and resilient • Evidence of VfM e.g. detailed WLC options, and design optimised • Evidence that Activity Data Base (ADB) use is optimised. • Evidence guidance & standards are met; list derogations & reasons • Final Design Report, coordinated response across multi-disciplines, evidencing all above - ≥ 1:500, ≥ 1:200, ≥ 1: 50, ≥ 1: 20; 3Ds, plans, sections, specs, comfort & energy DSMs BREEAM, WLCs etc.		Design information -PME: • Complete BREEAM • 1st annual energy NDEP • PME Design Statement and AEDET, plus share any design learning. • O&M/ Soft Landings, on going use optimisation and shared learning • Submit for Design Awards

	Strategic Assessment	Initial Agreement (IA)		Outline Business Case (OBC)	Full Business Case (FBC)		Project Monitoring & Evaluation (PME)	
	0 – Strategic Definition	1 – Preparation & Brief		2 – Concept Design	3 – Developed Design	4 – Technical Design	6 - Handover	7 – In Use
RIBA Stages : 2013 / 2007		A	B	C	D	E	F	L
		Appraisal	Design Brief	Concept	Design Development	Technical	Production	Post Practical Completion
Design Statement (DS):		Design Statement (DS): • Establish workshop stakeholder group incl. service user reps and public • Establish IA Design Standards, incl: • Workshop DS1a: set 'non-negotiables' • Workshop DS1b: set 'benchmarks' • Develop and Consult • NDAP Notification • Submit & Review IA Design Standards • NDAP Report IA		Design Statement (DS): • Establish early NDAP dialogue • Informal consultations (early OBC, plus OA*) • Workshop DS 2 a&b*: (late OBC, plus OA*) design self-assessments • NDAP Notification (late OBC) • Submit & Review Concept Design • NDAP Report OBC * additional OA Site/ Option Appraisal requirement, as well as for formal NDAP late OBC stage report.	Design Statement (DS): • Informal consultation (pre-down selection(s)# & mid FBC) – interim reports on request • Workshop DS 3 a&b#: (pre-down selection(s)# & late FBC) design self-assessments • NDAP Notification (mid-late FBC) • Submit & Review Developed Design • NDAP Report FBC # additional pre-down selection(s) requirement, as well as for formal NDAP late FBC stage report			Design Statement (DS): • Workshop DS 4: (PME at circa +1yr) assessment • PME report on learning • NDAP report, on request
AEDET/ ASPECT:		AEDET / ASPECT: • Workshop stakeholder group as above • Workshop 1 benchmark current service facility(ies) - if applicable;		AEDET / ASPECT: • Workshop 2 a&b*: (late OBC, plus OA*) design self-assessments	AEDET / ASPECT: • Workshop 3 a&b#: (pre-down selection(s)# & late FBC) design self-assessments			AEDET / ASPECT: • Workshop 4: (PME at circa +1yr) assessment
Technical / Guidance:		NHS Guidance & technical Standards: • Agree key Guidance & Standards appropriate for the project; incl, shared learning on prior projects		NHS Guidance & UK technical Standards: • Update Guidance & Standards • Agree key Derogations list	NHS Guidance & UK technical Standards: • Evidence contract terms, Guidance & Standards • Evidence Derogations lists; incl. technical reasons/ mitigations.		NHS & technical Standards: • Final Standards and Derogations • Prepare O&M manuals	NHS & technical Standards: • PME report on learning for future projects and ongoing O&M (circa +1yr)
BREEAM:				BREEAM: • Pre Assessment – Agree project specific target score with HFS support • Design Stage Assessment	BREEAM: • Assessment – Confirm project target score and extent final credits now evidenced • Issue interim 'design' certificate		BREEAM: • Assessment – evidence construction score • Issue NDEP energy cert.	BREEAM: (circa +1yr • Issue 'final' certificate • PME report on learning for future projects and O&M
HAI SCRIBE:		HAI SCRIBE: • Establish multi-disciplinary HAI group • HAI process & controls to be briefed incl, shared learning on prior projects		HAI SCRIBE: • HAI applied in concept and space planning • Workshop H2 a&b*: (late OBC, plus OA*) HAI risk assessments	HAI SCRIBE: • Confirm HAI applied in design details & specs. • Workshop H3 a&b#: (pre-down selection(s)# & late FBC) HAI risk assessments		HAI SCRIBE: • HAI Construction confirmation & records	HAI SCRIBE: (circa +1yr • PME report on learning for future projects and O&M
CDM:		CDM: • Establish multi-disciplinary CDM group • CDM process & controls to be briefed incl, shared learning on prior projects		CDM: • CDM applied in concept and space planning • Workshop C2 a&b*: (late OBC, plus OA*) CDM risk assessments	CDM: • Confirm HAI applied in design details & specs. • Workshop C3 a&b#: (pre-down selection(s)# & late FBC) CDM risk assessments		CDM: • CDM Construction confirmation & records	CDM: (circa +1yr • PME report on learning for future projects and O&M
BIM:		Building Information Modelling: • Data Drop 1 – Initial Brief of operational requirement & Model		Building Information Modelling: • Data Drop 2 – Outline Solution Model	Building Information Modelling: • Data Drop 3 – Construction Information Model		BIM: • Data Drop 4 – Operational and Maintenance Model	BIM: (circa +1yr • Data Drop 5 – in-use Validation Information Model and ongoing O&M
Planning:				Planning: • Pre Planning Consultation* (If applicable) • NDAP report used as consultation evidence • Planning In Principle Approval (If applicable)	Planning: • NDAP report used as evidence of A&DS Design Review undertaken by Planning • Planning Approval			

Health Finance, Corporate Governance and Value Directorate
Alan Morrison, Deputy Director of Health Infrastructure, Investment and PPE

T: [redacted]
E: [redacted]

Scottish Government
Riaghaltas na h-Alba
gov.scot

Dear Colleague

NHSSCOTLAND ASSURE: KEY STAGE ASSURANCE REVIEWS (KSAR) – COMMISSIONING AND HANDOVER

On the 27th May 2021, DL (2021) 14: NHS SCOTLAND ASSURE: QUALITY IN THE HEALTHCARE ENVIRONMENT announced that NHS Scotland Assure and the Key Stage Assurance Review (KSAR) process was being launched.

That DL informed all Health Boards that any business case going through the NHS Capital Investment Group for review would require the project to complete a satisfactory KSAR before Scottish Government approval would be granted.

This DL covers the commissioning, completion, and handover part of the process and notifies you that all building projects going through a KSAR, should not open to patients or the public until you receive a 'supported status' from NHS Scotland Assure.

Project teams should liaise with their NHS Scotland Assure KSAR team to ensure that their capital projects are completed satisfactorily to ensure that supported status is achieved. Any additional actions / conditions included within the KSAR 'supported status' report for Commissioning and Handover must also be completed within agreed deadlines. Non-compliance with these requirements will deem the new facility as not appropriate for public / patient occupation.

When a supported status has been achieved, and the local NHS Board is content for the building to open, the Senior Responsible Officer should send a copy of the report to the Chair of the NHS Capital Investment Group for information (NHSCIG@gov.scot).

Yours sincerely

[redacted]

Alan Morrison
Deputy Director of Health Infrastructure, Investment and PPE

DL (2023) 03

6th February 2023

Addresses:

For action
NHS Board Chief Executives
NHS Directors of Finance
NHS Nursing Directors
Directors of Estates and Facilities

For information
NHS Board Chairs

Enquiries to:

Alan Morrison
Deputy Director Health Infrastructure Division
Basement Rear
St Andrew's House
Regent Road
EDINBURGH EH1 3DG

Tel: [redacted]

E-mail: [redacted]

From: Laura Imrie
Sent: 24 September 2024 15:35
To: Devine, Sandra
Cc: julie.crichley[redacted]; Wallace, Angela
Subject: Re: Monday Meeting

Hi Sandra

Thank you for your email. I understand your concerns regarding the duration of our meetings (which I felt were very helpful) and the absence of clarity for NHSGGC from SG concerning roles and responsibilities.

I am happy to revert to communicating through the hospital IPCT and ARHAI IPCT moving forward. I will not be attending the event on 2 October, and I am not aware of whether this particular issue will be addressed during the event.

Best wishes

Laura

From: Devine, Sandra <[redacted]>
Sent: 24 September 2024 15:00
To: Laura Imrie <[redacted]>
Cc: julie.crichley[redacted] <[redacted]>; Wallace, Angela <[redacted]>
Subject: Monday Meeting

Hi Laura
Thank you for taking the time to meet with me each Monday. I think in the short term this was productive, but this has gone on longer than I had anticipated and I had hoped that we would have had some clarity from SG regarding roles and responsibilities by now as this request was made several months ago; perhaps this will be discussed in the upcoming event on the 2 October?

In the meantime, please feel free to contact me should any issues arise. I have cc in Prof Wallace and Ms Critchley for information.

Kind regards
Sandra

Directorate of the Chief Operating Officer, NHS Scotland
Healthcare, Quality and Improvement Division

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Dear Colleagues,

NHS SCOTLAND INFECTION PREVENTION AND CONTROL (IPC) ROLES AND RESPONSIBILITIES, INCLUDING IPC TEAM (IPCT) AND SPECIALIST IPC ROLE DESCRIPTORS.

This letter replaces the previous HDL (2005) 8 and builds on evidence and lessons learnt following: The Vale of Leven Hospital Inquiry Report (2014), The Queen Elizabeth University Hospital Review (2020) and The Queen Elizabeth University Hospital/ NHS Greater Glasgow and Clyde Oversight Board: Final Report (2021) . It outlines the main responsibilities for Boards in relation to the infection prevention and control (IPC) service and introduces the team and specialist IPC role descriptors.

The Role of the Chief Executive

The Chief Executive is ultimately responsible for ensuring successful prevention and control of infections within their NHS Board area. This accountability requires that the Chief Executive:

- Is aware of their legal responsibilities to identify, assess and control risks of infection in the workplace,
- Appoints an Executive Lead to be the Healthcare Associated Infection (HAI) Executive Lead,
- Appoints either a Clinical Lead and/or Infection Control Manager to have responsibility for the IPC service with sufficient resource to provide IPC support and advice and is able to demonstrate clear lines of governance throughout the organisation, and
- Ensures that prevention and control of infection is a core part of their organisation's clinical

From the Interim Chief Nursing Officer

Anne Armstrong

02 May 2024

DL (2024) 11

Addresses

For action

NHS Scotland Chairs,
NHS Scotland Chief Executives,
Chief Officers Health and Social Care Partnerships,
Local Authorities,
HR Directors,
Medical Directors,
Nurse Directors,
Primary Care Leads,
Directors of Pharmacy,
Directors of Public Health,
Directors of Dentistry,
Optometric Advisors,
All Independent Contractors (Dental, Pharmacy, General Practice and Optometry),
Infection Control Managers,
Infection Control Doctors,
Infection Control Nurses.

Further Enquiries

Scottish Government Directorate for Chief Nursing Officer

Email: cno@gov.scot

governance and patient safety programmes.

Role of Healthcare Associated Infection (HAI) Executive Lead

The HAI Executive Lead holds delegated accountability for the IPC service function within their portfolio answering directly to the Chief Executive in line with the Board's internal scheme of delegation. HAI Executive Leads are responsible for:

- Annual workforce planning to establish an IPCT appropriate to the size and complexity of the Board, in line with the requirements of the Health and Care (Staffing) (Scotland) Act 2019,
- Responsible for the management of any IPC associated risks which have been escalated to ensure appropriate mitigation steps are taken,
- Ensure the IPC service can provide the function required and have an appropriate work programme which supports provision and continuous improvement, and
- Responsible for chairing the NHS Healthcare Associated Infection Executive Committee (HAIEC)/ Infection Control Committee (ICC)
- Oversee and ensure relevant and required IPC/ healthcare associated infection (HCAI) reports are published and/or sent to the appropriate National Board/Scottish Government.

Infection Control Manager and/or Clinical Lead

The Infection Prevention Workforce: Strategic Plan (2022-2024) and accompanying CNO letter states that both the complexity and size of the Board should be considered when determining whether there is a need for a dedicated IPC Clinical Lead.

The Clinical Lead role **may not be required in all boards** and is distinct from the role of the HAI Executive Lead which will retain the delegated accountability within the Board for HAI.

Team and Specialist IPC Role Descriptors:

The Infection Prevention and Control Team (IPCT)

The function of the IPCT is to advise on the prevention, surveillance, investigation, and control of infection across health and care settings in collaboration with other key service partners. The IPCT works collaboratively with microbiology, virology and other services and departments, including operational and senior management teams, health protection teams, care home providers and the health and social care partnerships , to provide infection, prevention, and control (IPC) subject matter expertise, safe, effective, and person-centred communications and advice and support to help reduce the risk of infection to patients, service users, staff and visitors.

The membership, structure, and scope of an IPCT should reflect the geography, function, size, and complexity of the NHS Board it serves.

A descriptor of an IPCT can be found in ANNEX A.

IPC Specialist Role Descriptors

Since the publication of the Infection Prevention Workforce Strategic Plan 2022- 2024 in December 2022, the Healthcare Associated Infection (HCAI) and Antimicrobial Resistance (AMR) Policy Unit has been engaging with national and territorial Boards to produce a Clinical Lead role descriptor for Scotland and update the existing Infection Control Manager (ICM) descriptor within HDL(2005)8.

During the first stage of engagement with IPCTs from across Scotland, the HCAI/AMR Policy Unit was asked by key stakeholders to develop role descriptors for Infection Control Doctors, Nurses/Practitioners and Infection Control Support Workers.

ANNEX B holds role descriptors for all of the aforementioned team members. It is recognised that some staff may have additional responsibilities based on local need which would not necessarily be considered as a core responsibility for that role across Scotland, and therefore such responsibilities are not included within the descriptors.

The individual role and team descriptors outline the main responsibilities for IPC specialists across Scotland. The

individual role descriptors were developed with an initial draft created by NHS Education for Scotland, based on current job descriptions for IPC posts across Scotland and England, which was followed by consultation with NHS Scotland IPC staff representatives, HAI Executive Leads and Scottish Government Professional Advisors**.**

All descriptors emphasise that IPC teams are responsible for the provision of IPC advice to other areas and departments, noting that this does not mean they are accountable for IPC practice in those areas.

The IPCT and team member descriptors **are not mandatory**. They have been developed as a support tool and guide for Boards to refer to when reviewing local roles or IPCT structures as part of workforce planning in line with the requirements of the Health and Care (Staffing) (Scotland) Act 2019.

Yours sincerely,



INTERIM CHIEF NURSING OFFICER

Annex A – IPCT DESCRIPTOR



IPC Team Descriptor ANNEX A.docx

Annex B – SPECIALIST ROLE DESCRIPTORS – CROSS READ TABLE



Role Descriptors - Cross Read Table ANN

NHSScotland Assure
Quality in the healthcare environment

4th Floor
Delta House
50 West Nile Street
Glasgow
G1 2NP
www.nss.nhs.scot

NHS National Services Scotland

11th January 2024

Your Ref: AW/LMC
Our Ref: JC/AA

Professor Angela Wallace
Executive Nurse Director
NHS Greater Glasgow and Clyde
JB Russell House
Gartnavel Royal Hospital
1055 Great Western Road
GLASGOW
G12 0XH

Enquiries to: Julie Critchley
Email: [redacted]

Dear Angela

Many thanks for responding to my letter dated 20th October, as we discussed at our meeting on 3rd November 2023, I had not had the opportunity to consider your response from the 31st October 2023 to enable me to provide feedback at that meeting but have since reviewed.

Hopefully these communications and our discussions will help explore some of the challenges faced by the teams within our respective organisations.

In response to the operational issues that you raised in your letter I have asked Laura Imrie to address these with Sandra Devine and update yourself and I on progress that has been made.

In response to the other issues raised in your letter, which I have now discussed with the senior team, I am now able to provide you with a response.

- NHSGGC have on a number of occasions contacted Scottish Government directly to suggest that ARHAI are misinterpreting information provided by NHSGGC in their summary emails and I am concerned that from your letter you still consider this to be an issue. Laura Imrie has previously discussed this with Sandra Devine and requested examples of where there has been any misinterpretation to be shared with her to allow learning and improvement as she herself could not identify the issue when a review of all information provided by NHSGGC was cross checked against the summary communications. Laura is keen to understand the detail of these complaints to explore and will again discuss with Sandra.

- When I discussed with the ARHAI team your feedback regarding multiple requests for the same information they were able to relate to the frustration that NHSGGC may feel as the ARHAI team have confirmed that on occasion NHSGGC do not

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Chair Keith Redpath
Chief Executive Mary Morgan
Director Julie Critchley

NHS National Services Scotland is the common name of the Common Services Agency for the Scottish Health Service

provide the information requested and several follow up emails are required. Laura and Sandra now have a weekly meeting to discuss outstanding actions which Laura feels is working well. I have asked Laura to check in with Sandra for any ongoing issues.

- ARHAI Scotland acknowledge that the surveillance systems in place within NHSGGC for capturing data relating to infections are robust. I am unable to comment on the governance around internal escalation the issue I was raising was that the triggers for external reporting to ARHAI appear not to be aligned with the NIPCM. This may be due to the NHS Board awaiting typing or WGS results before reporting and I have asked Laura to explore this with Sandra. HIIAT assessment, in accordance with Chapter 3, should be undertaken at the first opportunity and an individual member of the IPCT may undertake an initial assessment which can be updated when a PAG/IMT is convened.

I feel that these key areas reflected what appears to be a different understanding as to the role of ARHAI Scotland in reviewing and providing assurance around infection related incidents and as we discussed I will consider with CNOD.

Yours sincerely

[redacted]

Julie Critchley
Director of NHSScotland Assure

Chief Nursing Officer Directorate
Professor Alex McMahon, Chief Nursing Officer

E: cno@gov.scot

Scottish Government
Riaghaltas na h-Alba

Dear Colleagues

EXTANT GUIDANCE ON INFECTION PREVENTION AND CONTROL, SURVEILLANCE AND VACCINATIONS FOR INFLUENZA AND COVID-19.

I am writing to you in the midst of another challenging winter in Scotland's Health and Social Care sector with a particular focus as the number of patients testing positive on admission for COVID-19 and influenza has increased. Given the service pressures at present, I wanted to take this opportunity to restate the extant guidance regarding infection prevention and control (IPC).

Each member of staff in health and social care has a role to play in infection prevention and control. Control measures such as standard infection control precautions (SICPs), transmission based precautions (TBPs) and vaccinations support us to reduce and control healthcare associated infections (HCAIs) and the additional pressures these bring to health and social care services.

National Infection Prevention and Control Manual

The National Infection Prevention and Control Manual (NIPCM) was relaunched on 11 July 2022. These evidence based guidelines aim to reduce the risk of HCAI and ensure the safety of those in the care environment – those being cared for, as well as staff and visitors.

Antimicrobial Resistance Healthcare Associated Infection (ARHAI) Scotland continues to monitor and analyse COVID-19 and other respiratory infections data. This is considered alongside reviews of the current scientific literature and international guidance (inclusive of WHO IPC guidance) to ensure the NIPCM remains an up to date practice guide for use in Scotland. The NIPCM and Care Home Infection

From the Chief Nursing Officer

Professor Alex McMahon

15 January 2024

DL (2024) 01

Addresses
For action

NHS Scotland Chairs,
NHS Scotland Chief Executives,
Chief Officers Health and Social Care Partnerships,
Local Authorities,
HR Directors,
Medical Directors,
Nurse Directors,
Primary Care Leads,
Directors of Pharmacy,
Directors of Public Health,
Directors of Dentistry,
Optometric Advisors,
All Independent Contractors (Dental, Pharmacy, General Practice and Optometry),
Infection Control Managers,
Infection Control Doctors,
Infection Control Nurses.

Further Enquiries

Scottish Government Directorate for Chief Nursing Officer

Email: cno@gov.scot

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Prevention and Control Manual (CH IPCM) are considered best practice in all health and care settings.

I do however recognise that during times of increased service pressure Boards may adopt practices that differ from those stated in the NIPCM. Boards are able to do this but it is your responsibility for ensuring safe systems of work including risk assessment and any decision to derogate should be considered and approved in line with the local board governance arrangements and must be frequently reviewed within those structures.

Risk Assessment

The increase in seasonal respiratory infections over winter further adds to the operational pressures experienced across health and social care services.

Healthcare staff are reminded to carry out individual risk assessment when providing direct clinical care to anyone with suspected or confirmed respiratory infection.

It is important that all patients and individuals are assessed for infection prior to arrival or on arrival to any health and care facility and throughout their stay. This will help ensure that the appropriate controls in addition to SICPs are applied promptly including individual patient placement.

General respiratory screening questions can be found within the resources section of the NIPCM or by following this link - Respiratory Symptom Screening Questions

It is also important to ensure that multidrug resistant organism (MDRO) clinical risk assessment based screening is undertaken in line with national protocols along with clinical samples when infection is suspected.

Reporting of Incidents and Outbreaks

Continued reporting of infection related incident and outbreaks over the winter period supports ARHAI Scotland in fulfilling their national function in preparedness and response to HCAI outbreaks and incidents. In order to support boards during this time, a new form for reporting key winter respiratory viruses was introduced in December, which aims to reduce the data collection burden.

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Infection Control in the Built Environment

Health Boards should ensure that any wards or departments that are reopened or repurposed to provide additional capacity over the winter months are safe and fit for purpose. In particular, ventilation and water systems should be reviewed as described below:

- *Ventilation*

For all areas, NHS boards should undertake local risk assessments based on the hierarchy of controls, of which engineering is a component. Further information on ventilation can be obtained here: Appendix 18 - Hierarchy of controls (scot.nhs.uk)

Guidance on ventilation in healthcare settings can be found in SHTM 03-01 Specialist ventilation for healthcare premises Ventilation for Healthcare Premises (SHTM 03-01) | National Services Scotland (nhs.scot)

Board Ventilation Safety Groups (VSG) should ensure that all specialist ventilation systems in hospitals (including Critical Care areas) have up to date annual verification reports, and that action plans are in place for any deficiencies identified. All ventilation systems should be well maintained, ensuring functionality of air handling units and correct delivery of assigned air change rates.

- *Water*

If opening a ward or department that is not currently fully occupied, a risk assessment of the area should be undertaken and the board Water Safety Group should be involved.

Guidance on water safety in healthcare settings can be found in SHTM 04-01.

If the area is to be utilised as an augmented care area, water testing should also be undertaken for Pseudomonas in addition to the tests listed above.

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- *Bed Spacing*

The NIPCM offers guidance on the minimum bed spacing requirements. I recognise that as service pressures increase extra beds may be added in order to meet the additional care demands. As stated above, practice out with that contained in the NIPCM should be risk assessed, considered and approved in line with the local board governance arrangements.

Winter IPC Messages

ARHAI Scotland and NHS National Education for Scotland have collaborated to relaunch a series of key IPC messages that can be used to support health and care settings over this winter period. They aim to raise awareness and help support communications around staying well during the winter. I would appreciate it if you could share these messages across your services.

Vaccinations

As per the letter dated 11 January 2024 (appendix A) myself and the other Chief Officers asked that you work with your teams to try and encourage COVID-19 and flu vaccination uptake within your workforce. This is in order to protect staff from these viruses, reduce staff absence due to sickness, and in the case of the flu vaccine, help to reduce potential transmission to your family, patient or client groups and to support wider winter resilience.

Antimicrobial Prescribing

Optimising antimicrobial use remains an important way to minimise the threat from antimicrobial resistance. In winter there is an increase in people presenting with symptoms of respiratory infections but most winter respiratory tract infections are caused by viruses and do not require treatment with antibiotics. It is vital for clinicians to follow advice on antibiotic prescribing from the Scottish Antimicrobial Prescribing Group and NHS board antibiotic prescribing guidelines on when to use antibiotics, the choice of antibiotic and duration of treatment.

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Surveillance

HCAI and AMR surveillance should continue as per current policy. Surgical site infection surveillance remains paused and *Clostridioides difficile* infection, *Escherichia coli* bacteraemia and *Staphylococcus aureus* bacteraemia surveillance continue as per national surveillance protocols. A review of national surveillance is currently underway.

I would like to offer my sincere thanks for everything you are doing. I recognise the commitment each member of staff has in ensuring the best of care to patients, service users and their visitors; it makes me incredibly proud to be your Chief Nursing Officer. I hope you find the information provided in this letter useful and supportive of your continued efforts.

Yours sincerely,



PROFESSOR ALEX MCMAHON
CHIEF NURSING OFFICER

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Appendix A - WINTER PROGRAMME 2023/24 – SEASONAL FLU AND COVID-19 VACCINATION letter



WINTER PROGRAMME 2023-2

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Scottish Procurement

Scottish Procurement Policy Note

SPPN 01/2017

8 March 2017

Scottish Government
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Implementation of Building Information Modelling within Construction Projects

Purpose

1. The purpose of this policy note is to advise that guidance on the provisions for adopting Building Information Modelling (BIM) has been published.

Key Messages

- Scottish Government and relevant bodies in scope of the Scottish Public Finance Manual[1] must assess their projects for BIM via the BIM Grading Tool[2] for projects above £2,000,000. The public body will then comply with the results of the BIM Grading Tool and should adopt the BIM Guidance for public works contracts commencing procurement procedures[3] from 6th April 2017.
- Scottish Government and relevant bodies in scope of the Scottish Public Finance Manual with projects below £2,000,000, are asked to assess their projects for BIM (via BIM Grading Tool) and where applicable adopt the BIM Guidance into their procedures.
- Other bodies that can award public contracts, and other organisations providing delivery mechanisms for the construction of public buildings and infrastructure, are asked to assess their projects for BIM (via BIM Grading Tool) and where applicable adopt the BIM Guidance into their procedures.

[1] http://www.gov.scot/Topics/Government/Finance/spfm/Intro (section 1; and 7 - 11)
[2] https://bimportal.scottishfuturestrust.org.uk/page/bim-grading-tool
[3] http://www.legislation.gov.uk/ssi/2015/446/made (Reg 2(1) "commenced")

Background

2. The Review of Scottish Public Sector Procurement in Construction[4] recommended that BIM be adopted on Public Sector Projects where appropriate from April 2017.

3. In line with the BIM Implementation Plan for Scotland, Scottish Futures Trust in partnership with Scottish Government have been delivering a programme of works to support the Public Sector in the adoption of BIM.

Rationale

4. BIM uses digital technology to improve the sharing and analysis of data during the construction and operational phase of projects. Improving data management and collaboration within projects will significantly improve efficiency and decision making in projects.

5. The introduction of BIM is a key catalyst to improve efficiencies in public sector infrastructure expenditure and support wider productivity within the construction industry.

6. In delivering a proportionate approach to BIM adoption, the BIM Grading Tool has been developed to allow for a project specific assessment of when and to what level BIM should be implemented for each project. The BIM Grading Tool considers project specific criteria including value and project specific factors.

Guidance

7. The BIM guidance portal translates learning and best practice into a simplified approach to support public bodies implement BIM. This will enable the implementation of BIM under a consistent national approach.

8. The BIM Portal provides three key parts to support the implementation of BIM which includes: -

- When to adopt BIM by means of the BIM Grading Tool
- Why to adopt BIM by means of the BIM Return on Investment Tool

[4] http://www.gov.scot/resource/0043/00436662.pdf

- How to adopt BIM through the new guidance and BIM Navigator.

The BIM Portal, which contains the new guidance, can be accessed at https://bimportal.scottishfuturestrust.org.uk/

Dissemination

9. Please bring this SPPN to the attention of all relevant staff within your field of responsibility to whom it may be of interest.

Contact

10. Any enquiries about this SPPN should be addressed to the BIM enquiry mailbox.

Scottish Procurement and Commercial Directorate,
The Scottish Government,
5 Atlantic Quay,
150 Broomielaw,
Glasgow,
G2 8LU.

National Strategic Facilities Group (NSFG)

Terms of Reference

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v3.0	18/10/23	Change role and remit from RSFG to NSFG and governance arrangements	NSFG	N

Approvals: This document requires the following signed approvals.

Name:	Title	Date:	Version:
Julie Critchley	Chair of NSFG	18 Oct 2023	v3.0
Robert Aitken	On behalf of SFMAG	18 Oct 2023	v3.0
Alan Wilson	On behalf of SETAG	18 Oct 2023	v3.0
Gerry Donald	On behalf of SPAG	18 Oct 2023	v3.0
Lawson Bisset	On behalf of NESG	18 Oct 2023	v3.0

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NSFG members	See appendix 1	24/10/23	v3.0

Linked Documentation:

Document Title:	Document File Path:

1. Official Name of Group
NHSScotland National Strategic Facilities Group (NSFG)
2. Purpose of Group
The purpose of the NSFG will be to provide collaborative leadership, assurance, compliance and vision for Estates and Facilities Services across NHSScotland Boards ensuring that these services remain fit for purpose, identify, and prioritise service risks through workplans and align with National Scottish Government Strategy, Health and Social Care Delivery Plans and Regional Delivery Plans.
3. Role and Remit of Group
The National Strategic Facilities Group is a key collaborative NHSScotland stakeholder group, providing support, professional advice and leadership to NHS Boards, Health and Social Care and SGHSCD on Estates, Facilities and Capital Planning in order to develop a modern NHS estate and healthcare facilities and services of the highest quality for patients and staff. Specifically, the Group will: • Provide professional advice and guidance to NHS Boards and NHSScotland on Estates, Facilities and Capital Planning Procurement matters. • To develop and sustain professionalism and foster a collaborative approach amongst SFG Board members to support the delivery of safe and effective Estates and Facilities services. • Provide a body of influence and professional expertise to Chief Executives, SGHSCD and Health Boards, Health and Social Care Partnerships to ensure that Estates, Facilities and Capital Planning issues are fully considered as key enablers, in the development of healthcare services throughout Scotland. • Identify those Strategic Estates, Facilities and Capital Planning risks which are best addressed nationally on behalf of all Boards. • Oversee projects and programmes of work which will support NHS Boards in improving local service delivery and enable the implementation of National Clinical Strategy, Health and Social Care Delivery Plan and Regional Delivery Plans. • Provide strategic direction for and determine, prioritise and endorse on an annual basis the Terms of Reference and work plans for the four main advisory groups, sub-groups, national programme groups. • Receive annual written performance monitoring reports from the groups to ensure performance against agreed plans and outcomes. • Approve via the attached organisational governance structure all relevant reports and recommendations going to national programme and governance groups, including the Chief Executives' Group. • Ensure a co-ordinated approach to share and spread knowledge and lessons learned relating to issues affecting all NHS Boards. • Seek to raise the standards and operational performance of all NHS Boards to that of the best performing Boards and recognised benchmarks. • Approve, endorse and publish national standards and best practice guidance. • Report and highlight compliance with agreed annual reporting on SCART, FMS, NCIS, EAMS, CPS, FMT and Corporate Green Code systems. • Support the development and maintenance of links with other Public and Private Sector organisations, where necessary requesting attendance and updates on strategic matters at the NSFG meeting. • Identify and agree appropriate representatives for national groups.

- Lead on the professional development, training and education of staff employed in Estates, Facilities and Capital Planning.
- Provide leadership in terms of future service development and workforce planning.
- Work closely with other professional groups in NHSScotland including the National Infrastructure Board, Sustainability & Value Board, National Planning Board and Executive Group, eHealth Leads Group and Directors of Finance Group.

4. Membership

Chair will be the Director of NHSScotland Assure.

Vice Chair will be a Strategic Advisory Group Chair.

Members

The members of the National Strategic Facilities Group Programme Board will be:

1. A nominated Director/Head of Facilities representative from each Health Board
2. Director and Assistant Directors of NHSS Assure
3. Scottish Government representatives
4. 4 x Chairs of SETAG, SFMAG, SPAG and NESG Advisory groups
5. Programme and National Project Leads, Consultants, Health Board and SGHSCD representatives (by invitation when required)

There will be a requirement for all members of the group to identify a suitable deputy to attend a meeting if they are unable to attend themselves.

5. Reporting

There will be four substantive Advisory Groups. (NESG, SETAG, SFMAG, SPAG). All other Subgroups will be accountable to the Advisory Groups. The Chairs of the Advisory Groups and National Programmes will provide a written annual report on progress and outcomes of approved work plans in the first quarter of each financial year, workplans should be presented to NSFG in the final quarter of the FY for the following FY.

The roles of the various Advisory Groups and Sub-Groups will be reviewed annually with the NSFG responsible for approving the Terms of Reference and annual reports and workplans. This will ensure that their objectives remain relevant, and they continue to deliver evidence-based outcomes in support of NHS Boards' and NHSScotland's strategic priorities.

NSFG Agenda and workplans should align with those of the subgroups to ensure a primary governance overview.

Communication

Invites to meetings and NSFG distribution list will be limited to agreed members of NSFG.

A virtual catch-up meeting will be initiated with Advisory Group Chairs and Director / Assistant directors of NHSS Assure bi monthly before formal NSFG meetings to compile and agree agenda input.

Actions and minutes of meetings will be copied in shared by e-mail to all NHSScotland NSFG Members after each meeting.

Following NSFG review and agreement of the annual reports from each Advisory Group, NHSS Assure will draft an NSFG annual report. Once the draft has been formally agreed by NSFG this will be shared with stakeholders for information.

6. Relationship with other Organisations

The NSFG Group will work closely with NHSS Assure, SGHSCD and other bodies as appropriate, to ensure effective stakeholder engagement and best practice, including the promotion of new service initiatives in the field of Estates, Facilities and Capital Planning.

The Group will also seek to develop and maintain links with other UK NHS Health Departments and various healthcare-related professional bodies and institutions, influencing decision-making to reflect

Scottish interests. In particular, links will be maintained with the DoH in England, Northern Ireland Estates and Welsh Health Estates.

7. Meetings

The National Strategic Facilities Group will meet virtually on a scheduled monthly basis, alternating between a formal meetings and informal chairs meetings. There will also be two in person risk-based workshops open to all NHSScotland NSFG members.

The agenda will be made up of topics supplied by the four strategic groups (maximum of two and minimum of one topic per meeting) on items requiring decision making or approval or highlighting risk, with progress reporting on projects and programmes. NHSS Assure will be responsible for providing admin support to the Group and for ensuring all papers for Group meetings are issued at least one week before NSFG meetings.

Standing update from NHSS Assure to update any related national innovation, policy or development issues out with the remit of the Advisory Group workplans.

Standing update from Scottish Government to cover national directives, information and direction.

All meeting papers and agenda topics will need to be supplied to the NHSS Assure secretariat at least seven days before the scheduled meetings. Agenda items for the formal NSFG meetings should be accompanied with a supporting paper.

Risk Based Workshop material will be organised and agreed through the four substantive Advisory Groups. (NESG, SETAG, SFMAG, SPAG).

8. Quorum and Voting

The Quorum will be set at 50% of the total membership of the NSFG.

In the event of a vote on an item, there will be one vote per Board/organisation.

9. Review Process

The terms of reference will be reviewed at least once on an annual basis to ensure that they remain fit for purpose and aligned with the strategic direction.

10. Index of appendices

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2	NSFG Governance Chart
3	NSFG annual meeting and reporting timeline
4	Role and remit of Chair of all NSFG Advisory Groups
5	Role and remit of Deputy Chairs of NSFG Advisory Groups
6	Role and remit of Chair of NSFG subgroups
7	Election process for all NSFG subgroups
8	Role and remit for Mentors for all NSFG subgroups

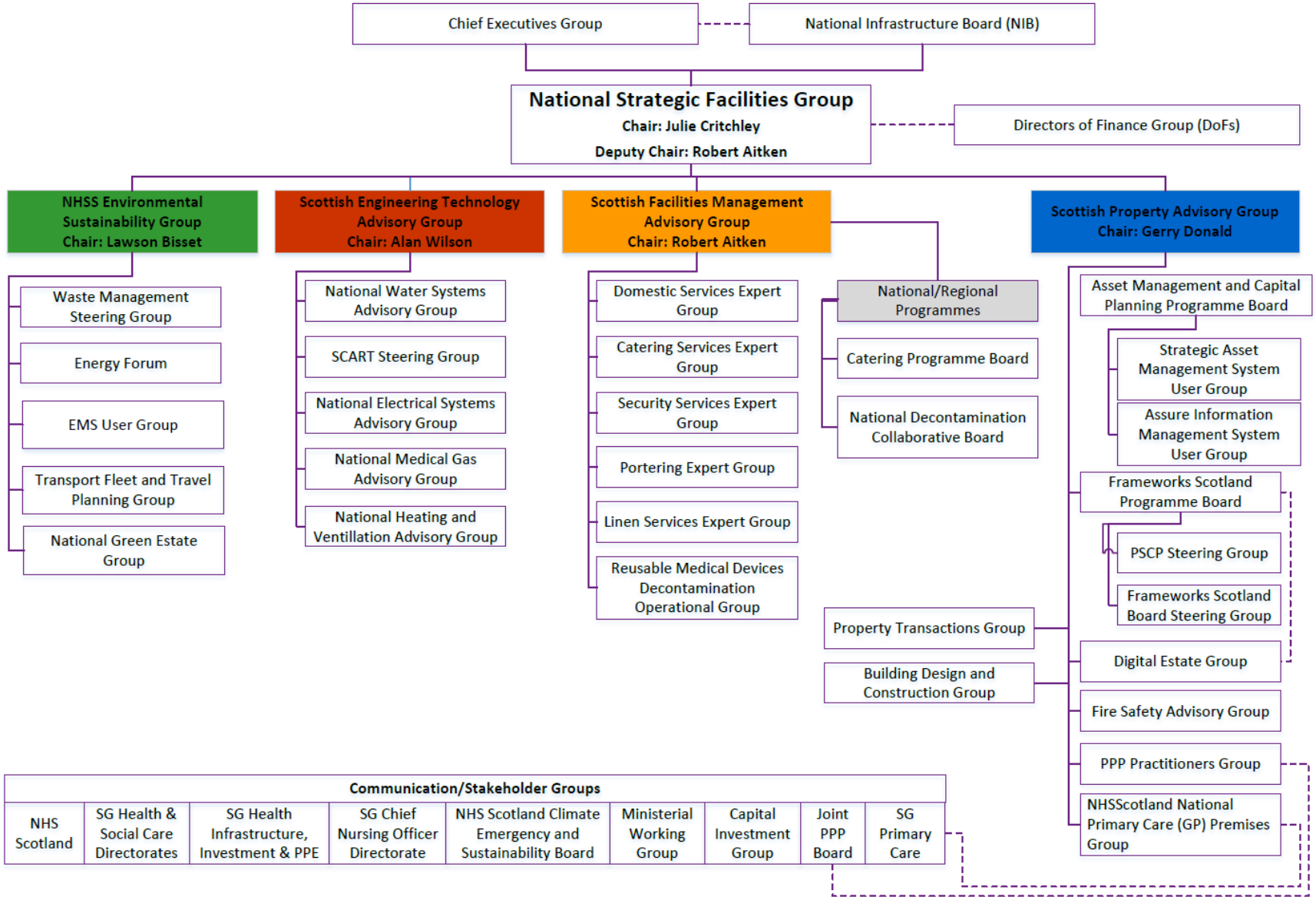
Appendix 1

NSFG Membership (as at October 2023)

NSFG Chair	Julie Critchley
NSFG Deputy Chair and SFMAG Chair	Robert Aitken
SPAG Chair	Gerry Donald
SETAG Chair	Alan Wilson
NESG Chair	Lawson Bisset
NHS Ayrshire and Arran	Helen Gemmell
NHS Borders	Gavin McLaren
NHS Dumfries and Galloway	David Bryson
NHS Fife	Neil McCormick
NHS Forth Valley	Morag Farquhar
NHS Grampian	Paul Allen
NHS Greater Glasgow and Clyde	Billy Hunter
NHS Highland	Alan Wilson
NHS Lanarkshire	Mary Anne Kane
NHS Lothian	Morag Campbell
NHS Orkney	Malcolm Colquhoun
NHS Shetland	Lawson Bisset
NHS Tayside	George Curley
NHS Western Isles	Douglas Mackenzie
Scottish Government	Alan Morrison
National Waiting Times Centre	John Scott
NHS 24	Lynne Kane
NHS Education Scotland	Nicola Todd
NHS Healthcare Improvement Scotland	
NHS National Services Scotland	Stuart Brown
NHS National Services Scotland	John Wright
NHS National Services Scotland	Ian Storrar
NHS National Services Scotland	Geraldine O'Brien
NHS National Services Scotland	Neil Redhead
Scottish Ambulance Service	
The State Hospital	Kenny Andress

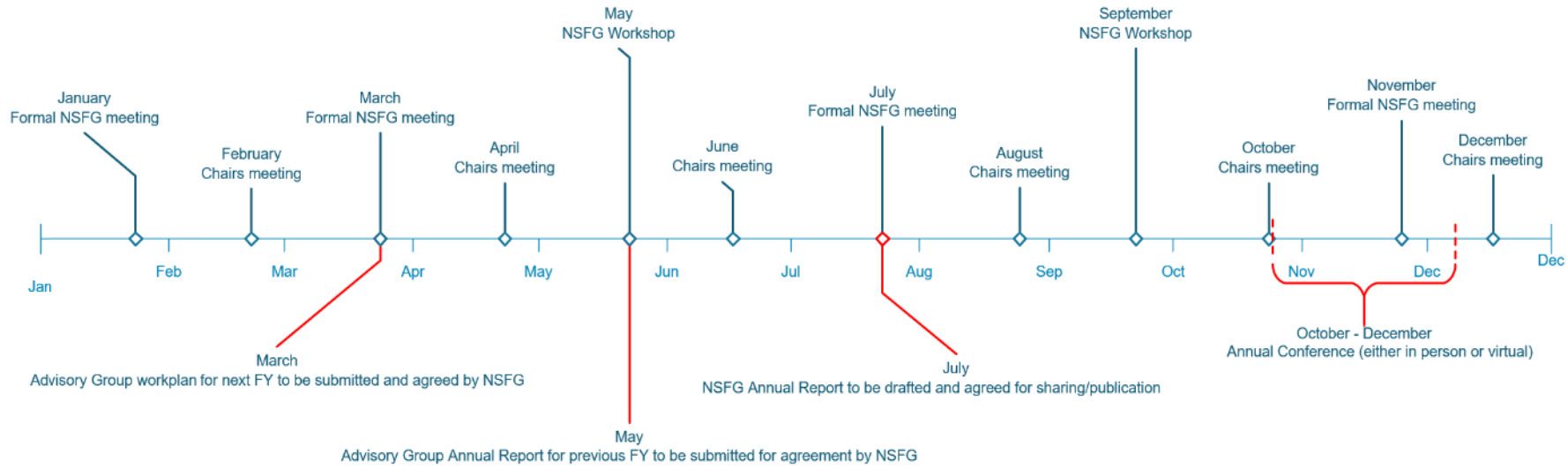
Appendix 2

NSFG Advisory Group Governance Structure (as at October 2023)



Appendix 3

NSFG annual meeting and reporting timeline



Appendix 4

Role and remit of Chair of all NSFG Advisory Groups

The NSFG Advisory Groups are Scottish Property Advisory Group (SPAG), Scottish Engineering Technology Advisory Group (SETAG), Scottish Facilities Management Advisory Group (SFMAG) and NHSScotland Environmental Sustainability Group (NESG).

The role of the Chair of the Advisory Group is to provide professional leadership, assurance, compliance and vision for the services within the remit of the group and its subgroups.

The Chair will become a member of the NSFG for the duration of their term as Chair of the advisory group and will attend NSFG meetings regularly. Each term for an advisory group chair is a maximum of three years after which the group will review and follow the election process below. A chair can serve a maximum of 2 consecutive terms before they must step down and a new chair elected.

The Chair will be responsible, on behalf of the Group, for:

- Ensuring the group Terms of Reference is kept up to date and the group workplan is agreed by NSFG annually.
- Providing an annual risk based workplan for consideration and approval by NSFG.
- Ensuring the group is focused on delivering the agreed workplan, mitigating the prioritised service risks., and reporting to each NSFG meeting on progress and matters requiring a decision or direction.
- Ensure that group meetings are convened regularly (recommended as alternate months)
- Ensure that risk tracking and agenda discussions / updates back to NSFG reporting documentation and alternate chairs meetings are part of the fixed agenda at Advisory Group meetings
- Report group risks and mitigation, annual workplan and progress updates, annual report to NSFG and escalate risks and issues where required.
- Ensure the groups focus remains on delivering the agreed annual workplan but adapting the workplan to incorporate emerging risks and issues as required.
- Share minutes and agendas with all Advisory Groups and any other relevant information.
- Seek and encourage group membership from across all NHSScotland Boards and help to develop the group members knowledge, skills, and expertise.
- Facilitate a culture where all group members are supported and empowered to bring risks and issues from their Board to the group for discussion and assistance.
- Develop and sustain a collaborative approach within the group to support delivery against the agreed workplan.
- Co-opt subject matter experts to the group as and when required.

Election of new chairs for the Advisory Groups should be sought through the membership of that Advisory Group. Nominations from within the group should be sought. Where there is more than one nomination then it should go to a ballot with the nomination with most votes winning the election from within that Advisory Group **(recommendation is that one vote from each board is sought where there are multiple members from boards present)**. The nominated candidate would then go forward to the NSFG for consideration and if NSFG are satisfied with the nomination then endorsement.

*Chairs and Deputy Chairs should each be representing a different NHSScotland Board with additional support from NHSScotland Assure.

Appendix 5

Role and remit of Deputy Chairs of NSFG Advisory Groups

Deputy chairs for both advisory and subgroups will support the Chair in all aspects of the role and remit detailed above and deputise for the Chair as and when required. Additionally, they should engage with and shadow the chair to help develop their knowledge and leadership skills.

Each term for an advisory group deputy chair is a maximum of three years after which the group will review and follow the election process below. A deputy chair can serve a maximum of 2 consecutive terms before they must step down and a new deputy chair elected. Where possible, the election process for the deputy chair should take place at the same time as the Chair. A deputy chair can serve 2 terms and then stand for election as chair if they wish.

Each Advisory Group should select 2 deputy chairs, one elected as a direct support to the chair from group membership and the other will be a representative from NHSScotland Assure. The deputy chair will provide the direct support to the chair and wider group while developing their strategic leadership skills on the national forum. The NHSScotland Assure deputy chair will provide the necessary additional national support and ensure the secretariate for the meeting is in place to draft reports on behalf of the chair and provide direct links with other NHSScotland Assure teams under the remit of the NSFG.

Appendix 6

Role and remit of Chair of NSFG subgroups

The NSFG Advisory Groups are Scottish Property Advisory Group (SPAG), Scottish Engineering Technology Advisory Group (SETAG), Scottish Facilities Management Advisory Group (SFMAG) and NHSScotland Environmental Sustainability Group (NESG). The subgroups are all groups that are governed by and report into these advisory groups.

The role of the Chair is to provide professional leadership, assurance, compliance and vision for the services within the remit of the group.

The Chair will be a member of the governing advisory group and attend meetings regularly. Each term for an advisory group chair is a maximum of three years after which the group will review and follow the election process below. A chair can serve a maximum of 2 consecutive terms before they must step down and a new chair elected.

The Chair will be responsible, on behalf of the Group, for:

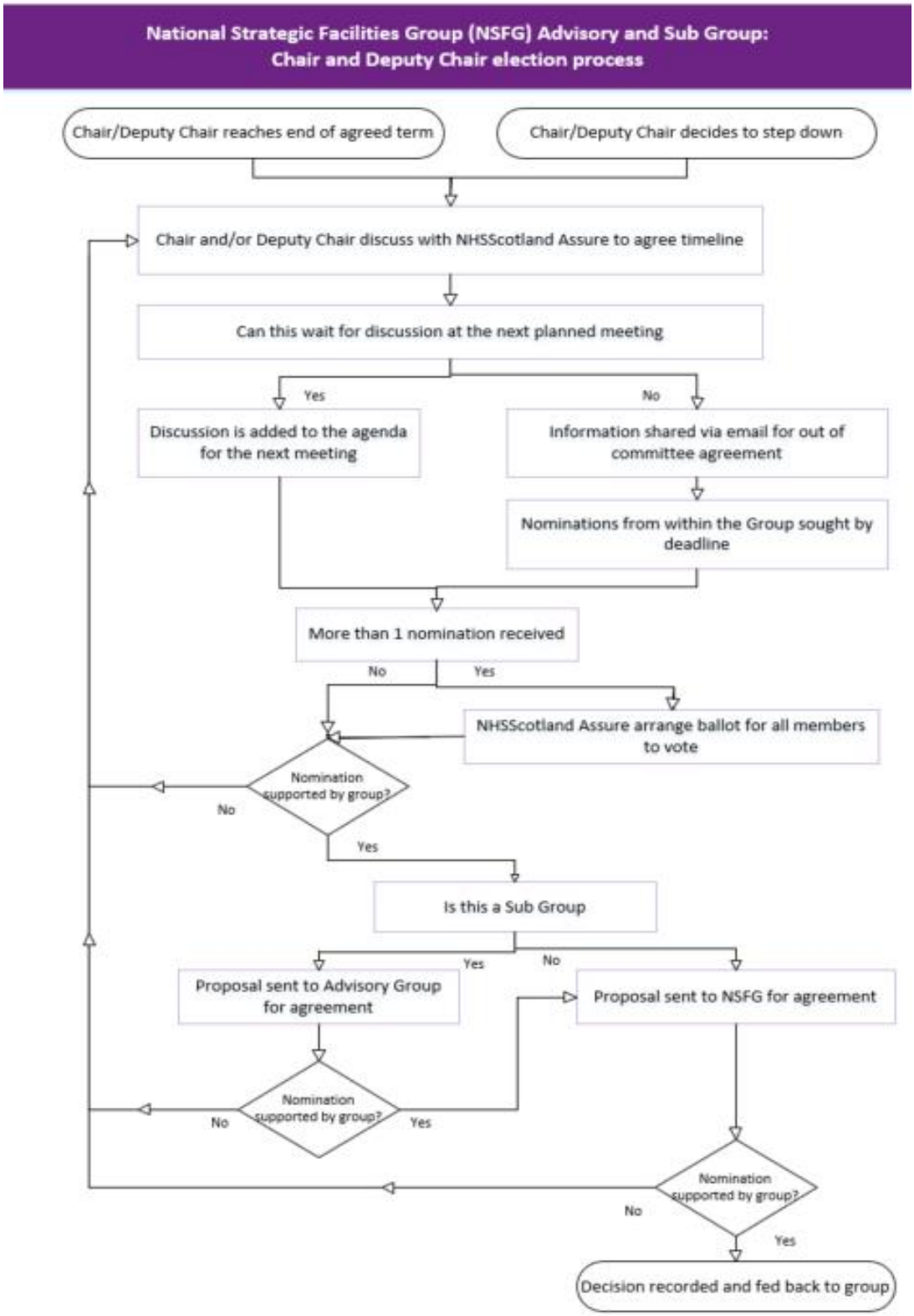
- Ensuring the group Terms of Reference is kept up to date and the group workplan is agreed by NSFG annually.
- Ensuring the groups focus is on delivering the agreed workplan and mitigating the prioritised service risks and align with National Scottish Government Strategy, Health and Social Care Delivery Plans and Regional Delivery Plans.
- Ensure that group meetings are convened regularly and scheduled to allow timely escalation and delegation with Advisory Group.
- Report group risks and mitigation, annual workplan and progress updates, annual report to Advisory Group and escalate risks and issues where required.
- Ensure the groups focus remains on delivering the agreed annual workplan but adapting workplan to incorporate emerging risks and issues as required.
- Share all relevant information from Advisory Groups, NSFG, Scottish Government and NHSScotland Assure where relevant or appropriate with the group.
- Seek and encourage group membership from across all NHSScotland Boards and help to develop the group members knowledge, skills, and expertise.
- Facilitate a culture where all group members are supported and empowered to bring risks and issues from their Board to the group for discussion and assistance.
- Develop and sustain a collaborative approach within the group to support delivery against the agreed workplan.
- Co-opt subject matter experts to the group as and when required.

Election of new chairs for the Subgroups should be sought through the membership of the individual group and nominated candidate notified to the appropriate Advisory Group for endorsement.

Appendix 7

Election process for all NSFG subgroups

When a chair is nearing the end of their term, they should ensure that discussion is held with the group to establish if there are any others interested in taking the role of chair or deputy chair of the group and highlight if they wish to continue or step down from the role where applicable. The chair or deputy chair should also ensure that NSFG are kept informed.



Appendix 8

Role and remit for Mentors for all NSFG subgroups

All subgroups should collaboratively, and collegiality consider their need for a mentor from either the NSFG or a relevant advisory group however this is not mandated.

The primary goal of a mentor is to build sustainable, trusting relationships with the subgroups and support them in delivering the required outputs directed by the advisory group and NSFG.

The role includes:

- Work closely with and support the chair and deputy chair of the subgroup, providing professional leadership, assurance, compliance and vision for the services within the remit of the subgroup as required.
- Regularly attend the subgroup meetings and make themselves available to the group chair when requested.
- Provide advice and guidance to help the group in drafting and delivery of their annual workplan. Ensure the group develop a strategic vision and a focus in driving a once for Scotland approach in all areas of the group workplan and that is aligned with National Scottish Government Strategy.
- Support the chair to develop and update the subgroup risks and provide advice on mitigation and escalation where required.
- Assist chairs to develop and sustain a collaborative approach within the group to support delivery against its agreed workplan.
- Assist chairs to share and spread knowledge and lessons learned relating to issues affecting all NHS Boards and provide advise where information should be shared wider.
- Form a supportive, coaching relationship with the chair and members of the subgroup to ensure a consistent engagement from all members of the group in all tasks and short life working groups which may be required.
- Ensuring a strong group membership with wide representation from across NHSScotland Boards and subject matter experts, from discussions through the advisory group and NSFG.
- Refer the chair and subgroup members to other sources of information, advice, or further support when appropriate.

NHS National Services Scotland

Scottish Health Technical Memorandum 06-01:

Electrical services supply and distribution

Part B: Operational Management

Health Facilities Scotland
Engineering and Environment

July 2015

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Disclaimer

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Preface

About Scottish Health Technical Memoranda

Engineering Scottish Health Technical Memoranda (SHTMs) give comprehensive advice and guidance on the design, installation and operation of specialised building and engineering technology used in the delivery of healthcare.

The focus of SHTM guidance remains on healthcare-specific elements of standards, policies and up-to-date established best practice. They are applicable to new and existing sites, and are for use at various stages during the whole building lifecycle: Healthcare providers have a duty of care to ensure that appropriate engineering governance arrangements are in place and are managed effectively. The Engineering Scottish Health Technical Memorandum series provides best practice engineering standards and policy to enable management of this duty of care.

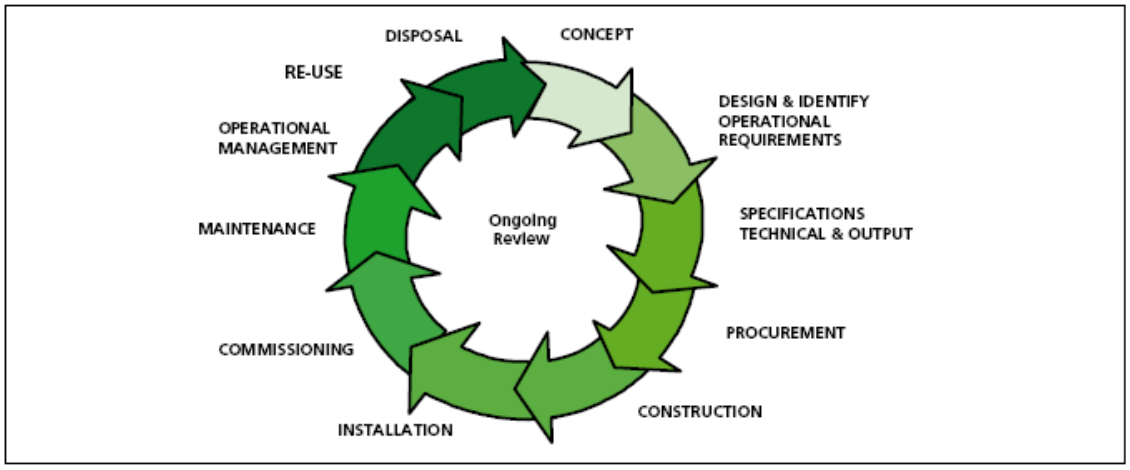
It is not the intention within this suite of documents to repeat unnecessarily international or European standards, industry standards or UK Government legislation. Where appropriate, these will be referenced.

Healthcare-specific technical engineering guidance is a vital tool in the safe and efficient operation of healthcare facilities. Scottish Health Technical Memorandum guidance is the main source of specific healthcare-related guidance for estates and facilities professionals.

The core suite of eight subject areas provides access to guidance which:

- is more streamlined and accessible;
- encapsulates the latest standards and best practice in healthcare engineering;
- provides a structured reference for healthcare engineering.

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Healthcare building life-cycle

Structure of the Scottish Health Technical Memorandum suite

The series of engineering-specific guidance contains a suite of eight core subjects:

Scottish Health Technical Memorandum 00: Policies and principles (applicable to all Scottish Health Technical Memoranda in this series)

Scottish Health Technical Memorandum 01: Decontamination

Scottish Health Technical Memorandum 02: Medical gases

Scottish Health Technical Memorandum 03: Heating and ventilation systems

Scottish Health Technical Memorandum 04: Water systems

Scottish Health Technical Memorandum 05: Reserved for future use

Scottish Health Technical Memorandum 06: Electrical services

Scottish Health Technical Memorandum 07: Environment and sustainability

Scottish Health Technical Memorandum 08: Specialist services

Some subject areas may be further developed into topics shown as -01, -02 etc and further referenced into Parts A, B etc.

Example: Scottish Health Technical Memorandum 06-02 Part A will represent: Electrical safety guidance for low voltage systems

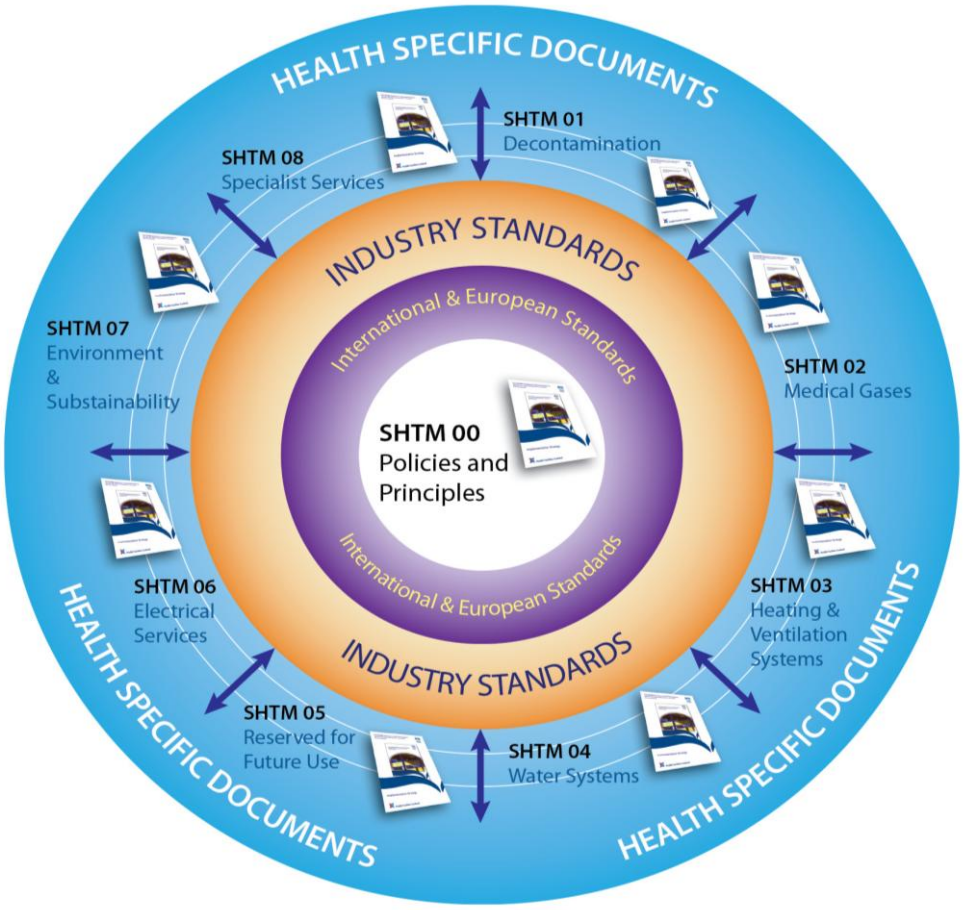
In a similar way Scottish Health Technical Memorandum 07-02 will simply represent: Environment and Sustainability – EnCO_2de.

All Scottish Health Technical Memoranda are supported by the initial document Scottish Health Technical Memorandum 00 which embraces the management and operational policies from previous documents and explores risk management issues.

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Some variation in style and structure is reflected by the topic and approach of the different review working groups.

Health Facilities Scotland wishes to acknowledge the contribution made by professional bodies, engineering consultants, healthcare specialists and NHS staff who have contributed to the review.



Engineering guidance structure

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Executive summary

Scottish Health Technical Memorandum 06-01: 'Electrical services supply and distribution' replaces Scottish Health Technical Memorandum 2007: 'Electrical services supply and distribution' and Scottish Health Technical Memorandum 2011: 'Emergency electrical services', and absorbs Scottish Health Technical Memorandum 2014: 'Abatement of electrical interference'.

This part (Part B) provides guidance for all works on the fixed wiring and integral electrical equipment used for electrical services within healthcare premises. Specifically, it considers the operational management and maintenance requirements for hard-wired electrical systems and fixed power plant.

The document is suitable for use with all forms of electrical maintenance work ranging from testing of plant, such as generators, to the periodic testing and inspection of the electrical network(s) and final circuits.

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1. Scope of Scottish Health Technical Memorandum 06-01

1.1 Scottish Health Technical Memorandum 06-01: 'Electrical services supply and distribution' replaces Scottish Health Technical Memorandum 2007: 'Electrical services supply and distribution' and Scottish Health Technical Memorandum 2011: 'Emergency electrical services', and absorbs Scottish Health Technical Memorandum 2014: 'Abatement of electrical interference'.

1.2 This part (Part B) provides guidance for all works on the fixed wiring and integral electrical equipment used for electrical services within healthcare premises. The document is suitable for use with all forms of electrical maintenance work ranging from testing of plant, such as generators, to the periodic testing and inspection of the electrical network(s) and final circuits.

1.3 It describes the maintenance requirements rather than the actual maintenance. The document follows, as far as practical, the format of Part A.

1.4 The provision of electrical services in healthcare premises is a management responsibility at both new and existing sites. This guidance is equally applicable to premises that offer healthcare services under the Registered Homes Act 1984.

1.5 The document provides healthcare premises managers with guidance on the European and British Standards for Electrical Safety, such as the IEE Regulations BS7671, the Building (Scotland) Regulations, and the Electricity at Work Regulations. Healthcare premises managers may be able to fulfil their duty of care in relation to the Health and Safety at Work etc Act by adopting the recommendations of this document.

1.6 Scottish Health Technical Memorandum 06-01 Part B is written in a similar format to Scottish Health Technical Memorandum 06-01 Part A; therefore the maintenance tasks for each part of the fixed wiring are organised in the same way.

1.7 This Scottish Health Technical Memorandum recommends that designers and stakeholders review this part of Scottish Health Technical Memorandum 06-01 during the design process such that they may be more aware of the maintenance activities required.

Abbreviations

ac: alternating current

BEMS: building & energy management system

BS: British Standard(s)

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CIBSE: Chartered Institution of Building Services Engineers

CHP: combined heat and power

CO_2: carbon dioxide

CPC: circuit protective conductor

CT: current transformer

DB: distribution board

dc: direct current

Designer: a person (or organisation) with the responsibility to provide electrical design support such that the electrical services are technically correct, safe and fit for purpose. The designer need not be a direct employee of the healthcare premises or Health Board.

DNO: distribution network operator

DVM: digital voltmeter

EMC: electromagnetic compatibility

EMI: electromagnetic interference

ERB: earth reference bar

ESD: electrostatic discharge

HV: high voltage

HVAC: heating, ventilation and air-conditioning

IEE: Institute of Electrical Engineers (as in “IEE Regulations”)

IET: Institution of Engineering & Technology

IEC: International Electrotechnical Commission

IMD: insulation monitoring device

IV: intravenous

IPS: isolated power supplies

ISO: International Standards Organisation

ISS: intake substation

LPS: lightning protection system

LV: low voltage

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MCB: miniature circuit breaker

MCC: motor control centre

MCCB: moulded case circuit breaker

MD: maximum demand

MEIGaN: Medical Electrical and Installation Guidance Notes

MET: main earth terminal

NHS: National Health Service

OCB: oil circuit breaker

Operational and estates manager: a manager responsible for the operational safety of the electrical services at the healthcare premises. The operational and estates manager need not be a direct employee of the Health Board.

PE: physical earth

PEC: protective earth conductor

PEI: primary electrical infrastructure

PELV: protective extra low voltage

PES: public electrical supply

PET: protective earth terminal

PF: power factor

PFC: power factor correction

PSCC: prospective short-circuit current

PV: photovoltaic cell

RCBO: residual current breaker with overcurrent

RCD: residual current device

SCADA: supervisory control and data acquisition

SELV: separated extra-low voltage

SF_6: sulphur hexafluoride

SI: Système Internationale

SP & N: single phase and neutral

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Stakeholder: a person (or organisation) with vested interests (not necessary pecuniary) for the electrical services quality and provisions at healthcare premises. The stakeholder will normally be an employee of the healthcare premises or Health Board.

UPS: uninterruptible power supply

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2. Definitions

2.1 The aim of this document is to assist stakeholders and managers of healthcare premises to develop the concept of “electrical operational procedures” and “electrical maintenance requirements”.

2.2 Healthcare facility managers should appoint managers with a duty to comply with the requirements of the Electricity at Work Act.

2.3 All forms of electrical operation procedures and maintenance tasks should adhere to the recommendations given in Scottish Health Technical Memorandum 06-02: ‘Electrical safety guidance for low voltage systems’ and Scottish Health Technical Memorandum 06-03: ‘Electrical safety guidance for high voltage systems’. Designers and stakeholders should read these documents when designing electrical network(s).

2.4 To avoid repetition, the following definitions will apply to all parts of the electrical fixed wiring system within healthcare premises. The various chapters correspond to the respective sections of the maintenance of the fixed wiring system.

Non-intrusive visual inspection

2.5 The non-intrusive visual-inspection maintenance tasks will include the regular visual inspection of the electrical plant and/or distribution service. Visual inspection should not require the removal of any housing or the isolation (disconnection) of the plant or services. In general, maintenance of this type will ensure that there has been no obvious damage since the last maintenance visit. The skill level for maintenance tasks of this type will be at a minimum related to the respective electrical plant or part of the electrical distribution system.

2.6 Non-intrusive visual-inspection maintenance tasks should be frequent (“frequency” in this document is given in terms of time between successive tasks).

2.7 Maintenance programmes for non-intrusive visual-inspection maintenance tasks may include the issue of a “limitation of access” document (see paragraph 2.30). However, there should not be a need to raise any other “permit to work/permit to test” document (see paragraph 2.29; see also Scottish Health Technical Memorandum 06-02: ‘Electrical safety guidance for low voltage systems’).

Non-intrusive functional tests

2.8 The non-intrusive functional-test maintenance tasks will include the routine operational checks of the electrical plant and/or distribution service. The routine operational checks should not require the removal of any housing, but may

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require the momentary isolation (disconnection) of the plant or services. Non-intrusive functional tests ensure that the plant and safety devices operate in the required way. The skill level for non-intrusive functional-test maintenance tasks will be minimal related to the respective electrical plant or part of the electrical distribution system.

2.9 Maintenance tasks of non-intrusive functional tests should be of occasional frequency.

2.10 Maintenance programmes for non-intrusive functional-test maintenance tasks may include the issue of a limitation-of-access document. Depending on the actual tasks, the issue of a permit-to-work/sanction-for-test document may be a more appropriate document. Where the non-intrusive functional tests require the short-term isolation (disconnection) of a service (with no resilient connection), a “permission for disconnection/interruption of electrical services” should be issued (see Scottish Health Technical Memorandum 06-02: ‘Electrical safety guidance for low voltage systems’).

Consumable services

2.11 Consumable-service maintenance tasks will include the servicing of the electrical plant and/or distribution service required to ensure that such items and systems operate in the most efficient way. The service checks may require the removal of housing and the isolation (disconnection) of the plant or services. The skills required to affect the consumable service of electrical plant will require formal training related to the respective electrical plant or part of the electrical distribution system.

2.12 Consumable-service maintenance tasks should be of occasional frequency.

2.13 Maintenance programmes for consumable services might require the issue of a permit-to-work/permit-to-test document. Where the consumable services require the short-term isolation (disconnection) of a service (with no resilient connection), a permission for disconnection/interruption of electrical services should be issued (see Scottish Health Technical Memorandum 06-02: ‘Electrical safety guidance for low voltage systems’).

Full services

2.14 Full-service maintenance tasks will include the servicing of the electrical plant and/or distribution service required to ensure that the electrical plant and/or electrical distribution system may operate in the most efficient and safe way. The service checks may require the removal of housing and the isolation (disconnection) of plant or services. The skills required to affect full service will require detailed formal training related to the respective electrical plant or part of the electrical distribution system.

2.15 Full-service maintenance tasks should be of occasional frequency.

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2.16 Maintenance programmes for full services might require the issue of a permit-to-work/sanction-for-test document. Where the full servicing requires the short-term isolation (disconnection) of a service (with no resilient connection), a permission for disconnection/interruption of electrical services should be issued (see Scottish Health Technical Memorandum 06-02: 'Electrical safety guidance for low voltage systems').

Planned preventive maintenance

2.17 Set maintenance frequencies should be identified for each part of the electrical distribution and plant; they should be used to implement routine maintenance regimes. The typical ranges are:

- daily;
- weekly;
- monthly;
- six-weekly;
- six-monthly; and
- annually.

Maintenance tasks of least frequency will include all tasks that are more frequent. For example, the six-monthly maintenance tasks will include the six-monthly maintenance tasks, the six-weekly maintenance tasks and the weekly maintenance tasks for the same equipment or system. The maintenance tasks might be grouped as non-intrusive visual inspection, non-intrusive functional tests, consumable services and full services, as described above.

2.18 Planned preventive maintenance programmes should be designed to minimise the opportunity for failure of electrical plant and/or electrical distribution systems.

Condition-based maintenance

2.19 Condition-based maintenance requires the monitoring of the electrical plant, equipment and electrical distribution system. Maintenance records should be maintained so that comparisons can be made between the collected information and any historical data of the generic family of electrical plant and distribution system. Where the measured values fall to a preset tolerance value, corrective maintenance tasks should be initiated (see paragraph 2.25). Where the measured value continues to fall (due to the non-completion of the task), operational and estates managers should ensure more urgent attention to maintenance requirements.

2.20 Condition-based maintenance regimes should include predetermined tolerance values, designed to minimise the opportunity for failure of electrical plant and/or electrical distribution systems.

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Failure maintenance

2.21 Failure maintenance is not a structured maintenance regime. Electrical plant and electrical distribution systems may continue to operate until a fault or failure causes their isolation. This maintenance strategy may be appropriate for items such as lamp-replacement maintenance where there is more than one fitting in the room. However, lamp maintenance strategies are outside the scope of this document.

2.22 This form of maintenance has no place within the fixed wiring system and electrical plant of a healthcare facility, and therefore is not covered any further in this Scottish Health Technical Memorandum.

2.23 Operational and estates managers should ensure that there are adequate measures in place for an appropriate response to such failures to meet the operational requirements of the facility. This entails establishing a fault category to aid the management of response.

2.24 Categories suggested may include immediate, urgent, same-day, next-day and general response. The initial response to a failure should not exceed 48 hours. The categories could relate to the clinical risk categories 1–5 identified in Scottish Health Technical Memorandum 06-01 Part A. The level of spare parts held should be adequate to avoid system downtimes exceeding one week. Improvements in the resilience of the electrical infrastructure may offset the level of spares held.

Corrective maintenance

2.25 Corrective maintenance of the fixed wiring systems and electrical plant includes any additional maintenance activities identified by any of the above service visits.

Frequent maintenance

2.26 Frequent maintenance will include any non-intrusive visual inspection or non-intrusive functional tests and, consequently, will require immediate or permanent access. The frequency of the maintenance will depend on the electrical plant and/or part of the electrical infrastructure. However, the frequency is likely to range between daily and six-weekly intervals.

Occasional maintenance

2.27 Occasional maintenance will include any consumable-service maintenance, and consequently access for maintenance should be readily achievable. Access may be by the opening of an unobstructed switchroom door or switchpanel door, but should not require the need to dismantle any building fabric or engineering services. The frequency of the maintenance service will depend on the electrical plant and/or part of the electrical infrastructure. However, the

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frequency is likely to range between six-weekly and yearly intervals.

Infrequent maintenance

2.28 Infrequent maintenance will include any full-service maintenance or plant replacement and, consequently, access for maintenance should be readily achievable. Access may be by the opening of an unobstructed switchroom door or switchpanel door, but should not require the need to dismantle any building fabric or engineering services. However, where the infrequent maintenance is for the replacement of plant or distribution cables etc, consideration may be given to the dismantling of specific soft-constructed building-fabric sections. The frequency of any infrequent maintenance is likely to range between six-monthly and yearly, or possibly greater, intervals.

Permit-to-work and limitation-of-access

2.29 The fixed wiring and electrical plant within any healthcare premises must prevent the risk of injury and/or danger. The only acceptable way of achieving this high standard will be the adoption of a permit-to-work system.

2.30 In addition, the control of access to specified areas must be regulated by a limitation-of-access system. These two standard procedures are procedures recognised by the Department of Health. The procedures are included in Scottish Health Technical Memorandum 06-02: 'Electrical safety guidance for low voltage systems'.

Service/test/record documentation

2.31 Estate management staff should maintain countersigned records of all maintenance tasks and servicing activities on any part of the fixed wiring or plant.

2.32 In some cases, the service record may form part of an insurance inspection or similar mandatory requirement. Examples might include the standard electrical test sheets referred to in Appendix 2 of Scottish Health Technical Memorandum 06-01 Part A.

2.33 Maintenance software applications or similar database applications should record any maintenance test information. Where any part of the maintenance regime includes a computerised planned maintenance system, the software may include facilities to generate maintenance test record sheets.

2.34 The essential part of any maintenance record keeping is to list out all the activities required at any particular service inspection visit and indicate the tasks that were successfully completed.

2.35 The service records should be kept either in a service logbook relating to the maintained item, or in the building logbook (see Section 17 of Scottish Health Technical Memorandum 06-01 Part A).

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3. Understanding risk and ownership

3.1 This section deals with the assessment of risk and the need to ensure that the operational-management and maintenance regimes of the primary electrical infrastructure (PEI) adequately protect the end-user and, in particular, patients, from electrical faults and failures. The healthcare organisation's management should set up a multidisciplinary team to evaluate the risk and maintenance requirements. This multidisciplinary team should include designers, stakeholders, clinicians and end-users. Suitably qualified staff should be designated to identify and advise on manufacturers' technical specifications and the legal requirements of the Health and Safety at Work etc Act 1974.

3.2 Scottish Health Technical Memorandum 06-01 Part A identifies clinical and business continuity risks according to the type of healthcare therapy and associated plant and services. It also identifies appropriate electrical distribution strategies based on resilience that minimises the effect of electrical failures. The operational and maintenance strategies should complement the guidance given in Scottish Health Technical Memorandum 06-01 in order to maintain a minimal risk to end-users and, in particular, patients, from electrical failures.

Note 1: Figure 6 in Scottish Health Technical Memorandum 06-01 Part A shows the five clinical risk categories, Figure 7 shows the four non-clinical and business-continuity risk categories. Part A provides details for various electrical infrastructure and distribution strategies based on the type of healthcare premises and associated clinical, non-clinical and business-continuity risk. The strategies provided may vary according to the degree of resilience from a unified system, segregated system to a dual-unified fully resilient infrastructure.

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4. Operational and maintenance strategy

4.1 This Scottish Health Technical Memorandum considers electrical operational management and maintenance requirements for the hard-wired electrical systems and fixed power plant at voltages up to and including high voltage (11kV). When considering the operational and maintenance strategy for the electrical network(s) within the healthcare premises, it is essential to take a holistic approach.

4.2 The electrical system may include HV as well as LV distribution networks depending on the size of the healthcare premises. The operation and maintenance of the electrical systems should prevent the risk of injury and/or danger.

4.3 There are essentially two strategies for the operational management and maintenance of electrical services at a healthcare facility:

- planned maintenance; and
- condition-based maintenance.

These strategies are defined in Section 2. The maintenance regime should minimise the opportunity for failure of the electrical services. The electrical service may fail due to a supply failure, an electrical fault, accidental damage of electrical accessories or unauthorised interference with the electrical systems. Scottish Health Technical Memorandum 06-01 Part A provides the management guidance for these issues. Scottish Health Technical Memorandum 06-02 – 'Electrical safety guidance for low voltage systems' provides details on how to ensure that electrical systems are operated in a safe manner and, hence, minimise the opportunity for failure. Guidance on organising maintenance activities on the fixed electrical wiring or electrical plant is summarised in Tables 1–3 of Scottish Health Technical Memorandum 06-02.

4.4 The electrical plant and electrical distribution infrastructure might degrade to a point of failure unless suitable maintenance regimes exist. Maintenance strategies should be evaluated with the distribution strategy and clinical risks.

Planned preventive maintenance

4.5 See paragraphs 2.17–2.18 for a definition of planned preventative maintenance.

4.6 Effective planned preventive maintenance regimes should minimise the opportunity for the electrical plant and or distribution systems to degrade into a faulty status. Therefore, operational and estates managers may wish to consider planned preventive maintenance where the electrical infrastructure does not have a high resilience.

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Condition-based maintenance

4.7 See paragraphs 2.19–2.20 for a definition of condition-based maintenance.

4.8 Effective condition-based maintenance regimes should minimise the maintenance workload by only initiating maintenance when it is actually required. However, the electrical service might fail or degrade at an unexpected rate and hence cause an interruption to the electrical supply at the final circuit point of connection. Condition-based maintenance programmes are most appropriate where the electrical infrastructure has high resilience.

Coordinated maintenance and business hours

4.9 Where maintenance tasks require electrical plant and/or part of the electrical services to be isolated and there are no duplicated provisions, a degree of inconvenience to patients and/or end-users might be inevitable.

4.10 Where the electrical infrastructure does not have an appropriate degree of resilience, maintenance tasks should be arranged outside normal business hours. Where the electrical infrastructure has a degree of resilience, there are more opportunities to implement maintenance regimes without the inconvenience to patient services or services to staff and visitors.

Operational and maintenance policy

4.11 Detailed planning and organisation of the maintenance regimes will be required where the operation of electrical equipment and the continued electrical supply are vital to the continued function of the healthcare facility's risk category areas (see Scottish Health Technical Memorandum 06-01 Part A and Section 3 of this document). Designers of electrical systems should be made aware of the maintenance requirements and provide suitable redundancy. An operational and maintenance policy should be adopted, based on a suitable programme from the above maintenance strategies. The operational and maintenance policy should be reviewed and updated every five years or as significant changes take place.

Spares and tools

4.12 Estates departments should consider the range of spares and tools needed, and should consult with manufacturers for their recommendations of spare parts for the fixed wiring and electrical plant. The range of spares held should reflect the particular clinical risk and business continuity risk of the healthcare facility (see Scottish Health Technical Memorandum 06-01 Part A). Where the electrical infrastructure does not provide a high level of resilience (that is, a single unified distribution), a greater range and volume of spares might be considered.

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4.13 Operational and estates managers should ensure that designers and installers standardise on a limited range of electrical plant types such that the overall volume of spares may be kept as small as practicable.

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5. Switchgear and protection

5.1 All inspections and tests involving switching devices must be performed in a manner that does not cause injury or danger to the maintenance operator and/or end-users.

5.2 All switchgear and protection maintenance tasks should be arranged as planned preventive maintenance. For maintenance planning purposes, it is important to demonstrate and confirm that the original commissioning tests are repeatable, and at the same time examine the switching device for indication of wear in contacts and slackness in moving and rolling linkages.

5.3 The manufacturers' operational and maintenance switchgear and protection manuals should be adopted as far as is reasonably practical. The guidance here is only intended to supplement the manufacturers' data or provide a guide where a broader understanding is required.

Non-intrusive visual inspection

High-voltage switchgear and protection

5.4 Maintenance tasks should include non-intrusive visual inspection of any HV switchgear and protection systems as an occasional maintenance with frequency not exceeding six-monthly intervals.

5.5 The non-intrusive visual inspection should include the checks for leakage of coolants, lubricants, the status of all instrumentation, and general tidiness of the switchroom. The non-intrusive visual inspection should include a visual check that no devices have tripped and/or no fault passage indicators are in the alarm condition.

5.6 A limitation-of-access document should be raised for any non-intrusive visual inspection of the HV switchgear and protection systems.

5.7 Thermal imaging equipment is a useful supplementary method for understanding the condition of HV switchgear and protection systems.

5.8 Non-intrusive visual inspection may be achieved with the use of infrared photography, which will show any local high-resistant hot spots, without opening the switchgear etc.

5.9 A limitation-of-access document should be raised for any non-intrusive visual-inspection maintenance of the HV switchgear and protection system.

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Transformers

5.10 Maintenance tasks should include non-intrusive visual inspection of any transformer as occasional maintenance with frequency not exceeding yearly intervals. The inspection should include checks for coolant and lubricant leakages, and general tidiness of the transformer enclosure. The inspection should also include a visual check of the cable-termination gland boxes, the cleaning of the transformer room/enclosure, and verification that any ventilation system is clear and tidy.

5.11 HV cable boxes should be inspected for indication of any deterioration in the terminations and bushings. Checks for any signs of oil or liquid penetration from the tank, or ingress from the environment, should be made.

5.12 LV cable boxes should be inspected for loosening of any multi-lug terminations. Checks for any signs of overheating or external ingress of tank oil or water should be made.

5.13 Cleaning of external insulators, the painting of the transformer tank and cooling fins, and checking the accuracy of temperature gauges and alarms should be undertaken. These activities should be the subject of Permit to Work procedures since the tasks comprise more than basic non-intrusive visual inspections.

5.14 The accuracy of sealed tank pressure gauges and pressure relief diaphragm, where fitted, should be checked to manufacturers' instructions.

5.15 A limitation-of-access document should be raised for any non-intrusive visual inspection of transformers.

Low-voltage switchgear and protection

5.16 Maintenance tasks should include non-intrusive visual inspection of any LV switchgear and protection as frequent maintenance with frequency not exceeding six-monthly intervals.

5.17 The inspection should include checks for coolant and lubricant leakages, the status of all instrumentation, and general tidiness of the switchroom.

5.18 A limitation-of-access document should be raised for any non-intrusive visual inspection of transformers.

Full services

High-voltage switchgear and protection

5.19 Planned maintenance should include a full examination of the breaker main and arc contacts and, for vacuum interrupter or SF_6, the chambers and indications. The setting and movement of all circuit-breaker actuating linkages using the "slow close" lever should be measured where the manufacturer gives guidance.

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5.20 Secondary injection tests to verify the integrity of protection should be carried out at regular intervals. The frequency of this test is dependent on the number of breaker operations and the environment. A maximum time limit should be decided on, beyond which the breaker protection should be comprehensively inspected and tested. This should be annually or, in special circumstances, more frequently. The frequency should not be arbitrarily decided on the basis of human resources. Plant history, wider experience of other similar installations, and the manufacturer's guidance on protection should be the criteria.

5.21 When circuit breakers have been out of service for an extended period, the protection/alarms should be proof-checked, with the breaker in the isolated position, before returning to service. This may be done by special test-injection push buttons or by manual operation of the relay or contacts. This will demonstrate the function of the trip circuit connections to the circuit-breaker mechanism.

5.22 Trip-circuit-faulty supervision alarm checks should be made frequently at the circuit breaker or switchboard push-button if provided.

5.23 When applying a circuit earth through an oil circuit breaker (OCB), the circuit-breaker close operation should be initiated from the remote-control station where possible.

5.24 Vacuum circuit breakers are generally expected to give long periods of maintenance-free operation. The vacuum interrupter can be expected to give between 10,000 and 50,000 operating cycles. The longevity of the interrupter will depend on the individual contact wear. A pointer mounted on the interrupter's frame will indicate an approximate maximum distance (mm) as advised by the manufacturer. The vacuum space in an interrupter may fail for a number of reasons (such as a leak, a hole, evaporation of gases from internal metal components or release of gas from high vapour pressure contaminants).

5.25 Transient overvoltage arrestor protection should be fitted at the terminations of HV inductive equipment that are switched by vacuum-interrupter circuit breakers.

5.26 SF_6 circuit breakers are expected to give long periods of maintenance-free operation. The SF_6 contactor chamber can be expected to give an operational life equivalent to the vacuum circuit breaker. The pressure of the chamber may be lost due to leaks. This can be monitored by a pressure-sensing and lockout alarm or gauge as required. The circuit breaker can operate, in emergency, in an SF_6 atmospheric gas pressure.

5.27 The general maintenance of an OCB involves protection relay testing, examination of operating linkages and terminations of control circuits, and operation of cubicle busbar shutters and sliding/plug-in contacts, similar to other circuit breakers.

5.28 Where OCBs are subject to regular routine operational switching, periodic examination samples of the tank oil quality should be tested to ensure that the quality standard of insulation is equal to BS148: 1998.

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5.29 Any circuit breaker operation due to system fault should be determined immediately after the incident. The main contacts of the OCB should be examined and replaced if damaged, and the tank's oil tested and replaced if necessary. All residues of the contaminated oil should be removed by wet suction methods.

5.30 To protect the switchroom floor, a temporary absorbent covering should cover the working area. Maintenance staff should be provided with suitable protective clothing and footwear and be restricted from wearing their working footwear outside the area.

5.31 Thermal-imaging equipment is a useful method for understanding the condition of HV switchgear and protection systems.

5.32 A permit-to-work document should be raised for any full-service maintenance of the HV switchgear and protection systems.

5.33 Depending on the type of HV distribution strategy (see Scottish Health Technical Memorandum 06-01 Part A), a "permission for disconnection/interruption of electrical services" document should be raised for any full-service maintenance of the HV switchgear and protection systems

Transformers

5.34 The routine operational procedures for transformers are limited to HV and LV circuit operations.

5.35 It is important to place transformers into the correct load centre of the site to provide the minimum voltage drop in the distribution cables.

5.36 Off-load tap change selection, when required, to adjust LV level. Off-load tap changing is achieved by moving the positions of the HV winding three-phase links to different stud positions for the voltage ratio as indicated.

5.37 Taking routine oil samples from conservator-type transformers, the inspection of tanks for oil leaks, the regular recording of temperature and tank vapour pressure indications, oil levels and dryer crystal appearance should all be undertaken.

5.38 Routine insulation resistance (IR) checks of HV and LV windings would usually include the LV and HV cables. The values of IR should be kept on record as an indicator of any changes in the integrity of the insulation. IR values of both cold and hot windings should be recorded.

5.39 Measurements of the continuity of the earth protective conductor should be taken.

5.40 Thermal-imaging equipment may provide a convenient method to understand the condition of the transformers.

5.41 A permit-to-work document should be raised for any full-service maintenance of any transformer.

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5.42 Depending on the type of HV distribution strategy, a “permission for disconnection/interruption of electrical services” document should be raised for the full-service maintenance of any transformer.

Low-voltage switchgear and protection

5.43 The routine maintenance programme should include tests on the protection relays, auxiliary relays, timer relays, coils, terminations and linkages forming the open/close mechanism and busbar shutter mechanisms and sliding/plug contacts.

5.44 The main contacts and auxiliary contacts mounted on the mechanism should be routinely inspected for misalignment, contact wear, burning and spring tension. Arc chutes should be kept clear of debris, and metal plates cleared or replaced as necessary.

5.45 Contactors operate at higher current ratings than motor starters. It is not required to interrupt fault capacity currents. The range of operation of contactors is within the overload range of the electrical equipment installed in the system circuit.

5.46 The following tasks should be carried out:

- the basic inspections will be similar to those of the motor starter. It is not expected that a test facility will be available on the isolator. The contactor may be withdrawn from its cubicle or have more cubicle space for inspection;
- care must be exercised to isolate the contactor mechanism from the switching cubicle’s incoming and outgoing circuits;
- the main, arcing and control circuit contacts linked to the contactor should be periodically inspected for alignment, erosion and burning;
- indication, alarm and control lamps should be checked regularly by a lamp test, operating push-button or by replacement.

5.47 The following maintenance checks should be carried out:

- maintenance checks and tests should be based on the commissioning document’s functional and protection tests;
- main contacts, arcing contacts and auxiliary contacts should be replaced where wear or erosion is significant and contact alignment reset;
- main contactor and relay coils should be checked for pull-in and dropout voltages, and latching contactors for trip operation by reduction of the initiating control voltage;
- operating time sequence of timing relays should be checked;
- terminal block connections should be checked for tightness, and conductor crimps inspected for breakage or looseness;

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- all fuse links should be examined for signs of overheating at the contacts, and current ratings confirmed;
- the operation of motor starters should be checked at regular intervals in addition to the planned maintenance routines, especially where repetitive stop/start operations are made.

5.48 The following tasks should be carried out:

- small direct online starters equipped with basic stop/start controls will result in the operation of the electric motor when the controls are tested. Electric motors should be prevented from starting by operating an isolating switch or disconnecting link box at or near the motor;
- in motor control cubicles, the arrangement of starter controls is often simplified for off-load tests. The starter main on/off isolator has a third “test” position, where the power supply is isolated but the control and alarm supplies remain on. The starter-door-closed interlock will also be released and the starter cubicle door may then be opened. Control tests can be carried out at the starter local control start/stop and reset push-buttons depending on the selection of the “remote/local/auto” control selection switch as follows:
  - confirm the operation of the stop, running and reset push-buttons for overload trip/ reset and control indication lamps and alarms in the three modes of control;
  - confirm the operation of emergency stop push-button;
  - operate and reset the thermal overload at the starter overload trip relay button;
  - close alignment of the three-phase main contacts, arcing contacts and any auxiliary contacts, using a moving-coil analogue meter, measured at the control terminal blocks.

5.49 Fuse-switches and isolators should be inspected annually as follows:

- the open and close action from the operating lever should be smooth and the spring recoil rapid;
- the operation of the spring recoil should be effective in opening or closing before the lever arc movement has passed the half travel point;
- the cubicle door should not be able to open until the switch is in the open position;
- the bolts and set-screws should be tight in the mechanism and the insulation should be free of defect or damage;
- moving blade surfaces and fixed contacts should be free of metal erosion or burning;
- the isolator or fuse-switch moving contacts should make and break simultaneously with the fixed contacts when closing and opening.

5.50 Fuse links should be inspected annually as follows:

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- the rating and rupturing capacity of all fuse links should be clearly shown on a circuit list stored in, or labelled onto, the door of the distribution board (DB) or enclosure.
- any work on exposed fuse-holder contacts should only be done with the incomer supply isolated.

5.51 Fuse-holders should be inspected annually as follows:

- the fuse-holder should be identified by the circuit list and contain the correctly-rated fuse link;
- the shroud on the fuse-holder main contact should be removed and the exposed spring contacts checked for firm compression, and they should be free from signs of overheating;
- conductor terminations should be checked for tightness;
- any dirt or dust should be removed and the DB or enclosure checked and sealed against ingress;
- both sets of spring contacts should be cleaned and lubricated.

5.52 Miniature circuit breakers (MCBs) should be inspected annually as follows:

- the MCB should be identified by the circuit list and be of the correct type and current rating. The rating should be clearly shown on a circuit list stored in, or labelled onto, the door of the DB or enclosure;
- MCBs should be operated several times to determine the freedom of the operating mechanism;
- the MCB terminals should be examined for overheating, and the conductor terminal screws checked for tightness;
- any doubts as to the suitability or effectiveness of an MCB should lead to its replacement;
- any dirt or dust should be removed, and the box or enclosure checked and sealed against ingress.

5.53 Thermal-imaging equipment is a useful method for understanding the condition of LV switchgear and protection systems.

5.54 A permit-to-work document should be raised for any full-service maintenance of the LV switchgear and protection system.

Service/test/record documentation

5.55 Records for any part of the switchgear and protection systems should include the following minimum set of details:

- manufacturer;
- date of installation;

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- service contract details (as appropriate);
- rating/type.

High-voltage switchgear and protection

5.56 All testing of any part of the HV switchgear and protection systems should be recorded on a test form similar to that used in the validation process (see Appendix 2 in Scottish Health Technical Memorandum 06-01 Part A).

5.57 By maintaining good records, estate managers should be in a position to detect whether any maintenance may be deferred, based on the condition and past test records of the equipment. However, it is recommended that no more than three consecutive routine tests be deferred.

Low-voltage switchgear and protection

5.58 All testing of any part of the LV switchgear and protection systems should be recorded on a test form similar to that used in the validation process (see Appendix 2 in Scottish Health Technical Memorandum 06-01 Part A).

5.59 By maintaining good records, estate managers should be in a position to detect whether any maintenance may be deferred, based on the condition and past test records of the equipment. However, it is recommended that no more than three consecutive routine tests be deferred.

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6. Secondary power sources

6.1 This chapter considers the operational and maintenance requirements of the secondary power sources. It describes the electrical requirements for standby generators and CHP as being identical. The electrical requirements of other secondary power sources (SPS) such as photovoltaic cells (PV) and wind turbines are outside the scope of this Scottish Health Technical Memorandum; in these cases, manufacturers' recommendations should be followed. However, the principle of the electrical test and maintenance requirements of these alternative power sources may be considered as being similar to that for a generator.

Routine online testing

Test to prove the essential electrical systems

6.2 All standby generator plant should be tested online with the building load every month. The duration of the online test should be at least one hour, but preferably two hours. The method of initiating the start of such test will depend on the electrical distribution strategy of the healthcare premises (see Scottish Health Technical Memorandum 06-01 Part A). A long-term paralleling of the generator and DNO connection (in accordance with the Energy Networks Association's 'Engineering requirements G.59') will minimise the inconvenience to the healthcare premises staff. Without such arrangements, testing of generators with the building load will require a short-term isolation of the electrical supply, which may not be acceptable. In these cases, tests should be conducted with a load bank that has reactive and resistive components to test the generator. (Purely resistive load banks may damage the cylinder or cylinder liners due to the high carbon build-up.)

6.3 Where the essential standby plant consists of more than one generator connected to the same part of the distribution (and long-term parallel arrangements exist), it may not be necessary to test all sets at the same time. The generator(s) on test should operate at greater than 70% full load, by adjusting the load-sharing controls of the generator and mains. Allowing the generator to operate as the lead electrical unit and the DNO connection to act as the supplementary supply will achieve this. Where there is more than one generator connected to the same part of the healthcare site's distribution, there are advantages in starting the second set after about one hour of running the first. The second set should be synchronised with the running set, before connecting to the load and then the first generator stopped after a further 15 minutes.

6.4 Note that a generator should run on offline after a test for a period of five minutes to allow the generator cooling system to stabilise.

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6.5 The use of a permit-to-work document for any test of the secondary power source may be required.

Test to prove the generator engine condition

6.6 Maintenance programmes should include a longer test run to establish the generator engine mechanical performance. A test to prove the generator engine condition should be carried out annually. The period of the test should be not less than three hours, and ideally, four hours.

6.7 During the test to prove the generator engine condition, the opportunity should be taken to conduct various tests on the generator safety chain. The overspeed governor should be operated to prove its action. This test will depend on the type of overspeed governor – electrical or hydraulic. Over-temperatures should be simulated to test their alarm function and action. The fuel rack should be forced off to test the auto-shutdown of the set. These tests should not be carried out if there is only one generator running (in island or parallel mode).

6.8 The generator should be allowed to run on offline after a test for a period of ten minutes to allow the generator cooling system to cool the set down naturally.

6.9 The use of a permit-to-work document may be required for any test to prove the generator engine condition of the secondary power source.

Blackout test

6.10 Maintenance tests for standby generators should include a test of any automated switchgear used to transfer power supplies from the primary supply and secondary supply. Where the standby plant does not provide the recommended 100% coverage, the standby plant should include test runs in island mode. These tests will assist staff to understand the limitations of the electrical standby systems and, therefore, exercise their contingency plans.

Generators and public electrical supply in parallel

6.11 Where the distribution strategy exists and arrangements with the DNO are in place to allow the standby generators to operate in parallel with the PES, the frequency of the test to prove the essential electrical systems can be reduced. Operations with the standby generator and PES in parallel should be considered in order to offset the maximum demand and hence reduce energy cost. Where these strategies exist, the parallel operation can extend the routine requirement to test the essential standby plant to six-monthly frequencies.

Non-intrusive visual inspection

6.12 Maintenance tasks should include weekly non-intrusive visual inspections of any primary and secondary power source systems. The non-intrusive visual inspection should include checks for coolant and lubricant leakage, the status of all instrumentation, and general tidiness of the generator house. The non-

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intrusive visual inspection test may also include the sweeping out of the generator room.

6.13 A limitation-of-access document (see Scottish Health Technical Memorandum 06-02 – 'Electrical safety guidance for low voltage systems') should be raised for any non-intrusive visual inspection of the essential standby plant etc.

Non-intrusive functional test

6.14 Primary and secondary system maintenance programmes should include non-intrusive functional tests as an occasional maintenance activity with frequency not exceeding three-monthly intervals. These tests should include the measurement of battery unit cell voltage and charging current in accordance with the battery manufacturer's recommendations. (Where the batteries are open-vented, specific gravity of the electrolyte should be measured and recorded.) The pH of the coolant water should be between 8 and 10.5. A measurement of the coolant anti-freeze should indicate a 35% to 50% mixture, or as recommended by the engine manufacturer. If the coolant water anti-freeze is refilled, ethylene glycol base should be used. The coolant water should have a suitable corrosion inhibitor. The condition of any radiator guards and exhaust insulation should also be inspected. The generator should be isolated from all control systems and distribution connections while performing any non-intrusive functional tests.

6.15 A permit-to-work document (see Scottish Health Technical Memorandum 06-02 – 'Electrical safety guidance for low voltage systems') should be raised for any non-intrusive functional maintenance task of the secondary power sources.

Full services

6.16 Secondary power system maintenance programmes should include full services as an infrequent maintenance with frequency exceeding annual intervals but not greater than ten-yearly. The individual maintenance tasks should be based on the manufacturers' data sheets and recommendations. The full services maintenance task of any secondary power source should include the comprehensive overhaul of the alternator, stator and control systems (see Section 5 for more details).

6.17 The planned full mechanical servicing of the secondary power source should be undertaken at the same time as the electrical full services.

6.18 A permit-to-work document should be used for the full servicing of standby generator plant. The full service of standby generators will reduce the embedded essential power resilience. Distribution strategies with an N+1 resilient standby power system will negate such restrictions. Alternatively, additional mobile standby plant may be brought in for the duration of the full servicing.

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Service/test/record documentation

6.19 A simple single-line diagram of the electrical infrastructure showing the interface of all primary and secondary power sources and their respective controls should be available at all times. The single-line diagram should include all earthing arrangements while the power is derived from the secondary power source.

6.20 Records should be kept of all hours that the standby plant is run, whether the purpose is for testing, parallel operation or an outage of the PES.

6.21 During any testing or parallel operation of the secondary power source, readings of the output phase-to-phase and phase-to-neutral voltage (V), current (A), frequency (Hz), true power (kW), apparent power (kVA) and power factor should be recorded. A computer software system for the automatic recording of the above parameters should be considered. Advantages include the automatic recording of data while the secondary power source is running due to an outage of the PES.

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7. Electromagnetic compatibility

7.1 Maintenance of equipment during its operational lifetime is a requirement of UK regulations. Trade tests for apparatus should include provisions for detecting and rectifying EMC defects, in addition to more common functional and safety checks. Maintenance should typically include a combination of both visual inspection and electrical tests. Trade tests can be extensive; some of these are summarised below, but one essential requirement is that details of all work carried out, defect reports and remedial actions taken should be recorded.

Non-intrusive visual inspection

7.2 Cables should be routinely checked against segregation and separation requirements.

7.3 Cable terminations should be checked for damage, corrosion and irregularities. Where filter circuitry is used, such circuitry should be checked to ensure it has not been electrically bypassed during service etc, and transient protection circuitry should be checked for over-voltage or damage.

7.4 Enclosures should be routinely checked for corrosion and signs of damage. Clear guidance should be provided on the painting and treating of metallic surfaces, which are required to provide a high level of conductivity.

7.5 Enclosure doors that employ RF seals should be checked for uniform fit in the doorframe. The RF seals may require cleaning and lubrication.

Non-intrusive functional test

7.6 Bonding straps between equipment etc should be routinely checked for damage and corrosion, and their dc resistance should be measured and compared with the required specification, typically 2 to 5 mΩ. If the bond connection has corrosion protection, this should be re-applied following disconnection.

7.7 Compliance should be achieved by checking the screwed and bolted connections during the active life of the installation. This verification should be performed either visually or by systematic tightening of each connection and by dc measurement across the joint.

Full services

7.8 Full servicing to eliminate any potential problems of electromagnetic compatibility should be considered as an infrequent maintenance with frequency not exceeding five-yearly intervals. The full servicing inspection may include a detailed survey by specialist companies to analyse the distribution circuitry for any stray radiated frequencies superimposed on the conductors.

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7.9 A limitation-of-access document should be raised for any full services/surveys of the electrical distribution for electromagnetic problems.

7.10 It is good EMC practice that an audit of the installed systems, including cable segregation, earthing and bonding, is performed on a regular basis. The interval between audits will depend on the complexity of the healthcare premises. Audits should be performed every two years for complex units and every five years for non-complex units. An EMC audit should be incorporated with the scheduled audit of electrical systems. An audit checklist should be used. Specialist EMC advice should be obtained as to the content of the checklist and the training of the person carrying out the audit.

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8. Earthing

Non-intrusive visual inspection

High-voltage earthing

8.1 HV earthing maintenance programmes should include non-intrusive visual inspection of any HV earthing systems as an occasional maintenance with frequency not exceeding yearly intervals. The non-intrusive visual inspection should include the bonding conductors between all HV equipment and, if appropriate, HV earth ground terminals owned by the healthcare premises.

8.2 A limitation-of-access document should be raised for any non-intrusive visual inspection maintenance of the HV earthing system.

Low-voltage earthing

8.3 LV earthing maintenance programmes should include non-intrusive visual inspection of any LV earthing systems as an occasional maintenance with frequency not exceeding six-monthly intervals. The non-intrusive visual inspection should include the main earthing terminal (MET), earth reference bars (ERBs), main earthing conductors and earth electrode connections.

8.4 A limitation-of-access document should be raised for any non-intrusive visual inspection maintenance of the LV earthing system.

Full services

High-voltage earthing

8.5 HV earthing maintenance programmes should include full servicing of any HV earthing systems as an infrequent maintenance with frequency not exceeding three-yearly intervals. The full services of any HV earthing should comply with the requirements of BS7430 and include the bonding conductors between all HV equipment and, if appropriate, HV earth ground terminals owned by the healthcare premises. The actual interval between full services of the HV earthing system should be staggered such that the effects of the weather conditions (on soil resistivity) can be evaluated.

8.6 A permit-to-work/sanction-for-test document should be raised for any full-service maintenance of the HV earthing system.

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Low-voltage earthing

8.7 LV earthing maintenance programmes should include full servicing of any LV earthing systems as an infrequent maintenance with frequency not exceeding two-yearly intervals. The full services of any LV earthing should comply with the requirements of BS7671 and BS7430 and include the MET, ERBs, main earthing conductors and earth electrode connections. The resistance of the earth loop should be as low as possible, and maintenance readings should be compared with the readings obtained at commissioning for the earth loop impedance and prospective short-circuit current (PSCC). A corrective maintenance strategy should be considered for any significant deterioration of the values.

8.8 The resistance of the earth electrode should be as low as possible and should not exceed 2 Ω, and subsequent maintenance readings should be compared with the readings obtained at commissioning for the earth loop impedance and PSCC. A corrective maintenance strategy should be considered for any significant deterioration of the values. The actual interval between full servicing of the LV earthing system should be staggered such that the effects of the weather conditions (on soil resistivity) can be evaluated.

8.9 A permit-to-work document should be raised for any full-service maintenance of the LV earthing system.

Service/test/record documentation

8.10 The records of the earthing systems should include a single-line block diagram showing the position of each earth electrode MET, ERB and protective earth terminal (PET) for each LV network, including isolated power supplies (IPSs). The single-line diagram should clearly identify any clean earths.

8.11 Records of the initial and subsequent soil resistivity readings and a record of the resistance readings of the earth electrodes should be maintained. The records should indicate where any low-resistive/high-conductive materials have been used to improve the soil resistivity surrounding the earth electrode.

Lightning protection

Non-intrusive visual inspection

8.12 The lightning protection system (LPS) should be visually inspected for any signs of damage without the need to expose any final earth electrodes. This will require a visual check of any exposed down-conductors, roof tapes and air finials. Where surge arrestors are included as part of the LPS, these should be visually inspected for their respective terminal connections.

8.13 Where non-intrusive visual inspection identifies damage to the LPS, consideration should be given to immediate repair or the delay of such

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corrective maintenance until the next full service. A quick measurement of the overall resistance to earth of the LPS may be used in this assessment.

8.14 The non-intrusive visual inspection maintenance frequency of the LPS may be considered as an occasional maintenance with frequency not exceeding six-monthly intervals.

Full services

8.15 The LPS should be annually tested for compliance with BS6651 and visually inspected for any signs of damage. Tests for effective continuity of each section of the LPS are required. Similarly, the resistance to earth of each individual electrode and the overall collective resistance to earth should be measured. The overall resistance to earth should not exceed 10 Ω. The test methods are described in BS7430.

8.16 The soil resistivity around each LPS earth electrode should be re-measured where it is suspected that the ground conditions have changed by, for example, new building works.

8.17 The full-servicing maintenance frequency of the LPS may be considered as an infrequent maintenance task at not greater than 13-monthly intervals. The odd number of months will ensure that the soil-resistivity readings are taken at all times of the year through the life of the building.

Service/test/record documentation

8.18 LPS records should include a single-line block diagram showing the position of each earth electrode and air finial. Initial and subsequent soil-resistivity records and individual earth-electrode resistance records should be maintained. The records should indicate where any low-resistive/high-conductive materials have been used to improve the soil resistivity surrounding the earth electrode.

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9. Containment

Non-intrusive visual inspection

9.1 Non-intrusive visual inspection containment maintenance should be considered as an infrequent maintenance with frequency not exceeding annual intervals. The non-intrusive visual inspection should include checks to ensure all covers and fixings of the containment system are in place and sound. Where appropriate, assessments should be made to determine whether the space factor of the containment has been exceeded.

9.2 Different maintenance frequencies may be considered for the various forms of containment system. For example, the non-intrusive visual inspection of a cable service-trench containment system might not justify the same maintenance frequency of, say, a trunking containment system used for final circuits.

9.3 A limitation-of-access document should be raised for any non-intrusive visual inspection maintenance of the containment system.

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10. Busbars and cables

Non-intrusive visual inspection

10.1 Non-intrusive visual inspection of busbars and cables should be considered as an infrequent maintenance with frequency not exceeding annual intervals. The inspection should include checks to ensure that there is no obvious damage to the busbar and cable systems, including any cable termination glands/boxes. The damage may be due to the over-stressing of cables from a gradual power overload or a change in the local environmental conditions. The non-intrusive visual inspection maintenance should also verify that the required separation distance between services has not been compromised.

10.2 A limitation-of-access document should be raised for any non-intrusive visual inspection maintenance of the busbar and cable systems.

Full services

10.3 Full-service busbar and cable maintenance should be considered as an infrequent maintenance with frequency not exceeding ten-yearly intervals. The full services should include a pressure test to determine the conductor condition of each busbar and cable system. Such pressure tests should only be applied after carefully considering the applied test voltage and duration of any pressure test. In all cases, the manufacturer's advice should be obtained prior to conducting the test. Initial tests may be up to 125% of the normal operating voltage (V_0) for one minute. However, as the busbars and cables age, applied test voltages should be reduced to 80% of the previous test voltage. Any busbars and cables that are considered functional but operating at or near their design limit should not be exposed to any pressure test.

10.4 Any busbars and cables that show defects or failures from the pressure test should be considered for replacement. Where the test demonstrates that damage or faults are confined to a discrete section, only a section of the busbars or cables should be replaced. Where sections are replaced, the new section should be joined with approved connection units or jointing techniques. Cable joints should be limited to four joints per cable length before the replacement of the cable.

10.5 A permit-to-work document should be raised for any full service inspection or maintenance or non-intrusive visual inspection of the busbar and cable systems.

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11. Uninterruptible power supplies, inverters and batteries

Non-intrusive visual inspection

11.1 Non-intrusive visual inspection of uninterruptible power supplies (UPSs), inverters and batteries should be considered as a frequent maintenance task at intervals not exceeding monthly. The non-intrusive visual inspection should include a visual check that no alarms have been activated and that rooms are apparently at design condition.

11.2 Where the UPS, inverter or battery includes self-monitoring or data-logging facilities, the visual inspection should include a printout of these facilities. In such a way, a condition-based maintenance system can be initiated for full-service maintenance checks.

11.3 The cleaning of any ventilation grilles on the UPS should be carried out at the same time. In addition, the room's general environmental conditions should be noted.

Non-intrusive functional test

11.4 Non-intrusive functional tests of UPSs, inverters and batteries should be considered as an occasional frequency maintenance task at intervals not exceeding six-monthly.

11.5 Functional tests for UPSs, inverters and batteries should include a physical test of any connected automatic or visual alarms. Functional tests of UPSs should verify that the inverter input would change from the rectifier output to battery output within 0.5 seconds. Similarly, the static switch should operate within 0.5 seconds following any fault condition of the inverter unit.

Full services

11.6 The full service of UPSs, inverters and batteries should be considered as an occasional frequent maintenance task at intervals not exceeding six-monthly.

11.7 UPSs, inverters and batteries that can perform self-diagnostic tests at a preset frequency may be used to advantage. UPS systems above 80 kVA may have self-diagnostic test facilities for battery condition. The self-test replicates the above on a much more frequent basis and can alarm fault conditions. During such tests, any adverse battery condition will restore the UPS to the rectifier output.

11.8 Full-services tests should demonstrate that the batteries can hold their fully charged state while the UPS is on bypass. Secondly, the batteries and UPS

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should be tested online (with the mains disconnected). The battery discharge voltage and current should be monitored over a 10-minute period. Following this, the battery voltage and current-recharge conditions should be observed. Any adverse conditions should be corrected.

11.9 The test should verify the condition of the rectifier and inverter components, including the static switch and all bypass switches. All cable and component connections should be tightened as required. Verification of the inverter input and output waveforms should be made.

Service/test/record documentation

11.10 A simple single-line diagram of the UPS/inverter arrangement indicating how the units are connected into the electrical infrastructure should be maintained as part of the operational and maintenance manual and site logbook.

11.11 The site logbook should contain full details of the UPS, inverter and battery units. The details should include:

- battery autonomy;
- UPS rating (kVA);
- rectifier type (six or 12 pulse);
- mode of operation (single/double conversion, on/offline);
- single supply or dual supply;
- date of installation;
- manufacturer;
- service contract details.

11.12 Records should be kept of all alarms and outages of the UPS, and details from all tests and servicing. Operational and estates managers may wish to consider a standard form to record all test results from any UPS, inverter or battery within the healthcare premises.

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12. Isolated power supplies

12.1 Isolated power supply (IPS) units should incorporate various self-diagnostic devices, which can assist in condition-based maintenance. Such devices include insulation-monitoring devices (IMDs).

Non-intrusive visual inspection

12.2 Non-intrusive visual inspections of isolated power supplies should be considered as a frequent maintenance task at intervals not exceeding monthly. The inspection should include a visual check that no alarms have been activated.

12.3 The cleaning of any ventilation grilles on the IPS should be carried out at the same time. In addition, the room's general environmental conditions should be noted.

Non-intrusive functional test

12.4 Non-intrusive functional testing of isolated power supplies should be considered as a frequent maintenance task at intervals not exceeding six-monthly.

12.5 The test should include audible and visual alarm tests. All alarm positions should be verified at the IPS unit, the nurses' station, and (if appropriate) any connected building energy management system (BEMS).

12.6 IPSs that can perform self-diagnostic tests on a preset frequency should be used. For example, the IPS will include an IMD that will continuously monitor the circuit insulation resistance. The non-intrusive functional test should include a recording of the IMD readings.

12.7 Where the IPS is connected to the output of a UPS, the non-intrusive functional test should be conducted in conjunction with the UPS maintenance.

Full services

12.8 The full servicing of IPSs should be considered as occasional maintenance at intervals not exceeding annually.

12.9 The full servicing of IPSs should include an annual visual inspection of the settings on all protective devices associated with any part of the IPS electrical installation. Check that extraneous metalwork is bonded to the ERB and that all socket earth terminals are also bonded to the same earth reference point. Each earth path should have an impedance reading not greater than 0.1 Ω.

12.10 Check primary and secondary isolation transformer voltages.

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12.11 Check transformer line-to-earth capacitive leakage current with a digital ammeter off load; the measured value should not exceed 0.5mA.

12.12 The full servicing of IPSs that are connected to the output of a tertiary supply (such as a UPS) should include an annual test to verify that the supply changeover occurs within 0.5 seconds. Where the IPS is connected to a primary supply and secondary supply (generator), the annual test should verify that the supply changeover occurs within 15 seconds.

12.13 Apply a simulated 50 kΩ test-resistor earth fault on each socket circuit and confirm correct alarm indications. Check voltage levels in IPS areas between socket earth terminals and room earth reference terminals and extraneous metalwork are less than 20mV (as far as practicable).

Service/test/record documentation

12.14 A simple single-line diagram of the IPS indicating how the units are connected in the electrical infrastructure should be maintained as part of the operational and maintenance manual and site logbook.

12.15 The site logbook should contain full details of the IPS. The details should include:

- number of transformers;
- number of outgoing circuits;
- circuit diagram indicating the location of each socket;
- IPS rating (kVA);
- date of installation;
- manufacturer;
- service contract details.

12.16 Records should be kept of all IPS alarms and outages, and details from all tests and servicing. A standard form should be used to record all test results from any IPS.

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13. Harmonic filters

Non-intrusive visual inspection

13.1 Non-intrusive visual inspection maintenance programmes for harmonic filters should be considered as an infrequent maintenance task at intervals not exceeding annually. The inspection should include the earth bonding conductors, cable terminations and fixing/mounting arrangements.

13.2 A limitation-of-access document should be raised for any non-intrusive visual inspection maintenance of harmonic filters.

Full services

13.3 Full-service maintenance programmes for harmonic filters should be considered as infrequent maintenance activities at intervals between one and five years. The full services should include the earth bonding conductors, cable terminations and fixing/mounting arrangements, and physical measurements of the electrical distribution quality. The function of any full services of the harmonic filters should ensure continued compliance with the Energy Networks Association's 'Engineering Recommendations G.54'.

13.4 A permit-to-work document should be raised for any full-service maintenance of harmonic filters.

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14. Power-factor correction units

Non-intrusive visual inspection

14.1 Non-intrusive visual inspection maintenance programmes for power-factor correction (PFC) systems should be considered as infrequent maintenance activities at intervals not exceeding one year. The non-intrusive visual inspection should include the earth bonding conductors, cable terminations and fixing/mounting arrangements.

14.2 A limitation-of-access document should be raised for any non-intrusive visual inspection maintenance of PFC systems.

Full services

14.3 Full-service maintenance programmes for PFC systems should be considered as infrequent maintenance activities at intervals between one and five years. The full services should include the earth bonding conductors, cable terminations and fixing/mounting arrangements, and physical measurements of the electrical distribution quality. The function of any full services of the PFC systems should ensure the network-corrected power factor remains within the range 0.95 to 0.92. The PFC units should be turned off and the uncorrected power factor noted and compared with the power factor while the PFC units are active.

14.4 A permit-to-work document should be raised for any full services maintenance of PFC units.

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15. Final circuits

15.1 Section 6 of the Health and Safety at Work etc Act states that it should be the duty of any person who designs or manufactures any part of an electrical system to ensure that adequate maintenance regimes are in place to prevent injury or danger. The maintenance regimes require routine inspection and testing.

15.2 IEE Guidance Note No 3 in BS 7671 provides guidance for the testing of the fixed wiring system. IEE's 'Electrical maintenance' booklet provides maintenance advice for the fixed wiring systems of a building.

15.3 Further guidance may be found in CIBSE Guide K – 'Electricity in buildings'.

Non-intrusive visual inspection

15.4 Non-intrusive visual inspection maintenance regimes of final circuits should be viewed as an occasional maintenance task at intervals not exceeding six-monthly. The inspection should include the visual inspection of all electrical accessories for any apparent damage. In addition, non-intrusive visual inspection of the final circuits should include visual checks of final distribution and protective devices. The actual frequency of non-intrusive visual inspection of final circuits should be determined by the risk of injury or danger, and the environment of the installation. For example, in mental health accommodation the risk of accidental damage may be greater. Similarly, for final circuits in high-traffic circulation areas, accidental damage may also be high. Non-intrusive visual inspection maintenance may be arranged as an integral part of other equipment maintenance activities, especially for healthcare premises with non-retained maintenance staff.

15.5 Damage to electrical accessories found during a non-intrusive visual inspection of final circuits should be considered as an urgent corrective maintenance task.

15.6 A limitation-of-access document should be raised for any non-intrusive visual inspection maintenance of final circuits.

Non-intrusive functional test

15.7 Non-intrusive functional test maintenance regimes of final circuits should be viewed as an infrequent maintenance task at annual intervals. The maintenance programme should include the operation of any automatic protective device trips and the manual operation of any isolator and/or switch disconnector. The actual frequency of non-intrusive functional tests should be evaluated by the risk of injury or danger and the environment of the installation. Non-intrusive functional tests of final circuits should be included as an integral part of other equipment maintenance activities, especially for healthcare premises with non-retained maintenance staff.

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15.8 Faulty switchgear or protective devices found during the non-intrusive function maintenance of final circuits should be considered as an urgent corrective maintenance task.

15.9 A permit-to-work document should be raised for any non-intrusive visual inspection maintenance of final circuits. The non-intrusive functional tests of final circuits should be coordinated with the respective end-users where the necessity of isolating supplies may be required. Under such circumstances, the use of a “permission for disconnection/interruption of electrical services” document should be raised.

Full services and testing

15.10 The full service and testing of final circuits should be viewed as an infrequent, planned preventative maintenance activity at intervals between three and five years. Full services and testing should satisfy the requirements of BS7671 Part 6, Chapters 61 and 63. The actual frequency of full servicing and testing should be evaluated by the risk of injury or danger, and the environment of the installation.

15.11 Faults or non-compliances found during the full service and testing of final circuits should be attended to as an urgent corrective maintenance task.

15.12 A permit-to-work document should be raised for any full service and testing of final circuits. The full service and testing of final circuits should be coordinated with the respective end-users where the potential of isolating supplies may be required. Under such circumstances, a “permission for disconnection/interruption of electrical services” document should be raised.

15.13 The full service and testing of final circuits should be coordinated with other maintenance activities, since such work may require the closure of a ward or department.

Service/test/record documentation

15.14 Service/test/record documentation should satisfy the requirements of BS7671, Appendix 6.

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16. Portable appliance testing

16.1 Portable appliances include any item of electrical equipment that is designed to be hand-held while operating, but excludes any piece of medical equipment. Portable appliances include items such as personal computers, vacuum cleaners, floor polishers, hand tools and many more. Estates managers should make a comprehensive list of all electrical appliances that might be plugged into any part of the fixed wiring system.

16.2 Portable appliances will include items that are double-insulated as well as items which have an exposed conductive casing that is earthed.

16.3 A policy decision should be made regarding electrical equipment, including portable appliances that are owned (and used) by patients or residential staff. The objective of any such policy should be for the safety of the fixed wiring system and any persons that might be exposed to the equipment and/or fixed wiring.

16.4 The healthcare organisation should adopt a policy that prohibits the use of personal electrical equipment until it has been tested (or other such safeguard). Equipment found faulty should be refused connection.

16.5 The equipment user should perform a visual inspection test each time the equipment is used.

Non-intrusive visual inspection

16.6 Non-intrusive visual inspection of portable appliances should be considered as frequent maintenance and performed as often as is practicable; it might vary according to the equipment. Where good records of routine testing are available, the records may be used to form a condition-based maintenance strategy.

16.7 Non-intrusive visual inspection testing of portable appliances will include the checking of the appliance lead/flex for any signs of damage or degradation, such as cuts, other damage or overheating. These tests can be carried out by the equipment user providing that he/she has been told how to conduct the inspection and he/she signs to confirm that the test has been regularly made.

16.8 Non-intrusive visual inspection testing of portable appliances also includes the checking of the equipment casing. These tests can be carried out by the equipment user providing that he/she has been told how to conduct the inspection, report defects, and he/she signs to confirm that the inspection has been made.

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Non-intrusive functional test

16.9 Non-intrusive functional tests of portable appliances should be considered as infrequent maintenance and performed as required, but generally at intervals no greater than 18 months. This might vary according to the equipment. Where good records of routine testing are available, the records may be used to form a condition-based maintenance strategy.

16.10 Non-intrusive functional tests of portable appliances are performed using specialist test equipment that can automatically perform a range of tests suitable for the equipment. Tests will include operating current, insulation resistance of the appliance, correctly wired plugs and flexes.

16.11 The test equipment can store the results (electronically) and be suitable for downloading onto a computer. Test certificates for individual equipment or groups of equipment can then be produced. Suitable software packages may store long-term historic records, which might form the bases of any condition-based maintenance.

16.12 Non-intrusive functional tests of portable appliances should only be performed by suitably instructed staff who understand the significance of any test results and can determine what, if any, corrective action might be required.

Service/test/record documentation

16.13 Estates managers should compile a comprehensive asset register of all portable appliances within the healthcare facility, regardless of the owner of the equipment. The asset register should uniquely identify the equipment by serial number, the owner of the equipment, the test, and the test frequency that should be performed.

16.14 Where the portable appliance is owned by the healthcare organisation, an asset identification label should be fixed to the item for positive recognition.

16.15 All functional tests should be stored, ideally on a computer system. The test records should show the equipment name, owner and serial/asset number, the test performed (with results), and the date of the test. It is acceptable to produce a summary test certificate for grouped items within one location, provided full test details are available on the computer software.

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17. Periodic testing of high dependency departments

The challenge:

17.1 The challenge is how to carry out tests in 24/7 occupied areas where dual circuits do not exist. In critical care areas these cannot be vacated to permit isolated or dead tests to be carried out to fixed wiring installations.

17.2 In this situation consideration would be given to carrying out live tests without disruption to patient care in the area. In the event that testing had to be carried out in these circumstances, risk assessments would require to be carried out not only by engineering staff but also nursing and managerial staff for the affected department. However, live testing can only be undertaken with complete safety in decanted accommodation and this implies that the premier and initial risk assessment is whether live testing should be carried out at all in occupied departments. The decision is a corporate one resting with senior management and should not be left to estates or local departmental management.

17.3 Fixed-wired electrical installations must be tested periodically to verify that they are still safe to use for a further period. The results of the testing will indicate if any repairs are necessary and when the next testing should take place. If fixed wiring installations are not tested the potential exists for them to become dangerous to the occupants and cause damage to (or, in extreme cases, *destruction of*) the building.

17.4 Certain departments in healthcare buildings are occupied all the time and rarely vacated. Older premises do not necessarily have dual lighting and small power circuits in 24/7 areas, and, even where these occur they may not be positively identifiable from circuit charts. There would be a residual risk with a single circuit remaining in use if total loading and reliance were placed upon it. This begs the question as to how final circuits can ever be tested while safely maintaining patient care. It would not be acceptable to disconnect patients from monitoring equipment nor switch off all the lights. One option would be to test the final circuit wiring without disconnecting from the electrical power source - namely live testing. Another option to be to conduct tests restricted to those that can be carried out safely without shutting down a department.

17.5 It should be noted that the IEE Wiring Regulations make no reference to live testing.

17.6 It should also be noted that future designs of high dependency areas will include for dual circuits and alternative energy sources.

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Statutory requirements:

The Electricity at Work Regulations.

17.7 In particular Regulation 14 - Work On or Near Live Conductors.

- **Clause 9** lists factors to be considered in deciding whether it is justifiable for work to proceed with the conductors live;
- **Clause 14** indicates the use of people who are properly trained and competent to work on live equipment safely using suitable instruments and probes;
- **Clause 18** states that although live testing may be justifiable it does not follow that subsequent repair work is carried out live.

The Electricity at Work Act (HSG85):

17.8 This gives guidance on devising safe working practices for people who carry out work on or near electrical equipment. It includes advice relevant to managers and supervisors who maintain electrical equipment. Although this document relates to equipment and not fixed wiring installations the flow charts contained within are useful for assessing whether to work on systems live or dead and what actions are necessary.

The IEE Wiring Regulations (BS7671)

17.9 These state that final circuits must be tested periodically. In part 7 the Regulations state that periodic inspection and testing shall not cause danger or damage to persons or property and also that the frequency of periodic inspection and testing shall be determined by the type of installation.

How to proceed:

17.10 A risk assessment requires to be carried out by senior management as to the implications and practicality of decanting the affected department or whether there is an absolute need for full tests. Although the assessment will require input from estates, nursing and managerial staff the ultimate decision will be a corporate one. It must be made clear to non-technical staff as to what is being attempted and how it will be carried out. If, after describing the methodology, it is decided that testing is not acceptable then the consequences must be made clear to the person responsible for the Healthcare facility not just to the department where the testing had been proposed.

The following are some building blocks for a risk assessment.

- how the testing can be carried out must be identified. Figure 3 of HSG85 illustrates planning and preparation for actions common to both dead and live working namely:
  - identify circuits to be worked on;

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  - plan the work;
  - specify correct system of work;
  - specify level of supervision;
  - Select and instruct competent workers;
  - ensure correct working methods;
  - provide and ensure use of appropriate protective equipment;
  - provide appropriate information and tools for workers and ensure they are fully instructed;
  - make arrangements for management checks and supervision of work;
  - implement dead or live working procedures.
- if it is established that dual circuitry is not available or is suspect in any way then these options can be considered:
  - full testing in a decanted department should be the first choice;
  - if full testing cannot be achieved because it is not possible to decant the affected department, testing procedures would be restricted only to those that can be completed without shutting down, provided this has been explained to, and accepted by, senior management;
  - alternative temporary power supplies might be derived from elsewhere in the building or even from a temporary generator. However, temporary installations should be to the same standards as the permanent installation and if trailing leads were employed they would bring with them their own inherent risks.
- detailed working procedures must be prepared. If restricted testing were acceptable and pursued, this would typically comprise the following:
  - visual checks;
  - polarity checks;
  - earth loop impedance tests;
- one option to mitigate risks of not testing dead would be to use thermal imaging equipment as a means of detecting problem areas and loads. Procedures should include contingency plans in the event of total power failure during testing.

Risks of exposure:

17.11 It has not been unknown for requests to carry out live testing rejected on the basis of either cost, disruption or because it was seen to be too difficult. The consequence of not carrying out periodic testing can be disastrous if not involving fatalities. By introducing risk assessments that require senior management involvement the responsibility for any inactivity will be clearly identified. Ultimately, the decision will have been taken corporately and not on a technical basis.

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17.12 There is evidence to confirm that where full testing had been carried out, the number and extent of faults were little different from those identified in the course of restricted testing that allowed departments to continue to function. This has been verified by testing organisations as a typical outcome in other industries.

17.13 Some development is required on the concept of limited testing and dialogue with the Health & Safety Executive (HSE) to seek their advice should allow the acceptability of this concept to be assessed.

Conclusion

17.14 Periodic testing of fixed wiring installations is required. There is no alternative and it must be carried out. The preparation of risk assessments identifying how this can be achieved either in the form of full or restricted testing is an essential tool and must involve estates, nursing and managerial staff to inform a corporate decision. Written procedures must be prepared and should apply throughout NHS Scotland for application as part of a managed process.

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Commissioning management





Commissioning Code M (2022)

Commissioning management

CIBSE CCM: 2022

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222 Balham High Road, London SW12 9BS

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Foreword

It has been almost 20 years since CIBSE first published Commissioning Code M and it is a testament to the original author and steering group that the document remained relevant for so long. This edition remains true to the aim of the original Code, which was to set out steps for commissioning building services in a proper and timely manner.

This updated edition of Code M has, however, been completely rewritten to reflect best practice and encompass the whole commissioning management process, from project inception, through completion and beyond.

The purpose of the Code is not to describe in detail how to commission individual systems, but to provide a clear and consistent framework for managing the process — and, in doing so, avoid the need to repeat management guidance in the CIBSE Commissioning Codes for individual systems.

In the age of smart technologies, this updated Code considers the growing interdependence between allied building systems and services and the need for more integrated system testing. This is becoming particularly important, as we collect more and more data to enhance performance and improve wellbeing. The Code also reflects the increasingly significant role of commissioning, beyond optimising performance, as we focus on climate change, carbon mitigation, energy reduction and net zero.

Furthermore, we cannot ignore the Grenfell Tower tragedy, which resulted in greater emphasis on legislation, the 'golden thread' and the Building Safety Act. Commissioning has a major role to play in delivering safe and effective functioning buildings, as recognised by the long-standing requirement for commissioning in the Building Regulations

This updated Code is the result of collaboration between CIBSE and the Commissioning Specialists Association (CSA). As chair of the steering group, I would like to thank everyone involved in preparing this publication — the content has been vigorously debated and challenged by a dedicated team of highly qualified, competent professionals from across the industry.

I strongly recommend the adoption of the principles within this Code, as they will help us all deliver safer, greener, higher-performing buildings and assets.

Ted Pilbeam
Chair, Commissioning Code M Steering Committee

Author

Glenn Hawkins (Clear Construction)

Commissioning Code M Steering Group

Ted Pilbeam (VolkerFitzpatrick) (chair); Roger Carlin (Ashford Environmental Services Ltd.) (vice chair); George Adams (SPIE); Tony Anderson (H&V Commissioning Services Ltd.); Neil Burdess (Banyards); John Harrison (Mill Valley Engineering Ltd.); David Hodge (Canary Wharf Contractors Ltd.); Paul McSoley (Mace Group); Adam Muggleton (AESG); Lee Pantry (Crown House Technologies); Joe Pitt (HDR); David Stevens (CIBSE Facilities Management Group); Neil Smith (VolkerFitzpatrick); Hayden Youngs (Media Control Management)

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Mark Berry (Norton Rose Fulbright); David Bleicher (BSRIA); David Green (Integral Group); Andy Knellar (Sygna); Nick Mead (Laing O'Rourke MEICA Technical Team)

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CIBSE Technical Director

Dr Hywel Davies

CIBSE Head of Knowledge

Eileen Bell

Project Manager

Colin Goodwin

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1 Introduction

Buildings and engineering systems need to be safely delivered within specific cost, time and build-quality parameters. They also need to be operationally ready at handover; perform to meet the specified needs of the people that use, manage, operate and maintain them; and function safely and efficiently in the long term.

In a world of accelerating technological advancement, increasing building complexity, tightening regulatory constraints, growing consumer demand for quality, surging environmental consciousness, and an urgent need to de-carbonise buildings, commissioning is one of the most important ways to achieve these outcomes.

The purpose of commissioning management is to ensure that commissioning is correctly executed — and that people, businesses, society, and the environment all benefit as a result.

The original version of this Code was produced in 2003. This updated document is intended to better represent the modern perception of what commissioning is and to reflect current commissioning management best practices.

1.1 Scope

This Code provides an overview of the management arrangements required to deliver buildings and engineering systems which are commissioned in a way that meets statutory regulations and project-specific design, specification, programme and cost requirements.

It is applicable to all types of active systems, both building services and architectural. The guidance also extends beyond the commissioning of individual systems to consider the operational interfaces and interdependencies between systems that enable a building to perform in the way that it is designed.

The guidance is intended to be applicable to new-build, reconstruction, refurbishment or re-use projects. The principles outlined can be applied to any type of building, large or small, simple or complex.

1.2 Purpose

The Code is intended to be a benchmark for quality and provide a basis for professional management of the commissioning process. It can be used as:

- a means of understanding what the overall commissioning process looks like
- a guide to best practice for commissioning management
- a tool to help define commissioning management procedures
- a basis for commissioning management scope of works and professional appointments
- a reference for project team members to enable commissioning to be carried out collaboratively.

This Code establishes what to do at the different stages of a project but is not prescriptive about how to do it. It does not offer technical guidance about different building services systems or other building elements that need to be commissioned or the rigour and effort required to commission them. These criteria will be project-specific.

Detailed technical commissioning guidance for different building services systems is contained in CIBSE Commissioning Codes and in publications by the Commissioning Specialists' Association (CSA), Building Services Research and Information Association (BSRIA), The Building Engineering Services Association (BESA) and the British Standards Institution (BSI). Please refer to the Bibliography for details of these documents.

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2 Legislation

Building work is covered by several aspects of legislation. In the UK, the technical requirements are primarily set out in the Building Act 1984 as amended by the Building Act 2022, the Building Regulations made under that Act, and certain additional regulations originally derived from the European Union.

The Building Safety Act 2022 was enacted at the end of April 2022. It makes significant changes to the Building Act 1984 and to the competence required of practitioners undertaking building work. However, the structure of the technical regulations set out in the Building Regulations is not changed significantly by the Building Safety Act.

The legal term 'building work' includes erecting or extending a building, providing or extending a controlled service or fitting in or in connection with a building, and the material alteration of a building or a controlled service or fitting. Accordingly, the works typically required to be carried out on projects, and to which this Code applies, will be covered by legislation concerning building work and construction projects. The formal legal definition of building work is set out in Regulation 3 (1) of the Building Regulations 2010.

The UK is one country made up of four nations, each with its own legal provisions. Construction project teams in the UK therefore need to understand the regulatory framework that applies to the specific location of their works. This same principle applies to projects outside of the UK. Users of this Code will also need to be aware of changing regulatory requirements when using it.

Please refer to the CIBSE website for information about UK Legislation[1].

2.1 The Building Regulations 2010

The Building Regulations 2010 are intended to secure the health, safety, welfare and convenience of persons in or about buildings.

Schedule 1 to the Building Regulations contains a number of Parts (A to H, J to M, O to S), which set minimum standards for structural and fire safety, energy efficiency, ventilation, accessibility, water use, overheating, security and other characteristics. The Parts of Schedule 1 are statements of functional requirements setting out what must be achieved. For each Part there is statutory guidance set out in the Approved Document or Documents for that Part, which give guidance on meeting the functional requirements in common building types.

Regulation 44 and Regulation 44Z, introduced in the 2021 amendments to the Building Regulations, explicitly require fixed building services to be commissioned in accordance with a procedure approved by the Secretary of State. They also set out requirements for the provision of information for the commissioning of the fixed building services in accordance with the approved procedure.

It is important to note that commissioning is a requirement of the Regulations and is not just a piece of guidance in an Approved Document. The Approved Documents provide additional guidance about commissioning and reference this CIBSE Commissioning Code.

2.2 The Construction (Design and Management) Regulations 2015

This Statutory Instrument is intended to protect persons from health and safety risks arising from construction work, and consequently commissioning work, through the establishment of a systematic framework for management of those risks.

The Regulations establish the responsibilities of key dutyholders such as client organisations, principal designers, main contractors and subcontractors.

[1] https://www.cibse.org/knowledge-research/knowledge-portal/legislation-recent-changes-to-law (accessed 1.06.22)

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2.3 The Building Safety Act 2022

The Building Safety Act 2022 represents the biggest change in the regulation of the UK built environment in a generation and will apply to both existing and new buildings. Noteworthy considerations relating to commissioning include:

- The creation of a new role of Building Safety Regulator, embedded within the Health and Safety Executive (HSE), whose key objectives will be overseeing the safety and performance of all buildings and leading the delivery of the new regime for high-rise and other 'in scope' buildings.
- A revision of the regulatory framework for construction products.
- The creation of new dutyholder roles to be imposed on clients, designers and contractors, aimed at ensuring compliance with the Building Regulations.
- Three new overarching stop-go 'gateways' will form part of the new regime governing how higher risk buildings are planned, designed and constructed and how any major renovations are undertaken; evidence of compliance must be produced before a project can move into the next phase.
- The information and documents required through the gateways will form part of the 'golden thread' of building safety information. It will be the responsibility of the dutyholders and those responsible for a building to put in place the correct systems, processes and procedures to ensure that the 'golden thread' is updated and maintained.

2.4 Other legislation

A list of other legislation that relates to commissioning is contained in section 10.1 of this Code.

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3 What is commissioning?

Commissioning is a process of assuring that a project is planned, programmed, costed, designed, installed, tested and fine-tuned, so it meets specified performance requirements.

This performance relates to individual systems and to the operational interfaces and interdependencies between systems that enable a building to perform as designed.

Commissioning starts during the preparation and briefing stage of a project and continues into a building's operational life. Commissioning management is based on the following principles:

- define what performance outcomes need to be achieved at the start of a project
- establish a plan of action to achieve these outcomes
- continuously verify and record that all decisions made, and all actions taken, are enabling these outcomes to be achieved.

Commissioning is a collaborative endeavour that requires ownership and accountability on both the client and delivery sides of a project. Success is dependent on having a shared understanding of what the overall commissioning process looks like. Commissioning also needs skill, care and discipline to do what is required at each stage before progressing to the next.

Figure 1 provides a commissioning logic diagram for a construction project. It is composed of 25 activities that take the project team on a logical journey through the commissioning activities at different stages of a project.

The matrix in Appendix A illustrates how the responsibilities for commissioning can be assigned to different members of the project team for the activities shown in the logic diagram.

The diagram in Appendix B places these activities at different stages of a project, in accordance with the Royal Institute of British Architects (RIBA) Plan of Work.

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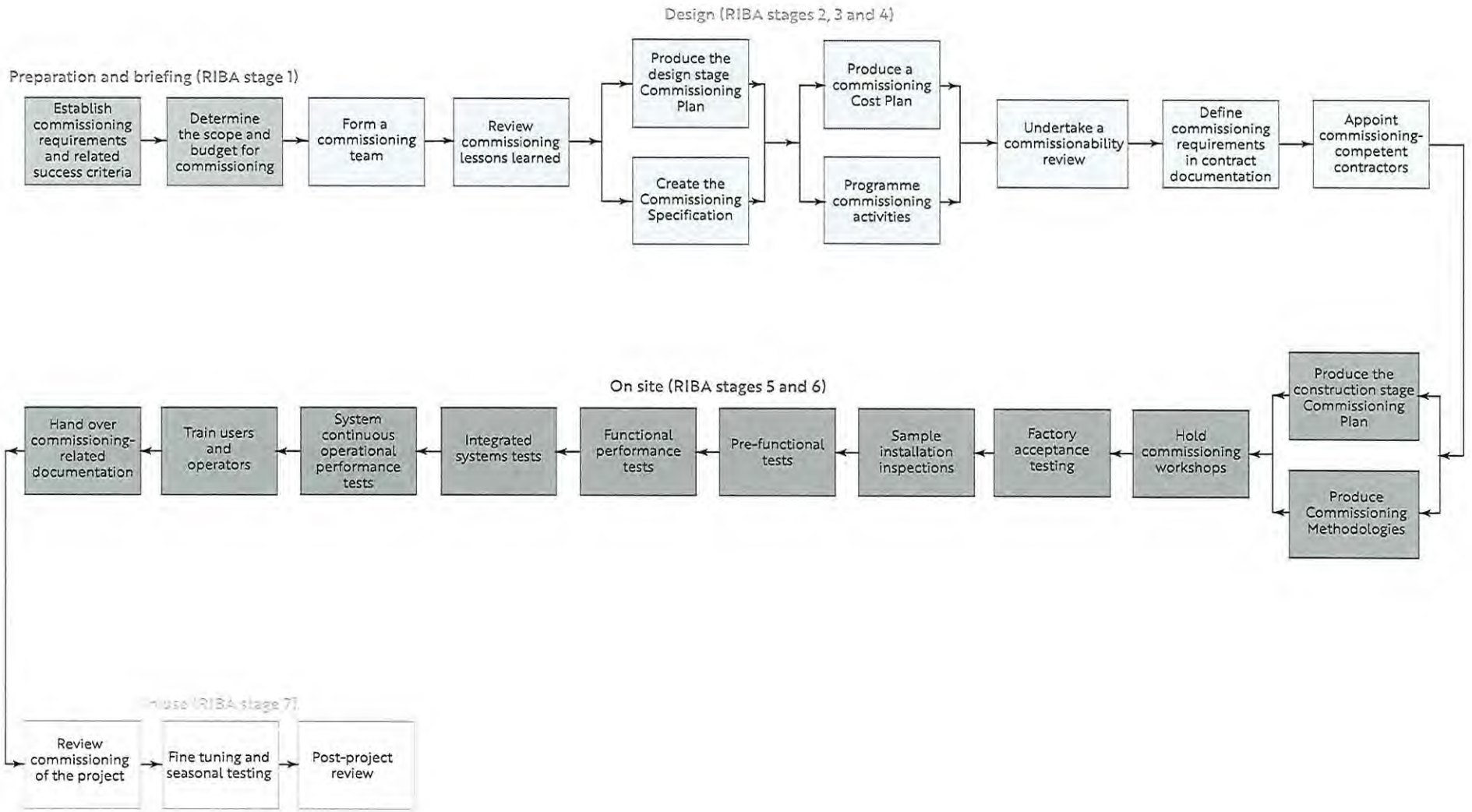


Figure 1 A commissioning process for a project

4 Commissioning management

4.1 What is commissioning management?

Commissioning management is the planning, monitoring and control of all aspects of commissioning and the engagement of all those involved in it, to achieve the specified outcomes. It requires a combination of technical expertise, management process knowledge and leadership skills.

In the context of this Code, commissioning management is a team endeavour in which a competent individual or company leads the management of the overall commissioning process on a project. The term commissioning manager (CxM) has been adopted in this Code for the competent entity that fulfils this role.

The lead management effort provided by the CxM needs to be coordinated with the management effort provided by other parties to execute their commissioning responsibilities to the specified requirements.

The commissioning management procedures used, and the level of effort required, need to be appropriate and proportionate to the project being delivered. There also needs to be a single point of accountability for commissioning management on a project.

The matrix in Appendix A illustrates how the responsibilities for commissioning activities can be assigned to different members of the project team.

4.2 The commissioning manager (CxM)

This Code is based on best practice and the presupposition that the appointment of the commissioning manager (CxM) needs to be considered at the beginning of the design stage.

When appointed, the CxM will lead the commissioning process, providing confidence to the client that a competent resource is being dedicated to this important aspect of project delivery. The CxM has unique insight into building systems performance, so can therefore provide accurate recommendations to the client about the performance of commissioned systems.

The contractual relationship of the CxM is vitally important because it will define their authority and responsibility. It will also impact the timing of the CxM appointment. When combined, these factors greatly influence the CxM's ability to help deliver the required project outcomes through correctly executed commissioning.

Two examples of common contractual relationship and communication routes for a CxM are shown in Figure 2. The first is when the CxM is appointed by the client as an independent objective advocate, and the second is when the CxM is in contract with the main contractor.

The CxM must be competent to perform the lead commissioning role. Other parties must also be competent to manage and execute their commissioning responsibilities, such as a building services contractor performing site-based tests or a building services design consultant producing a Commissioning Specification.

This competency of the CxM needs to be evidenced through a combination of qualifications, experience, knowledge, and skills. Their practical experience needs to relate to the commissioning of similar projects to the one for which they are being considered. Their knowledge needs to encompass matters such as the logical sequencing of commissioning activities, testing procedures for individual systems and overall buildings, required durations for these procedures, and the design and specification requirements of commissioning. They also need to understand and acknowledge the limitations of their experience and expertise.

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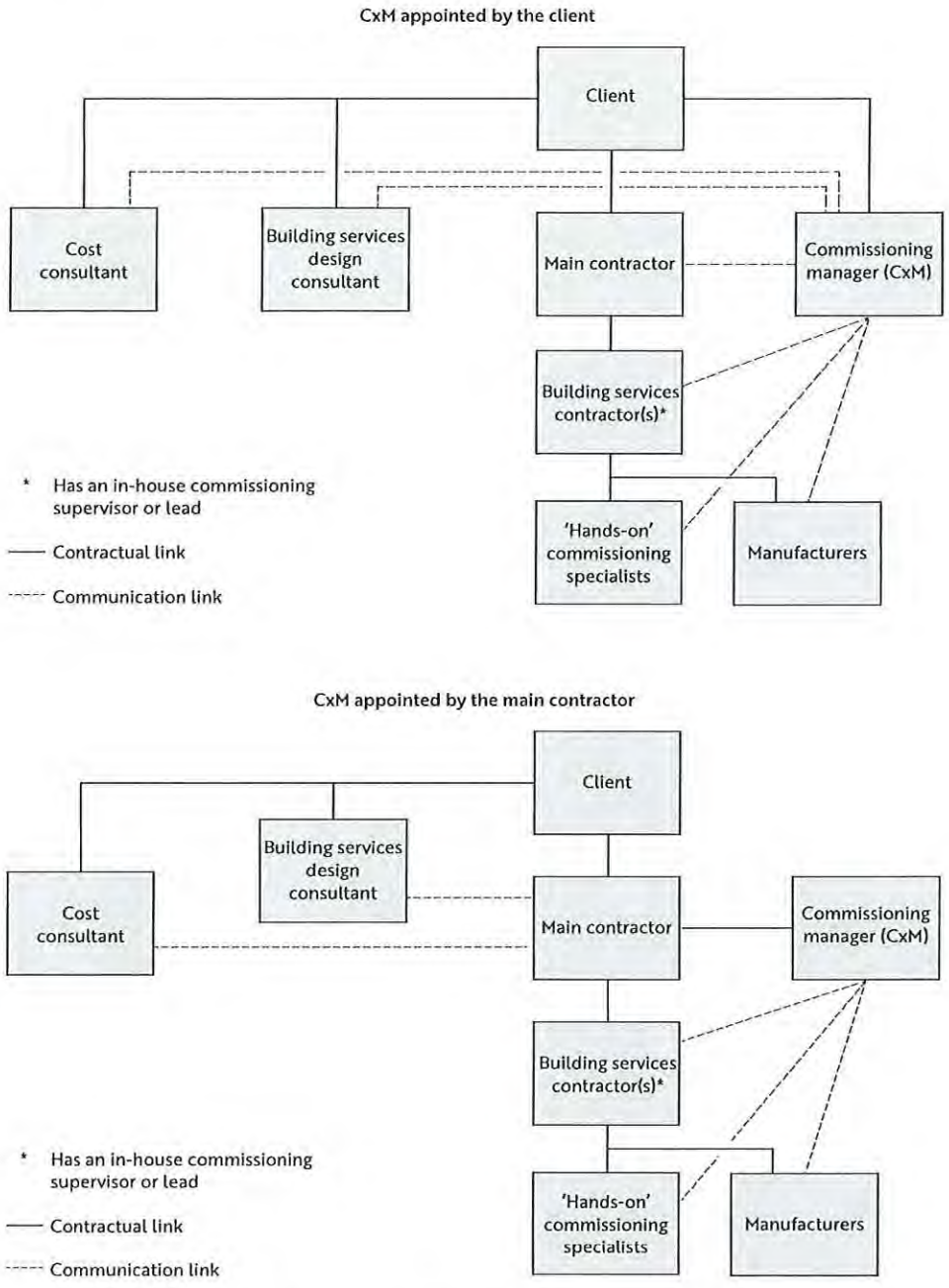


Figure 2 Contractual and communication routes for a commissioning manager (CxM) appointed by the client and appointed by the main contractor

The role of the CxM at the head of the commissioning team also requires pragmatic leadership skills, effective communication skills, strong resource planning and administration skills, and effective writing skills to produce documents such as the Commissioning Plan and assorted commissioning-related reports.

Commissioning management software platforms are commonly used to streamline and digitise the commissioning workflow on projects. Increasingly, competence in the use of software specifically designed to manage commissioning is also a fundamental requirement for a CxM.

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The Commissioning Specialists' Association (CSA) has the following grading system for commissioning managers, which can be used to find appropriate accredited competence for projects of varying sizes and complexities:

- CSA commissioning manager (CxM1)
- CSA senior commissioning manager (CxM2)
- CSA project commissioning manager (CxM3).

Further information about this professional accreditation system and the criteria required to achieve each grade, can be obtained from the CSA[2].

ASHRAE also has a building commissioning professional certification programme (BXCP) which can be considered when evaluating competence for the CxM role. Information about this qualification can be acquired at the ASHRAE website[3].

Other professional registrations, such as Engineering Technician (EngTech), Incorporated Engineer (IEng) or Chartered Engineer (CEng) meet globally recognised professional standards. People with these accreditations may also be able to perform the CxM role on a project, provided they have the appropriate experience, knowledge, and skills. Information about these qualifications is available from the Engineering Council[4].

4.3 Commissioning administration

Each of the commissioning activities described in this Code require specific management resource from the commissioning manager (CxM) and the other parties involved in them.

There are also a set of commissioning administration activities that are common to all project stages, and which are part of the CxM's duties. These include:

- preparing, chairing and producing minutes of commissioning team meetings
- monitoring actual versus planned progress of commissioning activities
- maintaining a commissioning issues and resolutions log
- producing commissioning progress reports
- integrating new individuals into the commissioning team
- reporting items that may affect the life safety and other legislative performance requirements of the project.

As required by their contract documents, different parties involved with commissioning need to participate in, or provide information for, the execution of the above administrative activities. Digital technologies such as BIM models, document management systems and RFID asset tagging are increasingly being used to help achieve this within a Common Data Environment (CDE) on projects.

[2] https://www.csa.org.uk (accessed 6.06.22)

[3] https://www.ashrae.org (accessed 6.06.22)

[4] https://www.engc.org.uk (accessed 6.06.22)

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5 The preparation and briefing stage

It is important that commissioning is considered early in the project lifecycle. This chapter of the Code provides an overview of the following preparation and briefing stage commissioning activities.



This Code proposes that, in accordance with best practice, the appointment of a commissioning manager (CxM) needs to be considered at the beginning of the design stage. If the parties involved during the preparation and briefing stage do not have the competency to undertake the commissioning activities prior to the design stage, then a CxM can be invited to assist on a short- term, fee-based appointment.

An example of how responsibilities for these activities can be assigned is provided in Appendix A.

5.1 Establish commissioning requirements and related success criteria

The Project Brief forms the basis from which all project delivery work, including commissioning, is executed. Required performance outcomes must be defined in the Project Brief, so it is clear what commissioning needs to achieve. These quantifiable and measurable success criteria fall into three categories:

- *Functionality and effectiveness*: e.g. occupancy criteria, indoor environmental criteria, sprinkler, fire detection and alarm and smoke control classifications, air change rates, water outlet temperatures, building envelope permeability, system resilience and redundancy criteria, power quality, harmonic distortion, vibration levels, safety and security performance, and occupant satisfaction.
- *Environmental*: e.g. energy use, water consumption, CO_2 emissions, BREEAM, NABERS or LEED rating.
- *Economic*: e.g. construction cost, utilities costs, operation and maintenance costs, revenue generation.

In setting the purpose, requirements and constraints for a scheme, the Project Brief needs to establish commissioning as a key means of achieving the required project outcomes. It also needs to describe what digital project protocols commissioning work must conform with, such as the level of building information modelling (BIM) and the Construction Operations Building Information Exchange (COBie) data that will need to be entered.

The Project Brief must be developed with significant client stakeholder input and ultimate approval.

5.2 Determine the commissioning scope and budget

The commissioning scope identifies the building systems to be commissioned, describes the commissioning activities that need to take place and establishes the standard of commissioning required.

A properly defined scope that considers the size, scale, type and complexity of a building will enable a budget for commissioning works to be established. Consideration must be given to ensure that money is assigned to all phases of a scheme, so it can be translated into a cost plan for commissioning during the design stage. It is intended that the scope and budget for commissioning be based on the process laid out within this Code.

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An appropriate commissioning scope will also enable commissioning activities and responsibilities to be defined in the contracts of the different parties appointed to the project.

The Royal Institute of British Architects (RIBA) and the Chartered Institute of Building (CIOB), state that a Project Execution Plan (PEP) is the principal document for describing the approach to managing a project. It covers matters such as compliance requirements, project organisation, management procedures, information systems, and how specialist project delivery activities are to be undertaken. Commissioning needs to be a key part of the content of this important document.

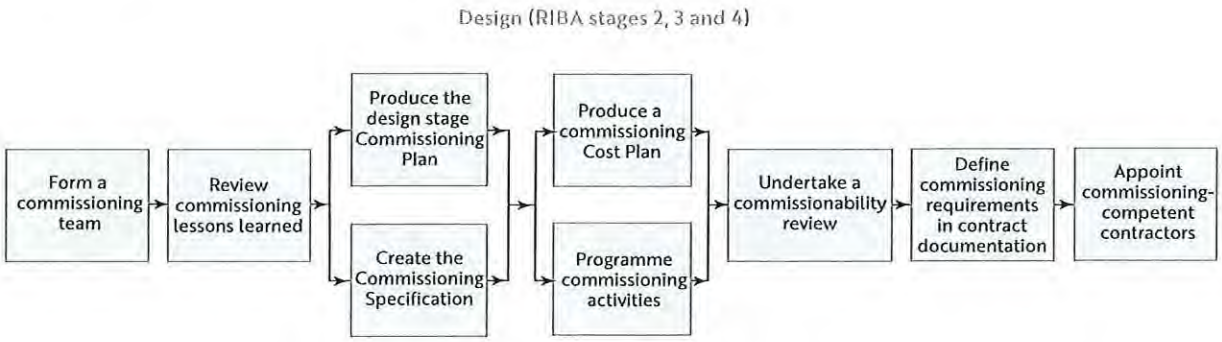
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6 The design stage

Commissioning involves activities that take place during the design stage of a project and this principle is consistent with this Code.

This chapter of the Code provides an overview of the following design stage commissioning activities.



An example of how responsibilities for these activities can be assigned is provided in Appendix A.

6.1 Form a commissioning team

The commissioning team is a group of professionals representing different organisations, whose coordinated actions are responsible for implementing the commissioning process.

This Code recommends that the commissioning team, led by a commissioning manager (CxM), should be formed during the design stage. As appropriate to the size and complexity of the project being undertaken, this team can include representatives from the client, the lead project management organisation, the building services design consultant, the main contractor, building services contractors and manufacturers. Each party will be integrated into the commissioning team upon their appointment at the different stages of a project.

Responsibilities for commissioning team members need to be defined. A matrix such as that shown in Appendix A can be used for this purpose. Individual commissioning team members must have the authority and competence to act on behalf of the organisation that they represent.

6.2 Review commissioning lessons learned

This Code considers it best practice to use feedback from earlier projects to inform the way commissioning is set up and executed. The objective of this exercise is to identify successes and areas for improvement and apply them to the commissioning of the project to be undertaken.

A variety of commissioning-related criteria can be examined during this review, including:

- the scope and logic of commissioning
- the division of commissioning responsibilities
- how much was spent on commissioning and what it was spent on
- the timing and duration of commissioning activities
- interfaces and interdependencies between systems
- whether the project was delivered on time or not
- the impact of value engineering on commissioning
- the commissioning competency of project team members
- the quality of commissioning documentation

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- digital tools used to execute commissioning works
- the performance of buildings in use
- end user and operator feedback.

This Code considers it best practice to produce a report providing the key findings, conclusions and recommendations from this exercise and then disseminate it to the project team.

6.3 Produce the design-stage Commissioning Plan

The Commissioning Plan describes the commissioning process for a project and establishes how it needs to be executed and documented. It is an organisational and managerial document, rather than a technical one.

As a minimum, it is proposed that the structure and content of a Commissioning Plan shall be as follows:

(1) *Introduction*: the purpose of the document and a general summary of its contents.

(2) *General project information*: an overview of the project, the organisations involved and how it is to be delivered.

(3) *Commissioning scope*: a description of the building services systems and other building elements to be commissioned on the project.

(4) *Commissioning process*: a description of the project-specific commissioning tasks to be executed at the different stages of project delivery.

(5) *Commissioning team*: a list of commissioning team members, with information such as who they work for, what their role is, and their contact details. An organogram for commissioning.

(6) *Commissioning roles and responsibilities*: the allocation of roles and responsibilities for different members of the project team, in accordance with the activities established in item (4) above.

(7) *Communication and documentation requirements*: a description of the communication protocols, digital technologies, reporting frequencies and documents to be used to execute commissioning on the project.

(8) *Commissioning schedule*: an overview of the sequence of commissioning events and associated dates and durations.

(9) *Appendices*: any reference material that supports the main body of the document.

The Commissioning Plan must be produced by a competent commissioning management professional. All information in the document needs to be project-specific, following and supplementing primary design, commercial and programme information. If the client has specific commissioning procedures that need to be complied with, this must be incorporated into the Commissioning Plan. The document needs to be updated as the project progresses and details emerge relating to the design, specification, programme, participating companies and test procedures, for example.

The design-stage Commissioning Plan needs to be part of the tender documentation that is issued to the main contractor. This will help ensure that they are aware of the commissioning process and its associated requirements before entering into contract.

With input from the main contractor and its key building services subcontractors and suppliers, the document will evolve into a construction-stage Commissioning Plan prior to commissioning activities commencing on site.

In accordance with the Building Regulations 2010, the Commissioning Plan needs to be issued to the Building Control Body (BCB), so it can check that commissioning is being done as the work proceeds.

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6.4 Create the Commissioning Specification

Whilst the Commissioning Plan is primarily an organisational and managerial document, the principal objective of the Commissioning Specification is to define the technical requirements with which commissioning works need to be accomplished.

Defining and then following the technical commissioning scope is a critical factor for success in meeting the performance objectives of any project. Whilst this is of importance for all aspects of building performance, it is crucially important for life safety and business-critical systems.

The production of the Commissioning Specification is typically the responsibility of the building services design consultant. This Code recommends that this key document be produced with specialist input from a competent commissioning management professional. All information in the specification needs to be project-specific.

The Commissioning Specification must not focus just on individual building services systems. It must also contain project-specific content about validation procedures such as smoke extract and control tests, fire alarm cause-and-effect tests, integrated systems tests (ISTs) and, where applicable, factory acceptance tests (FATs), system continuous operational performance tests (SCOP tests) and seasonal testing. Building elements whose performance needs to be validated, such as active façades and automatically-openable doors, windows and vents, also need to be covered in the Commissioning Specification.

During the design stage, an evaluation of operational energy use is recommended, utilising an appropriate methodology such as CIBSE TM54: *Evaluating operational energy use at the design stage* (2022). Once a building is in use, it is important to measure actual energy use, investigate the causes between expected and realised consumption, report back to the designer, and use the findings to improve building performance. This post-handover validation and fine-tuning work needs to be reflected in the Commissioning Specification.

The Commissioning Specification plays an important role in defining witnessing and final sign-off requirements for different stakeholders such as the commissioning manager, the building services design consultant and the building control officer. This presence at specific events validates that commissioning work is executed correctly and that records presented accurately reflect the work carried out. Witnessing needs to be appropriate to the size and complexity of a project, the importance of each individual system to life safety, business continuity and overall building operation, and the particulars of the project contract.

As a minimum, it is proposed that the structure and content of a Commissioning Specification shall be as follows:

(1) *Introduction*: the objective of the document and an overview of its contents.

(2) *General project information*: a summary the project, who is involved and how it is to be delivered.

(3) *Commissioning scope*: a description of the active systems, both building services and architectural, to be commissioned on the project.

(4) *General commissioning requirements*: information about the commissioning logic for the project, notification, sampling, witnessing and approval requirements, competence of personnel, instrumentation, commissioning records, training requirements and resolution of non-compliance.

(5) *Technical requirements for commissioning*: detailed descriptions of procedures, pass/fail criteria and performance tolerances for on-site and off-site testing relating to individual systems, central plant, meters, control software and graphical user interfaces (GUIs), and activities such as fire alarm cause-and-effect tests, ISTs, SCOP tests and seasonal testing.

(6) *Definitions and naming conventions.*

(7) *Applicable standards and guidance.*

(8) *Related project documents.*

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6.5 Produce a Commissioning Cost Plan

The commissioning process needs to be supported by adequate and transparent expenditure. The project Cost Plan must therefore show how money will be spent on commissioning, both its management and the physical hands-on work associated with it. This is the responsibility of whichever cost consultant is working on behalf of the client.

This Code recommends that this crucial cost planning activity is undertaken with specialist input from a competent commissioning management professional to describe commissioning activities and detail the types of manpower and other costs associated with them. In addition to activities that take place on site such as testing and witnessing, this expenditure needs to encompass design-stage commissioning activities, off-site testing and in-use stage commissioning activities. These can then be validated as clearly itemised commissioning costs during the appointment of the project's contractors.

Costs can be allocated by project stage, by commissioning activity, and by company. The *New Rules of Measurement* (NRM) (RICS, 2021) provide a structure for allocating commissioning costs to specific building services systems and other elements of a building that need to be commissioned, if this level of detail is appropriate.

The Commissioning Plan, Commissioning Specification and the Commissioning Programme need to inform this cost planning activity because they establish what needs to be done; how it needs to be done; who needs to do it; what resources are required; and when it needs to done.

Once the commissioning expenditure is established, it must only be adjusted after having fully evaluated what the consequences will be. Any unjustified reductions will mean that the needs of the commissioning process will be lost, diluted or compromised.

6.6 Programme commissioning activities

The programming of commissioning requires an understanding of overall project commissioning scope and logic, the detailed sequences of specific commissioning works and the time required to execute commissioning activities to the required standard. In addition to hands-on commissioning works, programmes also need to make appropriate provision for the production, review and acceptance of commissioning documentation.

High level project programming work must account for commissioning. This can be achieved by incorporating primary commissioning activities, such as those proposed in the commissioning process diagram in Figure 1 and assigning appropriate durations to them.

More detailed commissioning logic diagrams and programmes can then be produced for specific elements and systems, as well as procedures such as integrated systems tests (ISTs), system continuous operational performance (SCOP) tests and seasonal tests. As required, these will incorporate validation activities such as demonstrations and witnessing.

Commissioning activities are inextricably linked to other aspects of project delivery such as design, procurement, construction, handover and occupation. Commissioning must therefore be programmed so that it is coordinated with, and linked to, these other activities. This particularly applies to the installation of building services and to structural and architectural construction works, where changes in sequence, or delays in completion, often negatively impact on commissioning works.

This Code considers it best practice that a programme incorporating commissioning activities will be part of the tender documentation issued to the main contractor. The main construction programme then produced by the appointed main contractor needs to be logic-linked to the project's commissioning programme.

The commissioning team, of which the client and main contractor are key members, must protect the commissioning logic and time allocated for the execution of all commissioning

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activities. Illogical sequencing and unreasonable compression of timeframes will negatively affect the quality of commissioning work.

6.7 Undertake a commissionability review

Project design documentation needs to be reviewed to ensure that a building and the diverse range of systems in it will be commissionable when work starts on site.

This is not just a review of schematic drawings, layout drawings or a geometric BIM model. Other design deliverables that relate to commissioning, such as specifications, the life safety philosophy, standard operating procedures and description of operations documents also need to be considered for review.

This review is intended to focus only on the commissionability of the overall building and the individual building services systems and other functional building elements in it. It is not a verification of first-principle design calculations, a detailed approval process for drawings, nor a forensic examination of specifications to check regulatory compliance.

The reviewer(s) need to be independent from the people that produced the design. They also need the right competency to perform this important commissioning-focused task, obtaining expert assistance if required. A workshop format can be used to facilitate the important interaction between the reviewer and the designer.

A quality-based sampling methodology can be employed for this independent review process. This strategy uses the reviewer's expertise and experience to select a small, focused, meaningful sample of commissioning-related design information for initial review. A decision about how extensive the commissionability review needs to be can then be based on the findings of this initial review.

This Code considers it best practice to issue a formal commissionability review report and to track each issue identified. This will act as a record of the observations made and the responses of the designer to them. To facilitate this collaboration, aimed at resolving each issue, the wording used by all parties needs to be clear and respectful.

It is important to understand that the commissioning-focused design review does not transfer design liability from the design consultant to the reviewing organisation.

6.8 Define commissioning requirements in contract documentation

The main contractor and its building services subcontractors are key to the success of commissioning on any project. The documentation that is used to appoint them must therefore provide a clear description of the project's commissioning requirements and the role these organisations need to play in meeting them.

This need can be satisfied by integrating documentation that is already in place on the project into the tender information that is issued, such as the Commissioning Plan, the Commissioning Specification, and commissioning-related cost and programming information.

In addition to incorporating high quality commissioning-related content in the tender documentation, the issuing organisation has a professional obligation to explain it and respond to questions raised. The contractors must not be left to understand commissioning requirements in isolation.

With a collaborative approach of this nature, an agreed way forward can be established for the execution of commissioning activities that are to follow.

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6.9 Appoint commissioning-competent contractors

The commissioning responsibilities of the main contractor and its building services subcontractors are wide-ranging and crucially important. They can encompass lead or support roles in activities as diverse as work programming, document production, quality control of installation work, flushing and cleaning of pipework, pre-functional testing, functional performance tests, integrated systems tests, SCOP tests, witnessing, training and project reviews.

They must have the competency and resources to fulfil their commissioning-related obligations. This required capability needs to relate to the type of building that is being delivered, the types of building services systems and other functional elements in it, and the specific commissioning procedures that will be needed to deliver the project.

The appointing organisation needs to do their due diligence by validating the types of projects the tenderers have worked on, their commissioning track record on these projects, what their commissioning supply chain looks like and what specific commissioning competency their people have.

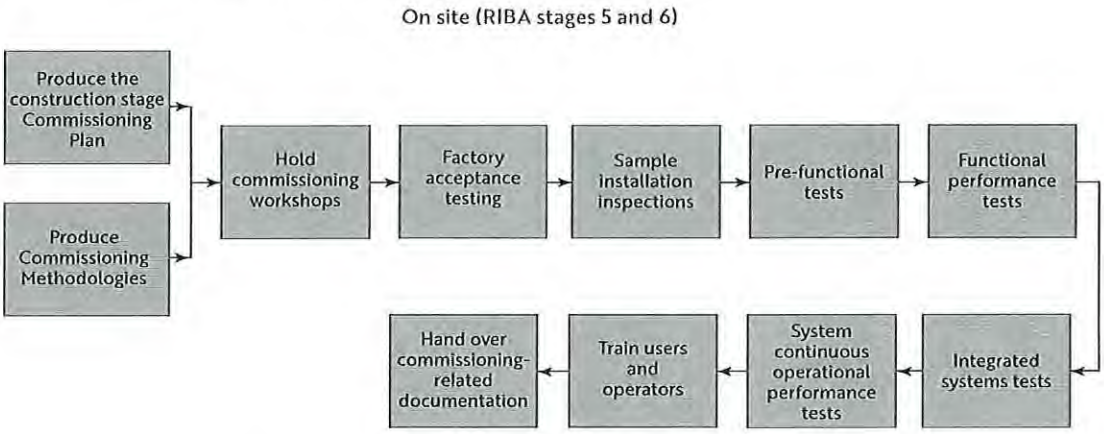
A competent commissioning management professional, if working as an independent advocate of the client, can provide valuable input to this commissioning activity.

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7 The on-site stage

This chapter of the document provides an overview of the following on-site stage commissioning activities. An illustration of how responsibilities for these activities can be assigned is provided in Appendix A.



Competence, discipline and clarity are key requirements for the successful execution of the site-based stage of commissioning. In particular, the logical journey from factory acceptance testing through to system continuous operational performance tests needs to be carefully managed.

This step-by-step process will typically focus on individual elements and systems, before considering the operational interfaces and interdependencies between systems, and then overall building performance. This Code proposes that moving logically from one step in the sequence to the next needs to be conditional on the validation of work that has been undertaken. Within this process, each party responsible for commissioning works will submit a record providing evidence of activities performed or stating results achieved. These records will then need to be reviewed and accepted.

Witnessing by competent personnel, which validates that commissioning work is executed correctly and that records presented accurately reflect the work carried out, is an essential part of this process. This important personal observation of commissioning events helps assure that specified requirements have been fulfilled. It also ensures that there is a shared understanding that the production of commissioning evidence is not just a paper-based administrative exercise.

As outlined in the preceding chapter of this Code, the extent of, division of responsibilities for, timing and duration of witnessing and sign-off activities needs to be established during the design stage. There also needs to be a shared understanding of what information witnessing parties need to be furnished with before they attend an event and how far in advance they require it. This can include:

- details of the activity to be witnessed
- the methodology for the activity
- records, such as test results
- acceptable variance of witnessed results from those recorded
- details of equipment used
- calibration certificates for equipment used.

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7.1 Produce the construction-stage Commissioning Plan

The Commissioning Plan describes the commissioning process for a project and establishes the way in which it will be managed.

By incorporating any new or revised information relating to matters such as design, specification, programme, participating companies, responsibilities, or procedures, the design-stage Commissioning Plan will evolve to become the construction-stage Commissioning Plan.

A competent commissioning management professional needs to lead the production of this document, with input from other parties such as the main contractor and its key building services subcontractors. The Commissioning Plan can then evolve into the Project Commissioning Report at handover.

7.2 Produce Commissioning Methodologies

Whilst the Commissioning Plan establishes the framework for successful management of commissioning, Commissioning Methodologies provide the detailed information about how on-site stage commissioning works will be prepared, executed and documented.

Separate methodologies are required for different active systems, both building services and architectural, and for distinct elements such central plant and meters. Methodologies also need to be produced for integrated systems tests (ISTs) and system continuous operational performance tests (SCOP tests). These procedures need to be project-specific and commissioning activity-specific. For example, a chilled water system will require different Commissioning Methodology documents for pipework pressure testing, flushing and cleaning, management of water quality, and balancing of flowrates.

Particular care needs to be taken when commissioning procedures such as the testing of fire-detection and alarm, stairwell pressurisation or smoke extract systems are reliant on architectural work being complete and correct.

Each methodology needs to be produced by the organisation that is responsible for performing the commissioning activity, in direct response to the Commissioning Specification. The commissioning manager (CxM) will typically be responsible for reviewing and accepting the methodologies produced by others and for producing methodologies for activities such as ISTs and SCOP tests.

Whilst these Commissioning Methodologies need to consider risks and safe working practices, their principal focus must be the procedure that will be used to confirm that the specified commissioning requirements of the project have been met. Their content therefore needs to be configured accordingly. The organisations producing these documents must also avoid loading them with irrelevant manufacturers' information.

As a minimum, it is proposed that the structure and content of a Commissioning Methodology shall be as follows:

(1) *Introduction*: the purpose of the document and a general summary of its contents.

(2) *System description*: project-specific details of the system to be commissioned.

(3) *Preparation requirements*: a list or description of constraints interfaces and dependencies such as installation approved, doors hung, ceilings complete, fuel tank filled, temporary load bank installed.

(4) *Commissioning procedure*: a full step-by-step description of the commissioning activity to be undertaken with associated pass/fail criteria and tolerances. References to associated material in the Appendices of the methodology.

(5) *Roles and responsibilities*: a description of who will be involved in the activity and what their role will be.

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(6) *Instrumentation to be used*: details of the type, manufacturer and model of instrumentation for specific activities.

(7) *Reference documents*: a list of industry standards and codes of practice, related specification clauses, drawings or description-of-operations documents.

(8) *Appendices*: marked-up drawings, manufacturer's technical information, cause-and-effect matrices, test scripts, checklists and test sheets, environmental, health and safety (EHS) risk assessment, calibration certificates.

7.3 Hold commissioning workshops

The objective of this activity is for the commissioning team to develop a shared understanding of how the on-site stage of commissioning will be executed — what needs to be done; when it needs to be done; how it needs to be done; who needs to do it; what records need to be produced; and how commissioning will be coordinated with construction works.

Matters that need to be considered include work sequences, activity durations, roles and responsibilities, interfaces between different companies, approval protocols, meeting arrangements, and documentation requirements. Large or complex projects can require multiple workshops that focus on particular systems, certain areas or phases of a project, or specific on-site commissioning procedures.

This Code considers it best practice that a competent commissioning management professional will be responsible for the preparation and facilitation of these workshops, and the authoring and dissemination of the reports from them.

7.4 Factory acceptance testing

This off-site testing can form an important part of a project's quality assurance and risk management procedures. It can encompass testing of modular building elements, primary building services plant such as chillers, transformers, control panels and standby generators, type-testing of elements such as fan coil units, and proving of software programmes and graphical user interfaces.

To satisfy the factory acceptance testing requirements of a project, there needs to be a shared understanding of the following:

- a list of every item that needs to undergo a test
- the locations of the tests
- the programme for the tests
- clear division of roles and responsibilities for the tests
- approved methodologies for the tests
- an appropriate budget for the tests
- the reporting requirements of the tests
- procedures in the event of non-compliance.

In response to the specified requirements for factory acceptance tests (FATs), this Code proposes that the commissioning manager (CxM) will be responsible for scheduling the tests, coordinating the input from different members of the commissioning team and directing their execution.

Specific manufacturers will produce the methodology documents for the FATs. They will also produce the test reports that act as evidence of compliance with required performance. Both types of document need to be issued, reviewed and approved in the specified manner.

Any issues found during the FATs which are carried over to the construction site need to be tracked and closed out by the commissioning team.

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7.5 Sample installation inspections

Within the on-site stage of commissioning, the installation of building services systems is of crucial importance, but is commonly problematic. Issues can relate to work being incomplete, incorrect, inaccurate, damaged, inaccessible or unidentified.

To avoid a negative impact on subsequent on-site commissioning activities, installation work must be complete, carried out with adequate and proper materials and workmanship, and be accessible for commissioning purposes. The installation work also needs to be executed within the timeframe provided in the project programme.

Commissioning does not replace the process of quality assurance, which needs to be carried out during manufacture and construction as part of normal, good engineering practice. However, installation verifications led by the commissioning manager (CxM) can help confirm that systems are ready to advance to the next stage of the on-site commissioning process. A quality-based sampling methodology can be employed for this important activity. This strategy uses the CxM's expertise and experience to select a small, yet focused, sample of installation works for inspection. A decision about how extensive this inspection regime needs to be can then be based on the findings of the initial sample.

If a record has been submitted by an installing contractor as evidence of compliant work completion, this Code considers it best practice to have this evidence in-hand whilst conducting the physical inspection. This will help validate that the documentary evidence matches what is observed on site.

If issues with installation work are identified during this inspection activity, it is the responsibility of the main contractor and its subcontractors to resolve them before progressing to the next on-site commissioning stage: pre-functional testing.

7.6 Pre-functional tests

This is a transitionary commissioning stage between installation completion and the functional performance testing of a system. Historically, this stage has often been referred to as pre-commissioning and/or static testing.

Activities at this stage include pressure testing of pipework, air leakage testing of ductwork, flushing and cleaning of closed water systems, initiation of water treatment regimes, and dead and live testing of electrical, communication, security and control systems. It also encompasses the setting-to-work of systems involving activities such as energisation, starting and running fans or pumps, and setting-up safety cut-outs, interlocks and alarms. As systems are set to work, working practices must be adopted that maintain high standards of health and safety.

The testing and other hands-on commissioning activities at this stage are the responsibility of the specialist subcontractors, as is the production and submission of the required records. The responsibilities of the commissioning manager (CxM) typically include coordination of the work programme, organisation of witnessing and the review and acceptance of records.

7.7 Functional performance tests

The principal objective of this stage is to validate the performance of individual building services systems in their own right, discrete from other systems.

This stage also involves simulated tests that prove the interfaces between systems, as a pre-cursor to the physical validation of interfaces and interdependencies during ISTs. For example, when commissioning a lift, an alarm signal from the fire and detection alarm system will be simulated and the response of the lift checked to ensure it meets the specified requirements. At the end of this stage each system needs to be safely operating autonomously in different specified modes of operation.

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The tests at this stage are the responsibility of the specialist subcontractors, as is the production and submission of the required test records. The main contractor also plays an important role in facilitating these tests by ensuring that all building-related pre-requisites are in place. The responsibilities of the commissioning manager (CxM) typically include coordination of the work programme, organisation of witnessing, and the review and acceptance of test records.

7.8 Integrated systems tests (ISTs)

The purpose of these test procedures is to validate that the operational interfaces and interdependencies between systems are in accordance with the specified requirements. They involve the joining together of two or more autonomous systems.

These tests encompass cause-and-effect tests on fire detection and alarm systems and the systems that interface with them, such as lifts, air conditioning, emergency lighting, access control, sprinklers, fire shutters, smoke extract and stairwell pressurisation.

This stage also involves test scenarios involving failures of different building services equipment, proving of functional interconnectivity between systems, mimicking of operational maintenance events, partial system or building failures, and complete building power failures which are often referred to as black building tests.

In response to the specified requirements for integrated systems tests (ISTs), this Code considers it best practice that the commissioning manager (CxM) will be responsible for scheduling the tests, coordinating the input from different members of the commissioning team, producing the Commissioning Methodologies for them and directing their execution.

Other commissioning team members need to fulfil their contractual obligations for the execution of these tests, as directed by the CxM.

7.9 System continuous operational performance (SCOP) tests

A SCOP test sets a system or a building into automatic control for a defined period, such as seven or 14 days. It is a project-specific procedure unique to the constructed asset and the external environment at the time of the test.

During this period of automatic building operation, performance criteria such as temperature, humidity, air quality, air pressure differences, noise levels or vibration levels are continuously monitored to prove that they can be maintained within specified tolerances. If defined performance criteria are not maintained during a SCOP test, it is common for the specification to state that the SCOP test must recommence.

Temporary heat loads are commonly required for a SCOP test, to mimic the heat generated by people or equipment. People can also be requested to mimic standard operating procedures such as entering and leaving a laboratory room or operating theatre from an adjacent corridor. There may also be a requirement to install a temporary data logging system that will produce a set of evidence that can be compared to the building's own building management system (BMS).

In response to the specified requirements for SCOP tests, this Code considers it best practice that the commissioning manager (CxM) will be responsible for scheduling the tests, coordinating the input from other members of the commissioning team, producing the Commissioning Methodologies for them and directing their execution. The CxM will also produce the test reports that act as evidence of compliance with required performance and issue them in the specified manner.

Other commissioning team members need to fulfil their contractual obligations for the execution of these tests, as directed by the CxM.

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7.10 Train users and operators

At handover, users and operators need to be able to take safe and effective ownership of active systems — both building services and architectural. The training, familiarisation and demonstration delivered by the construction project team is key to making this happen.

The responsibility for the preparation and delivery of the training typically rests with the specialist subcontractors and manufacturers. The client has responsibility to ensure that its people participate in the training that is being delivered and are competent to do so.

The commissioning manager's (CxM's) responsibilities typically involve scheduling the training that has been specified, producing attendance registers and checking that training has been delivered.

7.11 Hand over commissioning-related documentation

Handover information provides a record of what has taken place on a project; is required to allow a building to legally enter its in-use stage; and enables a building to be used, operated and maintained.

Examples of handover information include operating and maintenance (O&M) manuals, record drawings, an asset information model, an asset register, a construction health and safety file, a building user guide, and a building log book.

Commissioning-related documentation such as certificates of statutory compliance, commissioning records and a Project Commissioning Report must be integrated into the set of handover document in the specified manner.

This Code considers it best practice that the commissioning manager (CxM) will produce a Project Commissioning Report. The CxM will also typically be responsible for the review and acceptance of the commissioning records created by others. In accordance with the specified requirements, this commissioning-related material will be issued to whomever is leading the production of the handover information. This can be the author of the operating and maintenance (O&M) manuals or the person responsible for the asset information model (AIM), for example.

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8 The in-use stage

This chapter of the Code provides an overview of the following in-use stage commissioning activities.



An example of how responsibilities for these activities can be assigned is provided Appendix A.

8.1 Review commissioning of the project

This review needs to consider the project's commissioning activities, the outcomes related to commissioning, and the closing-out of outstanding items on the commissioning issues and resolutions log. The sequence of activities contained in the commissioning process diagram in Figure 1 can provide the structure for this important task.

This Code proposes that the commissioning manager (CxM) will prepare this activity, lead its execution, produce the lessons learned report from it, and issue it in the specified manner. As a minimum, a 'lessons learned' section must be included in the final Project Commissioning Report. Other members of the project team need to participate in the review and must commit to it with positive intent.

In reviewing the commissioning of the project, it is important to include the areas for improvement, as well as the successes.

8.2 Fine tuning and seasonal testing

This Code considers it best practice to undertake a programme of post-occupancy fine-tuning and seasonal testing. This is key to the delivery of specified performance outcomes, such as operational energy use.

The fine-tuning programme can be composed of a series of reviews of the building management system (BMS) and elements such as meters, with associated troubleshooting and corrective measures.

Seasonal testing is the performance evaluation of a building and its engineering services under full load conditions during peak heating and cooling seasons, as well as part-load conditions in spring and autumn.

This work will require collaboration between the commissioning team and the facilities management provider for the asset. This Code proposes that the commissioning manager (CxM) will prepare this activity, lead its execution, produce the report from it, and issue it in the specified manner. Other parties need to fulfil their obligations for the execution of this work, as directed by the CxM.

In accordance with requirements established during the preparation and briefing stage of a project, both the fine-tuning and seasonal testing may be part of an ongoing commissioning effort that continues through the operational life of a building. This ongoing commissioning can be in response to statutory compliance requirements, alterations to systems, building refurbishments and reconfigurations, or reviews of building performance.

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8.3 Post-project review

The principal focus of this activity is how a building and the active systems within it perform in-use, comparing actual operational performance and functionality against the design intent. This Code recommends that this activity should take place no sooner than 12 months after occupancy.

The collection of performance data needs to focus on the success criteria that were established for the project during the preparation and brief stage. This can include matters such as base build energy consumption, water consumption, indoor environmental performance, or system downtime. The methodology employed should also be in direct response to the requirements defined at the outset of the project.

The review also needs to encompass feedback from users and operators to understand what works and what does not, what they like and what they do not. This subjective data can then be compared to the objective performance data relating to the building and its different active systems, both building services and architectural.

A competent entity needs to lead this activity, facilitating input from design, construction and commissioning professionals, the facilities management provider and end-users. This lead entity will also be responsible for the production of the report associated with this work and its dissemination in the specified manner.

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9 Definitions

acceptance

A formal action, taken by a person with appropriate authority, to declare that some aspect of the project meets defined requirements, thus permitting subsequent activities to proceed.

acceptance criteria

Performance requirements or essential conditions that are to be achieved before project deliverables are accepted.

accountability

The acknowledgement and assumption of responsibility for actions, decisions, and their consequences.

assure

Give confidence to, confirm, encourage.

Building Control Body (BCB)

A local authority building control department or an approved inspector. Also known as the Authority Having Jurisdiction (AHJ).

building information modelling (BIM)

The use of a shared digital representation of a built asset to facilitate design, construction, commissioning and operation processes to form a reliable basis for decisions.

Construction Operations Building Information Exchange (COBie)

A non-proprietary data format for the publication of a subset of building information models (BIM) focused on delivering asset data as distinct from geometric information.

commissionability

The ability of a system, or interdependent systems, to be commissioned satisfactorily in accordance with specified requirements.

commissioning

A process of assuring that a project is planned, programmed, costed, designed, installed, tested, and fine-tuned so it meets specified performance requirements.

commissioning issues and resolutions log

A formal and ongoing record of problems or concerns and their resolutions that have been compiled by members of the commissioning team during the course of the commissioning process.

commissioning management

The planning, monitoring and control of all aspects of commissioning and the engagement of all those involved in it, to achieve the specified outcomes.

Commissioning Manager (CxM)

The entity that leads the management of the commissioning process on a project.

Commissioning Methodology

A project-specific document that details how an on-site commissioning procedure will be executed and documented.

Commissioning Plan

A document that describes the commissioning process for a project and defines the way in which it will be managed.

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Commissioning Specification

A detailed description of the commissioning work to be done on a project, with references to drawings, schedules, and relevant codes, manuals, guides and standards.

commissioning team

A group of project stakeholders, whose coordinated actions are responsible for implementing the commissioning process.

common data environment (CDE)

The agreed source of information for any given project or asset, for collecting, managing and disseminating each information container through a managed process. A CDE workflow describes the processes to be used.

competence

The combination of skills, knowledge, experience and behaviours that enable a person to undertake responsibilities and perform activities to a recognised standard on a regular basis.

Competent Person

Someone who has sufficient training and experience or knowledge and other qualities that allow them to assist you properly.

conformity

Fulfilment of a requirement.

data

Facts about an object.

document

Information and the medium on which it is contained.

defect

Nonconformity related to an intended or specified use.

dutyholder

The key roles (whether fulfilled by individuals or organisations) that are assigned specific responsibilities at particular phases of the building lifecycle, as defined in legislation.

engagement

Involvement in, and contribution to, activities to achieve shared objectives.

factory acceptance test (FAT)

Equipment testing undertaken at the manufacturer's factory, or an accredited third party test facility, to validate that performance under load complies with specified requirements.

fine tuning

Local adjustment to the system where usage and system proving have shown such a need. This may also include the reassessment of control set points and values to achieve optimum performance.

functional performance test (FPT)

A site-based test activity which validates that a system's performance is in accordance with specified requirements. An FPT is project-specific and system-specific.

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golden thread

The (digital by default) record of prescribed documents and building information needed to ensure that the original design intent and any subsequent changes to the building are captured, preserved and used to support safety improvements throughout the building lifecycle.

information

Meaningful data.

inspection

Determination of conformity to specified requirements.

installation

A system placed in position as required by the design or specification. The action or act of installing something.

installation verification

Observations or inspections that confirm the system or component has been installed in accordance with the contract documents and to industry accepted best practices.

integrated systems test (IST)

A procedure that entails performance testing of multiple integrated systems to verify proper functional interfaces between systems, within the whole building context.

lessons learned workshop

A workshop conducted to discuss and document project successes and identify opportunities for improvements for future projects.

life safety systems

Any interior building element designed to protect, and evacuate where necessary, the building population in emergencies, including fires and earthquakes, and less critical events, such as power failures.

management

The application of skill and care in the manipulation, use, treatment or control of things or persons.

monitoring

Determining the status of a system, a process , a product, a service , or an activity.

operationally ready

A state in which a building or engineering system is physically complete, functions as specified, has its asset documentation in place, and people have been trained to take safe and effective ownership of it.

outcomes

Quantitative and measurable targets, by which a project can be assessed, and its success tested throughout the design, delivery and post-occupancy stages.

performance

A measurable result.

performance test

The process of verifying that a material, product, assembly, or system meets defined performance criteria. The methods and conditions under which performance is verified are described in one or more test protocols.

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pre-functional test (PFT)

A site-based procedure which validates that equipment and systems are connected and operational, and confirms their state of readiness for functional performance testing.

procedure

A specified way to carry out an activity or a process.

process

A set of interrelated or interacting activities that use inputs to deliver an intended result.

project

A unique process, consisting of a set of coordinated and controlled activities with start and finish dates, undertaken to achieve an objective conforming to specific requirements, including the constraints of time, cost and resources.

Project Brief

A statement that describes the purpose, cost, time and performance requirements/constraints for a project.

Project Commissioning Report

A document describing the commissioning process for a project and presenting its results, conclusions and recommendations. It is commonly developed from the Commissioning Plan.

Project Execution Plan (PEP)

A plan for carrying out a project, to meet specific objectives, that is prepared by or for the project manager. In some instances, this is also known as the Project Management Plan (PMP).

quality

The degree to which a set of inherent characteristics of an object fulfils requirements.

quality assurance

Planned and systematic actions necessary to provide adequate confidence that a process, measurement or service satisfies given requirements for quality.

quality-based sampling

A process for evaluating a subset (sample) of the total population. The sample is based upon a known or estimated probability distribution of expected values.

record

A document stating results achieved or providing evidence of activities performed.

requirement

A need or expectation that is stated, generally implied or obligatory.

review

Determination of the suitability, adequacy or effectiveness of an object to achieve established objectives.

risk

Uncertain event or set of events with a potential positive or negative impact. The effect of uncertainty.

setting to work

The process of setting a static system into operation.

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stakeholder

Person, group or organization that has interests in, or can affect, be affected by, or perceive itself to be affected by a decision or activity.

success

Achievement of an objective.

system continuous operational performance (SCOP) test

A test procedure in which a system or a building is put into automatic control for a defined time period, during which specific performance criteria are continuously monitored to prove that they can be maintained within specified tolerances.

testing

The measurement and recording of system parameters to assess specification compliance.

tolerance

Permissible deviation from a specified design requirement.

validation

Confirmation, through the provision of objective evidence, that the requirements for a specific intended use or application have been fulfilled.

witness

A person present at an event and able to provide information about it from personal observation.

work package

Group of related activities and deliverables within a work breakdown structure with a defined scope, timescale, cost and a single person accountable for it.

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10 Bibliography

10.1 Legislation

A selection of legislation that relates to the commissioning of active systems, both building services and architectural, is shown below. Please refer to the official home of UK Legislation for more information (https://www.legislation.gov.uk).

- The Building Regulations 2010
- The Building Safety Act 2022
- The Management of Health and Safety at Work Regulations 1999
- The Construction (Design and Management) Regulations 2015
- The Electricity at Work Regulations 1989
- The Control of Substances Hazardous to Health Regulations 1994
- The Provision and Use of Work Equipment Regulations 1998
- The Pressure Systems Safety Regulations 2000
- The Gas Safety (Installation and Use) Regulations 1998
- The Water Supply (Water Fittings) Regulations 1999
- The Personal Protective Equipment at Work Regulations 1992
- The Confined Spaces Regulations 1997
- The Work at Height Regulations 2005

10.2 Technical commissioning publications

CIBSE publications

For details, refer to the CIBSE website (https://www.cibse.org/knowledge-research/knowledge-resources/engineering-guidance)

CIBSE Commissioning Codes:

- Code A: *Air distribution systems*
- Code B: *Boilers*
- Code C: *Automatic controls*
- Code L: *Lighting*
- Code R: *Refrigerating systems*
- Code W: *Water distribution systems*

Commissioning Specialists' Association (CSA) publications

A selection of CSA documents is shown below. For more information please refer to the CSA website (https://www.csa.org.uk).

- *Commissioning Engineers Compendium*

CSA Guidance Notes:

- GN 1: *White water balancing*
- GN 2: *Constant flow regulators*
- GN 3: *Variable volume water systems*
- GN 4: *Bacteria within closed circuit pipework systems*
- GN 5: *Site safety for commissioning engineers*

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- GN 8: *Inverter drives for fans and pumps*
- GN 12: *Dearation in hot water services systems*
- GN 13: *Volume flow rate measurement by non-invasive meters*

CSA Technical Memorandums:

- TM 1: *Standard Commissioning Procedures*
- TM 2: *Trouble shooting for air distribution systems*
- TM 5: *Adverse effects of air and dirt in water systems*
- TM 7: *Commissioning of steam systems*
- TM 9: *Water treatment and The Commissioning Engineer*

BSRIA documents

A selection of BSRIA publications is shown below. Please refer to the BSRIA website for more information (https://www.bsria.com/uk/information-training/bookshop).

- BG 50/2021: *Water Treatment for Closed Heating and Cooling Systems*

BSRIA Commissioning Guides:

- BG 29/2021: *Pre-Commission Cleaning of Pipework Systems* (6th edition)
- BG 49/2015: *Commissioning Air Systems*
- BG 2/2010: *Commissioning Water Systems*
- BG 44/2013: *Seasonal Commissioning*

Building Engineering Services Association (BESA) publications

A selection of BESA documents is shown below. Please refer to the BESA website for more information (https://www.thebesa.com).

- DW/143: *Guide to Good Practice – Ductwork Air Leakage Testing*
- DW/172: *Specification for Kitchen Ventilation*
- TR19: *Guide to Good Practice – Internal Cleanliness of Ventilation Systems*
- TR6: *Guide to Good Practice – Site pressure testing of pipework*
- TR40: *A Guide to Good Practice for Local Exhaust Ventilation*

Health and Safety Executive (HSE) guidance

A selection of HSE documents is shown below. Please refer to the HSE website for more information (https://www.hse.gov.uk)

- HSG274: *Legionnaires' Disease. Technical Guidance*
- ACOP L8: *Legionnaires' disease. The control of legionella bacteria in water systems. Approved Code of Practice and guidance*

10.3 Commissioning management and project management publications

ASHRAE publications

For details, refer to the ASHRAE website (https://www.ashrae.org).

- ASHRAE Guideline 0-2019: *The Commissioning Process*
- ANSI ASHRAE IES Standard 202-2018: *Commissioning Process for Buildings and Systems*
- *Commissioning Stakeholders Guide*

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BSRIA publication

Please refer to the BSRIA website for more information (https://www.bsria.com/uk/information-training/bookshop).

— BG11/2010: *Commissioning Job Book — A framework for managing the commissioning process*

Chartered Institute of Building (CIOB) publication

For details, refer to the CIOB website (https://www.ciobacademy.org/publications).

— *Code of Practice for Project Management for Construction and Development* (6th edition, 2022)

Royal Institute of British Architects (RIBA) publication

For details, refer to the RIBA website (https://www.architecture.com).

— *RIBA Job Book* (2020)

Royal Institution of Chartered Surveyors (RICS) publications

For details, refer to the RICS website (https://www.rics.org/uk/upholding-professional-standards/sector-standards/construction/nrm).

— NRM 1: *New Rules of Measurement. Order of cost estimating and cost planning for capital building works* (2021)

— NRM 2: *New Rules of Measurement. Detailed measurement for building works* (2021)

BSI publications

For details, refer to the BSI website (https://shop.bsigroup.com).

— BS 6079:2019 *Project management. Principles and guidance for the management of projects*

— BS 8536-1:2015 *Briefing for design and construction. Code of practice for facilities management* (buildings infrastructure)

— BS EN ISO 9000:2015 *Quality management systems. Fundamentals and vocabulary*

— BS EN ISO 19650-1: 2018 *Organization and digitization of information about buildings and civil engineering works, including building information modelling (BIM). Information management using building information modelling — Concepts and principles*

— BS EN ISO 19650-2 2018 *Organization and digitization of information about buildings and civil engineering works, including building information modelling (BIM). Information management using building information modelling — Delivery phase of the assets*

10.4 British Standards with commissioning guidance

A selection of the British Standards that relate to the commissioning of building services systems is shown below. Please refer to the BSI website (https://shop.bsigroup.com).

— BS 5839-1:2017 *Fire detection and fire alarm systems for buildings — Code of practice for design, installation, commissioning and maintenance of systems in non-domestic premises*

— BS 5839-6:2019+A1:2020 *Fire detection and fire alarm systems for buildings — Code of practice for the design, installation, commissioning and maintenance of fire detection and fire alarm systems in domestic premises*

— BS 5839-8:2013 *Fire detection and fire alarm systems for buildings — Code of practice for the design, installation, commissioning and maintenance of voice alarm systems*

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- BS 5839-9:2021 *Fire detection and fire alarm systems for buildings — Code of practice for the design, installation, commissioning and maintenance of emergency voice communication systems*
- BS 7346-8:2013 *Components for smoke control systems — Code of practice for planning, design, installation, commissioning and maintenance*
- BS 7593:2019 *Code of practice for the preparation, commissioning and maintenance of domestic central heating and cooling water systems*
- BS 7671:2018+A2:2022 *Requirements for Electrical Installations. IET Wiring Regulations*
- BS 8418:2021 *Design, installation, commissioning and maintenance of detector-activated video surveillance systems (VSS). Code of practice*
- BS 8558:2015 *Guide to the design, installation, testing and maintenance of services supplying water for domestic use within buildings and their curtilages. Complementary guidance to BS EN 806*
- BS 8629:2019 *Code of practice for the design, installation, commissioning and maintenance of evacuation alert systems for use by fire and rescue services in buildings containing flats*
- BS ISO 19455-1:2019 *Planning for functional performance testing for building commissioning — Secondary hydronic pump, system and associated controls*
- 21/30403065 DC: *BS 8644-1. Digital management of fire safety information — Part 1. Design, construction, handover, asset management and emergency response. Code of practice* (currently in draft stage)

10.5 Other commissioning-related guidance

- Better Buildings Partnership: *Design for Performance. A new approach to deliver energy efficient offices* (2019) (available at https://www.betterbuildingspartnership.co.uk/design-performance-new-approach-delivering-energy-efficient-offices-uk)
- BSRIA Guide BG 79/2020: *Handover Information and O&M Manuals*
- BSRIA Guide BG 74/2019: *Success Criteria for Soft Landings Projects*
- BSRIA Guide BG 54/2018: *Soft Landings Framework 2018*
- CIBSE Guide M: *Maintenance engineering and management* (2022)
- CIBSE TM54: *Evaluating operational energy use at the design stage* (2022)
- *RIBA Plan for Use Guide* (2021) (available at https://www.architecture.com/knowledge-and-resources/resources-landing-page/plan-for-use-guide)
- *RIBA Sustainable Outcomes Guide* (2019) (available at https://www.architecture.com/knowledge-and-resources/resources-landing-page/sustainable-outcomes-guide)
- Health and Safety Executive HSE L153: *Managing health and safety in construction* (2015 (available at https://books.hse.gov.uk/gempdf/L153.pdf)
- NHS Health Technical Memoranda (HTM) (available at https://www.england.nhs.uk/estates/health-technical-memoranda)

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Appendix A: Example activities and responsibilities matrix for commissioning

Assumptions made for the population of this example matrix:

(1) The activities and responsibilities matrix contains the 25 activities that form the commissioning process described in this Code. These activities take place from the Preparation and Brief stage (RIBA Stage 1) to the In-use stage (RIBA Stage 7).

(2) The 25 activities appear in the matrix in the order that they appear in the logic diagram for the commissioning process in Figure 1.

(3) The client appoints the commissioning manager (CxM) during the Concept Design Stage (RIBA Stage 2) of the project.

(4) The client/client's representative is a senior representative from within the client organisation, or a third party project management organisation acting on behalf of the client.

(5) The building services design consultant is in contract with the client.

(6) The main contractor is appointed at the start of the Technical Design stage (RIBA Stage 4) of the project and the main contractor appoints the building services contractor.

(7) All commissioning documents referred to in the activities and responsibilities matrix are project-specific.

(8) Commissioning documents will be uploaded to, and disseminated via, whatever document management system is in place, in the specified manner.

(9) People undertaking any commissioning activity are competent to do so.

(10) Commissioning administration activities (as outlined in section 4.3 of this Code) are common to all project stages and are not included in the activities and responsibilities in this matrix, e.g. commissioning team meetings, tracking of commissioning works, production of commissioning progress reports and maintenance of a commissioning issues and resolutions log.

(11) The activity descriptions contained in the activities and responsibilities matrix need to be read in the context of phrases such as: 'in accordance with the specified requirements', 'for compliance with project requirements' or 'in accordance with the contract documents'.

(12) The headline words used at the top of each box in the matrix have the following meanings:

- *Responsible*: performs the activity
- *Accountable*: ultimate responsibility for actions, decisions, and their consequences
- *Supportive*: assists with the execution of an activity
- *Consulted*: provides professional advice for an activity
- *Informed*: provided with information from an activity

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Activity number	Commissioning activity description	Responsibilities					
		Commissioning manager (CxM)	Client/client's representative (CL)	Building services design consultant (BSD)	Main contractor (MC)	Building services contractor (BSC)	Other company
1	Establish commissioning requirements and related success criteria	Consulted A CxM can be invited to assist the client with this activity on a short-term, fee-based appointment — before the permanent appointment of the CxM during the design stage	Responsible Accountable Produce a Project Brief that defines required performance outcomes and establishes commissioning as a key means of achieving these outcomes	Supportive Assist with the production of the Project Brief			
2	Determine the commissioning scope and budget	Consulted A CxM can be invited to assist the client with this activity on a short-term, fee-based appointment — before the permanent appointment of the CxM during the design stage	Responsible Accountable Identify the building systems to be commissioned, describe the commissioning activities that need to take place and establish the standard of commissioning required Assign an appropriate budget for commissioning Ensure that commissioning forms a key part of the Project Execution Plan (PEP) Include commissioning-related requirements in the contracts of all relevant consultants and contractors	Supportive Assist with scoping of, and budgeting for, commissioning			Supportive *Cost consultant* (CC) Assist with scoping of, and budgeting for, commissioning
3	Form a commissioning team	Responsible Respond to the Request for Proposal (RfP) for a CxM service and enter into contract with the client Integrate members into the commissioning team and run a kick-off meeting Initiate commissioning administration and lead it throughout the project	Accountable Issue a Request for Proposal (RfP) for the appointment of a commissioning manager (CxM) Appoint the CxM Provide a member for the commissioning team	Supportive Provide a member for the commissioning team	Supportive Provide a member for the commissioning team — when appointed at RIBA Stage 4	Supportive Provide a member for the commissioning team — when appointed at RIBA Stage 4	Supportive *Facilities management provider* (FM) Provide a member for the commissioning team *Equipment manufacturers* (EM) Provide a member for the commissioning team — when appointed at RIBA Stage 4
4	Review commissioning lessons learned	Responsible Accountable Organise and lead the lessons learned review Produce the lessons learned report(s)	Supportive Assist with the lessons learned review	Supportive Assist with the lessons learned review	Informed Provided with a copy of the lessons learned report — during appointment at RIBA Stage 4	Informed Provided with a copy of the lessons learned report — during appointment at RIBA Stage 4	Supportive *Cost consultant (CC)* and *facilities management provider* (FM) Assist with the lessons learned review

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Activity number	Commissioning activity description	Responsibilities					
		Commissioning manager (CxM)	Client/client's representative (CL)	Building services design consultant (BSD)	Main contractor (MC)	Building services contractor (BSC)	Other company
5	Produce the design-stage Commissioning Plan	Responsible Author the design-stage Commissioning Plan	Accountable Review and accept the Commissioning Plan	Supportive Assist with the production of the Commissioning Plan	Informed Provided with a copy of the Commissioning Plan — during appointment at RIBA Stage 4	Informed Provided with a copy of the Commissioning Plan — during appointment at RIBA Stage 4	
6	Create the Commissioning Specification	Consulted Assist with the production of the Commissioning Specification	Accountable Review and accept the Commissioning Specification	Responsible Produce the Commissioning Specification	Informed Provided with a copy of the Commissioning Specification - during appointment at RIBA Stage 4	Informed Provided with a copy of the Commissioning Specification - during appointment at RIBA Stage 4	
7	Produce a commissioning Cost Plan	Consulted Assist with the integration of commissioning-related content into the Cost Plan	Accountable Accept the Cost Plan with integrated commissioning content	Supportive Assist with the integration of commissioning-related content into the Cost Plan	Informed Provided with a copy of the Cost Plan — during appointment at RIBA Stage 4	Informed Provided with a copy of the Cost Plan — during appointment at RIBA Stage 4	Responsible *Cost consultant* (CC) Integrate commissioning costs into the project Cost Plan
8	Programme commissioning activities	Responsible Produce a commissioning logic diagram for the project Produce a detailed commissioning programme that is coordinated with, and linked to, the master project programme	Accountable Accept the commissioning logic diagram and commissioning programme Integrate commissioning into the master project programme with appropriate durations and logic links		Informed Provided with commissioning logic diagram and programme — during appointment at RIBA Stage 4 Supportive Once appointed, integrate commissioning into the master construction programme with appropriate durations and logic links	Informed Provided with commissioning logic diagram and programme — during appointment at RIBA Stage 4 Supportive Once appointed, schedule and coordinate commissioning activities with the MC and CxM	
9	Undertake a commissionability review	Responsible Perform the commissioning-focused design review, obtaining specialist advice where needed Produce a design review report Close-out all findings of the review with the BSD	Accountable Accept the commissioning-focused design review report issued by the CxM Accept any agreed changes following the design review	Supportive Formally respond to the commissioning-focused design review report issued by the CxM Implement agreed changes to design documentation	Informed Provided with a copy of the design review report - during appointment at RIBA Stage 4	Informed Provided with a copy of the design review report — during appointment at RIBA Stage 4	Supportive *Cost consultant* (CC) Ensure any agreed changes are integrated into the project Cost Plan

Activity number	Commissioning activity description	Responsibilities					
		Commissioning manager (CxM)	Client/client's representative (CL)	Building services design consultant (BSD)	Main contractor (MC)	Building services contractor (BSC)	Other company
10	Define commissioning requirements in contract documentation	Consulted Provide specialist input to the integration of commissioning-related content in the tender documentation Assist with the explanation of commissioning requirements during the tender period and the resolution of queries raised by the MC	**Responsible Accountable** Produce tender documentation that clearly defines the project's commissioning requirements Explain the commissioning requirements during the tender process and resolve any queries raised by the MC	**Supportive** Assist with the integration of commissioning-related content into the tender documentation	**Supportive** Review the commissioning-related content in the tender documentation Issue queries and resolve them with to the CL	**Supportive** Assist the MC with the review of commissioning-related content in the tender documentation Assist the MC with the issue and resolution of queries	**Supportive** *Cost consultant* (CC) Ensure clear commissioning-related cost information is integrated into the tender documentation
11	Appoint commissioning-competent contractors	Consulted Provide specialist input to the assessment of the commissioning competence of the tendering main contractors and their building services supply chains	**Responsible Accountable** Appoint a main contractor that, with its building services supply chain, has with the required commissioning competence	**Supportive** Assist with the review of the commissioning competence of the tendering main contractors	**Supportive** Provide clear information to the client about commissioning competence during the tender period	**Supportive** Assist the MC with the provision of clear information about commissioning competence during the tender period	
12	Produce the construction-stage Commissioning Plan	**Responsible** Produce the construction-stage Commissioning Plan	**Accountable** Review and accept the construction-stage Commissioning Plan	Consulted Provide specialist input to the production of the updated Commissioning Plan	**Supportive** Assist with the production of the updated Commissioning Plan	**Supportive** Assist with the production of the updated Commissioning Plan	
13	Produce Commissioning Methodologies	**Supportive** Guide the production of Commissioning Methodologies **Accountable** Lead the review and acceptance of Commissioning Methodologies		Consulted Provide specialist input to the production of the Commissioning Methodologies Provide specialist input to the review and acceptance of Commissioning Methodologies	**Supportive** Assist with the production of the Commissioning Methodologies	**Responsible** Produce Commissioning Methodologies, in accordance with the format and content required by the CxM Address comments made by the CxM about Commissioning Methodologies before proceeding with commissioning works	**Responsible** *Equipment manufacturers* (EM) Produce Commissioning Methodologies, in accordance with the format and content required by the CxM Address comments made by the CxM about Commissioning Methodologies before proceeding with commissioning works

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Activity number	Commissioning activity description	Responsibilities					
		Commissioning manager (CxM)	Client/client's representative (CL)	Building services design consultant (BSD)	Main contractor (MC)	Building services contractor (BSC)	Other company
14	Hold commissioning workshops	Responsible Organise and lead the commissioning workshop(s) Produce the workshop report(s)	Supportive Participate in the commissioning workshop(s) Accountable Review and accept the workshop report(s)	Supportive Participate in the commissioning workshop(s)	Supportive Participate in the commissioning workshop(s)	Supportive Participate in the commissioning workshop(s)	Supportive *Equipment manufacturers* (EM) Participate in the commissioning workshop(s)
15	Factory acceptance testing	Responsible Schedule the factory acceptance tests (FATs) Coordinate all participation in the FATs Guide the production of FAT Methodologies Lead the review and acceptance of each FAT Methodology Direct each factory acceptance test (FAT) Lead the review and acceptance of each FAT Report	Informed Provided with a copies of FAT reports	Supportive Witness factory acceptance tests (FATs) on behalf of the client Assist with the review and acceptance of each FAT Methodology Assist with the review and acceptance of each FAT Report	Accountable Monitor the programme of factory acceptance tests (FATs) Final acceptance of FAT reports	Supportive Attend factory acceptance tests (FATs) on behalf of the main contractor and witness tests	Responsible *Equipment manufacturers* (EM) Agree the factory acceptance test (FAT) schedule with the CxM Produce the FAT Methodologies, in accordance with the format and content required by the CxM Address CxM's comments about the FAT Methodology before proceeding with the FAT Execute the factory acceptance test (FAT) Undertake remedial works in the event of non-compliance Produce the factory acceptance test (FAT) report
16	Sample installation inspections	Responsible Lead sample inspections of installation work that relates to subsequent on-site commissioning activities Produce sampling installation inspection reports	Informed Provided with copies sampling installation inspection reports	Consulted Accompany the CxM during the sampling inspection work and provide specialist technical input	Accountable Monitor progress of installation works Offer installed work to the CxM for inspection Accompany the CxM during the sampling inspection work Review and accept the sampling installation inspection reports issued by the CxM Coordinate all required remedial works	Supportive Produce records of completed installation works Inform the main contractor that work is available for inspection Accompany the CxM during the sampling inspection work Undertake all remedial works before proceeding with pre-functional tests (PFTs)	Supportive *Equipment manufacturers* (EM) Produce a record of completion of installation work Inform the main contractor that work is available for inspections Accompany the CxM during the sampling inspection work Undertake all remedial works before proceeding with pre-functional tests (PFTs)

Activity number	Commissioning activity description	Responsibilities					
		Commissioning manager (CxM)	Client/client's representative (CL)	Building services design consultant (BSD)	Main contractor (MC)	Building services contractor (BSC)	Other company
17	Pre-functional tests (PFTs)	Supportive Review, coordinate and confirm each BSC's and EM's programme of work Witness tests, as required Coordinate the review and acceptance of test records	Informed Provided with copies of PFT records	Supportive Witness tests, as required Assist with the review and acceptance of test records	Accountable Agree the programme of work for pre-functional tests (PFTs) with the CxM Monitor progress of the PFTs Coordinate all required deficiency resolution and re-testing Final acceptance of test records	Responsible Execute the pre-functional tests (PFTs) Resolve deficiencies and perform re-testing as necessary Submit test records to the CxM	Responsible *Equipment manufacturers* (EM) Execute Site Acceptance Tests (SATs) Resolve deficiencies and perform re-testing as necessary Submit test records to the CxM
18	Functional performance tests (FPTs)	Responsible Review, coordinate and confirm each BSC's and EM's programme of work Witness FPTs, as required Coordinate all 3rd party involvement in statutory demonstrations Coordinate the review and acceptance of test records	Informed Provided with copies of FPT records	Supportive Witness FPTs, as required Assist with the review and acceptance of test records	Accountable Agree the programme of work for functional performance tests (FPTs) with the CxM Monitor progress of the FPTs Coordinate all required deficiency resolution and re-testing Accept test records	Responsible Execute the functional performance tests (FPTs) Resolve deficiencies and perform re-testing as necessary Submit test records to the CxM	Supportive *Equipment manufacturers* (EM) Assist the BSC with the execution of functional performance tests (FPTs)
19	Integrated systems tests (ISTs)	Responsible Produce the work programme for ISTs Coordinate all participation in the ISTs Produce the Commissioning Methodologies for ISTs Lead the execution of the ISTs Produce reports for the ISTs	Informed Provided with a copies of IST records	Supportive Witness the integrated systems tests (ISTs) on behalf of the client	Accountable Review, coordinate and confirm the programme of work for the ISTs with the CxM Monitor progress of the ISTs Assist with the execution of the ISTs Witness the integrated systems tests (ISTs) Accept the IST Commissioning Methodologies issued by the CxM Accept the IST reports issued by the CxM	Supportive Assist the CxM with production of the IST Commissioning Methodologies Provide all materials, equipment and manpower to execute the ISTs under the leadership of the CxM Provide all required information to enable the CxM to produce the IST test reports Resolve deficiencies and perform re-testing, as necessary	Supportive *Equipment manufacturers* (EM) Assist the CxM with production of the IST Commissioning Methodologies Support the execution of the ISTs, under the leadership of the CxM Help resolve deficiencies and re-testing, as necessary

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Activity number	Commissioning activity description	Responsibilities					
		Commissioning manager (CxM)	Client/client's representative (CL)	Building services design consultant (BSD)	Main contractor (MC)	Building services contractor (BSC)	Other company
20	System continuous operational performance (SCOP) tests	Responsible Produce the work programme for the SCOP tests Coordinate all participation in the SCOP tests Produce the Commissioning Methodology for SCOP tests Lead the execution of the SCOP tests Produce the report for the SCOP tests Upload the SCOP test report to the document management system	Informed Provided with a copies of SCOP test records	Supportive Witness the SCOP tests on behalf of the client	Accountable Review, coordinate and confirm the programme of work for the SCOP tests with the CxM Monitor progress of the SCOP tests Assist with the execution of the SCOP tests Witness the SCOP tests Accept the Commissioning Methodology for the SCOP tests issued by the CxM Accept the SCOP tests report issued by the CxM	Supportive Provide all materials, equipment, and manpower to execute the SCOP tests under the leadership of the CxM Provide all required information to enable the CxM to produce the SCOP test report Resolve deficiencies and perform re-testing as necessary	
21	Train users and operators	Supportive Coordinate and schedule training with the CL, BSC and OEMs Produce attendance registers for each training event Check that each training event has taken place and produce a summary report	Supportive Accept the training schedule produced by the CxM Ensure client-side personnel participate in the training	Supportive Assist the MC with the review and accept training materials produced by the BSC and EM	Accountable Review, coordinate and confirm the training programme with the CxM Review and accept training materials produced by the BSC and EM Monitor progress of the training Coordinate all client-side participation in all training Accept the training records issued by the CxM	Responsible Develop and deliver training, familiarisation and demonstration Produce a record of attendance for each training event	Responsible *Equipment manufacturers* (EM) Assist the BSC with the development and delivery of training about specific equipment
22	Hand over commissioning-related documentation	Responsible Produce a final project Commissioning Report Issue commissioning-related handover information to other parties, e.g. the author of the O&M manuals and the asset information model (AIM) content creator	Informed Provided with commissioning-related handover documentation		Accountable Monitor progress of the handing-over of commissioning-related documentation Accept the final project Commissioning Report and all other commissioning-related documentation	Responsible Develop Operating and Maintenance (O&M) manuals for building services Ensure all commissioning records have been submitted	Supportive Asset information model (AIM) content creator Integrate commissioning-related documentation into the model

Activity number	Commissioning activity description	Responsibilities					
		Commissioning manager (CxM)	Client/client's representative (CL)	Building services design consultant (BSD)	Main contractor (MC)	Building services contractor (BSC)	Other company
23	Review commissioning of the project	Responsible Prepare and lead a lessons learned workshop Produce the workshop report	Supportive Participate in the lessons learned workshop	Supportive Participate in the lessons learned workshop	Accountable Schedule a lessons learned workshop Review and accept the workshop report produced by the CxM Supportive Participate in the lessons learned workshop	Supportive Participate in the lessons learned workshop	Supportive *Facilities management provider* (FM) Participate in the lessons learned workshop *Manufacturers* Participate in the lessons learned workshop
24	Fine tuning and seasonal testing	Responsible Prepare the work programme for the fine tuning and seasonal testing Coordinate all participation in this work Produce the Methodologies for fine tuning and seasonal testing Direct the fine tuning and seasonal testing Produce the reports for this work	Informed Provided with a copy of the fine tuning and seasonal testing reports	Consulted Provide specialist input to the production of the fine tuning and seasonal testing methodologies	Accountable Review, coordinate and confirm the programme of work for fine tuning and seasonal testing tests with the CxM Monitor progress of the fine tuning and seasonal testing Review and accept the methodologies and reports for the fine tuning and seasonal testing	Responsible Perform the fine tuning and seasonal testing work, as directed by the CxM and in collaboration with facilities management provider (FM)	Supportive *Facilities management provider* (FM) Assist the CxM and BSC with fine tuning and seasonal testing
25	Post-project review	Responsible Perform a post-project review Produce the review report	Supportive Participate in the post-project review Ensure client-side personnel are available for consultation Informed Provided with a copy of the post-project review report	Consulted Provide specialist input to the post-project review	Accountable Coordinate and confirm the programme of work for the post-project review with the CxM Coordinate all participation in this work Review and accept the post-project review report Supportive Participate in the post-project review	Supportive Participate in the post-project review	Supportive *Facilities management provider* (FM) Participate in the post-project review

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Appendix B: Commissioning activities at the different stages of the RIBA Plan of Work

The RIBA Plan of Work organises the process of briefing, designing, delivering, maintaining, operating and using a building into eight stages. It is a framework for all disciplines on construction projects and should be used solely as guidance for the preparation of detailed professional services and building contracts.

Projects span from Stage 1 to Stage 6; the outcome of Stage 0 may be the decision to initiate a project and Stage 7 covers the ongoing use of the building.

	0 Strategic Definition	1 Preparation and Briefing	2 Concept Design	3 Spatial Coordination	4 Technical Design	5 Manufacturing and Construction	6 Handover	7 Use
Stage Outcome at the end of the stage	The best means of achieving the **Client Requirements** confirmed If the outcome determines that a building is the best means of achieving the **Client Requirements**, the client proceeds to Stage 1	**Project Brief** approved by the client and confirmed that it can be accommodated on the site	**Architectural Concept** approved by the client and aligned to the **Project Brief** The brief remains "live" during Stage 2 and is deroguted in response to the **Architectural Concept**	Architectural and engineering information **Spatially Coordinated**	All design information required to manufacture and construct the project completed Stage 4 will overlap with Stage 5 on most projects	Manufacturing, construction and **Commissioning** completed There is no design work in Stage 5 other than responding to **Site Queries**	Building handed over, **Aftercare** initiated and **Building Contract** concluded	Building used, operated and maintained efficiently Stage 7 starts concurrently with Stage 6 and lasts for the life of the building
CIBSE Commissioning Tasks		Establish **commissioning requirements** and related **success criteria** Determine the **scope and budget** for commissioning	Form a **Commissioning Team** Review **commissioning lessons learned** Produce the **Design Stage Commissioning Plan**	Create the **Commissioning Specification** Produce a **Commissioning Cost Plan** **Programme commissioning** activities	Undertake a **Commissionability Review** Define **Commissioning Requirements** in **contract documentation** Appoint **commissioning-competent Contractors**	Produce the **Construction Stage Commissioning Plan** Produce **Commissioning Methodologies** Hold **commissioning workshops** Carry out **factory acceptance testing** Carry out **sample installation inspections** Carry out: • **pre-functional tests** • **functional performance tests** • **integrated system tests** • **SCOP tests** **Training** of users and operators Hand over **commissioning-related documentation**	**Review commissioning** of the project	Carry out **fine tuning** and **seasonal testing** Undertake a **post-project review**

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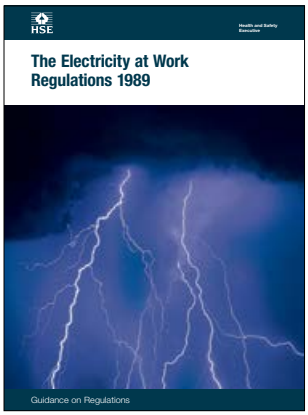
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222 Balham High Road, London SW12 9BS
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The Electricity at Work Regulations 1989

Guidance on Regulations



HSR25 (Third edition)
Published 2015

This new edition of HSR25 will help dutyholders meet the requirements of the Electricity at Work Regulations 1989. It will be of interest and practical help to all dutyholders, particularly engineers (including those involved in the design, construction, operation or maintenance of electrical systems), technicians and their managers.

It sets out the Regulations and gives technical and legal guidance on them. The purpose of this guidance is to highlight the nature of the precautions in general terms to help dutyholders achieve high standards of electrical safety in compliance with the duties imposed.

This third edition removes reference to regulations 17–28 and Schedule 1, which applied only to mines and were revoked in April 2015 by the Mines Regulations 2014, and shows changes made to regulations 3 and 29. This document applies to all electrical systems and there is additional guidance for mines in *Electrical safety in mines* (HSE publication HSG278).

The publication also contains references to HSE guidance and codes of practice from other standards-making bodies and trade associations.

HSE Books

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Guidance

This guidance is issued by the Health and Safety Executive. Following the guidance is not compulsory, unless specifically stated, and you are free to take other action. But if you do follow the guidance you will normally be doing enough to comply with the law. Health and safety inspectors seek to secure compliance with the law and may refer to this guidance.

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Introduction

About this book

1 This book gives guidance on and sets out the Electricity at Work Regulations 1989. The guidance is relevant to all work activities and premises except certain offshore workplaces and certain ships. Additional guidance specific to mines is given in *Electrical safety in mines*.[1]

2 The Electricity at Work Regulations 1989 (SI 1989/635) (as amended) (the Regulations) came into force on 1 April 1990. The purpose of the Regulations is to require precautions to be taken against the risk of death or personal injury from electricity in work activities. The text of the Regulations is available free to download from legislation.gov.uk or to purchase from The Stationery Office.

3 The Regulations are made under the Health and Safety at Work etc Act 1974 (the HSW Act).[2] The HSW Act applies principally to employers, the self-employed and to employees, including certain classes of trainees. Duties are imposed on people (referred to in this guidance as 'dutyholders') in respect of **systems**, **electrical equipment** and **conductors**, and in respect of work activities on or near electrical equipment. Words in bold (above and in extracts from the Regulations) are defined in regulation 2. The duties are in addition to those imposed by the HSW Act. The 1989 Regulations pre-date the risk assessment process brought in with the 1992 version of the Management of Health and Safety at Work Regulations. However, the risk assessment process is still required. Further information can be found in *Managing for health and safety*.[3]

What are the differences between this edition and the previous edition?

4 This third edition notes that regulations 17–28 and Schedule 1, which applied only to mines, were revoked in April 2015 by the Mines Regulations 2014. These Regulations also modified regulations 3 and 29.

Who should read this book?

5 The guidance is primarily for dutyholders (including those involved in the design, construction, operation or maintenance of electrical systems and equipment), engineers, technicians and their managers. It sets out the Regulations and gives technical and legal guidance on them. While it reflects the Health and Safety Executive's (HSE's) view of the meaning of terms used in the Regulations, only the Courts can provide a binding interpretation. The text of the Regulations is set out in *italics*, the accompanying guidance is in normal type. Coloured borders also indicate each section clearly.

Scope

6 This guidance applies to all operational voltages.

7 The Regulations apply to all **electrical systems and equipment** (as defined) whenever manufactured, purchased, installed or taken into use even if its manufacture or installation pre-dates the Regulations. Where electrical equipment pre-dates the Regulations this does not of itself mean that the continued use of the equipment would be in contravention of the Regulations. For example, some of the equipment to which the Regulations apply may have been made to a standard, such as a British Standard, which has since been modified or superseded. Standards such as BS 7671[4] can provide assistance but, ultimately, compliance with the Regulations is required. It is likely to be reasonably practicable to replace it with equipment made to a more recent standard when, but only when, it becomes unsafe or falls due for replacement for other than safety reasons, whichever occurs sooner.

British Standard BS 7671 Requirements for Electrical Installations (also known as the IET Wiring Regulations)

8 BS 7671 *Requirements for electrical installations* is also known as the IET Wiring Regulations. They are non-statutory regulations which 'relate principally to the design, selection, erection, inspection and testing of electrical installations, whether permanent or temporary, in and about buildings generally and to agricultural and horticultural premises, construction sites and caravans and their sites'.

9 BS 7671 is a code of practice which is widely recognised and accepted in the UK and compliance with it is likely to achieve compliance with relevant aspects of the Electricity at Work Regulations 1989.

10 There are, however, many types of system, equipment and hazard to which BS 7671 is not applicable; for example, certain installations at mines and quarries, equipment on vehicles, systems for public electricity supply and explosion protection. Furthermore, BS 7671 applies only to installations operating at up to 1000 V ac or 1500 V dc.

11 Installations to which BS 7671 is relevant may have been installed in accordance with an earlier edition, now superseded but then current. That, in itself, would not mean that the installation would fail to comply with the Regulations.

Electricity Safety, Quality and Continuity Regulations

12 The Electricity Safety, Quality and Continuity Regulations 2002 (ESQCR)[5] impose requirements in respect of the generation, distribution and supply of electricity, including supply networks and electrical equipment. The Department of Energy and Climate Change (DECC) leads on ESQCR matters, though HSE performs some functions on DECC's behalf, in particular with regards to public safety and incident notifications. Some ESQCR obligations – such as requirements for connection with earth – overlap with the Regulations, but others provide additional requirements.

The Regulations

Regulation 1 Citation and commencement

Regulation 1

These Regulations may be cited as the Electricity at Work Regulations 1989 and shall come into force on 1st April 1990.

Regulation 2 Interpretation

Regulation 2

(1) In these Regulations, unless the context otherwise requires –

*"circuit conductor" means any **conductor** in a **system** which is intended to carry electric current in normal conditions, or to be energised in normal conditions, and includes a combined neutral and earth conductor, but does not include a conductor provided solely to perform a protective function by connection to earth or other reference point;*

*"conductor" means a **conductor** of electrical energy;*

*"danger" means risk of **injury**;*

"electrical equipment" includes anything used, intended to be used or installed for use, to generate, provide, transmit, transform, rectify, convert, conduct, distribute, control, store, measure or use electrical energy;

"injury" means death or personal injury from electric shock, electric burn, electrical explosion or arcing, or from fire or explosion initiated by electrical energy, where any such death or injury is associated with the generation, provision, transmission, transformation, rectification, conversion, conduction, distribution, control, storage, measurement or use of electrical energy;

"system" means an electrical system in which all the electrical equipment is, or may be, electrically connected to a common source of electrical energy, and includes such source and such equipment.

Guidance 2

13 Words and phrases which are in **bold** type in the text of the regulation preceding the guidance are those which have been assigned a special meaning by being defined in regulation 2.

Systems

14 The term 'system' includes all parts of a system, eg conductors and electrical equipment in it, and is not a reference solely to the functional circuit as a whole. It follows that something required of a system is required both of the system as a whole and of the equipment and conductors in it.

Guidance 2

15 The definition refers to electrical systems. In the case of each system this will include all of the electrical equipment connected together and the various electrical energy sources in that system. In the case of transformers, even though there may be galvanic separation between the various windings of the transformers, where the energy is transmitted through these from one part of the electrical system to another, the transformer and all of its windings are part of the same system.

16 The definition of 'system' includes equipment which, although not energised, may be electrically connected to a common source of electrical energy. Equipment which is readily capable of being made live by a system is therefore considered to be part of that system. For example, a lighting circuit which has been disconnected from its source of electrical energy by means of removable links or fuses is still part of that system, as is such a circuit which has been switched off even though the switch might be a double pole switch.

17 Equipment which is in any way connected to a source of electrical energy, eg a test instrument containing a source and the equipment containing or connected to that source, becomes part of a system and the Regulations apply to that system. Electrical equipment which is not connected, and cannot be readily connected, to a source of electrical energy is not part of a system. Protective conductors, if they are connected to a source, are part of that system.

18 The reference in the definition to a common source of electrical energy does not exclude systems fed by several generators or transformers. The word 'common' is included in the definition so that completely independent electrical installations are regarded as separate systems. If, however, they are electrically connected in any way they are part of the same system for the purposes of the Regulations. This may mean that the system may be an extensive electrical network covering large geographical areas over which several or even many people have control of various parts. The Regulations place duties on these people only in respect of those provisions of the Regulations which relate to matters which are within their control (see regulation 3).

19 Self-contained portable systems, such as portable generating sets, are electrical systems for the purpose of the Regulations, as are transportable systems and systems on vehicles etc.

Electrical equipment

20 'Electrical equipment' as defined in the Regulations includes every type of electrical equipment from, for example, a high-voltage transmission overhead line to a battery-powered hand lamp. There are no voltage limits in the Regulations; the criteria are whether danger (as defined) may arise. It is appropriate for the Regulations to apply even at the very lowest end of the voltage or power spectrum because the Regulations are concerned with, for example, explosion risks, which may be caused by very low levels of energy igniting flammable gases even though there may be no risk of electric shock or burn.

21 Electrical equipment (as defined) includes conductors used to distribute electrical energy such as cables, wires and leads and those used in the transmission at high voltage of bulk electrical energy, as in the national grid.

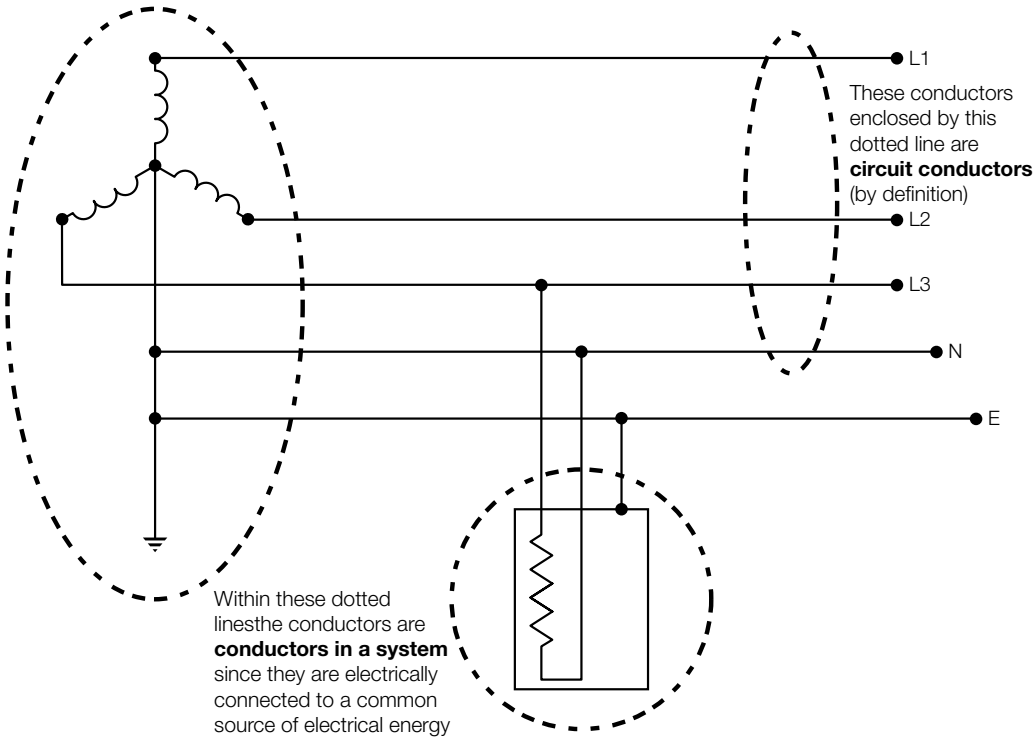
Conductors

22 Regulation 2 defines a conductor as 'a conductor of electrical energy'. This means any material which is capable of conducting electricity (electricity is synonymous with electrical energy) and therefore includes both metals and all other

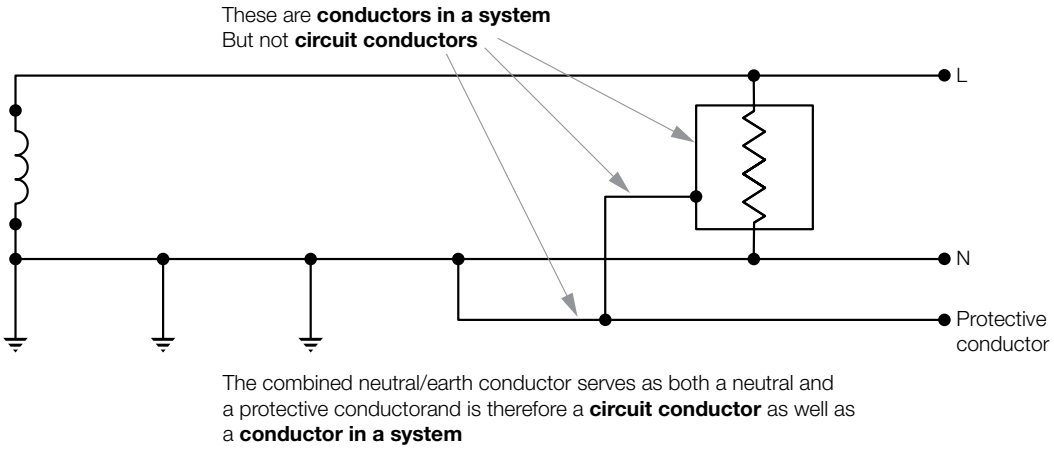
Guidance 2

conducting materials. The definition is not limited to conductors intended to carry current and so includes, for example, metal structures, salt water, ionised gases and conducting particles. The conductance of most materials varies with parameters such as temperature, eg glass is conducting when molten (and is then a conductor, as defined) whereas in its normal, solid, state it is a good insulator and finds many applications as such. For the purposes of the Regulations, while such materials conduct electricity, they are 'conductors'.

Figure 1 Types of conductor



3 Phase system – separate neutral and earth



System including both combined and separate neutral and earth conductors (single phase only shown)

Guidance 2

Circuit conductor

23 This definition is used in regulations 8 and 9 only. It distinguishes from all other conductors those conductors whose normal function is to carry load current or to be energised (see Figure 1).

Danger

24 The Regulations use the two defined terms, 'danger' and 'injury'. 'Danger' is defined as 'risk of *injury*'. 'Injury' is defined in terms of certain classes of potential harm to people.

25 Where the term 'prevent danger' is used it should therefore be read as 'prevent the risk of *injury*'.

26 The Regulations make requirements to 'prevent danger' or 'prevent injury' – or in the case of regulation 16 – 'to prevent danger or, where appropriate, injury'. The purpose of the distinction between 'injury' and 'danger' is to accommodate those circumstances when people must work on or so near live equipment that there is a risk of 'injury', ie where 'danger' is present and cannot be prevented. In these circumstances, under regulation 14, danger may be present but injury must be prevented.

27 The type of injuries with which the Regulations are concerned are detailed in the definition of 'injury' in the regulation (see paragraphs 29 and 30). The scope of the Regulations does not include consequential dangers such as crushing injuries caused by a machine going out of control following an electrical malfunction. Such other dangers are subject to other legal requirements under, for example, the HSW Act, the Factories Act 1961 and the Office, Shops and Railway Premises Act 1963.

28 If no danger arises from a particular system, item of electrical equipment or conductor and will not arise, then the Regulations, although applying to it, do not require any precautions to be taken. However, in order for there to be no danger, there would have to be no risk of electric shock, electric burn, fire, arcing or explosion.

Injury

29 The purpose of the Regulations is to prevent death or personal injury to any person from electrical causes in connection with work activities.

30 'Injury' means death or injury to any person from:

(a) electric shock;
(b) electric burn;
(c) fires of electrical origin;
(d) electric arcing;
(e) explosions initiated or caused by electricity.

Electric shock

31 The human body responds in several ways to electrical current flowing through it. The sensation of shock is only one such effect and this can be extremely painful. When a shock is received, the electric current may take multiple paths through the body and its intensity at any one point is difficult or impossible to predict. The passage of electric current may cause muscular contractions, respiratory failure, fibrillation of the heart, cardiac arrest or injury from internal burns. Any of these can be fatal.

Guidance 2

32 The nature and severity of injury depends upon the magnitude, duration and path of the current through the body and, in the case of alternating current (ac), on its frequency. It is not possible to identify precise thresholds for the existence of hazard because a judgement has to be made in each case taking all the circumstances into account, such as body weight, physical condition of the victim and so forth. Nevertheless, a guide to the sort of current magnitudes which mark the occurrence of various dangerous effects is given in the International Electrotechnical Commission's (IEC's) publication *Guide to effects of current on human beings and livestock. Special aspects relating to human beings*.[6] Quite low currents, of the order of only a few milliamps (mA), can cause fatal electric shock.

33 The likely effects of shock current are mainly influenced by:

(a) voltage;
(b) frequency;
(c) duration;
(d) any impedance in the current path.

34 The effects of electric shock are most acute at around the public electricity supply frequency of 50 hertz. Susceptibility to electric shock is increased if a person is in:

(a) good electrical contact with earth, such as in damp or wet conditions or in conducting locations such as inside a metal tank;
(b) hot environments where people may become damp due to perspiration or humidity, thus reducing the insulation protection offered by clothing.

35 The variability of conditions makes it impossible to specify a voltage which is guaranteed to be safe in all situations. In any situation, you should consider the risk of injury from electric shock against published guidance as to the voltages and other factors which have been found by extensive experience to be safe. This includes national and international standards and technical publications. However, these documents should be interpreted carefully and with a view to the limitations of their various scopes and assumptions. You should always consider the conventional public electricity supply voltage of 230 V ac as potentially fatally dangerous. Many fatal electric shock accidents have occurred from contact with conductors live at this voltage and possibly the most dangerous situation is where contact is made with conductors by each hand, current then flowing 'hand to hand' across the heart region.

36 The following documents give some guidance (see References):

(a) *Guide to effects of current on human beings and livestock* (IEC TS 60479);
(b) *Requirements for electrical installations* (BS 7671);
(c) *Safety of equipment electrically connected to a telecommunications network* (IEC 62151).[7]

Electric burn

37 Electric burns are different from burns due to fire (see paragraphs 39–40), arcing (see paragraphs 41–42) or explosion (see paragraphs 44–46). They are due to the heating effect caused by the passage of electric current through body tissues. They are most commonly associated with electric shock and often occur in and on the skin layers at the point of contact with the electrical conductors which gave rise to the electric shock. Electrical arcs jump across gaps and can cause burns.

Guidance 2

38 At high frequencies, eg radio frequencies (RF), which include microwaves, it may not even be necessary for contact to be made with live conductors for an electric burn to be received. In the case of RF, the heating is by absorption of the electromagnetic wave energy by a dielectric loss process in the body of the victim. RF burns can thus be extremely deep within the body. RF burning can occur without the sensation of shock, particularly if no contact is made with the RF conductors, and can therefore cause severe injury before the victim is aware of their occurrence. Electric burns are usually painful and very slow to heal. Permanent scarring is common.

Fires of an electrical origin

39 Fires may be started by electricity in a number of ways. The main causes are:

(a) overheating of cables and electrical equipment due to overloading of conductors;
(b) leakage currents due to poor or inadequate insulation;
(c) overheating of flammable materials placed too close to electrical equipment which is otherwise operating normally;
(d) the ignition of flammable materials by arcing or sparking of electrical equipment, including the scattering of hot particles from electrical equipment.

40 The injuries associated with fire are usually burns but may include other injuries such as smoke inhalation, each with the potential to kill.

Arcing

41 Arcing causes a particular type of burn injury which is distinct from other types. Arcing generates ultraviolet radiation which causes damage similar to severe sunburn. Molten metal particles from the arc itself can penetrate burn and lodge in the flesh. These effects are additional to any radiated heat damage caused by the arc.

42 On its own, ultraviolet radiation can cause damage; sensitive skin and eyes are especially vulnerable to arc flash. (‘Arc eye’ is commonly encountered with electric arc welding if the proper precautions are not adopted.)

43 Arcing faults can occur if the energy available at a piece of electrical equipment is sufficient to maintain a conductive path through the air or insulation between two conductors which are at different potentials. Under fault flashover conditions, currents many times the nominal rating or setting of a protective device may flow before those devices operate to clear the fault. Much energy is dissipated in the arc and, depending on the electrical protection, may continue long enough to inflict very serious arcing burns or to initiate a fire. These periods can be as short as 0.2 seconds. Arc flashovers caused during work on live circuit conductors are likely to be particularly hazardous because the worker is likely to be very near to or even enveloped by the arc. Such cases often lead to very serious, sometimes fatal, burn injuries.

Explosion

44 This category includes those injuries caused by explosions either of an electrical nature or those ignited by an electrical source.

45 Electrical explosions include the violent and catastrophic rupture of any electrical equipment. Switchgear, motors and power cables are liable to explode if they are subjected to excessive currents, which release violent electromagnetic forces and dissipate heat energy, or if they suffer prolonged internal arcing faults.

46 Explosions caused by ignition from an electrical source include ignition of flammable vapours, gases, liquids and dusts by electrostatic discharge, electric sparks, arcs or the high surface temperature of electrical equipment.

Guidance 2

Other words used in the Regulations

Charged/live (as used in regulations 8, 13 and 14)

47 The terms 'charged' and 'live' have different meanings; they are not defined in the Regulations so they take their ordinary meaning. 'Live' means equipment that is at a voltage by being connected to a source of electricity. 'Charged' means that the item has acquired a charge either because it is live or because it has become charged by other means, such as static or induction charging, or has retained or regained a charge due to capacitance effects even though it may be disconnected from the rest of the system.

Dead (as used in regulations 13 and 14)

48 The term 'dead' is not defined in the Regulations so it takes its ordinary meaning. Thus, in the context of the Regulations, for a conductor to be 'dead' means that it is neither 'live' nor 'charged'.

Other words used in the guidance

High voltage, low voltage

49 High voltage is a voltage in excess of 1000 V ac or 1500 V dc (direct current). Low voltage is a voltage up to and including 1000 V ac or 1500 V dc.

Live work

50 Live work is work on or near conductors that are accessible and 'live' or 'charged'. Note that testing of live exposed conductors using a test instrument is live work.

Regulation 3 Persons on whom duties are imposed by these Regulations

Regulation 3

(1) Except where otherwise expressly provided in these Regulations, it shall be the duty of every –

(a) employer and self-employed person to comply with the provisions of these Regulations in so far as they relate to matters which are within his control; and

(b) [(i) mine operator, in relation to a mine within the meaning of regulation 3 of the Mines Regulations 2014, and]
(ii) operator, in relation to a quarry within the meaning of regulation 3 of the Quarries Regulations 1999,
to ensure that all requirements or prohibitions imposed by or under these Regulations are complied with in so far as they relate to the mine of which he is the [mine operator] or quarry of which he is the operator and to matters which are within his control.*

(2) It shall be the duty of every employee while at work –

(a) to co-operate with his employer so far as is necessary to enable any duty placed on that employer by the provisions of these Regulations to be complied with; and

(b) to comply with the provisions of these Regulations in so far as they relate to matters which are within his control.

*[(3) In this regulation, "mine operator" has the meaning given by regulation 2(1) of the Mines Regulations 2014.]**

** Amended by the Mines Regulations 2014, SI 2014/3248.*

Guidance 3

Employer

51 For the purposes of the Regulations, an employer is any person or body who:

(a) employs one or more individuals under a contract of employment or apprenticeship; or
(b) provides training under the schemes to which the HSW Act applies through the Health and Safety (Training for Employment) Regulations 1990 (SI 1990/1380).

Self-employed

52 A self-employed person is an individual who works for gain or reward other than under a contract of employment, whether or not they employ others. They encounter the same risks as employed people.

Employee

53 Regulation 3(2)(a) reiterates the duty placed on employees by section 7(b) of the HSW Act.

54 Regulation 3(2)(b) places duties on employees equivalent to those placed on employers and self-employed people where these are matters within their control. This will include those trainees who will be considered as employees under the Regulations described in paragraph 51.

55 This arrangement recognises the level of responsibility which many employees in the electrical trades and professions are expected to take on as part of their job. The 'control' which they exercise over the electrical safety in any particular circumstances will determine to what extent they hold responsibilities under the Regulations to ensure that the Regulations are complied with.

56 A person may find themselves responsible for causing danger to arise elsewhere in an electrical system, at a point beyond their own installation. This situation may arise, for example, due to unauthorised or unscheduled back feeding from their installation onto the system, or to raising the fault power level on the system above rated and agreed maximum levels due to connecting extra generation capacity etc. Because such circumstances are within their control, the effect of regulation 3 is to bring responsibilities for compliance with the rest of the Regulations to that person, thus making them a dutyholder.

Absolute/reasonably practicable

57 Duties in some of the Regulations are subject to the qualifying term 'reasonably practicable'. Where qualifying terms are absent the requirement in the regulation is said to be absolute. The meaning of reasonably practicable has been well established in law. The interpretations in paragraphs 59–60 are given only as a guide to dutyholders.

Absolute

58 If the requirement in a regulation is 'absolute', for example if the requirement is not qualified by the words 'so far as is reasonably practicable', the requirement must be met regardless of cost or any other consideration. Regulations making such absolute requirements are subject to the defence provision of regulation 29.

Guidance 3

Reasonably practicable

59 Generally, you should do everything 'reasonably practicable' to protect people from harm. This means balancing the level of risk against the measures needed to control the real risk in terms of money, time or trouble. However, you do not need to take action if it would be grossly disproportionate to the level of risk.

60 In the context of the Regulations, where the risk is very often that of death, eg from electrocution, and where the nature of the precautions which can be taken are so often very simple and cheap, eg insulation, the level of duty to prevent that danger approaches that of an absolute duty.

Regulation 4 Systems, work activities and protective equipment

Regulation 4

*(1) All **systems** shall at all times be of such construction as to prevent, so far as is reasonably practicable, **danger.***

*(2) As may be necessary to prevent **danger**, **all systems** shall be maintained so as to prevent, so far as is reasonably practicable, such **danger**.*

*(3) Every work activity, including operation, use and maintenance of a **system** and work near a **system**, shall be carried out in such a manner as not to give rise, so far as is reasonably practicable, to **danger.***

*(4) Any equipment provided under these Regulations for the purpose of protecting persons at work on or near **electrical equipment** shall be suitable for the use for which it is provided, be maintained in a condition suitable for that use, and be properly used.*

Guidance 4

61 Regulation 4 covers, in a general way, those aspects of electrical systems and equipment, and work on or near these, which are fundamental to electrical safety.

Regulation 4(1)

62 The word 'construction' in the regulation has a wide application. It may be considered to cover the physical condition and arrangement of the components of a system at any time during its life. It will include aspects such as the design of the system and the equipment comprising that system.

63 In assessing the suitability of the construction of electrical systems, consideration should be given to all likely or reasonably foreseeable conditions of actual application or use of the electrical equipment in the system. This will include the testing, commissioning, operation and maintenance of the equipment throughout the life of the system.

64 In particular, you should consider:

(a) the manufacturer's assigned or other certified rating of the equipment;
(b) the likely load and fault conditions;
(c) the need for suitable electrical protective devices;
(d) the fault level at the point of supply and the ability of the equipment and the protective devices to handle likely fault conditions;
(e) any contribution to the fault level from the connected loads such as from motors;

Guidance 4

(f) the environmental conditions which will have a bearing on the mechanical strength and protection required of the equipment;
(g) the user's requirements of the installation;
(h) the risks that a system may create to adjacent work activities and the public;
(i) the manner in which commissioning, testing and subsequent maintenance or other work may need to be carried out.

65 The safety of a system depends upon the proper selection of all the electrical equipment in the system and the proper consideration of the inter-relationship between the individual items of equipment. For example, electrical protection against overloads and earth faults etc may need to be provided in one part of a system to protect another, possibly remote, part of the system. Also, where electrical energy is transformed or converted from one voltage to another, you should take precautions to prevent danger arising from the lower-voltage conductors becoming charged above their normal voltage.

Regulation 4(2)

66 Regulation 4(2) is concerned with the need for maintenance to be done to ensure safety of the system, rather than with the activity of doing the maintenance in a safe manner (which is required by regulation 4(3)).

67 The obligation to maintain arises only if danger would otherwise result. The maintenance should be sufficient to prevent danger so far as is reasonably practicable.

68 Inspection and, where necessary, testing of equipment is an essential part of any preventive maintenance programme. Practical experience of use may indicate an adjustment to the frequency at which preventive maintenance needs to be carried out. This is a matter for the judgement of the dutyholder, who should seek all the information they need to make this judgement including reference to the equipment manufacturer's guidance.

69 Records can aid demonstration of compliance and allow useful analysis of equipment condition, although keeping records is not a legal requirement. Maintenance records (including test results), preferably kept throughout the working life of an electrical system, will allow the condition of the equipment and the effectiveness of maintenance policies to be monitored. Without effective monitoring, dutyholders cannot be certain that the requirement for maintenance has been complied with.

70 British Standard Codes of Practice offering guidance on maintenance are referred to in Further reading. Advice on inspection and testing of some fixed installations is given in BS 7671.

Regulation 4(3)

71 Regulation 4(3) requires that work activities of any sort, whether directly or indirectly associated with an electrical system, must be carried out in a way which, as far as is reasonably practicable, does not give rise to danger. Regulations 12 to 16 provide more specific requirements in connection with work of an electrical nature on or near electrical systems. See *Electricity at work: Safe working practices*[8] for more information

Guidance 4

Work activities associated with electrical systems

72 In the case of electrical work, it is preferable that the conductors are made dead before work starts (see regulations 12, 13 and 14). In such cases, it is essential that the equipment is isolated (note that 'isolation' is defined in regulation 12(2), which will include securing by locking off etc; see also paragraph 75) and the conductors proved dead at the point of work before the work starts. Where a test instrument or voltage indicator is used for this purpose, this device should itself be proved immediately before and immediately after testing the conductors.

73 Safe systems of work incorporating safety isolation procedures are important for work on equipment which is to be made dead before work starts. Particular consideration is needed where multiple sources of supply can exist, eg connection of alternative generation. These are also discussed under regulations 12 and 13. Some work, such as fault finding and testing or live jointing by the electricity supply industry, may require electrical equipment to remain energised during the work. In these cases, regulation 14 makes particular requirements and regulation 4(4) is also likely to be relevant in terms of the protective equipment which may need to be provided. *Electricity at work: Safe working practices* gives further guidance.

74 The operation, maintenance and testing of electrical systems and equipment must only be carried out by those people who are competent for that work (see also regulation 16).

Disused electrical equipment and systems

75 Before electrical equipment or systems are decommissioned they must be disconnected from all sources of supply and isolated. Similarly, electrical equipment or systems which are disused, or no longer required or abandoned for any reason, should be disconnected from all sources of supply and isolated. Isolation (as defined in regulation 12(2)) requires taking effective steps to ensure that it is dead and cannot become inadvertently re-energised or charged by induction or capacitance effects. (Regulations 12, 13 and 14 are also likely to be relevant.) Suitable labels or notices to bring people's attention to the state of the equipment are likely to be necessary in preventing inadvertent re-energisation.

Other work near electrical systems

76 Regulation 4(3) is wide in its application and includes work of a non-electrical nature where there is a risk of electrical injury. A common example is excavation near to live electric power cables and work near live overhead power lines, where the risks can be severe. Advice on these matters is given in HSE publications listed in References and further reading. You must also consider the requirements of regulation 14.

Regulation 4(4)

77 The defence (regulation 29) is available in any proceedings for an offence under this part of regulation 4.

78 The term 'protective equipment' can be of wide application but typically includes those special tools, protective clothing and insulating screening materials etc necessary to do work safely on live electrical equipment. The requirement for

Guidance 4

suitable precautions to prevent injury may arise under regulation 14. The regulation requires the protective equipment to be:

(a) suitable for use;
(b) maintained in that condition;
(c) properly used.

79 Regulation 4(4) is not qualified by 'so far as is reasonably practicable', nor does the regulation refer either to injury or the risk of injury, ie electrical danger. The impact of the regulation is that, where protective equipment is provided in order to comply with any of the other regulations, the equipment must conform to the requirements of regulation 4(4). Advice on safe working practices is given in HSE guidance. Specifications for certain types of protective equipment such as insulating gloves and floor mats are listed in relevant standards in References and further reading.

Regulation 5 Strength and capability of electrical equipment

Regulation 5

*No **electrical equipment** shall be put into use where its strength and capability may be exceeded in such a way as may give rise to **danger**.*

Guidance 5

80 The defence (regulation 29) is available in any proceedings for an offence under this regulation.

81 Before equipment is energised, the characteristics of the system to which the equipment is connected must be taken into account. This should include those existing under normal conditions, possible transient conditions and prospective fault conditions, so that the equipment is not subjected to stress which it is not capable of handling without giving rise to danger. The effects to be considered include voltage stress and the heating and electromagnetic effects of current.

Strength and capability

82 The term 'strength and capability' of electrical equipment refers to the ability of the equipment to withstand the thermal, electromagnetic, electrochemical or other effects of the electrical currents which might be expected to flow when the equipment is part of a system. These currents include, for example, load currents, transient overloads, fault currents, pulses of current and, for alternating current circuits, currents at various power factors and frequencies. Insulation must be effective to enable the equipment to withstand the applied voltage and any likely transient over-voltages.

83 A knowledge of the electrical specification and the tests, usually based on the requirements of national or international standards, will assist the user in identifying the withstand properties of the equipment so that it may be selected and installed to comply with this regulation. Such tests are normally carried out either by the manufacturer or by an accredited testing organisation.

Rating

84 The strength and capability of electrical equipment is not necessarily the same as its rating. Usually the rating is that which has been assigned by the manufacturer following a number of agreed tests.

Guidance 5

85 Electrical equipment should be used within the manufacturer's rating (continuous, intermittent or fault rating as appropriate) and in accordance with any instructions supplied with the equipment.

Fault conditions

86 So that equipment remains safe under prospective fault conditions, you must select equipment that takes account of the fault levels and the characteristics of the electrical protection which has been provided for the purpose of interrupting or reducing fault current (excess current protection is required by regulation 11). Most electrical equipment will be able to withstand short-circuit currents safely for limited periods only. The considerations also extend to conductors and equipment provided solely for protective purposes, eg earthing conductors must be adequately rated to survive beyond fault clearance times to ensure satisfactory protective gear operation and fault clearance.

Regulation 6 Adverse or hazardous environments

Regulation 6

Electrical equipment *which may reasonably foreseeably be exposed to –*

(a) mechanical damage;
(b) the effects of the weather, natural hazards, temperature or pressure;
(c) the effects of wet, dirty, dusty or corrosive conditions; or
(d) any flammable or explosive substance, including dusts, vapours or gases,

shall be of such construction or as necessary protected as to prevent, so far as is reasonably practicable, ***danger*** *arising from such exposure.*

Guidance 6

87 The regulation draws attention to the kinds of adverse conditions where danger could arise if equipment is not constructed and protected to withstand such exposure. Electrical equipment must be suitable for the environment and conditions of use to which it may reasonably foreseeably be exposed so that danger which may arise from such exposure will be prevented so far as is reasonably practicable. The following paragraphs detail some of the conditions to which electrical equipment may be subjected. Guidance is given in these paragraphs and additional guidance may be found in the documents listed in References and further reading. Particular attention should be paid to the IP rating (Index of Protection) of equipment (see paragraph 108). Guidance is also given under regulation 8 on the use of reduced voltage systems on construction sites and elsewhere where particularly arduous or conducting locations may exist (see paragraphs 142–144).

Effects

88 The conditions at which the regulation is directed are those occurring naturally as well as those resulting from human activities, including the following:

(a) mechanical damage including impact, stress, strain, abrasion, wear, vibration and hydraulic and pneumatic pressure;
(b) effects of the weather, which include both short-term (eg wind, ice and snow, lightning) and long-term (eg temperature cycling) effects;
(c) natural hazards, which are those resulting from other than man's activities and include animals, trees and plants, tides and solar radiation etc;
(d) temperature and pressure;

Guidance 6

(e) liquids which include water and other liquids and their effects, including humidity, condensation, flooding, splashing, or immersion in these, cleaning with liquids, hosing down and solvent and solvent vapour action (electrically conducting and non-conducting liquids may present different aspects of electrical danger);
(f) dirty conditions which include all contamination as a result of liquids or solids (electrically conducting and non-conducting dusts may present different aspects of electrical danger);
(g) corrosive conditions which include all chemical actions and reactions and electrochemical effects;
(h) flammable substances, including flammable dusts and flammable vapours;
(i) explosive substances which include both any mixture of solids, liquids or gases which is capable of exploding and substances intended to be explosive (ie explosives).

89 When determining the suitability of equipment for particular environments or conditions of use, you only need to consider exposure or effects which are reasonably foreseeable.

Mechanical damage

90 The mechanical damage to which electrical equipment may be subjected varies considerably from one environment to another. For example, equipment designed for use in an office is unlikely to be suitable, without further protection or careful siting, in a workshop or farm environment.

91 The effects covered by regulation 6(b), (c) and (d) may also impose mechanical stresses on electrical equipment. For example, ice and wind loading, or loss of mechanical strength due to expansion and contraction resulting from temperature changes, can give rise to mechanical damage.

92 This regulation requires the mechanical protection, if necessary, of the insulation which is required under regulation 7(a). For example, to protect against impact damage, steel wire armouring of a cable may be necessary. Further suitable protection in addition to basic insulation may be required to form the physical protection necessary to ensure the continuing integrity of basic insulation, eg conduits or a trunking for single-insulated conductors or the armouring or tough external sheathing of composite or multi-core electric cable.

Weather, natural hazards and extreme conditions

93 Precautions taken to protect a site, structure or building from natural hazards and extreme weather conditions may give some protection to the associated electrical installation, but additional protection or precautions may also be necessary.

94 Extremes of temperature, pressure or humidity may result either from climatic conditions or from adjacent plant or from the use of the electrical equipment itself. Standards frequently quote the range of service conditions for electrical equipment, including temperature limits, and users should consider these when selecting equipment.

95 Guidance on assessing the need for lightning protection of structures and buildings etc, the design and provision of systems and their inspection, testing and maintenance is given in publications listed in References and further reading.

Guidance 6

Corrosive effects

96 If substances are present in the environment that accelerate corrosion of metallic enclosures or fittings, special materials or surface treatments may be necessary. In these cases, the electrical equipment must be protected, eg motors, and be of a type which is totally enclosed by an appropriate corrosion-resistant housing, ie not ventilated to the atmosphere.

97 Insulating materials and other materials used in electrical equipment may be affected by chemical agents or solvents. Cubicles housing electrical control equipment in hostile environments may need to be kept purged or pressurised with clean air or, in special cases, inert gas. See Further reading for details of relevant standards.

Dirt and dusts

98 Most industrial enclosures for electrical equipment do not resist the entry of fine dusts. Equipment must be constructed to resist the entry of dust and dirt where this may give rise to electrical and mechanical failures. Appropriate regular inspection and cleaning are recommended where dirt and dusts are likely to accumulate, eg portable motor-driven equipment incorporating ventilation slots which can cause the accumulation of potentially hazardous layers of dirt and dust.

Combustible dusts

99 In cloud form, some dusts create an explosion hazard, while layers of combustible dust on electrical equipment can give rise to fire hazards. The selection, construction or installation of equipment exposed to combustible dust must guard against the possibility of ignition. The maximum temperature attainable on the surface of any electrical equipment where these dusts may be deposited should always be below the temperature at which any ignition, charring or smoking of dust takes place. However, appropriate dust control measures and general cleanliness which minimise the problem at source are recommended. See References and further reading for details of relevant standards.

Potentially explosive atmospheres

100 If electrical equipment is used where a flammable or explosive atmosphere is likely to occur, the equipment must be constructed so that it is not liable to ignite that atmosphere. Further information is available in the Dangerous Substances and Explosive Atmospheres Regulations.[9]

101 The selection and installation of equipment for use in potentially explosive atmospheres should be guided by the recommendations contained in the HSE guidance and British Standards on the subject. Existing installations complying with the recommendations of earlier standards should be acceptable for continuing service, subject to proper maintenance.

102 Such electrical equipment must be chosen from that which has been certified as conforming to an appropriate standard.

103 Uncertified electrical equipment must not be used unless it will provide at least an equivalent level of safety to that provided by appropriately certified equipment.

Guidance 6

104 Some manufacturing processes, eg electrostatic paint spraying, make use of the characteristics of static electricity and the design of electrical equipment should be such that the ignition of solvents, vapours or particulate substances is prevented. See References and further reading for details of relevant standards.

105 The maintenance and repair of explosion-protected equipment is a specialised field of work and must only be carried out by those who have the necessary training and experience.

Other flammable substances

106 Electrical equipment that generates heat or produces sparks must not be placed where either the heat emitted or sparking could lead to the uncontrolled ignition of any substance.

107 The construction of the equipment should either exclude the substances from any part of the equipment which may be a source of ignition (eg by suitable enclosure) or should ensure that the equipment operates at sufficiently low temperature and energy levels as not to be a source of ignition under likely conditions of use and fault.

Classification system of ingress protection (IP rating)

108 There is an internationally recognised system of classifying the degree of protection provided by enclosures against the ingress of solid objects and moisture, and the protection afforded against contact with any live parts within the enclosure for all types of electrical equipment. The system is commonly known as the IP rating system and is detailed in a number of standards which are listed in Further reading.

Regulation 7 Insulation, protection and placing of conductors

Regulation 7

*All **conductors** in a **system** which may give rise to danger shall either –*

*(a) be suitably covered with insulating material and as necessary protected so as to prevent, so far as is reasonably practicable, **danger**; or*
*(b) have such precautions taken in respect of them (including, where appropriate, their being suitably placed) as will prevent, so far as is reasonably practicable, **danger**.*

Guidance 7

109 The danger to be protected against generally arises from differences in electrical potential (voltage) between circuit conductors or between such conductors and other conductors in a system – usually conductors at earth potential. The conventional approach is either to insulate the conductors or place them so people are unable to receive an electric shock or burn from them.

110 Some form of basic insulation, or physical separation, of conductors in a system is necessary for the system to function. That functional minimum, however, may not be sufficient to comply with the requirements of regulation 7. Factors which must be taken into account are:

Guidance 7

(a) the nature and severity of the probable danger;
(b) the functions to be performed by the equipment;
(c) the location of the equipment, its environment and the conditions to which it will be subjected;
(d) any work which is likely to be done on, with or near the equipment.

Insulation

111 Regulation 7(a) states that conductors must be insulated. Suitable insulation of the conductors in an electrical system is, in the majority of cases, the primary and necessary safeguard to prevent danger from electric shock, either between live conductors or between a live conductor and earth. It will also prevent danger from fire and explosion arising from contact of conductors either with each other or with earth. Energy from quite low levels of voltage (and levels insufficient to create a shock risk) can ignite a flammable atmosphere. The quality and effectiveness of insulation therefore needs to be commensurate with the voltages applied to the conductors and the conditions of use.

112 BS 7671 gives some advice on these matters for fixed electrical installations up to 1000 V ac or 1500 V dc.

113 The regulation requires that the insulation be protected as necessary, so that danger may be prevented so far as is reasonably practicable. Often, the protection required is to prevent mechanical damage to the insulation but may include any of the effects detailed under regulation 6. Examples of such protection would be the use of steel trunking and conduits or the use of steel armoured cables.

Other precautions including placing

114 Regulation 7(b) permits the alternative of having such precautions taken in respect of the conductors. These precautions may include the suitable placing of conductors. They may comprise strictly controlled working practices reinforced by measures such as written instructions, training and warning notices etc. The precautions must prevent danger so far as is reasonably practicable. Examples where bare conductors are used in conjunction with suitable precautions are to be found in many applications including overhead electric power lines, down-shop conductors for overhead travelling cranes in factories etc, railway electrification using either separate conductor and running rails or overhead pick-up wires, and certain large electrolytic and electrothermal plants.

115 The placing of overhead electric power lines is specified in ESQCR (see Introduction for more information).

116 Electric railway and tramway operators, in conjunction with the Office of Rail and Road, have developed standards and safety specifications for the construction of those parts of their systems which use bare conductors at overhead and at track level, together with safe systems of work.

117 Safety is ensured in electrochemical plants which use high current by such means as the separation of conductors which are at different potentials, the use of insulating working platforms and unearthed or isolated electrical supplies (see paragraphs 121–123).

118 Suitable placing of the conductors may, on its own, go a considerable way towards preventing danger, for example where the conductors are within a secure enclosure or where they are placed overhead at such a height that contact with

Guidance 7

these conductors is not reasonably foreseeable. Guidance on the security and protection of enclosures and the measure of their accessibility as determined by standard (finger) tests is given in standards listed in Further reading.

119 However, if the placing of the conductors cannot alone be relied upon to prevent danger, then additional precautions must be taken and rigorously applied. For example, in the case of live railway conductor rails the precautions may include warning notices, barriers and special training for railway staff. Electrolytic and electrothermal processes are further examples and are covered in paragraphs 121–123.

120 Dutyholders should carefully consider the inherent risks that may still exist if bare conductors are placed where they cannot normally be touched, eg maintenance activities around the conductors of an electric overhead crane system. Firstly, the protection of the equipment is required under regulation 6 for a range of reasonably foreseeable effects and, secondly, there may be occasions when people will require access to the area or enclosure where such conductors are located, eg substations and test areas. Where work is to be done with the conductors live, regulation 14 is relevant and the guidance under that regulation also applies.

Electrolytic and electrothermal processes

121 It is often necessary for industrial electrolytic and electrothermal processes, including large secondary battery installations, to adopt a range of precautions. As the work activity is likely to be near the live and uninsulated conductors, the precautions adopted will go towards satisfying both part (b) of regulation 7 and regulation 14.

122 Precautions may include:

(a) segregating the process area and limiting access to those people who are trained and experienced in the process and to people who are supervised so that injuries are prevented;
(b) ensuring a separation of conductors appropriate to the difference in potentials;
(c) use of insulating work platforms;
(d) use of electrical supplies which are isolated from earth together with protective devices to ensure this isolation;
(e) exclusion of unnecessary conducting materials and implements from the process area;
(f) use of protective clothing, eg in electric arc welding processes; such clothing offers protection against both the hot welding process and against the electric shock risk.

123 Details of advice on the safe use of electric induction furnaces and electric arc welding are given in Further reading.

Regulation 8 Earthing or other suitable precautions

Regulation 8

*Precautions shall be taken, either by earthing or by other suitable means, to prevent **danger** arising when any **conductor** (other than a **circuit conductor**) which may reasonably foreseeably become charged as a result of either the use of a **system**, or a fault in a **system**, becomes so charged; and, for the purposes of ensuring compliance with this regulation, a **conductor** shall be regarded as earthed when it is connected to the general mass of earth by **conductors** of sufficient strength and current-carrying capability to discharge electrical energy to earth.*

Guidance 8

124 The defence (regulation 29) is available in any proceedings for an offence under this regulation.

125 The regulation applies to any conductor (other than circuit conductors), including the conductive parts of equipment, such as outer metallic casings, which can be touched and, though not live, may become live under fault conditions.

126 Conductors which, although not part of a system, are within electrostatic or electromagnetic fields created by a system may be subject to this regulation. Appropriate precautions are necessary if the induced voltages or currents are large enough to give rise to danger.

Dangers

127 Dangers which may arise as a result of failure to take the necessary precautions include:

(a) risk of shock from conductors which are or may be exposed so that they may be touched and which become charged at dangerous voltage relative to earth or to other exposed conductors;
(b) risk of burns, fire, arcing or explosion due to currents of excessive magnitude and/or duration in such conductors.

128 The requirements of the regulation may be met in several different ways, depending on the circumstances, including:

(a) ensuring that such conductors do not become charged. This has the effect of excluding the conductors from the scope of this regulation;
(b) ensuring that if such conductors do become charged the values of voltage and current and the duration are such that danger will not arise;
(c) ensuring that if such conductors do become charged the environment is such that danger will not arise.

129 Techniques employed for achieving the above include:

(a) double insulation;
(b) earthing;
(c) connection to a common voltage reference point on the system;
(d) equipotential bonding;
(e) use of safe voltages;
(f) earth-free, non-conducting environments;
(g) current/energy limitation;
(h) separated or isolated systems.

130 You may employ the above techniques singly or in combination.

Guidance 8

Double insulation

131 The principle of 'double insulation' is that the live conductors of the electrical equipment are covered by two discrete layers or components of insulation, each of which would adequately insulate the conductor but which together ensure an improbability of danger arising from insulation failure. This arrangement avoids the need for any external metalwork of the equipment to be connected to a protective conductor or to earth. Double insulation has been found to be particularly suitable for certain types of portable equipment, eg electric motor-driven tools etc. See Further reading for details of relevant standards. However, the integrity of this safety protection depends upon the layers of insulation remaining in sound condition and this in turn requires the equipment to be properly constructed, used and maintained.

Earthing

132 It is the practice in the UK for the public electricity supply system at the usual distribution voltages of 230 V single-phase, 400 V three-phase, to be referenced to earth by a deliberate electrical connection made at the distribution substations or power transformers. It is the existence of this system earthing which enables earth faults on electrical equipment to be detected and the electrical supply to faulty equipment to be cut off automatically.

133 Many 230/400 V power installations are designed so that the automatic interruption of the supply in the event of an earth fault is achieved by the operation of fuses or automatic circuit breakers (MCBs etc). In most cases, these devices will have been selected to provide the additional protective function of interrupting excess current required under regulation 11. In these circumstances the earth fault current must be large enough to rupture the fuse quickly. The magnitude of the fault current under full earth fault conditions is governed mainly by the combined impedance of the fault loop, which will include the impedance of the fault itself, that of the earthing or protective conductors, the circuit conductors and that of the source.

134 Tests must therefore be carried out on new installations and at appropriate intervals thereafter to ascertain that the earth fault (loop) impedances are low enough to ensure the electrical protective devices such as fuses, circuit breakers etc will operate in the event of a breakdown of insulation leading to an 'earth fault'. This includes the temporary electrical system used at a construction site in the process of carrying out construction activities.

135 Acceptable values of earth loop impedance and interruption times etc, for final installations up to 1000 V, can be found in BS 7671. It is rarely sufficient to rely on an earth rod or rods to provide sufficient conductance for return fault currents. Separate protective earth cables or conductors connected to the neutral point of the supply are usually necessary unless other measures, such as the use of sensitive residual current protection equipment, are used to detect earth fault currents.

136 For the duration of the fault, the electrical bonding of exposed conductive parts and their connection to earth serves to limit the shock risk from the transient voltages appearing between metallic enclosures of equipment in the system or between a metallic enclosure and earth. Equipment earthing therefore includes the bonding of metallic enclosures, cable armouring, conduits and trunking etc, so that these conductors are electrically continuous and securely connected to the general mass of earth at one or more points.

137 Earthing and bonding conductors must be suitable for the maximum current which they may carry under fault conditions and be capable of surviving the worst-

Guidance 8

case fault (see paragraph 82). Their construction and strength must be adequate to withstand likely wear and tear. Where it might otherwise be difficult to ensure the continued effectiveness of earthing and bonding arrangements, it may be necessary to provide supplementary protection such as protective earth conductor monitoring.

138 Accidents have been caused by the metalwork of portable or transportable equipment becoming live as a result of the combined effects of a fault and high-impedance, protective conductor connections. The danger may be reduced by the use of a residual current device (RCD) designed to operate rapidly at small leakage currents (typically not exceeding 30 mA), although these devices do not eliminate the risk of electric shock. RCDs should not be considered as the sole means of protection but as an additional protective measure. They should be operated regularly using the test trip button. This test trip procedure is important in maintaining the effectiveness of most types of RCD.

139 Electric arc welding brings special problems associated with earthing practices. Stray currents from electrical arc welding can damage the protective earthing conductors of electrical installations. Information on earthing practice is available in a number of publications, some of which are listed in References and further reading.

Connection to a common voltage reference point on the system

140 In UK public electricity supply systems where transformer neutral points are connected to earth, the voltage reference point is the general mass of earth. Other reference points, to which systems may be referenced and to which bonding conductors are connected, may be chosen to suit particular circumstances.

Equipotential bonding

141 Equipotential bonding is the electrical interconnection of all exposed and extraneous conductors, which may become electrically charged, in such a way that dangerous voltages between any of the conductors that may be simultaneously touched are limited.

Use of reduced voltages

142 Reduced voltage systems are particularly appropriate for portable and transportable equipment, and in highly conducting locations such as boilers and tunnels where the risk of mechanical damage to equipment and trailing cables is high, and/or the body may be damp and have large areas of contact with the conducting location and on construction sites.

143 One example is a building or construction site supply system operating at 55-0-55 V ac single-phase, or at 110 V three-phase with a phase-earth voltage of 64 V ac. Another example is an extra-low-voltage system operating at or below 50 V ac or 120 V dc. Supply systems like these are referenced to earth and are therefore a special case of systems operating at reduced voltage for which bonding and earthing of all metallic enclosures are still recommended.

144 Further advice on reduced voltage systems is in Further reading.

Earth-free, non-conducting environments

145 If a system is supplied from a source which is earth-referenced, the path for fault current and the existence of dangerous potentials to earth can be eliminated in a defined area by ensuring that the area is ‘earth-free’. This does not necessarily mean that metallic components or fittings need to be prohibited but rather that no part of the defined area is earthed. It is easier to ensure the integrity of an ‘earth-free’ area by constructing it from non-metallic components, in which case it is more appropriately known as a non-conducting location or area. ‘Earth-free’ and ‘non-

Guidance 8

conducting' areas are specialised applications and are used mainly in certain testing of electrical equipment. Advice is available in the publications on electrical testing listed in References and further reading.

Current limitation

146 If fault currents which could cause electric shock are inherently limited by appropriate passive devices, eg high-integrity resistors, then protection by earthing or other means may not be required. In a conventional, dry working environment, for example, if the current is limited preferably to 1 mA but certainly to no more than 3 mA, this will not usually present a risk of injury from electric shock to people in good health who may be subjected to it only occasionally and for a short time. However, even this low level of current may give perceptible shock which, although by itself is unlikely to be physiologically dangerous, may give rise to a consequential injury such as from a fall induced by the shock. See paragraphs 29–30 on 'injury' under regulation 2, and especially IEC publication *Guide to effects of current on human beings and livestock*.

Separated or isolated systems

147 If safety depends on the supply system not being referenced to its immediate environment, whether true earth or surrounding metalwork, no potential should normally exist between live conductors and earth or exposed metallic parts. However, all systems are to some extent referenced to their environment by capacitive or inductive coupling or by leakage. That is why you cannot necessarily rely on the circuit conductors of separated or isolated* systems being at zero potential relative to their environment. Unless the isolated system is a very small and localised one, the leakage current may be large enough to provide a path for a fatal electric shock. Any difference in potential is likely to be greatest on extensive systems but, in all cases when the voltages or currents could be dangerous, precautions are needed. Examples of isolated systems are those supplied from the secondary winding of an isolating transformer or the winding of an alternator where there is no connection between them and any other source of electrical energy.

148 The isolation of a power system from earth may reduce the risks associated with a single fault. However, if this first fault has the effect of referencing the system to earth or other exposed conductor, subsequent faults may lead to very destructive and hazardous short circuits so extra precautions will be necessary to prevent this danger. These may include the bonding of metallic enclosures, earth fault detection, insulation monitoring or the use of an earth-free non-conducting environment. Regular inspection and testing to ensure that system isolation integrity is maintained will also be necessary.

* 'Isolated' in this context means separate from all other systems and does not imply 'isolation' as defined specifically for the purpose of regulation 12.

Regulation 9 Integrity of referenced conductors

Regulation 9

*If a **circuit conductor** is connected to earth or to any other reference point, nothing which might reasonably be expected to give rise to **danger** by breaking the electrical continuity or introducing high impedance shall be placed in that conductor unless suitable precautions are taken to prevent that **danger.***

Guidance 9

149 The defence (regulation 29) is available in any proceedings for an offence under this regulation.

150 In many circumstances the reference point is earthed because the majority of power distribution installations are so referenced by a deliberate connection to earth at the generators or distribution transformers.

151 The object of the regulation is to prevent referenced circuit conductors which should be at or about the same potential as the reference point from reaching significantly different potentials, thereby giving rise to possible danger.

152 The most common situation in which this regulation is relevant is in systems having a neutral point which is earthed. Such systems can be subdivided:

(a) systems or parts of systems in which the neutral and protective conductor are combined (eg TN-C and the combined parts of TN-C-S systems);*
(b) systems or parts of systems in which the neutral and protective conductors are separate (eg TN-S and the separate parts of TN-C-S systems).

Devices placed in the conductor

153 The regulation does not prohibit all electrical devices from being placed in referenced conductors. For example, a proper joint or a bolted link or a bar primary current transformer can be arranged to ensure the integrity of the conductor.

154 The regulation would also permit the inclusion of other devices such as a removable link, or even a manually-operated knife switch, provided that suitable precautions are adopted to ensure that these devices are not removed or operated in such a way as to give rise to danger. However, a number of other devices, such as fuses, thyristors, transistors etc, generally have the potential to give rise to danger by becoming open circuit or introducing high impedance into the conductor. The regulation prohibits such applications.

Combined neutral and protective conductors

155 Open circuit of, or high impedance in, combined neutral and protective conductors will almost certainly result in the exposed and extraneous conductors connected to the protective conductors, eg metal enclosures of switchgear, being at a significant potential (up to phase-neutral volts) relative to earth. This could lead to a risk of electric shock or burn, so the integrity of the combined neutral and earth conductor is very important.

156 However, where the protective conductor is combined with the neutral conductor over some part of their length, you should take precautions to prevent people coming into simultaneous contact with the protective conductors and earth (or conductors at earth potential). Equipotential bonding of all metalwork within a building and the connection of this to the protective conductor or neutral is a

* This terminology is explained in BS 7671.

Guidance 9

commonly used approach. Generally, however, combined neutral earth (CNE) systems should be confined to the public electricity supply network up to the point of supply to consumers.

Separate neutral and protective conductors

157 In deciding whether danger may result where there are separate neutral and protective conductors, consider not only the normal operation of the system but also the situations that may arise when work is being carried out on or near the system. If voltage rises on the neutral conductor could result in danger during the work then observe the above restrictions on devices in the neutral. For example, a fuse should not be placed in a neutral of a fixed power distribution installation (typically 230 V) as this places people working on the installation at risk of electric shock and burn if that fuse operates or otherwise becomes open circuit. Double pole fusing (fuses in both the phase and neutral) is acceptable, if these are fitted within self-contained electrical equipment which itself is not part of the fixed electrical installation, and is connected to the fixed installation by a plug and socket. This arrangement allows the equipment to be readily isolated from the system before work is done on that equipment.

158 In general, if a neutral conductor is to be switched, a multipole switch or circuit breaker should be used which also switches all of the related phase conductors, the neutral breaking last and making first. Such switching should not interrupt the protective conductor.

Regulation 10 Connections

Regulation 10

*Where necessary to prevent **danger**, every joint and connection in a **system** shall be mechanically and electrically suitable for use.*

Guidance 10

159 The defence (regulation 29) is available in any proceedings for an offence under this regulation.

Suitability of connections

160 The regulation requires that all connections in circuit and protective conductors, including connections to terminals, plugs and sockets, and any other means of joining or connecting conductors, should be suitable for the purposes for which they are used. This requirement applies equally to temporary and permanent connections. The insulation and conductance of the connections must be suitable, having regard to the conditions of use including likely fault conditions.

161 The mechanical protection and strength must be such as to ensure the integrity of the insulation and conductance under all conditions of use including likely fault conditions, subject to the need for any maintenance which may be required by regulation 4(2).

162 Joints and connections in protective conductors must be made at least as carefully as those in circuit conductors and they should be of sufficient strength and conductance to allow for the passage of fault currents. Such connections may need to be treated so they prevent corrosion. It is recommended that combinations of metals liable to produce damaging electrolytic action be avoided.

Guidance 10

Plugs and sockets

163 Plug and socket connections and their use must be arranged so that accidental contact with conductors live at dangerous voltages is prevented. This should be achieved by selection of appropriate equipment but may involve some degree of operator skill and/or training, depending on the circumstances.

164 In most applications, where a plug and socket type connector conveys a protective conductor as well as the circuit conductors, the protective conductor should be the first to be made and the last to be separated. The use of equipment made to appropriate standards should ensure this principle is adhered to.

165 Where plug and socket connections are not rated for making or breaking the maximum load current, effective arrangements should be made, eg by mechanical interlocking with the switch that controls the power, to ensure that the connections are made or broken only under no-load conditions.

Portable equipment

166 Special attention should be given to joints and connections in cables and equipment which will be handled, eg flexible cables for portable equipment. Plugs and sockets for portable equipment must be constructed in accordance with appropriate standards and arranged so that, where necessary, earthing of any metal casing of the equipment is automatically effected by the insertion of the plug. HSE guidance (see *Maintaining portable electric equipment in low-risk environments*[10]) and British Standards give further guidance on portable equipment.

Regulation 11 Means for protecting from excess of current

Regulation 11

*Efficient means, suitably located, shall be provided for protecting from excess of current every part of a **system** as may be necessary to prevent **danger.***

Guidance 11

167 The defence (regulation 29) is available in any proceedings for an offence under this regulation (see paragraphs 177–179).

168 It is recognised that faults and overloads may occur on electrical systems. The regulation requires that systems and parts of systems be protected against the effects of short circuits and overloads if these would result in currents which would otherwise result in danger.

169 The means of protection is likely to be in the form of fuses or circuit breakers controlled by relays etc, or it may be provided by some other means capable of interrupting the current or reducing it to a safe value.

The need to anticipate abnormal conditions

170 The regulation requires the means of preventing danger to be provided in anticipation of excess current; a fault or overload need not have occurred. Fault currents arise as a result of short circuits between conductors caused either by inherent failure of the electrical equipment or some outside influence, eg mechanical damage to a cable. Overload currents can arise as a result of the inadequacy of a system to supply the load and may be caused by an increased demand created by

Guidance 11

outside influence on the electrical equipment, eg mechanical overloading of an electric motor.

The selection of excess current protection

171 In principle, every main circuit should be protected at its origin, ie at the source end of the circuit. Where the rating of the conductors forming a branch circuit is less than that of the conductors from which it is drawing power, it is conventional for protection to be placed at this point. In practice, however, there are exceptions to this principle and, depending on the nature of the system, a technical judgement must be made as to where the protection should be placed. Guidance on some aspects of this subject is given in BS 7671.

172 When selecting the means of protection, you must consider a number of factors – the more important of these include:

(a) the nature of the circuits and type of equipment to be protected;
(b) the short-circuit energy available in the supply (the fault level);
(c) the nature of the environment;
(d) whether the system is earthed or not.

The nature of the circuits and type of equipment to be protected

173 The circuits to be dealt with may vary from high-power, high-voltage circuits, eg for the inter-connection of substations or for the supply to large motors, down to the smallest final circuit supplying a few low-power lamps at, say, 6 V. Over this range lies a great diversity of equipment, each item of which will possess characteristics which must be carefully considered in the selection of appropriate devices to protect against excess current.

Fault level

174 The maximum short-circuit current in the protected circuit must be considered. (The ability of circuit breakers and fuses to operate successfully and without dangerous effects, serious arcing or, in the case of oil-filled equipment, the liberation of oil, is implicit in the requirements of regulations 4 and 5.) The design of the protective arrangement must also provide for sufficient current to be available to operate the protective devices correctly in respect of all likely faults.

The nature of the environment

175 The nature of the environment may have a bearing on the choice of protective devices and their settings, eg where the possibility of a fire being started may be considerable. However, in all cases, the protection against excess current must be effective so that short circuits and earth faults are cleared promptly to minimise destructive arcing and heating. Protective devices, whether they are circuit breakers or fuses, should therefore be set or selected for the minimum tripping currents and times consistent with ensuring the reliable operation of the device and with the need to discriminate between successive stages of protection.

Earthed system

176 Where a system is earthed, the nature and efficiency of the earthing system is important in relation to the design and reliability of the protective devices. In earthed systems, operation in the event of an earth fault of the protective device is dependent on sufficient current passing to operate the excess current or earth leakage tripping device or to blow the fuse. In many systems, the device provided to comply with the requirements of this regulation in respect of excess of current (very often a fuse) may also provide protection against earth faults – and thus be in compliance with the requirements of regulation 8.

Guidance 11

Defence in criminal proceedings

177 The defence (regulation 29) is available in any proceedings for an offence under this regulation.

178 In some circumstances it will be technically impossible to achieve total compliance with the absolute requirement to prevent danger. If an excess of current is drawn due to a fault or overload, eg due to an arcing fault, then whatever form of electrical protection is provided, there will be some danger at the point of the fault during the finite time taken for the detection and interruption of the fault current. Nevertheless, electrical protection – whether by means of a simple fuse or another method – must be properly chosen and installed in accordance with good electrical engineering practice. The protection must be efficient and effective.

179 In some circumstances it is undesirable to interrupt the current in a circuit because this may itself lead to a hazard. Examples include the excitation field current of direct current motors, trip coil circuits, lifting electromagnets and the secondary circuits of current transformers. In such cases, however, the circuit should be rated or arranged so as not to give rise to danger from excess of current.

Regulation 12 Means for cutting off the supply and for isolation

Regulation 12

*(1) Subject to paragraph (3), where necessary to prevent **danger,** suitable means (including, where appropriate, methods of identifying circuits) shall be available for –*

*(a) cutting off the supply of electrical energy to any **electrical equipment**; and*
*(b) the isolation of any **electrical equipment.***

*(2) In paragraph (1), "isolation" means the disconnection and separation of the **electrical equipment** from every source of electrical energy in such a way that this disconnection and separation is secure.*

*(3) Paragraph (1) shall not apply to **electrical equipment** which is itself a source of electrical energy but, in such a case as is necessary, precautions shall be taken to prevent, so far as is reasonably practicable, **danger.***

Guidance 12

180 The defence (regulation 29) is available in any proceedings for an offence under this regulation.

Regulation 12(1)(a)

181 The objective of this part of the regulation is to ensure that, where necessary to prevent danger, suitable means are available to switch off the electricity supply to any piece of equipment. Switching can be, for example, by direct manual operation or by indirect operation via 'stop' buttons in the control circuits of contactors or circuit breakers. There may be a need to switch off electrical equipment for reasons other than preventing electrical danger but these considerations are outside the scope of the Regulations.

Guidance 12

Regulation 12(1)(b)

182 Whereas regulation 12(1)(a) requires means to be provided whereby the supply of electrical energy can be switched off, 12(1)(b) requires that there will be available suitable means of ensuring that the supply will remain switched off and inadvertent reconnection prevented. This is isolation. This provision, in conjunction with safe working practices, will enable work to be carried out on electrical equipment without risk of it becoming live during the course of that work, eg if the work is to be done under the terms of regulation 13.

183 In some cases, the equipment used to perform the requirement under regulation 12(1)(a) may also serve to perform the requirement under 12(1)(b). The two functions of ***switching off*** and ***isolation*** are not the same, even though in some circumstances they are performed by the same action or by the same equipment.

Regulation 12(3)

184 Regulation 12(3) recognises the impracticability in some cases of switching off or isolating that equipment which is itself an integral part of a source of electrical energy, eg the terminals of batteries, battery cells, photovoltaic systems, large capacitors and the windings of generators. The regulation requires precautions to be taken in these circumstances so that danger is prevented so far as is reasonably practicable. See References and further reading for details of guidance on working practices.

'Where necessary to prevent danger'

185 The need for means to cut off the supply and effect isolation depends on factors such as likely danger in normal and abnormal conditions. This assessment may be influenced by environmental conditions and provisions to be made in case of emergencies, such as a fire in premises. It includes consideration of which electrical equipment could be a source of danger if such means were not provided and of the installation, commissioning, operational and maintenance requirements over the life of the equipment.

Suitable means for cutting off the supply

186 The suitable means for cutting off the supply (regulation 12(1)(a)) should:

(a) be capable of cutting off the supply under all likely conditions having regard to the equipment, its normal operation conditions, any abnormal operating or fault conditions, and the characteristics of the source(s) of electrical energy;
(b) be in a suitable location regarding the nature of the risks, the availability of people to operate the means and the speed at which operation may be necessary. Access to switches etc should be kept clear and unobstructed, free of tripping and slipping hazards etc;
(c) be clearly marked to show its relationship to the equipment which it controls, unless there could be no doubt that this would be obvious to any person who may need to operate it;
(d) only be common to several items of electrical equipment where it is appropriate for these to be energised and de-energised as a group.

Guidance 12

Suitable means of isolation

187 The suitable means of isolation of equipment (regulation 12(1)(b)) should:

(a) have the capability to positively establish an air gap or other effective dielectric which, together with adequate creepage and clearance distances, will ensure that there is no likely way in which the isolation gap can fail electrically;
(b) include, where necessary, means directed at preventing unauthorised interference with or improper operation of the equipment, eg means of locking off;
(c) be located so the accessibility and ease with which it may be employed is appropriate for the application. The time and effort that must be expended to effect isolation should be reasonable, depending on the nature of the equipment and the circumstances under which isolation may be required. For example, a very remote means of isolation may be acceptable if isolation is only needed infrequently and any additional time taken to effect isolation does not result in danger;
(d) be clearly marked to show which equipment it relates to, unless there could be no doubt that this would be obvious to any person who may need to operate it;
(e) only be common to several items of electrical equipment where it is appropriate for these to be isolated as a group.

Selection of isolator switches

188 Isolator switches (or disconnectors) will often be used as the means of disconnection and securing separation from the supply. When selecting appropriate equipment, consider:

(a) the isolating distances between contacts or other means of isolation which should meet an appropriate standard or be otherwise equally effective;
(b) the position of the contacts or other means of isolation, which should either be externally visible or clearly and reliably indicated. An indication of the isolated position, other than by direct observation of the isolating gap, should occur when the specified isolating distance has been achieved in each pole;
(c) provision to enable the prevention of unauthorised, improper or unintentional energisation, eg locking-off facilities.

189 For further information on the selection of isolators/disconnectors, refer to appropriate standards (see Further reading).

Regulation 13 Precautions for work on equipment made dead

Regulation 13

*Adequate precautions shall be taken to prevent **electrical equipment**, which has been made dead in order to prevent **danger** while work is carried out on or near that equipment, from becoming electrically charged during that work if **danger** may thereby arise.*

Guidance 13

190 The defence (regulation 29) is available in any proceedings for an offence under this regulation.

191 The regulation may apply during any work, be it electrical or non-electrical. The regulation requires adequate precautions to be taken to prevent the electrical

Guidance 13

equipment that has been made dead from becoming electrically charged, from whatever source, if this charging would give rise to danger. 'Charged' is discussed under regulation 2.

192 The regulation uses the term 'electrical equipment', which is defined by regulation 2 and explained in paragraphs 20–21.

The precautions

193 The precautions must be effective in preventing the electrical equipment from becoming charged in any way which would give rise to danger.

194 In the first place, the procedures for making the equipment dead will probably involve use of the means required by regulation 12(1)(a) for cutting off the supply of electrical energy. Isolation of the electrical equipment will be necessary and the means required by regulation 12(1)(b) will facilitate this. Ideally, a means of locking off an isolator can be used. Where such facilities are not available, the removal of fuses or links and their being held in safe keeping can provide a secure arrangement if proper control procedures are used.

195 These precautions will prevent the equipment from becoming charged by connection to its own or normal sources of electrical energy but may not, alone, be sufficient to prevent charging. The presence of electrical energy as a result of electromagnetic induction, mutual capacitance or stored electrical energy may have to be guarded against, eg by applying earthing connections for the duration of the work (temporary earths). The precautions may need to include means of preventing further accumulation of electrical charge, following initial discharge, because latent energy may be stored in the system, eg in the dielectric of high-voltage cables or capacitors within equipment. For work on high-voltage power distribution circuits, isolation procedures should include the application of circuit main earths (primary earths) at points of isolation and additional earthing around the point of work.

196 Where work is to be done on or near conductors that have been isolated, the conductors must be proved dead at the point of work before the task starts. Where a test instrument or voltage indicator is used for this purpose, this should itself be proved, preferably immediately before and immediately after testing the conductor (see also regulation 4(3)).

197 The regulation does not prevent the application of a test voltage to equipment, provided that this does not give rise to danger.

Written procedures

198 The safety isolation procedures should be formalised in written instructions or house rules. Safety documentation, including 'permits-to-work', may form part of the written procedures and their use is considered essential to ensuring a safe system of work where this involves work on the conductors or equipment of high-voltage power distribution systems (typically where the working voltage exceeds 1000 V) or where the system is very complex. Properly formulated and regulated 'permit-to-work' procedures focus the minds of those issuing and of those receiving the permits, both on the manner in which the work is to be done and on how the equipment has been made safe. Further advice on these procedures and precautions is in the guidance listed in References and further reading.

Guidance 13

Decommissioned equipment

199 Before electrical equipment is decommissioned, dismantled or abandoned for any reason, it must be disconnected from all sources of supply and effective steps taken to ensure that it is dead and cannot inadvertently become re-energised or dangerously charged. It may be necessary to securely mark or otherwise suitably label equipment, circuits, switches etc to guard against inadvertent re-energisation. (See also the requirement for identifying circuits under regulation 12(1).)

Regulation 14 Work on or near live conductors

Regulation 14

*No person shall be engaged in any work activity on or so near any live **conductor** (other than one suitably covered with insulating material so as to prevent **danger**) that **danger** may arise unless –*

*(a) it is unreasonable in **all** the circumstances for it to be dead; and*
(b) it is reasonable in all the circumstances for him to be at work on or near it while it is live; and
*(c) suitable precautions (including where necessary the provision of suitable protective equipment) are taken to prevent **injury**.*

Guidance 14

200 The defence (regulation 29) is available in any proceedings for an offence under this regulation.

201 Regulation 14 addresses the situation where, either permanently or temporarily, danger from conductors is not prevented by the precautions specified in regulation 7(a).

202 The regulation is concerned only with those situations where people are at work on or near live electrical conductors which may foreseeably give rise to danger. Such work is permitted only if conditions (a), (b) and (c) are satisfied. 'Work' is not confined to electrical work but includes any work activity, eg electrical testing.

The need for the conductor to be live

203 If danger may otherwise arise it is always preferable that work on or near electrical equipment should be carried out when that equipment is dead (see regulation 13 and guidance). Regulation 14 recognises that there are circumstances, however, in which it is unreasonable, having regard to all relevant factors, for the equipment to be dead while work proceeds. An example of this might be undertaking maintenance, checks or repairs on a busy section of electric railway track where it would be disproportionately disruptive and costly for the live conductors to be isolated for the period of the work. Other examples are in the electrical supply industry, particularly live cable jointing, and in much of the work done on telephone network connections.

204 When ordering, purchasing and installing plant, consider the manner of operation, maintenance and repair of the electrical equipment which will be necessary during its life.

205 The design of electrical equipment and of the installation should eliminate the need for live work which puts people at risk of injury. This can often be done by careful thought at the design stage of installations, for example by the provision of alternative power infeeds; properly laid out distribution systems to allow parts to be isolated for work to proceed; and by designing equipment housings etc which

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result in segregation of parts to be worked on and protect people from other parts which may be live.

206 Equipment which combines power and control circuitry should be arranged so that the power circuits are physically separate and segregated from logic and control circuits, or so placed, recessed or otherwise arranged that the risk of accidental contact is eliminated. Diagnostic work on the low-power/voltage circuits may then proceed with less risk to personnel. Where regular measurements of, say, voltage, current etc are to be made, consider appropriate test and measuring equipment, eg voltmeters, ammeters etc, or test points being built into the equipment.

207 Live work includes live testing, for example the use of a potential indicator on mains power and control logic circuits (but see paragraph 218).

208 The factors which should be considered in deciding whether it was justifiable for work to proceed with the conductors live should include the following:

(a) It is not practicable to carry out the work with the conductors dead, eg where for the purposes of testing it is necessary for the conductors to be live.
(b) To make the conductors dead will create other hazards, such as to other users of the system, or for continuously operating process plants etc.
(c) The need to comply with other statutory requirements.
(d) The level of risk involved in working live and the effectiveness of the precautions available set against the economic need to perform that work.

The need to be near uninsulated live conductors

209 People at work are permitted to be near live conductors only if this is reasonable in all the circumstances. If, for example, it would be reasonable for the work to be carried out at a safe distance from the conductors then it would be prohibited for that work to be done near the conductors.

210 People whose presence near the live conductors is not necessary should not be so near the conductors that they are at risk of injury. However, there may be occasions when people who do not normally need to be in the vicinity of live conductors are required to be present, eg those assisting or recovering a casualty after an incident. Appropriate measures must be put in place to protect them.

The need to take precautions to prevent injury

211 The precautions necessary to comply with regulation 14(c) should be commensurate with the risk.

212 The system of work must:

(a) allow only people who are competent to do so to work on or near exposed, live conductors (competence for these and other purposes is further dealt with at regulation 16); *and*
(b) indicate within what limits the work is to be attempted; *and*
(c) indicate what levels of competence apply to each category of such work; *and*
(d) incorporate procedures under which the person attempting the work will report back if the limits specified in the system are likely to be exceeded.

Guidance 14

213 This usually requires detailed planning before the work is started.

214 Suitable precautions should include, as appropriate:

(a) the use of people who are properly trained and competent to work on live equipment safely (see also regulation 16);
(b) the provision of adequate information to the person carrying out the work about the live conductors involved, the associated electrical system and the foreseeable risks (NB: when excavation work is ongoing the insulation of a cable is not an effective measure against damage to the cable or penetration of it by a mechanical tool);
(c) the use of suitable tools, including insulated tools, equipment and protective clothing (see also regulation 4(4));
(d) the use of suitable insulated barriers or screens (see also regulation 4(4));
(e) the use of suitable instruments and test probes;
(f) accompaniment by another person or people if the presence of such person or people could contribute significantly to ensuring that injury is prevented;
(g) the restriction of routine live test work (eg product testing) to specific areas and the use of special precautions within those areas, such as isolated power supplies, non-conducting locations etc;
(h) effective control of any area where there is danger from live conductors.

Accompaniment

215 A dutyholder's judgement as to whether someone carrying out work subject to regulation 14 should be accompanied, should be based on considerations of how injury is to be prevented. If an accompanying person can substantially contribute towards the implementation of safe working practice, then they should be present. They should be trained to recognise danger and, if necessary, to render assistance in the event of an emergency.

216 Some examples of electrical work where it is likely that the person carrying out the work should be accompanied are:

(a) electrical work involving manipulation of live, uninsulated power conductors at, say, 230 V using insulated tools;
(b) other work on or near bare live conductors where someone working on their own would not be capable of undertaking the work safely without assistance in, for example, keeping other people from the work area.

Control of the area

217 Where there is danger from live conductors ensure that those who are not competent to prevent the occurrence of injury, and those whose presence is unnecessary, are not permitted into the area. If the person undertaking the work is continuously present while danger exists from the live conductors, and the area is small enough to be under their constant supervision and control, then further precautions to control access may not be necessary. If, however, the area is too large or they are not continuously present, then effective control should be secured by other means, such as the provision of lockable enclosures or barriers and warning notices indicating the presence of live conductors. (The above examples are given without prejudice to the requirements of regulation 14, the criteria of which must be followed in each case before live work is undertaken.)

Testing

218 Regulation 14 will often apply to electrical testing. Testing to establish whether electrical conductors are live or dead should always be done on the assumption that they may be live and, therefore, it should be assumed that this regulation is applicable until such time as the conductors have been proved dead.

Guidance 14

219 When testing for confirmation of a 'dead' circuit, the test instrument or voltage indicator used for this purpose must itself be proved, preferably immediately before and immediately after testing the conductors.

220 Although live testing may be justifiable it does not follow that there will necessarily be justification for subsequent repair work to be carried out live.

Suitable protective equipment

221 Protective equipment suitable for the work activity should only be used as a last resort, ie when all other ways to eliminate or reduce risks have been considered.

222 Examples of equipment that can protect someone from the effects of electricity are:

(a) suitable clothing, including insulating helmets, goggles and gloves;
(b) insulating materials used as fixed or temporary screening to prevent:
  (i) electric shock;
  (ii) short circuit between live conductors;
  (iii) short circuit between live conductors and earth;
(c) insulating mats and stands to prevent electric shock current via the feet;
(d) insulated tools;
(e) insulated test probes.

223 There must be procedures for the periodic examination and, where necessary, testing and replacement of this protective equipment. See also the requirements of regulation 4(4), and References and further reading for details of guidance on working procedures, standards etc.

Emergency resuscitation and first aid

224 You should consider placing notices or placards giving details of emergency resuscitation procedures in the event of electric shock at those locations where people may be at greater risk of electric shock. Such places might include electrical test areas, substations and laboratories but, for resuscitation techniques to be effective, those required to exercise them must receive proper training and regular practice. The Health and Safety (First-Aid) Regulations 1981[11] make various requirements for the provision of suitably trained first-aiders at places of work.

Work near underground cables

225 Serious injuries have occurred during excavation and other work near underground power cables. This work comes within the scope of regulation 14 if there is a risk of injury from these cables.

226 Underground power cables present a risk of serious or fatal injury during excavation or similar work, particularly to people using hand tools (eg picks, concrete breakers etc). Precautions should include:

(a) mapping, recording and marking on site of cable runs;
(b) use of cable-locating devices;
(c) safe digging practices.

227 Well-established advice on working near underground cables is given in *Avoiding danger from underground services*.[12]

Work near overhead power lines

228 Every year workers are killed or injured while working near to overhead power lines. They may be readily accessible to people working on elevated platforms,

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scaffolding or roofs. People working with tall vehicles such as cranes, tipper lorries or farm machinery, or handling metal ladders, pipes or other long articles may also be at risk from a flashover or contact with overhead power lines.

229 Well-established advice on work near overhead power lines is given in HSE guidance notes *Avoiding danger from overhead power lines*[13] and *Working safely near overhead electricity power lines*.[14]

Regulation 15 Working space, access and lighting

Regulation 15

*For the purposes of enabling **injury** to be prevented, adequate working space, adequate means of access, and adequate lighting shall be provided at all **electrical equipment** on which or near which work is being done in circumstances which may give rise to **danger**.*

Guidance 15

230 The defence (regulation 29) is available in any proceedings for an offence under this regulation.

231 The purpose of the regulation is to ensure that sufficient space, access and adequate illumination are provided while people are working on, at or near electrical equipment so that they may work safely. The requirement is not restricted to those circumstances where live conductors are exposed, but applies where any work is being done in circumstances which may give rise to danger. The regulation does not require such space, access or illumination to be provided at times other than when work is being done. (But see guidance under regulation 12(1)(a) (paragraph 186(b)) in respect of safe access to means of cutting off the supply.)

Working space

232 Where there are dangerous exposed live conductors within reach, the working space dimensions should be adequate:

(a) to allow people to pull back away from the conductors without hazard;
(b) to allow people to pass one another with ease and without hazard.

233 Among the legal provisions revoked when these Regulations came into force were the Electricity (Factories Act) Special Regulations 1908 and 1944. Regulation 17 of those Regulations specified minimum width and height dimensions of switchboard passageways where there were bare conductors exposed or arranged to be exposed when live so that they may be touched. That regulation and the relevant definitions used are reproduced in Appendix 1. The dimensions specified were arrived at after much consideration of the circumstances in a Public Inquiry when those Regulations were being drafted. However, those dimensions can still provide guidance for an appropriate level of safety in many circumstances and where the voltages do not significantly exceed 3000 V. This does not condone the use of equipment having normally bare and exposed conductors if a safe alternative can reasonably be adopted.

Lighting

234 Natural light is preferable to artificial light, but where artificial light is necessary it is preferable that this be from a permanent and properly designed installation – in indoor switchrooms etc. However, there will always be exceptions and special circumstances where these principles cannot be achieved, eg where handlamps or

Guidance 15

torches may be the sole or most important means of lighting. Whatever level of lighting is used, it must be adequate to enable injury to be prevented. HSE guidance *Lighting at work*[15] refers.

Regulation 16 Persons to be competent to prevent danger and injury

Regulation 16

*No person shall be engaged in any work activity where technical knowledge or experience is necessary to prevent **danger** or, where appropriate, **injury**, unless he possesses such knowledge or experience, or is under such degree of supervision as may be appropriate having regard to the nature of the work.*

Guidance 16

235 The defence (regulation 29) is available in any proceedings for an offence under this regulation.

236 The object of the regulation is to ensure that people are not placed at risk due to their own lack of competence in dealing with electrical equipment, or that of others.

'... prevent danger or, where appropriate, injury ...'

237 This regulation uses both terms: 'injury' and 'danger'. The regulation therefore applies to all work associated with electrical equipment where danger may arise and whether or not danger (or the risk of injury) is actually present during the work. It will include situations where the elimination of the risk of injury, ie the prevention of danger, for the duration of the work is under the control of someone who must therefore possess sufficient technical knowledge or experience – or be so supervised etc – to be capable of ensuring that danger is prevented. For example, where a person is to isolate some electrical equipment before undertaking work on the equipment, they will require sufficient technical knowledge or experience to prevent danger during the isolation. There will be no danger from the equipment during the work, provided that the isolation has been carried out properly: danger will have been prevented. However, the person doing the work must have sufficient technical knowledge or experience so as to prevent danger during that work, eg by knowing not to work on adjacent 'live' circuits.

238 The regulation also covers those circumstances where danger is present, ie where there is a risk of injury, as for example where work is being done on live or charged equipment using special techniques and under the terms of regulation 14. In these circumstances, people must possess sufficient technical knowledge or experience – or be so supervised etc – to be capable of ensuring that injury is prevented.

Technical knowledge or experience

239 The scope of 'technical knowledge or experience' should include:

(a) adequate knowledge of electricity;
(b) adequate experience of the electrical work being carried out;
(c) adequate understanding of the system to be worked on and practical experience of that class of system;
(d) understanding of the hazards which may arise during the work and the precautions which need to be taken;
(e) the ability to recognise at all times whether it is safe for work to continue.

Guidance 16

Allocation of responsibilities

240 Employees must be trained and instructed to ensure that they understand the safety procedures which are relevant to their work and must work in accordance with any instructions or rules laid down by their employer and directed at ensuring safety.

Supervision

241 The regulation recognises that, in many circumstances, people will require some degree of supervision where they do not have sufficient technical knowledge or experience to ensure that they can undertake the work safely. Dutyholders, when allocating to supervisors responsibilities for supervision, should clearly state to the supervisor exactly what their responsibilities are and consider stating these responsibilities in writing. Where the risks involved are low, verbal instructions are likely to be adequate but as the risk or complexity increase there comes a point where the need for written procedures becomes important if instructions are to be understood and supervised more rigorously. In this context, supervision does not necessarily require continual attendance at the work site, but the degree of supervision and the manner in which it is exercised is for the dutyholders to arrange to ensure that danger, or as the case may be, injury, is prevented.

242 You should also refer to appropriate guidance, such as that in national, international, reputable foreign and harmonised or industry standards and codes of practice, or to HSE guidance, or seek expert advice.

Regulations 17–28

243 Regulations 17 to 28 and Schedule 1 inclusive were revoked by the Mines Regulations 2014.

Regulation 29 Defence

Regulation 29

In any proceedings for an offence consisting of a contravention of [regulations 4(4), 5, 8, 9, 10, 11, 12, 13, 14, 15 or 16,] it shall be a defence for any person to prove that he took all reasonable steps and exercised all due diligence to avoid the commission of that offence.*

** Amended by the Mines Regulations 2014, SI 2014/3248.*

Guidance 29

244 Regulation 29 applies only in criminal proceedings. It provides a defence for a dutyholder who can establish that they took all reasonable steps and exercised all due diligence to avoid committing an offence under regulations 4(4), 5, 8, 9, 10, 11, 12, 13, 14, 15 or 16.

Regulation 30 Exemption certificates

Regulation 30

(1) Subject to paragraph (2), the Health and Safety Executive may, by a certificate in writing, exempt –

(a) any person;
(b) any premises;
(c) any electrical equipment;
(d) any electrical system;
(e) any electrical process;
(f) any activity,

or any class of the above, from any requirement or prohibition imposed by these Regulations and any such exemption may be granted subject to conditions and to a limit of time and may be revoked by a certificate in writing at any time.

(2) The Executive shall not grant any such exemption unless, having regard to the circumstances of the case, and in particular to –

(a) the conditions, if any, which it proposes to attach to the exemption; and
(b) any other requirements imposed by or under any enactment which apply to the case,

it is satisfied that the health and safety of persons who are likely to be affected by the exemption will not be prejudiced in consequence of it.

Guidance 30

245 HSE is given power to issue general or special exemptions and to impose conditions and time limits on them. It is a standard power given to allow the variation of legal duties where, in circumstances unforeseen by those drafting the legislation, they are in practice unnecessary or inappropriate. Exemptions would be granted only in very exceptional circumstances.

Regulation 31 Extension outside Great Britain

Regulation 31

These Regulations shall apply –

(a) in Great Britain; and
(b) outside Great Britain as sections 1 to 59 and 80 to 82 of the Health and Safety at Work etc Act 1974 apply by virtue of the provisions of the Health and Safety at Work etc Act 1974 (Application outside Great Britain) Order 1995.

Guidance 31

246 Regulation 31 was modified by the Offshore Electricity and Noise Regulations 1997. Although the regulation refers to the Health and Safety at Work etc Act 1974 (Application outside Great Britain) Order 1995, this order has been revoked. The regulation should be read as referring to the Health and Safety at Work etc Act 1974 (Application outside Great Britain) Order 2013 (SI 2013/240).[16]

247 The Electricity at Work Regulations apply to all work activities on offshore installations, wells, pipelines and pipelines works and to certain connected activities within the territorial waters of Great Britain, or in the designated areas of the UK Continental Shelf. They also apply to certain other activities within territorial waters, including the construction and operation of wind farms.

Regulation 32 Disapplication of duties

Regulation 32

The duties imposed by these Regulations shall not extend to –

(a) the master or crew of a sea-going ship or to the employer of such persons, in relation to the normal ship-board activities of a ship's crew under the direction of the master; or

(b) any person, in relation to any aircraft or hovercraft which is moving under its own power.

Guidance 32

Sea-going ships

248 Sea-going ships are subject to other electrical safety legislation which gives protection to people on board. Regulation 32 disapplies the Electricity at Work Regulations from these ships as far as the normal ship-board activities of a ship's crew under the direction of the master is concerned. It does not disapply them in respect of other work activities however, eg where a shore-based electrical contractor goes on board to carry out electrical work on the ship. That person's activities will be subject to the Regulations within the general applicability of the Regulations. The Regulations will apply outside Great Britain only as provided for under regulation 31.

Aircraft and hovercraft

249 The Regulations may apply only while an aircraft or hovercraft is not moving under its own power.

Vehicles

250 The Regulations may apply to electrical equipment on vehicles if this equipment may give rise to danger.

Regulation 33 Revocations and modifications

Regulation 33

(1) The instruments specified in column 1 of Part I of Schedule 2 are revoked to the extent specified in the corresponding entry in column 3 of that Part.

(2) The enactments and instruments specified in Part II of Schedule 2 shall be modified to the extent specified in that Part.

(3) In the Mines and Quarries Act 1954, the Mines and Quarries (Tips) Act 1969 and the Mines Management Act 1971, and in regulations made under any of those Acts, or in health and safety regulations, any reference to any of those Acts shall be treated as including a reference to these Regulations.

Guidance 33

251 The Regulations replace or modify a number of statutory provisions in accordance with the intention of the HSW Act section 1(2).

252 Systems and equipment which were subject to provisions which have been revoked are now subject to these Regulations.

Appendix 1

Working space and access: Historical comment on revoked legislation (see regulation 15)

Among the legal provisions revoked upon the coming into force of the Electricity at Work Regulations 1989 were the Electricity (Factories Act) Special Regulations 1908 and 1944. Regulation 17 of those Regulations specified minimum width and height dimensions of 'switchboard passage-ways' if there were 'bare conductors' exposed or arranged to be exposed when 'live' so that they may be touched. These related to what are commonly known as 'open type' switchboards which had much exposed copper work, knife switches etc. That regulation (and the key definitions used at that time) are reproduced below for information. The dimensions which were specified by that regulation were arrived at after much consideration of the circumstances at the time. A compromise was struck between the objective of achieving the safety of those who had to work at and operate these 'open type' switchboards and the need to recognise the constraints imposed by the installations existing and the nature of the technology in 1908. Even though the dimensions were a compromise, it was widely recognised that they were a good minimum standard which had been found necessary following a number of severe and fatal accidents in factories and power stations due to inadequate space or cluttered access in the vicinity of bare live conductors at these 'open type' switchboards. The dimensions chosen allowed workmen to operate or otherwise work upon the switchboard in reasonable safety and allowed, for example, people to pass one another in the switchboard passageway without being placed at unacceptable risk of touching live conductors.

Where the need does arise to work on or near live conductors, the principles of providing adequate working space and uncluttered access/egress, which were expressed in regulation 17 of the Electricity (Factories Act) Special Regulations 1908 and 1944, should be given proper consideration.

Regulation 17 (of 1908 Regulations)

At the working platform of every switchboard and in every *switchboard passage-way*, if there be *bare conductors* exposed or arranged to be exposed when *live* so that they may be touched, there shall be a clear and unobstructed passage of ample width and height, with a firm and even floor. Adequate means of access, free from danger, shall be provided for every *switchboard passage-way*.

The following provisions shall apply to all such *switchboard* working platforms and passage-ways constructed after January 1, 1909 unless the bare conductors, whether overhead or at the sides of the *passage-ways*, are otherwise adequately protected against *danger* by divisions or screens or other suitable means:

(a) Those constructed for *low pressure* and *medium pressure switchboards* shall have a clear height of not less than 7 ft and a clear width measured from *bare conductor* of not less than 3 ft.
(b) Those constructed for *high pressure* and *extra high pressure switchboards*, other than operating desks or panels working solely at *low pressure*, shall have a clear height of not less than 8 ft and a clear width measured from *bare conductor* of not less than 3 ft 6 in.
(c) Bare conductors shall not be exposed on both sides of the *switchboard passage-way* unless either (i) the clear width of the passage is in the case of *low pressure* and *medium pressure* not less than 4 ft 6 in and in the case of *high pressure* and *extra high pressure* not less than 8 ft in each case measured between bare conductors, or (ii) the *conductors* on one side are so guarded that they cannot be accidentally touched.

Key definitions used in the 1908 Regulations

Switchboard means the collection of switches or fuses, *conductors*, and other *apparatus* in connection therewith, used for the purpose of controlling the current or pressure in any *system* or part of a *system*.

Switchboard passage-way means any passage-way or compartment large enough for a person to enter, and used in connection with a *switchboard* when *live*.

Low pressure means a *pressure* in a *system* normally not exceeding 250 volts where the electrical energy is used.

Medium pressure means a *pressure* in a *system* normally above 250 volts, but not exceeding 650 volts, where the electrical energy is used.

High pressure means a *pressure* in a system normally above 650 volts, but not exceeding 3000 volts, where the electrical energy is used or supplied.

Extra-high pressure means a *pressure* in a *system* normally exceeding 3000 volts where the electrical energy is used or supplied.

References and further reading

References

1 *Electrical safety in mines* HSG278 HSE Books 2015 www.hse.gov.uk/pubns/books/hsg278.htm

2 *The Health and Safety at Work etc Act 1974 (c37)* The Stationery Office 1974 ISBN 978 0 10 543774 1

3 *Managing for health and safety* HSG65 (Third edition) HSE Books 2013 www.hse.gov.uk/pubns/books/hsg65.htm

4 BS 7671 *Requirements for electrical installations. IET Wiring Regulations. Seventeenth edition* British Standards Institution

5 *The Electricity Safety, Quality and Continuity Regulations 2002 (ESQCR)* SI 2002/2665 The Stationery Office www.legislation.gov.uk

6 *Guide to effects of current on human beings and livestock. Special aspects relating to human beings* PD 60479-2:1987 IEC www.iec.ch

7 *Safety of equipment electrically connected to a telecommunication network* 62151:2000 IEC www.iec.ch

8 *Electricity at work: Safe working practices* HSG85 (Third edition) HSE Books 2013 www.hse.gov.uk/pubns/books/hsg85.htm

9 *Dangerous substances and explosive atmospheres: Dangerous Substances and Explosive Atmospheres Regulations 2002. Approved Code of Practice and guidance* L138 (Second edition) HSE Books 2013 www.hse.gov.uk/pubns/books/l138.htm

10 *Maintaining portable electric equipment in low-risk environments* Leaflet INDG236(rev3) HSE Books 2013 www.hse.gov.uk/pubns/indg236.htm

11 *First aid at work: The Health and Safety (First-Aid) Regulations 1981. Guidance on Regulations* L74 (Third edition) HSE Books 2013 www.hse.gov.uk/pubns/books/l74.htm

12 *Avoiding danger from underground services* HSG47 (Third edition) HSE Books 2013 www.hse.gov.uk/pubns/books/hsg47.htm

13 *Avoiding danger from overhead power lines* General Guidance Note GS6 (Fourth edition) HSE 2013 www.hse.gov.uk/pubns/gs6.htm

14 *Working safely near overhead electricity power lines* AIS8(rev3) HSE Books 2012 www.hse.gov.uk/pubns/ais8.htm

15 *Lighting at work* HSG38 (Second edition) HSE Books 1998 www.hse.gov.uk/pubns/books/hsg38.htm

16 *The Health and Safety at Work etc Act 1974 (Application outside Great Britain) Order* 2013 SI 2013/240 The Stationery Office

Further reading

Guidance

Electrical safety and you: A brief guide Leaflet INDG231(rev1) HSE Books 2012 www.hse.gov.uk/pubns/indg231.htm

Electrical risks from steam/water pressure cleaners Plant and Machinery Guidance Note PM29 (Second edition) HSE Books 1995 www.hse.gov.uk/pubns/pm29.htm

Selection and use of electric handlamps Plant and Machinery Guidance Note PM38 (web only) HSE Books 2007 www.hse.gov.uk/pubns/pm38.htm

Electrical test equipment for use by electricians General Guidance Note GS38 (Fourth edition) HSE Books 2015 www.hse.gov.uk/pubns/gs38.htm

Electrical safety at places of entertainment General Guidance Note GS50 (Third edition) HSE Books 2014 www.hse.gov.uk/pubns/gs50.htm

Keeping electrical switchgear safe HSG230 HSE Books 2015 www.hse.gov.uk/pubns/books/hsg230.htm

Listed below are standards, codes of practice and other publications which contain guidance relevant to these Regulations and electrical safety – published by bodies other than HSE. Most of these documents are the product of technical committees on which HSE has been represented. This does not mean, however, that the documents are concerned solely with safety and users should bear in mind the scope of the safety content of these documents and the fact that they have largely been arrived at through a process of consensus.

International Electrotechnical Commission (IEC) publications

Guide to effects of current on human beings and livestock. Part 1: General aspects TS 60479-1:2005 IEC www.iec.ch

Safety of equipment electrically connected to a telecommunication network 62151:2000 IEC www.iec.ch

Extra-low voltage (ELV) – Limit values 61201:ed 2.0 2007–08 IEC www.iec.ch

Effects of current on human beings and livestock. General aspects DD IEC/TS 60479-1 www.iec.ch

Guide to effects of current on human beings and livestock. Special aspects relating to human beings PD 6519-2:1998 IEC 60479-2 www.iec.ch

Safety of equipment electrically connected to a telecommunication network IEC 62151 www.iec.ch

Extra-low voltage (ELV) – Limit values IEC 61201 ed 2.0 www.iec.ch

British Standards

The following British Standards are relevant to different aspects of electrical safety. The up-to-date version of each standard is available from BSI on http://shop.bsigroup.com (see Further information).

BS 4363 *Specification for distribution assemblies for reduced low voltage electricity supplies for construction and building sites*

BS 4444 *Guide to electrical earth monitoring and protective conductor proving*

BS 6423 *Code of practice for maintenance of low-voltage electrical switchgear and controlgear*

BS 6626 *Maintenance of electrical switchgear and control gear for voltages above 1 kV and up to and including 36 kV. Code of practice*

BS 6867 *Maintenance of electrical switchgear for voltages above 36 kV. Code of practice*

BS 7375 *Distribution of electricity on construction and building sites. Code of practice*

BS 7430 *Code of practice for protective earthing of electrical installations*

BS 7671 *Requirements for Electrical Installations. IET Wiring Regulations. Seventeenth edition*

BS 7909 *Code of practice for temporary electrical systems for entertainment and related purposes*

BS EN 50050 *Electrostatic hand-held spraying equipment. Safety requirements (50050 series, see Parts 1, 2 & 3)*

BS EN 60034 *Rotating electrical machines. Degrees of protection provided by the internal design of rotating electrical machines (IP Code). Classification*

BS EN 60079 *Explosive atmospheres (60079 series, see Parts 0, 14, 17, 31)*

BS EN 60204-1 *Safety of machinery. Electrical equipment of machines. General requirements*

BS EN 60529 *Degrees of protection provided by enclosures (IP Code)*

BS EN 60903 *Live working. Gloves of insulating material*

BS EN 60947 *Low-voltage switchgear and controlgear (60947 series, see Parts 1, 2)*

BS EN 61111 *Live working. Electrical insulating matting*

BS EN 61439-1 *Low-voltage switchgear and controlgear assemblies. General rules*

BS EN 61439-2 *High-voltage switchgear and controlgear. Alternating current circuit breakers*

BS EN 62271 *High-voltage switchgear and controlgear (62771 series, see Parts 100, 102)*

BS EN 62305-1 *Protection against lightning. General principles*

BS EN 81-20 *Safety rules for the construction and installation of lifts. Lifts for the transportation of persons and goods. Passenger and goods passenger lifts*

PD CLC/TR 50404 *Electrostatics. Code of practice for the avoidance of hazards due to static electricity*

Useful web links

www.hse.gov.uk/construction/safetytopics/electricity.htm

International Electrotechnical Commission (IEC) www.iec.ch

Further information

For information about health and safety, or to report inconsistencies or inaccuracies in this guidance, visit www.hse.gov.uk/. You can view HSE guidance online and order priced publications from the website. HSE priced publications are also available from bookshops.

British Standards can be obtained in PDF or hard copy formats from BSI: http://shop.bsigroup.com or by contacting BSI Customer Services for hard copies only Tel: 0845 086 9001 email: cservices@bsigroup.com.

The Stationery Office publications are available from The Stationery Office, PO Box 29, Norwich NR3 1GN Tel: 0870 600 5522 Fax: 0870 600 5533 email: customer.services@tso.co.uk Website: www.tsoshop.co.uk. (They are also available from bookshops.) Statutory Instruments can be viewed free of charge at www.legislation.gov.uk where you can also search for changes to legislation.

This publication is available at www.hse.gov.uk/pubns/books/hsr25.htm.

Published by the Health and Safety Executive 10/15 HSR25

Health Finance, Corporate Governance and Value Directorate
Richard McCallum, Director

T: [redacted]
E: [redacted]

Chief Nursing Officer Directorate
Professor Amanda Croft, Chief Nursing Officer

E: CNO@gov.scot

Scottish Government
Riaghaltas na h-Alba
gov.scot

DL(2021) 14
27 May 2021

Dear Colleague

NHS SCOTLAND ASSURE: QUALITY IN THE HEALTHCARE ENVIRONMENT

On 1 June 2021, a new service, NHS Scotland Assure, is launching as part of services delivered by NHS National Services Scotland (NSS).

NHS Scotland Assure has been co-designed with users to deliver a co-ordinated approach to the improvement of risk management in new builds and refurbishment projects across NHS Scotland. The new service will underpin a transformation in our approach to minimising risk in our healthcare buildings and environments, protecting patients from the risk of infection and supporting better outcomes for patients in Scotland.

NHS Scotland Assure, via NSS, is accountable to the Scottish Government, and will provide assurance that the Healthcare Built Environment is safe, fit for purpose, cost effective and capable of delivering sustainable services over the long term. Its relationship with the Scottish Government will be with both the Health Finance, Corporate Governance and Value Directorate and the Chief Nursing Officer's Directorate.

From the 1 June 2021, all NHS Board projects that require review and approval from the NHS Capital Investment Group (CIG), will need to engage with NHS Scotland Assure to undertake key stage assurance reviews (KSARs). Approval from the CIG will only follow once the KSAR has been satisfactorily completed. The KSARs have been designed to provide assurance to the Scottish Government that guidance has been followed. The Scottish Government may also commission NHS Scotland Assure to undertake reviews on other healthcare built environment projects. This does not change accountability for the projects; NHS Boards remain accountable for their delivery. NHS Scotland Assure will be accountable for the services it provides that support delivery of the projects.

Addresses

For action
NHS Board Chief Executives
NHS Directors of Finance
NHS Nursing Directors
Directors of Estates and Facilities

For information
NHS Board Chairs

Enquiries to:
Alan Morrison
Deputy Director Health Infrastructure
St Andrew's House

Regent Road
Edinburgh EH1 3DG

[redacted]

Using the Scottish Approach to Service Design, NSS has designed NHS Scotland Assure as a multi-disciplinary team, with subject matter experts in the fields of infection prevention and control, medical microbiology, specialist engineering, science, hard and soft facilities and building management. NHS Scotland Assure will have close working relations with Healthcare Improvement Scotland (HIS), National Education Scotland (NES) and Public Health Scotland (PHS), recognising their areas of expertise. It will further develop its connections to other UK and international bodies and services as it develops.

It will undertake a leadership role supporting NHS Boards while they deliver oversight for the design, construction, and maintenance of major infrastructure developments within the NHS. As a quality management system for the healthcare built environment, NHS Scotland Assure will strengthen infection prevention and control and play a crucial guidance role regarding incidents and outbreaks across health and social care.

Due to the impact of the pandemic, the service is launching with a phased approach. At 1 June 2021, the service will launch with its first phase of design completed. The second phase of service design will continue throughout 2021-22 and will see further enhancements developed through the year.

For further information, please contact nss.NHSScotlandAssure@nhs.scot

Your sincerely,



Richard McCallum
Director of Health Finance and Governance



Professor Amanda Croft
Chief Nursing Officer

Appendix

NHS Scotland Assure: Quality in the Healthcare Environment

Background
NHS National Services Scotland was commissioned by Scottish Government to design and implement a new approach to improve the quality of our healthcare environment. This was outlined in the 2019/2020 Programme for Government in response to issues identified in the built environment of new hospitals in Scotland.

"To ensure patient safety we will create a new national body to strengthen infection prevention and control, including in the built environment. The body will have oversight for the design, construction and maintenance of major infrastructure developments within the NHS and also play a crucial policy and guidance role regarding incidents and outbreaks across health and social care."

NHS Scotland Assure has been formed to promote confidence that the NHS estate is safe and of high quality.

Scope
Arrangements for quality in the healthcare built environment are changing in Scotland. NHS Scotland Assure and its functions are for all NHS health and care environments, and cover the full lifecycle of a build. Infection prevention and other infrastructure harm prevention measures will be designed at the very outset of the planning, design and construction stages of a healthcare facility and maintained thereafter. NHS Scotland Assure will consider risks as they relate to the built environment.

Aims and objectives
Using the Scottish Approach to Service Design and involving service users through the process, NHS Scotland Assure has been designed to improve the management of risk in the built environment across Scotland, providing greater confidence to stakeholders.

The buildings and environment we deliver healthcare in play a large part in preventing and controlling the risk of transmission of infection and other harms. It's essential our buildings are safe, resilient and not vulnerable to these risks; where these can be prevented. NHS Scotland Assure will work collaboratively with NHS Boards to make sure our buildings are compliant with best available evidence in all aspects of safety, and systems are designed and built to be safe at the point of initiation of services.

Quality Management System Approach
NHS Scotland Assure adopts the Healthcare Improvement Scotland (HIS) Quality Management System and will deliver Quality Assurance for risk management in the built environment through:

- **Planning** - Intelligence capabilities enabling a preventative approach to managing risk.
- **Assurance and Control** - Collaborative working with Health Boards to ensure they are compliant with Guidance.
- **Improvement** - Research and the production of evidence based guidance.

Key functions
Consisting of five key functions, NHS Scotland Assure is designed to align to the Healthcare Improvement Scotland Quality Management framework.

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- National leadership and strategy
- Planned lifecycle support
- System capacity and capability
- Intelligence and knowledge sharing
- System response

With an overarching leadership role, NHS Scotland Assure represents NHS Scotland's work to manage risk in the built environment at a national level and influence the development of new policy.

Governance
Alongside building robust relationships across the system, NHS Scotland Assure and NHS Boards will jointly sign off key stage assurance reviews (KSARs) at relevant stages of projects. NHS Boards are required to engage with NHS Scotland Assure in this process.

Healthcare Improvement Scotland (HIS) will continue inspections of NHS Hospitals and services through the Healthcare Environment Inspectorate (HEI). NHS Scotland Assure will work with HIS to ensure inspections carried out by the HEI are supported by relevant expertise.

NHS Scotland Assure will form a strategic partnership with National Education Scotland to deliver the workforce education development service and will collaborate with PHS to share intelligence and expertise.

NHS Scotland Assure is accountable to the Scottish Government. Through shared commitment to transparency and accountability, assurance will be provided that the healthcare built environment is compliant with the best available evidence in all aspects of safety, is fit for purpose, cost effective and capable of delivering sustainable services over the long term.

NHS Scotland Assure will provide a structured forum that will enable construction, facilities professionals and clinical colleagues to work in an integrated manner to ensure that the healthcare built environment is safe, fit for purpose, cost effective and capable of delivering sustainable services over the long term.

By reducing risk in the healthcare-built environment to the lowest possible level through enhanced and new services, NHS Scotland Assure will unite stakeholder groups across sectors to minimise risk and improve quality across NHS Scotland's estate, increasing patient safety.

Services
NHS Scotland Assure consists of eight new services, supporting the management of risk in healthcare builds across Scotland. For some services, elements are already delivered across the system, and where this is the case, enhancements will be made.

Due to the impact of the pandemic, the service is launching with a phased approach. At 1st June 2021, the service will launch with its first phase of design completed. The second design phase throughout 2021/22 will see further development of the service
.
Please see our website for the latest information about these services.

Contact Us

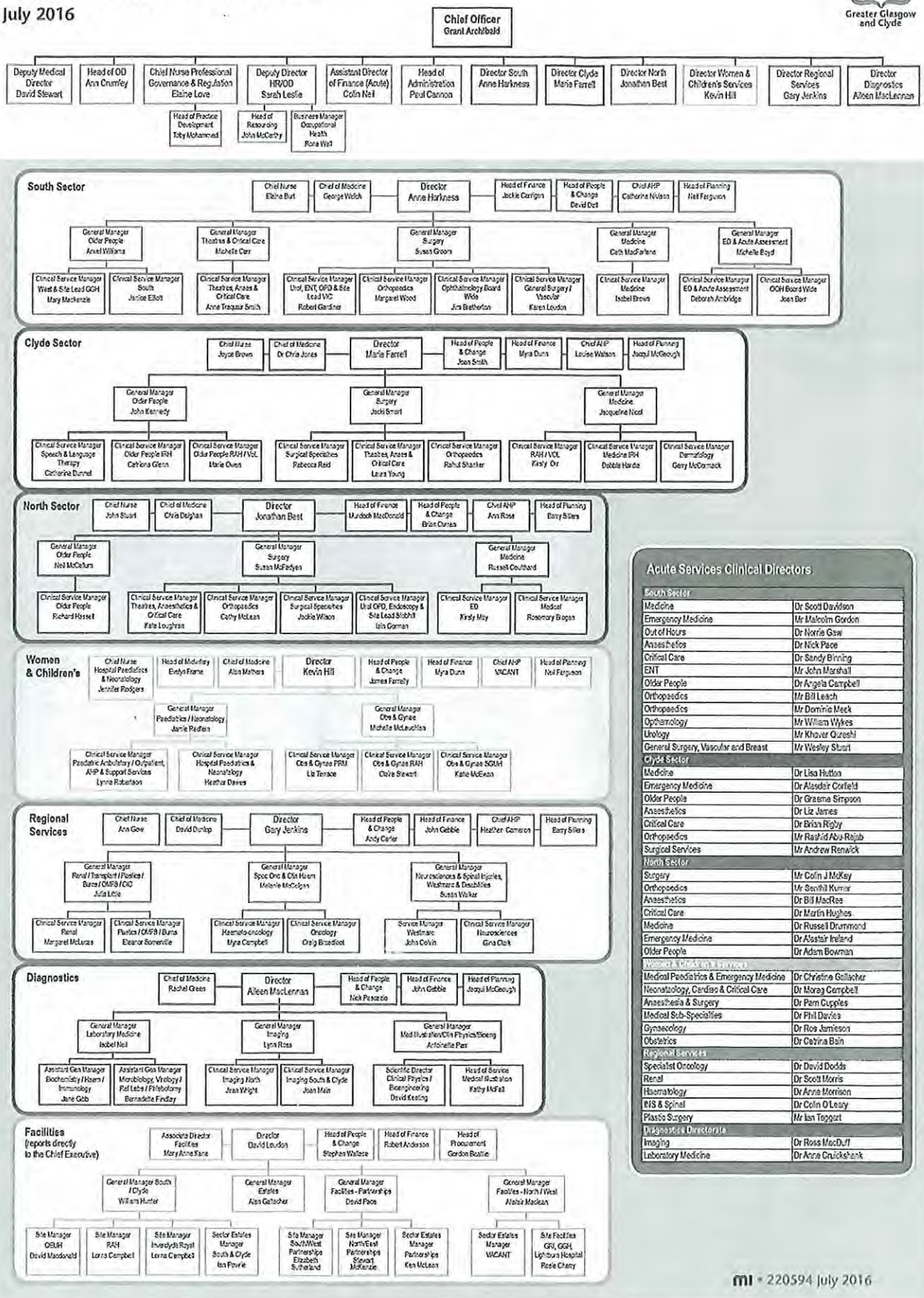
Further information on the service can be found at: https://www.nss.nhs.scot or please email us at: nss.NHSScotlandAssure@nhs.scot

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Acute Services Structure

July 2016

NHS Greater Glasgow and Clyde

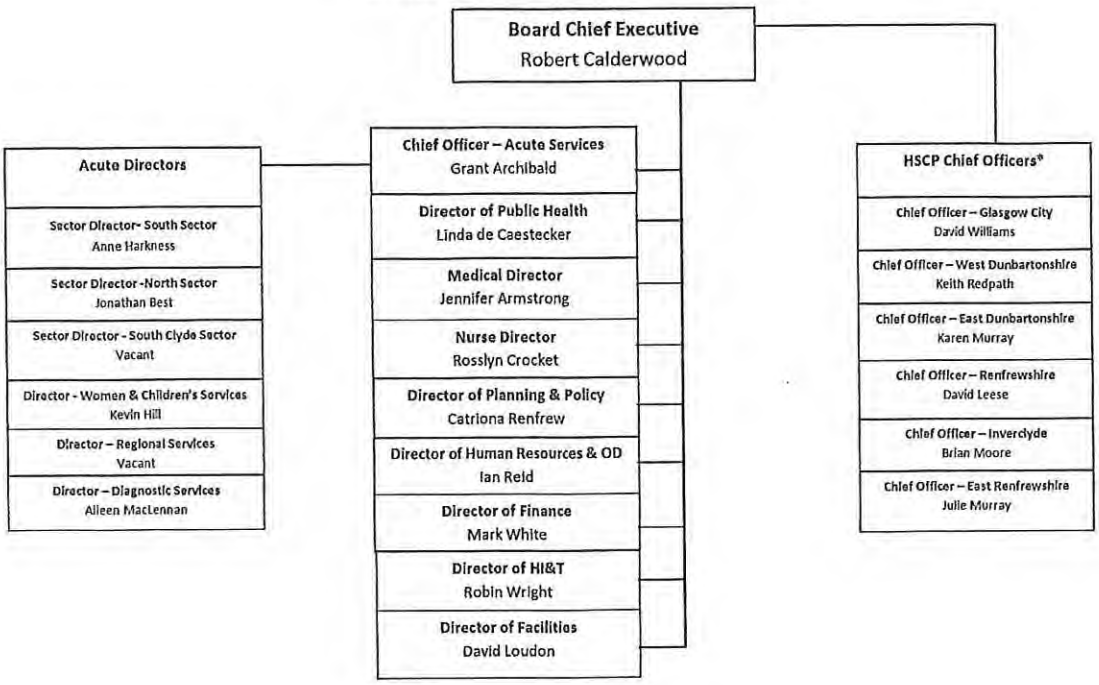


Acute Services Clinical Directors

South Sector	
Medicine	Dr Scott Davidson
Emergency Medicine	Mr Malcolm Gordon
Out of Hours	Dr Norrie Gow
Anaesthetics	Dr Nick Pace
Critical Care	Dr Sandy Binning
ENT	Mr John Marshall
Older People	Dr Angela Campbell
Orthopaedics	Mr Bill Leach
Orthopaedics	Mr Dominic Meek
Opthamology	Mr William Wykes
Urology	Mr Khaver Qureshi
General Surgery, Vascular and Breast	Mr Wesley Stuart
Clyde Sector	
Medicine	Dr Lisa Hutton
Emergency Medicine	Dr Alasdair Corfield
Older People	Dr Grasma Simpson
Anaesthetics	Dr Liz James
Critical Care	Dr Brian Rigby
Orthopaedics	Mr Rashid Abu-Rajab
Surgical Services	Mr Andrew Renwick
North Sector	
Surgery	Mr Colin J McKay
Orthopaedics	Mr Senthil Kumar
Anaesthetics	Dr Bill MacRae
Critical Care	Dr Martin Hughes
Medicine	Dr Russell Drummond
Emergency Medicine	Dr Alastair Ireland
Older People	Dr Adam Bowman
Women & Children's	
Medical Paediatrics & Emergency Medicine	Dr Christine Gallacher
Neonatology, Cardiac & Critical Care	Dr Morag Campbell
Anaesthesia & Surgery	Dr Pam Cupples
Medical Sub-Specialties	Dr Phil Davies
Gynaecology	Dr Ros Jamieson
Obstetrics	Dr Catrina Bain
Regional Services	
Specialist Oncology	Dr David Dodds
Renal	Dr Scott Morris
Haematology	Dr Anne Morrison
NIS & Spinal	Dr Colin O'Leary
Plastic Surgery	Mr Ian Taggart
Diagnostics & Directorate	
Imaging	Dr Ross MacDuff
Laboratory Medicine	Dr Anne Cruickshank

mi • 220594 July 2016

NHS Greater Glasgow and Clyde Revised Organisational Structure



*Chief Officers Designate pending formal IJB approval

Prior information notice

This notice is for prior information only

Section I: Contracting authority

I.1) Name and addresses

The Common Services Agency (more commonly known as NHS National Services Scotland) (NSS)

1 South Gyle Crescent

Edinburgh

EH12 9EB

UK

Telephone: [redacted]

E-mail: [redacted]

NUTS: UKM

Internet address(es)

Main address: http://www.nss.nhs.scot/browse/procurement-and-logistics

Address of the buyer profile: https://www.publiccontractsscotland.gov.uk/search/Search_AuthProfile.aspx?ID=AA11883

I.2) Joint procurement

The contract is awarded by a central purchasing body

I.3) Communication

Additional information can be obtained from the abovementioned address

I.4) Type of the contracting authority

Body governed by public law

I.5) Main activity

Health

Section II: Object

II.1) Scope of the procurement

II.1.1) Title

National Infection Prevention Control Intelligence Solution

Reference number: NP507125

II.1.2) Main CPV code

72000000

II.1.3) Type of contract

Services

II.1.4) Short description

Scottish Government and NHSScotland are exploring options for a single national Infection Prevention Control eSurveillance solution that will ensure consistent application across all of NHSScotland.

II.1.6) Information about lots

This contract is divided into lots: No

II.2) Description

II.2.3) Place of performance

NUTS code:

UKM

II.2.4) Description of the procurement

Scottish Government and NHSScotland are exploring options for a single national Infection Prevention Control eSurveillance solution that will ensure consistent application across all of NHSScotland. This will replace the existing disparate systems across Health Boards and action the recommendation set out in the Infection Prevention Workforce Strategic Plan – 2022 to 2024 'To progress the work for a national eSurveillance system for Scotland, with the support of local and national stakeholders'.

The national solution will need to:

- Integrate and be interoperable with some of the numerous NHS Scotland existing systems.

- Provide efficient local and national reporting.

- Provide real time data (e.g. providing alerts to flag identification of an infection, provide up to date reporting)

- Be available 24 hours a day, 7 days a week and must have an extremely high degree of resilience in order to minimise any periods of scheduled or unscheduled downtime. Vendors of future solutions should note that this resilience should include but not be limited to Failover and Disaster Recovery of the system with limited technical intervention.

This soft market test is being conducted to determine what solutions may be available, determine the scope of any future procurement to enable the delivery of a national solution, and to ascertain indicative costs.

II.3) Estimated date of publication of contract notice:

16/06/2025

Section IV: Procedure

IV.1) Description

IV.1.8) Information about Government Procurement Agreement (GPA)

The procurement is covered by the Government Procurement Agreement: Yes

Section VI: Complementary information

VI.3) Additional information

Please download the IPC eSurveillance PIN V1 from this Public Contracts Scotland prior information notice and return completed, and as instructed in the PIN, by 10:00 Monday 3 March 2025.

NOTE: To register your interest in this notice and obtain any additional information please visit the Public Contracts Scotland Web Site at http://www.publiccontractsscotland.gov.uk/Search/Search_Switch.aspx?ID=789140.

(SC Ref:789140)

VI.5) Date of dispatch of this notice

30/01/2025

9 December 2022

NHS Greater Glasgow and Clyde response to

RFI (Request for Information) 10. Section 3 Ward 4C of the QEUH: In respect of all perceived problems, defects and issues with the ventilation system within Ward 4C of the QEUH, following building handover in January 2015 to present date

This response is presented as a chronology, identifying documents to answer the various sections of 3.1 to 3.7 against each of the work programmes that may in a wide interpretation be considered as "remedial and/or refurbishment works". The works set out below were undertaken to create improvement in the ventilation. We have not included activities which we consider to be a change or enhancement of planned preventative maintenance.

The response below must be read in conjunction with the documents previously provided in response to RFI 1 5.1, submitted 15.07.2021, which, together with the chronology below, form the full response to RFI 10, Section 3. The response to RFI 1 6 submitted 10.11.2021, RFI 4 submitted 04.04.2022, and much of the response to RFI 7 provide background and detail to the decisions taken to proceed with works; information previously provided has in general not been duplicated in the response below.

Filename	Descriptive comment
	It was agreed during the build period to transfer Bone Marrow Transplant (BMT) to the QEUH Ward 4B (Haemato-oncology). To accommodate BMT within Ward 4B it was agreed that 10 haemato-oncology beds would be provided in Ward 4C Renal as these were considered suitable for low risk haemato-oncology patients. The patients who moved there were from a general ward (without specialist ventilation) in the Southern General. From occupation in spring 2015 the ventilation system was operating under design conditions with no perceived problems, defects or issues in relation to the design intent or the agreed handover specification. In **October 2018** a report on the feasibility of increasing ventilation air change rates in RHC Ward 2A was provided to the board (refer to response to Question 1.1 to this Request for Information). This study confirmed the understanding that to achieve a significant increase in air change rates would require substantial disruptive works.

	Estates commenced an exploration to explore what improvements could be made within the parameters of the existing infrastructure in various wards, which included Ward 4C. On **23 November 2018** the board received a HSE Notice of Contravention and Improvement Notice with regard to Infectious Diseases Wards 5C and 5D. The 3 AHUS's serving Ward 5C also serve 4C.
ATO102_03191365 AW to TS re vent update 26 11 2018.msg	**26 November 2018** - Email update from A Wilson to T Steele giving update on plan for rebalancing the system for ward 4C and 5C *"to improve the situation for these wards as best we can".*
	During week commencing Mon **28 Nov 2018** H&V commenced modifying the ventilation in wards 4C.
ATO102_03191503 AW to TS update 30 11 2018.msg	**30 November 2018 –** Email update from A Wilson to T Steele providing an update on adjustments to the ventilations systems in 4C, 5C, 5D, 7A and 7D.
Ward +4C & -5C Pressure change report. 14 Dec 2018 Rev1.1.pdf	**03 December 2018** – Report by H and V Commissioning Engineers. Report prepared on completion of the works and includes description of Scope of Works to "maximise bedrooms in ward 4C from corridor to bedroom to positive pressure. Target pressures greater than 1Pa."
RE estates email ventilation 4C.msg	**09 December 2018 -** I Powrie to T Steele confirming he (IP) has reviewed the commissioning data and confirms that ward 4C is supplied by 3 separate vent systems. Email also provides a draft response to the request for a feasibility study to achieve • 6 air changes/ hour • positive pressure 6PA • Hepa filtered rooms It notes that the feasibility study could be included in scope for one already underway for RHC Ward 2A, with 2A taking priority.
Copy of 4C Room Pressure Survey.xls	09 December 2018 - Excel spreadsheet which is attached to the above email providing the outcome of a room pressure survey at Ward 4C which indicates performance at slight positive and not nominally negative as designed.

	19 January 2019 – 14 Mobile Hepa filter units were distributed within ward 4c. Refer to Cryptococcus Incident Management Meeting notes from 21 Jan 2019 provided in response to RFI 7. In **June 2019** the Specialist Critical Ventilation Group noted a preference to providing a set up in Ward 4C which would be the same as 4A or RHC 2A and that it would be a 2 to 5 year plan to review in detail to identify and eliminate risks and costs of work involved.
FW QEUH CriticalSpecialist Ventilation Systems Steering Group.msg	**05 July 2019** – Email from T Inkster regarding production of an SBAR for ward 4c. (refer to response provided to RFI 7)
SBAR 4C.doc (within FW QEUH CriticalSpecialist Ventilation Systems Steering Group.msg)	**05 July 2019 –** SBAR report prepared by T Inkster **-** attachment to email above
	16 & 17 December 2019 HSE issued a Notification of Contravention letter and an Improvement Notice with regard to Ward 4C. Refer to previously submitted response to RFI 1 5.1
QEUH - Ward 4C - January 2020.pdf	**16 & 17 January 2020** – CorrectAir Solutions Report for Ward 4C - Annual Verification and Inspection Executive summary of this report notes that 10 No. Ceiling Vents Grilles removed. As noted in the Action Plan in response to HSE Notification, the removal of these reduces the risk of particulate transfer between corridor ceiling void and the clinical space, and improves the overall permeability of the ward.
Risk Assessment v8 - 02 2020.doc	**28 February 2020 –** Risk Assessment Form – Airborne Pathogens Previously provided as part of response to RFI 1 5.1 (*refer to Production 11: Second Inventory of Productions for the Appelant &Productions 5 – 11.pdf*).
QEUH WARD 4C Vent Improvement Scope (002).pdf	**03 September 2020 –** Ward 4C Improvement Scope of Works The content of the Ward 4C HSE Action Plan noted below indicates that Option 1 was the selected option within this scope document.

2020-09-18 HSE Ventilation IN Progress ActionPlanv4 QEUH 4C PICU ICU.pdf	**02 September 2020 –** Ward 4C HSE Action Plan Previously provided as part of response to RFI 1 5.1
	From **20 September 2020,** on a phased basis, recirculation units were installed to ensuite toilets to improve air quality. There was no physical change to the existing ventilation system.
CSSL Reports Dec 2020.pdf	**20 September - December 2020** – Validation of Critical Ventilation System. Test report for each room (25 bedrooms) with particle counts carried out pre and post fitting of recirculation fans (Camfil Camcleaner 400 concealed fan units). The recirculation units were installed on a phased basis as per dates on reports.
ATO101_00063396 - Risk Assessment 22 06 2021.doc	**22 June 2021 –** Risk Assessment Form – Airborne Pathogens
QEUH - Adults Ward 4C - Annual Verification and Inspection - September 2021 – CSSL.pdf	**September 2021 -** CorrectAir Solutions Report for Ward 4C - Annual Verification and Inspection.
QEUH-CDL-XX-XX-RP-Z-90201 - Word 4,5,6 & 7C Ventilation Report.pdf	**May 2022 –** Cundall Report – Ventilation Report into the viability for increasing the ventilation rates within the single bedrooms on wards 4C, 5C, 6C and 7C to 6 ach.
QEUH - Adults Ward 4C - Annual Verification and Inspection - September 2022 – CSSL.pdf	**September 2022 -** CorrectAir Solutions Report for Ward 4C - Annual Verification and Inspection

NHS Greater Glasgow and Clyde	NHS GREATER GLASGOW & CLYDE CONTROL OF INFECTION COMMITTEE STANDARD OPERATING PROCEDURE (SOP)	Page	1 of 11
		Effective From	May 2020
	Patient Placement Guidance	Review Date	May 2022
		Version	1
The most up-to-date version of this SOP can be viewed at the following website: www.nhsggc.org.uk/your-health/public-health/infection-prevention-and-control/			

SOP Objective

To ensure that patients are cared for in the appropriate area in order to minimise the risk of cross-infection, and to protect immune compromised patients from environmental infection.

This SOP applies to all staff employed by NHS Greater Glasgow & Clyde and locum staff on fixed term contracts and volunteer staff.

KEY CHANGES FROM THE PREVIOUS VERSION OF THIS SOP

- **This is a new SOP**

Document Control Summary

Approved by and date	This will be approved by Board Infection Control Committee
Date of Publication	May 2020
Developed by	Infection Control Policy Sub-Group
Related Documents	National IPC Manual http://www.nipcm.hps.scot.nhs.uk/ MERS-cov-information hub https://www.hps.scot.nhs.uk/a-to-z-of-topics/middle-east-respiratory-syndrome-coronavirus/ 2019-nCoV https://www.hps.scot.nhs.uk/a-to-z-of-topics/wuhan-novel-coronavirus/
Distribution/ Availability	NHSGGC Infection Prevention and Control Internet www.nhsggc.org.uk/your-health/public-health/infection-prevention-and-control/
Lead Manager	Board Infection Control Manager
Responsible Director	Director of Infection Prevention and Control

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1. Responsibilities

Health Care Workers (HCW) must:

- Follow this SOP.
- Follow the advice of the Infection Prevention Control Team (IPCT)
- Escalate to line manager if they are unable to follow this SOP.

Managers must:

- Support HCWs in following this SOP.
- Cascade new policies/SOPs to clinical staff.

Infection Control Teams must:

- Keep this SOP up-to-date.
- Provide education opportunities on this SOP.

Facilities / Estates Teams must:

- Carry out validation on all rooms annually or following any works carried out on the room.
- Keep up-to-date validation records.

2. General Information on Specialist Ventilation

Across NHS Greater Glasgow and Clyde there are a number of specially ventilated rooms designed to protect patients within the healthcare environment from potentially harmful pathogens. The tables below provide a list of wards and rooms on each of the main hospital sites, indicating the type of ventilation and filtration available in each. This will direct staff to the correct placement of patients who are suspected or confirmed to have an airborne or high consequence infectious disease, as well as airborne protective isolation for immune compromised patients. Below is a description of what each type of ventilation means, while Table 1 should be used to guide staff to the type of patient that can be safely cared for in each.

3. What is a Positive Pressure Ventilated Lobby (PPVL) Room (HEPA and NON-HEPA filtered air)

A PPVL room has a flow of air from the lobby which moves into the main room. The contaminated air is extracted via a vent in the en suite toilet when one is available. In all instances in QEUH and RHC there is an additional extract in variable locations in the ceiling of the patient room. The lobby itself is positively pressurised to both the patient's room and the outer corridor providing a barrier between the patient within the room and the surrounding ward. This movement of air effectively prevents infection spreading between the room and the surrounding ward. Some PPVL rooms have an air supply to the lobby via a filter (HEPA filter) providing some further protection for patients who are immunosuppressed within the room. It is important to keep the door to the main room and to the lobby closed when not in use to ensure that this flow of air is maintained. The pressure on the gauge from corridor to lobby should read +6 to +12 PA.

4. What is a Negatively Pressured Room

A negative pressure room has a flow of air which moves from the corridor into the room preventing the escape of room air to the surrounding ward. The ventilation within the room is such that it dilutes any airborne pathogens which are circulating. The room provides a negative air flow / 'cascade' from ward corridor to lobby, and lobby to isolation room, whilst allowing control of room temperature. The room is validated for 5-10 air changes per hour within an isolation room and a pressure differential of -6Pa to -12Pa in relation to the corridor. It is important to keep the door to the main room and the lobby closed when not in use to ensure that this flow of air is maintained.

5. What is a BMT Room

BMT rooms are reserved for use by those patients who are highly susceptible to infection, for example, those undergoing bone marrow transplant. The air supply to the room is via a filter (HEPA filter) to further provide protection to the vulnerable patient within the room from external airborne pathogens such as fungi. These rooms are currently only located within Ward 2A Children Hospital (ward is currently closed), and also Ward 4B in the QEUH, and are reserved for use by BMT patients (These rooms do not have lobbies). The BMT rooms in Ward 4B QEUH are validated. The validation is derogated to deliver 6 ac/h and 10 Pascals +ve pressure from room to corridor. It is important to keep the door to the main room closed when not in use to ensure that this flow of air is maintained especially as the corridor is not HEPA filtered air.

6. Room Types

Type of Room	Contraindications	Patient allocation / suitability
PPVL without HEPA	Varicella Zoster, MDR-TB or High Consequence Infectious Disease, Immune compromised patients as non-HEPA filtered	Patients with Atypical Mycobacteria (CFs)
		Patients with airborne infection, only after discussion with (ICD or on-call microbiologist).
		Patients with infections (non-airborne route)
PPVL with Lobby HEPA	Airborne infection unless discussion with IPCT (ICD or on-call microbiologist)	Immunosuppressed patients, i.e. Haem-onc patients, should be prioritised for these rooms
		Immunosuppressed with chickenpox / measles on discussion with IPCT
		Patients with Atypical Mycobacteria
		Patients with infections (non-airborne route)
Negative pressure	Any patient with very low immunity, i.e. Bone Marrow Transplant (BMT) patients	Chickenpox, Measles, Pathogens of High Consequence
		Tuberculosis (incl MDRTB and XMDRTB)
		VHF
		MERs, COVID-19
BMT Rooms	Contraindications should include airborne infections, C. diff and norovirus	Bone Marrow Transplant patients These are located in specialist units QEUH 4B RHC 2A (currently closed) WoSBOC A summary of these room is not included in this SOP

7. Signage

Patient bedrooms with specialist ventilation will have a sign at the door indicating the specific ventilation afforded by that particular room. The signs will be similar to those below with local details.

Negative Pressure
Isolation Room
Pressure gauge should be between
-6Pa & -12Pa
If the positive side of the gauge is out of range please contact estates department
Help desk 5555

HEPA FILTERED PPVL
Isolation Room
Pressure gauge should be between
+6Pa & +12Pa
If the positive side of the gauge is out of range please contact estates department
Help desk 5555

NON-HEPA FILTERED PPVL
Isolation Room
Pressure gauge should be between
+6Pa & +12Pa
If the positive side of the gauge is out of range please contact estates department
Help desk 5555

Table 1. Special Ventilation Rooms – Royal Hospital for Children (RHC) (additional comments re immunosuppressed patients while Ward 2a/b closed)

Location	Room Number	Type of Room	HEPA filter (Lobby supply)	Type of Patient	Comment	En suite Y/N
CDU	18	Negative Pressure	No	Varicella Zoster, TB, VHF, MERS, COVID-19	Not immunosuppressed	Y
1D	5	Negative Pressure	No	Varicella Zoster, TB, VHF, MERS, COVID-19	Not immunosuppressed	N
1D	12	PPVL	Yes	Airborne	Prioritise Immunosuppressed	N
1D	17	PPVL	Yes	Airborne	Prioritise Immunosuppressed	N
1D	18	PPVL	No	Airborne	Not immunosuppressed	N
1E	13	PPVL	Yes	Airborne	Prioritise Immunosuppressed	Y
1E	14	PPVL	Yes	Airborne	Prioritise Immunosuppressed	Y
2C	5	PPVL	No	Airborne	Not immunosuppressed	Y
2C	6	Negative Pressure	No	Varicella Zoster, TB, VHF, MERS, COVID-19	Not immunosuppressed	Y
3A	15	PPVL	Yes	Airborne	Prioritise Immunosuppressed	Y
3A	16	PPVL	No	Airborne	Not immunosuppressed	Y
3B	19	PPVL	No	Airborne	Not immunosuppressed	Y
3B	5	PPVL	No	Airborne	Not immunosuppresses	Y
3C	9	PPVL	Yes	Airborne	Prioritise Immunosuppressed	Y
3C	10	PPVL	Yes	Airborne	Prioritise Immunosuppressed	Y

Table 2. Special Ventilation Rooms – Adult Queen Elizabeth University Hospital (QEUH)

Location	Room Number	Type of Room	HEPA filter (Lobby Supply)	Type of Patient	Comment	En suite Y/N
HDU UNIT 1	3	PPVL	No	Airborne	Not immunosuppressed	N
Surgical HDU UNIT 1	4	Negative Pressure	Yes	Varicella Zoster, TB, VHF, MERS, COVID-19	Not immunosuppressed	N
HDU UNIT 2	11	PPVL	No	Airborne	Not immunosuppressed	N
ICU UNIT 3	23	PPVL	No	Airborne	Not immunosuppressed	N
ICU UNIT 3	24	Negative Pressure	Yes	Varicella Zoster, TB, VHF, MERS, COVID-19	Not immunosuppressed	N
ICU UNIT 4	31	PPVL	Yes	Airborne	Prioritise Immunosuppressed	N
ICU UNIT 4	40	PPVL	No	Airborne	Not immunosuppressed	N
Medical HDU UNIT 5	43	Negative Pressure	Yes	Varicella Zoster, TB, VHF, MERS, COVID-19	Not immunosuppressed	N
Medical HDU UNIT 5	44	Negative Pressure	Yes	Varicella Zoster, TB, VHF, MERS, COVID-19	Not immunosuppressed	N
HDU UNIT 6	50	PPVL	Yes	Airborne	Prioritise Immunosuppressed	N

*rooms that require validation

Table 3. Special Ventilation Rooms – Royal Alexandra Hospital (RAH)

Location	Room Number	Type of Room	HEPA Filter (Lobby Supply)	Type of Patient	Comment	En suite Y/N
ICU	2	Negative Pressure	No	Varicella Zoster, TB, VHF, MERS, COVID-19	Not immunosuppressed	N
ICU	5	Negative Pressure	No	Varicella Zoster, TB, VHF, MERS, COVID-19	Not immunosuppressed	N

Rooms that require validation are marked with *. Estates are aware of this and are awaiting access to undertake revalidation. As soon as the IPCT are notified of these rooms having passed revalidation, the document will be updated.

Please note there are no negative pressure isolation rooms in either Vale of Leven Hospital or Inverclyde Royal Hospital.

Table 4. Special Ventilation Rooms – Glasgow Royal Infirmary (GRI)

Location	Room Number	Type of Room	HEPA Filter (Lobby Supply)	Type of Patient	Comment	En suite Y/N
6	3/25	Negative Pressure	No	Varicella Zoster, TB, VHF, MERS, COVID-19	Not immunosuppressed	Y
6	3/39	Negative Pressure	No	Varicella Zoster, TB, VHF, MERS, COVID-19	Not immunosuppressed	Y
7	3/52	Negative Pressure	No	Varicella Zoster, TB, VHF, MERS, COVID-19	Not immunosuppressed	Y
16	3/31	Negative Pressure	No	Varicella Zoster, TB, VHF, MERS, COVID-19	Not immunosuppressed	Y
ICU WEST	7	Negative Pressure	No	Varicella Zoster, TB, VHF, MERS, COVID-19	Not immunosuppressed Used as **third** choice	N
ICU WEST	10	Negative Pressure	No	Varicella Zoster, TB, VHF, MERS, COVID-19	Not immunosuppressed Used as **fourth** choice	N
ICU EAST	11	Negative Pressure	No	Varicella Zoster, TB, VHF, MERS, COVID-19	Not immunosuppressed Used as **second** choice	N
ICU EAST	12	Negative Pressure	No	Varicella Zoster, TB, VHF, MERS, COVID-19	Not immunosuppressed. **This room should be prioritised and used first.**	N

8. Emerging Pathogens – COVID-19

Background (HPS February 2020)

In late December 2019, the People's Republic of China reported an outbreak of pneumonia due to unknown cause in Wuhan City, Hubei Province. In early January 2020, the cause of the outbreak was identified as a new coronavirus, named novel coronavirus (COVID-19). While early cases were likely infected by an animal source in a 'wet market' in Wuhan, ongoing human-to-human transmission is now occurring.

There are a number of coronaviruses that are transmitted from human-to-human which are not of public health concern however the COVID-19 can cause respiratory illness of varying severity. Currently there is no vaccine and no specific treatment for infection with the virus.

On 30 January 2020 the World Health Organization declared that the outbreak of 2019-nCoV constitutes a Public Health Emergency of International Concern.

The collection of resources on this page contains information and advice on novel coronavirus (COVID-19).

https://www.hps.scot.nhs.uk/a-to-z-of-topics/wuhan-novel-coronavirus/

PLEASE NOTE THAT IN THE ABSENCE OF A NEGATIVE PRESSURE ROOM, A STANDARD ISOLATION ROOM WITH AN EN SUITE IS AN ACCEPTIBLE ALTERNATIVE FOR PATIENTS WITH CONFIRMED OR POSSIBLE COVID-19.

9. Evidence Base

https://www.hps.scot.nhs.uk/a-to-z-of-topics/wuhan-novel-coronavirus/

http://www.nipcm.hps.scot.nhs.uk/

https://www.hps.scot.nhs.uk/a-to-z-of-topics/middle-east-respiratory-syndrome-coronavirus/

Minutes of the Acute Infection Control Committee
Boardroom, JB Russell House
Gartnavel Royal Hospital
Tuesday 12th November at 10:00

PRESENT

Dr Scott Davidson (Chair)	Deputy Medical Director
Rosie Cherry	Head of Performance & Quality
Pamela Joannidis	Acting Associate Nurse Director IPC
Kate Hamilton	IPC Nurse Consultant
Karen McGugan	Lead Nurse, Imaging
Elaine Burt	Chief Nurse Regional Sector
Patricia Friel	Lead Nurse
Morag Gardner	Chief Nurse South Sector
Dr Iain Kennedy	Public Health Consultant
Kirsty McDaid	Lead IPC Nurse West & HSC Partnerships
Gillian Bowskill	Lead IPC Nurse Paediatrics
Jenn Barret	Senior IPC Nurse North Sector
Jackie Barmanroy	Senior IPC Nurse South Sector
Sandra Devine	Acting Infection Control Manager
Ann Kerr	Lead IPC Surveillance Nurse
Angela Oneill	Deputy Director of Nursing
Dr Linda Begrade (arrived at 11:00)	Infection Control Doctor

IN ATTENDANCE

Calum MacLeod (Minutes)

APOLOGIES

John Stuart	Gillian Mills	Donna McConnell
Dr Erica Peters	Jackie Wilson	Lynn Pritchard
Jenn Rodgers	Dr David McCarey	

		Actions
1.	**Introductions & Apologies Received**	
	Dr Scott Davidson welcomed everyone to the meeting, introductions were made and apologies were received from the above mentioned.	

		Actions
2.	**Minutes of Previous Meeting**	
	The minutes of the previous AICC meeting held on Monday 2nd September were approved with no amendments requested.	
	Update on Action Plan	
	Summary of changes has been drawn up along with a SBAR regarding the new proposed Acute IPC audit tool. This is currently on the agenda as Item 20. A letter in relation to patients who have tested positive for CPE/MRSA but were discharged home before being informed of their positive result has been drafted and will be sent out to the AICC. Dr Iain Kennedy gave an update regarding the action about dedicated trainers within GG&C with regards to emerging pathogens of high consequence. A further meeting has been arranged for early December 2019 to organise how they plan to allow staff sufficient time to undertake this. Scottish Government have requested that a rolling training programme should be implemented where emergency, critical care and Infectious Diseases staff are to be trained.	
3.	**National Infection Prevention & Control Manual**	
	Updated literature review on aerosol generating procedures where tracheotomy/tracheostomy procedures have been added to the list of AGPs. CPR is no longer specified as an AGP. Work with regards to prevention and management of healthcare ventilation system-associated infection incidents/outbreaks within Chapter 4 is currently out for consultation.	
4.	**Monthly & Sector Enhanced Surveillance of SABs**	
	In August 2019, 29 SAB cases were identified, 9 of which were HAI. 10 cases in total were related to IV access device. 6 cases that were considered to be an avoidable harm or had SAB citied on death certificate had a Datix assigned as part of the clinical review process. In September 2019, 28 SAB cases were identified, 14 of which were HAI. 7 cases in total were related to IV access device. 3 cases that were considered to be an avoidable harm or had SAB citied on death certificate had a Datix assigned as part of the clinical review process. Quarter 3 reports for each sector were also disseminated to the group for information. Ann Kerr informed the group that initial figures for October's SAB report are showing zero SABs recorded for the whole of the Regional directorate during the month of October.	

5.	SAB Steering Group	Action
	The use of chlorhexidine dressing for PICC or CVC was discussed, this was a recommendation from 5 years ago but there was not enough evidence to support a widespread blanket use. These dressings are currently being used only within the Renal speciality where the dressing is put in place for 6 weeks with the first 2 of these being the critical time for infections. The group recommends the introduction of these dressing in other high risk areas where there is evidence of high numbers of PICC or CVC infections. A care plan with regards to midline IV device is currently being led by IPC Nurse consultant, practice development and Karen McGugan. Awaiting procurement to confirm that PVC packs are available to order via PECOS. Once confirmed Pamela will send out PECOS codes. Karen McGugan informed the group that from the 2nd December 2019 GG&C Vascular Access Service will be using the Biopatch for certain population of these patients. These are already in use within Ward B7 at the Beatson. Discussion regarding the four weekly PVC sweeps which are undertaken and how we close the loop. Pamela and Sandra are to take this action forward. There is also a need to demonstrate improvement that has been made with the introduction of the new PVC earlier this year is to be incorporated into the IPC work plan. Next SAB steering group is being held on Tuesday 19th November.	**P Joannidis**
6.	**Acute Clinical Governance IPC Reports**	
	Latest report went to acute clinical governance meeting. This report focusses on audits and completion of Learnpro modules as well as trending analysis about CDI and SABs. Highlights from this report included: • Spike in CDI infections during October (41 in total with 15 of these being HAI) • 12 cases of flu reported across the board last week. • 5 wards closed due to Norovirus within expected levels for this time of year but still early in the season. • SPC charts are to be included in future ACG reports.	
7.	**Draft Policies for Approval**	
	Decontamination SOP – Minor changes which brings it in line with Central Decontamination Unit. Outbreak SOP – this has been updated in relation to some recent significant outbreaks. Public Health guidance was used to put more structure around IMT meetings and the role of individual members within the IMT. Occupational Health Guidance has also been updated. MERs guidance regarding management of a suspected case of MERS-CoV in GG&C has been developed/updated by the IPCT and Infectious Diseases. This document fits in with locally arranged patient pathways and will be finally approved at the BICC	

8.	**Bi – Monthly HAIRT Report**	**Action**
	GG&C are not performing well against national Healthcare associated SABs and CDI cases. Zero hip arthroplasty SSI reported during April to June.	
9.	**HEI/HAI**	
	Corporate HEI group is being set up. Membership, terms of reference and the finalised corporate inspection tool has been completed. Rosie Cherry will send out dates for the next meeting.	
10.	**IPC Work Plan 2019/20**	
	Pamela has added a caveat to the work plan to say that the Lead ICD will not be able to progress actions that have not been completed but the IPCT are currently trying to resolve this. The Board Water Safety group have a revised membership and are looking at guidance about the removal of water coolers within wards/departments which have water coolers. Currently awaiting national guidance on this.	
11.	**IPC Sector Update Report**	
	Clyde Sector –Public Health received a letter from Renfrewshire council regarding the recent salmonella outbreak at RAH. Environmental Health officers from the council are not currently invited to IMT as it was thought that Public Health would contact them if there are any follow up actions required. Vale of Leven had a measles confirmed case where significant activity regarding tracing staff vaccinations was undertaken. **North Sector** –. Confirmed bordeteller pertussis case, patient had multiple contacts through their patient journey. IMT's held and linked with Public Health to follow up patient contacts. 3 CDI deaths that have been on patient's death certificate, 2 are HAIs. Datix's have been completed for all of these. 4 patients with Group A Strep isolated mostly from wound swabs. Problem assessment group organised for today regarding this. **South Sector** – CDI trigger in Ward 11B ENT as 2 patients identified with CDI within 2 weeks. Typing has came back as different, no obvious cross transmission. IPCT are carrying out some education within the ward along with hand hygiene audits. Ward 52 closed from 22nd - 28th October. Overall 16 patients affected with 6 confirmed Norovirus. Ward 53 closed from 19th – 25th October. Overall 12 patients affected with 4 confirmed Norovirus. Ongoing IMT regarding increase in Cranial/Spinal Surgical Site Infections (SSI). No other Neuro Surgical site unit undertakes this surveillance so cannot compare. No common identifiable link between patients, standardised measures along patient pathway, no clear hypothesis as different theatres, staff and organisms have been identified. Peer review of theatre practice is to be arranged.	

	IPC Sector Update Report	Action
	South Paediatrics – confirmed pertussis positive for staff member within ICU. Staff and patient contacts identified, assessed and treated. Letters sent to discharged patient contacts. Public Health have bene involved with possible contacts but no further cases identified. Cluster of Acinetobacter within PICU. PAG held on 5th November where a HIIAT score of green. Ongoing incident regarding increase in gram negative bacteraemias within Ward 6A, QEUH which is currently being used for Paediatric Haematology/oncology patients. 1 new possible case on 10th November which will be the first case since the 1st of October. In total 15 cases have been identified. Last IMT HIIAT at Green. Chief Executive and Chairman of the board met with parents of patients who raised their concerns. **West/HSC Partnerships –** ongoing endoscopy reprocessing incident in relation to identifying AFB from the rinse water. As of 4th October all units have been down while the machines are being stripped down and decontaminated. This has had no impact of clinical cases. **Hot de-Brief -** Kate Hamilton went over this hot debrief regarding the recent Ciproflaxocin/Gentamicin resistant S. aureus outbreak in the PRM hospital. This unique strain was supceptable to chlorhexidine. Lessons learned from this debrief surrounding press releases and staff screening. Staff were offered decolonisation while being screened as a proactive step. Angela O'Neill raised that it states there was transmission but the IMT could not confirm it was not transmitted. Staff members did come back positive. Logical that it was transmitted through staff due to the speciality of the ward. Re – word the report as it reads less than a definite but it was mitigated. Kate Hamilton will take this forward as this document would be available through freedom of information requests.	
12.	**Minutes of the Board Infection Control Committee**	
	Minutes were disseminated to the group with no questions.	
13.	**CJD Subgroup**	
	New NICE guidelines has been updated with the expected publishing date of the 27th November. Dr Kennedy has read the draft guidance. If the Scottish Government goes ahead with the updated NICE guidance it may make things easier as some things previously recommended may not be required. In the meantime nothing will be changed until the Scottish Government change their requirements.	
14.	**Anti Microbial Report**	
	Ysobel Gourlay was not present during the meeting to discuss her report. Dr Kennedy highlighted that the Scottish One Health Antimicrobial Use and Antimicrobial Resistance report 2018 is about to be published on 12th November 2019.	

15.	**Facilities Update**	**Action**
	Winter cleaning started across all sites across GG&C from the 1st November 2019. Since July 2019 cleanliness standards within the Langlands Building, QEUH campus have achieved partial compliance with the NHS Scotland National Cleaning Service Specification (NCSS) Quality Framework. Following further NHS GG&C scrutiny the external service provider responsible for Domestic Services within the Langlands building is taking remedial action to ensure that the appropriate level of service improvement is taken to achieve satisfactory standards of cleanliness which complies with the NCSS quality framework. GG&C have instigated contractual remediation action on the contract provider and SPV. NHS GG&C are still in contingency arrangements with regards to the Clinical waste Contract. The new provider Tradebe are in the final stages of commissioning the new disposal site at Bellshill.	
16.	**Water Group Update**	
	The Board water policy describes the responsibilities of recording the flushing of infrequently used outlets and a return to local estates is required quarterly to detail where these outlets are and that flushing has taken place. The lack of returns has been escalated to the Board Water Group and individual Directors will be written to about this legislative compliance issue. Discussion regarding the lists that are being used to register the water flushing are quite historical and do not take into account any public areas. Attempts to update this list are underway but this is a massive undertaking.	
17.	**New Build Hospitals Update**	
	ICE Theatres on the QEUH campus has been commissioned and will be moving on the weekends of 16/17th November and 30th November & 1st December.	
18.	**Theatre Maintenance/Validation Update**	
	Nil to report as Gillian Mills was not present.	
19.	**Decontamination Subgroup**	
	Meeting at end of November where Michael Murphy Infection Control Doctor will be chairing. Currently drawing up terms of reference for the respiratory group in relation to Cystic Fibrosis patients across GG&C. Cowlairs clean room has had their floor repaired but not to the satisfaction of the head of decontamination. It is not affected any process within Cowlairs.	

20.	IPCAT	Action
	The current Acute Infection Prevention & Control Audit Tool is being reduced from its current 4 sections/163 questions into 2 sections/65 questions. This change has been made due to feedback from an inspection of the QEUH in January 2019 which highlighted a risk of overall IPCAT scores giving false assurance and not being reflective of individual elements of the audit where the score is low. The proposal is to re-audit any amber/red scoring sections within a month of original audit. This would enable re-assurance that the standards have risen and close the loop. The new tool was trialled in all sectors comparing the scores from the current audit tool to the new one There will be a formal revaluation of this audit in 6 months so we can modify it/change it if required. Plan is to switch over at the beginning of January 2020. This approach will be moved onto OPD and mental health areas in the future	
21.	**AOCB**	
	New AICC Dates	
	2020 AICC dates/times were disseminated and agreed.	
	HIS Letter	
	Joint inspections from both OPAH and HEI putting standards and methodology together.	
	CNO Letter	
	Letter from the CNO regarding Standards of Healthcare Associate Infections and Indicators on Antibiotic use.	
	Aide Memoire: Prevention & Management of Healthcare Ventilation System-associated infection incidents/outbreaks	
	This aide memoire provides best practice recommendations for clinical/estate/facility and IPC staff on preventative measures required and the appropriate actions that should be implemented in this event. Initial feedback from this was that it has massive implications. This will be taken to the BICC for further discussion. If anyone has any comments can you please forward them onto Kate Hamilton.	

SCOTTISH GOVERNMENT
HEALTH AND SOCIAL CARE DIRECTORATES
OVERSIGHT BOARD – QUEEN ELIZABETH UNIVERSITY HOSPITAL AND ROYAL HOSPITAL FOR CHILDREN, NHS GREATER GLASGOW AND CLYDE (NHSGGC)

Draft Terms of Reference

Purpose and role of group:
The Oversight Board for Queen Elizabeth University Hospital (QEUH) and the Royal Hospital for Children (RHC), NHSGGC, is a time-limited group to offer advice and assurance working with the Scottish Government and NHSGGC to:

- ensure appropriate governance is in place to increase public confidence;
- strengthen current approaches that are in place to mitigate avoidable harms, particularly with respect to infection prevention and control;
- improve how families of children within haemato-oncology wards have received relevant information and been engaged with;
- oversee and recommend action on the review of relevant cases;
- provide oversight on any related issues that emerge in the course of the programme of work; and
- work towards the de-escalation of the NHSGGC Board from Stage 4.

Background:
In light of the on-going issues around the systems, processes and governance in relation to infection prevention, management and control at the QEUH and RHC and the associated communication and public engagement issues, the Director General for Health & Social Care and Chief Executive of NHSScotland has concluded that further action is necessary to support the Board to ensure appropriate governance is in place to increase public confidence in these matters and therefore that for this specific issue the Board will be escalated to Stage 4 of the performance framework. This stage is defined as 'significant risks to delivery, quality, financial performance or safety; senior level external transformational support required'.

Approach:
The Oversight Board (OB) will take a values-based approach in line with the National Performance Framework (NPF) and the values of NHSScotland (NHSS).

The NPF values inform the behaviours people in Scotland should see in everyday life, forming part of our commitment to improving individual and collective wellbeing, and will inform the behaviours of the OB individually and collectively:

- to treat all our people with kindness, dignity and compassion;
- to respect the rule of law; and
- to act in an open and transparent way.

The values of NHSS are:

- care and compassion;
- dignity and respect;
- openness, honesty and responsibility; and
- quality and teamwork.

These values will be embedded in the work of the OB and its sub-groups, and this work will also be informed by engagement work undertaken with other stakeholder groups, in particular family members/patient representatives.

The OB is focused on improvement. OB members, and sub-group members, will ensure a lessons-learned approach underpins their work in order that learning is captured and shared locally and nationally.

Meetings:
The OB will meet weekly for the first four weeks and timings will be discussed thereafter. Video-conferencing and tele-conferencing will be provided.

Full administrative support will be provided by officials from CNOD. The circulation list for meeting details/agendas/papers/action notes will comprise OB members, their PAs and relevant CNOD staff.

Objectives, deliverables and milestones:
The objectives for the Oversight OB are to:

- improve the provision of responses, information and support to patients and their families;
- if identified, support any improvements in the delivery of effective clinical governance and assurance within the Directorates identified;
- provide specific support for infection prevention and control, if required;
- provide specific support for communications and engagement; and
- oversee progress on the refurbishment of 2A/B and any related estates and facilities issues as they pertain to haemato-oncology services.

Matters that are not related to the issues that gave rise to escalation are assumed not to be in scope, unless OB work establishes a significant link to the issues set out above.

In order to meet these objectives, the OB will retrospectively assess issues around the systems, processes and governance in relation to infection prevention, management and control at the QEUH and RHC and the associated communication and public engagement; having identified these issues, produce a gap analysis and work with NHSGGC to seek assurance that they have already been resolved or that action is being taken to resolve them; compare systems, processes and governance with national standards, and make recommendations for improvement and how to share lessons learned across NHSScotland. The issues will be assessed with regards to the information available at the particular point in time and relevant standards that were extant at that point in time.

The OB will focus on those issues directly related to the matters that led to the escalation of the Board to Stage 4. Other matters, unless pertinent to the OB's objectives, are out of scope.

A programme plan is being drawn up which will set out specific deliverables and milestones. In addition, the OB is preparing a risk register.

Governance:
The OB will be chaired by the Chief Nursing Officer, Professor Fiona McQueen, and will report to the Cabinet Secretary for Health and Sport.

There will be three Sub-groups – Infection Prevention & Control and Governance (which will be chaired by Irene Barkby MBE); Technical (Facilities and Estates) (chair to be confirmed); and Communications & Engagement (chaired by Professor Crag White) – all of which will report to the OB.

An organogram showing the governance structure is at Annex A.

Membership:

Oversight Board	
Member	**Job Title**
Professor Fiona McQueen (Chair)	Chief Nursing Officer, CNOD
Keith Morris (Deputy Chair)	Medical Advisor, Healthcare Associated Infection/AMR
Hazel Borland	Executive Director of Nursing, Midwifery and Allied Health Professionals & Healthcare Associated Infection Executive Lead, NHS Ayrshire and Arran
Professor Craig White	Divisional Clinical Lead, Healthcare Quality and Improvement Directorate
Irene Barkby MBE	Executive Director of Nursing, Midwifery and Allied Health Professionals & Healthcare Associated Infection Executive Lead, NHS Lanarkshire
Dr Andrew Murray	Medical Director, NHS Forth Valley Co-chair of the managed clinical network for children's cancer services in Scotland
Lesley Shepherd	Professional Advisor, Healthcare Associated Infection /AMR
Sandra Aitkenhead	The Scottish Government (secondee)
Phil Raines	CNOD
Claire McGrath (Secretariat)	CNOD
Calum Henderson (Secretariat)	CNOD

Infection Prevention & Control and Governance sub-group	
Member	**Job Title**
Irene Barkby MBE (Chair)	Executive Director of Nursing, Midwifery and Allied Health Professionals & Healthcare Associated Infection Executive Lead, NHS Lanarkshire
Frances Lafferty	ICN, NHS Ayrshire and Arran
Martin Connor	ICD, NHS Dumfries and Galloway
Helen Buchanan	Executive Lead for HAI, NHS Fife
Christina Couloumbe	ICP, NHS Lanarkshire
Lisa Ritchie	Health Protection Scotland
Lesley Shepherd	Professional Advisor, Healthcare Associated

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	Infection /AMR
Sandra Aitkenhead	The Scottish Government (secondee)
Phil Raines	CNOD
Claire McGrath (Secretariat)	CNOD

Communications and Engagement sub-group	
Member	**Job Title**
Professor Craig White (Chair)	Divisional Clinical Lead, Healthcare Quality and Improvement Directorate
Alfie Rawson	Families representative
Professor John Cuddihy	Families representative
Lynsey Cleland	Director of Community Engagement at Healthcare Improvement Scotland
Andrew Moore	Head of Excellence in Care for Healthcare Improvement Scotland
Phil Raines	CNOD
Calum Henderson (Secretariat)	CNOD

Further representation, including other family representatives is expected. In addition to these members, other attendees may be present at meetings based on agenda items:

OB – senior executives and non-executives from NHSGGC including Chair of Area Partnership Forum, Chair of Area Clinical Forum, Medical Director, Nurse Director, Director of Estates and Facilities, Director of Communications, Board Chair and Chief Executive; family representatives; representatives from HPS, HFS, HIS, HEI and HSE.

Infection Prevention & Control and Governance sub-group – Chair of Communications & Engagement sub-group; representatives from HPS, HFS, HIS, HEI and HSE.

Communications & Engagement sub-group – Chair of Infection Prevention & Control and Governance sub-group; communications staff from NHSGGC; communications staff from Scottish Government.

Stakeholders:
The Oversight Board and its sub-groups recognise that a broad range of stakeholder groups have an interest in their work, and will seek to ensure their views are represented and considered. These stakeholders include:

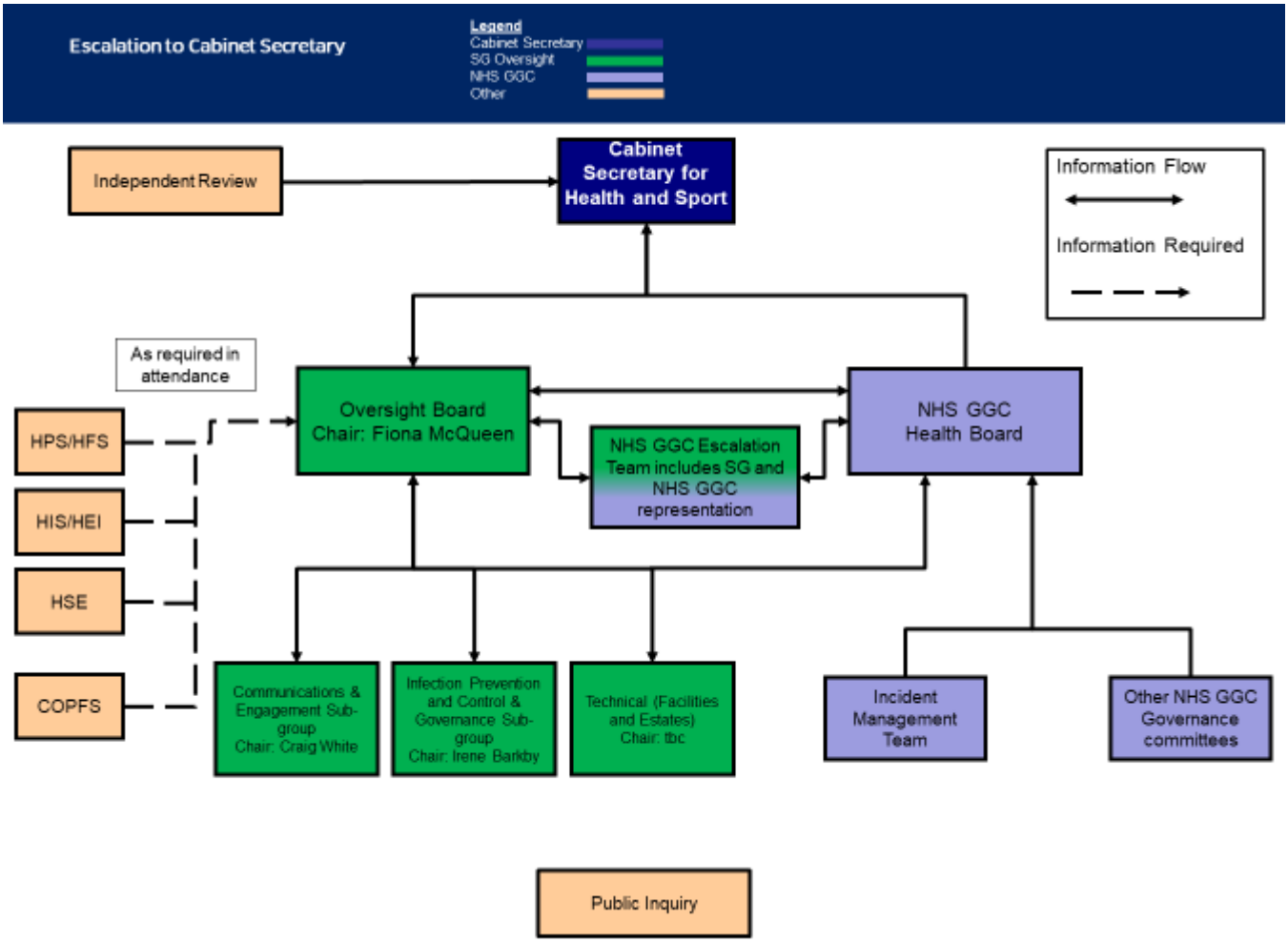
- The general public
- The Cabinet Secretary for Health and Sport
- The First Minister
- The Scottish Parliament
- Scottish Government, particularly the Health and Social Care Management Board
- The staff of NHSGGC and Trade Unions
- The senior leadership team of NHSGGC and the Board

In addition, special focus will be given to patients and their families, as highlighted by their direct involvement in the Communications & Engagement sub-group

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Annex A

Organogram of Governance Structure



Annex B

SCOTTISH GOVERNMENT
HEALTH AND SOCIAL CARE DIRECTORATES
OVERSIGHT BOARD – QUEEN ELIZABETH UNIVERSITY HOSPITAL AND ROYAL HOSPITAL FOR CHILDREN, NHS GREATER GLASGOW AND CLYDE (NHS GGC)

INFECTION PREVENTION & CONTROL AND GOVERNANCE SUB-GROUP

Draft Terms of Reference

Purpose and role of group
The Infection Prevention and Control and Governance (IPCG) Sub-group for the Oversight Boar for the Queen Elizabeth University Hospital (QEUH) and the Royal Hospital for Children (RHC), NHSGGC, is a time-limited group to offer advice and assurance working with Scottish Government and NHSGGC to:

- ensure appropriate governance is in place to increase public confidence; and
- strengthen current approaches that are in place to mitigate avoidable harms.

It directly reports to the Oversight Board, which is chaired by the Chief Nursing Officer, Professor Fiona McQueen. It has specific responsibilities for supporting the Oversight Board with the Board's following objectives:

- support improvements in the delivery of effective clinical governance and assurance within the Directorates identified; and
- provide specific support for infection prevention and control.

Background
In light of the on-going issues around the systems, processes and governance in relation to infection prevention, management and control at the QEUH and RHC and the associated communication and public engagement issues, the Director General for Health and Social Care and Chief Executive of NHSScotland has concluded that further action is necessary to support the Board to ensure appropriate governance is in place to increase public confidence in these matters and, therefore, that for this specific issue the Board will be escalated to Stage 4 of the performance framework. This stage is defined as 'significant risks to delivery, quality, financial performance or safety; senior level external transformational support required.'

The IPCG Sub-group will focus on the issues relating to infection prevention and control and associated governance that gave rise to escalation to Stage 4.

Approach:
The IPCG Sub-group will take a values based approach in line with the National Performance Framework (NPF) and the values of NHSScotland (NHSS).

The NPF values inform the behaviours people in Scotland should see in everyday life, forming part of our commitment to improving individual and collective wellbeing, and will inform the behaviours of the AAOB individually and collectively:

- to treat all our people with kindness, dignity and compassion;

- to respect the rule of law; and
- to act in an open and transparent way.

The values of NHSS are:
- care and compassion;
- dignity and respect;
- openness, honesty and responsibility; and
- quality and teamwork.

These values will be embedded in the work of the Oversight Board, and this work will also be informed by engagement work undertaken with other stakeholder groups, in particular family members/patient representatives.

The Sub-group is focused on improvement. Sub-group members will ensure a lessons-learned approach underpins their work in order that learning is captured and shared locally and nationally.

Meetings
The Sub-group will meet frequently for the first four weeks, with frequency thereafter to be determined as required. Video-conferencing or tele-conferencing will be provided.

Full administrative support will be provided by officials from CNOD. The circulation list for meeting details/agendas/papers/action notes will comprise Sub-group members, their PAs and relevant CNOD staff.

Objectives
The objectives for the Sub-group are to:
- support improvements in the delivery of effective clinical governance and assurance within the Directorates identified with respect to IPC risk management, audit and assurance; and
- provide specific support for infection prevention and control systems within NHSGGC, with particular support being provided by Dr Eleri Davies of Health Protection Wales in her commissioned review of processes by the Scottish Government.

In order to meet these objectives, the Sub-group will retrospectively assess issues around the systems, processes and governance in relation to infection prevention, management and control at the QEUH and RHC and the associated communication and public engagement; having identified these issues, produce a gap analysis and work with NHSGGC to seek assurance that they have already been resolved or that action is being taken to resolve them; compare systems, processes and governance with national standards, and make recommendations for improvement and how to share lessons learned across NHSScotland.

It will do so by reviewing:
- alignment of IPC and wider Board structures within NHSGGC;
- handling of HAIRT reports, reports by the Clinical Governance Committee, Audit and Risk Committee, and IPC inspection and escalation reports;

- the management of IPC risks through the Board;
- relevant issues related to corporate management operational governance, including related IPC delegation, audit and assurance, and inspection and action; and
- relevant issues by the IPC Committee.

Deliverables will be agreed in the early meetings of the Sub-group and with the Oversight Board.

Governance
The Sub-group will be chaired by Irene Barkby, and will report to the Chair of the Oversight Board.

Membership

Member	**Job Title**
Irene Barkby (Chair)	Executive Director of Nursing, Midwifery and Allied Health Professionals & Healthcare Associated Infection Executive Lead, NHS Lanarkshire
Frances Lafferty	ICN, NHS Ayrshire and Arran
Martin Connor	ICD, NHS Dumfries and Galloway
Helen Buchanan	Executive Lead for HAI, NHS Fife
Christina Couloumbe	ICP, NHS Lanarkshire
Lisa Ritchie	Health Protection Scotland
Phil Raines	CNOD
Claire McGrath	CNOD

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SCOTTISH GOVERNMENT
HEALTH AND SOCIAL CARE DIRECTORATES
OVERSIGHT BOARD – QUEEN ELIZABETH UNIVERSITY HOSPITAL AND ROYAL HOSPITAL FOR CHILDREN, NHS GREATER GLASGOW AND CLYDE (NHS GGC)

COMMUNICATION AND ENGAGEMENT SUB-GROUP

Draft Terms of Reference

Purpose and role of group:
The Communications and Engagement Sub Group for Queen Elizabeth University Hospital (QEUH) and the Royal Hospital for Children (RHC), NHSGGC, is a time limited group to offer advice and assurance working with Scottish Government and NHSGGC to:

- Ensure appropriate governance is in place to increase public confidence
- Strengthen current approaches that are in place to mitigate avoidable harms

Background:
In light of the on-going issues around the systems, processes and governance in relation to infection prevention, management and control at the QEUH and RHC and the associated communication and public engagement issues, the Director General for Health & Social Care and Chief Executive of NHSScotland has concluded that further action is necessary to support the Board to ensure appropriate governance is in place to increase public confidence in these matters and therefore that for this specific issue the Board will be escalated to Stage 4 of the performance framework. This stage is defined as 'significant risks to delivery, quality, financial performance or safety; senior level external transformational support required.'

Approach:
The Communications and Engagement Sub Group will take a values based approach in line with the National Performance Framework (NPF) and the values of NHSScotland (NHSS).

The NPF values inform the behaviours people in Scotland should see in everyday life, forming part of our commitment to improving individual and collective wellbeing, and will inform the behaviours of the AAOB individually and collectively:

- to treat all our people with kindness, dignity and compassion
- to respect the rule of law
- to act in an open and transparent way

The values of NHSS are:

- Care and compassion
- Dignity and respect
- Openness, honesty and responsibility
- Quality and teamwork

These values will be embedded in the work of the Communications and Engagement Sub Group, and this work will also be informed by engagement work undertaken with other stakeholder groups, in particular family members / patient representatives.

The Communications and Engagement Sub Group is focused on improvement. Sub group members, and sub-group members, will ensure a lessons learned approach underpins their work in order that learning is captured and shared locally and nationally.

Meetings
The Communications and Engagement Sub Group will meet fortnightly for the first two months and timings will be discussed thereafter. Tele-conferencing will be provided.

Full administrative support will be provided by officials from Scottish Government. The circulation list for meeting details/agendas/papers/action notes will comprise Oversight Board members, their PAs and relevant CNOD staff.

Objectives, deliverables and milestones:
The objectives for the Communications and Engagement Sub Group are to:

- through proactive engagement and enhanced communications, have a positive impact on patients and their families in relation to how problems are identified, responded to, communicated and managed,
- ensuring respect at all times towards families relative to their rights to information and participation
- identify what has worked well and where the provision of information, communication and engagement could be enhanced and improved

In order to meet these objectives, the Communications and Engagement Sub Group will retrospectively assess issues at the QEUH and RHC with communication and public engagement; having identified these issues, work with NHSGGC to seek assurance that they have already been resolved or that action is being taken to resolve them; compare systems, processes and governance with national standards, and make recommendations for improvement and how to share lessons learned across NHSScotland.

Specific deliverables which will contribute to these objectives being met are as follows:

Analysis of the Patient Survey issued by Professor White on week commencing 25 November and the effectiveness of subsequent follow up actions informed by responses

A review of the following documents within NHS Greater Glasgow and Clyde:
Strategic Communications plans for both internal and external communications

Milestones:
Prioritise communications and information provided to families with a focus on respect and transparency (with an initial focus on ensuring that all outstanding patient and family questions raised
Development of a strategic Communications and Engagement Plan
Review of policies and procedures in respect of communications, engagement and decision-making regarding consideration of the organisational duty of candour, significant clinical incident reviews (including engagement, involvement and provision of information to families in relation to these processes).

Governance:
The Communications and Engagement Sub Group will be chaired by Professor Craig White, and will report to the Oversight Board.

The Oversight Board will be chaired by the Chief Nursing Officer, Scottish Government, and will report to the Cabinet Secretary for Health and Sport.

Membership:

Communications and Engagement sub-group	
Member	**Job Title**
Craig White (Chair)	Divisional Clinical Lead, Healthcare Quality and Improvement Directorate
Alfie Rawson	Families representative
John Cuddihy	Families representative
Lynsey Cleland	Director of Community Engagement at Healthcare Improvement Scotland
Andrew Moore	Head of Excellence in Care for Healthcare Improvement Scotland
Secretariat	CNOD

In addition to these members, other attendees may be present at meetings based on agenda items:

Chair of Infection Prevention & Control and Governance sub-group; relevant Directors and senior staff from NHSGGC; communications staff from Scottish Government.

Stakeholders

The Communications and Engagement Sub Group recognise that a broad range of stakeholder groups have an interest in their work, and will seek to ensure their views are represented and considered. These stakeholders include:

- Patients and their families
- The general public
- The Cabinet Secretary for Health and Sport
- The First Minister
- The Scottish Parliament
- Scottish Government, particularly the Health and Social Care Management Board
- The staff of NHSGGC and Trade Unions
- The senior leadership team of NHSGGC and the Board

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Title:	General Medicine – Clinical Governance Update
Prepared by:	Scott Davidson (Clinical Director)
Prepared for:	General Medicine Clinical Governance Meeting
Paper provided for:	Decision ☐ Information ☒ Discussion ☐ Endorsement ☐
Date:	4th May 2017

1 Introduction

1.1 This paper provides a brief update on Clinical Governance arrangements within General Medicine Service.

2 Quality Initiatives

2.1 There are quality initiatives ongoing within the Directorate, including:

Palliative Care

QIS project which is looking at ways to reduce unnecessary interventions (bloods/obs.) in patients approaching end of life in acute wards across GRI/QEUH. Patients identified as dying by the Consultant in charge of care and their team have a sticker placed in notes/on obs. charts stating patient is not for further routine bloods/obs. Intervention is being piloted on the following QEUH wards:

5A (gen med/diabetes)

8C (gastro)

7D (respiratory)

Plan is for 3 months of data collection and review.

Cardiology

IV drug infusions charts revision group

Standardised Heart Failure IDL

Complications in Brady Pacing

Implementation of Ward round checklist

I.D.

A modified version of our “late diagnosis” feedback letter has been developed so that we can delete the line “was tested” or “was not” tested as there still might be some learning for other clinicians e.g. in a GP practice



draft late Dx governance letter v2

3 Audit

Cardiology
3.1 Heart Failure Coding Audit
3.2 Audit of SBE in GG&C
3.3 Time from Antibiotic Administration to Procedure Start Times
3.4 Audit of Echo waiting Times for IP
3.5 Audit of Echo data acquisition
3.6 Echocardiography in patients with stroke
3.7 Inpatient Waiting Times for Complex Devices

Respiratory

Audit of the management of community acquired pneumonia using data obtained from discovery.

4 Medical Education

4.1 We have recently received the deanery report which demonstrated clear improvement from previous visits but there still remains work to be done and we remain under GMC monitoring. The draft report is attached.



Deanery response_dec16_QEl

4.2 We have undertaken a major piece of work in redesigning our rotas and the significant benefit we achieved by having the real time rostering software to help us.

Cardiology
4.3 Monthly Echo review meeting
4.4 Monthly Departmental education meeting including SCI reports and Governance
4.5 Monthly CME meeting with GJNH
4.6 ST regional meetings
4.7 3 monthly Pacing Audit meetings (reviewing activity, complications and procedural issues).

Respiratory
4.8 Weekly respiratory education meeting

General Medicine
4.9 Weekly Wednesday governance meeting

5 Incidents/Complaints

5.1 The tables below detail the complaints received and responded to by month from May 2016. It should be noted that many of the complaints that have breached the 20-day standard relate to complexity and the involvement of a number of different teams.

Complaints Received in the month							
Month	Number Received	QEUH		Victoria ACH	Gartnavel	West	Other
March 2017	7	7					
February 2017	14	12			1	1	
January 2017	12	9			1	2	
December 2016	9	4			5		
November 2016	11	6		2	2	1	
October 2016	9	6			3		
September 2016	14	12			2		
August 2016	10	6			3	1	
July 2016	12	11			1		
June 2016	19	13		2	3	1	
May 2016	9	8			1		

Complaints Responded to in the month						
Date	Number Completed	Completed within 20 days	Not Upheld	Partly Upheld	Upheld	Other
March 2017	15	9 (60%)	3	2	11	1 withdrawn
Feb 2017	5	2 (40%)	2		3	
Jan 2017	8	5 (63%)		1	4	
Dec 2016	8	7 (88%)	2		6	
Nov 2016	8	7 (88%)	5	2	1	
Oct 2016	12	10 (83%)	2	4	6	
Sep 2016	6	6 (100%)	1	1	4	
Aug 2016	9	8 (89%)	2	3	4	

July 2015	12	10 (83%)	4	4	4	
June 2016	8	8 (100%)	5	1	2	
May 2016	7	4 (57%)	1	2	4	
April 2016	11	7 (64%)	5	1	5	

5.2 Ombudsman Cases

We have received 4 decision letters from the ombudsman as follows:-

- Crawford-not upheld - outpatient care
- Mackenzie – upheld – wait for cardiology/cardioversion
- Livingston – upheld –medical care, communication, lack of review before discharge.
- Rehman – upheld – nursing/medical care.

5.3 There are 2 Serious Clinical Incidents outstanding as at April 2017 which are detailed below.

Commissioned Date	Specialty	SCI Description	Update
04/11/2016	Gastroenterology	Request for Liver screen not followed up.	In draft
23/11/2016	Gastroenterology	Delay in diagnosis	Being written up

There is 1 4/5 review which will be investigated as a SCI.

Commissioned Date	Specialty	SCI Description	Update
14/04/17	Gastroenterology	Lost to follow up.	Under investigation

South Sector Clinical Governance Annual Report 2017/2018

Introduction

The aim of the South Sector and the specialty Directorate Clinical Governance Groups is to support the delivery of consistent high quality clinical care and to provide assurance that appropriate clinical governance mechanisms are in place.

The South Sector Annual Governance Report will describe our Clinical Governance framework within the South Sector of NHS Greater Glasgow and Clyde based around five key headings:

1. Person Centred Care
2. Patient Safety
3. Clinical Effectiveness
4. Clinical Governance arrangements
5. Exemplar case studies

The report is not an exhaustive account of all the sector's activities but will provide an indication of progress achieved in the last 12 months, referencing specific evidence based examples of improvement as well as highlighting key risks and outstanding issues with improvement objectives for the next 12 months

South Sector Clinical Governance Framework

The South Sector team has a single framework for clinical governance with the South Clinical Governance forum. The purpose of the forum is to ensure continual quality improvement, and assurance of patient safety within the Sector.

Each of our sub-directorates has its own specialty specific Clinical Governance arrangements and Quality Assurance processes. They report into, and are accountable to the South Sector Clinical Governance forum.

The sub-directorate clinical governance meetings are chaired by the CD with the general manger, lead nurses, lead clinicians and other multi-disciplinary team members in attendance.

The South Sector Clinical Governance forum is chaired by the Chief of Medicine with membership comprising the Sector Director, Chief Nurse, Chief AHP, Clinical Directors and General Managers from each of the Directorates, with representation from Pharmacy, Infection Prevention and Control, Complaints, Clinical Risk, and Clinical Effectiveness.

In addition to the framework described there is also a Safe Use of Medicines Committee chaired by the Chief of Medicine. The membership of the SUM committee comprises Nursing, Pharmacy and Clinical Directors and through the Lead Pharmacist provides a link to the Area Drug and Therapeutics Committee.

Quality Assurance

The South Sector Clinical Governance Framework has been developed in line with the NHSGGC Clinical Governance Strategy and Framework and the NHSGGC Risk Management Strategy.

We have encouraged and supported access to training in Quality Improvement methodology ensuring greater understanding of the importance of data, enabling access and support to clinical teams, so information is practically applied in support of quality improvement.

The sector has encouraged clinicians to develop research interests and build on the collaborative opportunities offered by the large number and range of clinical services provided at the QEUH. This has allowed the sector to establish a number of accredited training courses such as the European Trauma Course, to appoint a number of nursing and medical staff with dedicated time for research (a significant number with NRS Fellowships) and to introduce new technology such as a laser for the treatment of oesophageal and gastric cancer.

Our Clinical Governance framework is aligned with and reports to the Acute Services Division (ASD) Clinical Governance Forum in line with specified reporting requirements, enabling escalation of any relevant items when required, particularly where cross-sector/directorate issues have been identified.

At every South Sector Clinical Governance meeting we include infection control as a standing item ensuring that infection prevention and control is explicitly considered and discussed with each sub directorate.

The South Sector Clinical Governance Group acts in an advisory context for sub-sector/directorate clinical governance groups through the review of standard reports and escalation of issues where there is concern regarding risk or safety.

Clinical Effectiveness support to our group helping to ensure our services comply with clinical governance related statutory requirements and relevant national standards

Person Centred Care

The philosophy of the South Sector team places the principle of person centred care firmly at the heart of our improvement approaches. It is essential that all of our staff understand and sign up to this philosophy of care as it is more than just engaging patients in decisions around their care. It is about engaging patients and staff in the design, evaluation and improvement of patient care, recognising that engaging clinical staff and patients is pivotal in creating and maintaining success. The Patient and Carer's Experience Group reports to the clinical governance forum and has public partners as members. In order to enhance the routine feedback we receive we have conducted a number of Carer's Audits which has allowed specific action plans to be developed

The overwhelming majority of feedback from all forums is positive.

All complaints are investigated and used as an opportunity for improvement

Patient Safety

All clinical staff are engaged fully with the NHSGGC Significant Clinical Incidents Policy thus ensuring all services respond fully to these unfortunate events, including unexpected clinical outcomes and through recording and investigation of adverse events and by shared learning communicate improvement processes to all relevant stakeholders.

Between April 17 and September 17 there were 30 new SCIs commissioned (15 Surgical, 8 TACCE, 1 ED/IAU, 4 Medicine and 2 Care of the Elderly) and 27 were closed within this period. Summaries of the SCI cases and copies of final reports are circulated on a monthly basis to thedirectorate. In

addition, all SCI recommendations and actions are logged by the Clinical Risk team and are followed up with the service at 3 months and 6 months to ensure each is progressing. If after this timescale the recommendation is still outstanding, the issue is highlighted to the appropriate directorate management structure for executive action.

We are developing a Risk Register to Identify, manage and mitigate risks to the delivery of care in all clinical areas. This links with our Business Continuity plans and Major incident planning

Clinical Effectiveness

Processes to support the implementation of the NHSGGC Clinical Guidelines Framework, to track clinical quality publications, and to impact assess national guidance and NICE IPGs, continue to operate well in the South sector.

Our philosophy demands that all services have in place prioritised quality improvement programmes, which will improve and sustain the delivery of safe, effective, person centred care

We have developed, implemented and maintained a directorate/sector clinical governance work plan which aligns with NHSGGC strategic priorities and objectives with clinical leadership secured in the scope and delivery of the work plan.

Scottish Patient Safety Programme

A major area of focus during this year has been the Deteriorating Patient work stream, led by Dr Russell Allan, Quality Improvement Lead. An initial focus on spread has resulted in wide engagement in both the Frequency of Observation and Structured Response work streams. Named champions have been identified for many areas, and there is engagement and leadership from the Chief of Nursing and Chief of Medicine; which has set a high level strategy, and ensured commitment at a senior level. Attention has now moved to an “exemplar ward” approach, where there will be intense work to achieve process reliability in a small number of wards, which can be spread across the rest of the hospital.

Palliative care has also being doing great work on the QEUH site at reducing the number of dying patients receiving unnecessary blood tests and antibiotics during their terminal phase. This recognition of deterioration and dying fits in very well with the deteriorating patient work, and a project will begin shortly to bring together these work streams to produce and test changes to help identify appropriate patients and make escalation plans.

Exemplar case Studies

Cross Sector Work

Medication Governance

<u>Single Dose Intravesical Chemotherapy post Bladder Tumour Resection</u>

Background:

Bladder cancer is a disease with a high prevalence due to its high recurrence rate. Transurethral resection of a bladder tumour (TURBT) is the treatment in initial stages and could eradicate a Ta, T1 tumour completely; however half of these patients will have a recurrence within one or two years. Studies have shown that a single dose of intravesical chemotherapy following resection of superficial bladder tumours, either new or recurrences may reduce the incidence of recurrence by over 40%.

This is the treatment of choice in patients with a single, low risk papillary tumour and is recommended as the initial treatment after TURBT in patients with high risk tumours.

Intravesical Mitomycin is widely used for this purpose and is the agent most commonly used in the West of Scotland in the treatment of non-invasive bladder cancer. EAU guidance (2016) on management of non-muscle-invasive bladder cancer state the following in relation to treatment timescales: 'Prevention of tumour cell implantation should be initiated within the first few hours after TURB. After that, tumour cells are firmly implanted and are covered by extracellular matrix. In all single instillation (SI) studies, the instillation was administered within 24 hours. To maximize the efficacy of SI, one should devise flexible practices that allow the instillation to be given as soon as possible after TURB, preferably within the first 2 hours in the recovery room or even in the operating theatre'

Previous QEUH Practice:

Patient attended theatre for TURBT where the operating Consultant would prescribe Mitomycin post- op if appropriate. On return to the ward, the nursing staff would then email a copy of the prescription to aseptic pharmacy and call them to acknowledge receipt. The ward would then have to wait for the Mitomycin to be prepared by pharmacy and transported to the ward by porter. Often, patients would arrive back on the ward after 5:30pm so this would delay treatment until the next day. This practise led to multiple delays in treating patients within the recommended 2 hours.

New & Current Protocol:

Following extensive staff training, Mitomycin vials are now safely stored within Ward 11C and are reconstituted within the clinical area. This has completely eliminated the need to wait for Mito to be prepared by pharmacy and facilitates target treatment time of 2 hours.

Results from first 6 months, June – December 2017:

- 54% of Mito' was given within 1-2 hours of surgery
- 8% given within 3-4 hours of surgery
- 20% given over 5 hours after surgery
- 18% given over 10 hours after surgery

The 38% given over 5 hours after surgery were due to patient condition post op. If there is a large amount of bleeding then Mitomycin is contraindicated with staff awaiting instruction from the surgeon on when to administer, if at all.

Conclusion:

Protocol continues to demonstrate positive outocmes for patients and is now being rolled out across other urology services within GG&C.

Standardising High Risk Cardiac Infusions through an Innovative Prescribing Bundles

Situation:

A near fatal incident involving a flecainide dose error highlighted the danger of outdated legacy prescription charts and prescriber inexperience with high risk cardiac infusions.

Background:

The QEUH Coronary Care Unit (CCU) was formed from an amalgamation of three smaller central city hospitals. No uniform drug preparation or prescription policies had been instituted for high risk cardiac infusions. This led to a significant clinical incident where the correct drug concentration and delivery rates were confused due to a mis-match between protocols from previous sites, with a near fatal overdose of flecainide with major haemodynamic collapse requiring intensive care support occurred.

Assessment:

A formal investigation revealed a lack of awareness and familiarity with high risk infusion cardiac drugs. Additionally, many old and expired existing fragments of charts which are not compatible were found around the different cardiology areas. Other 'near miss' incidents were also noted attributable to these factors

An IV Working Group was therefore created to develop standardised prescribing booklets for 13 high risk infusion medications each supplemented with information regarding drug preparation, administration and a summary of therapeutic notes (indications, contra-indications etc). These were created on yellow 'alert' paper and clear version numbering was utilised. Medical illustration also implemented an 'order lock' to prevent non-cardiology areas inappropriately requesting their use.

Focus groups demonstrated a high need for these prescribing bundles and strongly positive feedback regarding their use. Continuous data monitoring during an 8 month pilot in the main coronary care units across the health board found no adverse events due to the use of the charts.

Recommendation:

These charts have now been adopted by the Heart MCN and now have approval by the Safe Use of Medicines committee for wider controlled use in the cardiology areas. Potential use across other medical areas (such as medical receiving) could be considered in due course.

Patient Safety

<u>Weekend Electronic Doctors Handover</u>

Within the 1st Deanery visit to Medicine Services at the QEUH there was concern raised over handovers. We recognised this as an area to prioritise and our Chief Residents, clinical and management teams worked closely with our e-health team to develop an electronic handover structure. The electronic handover is based around standard questions laid out in Royal College of Physicians guidance but in addition also incorporates the important 'aims and limitations of treatment'

We have now successfully developed an electronic medical handover embedded within the trakcare platform that has now been adopted across NHS GGC. We already use an electronic SBAR for nursing handovers when patients move between wards

This work was nominated for the 'Holyrood IT Awards' as well as being presented at the 'Big Brag' Scottish Government event May 2018.

South Sector Work

Patient Safety and Patient Centred Care

Acquired Pressure Damager within South Sector DME

Background:

Identified in August 2017 that there was significant need for improvement around acquired pressure damage within DME wards, Ward 53 QEUH was identified as area of greatest need at that point having had three episodes of patient harm in relation to tissue viability that month.

*Action:*Focus of improvement was therefore initially targeted at Ward 53 with link nurse training, specialist nurse involvement and baseline data collated in relation to accuracy and delivery of care rounding. In addition there was a review of ward stock to ensure appropriate equipment in place and removal of any unsuitable items. Baseline data demonstrated that there was a lack of consistency in prescribing and delivery of care rounding therefore test of change involved the use of a visual RED 2 to ensure that it was evident at individuals' bed space that they required 2 hourly care rounding in line with PUDRA and care plan. Ward staff continued to audit weekly and improved compliance became evident although still area for improvement. As skin care relies upon the input of the whole team it was decided that a train the trainer approach was required to ensure all ward staff inclusive of HCSW were given training, a training package was put together by Tissue Viability team and they supported teaching link nurses, SCN and CN's to deliver the training. This approach was taken as it had previously proven difficult to release staff for formal sessions and this allowed it to be incorporated in to the working day when ward activity allowed. It was decided that the outcome measure would be days between incidences of avoidable acquired grade 2 and above damage, whilst the bigger aim is to eliminate all pressure damage this approach was taken to help motivate and demonstrate to staff that they could make small changes to practice which could have a significant impact. Ward 53 is currently measuring 242 days since last episode of avoidable harm. In addition there was a focus around spreading this approach and sharing learning within the service, initially Ward 55 adapted some of the learning to their area and it became evident there was a need and appetite for approach within other wards. Following review of evidence/learning via colleagues within NHS Fife and success of their cluster review meetings it was arranged for Lead Nurse and Clinical Nurse Educator to visit and attend meeting. In addition a Monday to Friday safety huddle was convened within Langland's at 13.30 focussing on tissue viability; falls, delirium and infection control, all wards were invited with offsite wards requested to forward daily update electronically. The purpose of huddle was to share learning, challenge practice and escalate concerns in relation to these parameters; staff attending were expected to provide data such as days between avoidable tissue damage, falls with harm and number of patients with delirium diagnosis. Following on from visit to Fife two initial cluster review meetings have taken place with terms of reference being agreed, the idea behind these review meetings is that when a ward has an incidence of harm then team members will attend meeting to present the case, they will discuss the learning from within their own team but also discuss with wider forum for shared learning and external input.

Results:

Overall this approach has seen a significant reduction in avoidable acquired pressure damage within the service over the last three months.

Frailty:

Improving Care for Older Adults at the QEUH with our Frailty Service

Background:

A number of service developments have been put in place within the QEUH since January 2017 to improve the pathway for the unscheduled attendance/admission of frail elderly patients to the QEUH. The main purpose of this work was to improve the coordination of care for frail elderly

patients and to make sure that their care was provided in the most appropriate setting (within DME if 'frailty' was their primary presenting condition). Our aim was to improve the individuals' experience by providing a person centred, coordinated and dynamic approach supporting individuals with a frailty syndrome using a clearly defined pathway.

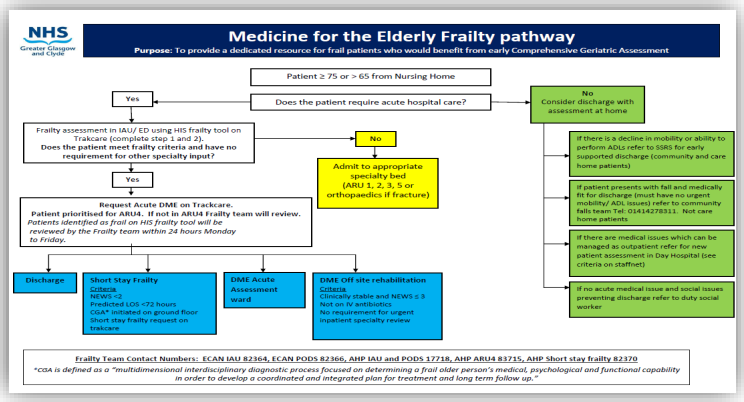
Actions:

Frailty Assessment – Working closely with colleagues in Healthcare Improvement Scotland, we have led on developing a revised Frailty Assessment tool to be used nationally. Within QEUH, this assessment tool is now being used to screen all patients >75 (or >65 from a nursing home) admitted via ED or IAU. The revised tool is shown below.

Comprehensive Geriatric Assessment (CGA) – through our frailty team (consisting of ECANs, AHPs and medical staff) we are now providing CGA within 24hrs of admission to all frailty+ patients.

Frailty Short Stay (FSS) Ward – The South Sector opened a 10-bed FFS in June 2017. The ward has allowed the Frailty Team to prioritise the care for predicted short-stay patients in a ward that is set up to review patients on a more frequent basis – i.e. daily senior review.

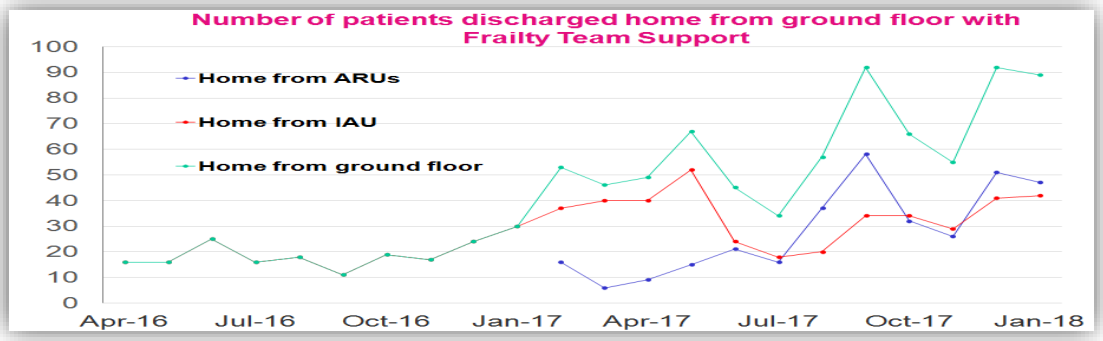
Frailty Pathway – the DME team has worked closely with colleagues in other directorates within the South Sector to ensure every department is working to the same pathway for frail elderly patients:



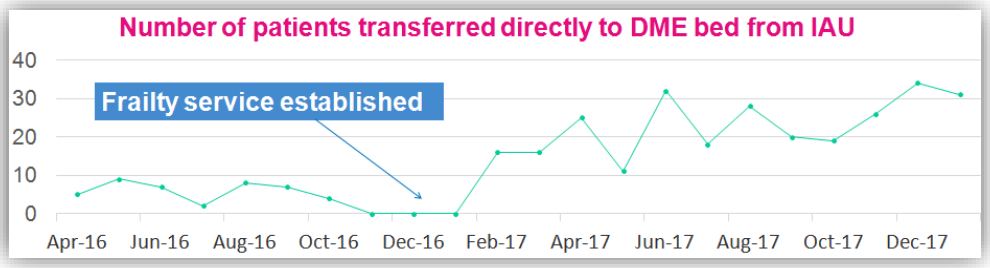
Results:

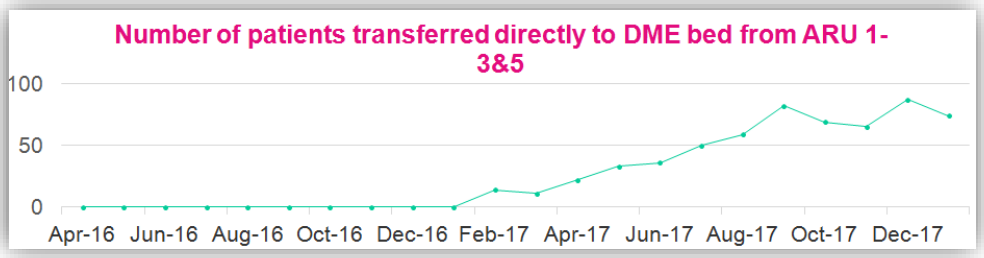
LOS Reduction – There has been a noticeable reduction in the LOS for older adults attending QEUH as a result of the frailty worked carried out over the last year. There has been a 27% reduction in DME average LOS (from 17.65 days to 12.88 days) when comparing LOS performance pre- and post-June 2017 (when FSS unit opened).

Discharge Rates – During this work programme we have been carefully tracking the number of patients discharged directly from the ground floor (IAU+ARUs) with the support of the Frailty Team. The graph below demonstrates and increasing number of patients being discharged directly from the ground floor, thus potentially avoiding lengthy inpatients stays.



Appropriate Admission Pathways – perhaps the most important improvement we have seen as a result of this work is more patients being admitted directly to DME wards from the ground floor. Patients who otherwise would have been admitted to a general medical ward with a potential transfer to a DME ward at a later date. The two graphs below show that from both IAU and the ARUs the number of patients accessing DME directly from the ground floor has increased significantly since January 2017 when this work began in earnest. (n.b. the ARU graph does not include ARU4 as patients from ARU4 have always been admitted to DME wards in the main).





Readmission Rates – as a balancing measure, the South Sector is monitoring DME readmission rates. There has been no increase in readmission rates during the course of this work.

Conclusion/Future Plans – The Frailty Team have improved care pathways for older adults attending the QEUH. Future plans include better (electronic) identification/tracking of frail patients through our wards, making permanent any temporary elements of the Frailty Team and looking to expand the service as budget allows to provide an equitable 7 day service (including weekday evenings). The Frailty Team are also working together with HSCP colleagues on many aspects of the service.

Awards/Publications – the DME Frailty Team won the 2017 South Sector FTFT award. A recent poster submission (title shown below) won first prize at the British Geriatric Society Spring Conference in April 2018. At the same conference, a research publication relating to our work to validate the HIS frailty tool (title also shown below) was given as a platform presentation.

'Does the Frailty Service Improve care for the older adult at Queen Elizabeth University Hospital (QEUH)?
McCluskey H, Glasgow W, O'Neill C, Williams A, Mitchell L

'Assessing the Psychometric properties of the HIS "Think Frailty" Tool'
M Taylor-rowan, T Quinn, P Smith, G Ellis, R Keir, C McAlpine, G Marsh, J murtagh, M McElroy, L Mitchell, G Waddell, A Williams, L Duffy, S Oswald, A Myles, A Bann, K Rodger, J Reid, L Kellichan, D Docharty, T Marshall, B McGurn, C Ritchie, A Wells, A Talbot, C McInnnes, E Reynish, D Coleman, B Flynn, A Scott, A Coull, L Dingwall

Mental Health Triage and Risk Assessment Tool (MHTRAT)

The Mental Health Triage and Risk Assessment Tool (MHTRAT) was updated in 2017 with a supporting education programme. It was rolled out to all the ED departments in GG&C. This was developed and progressed via the Mental Health Acute Interface Group (MHAIG)

- 6 Mental Health nurses and 1 ED speciality Doctor trained to deliver training programme to ED and Minor Injuries staff
- Robust governance framework to cover all aspects of the training including quality of training, and administration of the training and the effectiveness of the training. (Using pre and post training evaluation questionnaires)
- Completion of the MHTRAT and its training package including a (Learn Pro Module) now mandatory.
- Practice guidance document in relation to completion of the MHTRAT.
- Health Scotland approval sought for the training package in terms of approved Assist training requirements.
- Link nurses identified in each ED in GG&C to co-ordinate the training for each ED.
- Supervision framework for the trainers and access to Assist trainer's supervision sessions.
- Train over 400 ED staff in total over a calendar year.

Mental Health Practice Development Nurse

Introduction of Mental Health Practice Development Nurse in acute (South Glasgow) in 2017 has seen an increase in staff education and resulting confidence, establishing more effective, relationship based and informed care.

- This innovative role crosses traditional boundaries between mental and physical health care. It represents a response to a changing hospital population, and incorporates those with multiple morbidities.
- Ad hoc education with on-going support has recognised the concept of the workplace as a vital learning source, with staff being empowered to realise
- That they often possess a level of unconscious competence. Recognising and building on this with PDN input has been instrumental in improving confidence and overall care.
- Mental health presentations to acute general hospitals in Scotland have doubled in the past seventeen years. Staff often feel they are working beyond their expertise, with concern about appropriate patient care. In South Glasgow, a Mental Health Practice Development Nurse role was introduced, providing a new resource to access support, information, advice and education related to:
- mental health problems
- co morbid mental/physical issues

- clinically related challenging behaviour
- Aim - to increase the relevant knowledge, skills and confidence of staff, with the ultimate aim of establishing more effective, relationship based and informed care.

Both MHTRAT and RMN PD changes have submitted and have been accepted for the NHS Scotland event 2018

CCAAT Observational Audit tool

The CCCAT observational audit tool, (combining CAS/EIC, OPAH, Tissue Viability and Nutritional Needs standards) was developed in response to the Excellent in Care standards and the recognition that there was no reliable process by which to measure progress and outcomes and extensively tested by the South Sector throughout 2017 and it has now been adopted to provide assurance on the quality of care delivered. It is currently being rolled out across the Sector with 86% of wards having completed a baseline audit and of these 87% (39 wards) are scoring at green. The tool has been recognised as best practice by the Board and will be used in all areas of the acute division

The tool is designed to be used to self-evaluate as well as peer audits, it is RAG rated and is split into Nursing and Medical responsibilities and includes a section for an improvement plan which needs to be completed for all areas of the audit that are red and amber. The tool will be used 6 monthly and allow focussed improvement in any identified audit fields.

Delirium Ambassadors

This was small scale Quality Improvement Programme aimed at FY1/2 doctors and Band 5 nursing staff from across the South Sector. The Programme was developed and delivered by a group of Consultant Geriatricians and the Associate Chief Nurse. It was delivered over an 8 month period the topics covered included

- SPSP programme and Safety
- Delirium - Symptoms and signs, management and AWI
- Quality Improvement - Theory and methodology data and run charts

The formal teaching took place between October and December 2017; participants had to undertake a QI project in their own area and were asked to produce a report on the improvements.

Initially 22 staff signed up to become Delirium Ambassadors, however due to rota restrictions and sickness only 10 staff were able to complete projects.

The areas covered include ED, Medicine, Surgery and DME, although this is only a small scale project there has been a tangible improvement in delirium care.

*"I have to tell you that I've noticed a **significant** and very **positive** change in the QEUH wards that I visit (I do DME liaison). Delirium is now a commonly used term, and used in a positive caring way, not a negative label. When I look in folders and notes, completion of AMTs/4ATs and AWI certificates is now commonplace, when it was rare".* Ian Reeves Consultant Geriatrician

Pan GGC Older People's Clinical Governance Forum

The Consultant Geriatricians recognised that since reconfiguration of service there was no longer the opportunity to share learning across Older People services. Prior to 2015 there had been a yearly Multi-disciplinary Clinical Governance Symposium. The Geriatricians within the South organised an event in June 2017, approximately 100 medical, nursing and AHP staff from across NHS Greater

Glasgow and Clyde attended the afternoon which covered a variety topics including Frailty, Delirium, Hip Fracture and Poly pharmacy. The event was so successful that it was agreed that it should run on a yearly basis with Clyde Sector agreeing to host this years' event.

Unscheduled Care Performance

We have appointed an Associate Chief of Medicine for Unscheduled Care and there have been significant changes made to our unscheduled care pathways and protocols over the last 12 months. The EMAT process described in our last annual report is now embedded and we have targeted our receiving complex (ARU1-5) as being for short stay patients (24-36 hours) with our Assessment Unit having an ideal length of stay of 8 hours. In order to try and improve flow we have introduced direct admission to downstream wards from the Assessment Unit for Consultant assessed patients with a predicted length of stay over 48 hours. However we recognise that UCC remains one of our biggest challenges with demand on our services continuing to increase year on year. We are currently undertaking a review of our ground floor model, pulling together the opinions of our key professionals as well as utilising data from a recently commissioned review of all Datix entries relating to our Assessment Unit.

Summary and Conclusions

The South Sector has developed a robust Clinical Governance framework and programme which is multidisciplinary multi-tiered and delivers its primary aim of delivering safe patient centred clinical care. This is achieved through a process of data collection, reporting and shared learning of adverse outcomes, and a quality improvement agenda in line with Board policy, National standards and peer review.

Terms of Reference

South Sector Clinical Governance Group

1. Function

The functions of the Sector Clinical Governance Groups is to:

- Collectively and continuously improve the safety and quality of clinical care in NHS Greater Glasgow & Clyde (NHSGGC)
- Ensure that systems are in place to provide effective assurance, support and delivery of healthcare services in line with the NHSGGC Clinical Governance Framework and Strategy
- Identify issues with current practice across the sectors/directorates, enabling key risks to clinical quality to be assessed and managed
- Align with the priorities defined by NHSGGC, whilst driving the provision of safe, effective and person centred care for every person, all of the time.

2. Aim

This aim of the Sector Clinical Governance Groups are to support the delivery of consistent high quality clinical care and to provide assurance that appropriate clinical governance mechanisms are in place, this which will be achieved by:

- Safe
  - Working in line with the NHSGGC Significant Clinical Incidents Policy
    - Ensuring all services respond fully to concerns of sub-optimal care, for example Significant Clinical Incidents, including appropriate communication on investigation and improvement processes to all relevant stakeholders
  - Working in line with the NHSGGC Incident Management Policy
  - Identifying, managing and mitigating risks to the delivery of care through the development and maintenance of a risk register

- Effective
  - Working in line with a range of Clinical Governance related policies and frameworks, including:
    - NHSGGC Clinical Governance Related Guidance Policy
    - NHSGGC New Interventional Procedures
    - NHSGGC Clinical Guidelines Framework
    - NHSGGC Clinical Effectiveness Framework and Strategy.
  - Ensuring that all services have in place prioritised quality improvement programmes, which will improve and sustain the delivery of safe, effective, person centred care
  - Development, implementation and maintenance of a directorate/sector clinical governance workplan which aligns with NHSGGC strategic priorities and objectives
  - Ensuring clinical leadership is secured in the scope and delivery of the workplan
  - Supporting the tracking of clinical quality publications and associated development and implementation of improvement action plans

- Person Centred
  - Placing the principle and practice of being person centred more clearly at the heart of improvement approaches
  - Understanding that person centredness is more than engaging patients in their care but also about engaging patients and staff more substantially in the design, evaluation and improvement of care
  - Recognising that engaging clinical staff and patients is crucial to sustained success
  - Uphold the principles set out in The Patient Rights (Scotland) Act 2011

- Ensure the provision of health and care services are focused on people, their families and carers and that they receive a positive experience of care and get the outcomes and care they expect
- Ensure that people who use services are enabled to have their voice heard, and the use of use all forms of feedback is used to learn and improve the delivery of more person-centred care
- Ensure that people are empowered to be active partners in their care
- Staff are enabled and supported to provide care which is person-centred

- Assurance
  - Working in line with the NHSGGC Clinical Governance Strategy and Framework
  - Working in line with the NHSGGC Risk Management Strategy
  - Ensuring greater transparency of data, enabling access and support to clinical teams, so information is practically applied in support of quality improvement
  - Reporting to Acute Services Division (ASD) Clinical Governance Forum in line with specified reporting requirements, as well as escalation of any relevant items when required, including cross-sector/directorate issues
  - Ensuring that infection prevention and control is explicitly considered and discussed at all meetings
  - Acting in an advisory context for sub-sector/directorate clinical governance groups through the review of standard reports and issue escalation
  - Ensuring services comply with clinical governance related statutory requirements and relevant national standards

3. Values

The groups will:

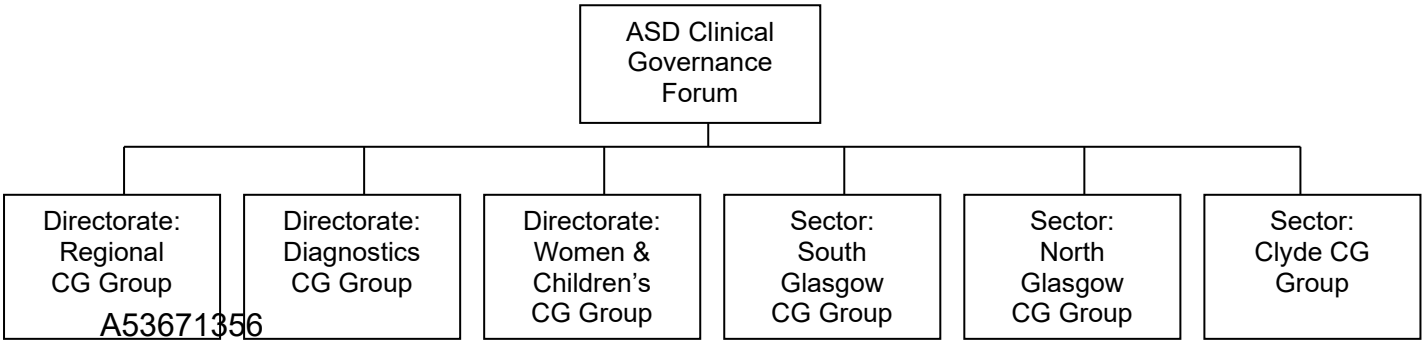
- Be outcome focused
- Be collaborative and transparent
- Develop improvement in a learning organisation
- Be assurance oriented but with strong ideals of natural justice and human rights
- Be a partnership of equals, actively involving all key all stakeholders and striving to ensure each member feels they can make a valuable contribution
- Work to align and streamline processes where possible to aid improvement and provide support where needed
- Reduce, rather than add to, the bureaucratic burden

4. Frequency, attendance and quorum

Meetings shall be held as a minimum every 3 months, with dates to be agreed in advance. The chair may convene additional meetings as necessary. Members are expected to attend 75% of meetings. If a member is unable to attend a meeting, they must send a deputy. On occasions where members are unable to send a deputy, 50% of group members, (excluding the chair/vice chair) will constitute a quorum. This must represent an equitable mix of clinical and non clinical attendees.

5. Reporting structure

The groups will be accountable, through the chair, to the Acute Services Division Clinical Governance Forum, and will provide regular update reports, and escalate issues when required. Each sector/directorate will have a clinical governance work plan and produce an annual report using a standard template to be submitted to the Head of Clinical Governance.



6. Administrative arrangements

Administrative support will be provided for the group. A standard agenda has been developed outlining standing items; additional items may be submitted for consideration in advance of meetings. The agenda and any additional papers will be sent out to members at least 5 working days in advance of the meeting to allow time for due consideration of issues. A minute will be taken, and a draft will be distributed within 2 weeks of the meeting. The draft minute of the meeting will be approved by group members at the next meeting.

7. Chair

Meetings should be chaired by the Chief of Medicine. The role of vice chair should be undertaken by the Chief Nurse.

8. Membership

Members of the group have a responsibility to attend at least 75% of meetings, having read all papers before hand. Members are also expected to act as ‘champions’, disseminating information and good practice as appropriate.

It is important to recognise the necessary links, liaison and shared aims of other groups who support the delivery of safe, effective and person centred care, including Knowledge Services, Organisational Development, Corporate Inequalities Team, Health and Safety, Planning, Performance, Learning and Education, Practice Development and Medical Education.

Membership of the group should consist of the following:

- Chief of Medicine (chair)
- Chief Nurse (vice chair)
- Director
- General Managers
- Clinical Directors
- Infection Control Lead
- Clinical Risk Liaison
- Clinical Effectiveness Liaison
- Chief AHP

9. Changes to Terms of Reference

The Terms of Reference will be formally reviewed every 2 years. Outwith the formal review, changes to the terms of reference may be proposed at any meeting of the group with due notice of the proposed change having been submitted via the secretariat support. Any change shall only become operative after consideration and approval by the group.

From: Imrie D (Douglas)
Sent: 31 December 2019 13:43
To: Chalmers G (Greig)
Cc: Dunk R (Rachael)
Subject: 2019-12-31 QEUH Oversight - Marion Baines appointment letter
Attachments: CNO letter December 2019 - Personal - Dr M Bain Appt.pdf

Greig

See attached.

Douglas

From: Dunk R (Rachael) <[redacted]>
Sent: 31 December 2019 13:42
To: Chalmers G (Greig) <[redacted]>; Imrie D (Douglas) <[redacted]>
Subject: Marion Baines appt

No probs.

Douglas – for completeness on staff to GGC can you send Greig the letter that has gone to Marion Baines please?

I am waiting to hear from NSS who to deal with to progress, but it's in hand.

Rachael

From: Chalmers G (Greig) <[redacted]>
Sent: 31 December 2019 13:38
To: Dunk R (Rachael) <[redacted]>
Subject: RE: QEUH Media query - CNO directorate recruitment - Mail on Sunday

Ta.

Greig

Greig Chalmers
Interim Deputy Director
Directorate for Chief Nursing Office
DG Health and Social Care
The Scottish Government
Room 2R.03
St Andrew's House
Edinburgh
EH1 1DG
t: [redacted]
m: [redacted]

From: Dunk R (Rachael) <[redacted]>
Sent: 31 December 2019 13:20
To: Chalmers G (Greig) <[redacted]>
Subject: RE: QEUH Media query - CNO directorate recruitment - Mail on Sunday

FYI – Christine's team sorted this for us, NSS have the arrangements in place to do this.

Rachael

From: Chalmers G (Greig) <[redacted]>
Sent: 31 December 2019 13:10
To: Hill A (Adam) <[redacted]>; Murray D (Diane) <[redacted]>; Dunk R (Rachael) <[redacted]>; McQueen F (Fiona) <[redacted]>
Cc: Leitch J (Jason) <[redacted]>; CNO : Head of Chief Nursing Officer <[redacted]>; Burgess E (Elizabeth) <[redacted]>; Shepherd L (Lesley) <[redacted]>; Morrison A (Alan) <[redacted]>; Birch J (Jason) <[redacted]>; Connaghan J (John) (Health) <[redacted]>; Ives J (Josephine) <[redacted]>; Chief Medical Officer <[redacted]>; Smith G (Gregor) <[redacted]>; Wright M (Malcolm) <[redacted]>; Burkinshaw B (Beata) <[redacted]>; News Desk <[redacted]>; Communications Healthier <[redacted]>; Hart S (Suzanne) <[redacted]>; Mair S (Suzi) <[redacted]>; White C (Craig) <[redacted]>
Subject: RE: QEUH Media query - CNO directorate recruitment - Mail on Sunday

Thanks Adam.

Greig

Greig Chalmers
Interim Deputy Director
Directorate for Chief Nursing Office
DG Health and Social Care
The Scottish Government
Room 2R.03
St Andrew's House
Edinburgh
EH1 1DG
t: [redacted]
m: [redacted]

From: Hill A (Adam) <[redacted]>
Sent: 31 December 2019 13:09
To: Murray D (Diane) <[redacted]>; Chalmers G (Greig) <[redacted]>; Dunk R (Rachael) <[redacted]>; McQueen F (Fiona) <[redacted]>
Cc: Leitch J (Jason) <[redacted]>; CNO : Head of Chief Nursing Officer <[redacted]>; Burgess E (Elizabeth) <[redacted]>; Shepherd L (Lesley) <[redacted]>; Morrison A (Alan) <[redacted]>; Birch J (Jason) <[redacted]>; Connaghan J (John) (Health) <[redacted]>; Ives J (Josephine) <[redacted]>; Chief Medical Officer <[redacted]>; Smith G (Gregor) <[redacted]>; Wright M (Malcolm) <[redacted]>; Burkinshaw B (Beata) <[redacted]>; News Desk <[redacted]>; Communications Healthier <[redacted]>; Hart S (Suzanne) <[redacted]>; Mair S (Suzi) <[redacted]>; White C (Craig) <[redacted]>
Subject: RE: QEUH Media query - CNO directorate recruitment - Mail on Sunday

Many thanks Greig/Diane. The below lines are very helpful

I will send the below lines (very slightly amended but not in terms of content) onto SpAds for their view.

All the best,

Adam

A Scottish Government spokesperson said:

“As part of the our work to support improvement in infection prevention, management and control in NHS Greater Glasgow and Clyde (GGC), a consultant with relevant experience has been engaged to assist GGC with management of actions associated with the Board’s escalation to stage 4 of the NHS Scotland escalation framework. We keep the need for this additional support under review.”

From: Murray D (Diane) <[redacted]>
Sent: 31 December 2019 13:03
To: Chalmers G (Greig) <[redacted]>; Hill A (Adam) <[redacted]>; Dunk R (Rachael) <[redacted]>; McQueen F (Fiona) <[redacted]>
Cc: Leitch J (Jason) <[redacted]>; CNO : Head of Chief Nursing Officer <[redacted]>; Burgess E (Elizabeth) <[redacted]>; Shepherd L (Lesley) <[redacted]>; Morrison A (Alan) <[redacted]>; Birch J (Jason) <[redacted]>; Connaghan J (John) (Health) <[redacted]>; Ives J (Josephine) <[redacted]>; Chief Medical Officer <[redacted]>; Smith G (Gregor) <[redacted]>; Wright M (Malcolm) <[redacted]>; Burkinshaw B (Beata) <[redacted]>; News Desk <[redacted]>; Communications Healthier <[redacted]>; Hart S (Suzanne) <[redacted]>; Mair S (Suzi) <[redacted]>; White C (Craig) <[redacted]>
Subject: RE: QEUH Media query - CNO directorate recruitment - Mail on Sunday

Hi all,

I assume this is for Sandra Aitkenhead - Scottish Government (secondee) from KPMG, but like Greig don’t have details of the contract.

Happy to support Grieg’s suggested response.

Diane

From: Chalmers G (Greig) <[redacted]>
Sent: 31 December 2019 12:51
To: Hill A (Adam) <[redacted]>; Dunk R (Rachael) <[redacted]>; McQueen F (Fiona) <[redacted]>; Murray D (Diane) <[redacted]>
Cc: Leitch J (Jason) <[redacted]>; CNO : Head of Chief Nursing Officer <[redacted]>; Burgess E (Elizabeth) <[redacted]>; Shepherd L (Lesley) <[redacted]>; Morrison A (Alan) <[redacted]>; Birch J (Jason) <[redacted]>; Connaghan J (John) (Health) <[redacted]>; Ives J (Josephine) <[redacted]>; Chief Medical Officer <[redacted]>; Smith G (Gregor) <[redacted]>; Wright M (Malcolm) <[redacted]>; Burkinshaw B (Beata) <[redacted]>; News Desk <[redacted]>; Communications Healthier <[redacted]>; Hart S (Suzanne) <[redacted]>; Mair S (Suzi) <[redacted]>; White C (Craig) <[redacted]>
Subject: RE: QEUH Media query - CNO directorate recruitment - Mail on Sunday

Afternoon Adam,

No, this contract **is** connected to the QEUH. A consultant has been procured from KPMG to provide advice to GGC on programme management of actions associated with the Board’s escalation to Stage 4. The person has begun work with GGC over the last few weeks. And that is their principal activity.

I am afraid that I don't have access today to any details of the contract, and colleagues involved are not here of course. My assumption from the papers is that it is making use of a standing call off contract, and involves a daily rate as is standard for such companies.

I would suggest a straight bat response:

"As part of the Scottish Government's work to support improvement in infection prevention, management and control in NHS Greater Glasgow and Clyde (GGC), a consultant with relevant experience has been procured to assist GGC with programme management of actions associated with the Board's escalation to stage 4 of the NHS Scotland escalation framework. The Scottish Government keeps the need for this additional support under review."

I hope that's helpful.

Greig

Greig Chalmers
Interim Deputy Director
Directorate for Chief Nursing Office
DG Health and Social Care
The Scottish Government
Room 2R.03
St Andrew's House
Edinburgh
EH1 1DG
t: [redacted]
m: [redacted]

From: Hill A (Adam) <[redacted]>
Sent: 31 December 2019 12:32
To: Dunk R (Rachael) <[redacted]>; McQueen F (Fiona) <[redacted]>; Murray D (Diane) <[redacted]>
Cc: Leitch J (Jason) <[redacted]>; CNO : Head of Chief Nursing Officer <[redacted]>; Burgess E (Elizabeth) <[redacted]>; Shepherd L (Lesley) <[redacted]>; Morrison A (Alan) <[redacted]>; Birch J (Jason) <[redacted]>; Connaghan J (John) (Health) <[redacted]>; Ives J (Josephine) <[redacted]>; Chief Medical Officer <[redacted]>; Smith G (Gregor) <[redacted]>; McLaughlin C (Christine) <[redacted]>; Wright M (Malcolm) <[redacted]>; Burkinshaw B (Beata) <[redacted]>; News Desk <[redacted]>; Communications Healthier <[redacted]>; Hart S (Suzanne) <[redacted]>; Mair S (Suzi) <[redacted]>; White C (Craig) <[redacted]>
Subject: RE: QEUH Media query - CNO directorate recruitment - Mail on Sunday

Apologies, copying Dianne as per festive arrangements.

From: Hill A (Adam)
Sent: 31 December 2019 12:29
To: Dunk R (Rachael) <[redacted]>; McQueen F (Fiona) <[redacted]>
Cc: Leitch J (Jason) <[redacted]>; CNO : Head of Chief Nursing Officer <[redacted]>; Burgess E (Elizabeth) <[redacted]>; Shepherd L (Lesley) <[redacted]>; Morrison A (Alan) <[redacted]>; Birch J (Jason) <[redacted]>; Connaghan J (John) (Health) <[redacted]>; Ives J (Josephine) <[redacted]>; Chief Medical Officer <[redacted]>; Smith G (Gregor) <[redacted]>; McLaughlin C (Christine) <[redacted]>; Wright M (Malcolm) <[redacted]>; Burkinshaw B (Beata) <[redacted]>; News Desk <[redacted]>; Communications Healthier <[redacted]>; Hart S (Suzanne) <[redacted]>; Mair S (Suzi)

<[redacted]>; White C (Craig) <[redacted]>
Subject: QEUH Media query - CNO directorate recruitment - Mail on Sunday

Hi all,

Hope you are well.

The Mail on Sunday have been on re. CNOD recruitment, seeking to link it to QEUH.

Are we able to say that this categorically isn't the case? If so then I will go back to the journalist and advise of that and hopefully that will be the end of it.

If not, then suggest we could respond with a general line around the wider work of CNOD as would assume that this isn't singularly related to QEUH – which the journalist is hoping to write.

I'd be grateful for urgent guidance in the first instance and then we can look at how to proceed.

All the best,

Adam

From: Martin SM (Stephen) <[redacted]> **On Behalf Of** News Desk
Sent: 31 December 2019 12:16
To: Hill A (Adam) <[redacted]>
Cc: News Desk <[redacted]>
Subject: FW: For allocation - media query - CNO directorate recruitment - Mail on Sunday

---

From: Clarke J (Jenny) [redacted]>
Sent: 31 December 2019 12:14
To: News Desk <[redacted]>; Martin SM (Stephen) <[redacted]>
Subject: For allocation - media query - CNO directorate recruitment - Mail on Sunday

For allocation, pls. Deadline COP Thursday. Journo is looking for a steer if it relates to QEUH – if not, it might not make a story.

From: Georgia Edkins <[redacted]>
Sent: 31 December 2019 12:11
To: Clarke J (Jenny) <[redacted]>
Subject:

Hello Jenny,

Thank you for our chat on the phone just now.
I saw this contract and wondered if you could please fill me in on some more details?
It says the NSS are recruiting for more personnel for the Chief Nursing Officer Directorate – but it is a move commissioned by the Scottish Government, I believe (it suggests that in the contract text).
I have contacted NSS, and they have asked me to come to you.

As I mentioned, I am not looking for a statement so much as some background information on what these personnel will be doing. What is the reason for this contract?
How many personnel are you hoping to take on?
Will their work relate to the QEUH review headed up by the Chief Nursing Officer?

https://www.publiccontractsscotland.gov.uk/search/show/search_view.aspx?ID=DEC376113

Really appreciate your help on this. May I please have a response by about Thursday end of play?
Happy New Year when it comes!

Warmest wishes,
Georgia

Georgia Edkins
News Reporter

Scottish Mail on Sunday
| 20 Waterloo Street, Glasgow, G2 6DB
T: [redacted]
M: [redacted]
E: [redacted]

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Chief Nursing Officer Directorate
Fiona McQueen, Chief Nursing Officer

Scottish Government
Riaghaltas na h-Alba
gov.scot

T: [redacted]
E: [redacted]

Personal
Professor Marion Bain
Senior Medical Consultant
NHS National Services Scotland
Gyle Square
1 South Gyle Crescent
Edinburgh
EH12 9EB

23 December 2019

Dear Marion,

Appointment to Director of Infection Prevention and Control, NHS Greater Glasgow and Clyde (NHS GGC)

Thank you for agreeing to accept the role of Director of Infection Prevention and Control, NHS GGC.

This appointment forms part of the tailored support to NHS GGC as part of the escalation to Level 4 of the performance framework. The appointment will formally commence on 6 January, 2020, for 4 days a week, in the first instance for 3 months.

During the period of this appointment you will remain an employee of NHS National Services Scotland and retain your existing terms and conditions and will report to Jane Grant, Chief Executive, NHSGGC but also provide regular briefing and updates to myself as Chair of the Oversight Board.

In your role as Director of Infection Prevention and Control, NHS GGC you will have responsibility for the actions as set out in the annex to this letter and I expect you to work as part of the NHS GGC team. Overall responsibility for HAI remains with the Board.

We have discussed additional support to enable you to perform this role, including administrative support and additional technical advice. This additional support will be confirmed with you in the New Year.

Yours sincerely

[redacted]

Fiona McQueen
Chief Nursing Officer for Scotland

Director of Infection Prevention and Control – NHS GGC

- Responsibility for leadership of Healthcare Associated Infection at NHS GGC.
- Lead on any transformation work required in NHS GGC to ensure improvements to the systems, processes and governance in relation to infection prevention and control (IPC) within NHS GGC, with a particular focus on QEUH and RHC.
- Where required, to put in place relevant staffing support in NHS GGC to take forward this work in agreement with the NHS GGC Board.
- Work with the IPC sub-group of the Oversight Board to ensure timely provision of information (and, where required, to the Oversight Board).
- Work with the Scottish Government programme management team and others in their assurance roles in supporting the work of the Oversight Board.
- Work with the Chair of the Incident Management Team (IMT) to ensure actions arising have been acted on and ongoing assurance from the IMT members regarding outbreak investigation and applied rigour.
- Support the development of an improvement culture with robust IPC risk management among clinical and IPC staff, including any necessary steps to improve relevant joint working between different Directorates within NHS GGC.
- Oversee the development and conduct of a case review of relevant cases for the Oversight Board
- Provide advice to CNO as Chair of the Oversight Board and Jane Grant as CEO of NHS GGC.

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From: Anderson D (David) (Health) on behalf of McCallum R (Richard)
Sent: 21 February 2020 14:28
To: More S (Sean); Birch J (Jason); Maitland H (Helen); Sturrock RG (Roy); McGregor F (Frank); Frame G (Gordon); Millan FA (Fergus); Neill S (Sean); Connaghan J (John) (Health); Kirkwood R (Robert); McCallum R (Richard)
Cc: Fleming AG (Andrew); DG Health & Social Care
Subject: RE: NHS Greater Glasgow & Clyde - Board Meeting - 25 Feb
Attachments: Agenda and Papers NHSGGC Board Meeting - February 2020 (003).pdf; Item 13 - Paper 20_06 - NHS GGC Board Paper Out of Hours - latest amendments21-2.pdf

Follow Up Flag: Follow up
Flag Status: Completed

Re-sending adding RMcC and removing me, please include RMcC on any responses/further emails rather than me. Also attaching

- a) the paper contained in the eRDM link in the chain below (as I didn't have permission rights to access so some of you may not also)
- b) the additional paper issued by Sean in the email directly below so everything's in one place.

David Anderson
PA to Richard McCallum, Interim Director of Health Finance and Governance
2E-South
St. Andrew's House
Regent Road
Edinburgh
EH1 3DG
[redacted]

From: More S (Sean) <[redacted]>
Sent: 21 February 2020 14:10
To: Birch J (Jason) <[redacted]>; Maitland H (Helen) <[redacted]>; Sturrock RG (Roy) <[redacted]>; McGregor F (Frank) <[redacted]>; Frame G (Gordon) <[redacted]>; Millan FA (Fergus) <[redacted]>; Anderson D (David) (Health) <[redacted]>; Neill S (Sean) <[redacted]>; Connaghan J (John) (Health) <[redacted]>; Kirkwood R (Robert) <[redacted]>
Cc: Fleming AG (Andrew) <[redacted]>; DG Health & Social Care <[redacted]>
Subject: RE: NHS Greater Glasgow & Clyde - Board Meeting - 25 Feb

Hello again,

I have just received the following update from the Board at NHS GGC:

"Following further discussion with Scottish Government and the Turnaround Director, an amended version of the GP Out of Hours paper – Item 13, Paper No. 20/06 – has been drafted and is attached for your consideration. This is the paper that will be discussed at the NHS Board Meeting on Tuesday."

Apologies for any confusion.

Kind regards,

Sean More
Briefing Support Officer
Resilience, Support and Intelligence | Sponsorship and Ministerial Support
Room 2EN
St Andrew's House
Edinburgh
EH1 3DG

Scottish Government
Riaghaltas na h-Alba
gov.scot

From: More S (Sean)
Sent: 21 February 2020 13:59
To: Birch J (Jason) <[redacted]>; Maitland H (Helen) <[redacted]>; Sturrock RG (Roy) <[redacted]>; McGregor F (Frank) <[redacted]>; Frame G (Gordon) <[redacted]>; Millan FA (Fergus) <[redacted]>; Anderson D (David) (Health) <[redacted]>; Neill S (Sean) <[redacted]>; Connaghan J (John) (Health) <[redacted]>; Kirkwood R (Robert) <[redacted]>
Cc: Fleming AG (Andrew) <[redacted]>; DG Health & Social Care <[redacted]>
Subject: NHS Greater Glasgow & Clyde - Board Meeting - 25 Feb

Good afternoon all,

We recently received the NHS GGC Board Meeting papers, so I am distributing them for your information.

Please refer to agenda below, extracted from the papers.

Jason – See item 11
Helen, Roy, Frank and Gordon – See item 12
Fergus – See item 13
David – See items 21-22
Sean – See items 23-26
John – See item 24
Robert – See item 27

Agenda and Papers:
https://erdm.scotland.gov.uk:8443/documents/A27232855/details

Meeting of the NHS Greater Glasgow and Clyde Board
Tuesday 25th February 2020 at 09:30
William Quarrier Conference Centre
20 St Kenneth Drive
Glasgow
G51 4QD

AGENDA

NO.	ITEM	PURPOSE	PAPER NO.
1.	**Welcome and Apologies**		
2.	**Declarations(s) of Interest(s)**		
3.	**Minutes of Previous Meeting held on 17th December 2019**	Approval	NHSGGC(M) 19/06
4.	**Matters Arising** **a) Rolling Action List**	Approval	Paper 20/01
5.	**Chair's Report**		Verbal
6.	**Chief Executive's Report**		Verbal
7.	**Patient's Story** Video presentation introduced by the Nurse Director		Presentation
	BETTER HEALTH		
8.	**Public Health Committee – Update** • Update on key items of discussion at previous meeting held 29th January 2020 • Approved minutes of meeting held 23rd October 2019	Noting	Paper 20/02 PHSC(M)19/04
9.	**Coronavirus Update** Verbal update by the Deputy Director of Public Health		Verbal
10.	**Public Health Screening Programme Annual Report** Paper presented by the Deputy Director of Public Health	Approval	Paper 20/03
	BETTER CARE		
11.	**Queen Elizabeth University Hospital and Royal Hospital for Children Update** Paper presented by the Chief Executive	Noting	Paper 20/04

	COFFEE BREAK		
12.	**Scheduled & Unscheduled Care Performance** Paper presented by the Chief Operating Officer	Noting	Paper 20/05
13.	**GP Out of Hours Update** Paper presented by the Interim Director of GP Out of Hours Service	Approval	Paper 20/06
14.	**Healthcare Associated Infection Report** Paper presented by the Director of Infection Control	Noting	Paper 20/07
15.	**Acute Services Committee – Update** • Update on key items of discussion at previous meeting held 21st January 2020 • Approved minutes of meeting held 19th November 2019	Noting	Paper 20/08 ASC(M)19/06
16.	**Clinical & Care Governance Committee – Update** • Update on key items of discussion at previous meeting held 10th December 2019	Noting	Paper 20/09
17.	**Area Clinical Forum – Update** • Update on key items of discussion at previous meeting 13th February 2020 • Approved Minutes of meeting held 5th December 2019	Noting	Paper 20/10 ACF(M) 19/06
18.	**NHSGGC Integrated Performance Report** Paper presented by the Director of Finance	Noting	Paper 20/11
	LUNCH		
	BETTER VALUE		
19.	**Finance, Planning and Performance Committee – Update** • Update on key items of discussion at previous meeting held 11th February 2020 • Approved minutes of meeting held 3rd December 2019	Noting	Paper 20/12 FPPC(M)19/06
20.	**Audit and Risk Committee – Update** • Update on key items of discussion at previous meeting held 10th December 2019	Noting	Paper 20/13

21.	**NHSGGC Revenue and Capital Report** Paper presented by the Director of Finance	Noting	Paper 20/14
22.	**NHSGGC Financial Plan Initial Draft 2020/21** Paper presented by the Director of Finance	Noting	Paper 20/15
	BETTER WORKPLACE		
23.	**Staff Governance Committee – Update** • Update on key items of discussion at previous meeting held 4th February 2020 • Approved minutes of meeting held 21st August 2019 and 5th November 2019	Noting	Paper 20/16 SGC(M)19/03 SGC(M)19/04
24.	**Strengthening Senior Management Team within NHS Greater Glasgow and Clyde** Paper presented by the Chief Executive	Noting	Paper 20/17
25.	**NHSGGC - "A Great Place to Work" – Our Leadership Approach** Paper presented by the Director of Human Resources and Organisational Development	Approval	Paper 20/18
26.	**NHSGGC – "A Great Place to Work" – Employee Engagement and Experience** Paper presented by the Director of Human Resources and Organisational Development	Approval	Paper 20/19
	GOVERNANCE		
27.	**Corporate Governance and Board Development Plan** Paper presented by the Head of Corporate Governance and Administration	Approval	Paper 20/20
28.	**Review of Integration Schemes** Paper presented by the Head of Corporate Governance and Administration	Approval	Paper 20/21
	DATE & TIME OF NEXT MEETING		
29.	**Tuesday 28th April 2020, 09:30am, William Quarrier Centre, 20 St. Kenneth Drive, Glasgow, G51 4Q**		

Sean More
Briefing Support Officer
Resilience, Support and Intelligence | Sponsorship and Ministerial Support
Room 2EN
St Andrew's House
Edinburgh

EH1 3DG

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BOARD OFFICIAL

Meeting of the NHS Greater Glasgow and Clyde Board on Tuesday 25th February 2020 at 09:30am in the William Quarrier Conference Centre, 20 St Kenneth Drive, Glasgow, G51 4QD

AGENDA

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19.	**Finance, Planning and Performance Committee – Update** • Update on key items of discussion at previous meeting held 11th February 2020 • Approved minutes of meeting held 3rd December 2019	Noting	Paper 20/12 FPPC(M)19/06
20.	**Audit and Risk Committee – Update** • Update on key items of discussion at previous meeting held 10th December 2019	Noting	Paper 20/13

21.	**NHSGGC Revenue and Capital Report** Paper presented by the Director of Finance	Noting	Paper 20/14
22.	**NHSGGC Financial Plan Initial Draft 2020/21** Paper presented by the Director of Finance	Noting	Paper 20/15
	BETTER WORKPLACE		
23.	**Staff Governance Committee – Update** • Update on key items of discussion at previous meeting held 4th February 2020 • Approved minutes of meeting held 21st August 2019 and 5th November 2019	Noting	Paper 20/16 SGC(M)19/03 SGC(M)19/04
24.	**Strengthening Senior Management Team within NHS Greater Glasgow and Clyde** Paper presented by the Chief Executive	Noting	Paper 20/17
25.	**NHSGGC - "A Great Place to Work" – Our Leadership Approach** Paper presented by the Director of Human Resources and Organisational Development	Approval	Paper 20/18
26.	**NHSGGC – "A Great Place to Work" – Employee Engagement and Experience** Paper presented by the Director of Human Resources and Organisational Development	Approval	Paper 20/19
	GOVERNANCE		
27.	**Corporate Governance and Board Development Plan** Paper presented by the Head of Corporate Governance and Administration	Approval	Paper 20/20
28.	**Review of Integration Schemes** Paper presented by the Head of Corporate Governance and Administration	Approval	Paper 20/21
	DATE & TIME OF NEXT MEETING		
29.	**Tuesday 28th April 2020, 09:30am, William Quarrier Centre, 20 St. Kenneth Drive, Glasgow, G51 4Q**		

NHS Greater Glasgow & Clyde	**Paper Number 20/05**
Meeting:	**Board Meeting**
Date of Meeting:	**25 February 2020**
Purpose of Paper:	**For Noting**
Classification:	**Board Official**
Sponsoring Director:	**Mr Jonathan Best, Chief Operating Officer**

Paper Title

Update on Level 4 Escalation under NHS Scotland's Performance Management Framework in relation to Scheduled and Unscheduled Care.

Recommendation

Board members are asked to:

I. Note the updated position in relation to the Level 4 Escalation for Scheduled and Unscheduled Care.

Purpose of Paper

To provide Board members with an update on the Scheduled and Unscheduled Care elements of the Level 4 Escalation under NHS Scotland's Performance Management Framework.

The other areas of Escalation; Infection Control (1st escalation) and GP Out of Hours (2nd escalation) are covered in other reports.

At this time, Finance is not considered part of the current escalation.

Key Issues to be considered

The required actions, both underway and proposed, to improve Scheduled and Unscheduled Care and, subsequently, de-escalate the NHS Board.

Any Patient Safety /Patient Experience Issues

Refer to the Corporate Plan priorities below.

Any Financial Implications from this Paper

An assessment of the finance required to deliver the recovery plan will form an integral part of the escalation process and it is anticipated that this will be finalised by the end of March 2020.

Any Staffing Implications from this Paper

Will be confirmed, following the development of the recovery plan.

Any Equality Implications from this Paper

None at this time.

Any Health Inequalities Implications from this Paper

None at this time.

Has a Risk Assessment been carried out for this issue? If yes, please detail the outcome.

Risk assessments will be carried out against specific actions where relevant. Each PID contains a risk assessment.

Highlight the Corporate Plan priorities to which your paper relates

Under NHSGG&C's Corporate Objective Theme of ***Better Care*** we remain committed to delivering the required levels of performance in relation to Scheduled and Unscheduled Care.

Author: **Chief Operating Officer**
Tel No: [redacted]
Date: **25th February 2020**

NHS Greater Glasgow & Clyde	**Paper No. 20/07**
Meeting:	**NHSGGC Board Meeting**
Date of Meeting:	**Tuesday 25th February 2020**
Purpose of Paper:	**For Noting**
Classification:	**Board Official**
Sponsoring Director:	**Professor Marion Bain, Director of Infection Prevention and Control**

Healthcare Associated Infection Reporting Template (HAIRT)

Recommendation: For noting.

Purpose of Paper: Update on NHSGGC performance against Healthcare Associated Infection standards and performance measures.

Key Issues to be considered:

Validated Health Protection Scotland (HPS) data : Quarter 3 2019 (July-September)					
		Healthcare Associated Rate per 100 000 bed days		Community Associated Rate per 100 000 population	
		GGC	National	GGC	National
***S. aureus* bacteraemia**	110 cases	22.3	17.5	5.7	7.4
***C. difficile* in age 15+**	77 cases	14.2	13.5	6.1	5.5
***E.coli* bacteraemia**	304 cases	41.3	40.3	44.6	44.2

Table 1: *NHSGGC and national comparison rates for 01/07/2019-30/09/2019*

- **110** validated *Staphylococcus aureus* bacteraemia (SAB) cases were reported for July to September 2019 with a Healthcare Associated rate of 22.3 cases per 100,000 bed days (n=93). This is above the national rate and marginally above the 95% confidence interval of 22.0 cases per 100,000 bed days in national funnel plot analysis for the reporting quarter. An exception report has been completed by the board and returned to Health Protection Scotland.

- **77** validated *Clostridioides difficile* (CDI) cases in ages 15 and over were reported for July to September 2019 with a Healthcare Associated rate of 14.2 cases per 100,000 bed days (n=59). This is a reduction in CDI cases upon the previous reporting quarter and within expected confidence intervals.

- **304** validated *Escherichia coli* (E. coli) bacteraemia (ECB) were reported for July to September 2019 with a Healthcare Associated rate of 41.3 cases per 100,000 bed days (n=172). This is within expected confidence intervals. This HAIRT contains further information on the mandatory enhanced surveillance programme for ECB.

- In the last completed quarter (October–December 2019) Multi-Drug Resistant Organism (MDRO) Screening Clinical Risk Assessment uptake which includes MRSA Screening and CPE Screening has been ≥ 90% in NHSGGC. This meets the 90% national compliance requirements for MRSA screening.

Any Patient Safety /Patient Experience Issues:

Royal Hospital for Children. Increase incidence of gram negative cultures in patients in the Paediatric Intensive Care Unit (PICU)

The National Support Framework was invoked by Scottish Government on the 10 January 2020.
HPS will prepare a 'healthcare infection situational needs assessment'. This will be shared with NHSGG&C and SG. Recommendations from this assessment will be reviewed by GGC when received. In addition, the Director of Infection Prevention and Control has commissioned a review group which includes representatives from Health Protection Scotland.

Information requested by HPS has been forwarded and suggested actions have been implemented. IMT process is in place and all cases as per the agreed definition are being reviewed. Action plans will be reviewed by the Board Infection Control Committee and the Board Clinical Governance Committee. Implications for wider learning in the adult setting will also be considered.

Any Financial Implications from this Paper: No

Any Staffing Implications from this Paper: No

Any Equality Implications from this Paper: No

Any Health Inequalities Implications from this Paper: No

Has a Risk Assessment been carried out for this issue? If yes, please detail the outcome: No

Highlight the Corporate Plan priorities to which your paper relates:
Patient safety and improving quality, efficiency and effectiveness.

Author: Mrs Sandra Devine, Acting Board Infection Control Manager
Tel No: [redacted]
Date: 25/02/2020

Healthcare Associated Infection Reporting Template (HAIRT)

Section 1 – Board Wide Issues
This is the bi-monthly publication of the reporting template for submission to the NHS Board as required by the national HAI Action Plan.

National Definitions/Denominators

This HAIRT presents data based on the national definitions of Healthcare Associated and Community Infections. Below is a short summary of the definitions which have been applied to the presented data.

- Healthcare Associated Infections i.e. *any infections associated with Healthcare (hospital or GP).* Rates are worked out by number of infections over total occupied bed days (OBDs).
- Community Associated Infections. Rates are calculated as the number of infections per 100,000 population.

October 2019: Updated Healthcare Associated Infection (HCAI) standards and antibiotic use indicators for Scotland

The CNO issued an update on the standards and indicators for HCAI for Scotland on 10th October 2019.

HCAI standards
Baseline data from 2018/19 will be used for the reduction target for **healthcare associated** cases of:

- *E.coli* bacteraemia – initial reduction of 25% by 2021/22
- *S.aureus* bacteraemia – reduction of 10% from 2019 to 2022
- *C.difficile* – reduction of 10% from 2019 to 2022

The Infection Prevention & Control Team have devised local reduction aims for each acute sector based on the new standards and these will be included in existing Sector and Directorate monthly reports for discussion at local clinical governance meetings.

Antibiotic use indicators
1. A 10% reduction of antibiotic use in Primary Care (excluding dental) by 2022, using 2015/16 data as the baseline (items/1000/day).

2. Use of intravenous antibiotics in secondary care defined as DDD / 1000 population / day will be no higher in 2022 than it was in 2018.

3. Use of WHO Access antibiotics (NHSE list) ≥60% of total antibiotic use in Acute hospitals by 2022.

The NHSGGC Antimicrobial Utilisation Committee and Antimicrobial Management Team will provide updates on progress in each indicator in subsequent HAIRT editions.

Staphylococcus aureus

***Staphylococcus aureus* Bacteraemia (SAB) Surveillance and Actions**

Quarter 3: 2019 (July-September) Surveillance
For the last published reporting quarter (July-September 2019) NHSGGC reported a total of **110** validated SAB cases. These are further classified as healthcare associated (n=93) or community infections (n=17).

93 healthcare associated cases were reported for the quarter providing a rate of 22.3 per 100,000 occupied bed days (Figure 1). This is above the national rate of 17.5.

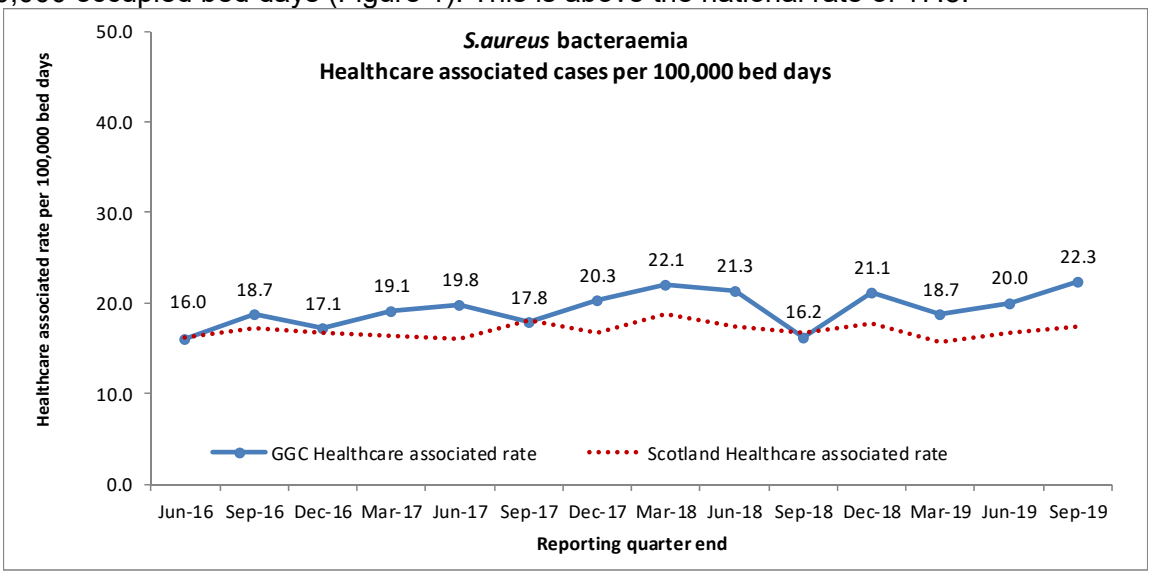
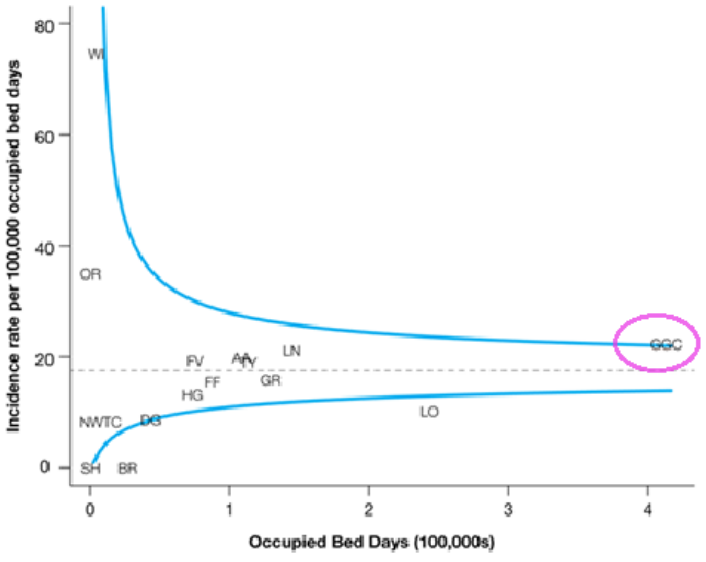


Figure 1: *Healthcare associated SAB comparison by quarter for NHSGGC and Scotland.*

NHSGGC were marginally above the 95% upper confidence interval of 22.0 cases per 100,000 bed days in national funnel plot analysis for the reporting quarter. Details of the exception report completed by the board and returned to HPS are as follows:

Situation:	NHS Greater Glasgow & Clyde were above the 95% confidence interval upper limit in the funnel plot analyses for healthcare associated SAB. The upper limit 22.0 and the NHSGGC rate 22.3.



Background:	As per HPS report. https://www.hps.scot.nhs.uk/data/healthcare-associated-infection-quarterly-epidemiological-commentary/
Assessment:	There has been no change to methodology for data collection or analysis.

Data is collected by sector IPC Nurses and validated by the IPC surveillance and data team. Mandatory enhanced surveillance data set is completed as per HPS protocol.

Review of entry point for healthcare associated cases is displayed below:

Source/entry point of HCAI SAB	Number of cases
IVAD	28
Skin/soft tissue	19
Source not identified	15
Respiratory infection	8
Injection site in PWID	3
Urinary catheter	3
Urinary tract infection	3
Contaminant	2
Nephrostomy	2
Related to minor surgery procedure	2
Sacroiliitis	1
Infected DVT	1
Septic arthritis	1
Endocarditis	1
Surgical site infection	1
Osteomyelitis	1
Discitis	1
Parotitis	1
Total	**93**

Intravenous access devices (IVAD) are accountable for 30% of the HCAI SABs reported in Q3, 2019.

A skin or soft tissue source accounts for one in five HCAI SABs.

It should also be noted that two of the “Injection site in PWID” HCAI SAB cases required reporting in this category as the blood culture specimen was aspirated more than 48 hours after patient admission to hospital. In both cases, the source of SAB was present on admission and was locally reported as community acquired.

Recommendations

Local surveillance of Q4, 2019 indicates that there has been a reduction in the number of reported HCAI SAB cases with a total of 69 HCAI cases reported at time of SBAR compilation. This is a **26% reduction** in case numbers from the previous quarter.

There has also been a reduction in the number of HCAI cases related to an IVAD (n=15). This is almost half of the cases reported in Q3. Local quality improvement work continues within NHSGGC Acute hospitals to ensure that reduction in HCAI SABs caused by these devices is sustained. One such action is the application of a Chlorhexidine impregnated dressing on every patient with a central venous catheter inserted by the NHSGGC Vascular Access Service. This is considered best practice for assisting the development of bloodstream infections and not just those caused by *S.aureus*.

Skin/soft tissue sources are more challenging in which to implement reduction strategies, however this should remain a focus for improvement and will be highlighted again in conjunction with Tissue Viability colleagues, to all clinical teams across NHSGGC.

Community associated infections are reported against a denominator rate per 100,000 population (Figure 2). These cases include SABs in people who have had no healthcare interaction as an in-patient, out-patient, or via Health & Social Care Partnerships (HSCP) in the 30 days prior to SAB onset, and are not users of registered medical devices such as urinary catheters. These cases are therefore less amenable to reduction measures within GGC Acute hospitals. The rate of community associated infections in NHSGGC was 5.7 which was **below** the NHS Scotland rate of 7.4. It should be noted that the process for reviewing all cases in NHSGGC is rigorous and includes all available sources of data.

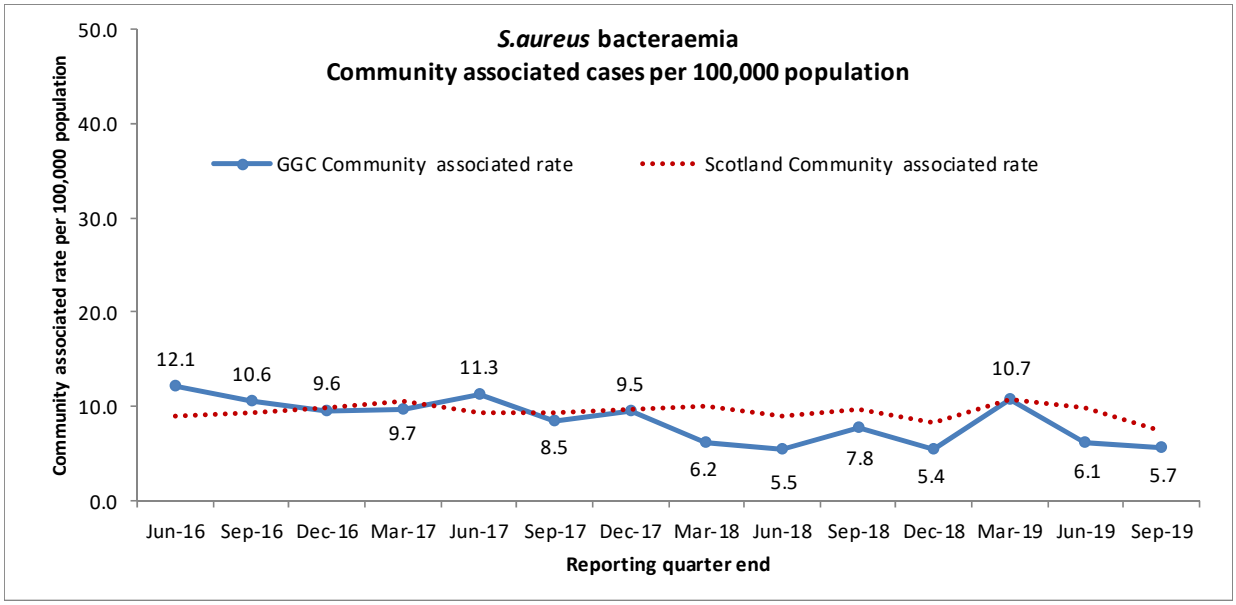


Figure 2: *Community associated SAB comparison by quarter for NHSGGC and Scotland*

Quarter 4: 2019 (October - December**) NHSGGC Surveillance**
Local surveillance has shown a **13% decrease** upon the previous quarter in the number of SAB cases with a total of 96 cases. 69 cases were healthcare associated and 27 were community associated. Local surveillance of Q4, 2019 indicates that there has been a reduction in the number of reported HCAI SAB cases with a total of 69 HCAI cases reported at time of reporting. This is a **26% reduction** in case numbers from the previous quarter

SAB Actions Update
The NHSGGC SAB group continues to meet and work to reduce the amount of avoidable healthcare associated cases is ongoing.

- The NHSGGC Vascular Access Service is a department dedicated to inserting central lines in patients who required long term intravenous medications, e.g. antibiotics, chemotherapy or intravenous nutrition. From December 2019, a Chlorhexidine Gluconate impregnated dressing is now applied following insertion of a Central Venous Catheter. This dressing can remain in place for up to seven days before being changed on a weekly basis thereafter for the duration of the device, or as advised by the clinical team. This additional step may help to prevent infections associated with these types of lines.

  This may provide increased patient comfort and offer some protection in reducing bloodstream infections, and not only those caused by *S.aureus*, associated with the entry site. The use of this type of dressing is also included as a consideration in the HPS Key Recommendation "Preventing infections when inserting and maintaining a CVC"

- PVC insertion pack has been approved for use and will be available shortly in all clinical areas in GGC.

- A strategy to reduce HCAI SABs due to skin and soft tissue infections is being developed and led by the Nurse consultant, IPC. This will be approved and supported by the NHSGGC SAB Group. When complete, this strategy will be implemented and use surveillance data to measure impact over a 12-month period.

- Clinical areas that have had two SABs in a four week period which have been caused by an IVAD, will have weekly ward audits (for four consecutive weeks) of care plan documentation undertaken by the local IPCT. These will be prospectively fed back to the clinical team and an improvement strategy jointly developed for implementation and future monitoring by the clinical team. This will be followed by a programme of audit to provide assurance that improvement is implemented and sustained.

Multi-Drug Resistant Organism (MDRO) Screening Clinical Risk Assessment uptake. (Includes MRSA Screening and CPE Screening).

MRSA (Meticillin Resistant *Staphylococcus aureus*)
Mandatory Clinical Risk Assessment (CRA) compliance for GGC in Q3 (October - December 2019) is **90%.** This is an improvement on recent reporting quarters and meets the required 90% for national reporting requirements. The IPCT will continue to target education in individual areas that do not meet the target. In addition, compliance with the assessment this CRA and the CPE CRA have been included as criteria in the updated Infection Prevention & Control Audit Tool (IPCAT).

MRSA screening CRA uptake	**2018-19 Q4** (Jan-Mar)	**2019-20 Q1** (Apr-Jun)	**2019-20 Q2** (Jul-Sep)	**2019-20 Q3** (Oct-Dec)
Greater Glasgow & Clyde	69%	92%	87%	**90%**
Scotland	83%	89%	88%	88%

Table 2: *Quarterly screening compliance- MRSA National Data Source: MDRO Admission Screening Team January 2020.*

CPE (Carbapenemase-producing Enterobacteriaceae)
Enterobacteriaceae are a family of Gram-negative bacteria (sometimes called coliforms) which are part of the normal range of bacteria found in the gut. Carbapenemase-Producing Enterobacteriaceae (CPE) are a type of bacteria that are extremely resistant to antibiotics.

Table 3 below shows the CRA compliance rate since national reporting was implemented. Improvement in compliance has been sustained in Q3. Although CPE screening is mandatory, there is no national target set for compliance.

CPE screening - CRA uptake	**2018-19 Q4** (Jan-Mar)	**2019-20 Q1** (Apr-Jun)	**2019-20 Q2** (Jul-Sep)	**2019-20 Q3** (Oct-Dec)
Greater Glasgow & Clyde	78%	94%	92%	**95%**
Scotland	81%	86%	86%	85%

Table 3: *Quarterly screening compliance – CPE National Data Source: MDRO Admission Screening Team January 2020..*

Clostridioides difficile (CDI)

Quarter 3: 2019 (July-September) Surveillance

77 validated cases were reported in the last published quarter (July-September). This is less than the previous reporting quarter and also the **lowest** quarter 3 in the past four years. 59 cases were healthcare associated and this provided a rate of 14.2 cases per 100,000 bed days (Figure 3). The rate for NHS Scotland was 13.5.

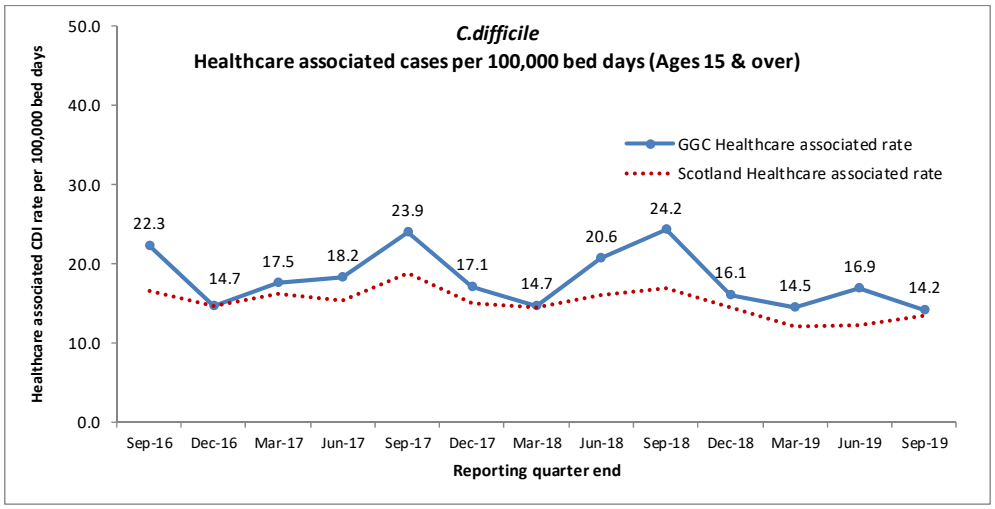


Figure 3: *Healthcare associated CDI rates comparison by quarter for NHSGGC and Scotland.*

18 community associated CDI cases were reported for the quarter with a rate of 6.1 per 100,000 population (Figure 4). The rate for NHS Scotland was 5.5.

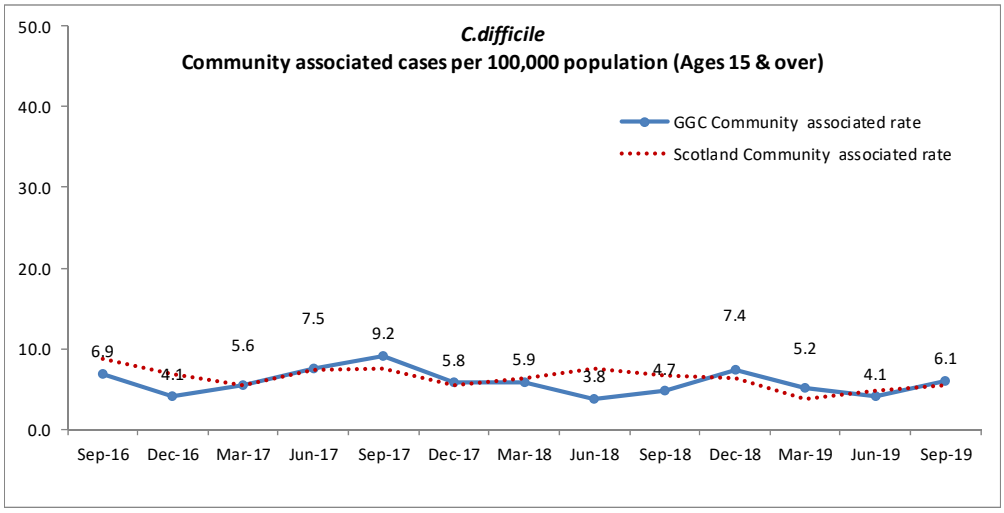


Figure 4: *Community associated CDI comparison by quarter for NHSGGC and Scotland.*

Quarter 4: 2019 (October - December) NHSGGC Surveillance

Local surveillance for this quarter has shown a very slight increase of 4 cases upon the previous quarter with 81 cases in total. 68 are healthcare associated and 13 are community associated. This would appear to be normal variation for healthcare associated cases for this quarter in recent years (Table 4.)

Year – Quarter 4 (October-December)	Number of Healthcare Associated CDI
2015	112
2016	65
2017	74
2018	67
2019	**68**

Table 4: *Quarter 4 healthcare associated C.difficile cases. Please note 2019 data has not been validated by HPS.*

***Escherichia coli* (*E. coli*) bacteraemia**

As described on the HPS website, *Escherichia coli* (*E. coli*) is a bacterium that forms part of the normal gut flora that helps human digestion. Although most types of *E. coli* live harmlessly in your gut, some types can make you unwell.

When it gets into your blood stream, *E. coli* can cause a bacteraemia. This can be as a result of an infection such as:
•urinary tract
•surgery
•inappropriate use of medical devices

However, on occasions, the source of the bacteraemia isn't known.

E. coli is currently the most common cause of bacteraemia in Scotland. As a result, the Scottish Government Health and Social Care Directorate (SGHSCD) requested an in-depth analysis of the epidemiology of *E. coli* bacteraemia.

Quarter 3: 2019 (July-September) Surveillance
304 validated cases were reported in the last published quarter (July-September).172 cases were healthcare associated and this provided a rate of 41.3 cases per 100,000 bed days. The rate for NHS Scotland was 40.3. 132 community associated cases were reported for the quarter with a rate of 44.6 per 100,000 population. The rate for NHS Scotland was 44.2.

NHSGGC was within 95% confidence intervals for HCAI and community cases and was also not above normal variation on trend analysis from 2016 to date.

Quarter 4: 2019 (October - December**) NHSGGC Surveillance**
Local surveillance for the most recent quarter indicates a 13% **reduction** in the number of healthcare associated cases (n=150) and a slight increase community associated cases (n=139).

Antibiotic use indicators

The NHSGGC Antimicrobial Utilisation Committee and Antimicrobial Management Team have provided the current status with each of the three indicators included in the CNO letter issued in October 2019.

1. A 10% reduction of antibiotic use in Primary Care (excluding dental) by 2022, using 2015/16 data as the baseline (items/1000/day).

	2015/16 (Baseline)	**2022 TARGET**	2016/17	2017/18	2018/19	YTD April/Oct
Primary care total antibiotic use (excluding dental) (items/1000/day)	2.02	**1.82**	1.98	1.95	**1.82**	**1.73**

2. Use of intravenous antibiotics in secondary care defined as DDD / 1000 population / day will be no higher in 2022 than it was in 2018.

	2018 (Baseline)	**2022 TARGET**	2019 Q1	2019 Q2	2019 Q3	2019 Q4
Secondary care IV antibiotic use (DDDs/1000/day)	1.37	**1.37**	**1.33**	**1.23**	**1.36**	**1.35**

3. Use of WHO Access antibiotics (NHSE list) ≥60% of total antibiotic use in Acute hospitals by 2022.

	2018 (Baseline)	2022 TARGET (%)	2019 Q1	2019 Q2	2019 Q3	2019 Q4
Use of WHO Access Antibiotics in Acute Hospitals (% of Total Antibiotics)	59.8	**60**	**61.2**	**60.6**	**63.3**	**61.9**
NORTH	**62.3**	**60**	**62.9**	**62.1**	**65.7**	**63.1**
SOUTH	59.9	**60**	**60.3**	58.8	**62.4**	**61.6**
CLYDE	**62.3**	**60**	**63.9**	**63.2**	**68.4**	**65.2**
W+C	47.6	**60**	49.7	52.2	46.5	46.8
REGIONAL	54.8	**60**	54.5	55.9	57	55.6

OUTBREAKS / EXCEPTIONS

(Reported are those that are assessed as AMBER or RED using the HPS Hospital Infection Incident Assessment Tool (HIIAT))

Institute for Neurological Sciences (INS), QEUH Campus, Increase in Surgical Site Infections (SSI) in Spinal Surgery. Initially HIIAT assessed as RED this was subsequently HIIAT assessed as GREEN on the 17th January 2020.

Two further cases of SSI in this group of patients was reported, one at the beginning of November and one in December. This is well within what would be expected in this group of patients. This incident is now closed.

Royal Hospital for Children. Increase incidence of gram negative cultures in patients in the Paediatric Intensive Care Unit (PICU)

Initially, the incident included cases of Serratia marcesens, Pseudomonas aeruginosa and Acinetobacter from 1st August 2010. This was extended in December to include all gram negative (GN) organisms. The case definition, as of 5 February 2020, is any patient in PICU who has a positive GN isolate from a blood culture or bronchoalveolar lavage (BAL) as defined by Scottish Government and Health Protection Scotland.

Thus far the incident has included:

Klebsiella pneumonae (2)
Pseudomonas aeruginosa (3)
Acinetobacter nosocomialis (6)
Serratia marcescens (3)
Burkholderia cenocepacia (1)

HIIAT assessed as Amber 27/01/2020. There have been no new cases since 25 January 2020.

Control Measures

- Hand hygiene education for both staff and parents.
- All drains to have weekly dosing with Hysan.
- HPS support is being provided.
- Statistical process control charts have been developed to support trigger process.
- Patients are isolated where possible.
- Weekly safe patient environment audits taking place.

- Continue to monitor for all new cases and undertake a RCA for each.
- Sampling of the environment will continue until there is 4 weeks of results.

The National Support Framework was invoked by Scottish Government on the 10 January 2020.
HPS will prepare a 'healthcare infection situational needs assessment'. This will be shared with NHSGG&C and SG. Recommendations from this assessment will be reviewed by GGC when received. In addition, the Director of Infection Prevention and Control has commissioned a review group which includes representatives from Health Protection Scotland. This group will review hypothesis, investigations, trend data and new scientific evidence to base actions upon. All requests for information have been acted upon and HPS are reviewing these documents.

QEUH Campus. Langlands Building. Two cases of Hospital Acquired C. diff Infection in a two week period. C. diff infection was noted on both patients death certificate. HIIAT assessed as RED on the 17 January then GREEN on the 20 January. Confirmed as two different ribotypes so not due to cross infection and therefore not linked.

Actions
- Health Protection Scotland Trigger tool implemented and completed.
- Hand hygiene audit.
- Standard Infection Control Precaution (SICPS) audit.
- Review of antimicrobial prescribing.
- Twice daily cleans with a chlorine based detergent was ongoing at the time (winter clean regime) and all rooms the patients were located in were terminally cleaned.
- Education sessions to raise awareness about this infection have been delivered.

Norovirus

There were 11 wards closed in 5 hospitals due to Norovirus activity November and December 2019.

Month	Jan -19	Feb -19	Mar-19	Apr-19	May-19	Jun-19	Jul-19	Aug -19	Sep-19	Oct-19	Nov-19	Dec-19
Ward Closures	1	7	3	5	2	3	2	0	0	4	6	5
Bed Days Lost	7	42	106	188	49	49	11	0	0	46	76	85

Table 5: *NHSGGC Ward closures due to suspected / confirmed Norovirus*

Data on the number of wards closed due to confirmed or suspected Norovirus is available from HPS on a weekly basis: http://www.hps.scot.nhs.uk/giz/norovirussurveillance.aspx

Healthcare Environment Inspectorate (HEI)

There was an unannounced inspection of wards and departments in QEUH Campus from the 19-21 November 2019. The report on this visit will be published on the 13 February 2020.

HEI reports and action plans can be viewed by clicking on the link below.
http://www.healthcareimprovementscotland.org/our_work/inspecting_and_regulating_care/nhs_hospitals_and_services/hei_inspections/all_hei_reports.aspx

Other HAI Related Activity

Surgical Site Infection (SSI) Surveillance

All NHS Boards are required to undertake in-patient and 30-day re-admission surveillance (excluding caesarean section which is 10 day post discharge surveillance) as per DL (2019) 23. Available at: https://www.sehd.scot.nhs.uk/dl/DL(2019)23.pdf

Quarter 3: 2019 (July-September)

For the last published reporting quarter the SSI rate for caesarean-section remained lower than the national dataset SSI rate and also below national 95% confidence interval (Table 6).

There were four hip arthroplasty SSI reported for the quarter with an SSI rate of 1.1%. This is above the national SSI rate of 0.8%, however within 95% confidence intervals.

Category of Procedure	Operations	Infections	NHSGGC SSI rate (%)	NHSGGC 95% CI	National Dataset SSI rate (%)	National 95% CI
Caesarean section	1367	3	0.2	0.1,0.6	1.1	0.8,1.5
Hip arthroplasty	348	4	1.1	0.4,2.9	0.8	0.5,1.3

Table 6: *SSI rates for Caesarean section (in-patient and PDS to day-10), Hip arthroplasty (in-patient and re-admission to day-30), NHSGGC*

Quarter 4: 2019 (October -December) **NHSGGC Surveillance**
Local surveillance (readmission to day 30 post-op) is ongoing for the quarter. Current status is displayed in Table 7.

Quarter 4 -19 (October- December) : Local SSI Surveillance (status at 06/01/2020)				
	Category of Procedure	Operations	Infections	NHSGGC SSI Rate (%)
Mandatory (reported to HPS)	Caesarean section	1306	6	0.5
	Hip arthroplasty	319	4	1.3
	Large Bowel Surgery	244	3	1.2
	Major Vascular Surgery	213	2	0.9
Voluntary	Knee arthroplasty	311	2	0.6
	Repair of neck of femur	473	4	0.8
Additional INS,QEUH only	Cranial Surgery	187	2	1.1
	Spinal Surgery*	178	8	4.5

Table 7: *Local SSI Surveillance. Procedures undertaken 01/10/19 - 31/12/19 (In-patient and 30 day readmission; C-section* in-patient and PDS to day 10)
*see outbreaks/exceptions section of this report.

Statistical Process Control Charts
Statistical Process Control Charts (SPCs) continue to remain within normal control limits in all sites.

Cleaning and the Healthcare Environment
All areas within NHSGGC scored **GREEN (>90%)** in the most recent report on the National Cleaning Specification.

Healthcare Associated Infection Reporting Template (HAIRT)

Section 2 – Healthcare Associated Infection Report Cards

The following section is a series of 'Report Cards' that provide information for each acute hospital and key non-acute hospitals in the Board, on the number of cases of *Staphylococcus aureus* blood stream infections and *Clostridioides difficile* infections, as well as hand hygiene and cleaning compliance. In addition, there is a single report card which *C. difficile* specimens identified from non-hospital locations, e.g. GPs, hospices, care homes, prisons etc. The information in the report cards is provisional local data and may differ from the national surveillance reports carried out by HPS and HFS. The national reports are official statistics which undergo rigorous validation which means final national figures may differ from those reported here. However, these reports aim to provide more detailed and up-to-date information on healthcare associated infection activities at local level than is possible to provide through the national statistics.

Understanding the Report Cards – Infection Case Numbers
Clostridioides difficile infections (CDI) and *Staphylococcus aureus* bacteraemia (SAB) cases are presented for each hospital, broken down by month.

- **Healthcare associated cases**
  For each hospital the total number of cases for each month is included in the report cards. These include those that are considered to be **hospital acquired**, i.e. reported as positive from a laboratory report on samples taken more than 48 hours after admission and **healthcare associated** in which the patient has a positive sample taken from within 48 hours of admission and the patient has also had healthcare interaction in the previous 30 days for SAB or 12 weeks for *C. difficile*.

- **Community associated cases**
  For community associated cases, the patient has had no healthcare interaction as specified in the time frame above, however the specimen was obtained from a current hospital in-patient that did not meet the reporting criteria for a healthcare associated case.

More information on these organisms can be found on the HPS website:

***Clostridioides difficile*:**
https://www.hps.scot.nhs.uk/a-to-z-of-topics/clostridioides-difficile-infection/

***Staphylococcus aureus* Bacteraemia**
https://www.hps.scot.nhs.uk/a-to-z-of-topics/staphylococcus-aureus-bacteraemia-surveillance/

Understanding the Report Cards – Hand Hygiene Compliance
Hospitals carry out regular audits of how well their staff are complying with hand hygiene. The Board report card presents the combined percentage of hand hygiene compliance with both opportunity taken and technique used broken down by staff group.

Understanding the Report Cards – Cleaning Compliance
Hospitals strive to keep the care environment as clean as possible. This is monitored through cleaning and estates compliance audits. More information on how hospitals carry out these audits can be found on the HFS website:
http://www.hfs.scot.nhs.uk/

NHS GREATER GLASGOW & CLYDE

REPORT CARD

Staphylococcus aureus bacteraemia monthly case numbers

	Jan 2019	Feb 2019	Mar 2019	Apr 2019	May 2019	Jun 2019	Jul 2019	Aug 2019	Sep 2019	Oct 2019	Nov 2019	Dec 2019
Healthcare Associated	31	24	25	29	31	25	38	28	24	18	27	24
Community Associated	14	16	5	7	7	4	8	11	4	8	10	9
Total	**45**	**40**	**30**	**36**	**38**	**29**	**46**	**39**	**28**	**26**	**37**	**33**

Clostridioides difficile infection monthly case numbers

	Jan 2019	Feb 2019	Mar 2019	Apr 2019	May 2019	Jun 2019	Jul 2019	Aug 2019	Sep 2019	Oct 2019	Nov 2019	Dec 2019
Healthcare Associated	20	18	18	16	30	23	19	17	19	35	16	17
Community Associated	10	6	7	8	2	5	9	9	7	5	7	1
Total	**30**	**24**	**25**	**24**	**32**	**28**	**28**	**26**	**26**	**40**	**23**	**18**

Hand Hygiene Monitoring Compliance (%)

	Jan 2019	Feb 2019	Mar 2019	Apr 2019	May 2019	Jun 2019	Jul 2019	Aug 2019	Sep 2019	Oct 2019	Nov 2019	Dec 2019
Board Total	97	97	97	97	97	97	97	97	98	97	96	98

Cleaning Compliance (%)

	Jan 2019	Feb 2019	Mar 2019	Apr 2019	May 2019	Jun 2019	Jul 2019	Aug 2019	Sep 2019	Oct 2019	Nov 2019	Dec 2019
Board Total	95.1	94.8	95.2	95.3	94.3	95.0	94.9	93.7	94.1	94.5	94.9	94.9

Estates Monitoring Compliance (%)

	Jan 2019	Feb 2019	Mar 2019	Apr 2019	May 2019	Jun 2019	Jul 2019	Aug 2019	Sep 2019	Oct 2019	Nov 2019	Dec 2019
Board Total	98.7	97.9	98.0	96.9	97.3	97.2	96.3	96.1	96.5	96.3	96.7	97.0

GLASGOW ROYAL INFIRMARY / PRINCESS ROYAL MATERNITY

REPORT CARD

***Staphylococcus aureus* bacteraemia monthly case numbers**

	Jan 2019	Feb 2019	Mar 2019	Apr 2019	May 2019	Jun 2019	Jul 2019	Aug 2019	Sep 2019	Oct 2019	Nov 2019	Dec 2019
Healthcare Associated	9	7	3	7	8	8	6	7	10	6	8	10
Community Associated	6	5	-	1	3	1	2	4	1	2	1	3
Total	**15**	**12**	**3**	**8**	**11**	**9**	**8**	**11**	**11**	**8**	**9**	**13**

***Clostridioides difficile* infection monthly case numbers**

	Jan 2019	Feb 2019	Mar 2019	Apr 2019	May 2019	Jun 2019	Jul 2019	Aug 2019	Sep 2019	Oct 2019	Nov 2019	Dec 2019
Healthcare Associated	4	5	8	4	8	7	6	6	5	7	1	3
Community Associated	1	2	-	3	-	-	-	1	1	-	-	-
Total	**5**	**7**	**8**	**7**	**8**	**7**	**6**	**7**	**6**	**7**	**1**	**3**

Hand Hygiene Monitoring Compliance (%)

	Jan 2019	Feb 2019	Mar 2019	Apr 2019	May 2019	Jun 2019	Jul 2019	Aug 2019	Sep 2019	Oct 2019	Nov 2019	Dec 2019
Board Total	96	97	97	97	95	96	97	98	98	98	97	98

Cleaning Compliance (%)

	Jan 2019	Feb 2019	Mar 2019	Apr 2019	May 2019	Jun 2019	Jul 2019	Aug 2019	Sep 2019	Oct 2019	Nov 2019	Dec 2019
Board Total	95.6	95.6	95.0	95.2	95.3	95.3	95.5	95.0	94.7	95.1	95.2	95.3

Estates Monitoring Compliance (%)

	Jan 2019	Feb 2019	Mar 2019	Apr 2019	May 2019	Jun 2019	Jul 2019	Aug 2019	Sep 2019	Oct 2019	Nov 2019	Dec 2019
Board Total	99.5	99.2	98.7	97.9	96.9	95.7	92.0	90.8	90.0	89.5	90.8	91.8

ROYAL ALEXANDRA HOSPITAL

REPORT CARD

***Staphylococcus aureus* bacteraemia monthly case numbers**

	Jan 2019	Feb 2019	Mar 2019	Apr 2019	May 2019	Jun 2019	Jul 2019	Aug 2019	Sep 2019	Oct 2019	Nov 2019	Dec 2019
Healthcare Associated	5	4	7	4	7	3	3	7	2	3	2	4
Community Associated	4	4	1	1	2	1	3	2	1	4	1	1
Total	**9**	**8**	**8**	**5**	**9**	**4**	**6**	**9**	**3**	**7**	**3**	**5**

***Clostridioides difficile* infection monthly case numbers**

	Jan 2019	Feb 2019	Mar 2019	Apr 2019	May 2019	Jun 2019	Jul 2019	Aug 2019	Sep 2019	Oct 2019	Nov 2019	Dec 2019
Healthcare Associated	7	5	2	-	7	3	3	-	2	6	2	2
Community Associated	-	2	-	1	-	1	-	-	1	2	4	1
Total	**7**	**7**	**2**	**1**	**7**	**4**	**3**	**0**	**3**	**8**	**6**	**3**

Hand Hygiene Monitoring Compliance (%)

	Jan 2019	Feb 2019	Mar 2019	Apr 2019	May 2019	Jun 2019	Jul 2019	Aug 2019	Sep 2019	Oct 2019	Nov 2019	Dec 2019
Board Total	97	97	97	96	98	98	96	96	99	96	96	99

Cleaning Compliance (%)

	Jan 2019	Feb 2019	Mar 2019	Apr 2019	May 2019	Jun 2019	Jul 2019	Aug 2019	Sep 2019	Oct 2019	Nov 2019	Dec 2019
Board Total	95.7	94.7	94.7	93.3	95.0	95.5	95.5	95.1	94.1	95.0	94.5	93.1

Estates Monitoring Compliance (%)

	Jan 2019	Feb 2019	Mar 2019	Apr 2019	May 2019	Jun 2019	Jul 2019	Aug 2019	Sep 2019	Oct 2019	Nov 2019	Dec 2019
Board Total	96.2	93.4	93.5	93.6	98.0	96.5	94.6	94.6	93.0	94.1	95.7	95.3

INVERCLYDE ROYAL HOSPITAL

REPORT CARD

***Staphylococcus aureus* bacteraemia monthly case numbers**

	Jan 2019	Feb 2019	Mar 2019	Apr 2019	May 2019	Jun 2019	Jul 2019	Aug 2019	Sep 2019	Oct 2019	Nov 2019	Dec 2019
Healthcare Associated	2	1	-	3	3	1	3	-	-	1	2	2
Community Associated	2	-	-	1	-	-	-	2	-	-	2	1
Total	**4**	**1**	**0**	**4**	**3**	**1**	**3**	**2**	**0**	**1**	**4**	**3**

***Clostridioides difficile* infection monthly case numbers**

	Jan 2019	Feb 2019	Mar 2019	Apr 2019	May 2019	Jun 2019	Jul 2019	Aug 2019	Sep 2019	Oct 2019	Nov 2019	Dec 2019
Healthcare Associated	2	2	-	3	2	1	-	2	2	3	1	1
Community Associated	-	-	1	-	-	-	-	-	-	1	-	-
Total	**2**	**2**	**1**	**3**	**2**	**1**	**0**	**2**	**2**	**4**	**1**	**1**

Hand Hygiene Monitoring Compliance (%)

	Jan 2019	Feb 2019	Mar 2019	Apr 2019	May 2019	Jun 2019	Jul 2019	Aug 2019	Sep 2019	Oct 2019	Nov 2019	Dec 2019
Board Total	99	98	98	98	99	99	98	98	97	99	99	98

Cleaning Compliance (%)

	Jan 2019	Feb 2019	Mar 2019	Apr 2019	May 2019	Jun 2019	Jul 2019	Aug 2019	Sep 2019	Oct 2019	Nov 2019	Dec 2019
Board Total	95.6	94.7	93.6	94.9	95.2	95.1	95.3	94.6	93.8	94.4	94.9	94.6

Estates Monitoring Compliance (%)

	Jan 2019	Feb 2019	Mar 2019	Apr 2019	May 2019	Jun 2019	Jul 2019	Aug 2019	Sep 2019	Oct 2019	Nov 2019	Dec 2019
Board Total	96.6	95.4	95.2	96.5	96.6	96.9	96.9	94.2	93.9	94.4	94.3	94.6

VALE OF LEVEN HOSPITAL

REPORT CARD

***Staphylococcus aureus* bacteraemia monthly case numbers**

	Jan 2019	Feb 2019	Mar 2019	Apr 2019	May 2019	Jun 2019	Jul 2019	Aug 2019	Sep 2019	Oct 2019	Nov 2019	Dec 2019
Healthcare Associated	1	-	-	-	-	3	4	1	1	-	-	-
Community Associated	-	-	-	1	-	-	-	-	-	-	1	-
Total	**1**	**0**	**0**	**1**	**0**	**3**	**4**	**1**	**1**	**0**	**1**	**0**

***Clostridioides difficile* infection monthly case numbers**

	Jan 2019	Feb 2019	Mar 2019	Apr 2019	May 2019	Jun 2019	Jul 2019	Aug 2019	Sep 2019	Oct 2019	Nov 2019	Dec 2019
Healthcare Associated	-	-	-	-	-	-	-	-	1	-	-	-
Community Associated	-	-	-	-	-	-	1	-	-	-	-	-
Total	**0**	**0**	**0**	**0**	**0**	**0**	**1**	**0**	**1**	**0**	**0**	**0**

Hand Hygiene Monitoring Compliance (%)

	Jan 2019	Feb 2019	Mar 2019	Apr 2019	May 2019	Jun 2019	Jul 2019	Aug 2019	Sep 2019	Oct 2019	Nov 2019	Dec 2019
Board Total	99	98	100	99	100	99	99	98	98	98	97	98

Cleaning Compliance (%)

	Jan 2019	Feb 2019	Mar 2019	Apr 2019	May 2019	Jun 2019	Jul 2019	Aug 2019	Sep 2019	Oct 2019	Nov 2019	Dec 2019
Board Total	97.6	97.9	97.3	97.2	97.2	97.5	97.4	97.4	97.5	97.8	97.6	97.5

Estates Monitoring Compliance (%)

	Jan 2019	Feb 2019	Mar 2019	Apr 2019	May 2019	Jun 2019	Jul 2019	Aug 2019	Sep 2019	Oct 2019	Nov 2019	Dec 2019
Board Total	99.6	99.3	98.5	98.7	99.1	99.3	99.2	99.1	98.6	99.0	97.4	97.7

GARTNAVEL GENERAL HOSPITAL

REPORT CARD
Figures combined for Gartnavel General Hospital, Beatson WoSCC and NHS Centre for Integrative Care.

***Staphylococcus aureus* bacteraemia monthly case numbers**

	Jan 2019	Feb 2019	Mar 2019	Apr 2019	May 2019	Jun 2019	Jul 2019	Aug 2019	Sep 2019	Oct 2019	Nov 2019	Dec 2019
Healthcare Associated	1	1	2	1	2	2	1	2	3	-	1	-
Community Associated	-	-	-	-	-	-	-	1	-	-	-	-
Total	**1**	**1**	**2**	**1**	**2**	**2**	**1**	**3**	**3**	**0**	**1**	**0**

***Clostridioides difficile* infection monthly case numbers**

	Jan 2019	Feb 2019	Mar 2019	Apr 2019	May 2019	Jun 2019	Jul 2019	Aug 2019	Sep 2019	Oct 2019	Nov 2019	Dec 2019
Healthcare Associated	1	1	-	-	1	1	1	-	1	5	1	3
Community Associated	1	-	1	-	-	-	-	-	-	-	-	-
Total	**2**	**1**	**1**	**0**	**1**	**1**	**1**	**0**	**1**	**5**	**1**	**3**

Hand Hygiene Monitoring Compliance (%)

	Jan 2019	Feb 2019	Mar 2019	Apr 2019	May 2019	Jun 2019	Jul 2019	Aug 2019	Sep 2019	Oct 2019	Nov 2019	Dec 2019
Board Total	96	97	95	99	97	97	96	98	98	97	96	98

Cleaning Compliance (%)

	Jan 2019	Feb 2019	Mar 2019	Apr 2019	May 2019	Jun 2019	Jul 2019	Aug 2019	Sep 2019	Oct 2019	Nov 2019	Dec 2019
Board Total	96.1	96.1	96.7	96.1	95.4	95.6	95.4	95.6	95.9	95.8	95.9	96.1

Estates Monitoring Compliance (%)

	Jan 2019	Feb 2019	Mar 2019	Apr 2019	May 2019	Jun 2019	Jul 2019	Aug 2019	Sep 2019	Oct 2019	Nov 2019	Dec 2019
Board Total	99.5	99.1	99.1	99.0	98.6	98.5	98.5	98.4	98.8	99.1	98.5	99.5

QUEEN ELIZABETH UNIVERSITY HOSPITAL

REPORT CARD

Staphylococcus aureus bacteraemia monthly case numbers

	Jan 2019	Feb 2019	Mar 2019	Apr 2019	May 2019	Jun 2019	Jul 2019	Aug 2019	Sep 2019	Oct 2019	Nov 2019	Dec 2019
Healthcare Associated	13	8	10	5	10	6	17	10	6	8	10	6
Community Associated	1	5	4	3	1	1	2	2	1	1	2	4
Total	**14**	**13**	**14**	**8**	**11**	**7**	**19**	**12**	**7**	**9**	**12**	**10**

Clostridioides difficile infection monthly case numbers

	Jan 2019	Feb 2019	Mar 2019	Apr 2019	May 2019	Jun 2019	Jul 2019	Aug 2019	Sep 2019	Oct 2019	Nov 2019	Dec 2019
Healthcare Associated	4	4	7	8	11	7	6	8	6	9	7	5
Community Associated	2	-	1	3	-	-	4	3	4	2	2	-
Total	**6**	**4**	**8**	**11**	**11**	**7**	**10**	**11**	**10**	**11**	**9**	**5**

Hand Hygiene Monitoring Compliance (%)

	Jan 2019	Feb 2019	Mar 2019	Apr 2019	May 2019	Jun 2019	Jul 2019	Aug 2019	Sep 2019	Oct 2019	Nov 2019	Dec 2019
Board Total	96	96	96	97	96	96	96	96	96	97	94	97

Cleaning Compliance (%) QEUH only

	Jan 2019	Feb 2019	Mar 2019	Apr 2019	May 2019	Jun 2019	Jul 2019	Aug 2019	Sep 2019	Oct 2019	Nov 2019	Dec 2019
Board Total	94.3	93.1	93.7	92.9	93.2	93.2	93.2	93.5	94.4	94.3	94.1	94.1

Cleaning Compliance (%) Langlands building only

	Jan 2019	Feb 2019	Mar 2019	Apr 2019	May 2019	Jun 2019	Jul 2019	Aug 2019	Sep 2019	Oct 2019	Nov 2019	Dec 2019
Board Total	88.7	88.7	N/A	N/A	85.5	90.7	93.1	77.7	81.6	100	91.4	91.3

Scores not available for March & April 2019

Following further NHS GGC scrutiny, the external service provider responsible for Domestic Services within Langlands Building is taking remedial action to ensure that the appropriate level of service improvement is taken to achieve satisfactory standards of cleanliness which fully complies with the quality framework set out within the NHS Scotland National Cleaning Services Specification. NHSGGC have instigated contractual remediation action on the contractor and SPV.

Estates Monitoring Compliance (%)

	Jan 2019	Feb 2019	Mar 2019	Apr 2019	May 2019	Jun 2019	Jul 2019	Aug 2019	Sep 2019	Oct 2019	Nov 2019	Dec 2019
Board Total	99.3	97.7	97.9	93.8	94.8	96.3	96.2	96.1	98.1	98.0	96.7	94.9

ROYAL HOSPITAL FOR CHILDREN

REPORT CARD

***Staphylococcus aureus* bacteraemia monthly case numbers**

	Jan 2019	Feb 2019	Mar 2019	Apr 2019	May 2019	Jun 2019	Jul 2019	Aug 2019	Sep 2019	Oct 2019	Nov 2019	Dec 2019
Healthcare Associated	-	2	2	6	-	1	4	1	1	0	2	2
Community Associated	1	2	-	-	1	1	1	-	1	1	3	-
Total	**1**	**4**	**2**	**6**	**1**	**2**	**5**	**1**	**2**	**1**	**5**	**2**

***Clostridioides difficile* infection monthly case numbers (in ages 15 & over only)**

	Jan 2019	Feb 2019	Mar 2019	Apr 2019	May 2019	Jun 2019	Jul 2019	Aug 2019	Sep 2019	Oct 2019	Nov 2019	Dec 2019
Healthcare Associated	-	-	-	-	-	-	-	-	-	-	-	-
Community Associated	-	-	-	-	-	-	-	-	-	-	-	-
Total	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**

1

Hand Hygiene Monitoring Compliance (%)

	Jan 2019	Feb 2019	Mar 2019	Apr 2019	May 2019	Jun 2019	Jul 2019	Aug 2019	Sep 2019	Oct 2019	Nov 2019	Dec 2019
Board Total	96	95	98	98	96	97	98	98	97	97	97	99

Cleaning Compliance (%)

	Jan 2019	Feb 2019	Mar 2019	Apr 2019	May 2019	Jun 2019	Jul 2019	Aug 2019	Sep 2019	Oct 2019	Nov 2019	Dec 2019
Board Total	94.5	94.1	93.7	95.2	93.8	94.5	94.2	93.8	94.6	94.5	94.4	94.2

Estates Monitoring Compliance (%)

	Jan 2019	Feb 2019	Mar 2019	Apr 2019	May 2019	Jun 2019	Jul 2019	Aug 2019	Sep 2019	Oct 2019	Nov 2019	Dec 2019
Board Total	97.8	97.3	98.5	95.1	94.4	95.2	94.6	95.4	94.7	96.2	95.6	96.7

NHS GREATER GLASGOW & CLYDE

NON-ACUTE HOSPITALS REPORT CARD

The hospitals covered in this report card include:

- Lightburn Hospital
- Dykebar Hospital
- Gartnavel Royal Hospital
- Leverndale Hospital
- MacKinnon House
- Mearnskirk House (Closed 03 March 2019)
- New Victoria Hospital
- Orchard View (Inverclyde Royal Hospital campus)
- Stobhill Hospital

***Staphylococcus aureus* bacteraemia monthly case numbers**

	Jan 2019	Feb 2019	Mar 2019	Apr 2019	May 2019	Jun 2019	Jul 2019	Aug 2019	Sep 2019	Oct 2019	Nov 2019	Dec 2019
Healthcare Associated	-	1	1	3	1	1	-	-	1	-	2	-
Community Associated	-	-	-	-	-	-	-	-	-	-	-	-
Total	**0**	**1**	**1**	**3**	**1**	**1**	**0**	**0**	**1**	**0**	**0**	**0**

***Clostridioides difficile* infection monthly case numbers**

	Jan 2019	Feb 2019	Mar 2019	Apr 2019	May 2019	Jun 2019	Jul 2019	Aug 2019	Sep 2019	Oct 2019	Nov 2019	Dec 2019
Healthcare Associated	-	1	-	-	-	-	-	-	1	-	1	1
Community Associated	-	-	-	-	-	-	-	-	-	-	-	-
Total	**0**	**1**	**0**	**0**	**0**	**0**	**0**	**0**	**1**	**0**	**1**	**1**

NHS GREATER GLASGOW & CLYDE

Non hospital locations (GP practices, care homes & hospices) report card
***Clostridioides difficile* infection monthly case numbers**

	Jan 2019	Feb 2019	Mar 2019	Apr 2019	May 2019	Jun 2019	Jul 2019	Aug 2019	Sep 2019	Oct 2019	Nov 2019	Dec 2019
Healthcare Associated	2	-	1	1	1	4	3	1	1	5	3	2
Community Associated	6	2	4	1	2	4	4	5	1	-	1	-
Total	**8**	**2**	**5**	**2**	**3**	**8**	**7**	**6**	**2**	**5**	**4**	**2**

GLOSSARY (updated August 2019)

Alert organism alert condition	Any of a number of organisms or infections that could indicate, or cause, outbreaks of infection in the hospital or community.
Bacteraemia	Infection in the blood. Also known as Blood Stream Infection (BSI).
CDI	***Clostridioides difficile*** Infection. Also referred to as ***C. diff*** is a Gram-positive spore-forming anaerobic bacterium. *C.difficile* is the most common cause of gastro-intestinal infection in hospitals. It causes two conditions; antibiotic associated diarrhoea and the more severe and occasionally life-threatening pseudomembranous colitis. Control of the organism can be problematic due to the formation of spores and difficulty in removing them. Patients who have had antibiotics within the last eight weeks are most at risk of acquisition of the organism.
CNO	**Chief Nursing Officer**
CPE	**Carbapenemase-producing *Enterobacteriaceae***. A type of Gram-negative bacteria that are extremely resistant to antibiotics.
CRA	**Clinical Risk Assessment**
CVC	**Central Venous Catheter.** This also includes those that are peripherally inserted i.e. PICC
Code of Practice	**Code of Practice -** The NHS Scotland Code of Practice for the Local Management of Hygiene and Healthcare Associated Infection issued 2004 contains the components that must be complied with by all NHS HCWs in Scotland. http://www.scotland.gov.uk/Publications/2004/05/19315/36624
HAI	Originally used to mean hospital acquired infection, the official 'Scottish Government' term is now **Healthcare Associated Infection**. These are considered to be infections that were not incubating prior to contact with a healthcare facility or undergoing a healthcare intervention. It must be noted that HAI infection is not always an avoidable infection. **Please note** that for *S.aureus* Bacteraemia surveillance – HAI refers to 'hospital acquired cases as per HPS National reporting requirements. See https://hpspubsrepo.blob.core.windows.net/hps-website/nss/1964/documents/1_esab-protocol-2016-04-v1.0.pdf
HCAI	**Healthcare Associated Infection (for CDI and SAB classification)**
HCW	**Healthcare Worker**
HDL	**Health Department Letter**
HEAT Target	**Health Efficiency and Access to Treatment**. Targets set by the Scottish Government.
HEPA	**High-Efficiency Particulate Air**. An efficiency standard of air filter. Filters meeting the HEPA standard must satisfy certain levels of efficiency.
HFS	**Health Facilities Scotland**
HH	**Hand Hygiene**
HIIAT	**Hospital Infection Incident Assessment Tool**
HIIORT	**Healthcare Infection Incident and Outbreak Reporting Template**
HPS	**Health Protection Scotland**
HSCP	**Health & Social Care Partnerships**
IPCN /T/D/M	**Infection Prevention & Control Nurse / Team / Doctor / Manager**
IVAD	**Intravenous Access Device.** An invasive device placed into a vein which is used to administer intravenous fluids or medication. **Examples are PVC or CVC**
KPI	**Key Performance Indicator**
MAR	**My Admission Record** is the acute inpatient nursing admission document
MDRO	**Multi Drug Resistant Organism**
MRSA	**Meticillin resistant *Staphylococcus aureus*.** A *Staphylococcus aureus* resistant to first line antibiotics; most commonly known as a hospital acquired organism.
MSSA	**Meticillin Sensitive *Staphylococcus aureus***
NHSN	**National Healthcare Safety Network** – risk factor score for determining risk of SSI after surgery.
OBD	**Occupied Bed Days**
OPAT	**Outpatient Parenteral Antibiotic Therapy**
PDS	**Post Discharge Surveillance (Caesarean Section procedures only)**
PHPU	**Public Health Protection Unit**
PICC	**See CVC**
PPI	**Proton Pump Inhibitors.** A group of medications used to decrease gastric acid production.
PVC	**Peripheral Venous Catheter**
RSV	**Respiratory Syncytial Virus.** A contagious respiratory infection.
SAB	***Staphylococcus aureus* Bacteraemia**
SBAR	**Situation, Background, Assessment, Recommendation**. A standardised template used facilitate prompt and appropriate communication
SCN / M	**Senior Charge Nurse / Midwife**
SICP	**Standard Infection Control Precautions**
SGHD	**Scottish Government Health Directorate**
SOP	**Standard Operating Procedure**
SPC	**Statistical Process Control *(Charts)***
SSI	**Surgical Site Infection**
VRE	**Vancomycin resistant enterococcus** - an alert organism. A common organism that can be inherently resistant to Vancomycin but can also acquire (and transfer resistance) to other organisms. Has caused outbreaks reported in the literature in a variety of high-risk settings, e.g. renal or bone marrow transplant units.

NHS Greater Glasgow & Clyde	**Paper No. 20/09**
Meeting:	**Board Meeting**
Date of Meeting:	**25th February 2020**
Purpose of Paper:	**For Noting**
Classification:	**Board Official**
Name of Reporting Committee	**Clinical and Care Governance Committee**
Date of Reporting Committee	**10th December 2019**
Committee Chairperson:	**Ms Susan Brimelow, OBE**

Paper Title: **Update on Key Items of Discussion at Governance Committee**

Recommendation:

That the Board note the key items of discussion at the recent meeting of the Clinical and Care Governance Committee on 10th December 2019, as set out below.

Key Items of Discussion:

1. **Internal Review of Queen Elizabeth University Hospital (QEUH) and Royal Hospital for Children (RHC): Review of Clinical Outcomes**

   Members received reports on the Clinical Outcomes work stream of the Internal Review of QEUH and RHC which was commissioned by the Board, and part of the ongoing assessment of the overall situation at the Queen Elizabeth University Hospital and the Royal Hospital for Children. The report was reviewed by the Board Clinical Governance Forum who were satisfied that there were no areas or issues of serious concern evident in the review, and that the prevailing clinical governance arrangements were appropriate in ensuring issues were recognised and resolved.

   Members were content to approve the report for submission as part of the overall Internal Review which would be presented to the Board meeting on the 17th December, subject to refinement of the reports contained within the paper.

2. Paediatric Haematology/Oncology

Members received a presentation from Dr Scott Davidson, Deputy Medical Director for Acute Services and Dr Iain Kennedy, Consultant in Public Health Medicine. Mr Kevin Hill, Director for Women & Children's Directorate and Ms Jen Rodgers, Chief Nurse, Women & Children's Directorate, were also in attendance to comment and answer any questions from members. The presentation covered Infection Prevention and Control, clinical governance and accountability framework within GG&C, Incident Management Teams, definition of outbreak, 2018/2019 incident and actions undertaken, Water Quality and Control and Patient Engagement, Communication and Whistleblowing.

Members found the presentation useful and were reassured that due diligence had been carried out.

3. Extract from the Clinical Risk Register

Members considered the extract from the Corporate Risk Register that relates to risks that come under the remit of the Clinical and Care Governance Committee. Members reviewed these and requested that the risk below was remitted back to the Audit & Risk Committee.

- Failure to Comply with recognised policies and procedures in relation to infection control.

4. Patient Experience Report

Dr McGuire, Nurse Director presented the quarterly Patient Experience Report to the Committee.

Members acknowledged the positive report and noted the performance and methods used to identify opportunities to bring about service improvements.

5. Board Clinical Governance Forum – Minutes of meetings held on 19th August 2019 and 28th October 2019

Members considered and noted the minutes of the Board Clinical Governance Forum meetings on 19th August and 28th October 2019.

NHS Greater Glasgow & Clyde	**Paper No. 20/12**
Meeting:	**Board Meeting**
Date of Meeting:	**25th February 2020**
Purpose of Paper:	**For Noting**
Classification:	**Board Official**
Name of Reporting Committee	**Finance, Planning and Performance Committee**
Date of Reporting Committee	**11th February 2020**
Committee Chairperson	**Prof John Brown CBE**

Paper Title: Update on Key Items of Discussion at Governance Committee

Recommendation:

That the Board note the key items of discussion at the recent meeting of the Finance, Planning and Performance Committee on Tuesday 11th February 2020 as set out below.

It was noted that, due to time constraints, the following items were deferred:-

Item 14 – Paper 20/08 – Integration Schemes
Item 15 – Paper 20/09 – Health and Social Care Integration Statutory Guidance – Directions from Integration Authorities to Health Boards and Local Authorities

Key Items of Discussion:

1. **Coronavirus Update**

Prof Linda de Caestecker, Director of Public Health, provided the Committee with an update in respect of Coronavirus. The case definition had recently been amended and included suspected cases displaying signs of infection including respiratory symptoms, fever, cough, shortness of breath, and breathing difficulties. A dedicated testing centre had been established within the Brownlee Centre and Prof de Caestecker noted that there had been an increase in the number of inquiries received in respect of suspected cases. Collaborative work with a number of

organisations including Health Protection Scotland, the Chief Medical Officer of Scotland, and the Chief Medical Officer of England, continued and regular teleconferencing calls were taking place. A local Incident Management Team (IMT) had been established and were in the process of considering options for testing models. Ms Bustillo confirmed that public communications were being arranged on a national basis and led by the Scottish Government.

Prof de Caestecker assured members that work continued to review Business Continuity Plans on a regular basis and as such, robust plans were in place to manage the situation as this developed. She confirmed that the situation was being approached in the same way as management of pandemic influenza.

The Committee were assured by the information provided by Prof de Caestecker and directed the Audit and Risk Committee to undertake a review of Business Continuity Plans at the next meeting on 17th March 2020.

2. Escalation Update

The Committee received an update from Mrs Jane Grant, Chief Executive, on the position in relation to the escalation of NHSGGC to Level 4 of the NHS Boards Performance Framework. An additional Oversight Board had been established in respect of performance and terms of reference for the group had been devised. The Oversight Board considering infection prevention and control; and communications and engagement, was progressing and the sub groups associated with this Oversight Board were in the process of developing work plans.

The Committee requested that the Terms of Reference for the two Oversight Boards and the four associated sub groups, along with the work plans being developed, were made available to Board members at the next Board Meeting on 25th February 2020.

3. Adult and Older People Mental Health and Learning Disability Delayed Discharge

The Committee considered a report presented by Ms Jackie Kerr, Assistant Chief Officer Adult Services, and Mr Stephen Fitzpatrick, Head of Older People Services, Glasgow City HSCP. The report provided an update on the current position in respect of adult and older people mental health and learning disability delayed discharges and the actions being taken to improve performance and outcomes for patients.

The Committee were content to note the report and felt that it provided a clear description of the positive areas of work being taken forward. Further assurance was requested in respect of the management of the risks associated with the current bed capacity management practice and Ms Kerr agreed to discuss this further with Mrs Grant to provide additional assurance of the mitigation of associated risks. Ms Kerr also agreed to confirm the dates of roll out associated with the implementation of programmes detailed within the report.

4. Revenue and Capital Report

Mr Mark White, Director of Finance, presented the Month 9 financial position. He highlighted that, as at 31st December 2019, the organisation reported expenditure levels [redacted] over budget, which represented an increase on the Month 8 position of [redacted] over spend. The Financial Improvement Programme (FIP) Tracker recorded projects totalling circa [redacted] on a FYE and [redacted] on a CYE. The overall projected deficit at 31st March 2020, was [redacted].

The Committee noted the financial position and a range of actions underway to minimise the impact of significant, unforeseen, cost pressures which had emerged in-year.

5. Radionuclide Dispensary (RND)

The Committee considered a paper presented by Mr Arwel Williams, Director of Diagnostics and Imaging, which asked the Committee to approve the proposal, endorsed by the Capital Planning Group and the Corporate Management Team, to present the Initial Agreement to the Scottish Government Capital Investment Group for capital funding support, to relocate the Radionuclide Dispensary, currently situated on the grounds of the former Western Infirmary site.

The Committee were content to approve the recommendation that the Initial Agreement be presented to the Scottish Government Capital Investment Group for consideration. Given the current location, the Committee instructed Mr Williams to carry out a review of Business Continuity Plans to ensure continuity of service in the event of an adverse incident.

6. Review of Alcohol Brief Intervention (ABI) Delivery within NHSGGC 2019/20

The Committee considered a report presented by Prof Linda de Caestecker, Director of Public Health, which provided the Committee with a review of delivery of Alcohol Brief Interventions (ABIs) within NHSGGC, and detailed a range of actions being taken to improve performance.

The Committee were content to note the actions being taken to improve performance in the areas described, and following discussion, the Committee requested that Prof de Caestecker circulate information to members via email, which detailed the performance shortfall figures. In addition, the Committee recommended that Integration Joint Boards routinely review their respective performance in this key area and identify ways to improve this.

7. Moving Forward Together Update

The Committee received a report presented by Ms Fiona MacKay, Associate Director of Planning, which provided an overview of progress in respect of the Moving Forward Together (MFT) Programme.

Following discussion, the Committee recommended that a greater focus on increasing the pace of the MFT Programme was required. In addition, the Committee recommended a review of all of the areas of work contained within the MFT Programme, to identify continuous service improvement areas, which could be addressed by operational management, to allow increased emphasis on progressing the larger transformation elements of the Programme. The Committee also recommended a review of the capacity of the MFT Programme support team and considered that additional skills may be required in order to progress the Programme from the current design phase to the implementation phase.

8. Annual Operational Plan 2020/21

The Committee considered the Draft Annual Operational Plan 2020/21, presented by Mr Mark White, Director of Finance. The Plan outlined how NHSGGC would deliver expected levels of operational performance to provide the foundations for delivering the Cabinet Secretary's priorities on waiting times improvement, investment in mental health, and greater progress and pace of integration of Health and Social Care. Mr White provided an overview of the key areas contained within the Plan including Elective Waiting Times; Cancer Waiting Times; Unscheduled Care; Mental Health; Integration of Primary Care; Healthcare Associated Infection; Population Health; Finance; Workforce; Digital Health; and Operational Delivery.

The Committee acknowledged that consideration of the governance process for approval of the Plan was required, once further details of the Level 4 escalation Recovery Plan, were available. It was expected that the Recovery Plan would be available by March 2020, therefore a further iteration of the Annual Operational Plan would be considered by the Committee at the next meeting on 14th April 2020, for onward presentation to the Board on 28th April 2020. As in previous years, the Plan would be submitted to the Scottish Government by the specified deadlines, subject to Board approval. Mr White agreed to provide a brief verbal overview of the Annual Operational Plan and progress of submission of the drafts to the Scottish Government, alongside the Revenue and Capital Report to the Board Meeting on 25th February 2020.

9. Extract from the Corporate Risk Register

The Committee considered the Extract from the Corporate Risk Register, which provided members with an overview of the risks that come under the remit of the Finance, Planning and Performance Committee. Prof Brown highlighted to members that further review of the risks would be required following the Board members session on 12th February 2020, where consideration would be given to a number of recommendations to improve governance, which may have an impact on the Finance, Planning and Performance Committee and the risks which fall under the remit of the Committee. Following discussion about the risk associated with the Equality of Human Rights Commission (EHRC) legal challenge, Mrs Grant provided an overview of the current position. She noted that admissions to the Darnley and Quayside facilities had temporarily ceased and interim guardianship was being sought for two patients. The organisation continued to work in partnership with

colleagues, the Central Legal Office and Legal Counsel, and with colleagues from EHRC, to resolve the matter and ensure that patients continued to receive the best possible care in the most appropriate setting.

The Committee were content to note the risks, were satisfied that the risks and controls were captured appropriately, and that management were taking the appropriate action to mitigate the risks described.

NHS Greater Glasgow & Clyde	**Paper No. 20/13**
Meeting:	**Board Meeting**
Date of Meeting:	**25th February 2020**
Purpose of Paper:	**For Noting**
Classification:	**Board Official**
Name of Reporting Committee	**Audit and Risk Committee**
Date of Reporting Committee	**10 December 2019**
Committee Chairperson	**Mr Allan MacLeod**

Paper Title: Update on Key Items of Discussion at Governance Committee

Recommendation:

That the Board note the key items of discussion at the recent meeting of the Audit and Risk Committee as set out below.

Key Items of Discussion:

1. The Audit and Risk Committee were presented with an Internal Audit Follow-Up Report from the Board's Internal Auditors, Scott-Moncrieff. The committee noted an increase in actions past their original due date. The committee felt that effort must be made to deal with any outstanding actions recognising priority matters. The Chief Executive agreed to raise the committee's concerns regarding timeous follow up at the Informal Directors Group meeting.

2. The Audit and Risk Committee reviewed a report on hospital delayed discharge processes provided by the Boards Internal Auditors, Scott-Moncrieff. Discussion highlighted the importance in promoting cross system working between the Board and its partnerships. The committee felt that joint effort would usefully be made in auditing these processes, and others, on a whole-system basis. The Chief Executive agreed to discuss the committee's view with HSCP Chief Officers.

3. The Audit and Risk Committee undertook half yearly review of the Corporate Risk Register, which has been the subject of a detailed review by the Risk Management Steering Group. The committee noted amendments to a number of strategic risks reflecting the increased focused around infection control and financial performance. Following established practice, the amended corporate risk register would be distributed to standing committees as appropriate for effective management.

4. The Audit and Risk Committee were presented with the draft Annual Audit Plan from Audit Scotland, noting no significant changes in comparison to the previous year's approach. The committee noted a reduced materiality value, and asked the Chief Executive and Director of Finance to consider any required changes to the performance report and governance statement for 2019-20 to reflect the role of the appointed Oversight Board.

NHS Greater Glasgow & Clyde	**Paper No. 20/16**
Meeting:	**Board Meeting**
Date of Meeting:	**25 February 2020**
Purpose of Paper:	**For Noting**
Classification:	**Board Official**
Name of Reporting Committee:	**Staff Governance Committee**
Date of Reporting Committee:	**4 February 2020**
Committee Chairperson:	**Mr A Cowan, Co-Chair (Chaired)** **Mrs D McErlean, Co-Chair**

Update on Key Items of Discussion at Staff Governance Committee

1. Recommendation:

1.1 That the Board note the key items of discussion at the recent meeting of the Staff Governance Committee as set out below.

2. Key Items of Discussion:

2.1 Providing assurance to the Board that it is meeting its obligations in relation to Staff Governance under the NHS Reform (Scotland) Act 2004 and the Staff Governance Standard.

2.2 The Committee received presentations and had the opportunity to scrutinise the following areas:

- West Dunbartonshire Health and Social Care Partnership
- Human Resources and Organisational Development Directorate

Key Message:
The Staff Governance Committee had the opportunity to scrutinise these areas and received sufficient evidence to be assured that a culture of engagement with staff exists and that broad compliance was being achieved, equally and that areas that required improvement were well understood and that plans existed to progress this. Notably, the Committee welcomed the fact that West Dunbartonshire HSCP had a priority focus on Attendance Management, an area of challenge within the Board and was working to improve its performance on TURAS. The Committee welcomed the

particularly strong performance related to Statutory and Mandatory training, an iMatter achievement of 62% (sufficient to yield a full report), noting the successful pilot using text technology yielded an 80% response (albeit from a small cohort) and 90% staff uptake of the seasonal flu vaccination. The Committee further noted that the Human Resources and Organisational Development Department had achieved 92% on iMatter action planning, a sickness level of 3.03%, Statutory and Mandatory Training compliance of 97.7%, and KSF compliance of over 70% and noted their plans to improve in outstanding priority areas.

3. Other Matters Reviewed by the Committee:

3.1 The Committee noted the development of the Board's first Workforce Strategy, co-produced with staff, and discussed the need to demonstrate linkages with the Board's Culture Framework. A summary is provided at Appendix 1. The Committee sought a further update in mid 2020.

3.2. Medical Education: The Committee were encouraged to hear of the positive progress in areas currently under 'Enhanced Monitoring' (EM), specifically noting improvements in Queen Elizabeth University Hospital (Medicine) and the Princess Royal Maternity Unit (Obstetrics and Gynaecology) but noted the continuing concerns around the Immediate Assessment Unit which has been the subject of a revisit on 4 February 2020. The Committee were pleased to note the de-escalation of the Vale of Leven Hospital and noted that Inverclyde Royal Hospital (Medicine) is now in 'EM' where concerns related to consultant supervision and patient safety were highlighted. Dr Donaldson provided assurance to the Committee that actions to address these concerns are in place or have been completed. The Committee also noted the positive progression of work through Civility Saves Lives and Doctors in Training Health and Wellbeing.

3.3. Staff Flu Vaccination: While the Committee noted that the Board wide position has improved on 2018/19 (currently 47% vs 43.6% last year), it remained concerned that Nursing, the largest job family (6409 WTE) remained a low uptake at 38%. The Committee noted that a survey of nurses was proposed to better understand how to improve uptake and has asked to see the output of this work.

3.4. A wide range of routine update reports were received, including:

3.4.1 Workforce Statistics Report: among which the Committee noted that 85% of Attendance Management cases eventually return to work, further reinforcing the importance of supportive person centred management actions to promote early return and reduce impact and cost. Significant improvement in Statutory and Mandatory Training achievement across the Board is noted (borne of an increased use of targeted, personalised emails); this should be welcomed by the Board. The Committee supports any initiative that promotes a culture

among managers and staff that places the same importance on Statutory and Mandatory Training as it does on Continuing Professional Development and Continuing Medical Education.

3.4.2 Attendance Management: The Committee noted the range of initiatives and activity designed to support improved attendance. Nevertheless, the current rate of absence is above the national target and despite a range of activities has not improved overall in the reporting period. The Committee noted the number of absences related to stress, anxiety, depression, and whilst acknowledging all the interventions, will be seeking further assurance on the reasons for absence and emerging trends. The Committee recognised that this is a complex area, stubborn to improvement, and have sought to remain engaged with a further detailed update in August 2020.

3.4.3 Health and Safety: Matters related to mandatory training compliance with sharps, manual handling and falls continue to challenge the Board and slow progress towards full compliance has been evident. Senior managers remain engaged. Phase 1 was completed in line with the deadline and target set, and our current performance reported to the Health and Safety Executive (HSE) reflects about 70% achievement in phase 2 and a range between 50-70% in phase 3 (December 2019). Guidance has been issued with a clear deadline for all outstanding areas to achieve by 29 February 2020. A response from the HSE is awaited.

3.4.4 Staff Governance Standard Framework - Response to Government: Our annual input to the Scottish Government was submitted on 31 May 2019. In their feedback response, they noted that:

NHSGGC evidence provided, highlights a number of actions that the Board has taken to inform continuous improvement across all 5 strands of the Standard. Particular areas of note are:

- The Board's continued momentum in relation to the strategy for change and transformation - 'Moving Forward Together' with over 20 staff engagement sessions taking place which provided staff with an overview of the MFT vision and the principles underpinning the proposals for change, taking into account the Health and Social Care Delivery Plan. All staff who attended welcomed the opportunity to be involved in the programme and to share their views and opinions on MFT.

- Working with services who have transformed care to understand the workforce issues which help drive transformation and highlight real examples where transformative practice is happening and use these as examples of change in practice to stimulate thinking and creativity. In view of the scale of reaching out to a broad range of Health and Social Care staff employed across 6 Integrated Joint Boards.

- Continuing to promote and embed partnership working through meeting structure and Staff Governance approach which includes the work of the

Area Partnership Forum, the Acute Services Partnership Forum and local partnership fora in all NHSGGC services, including HSCPs.

- Developing an NHSGGC Culture Framework, with the particular aims of improving staff engagement and involving our workforce in delivering 'better health, better care, better value and a better workplace'.

The Government also credited achieving a critical mass of staff input for iMatter in all 6 HSCPs (which will yield individual reports) and noted that we 'showed good progress towards implementing iMatter.' They also offered advice and feedback in discrete areas.

3.5. The Committee also reviewed their Terms of Reference, the 'Involved in Decisions' element of the Staff Governance Workplan 2019/20, and activity and minutes of the Area Partnership Forum.

The Committee supported the update on the Culture Framework implementation and the clarity around activity to support Employee Engagement/Experience and the development of our leaders. This included the Board's 3 priorities (strengthening Employee Voice, greater visibility of leaders, and celebrating success) in responding to the Sturrock Report. The Committee sought to remain engaged and welcomed the opportunity to receive and scrutinise further updates as this work progresses.

NHS Greater Glasgow & Clyde	**Paper No. 20/17**
Meeting:	**NHS Greater Glasgow and Clyde Board**
Date of Meeting:	**25th February 2020**
Purpose of Paper:	**For Noting**
Classification:	**Official Sensitive**
Sponsoring Director:	**Jane Grant, Chief Executive**

Paper Title – Strengthening the senior management team within NHS Greater Glasgow and Clyde

Recommendation:

Board members are asked to:

- Note the proposal in relation to strengthening the senior management team
- Note that appropriate approvals and updates will be taken to the Remuneration Committee and Finance, Planning and Performance Committee

Purpose of Paper: To update the NHS Board on progress towards strengthening the senior management team to address the current challenges.

Key Issues to be considered:

There is a need to strengthen the senior management team at this time due to the multiple demands on the team, in order to ensure there is the ability to address the current challenges in a robust and constructive manner.

Any Patient Safety /Patient Experience Issues

None identified at this time.

Any Financial Implications from this Paper:

An assessment of the overall financial implications will be made once the final configuration/ grade of the posts is confirmed and the non-recurring costs are fully defined.

As stated in the paper, the majority of the changes can be accommodated by a redesign / realignment of existing budgets.

Any Staffing Implications from this Paper:

As noted above, the final staffing implications will be reported to the Remuneration Committee and the Finance, Planning and Performance Committee.

Any Equality Implications from this Paper:

None at this time.

Any Health Inequalities Implications from this Paper:

None at this time.

Has a Risk Assessment been carried out for this issue? If yes, please detail the outcome.

Not at this time.

Author – Jane Grant, Chief Executive
Tel No – [redacted]
Date – 17 February 2020

Strengthening the senior management team within NHS Greater Glasgow and Clyde

1. Introduction

NHS Greater Glasgow and Clyde faces unprecedented challenges in a number of areas and consideration has, therefore, been given to strengthening the senior leadership team to address these challenges in a robust and constructive manner. This paper outlines a number of actions already completed, along with a number of other proposals which are currently being finalised.

There are a significant number of Reviews being undertaken associated with the Queen Elizabeth University Hospital/Royal Hospital for Children (QEUH/RHC) campus and this has stretched the capacity of the senior team. In addition, the recent escalation to level 4 of the performance framework in relation to infection control processes and associated communication/engagement issues, along with the further escalation in relation to performance issues, has also lead to significant demands being placed on the senior team.

In response to these pressures, a number of changes are being proposed, some on a recurring basis and others for a fixed period. A number of changes have already been made, with others underway at present.

2. Service Delivery

2.1 Scheduled Care

One of the key priorities for NHS Greater Glasgow and Clyde relates to elective waiting times. In order to strengthen cross sectoral working and ensure robust capacity planning and monitoring processes are in place, it is proposed to recruit a new Director of Access and an Access Manager to promote Board wide processes and maximise the use of all of the elective capacity. The Director of Access post is currently being advertised and an internal secondment has been put in place during the recruitment period. In the short term, additional capacity is also being provided by an experienced external resource.

2.2 Unscheduled Care

Additional support has been provided by Scottish Government colleagues and, in addition, NHS GGC, in conjunction with the Scottish Government, appointed the North East Commissioning Support Unit (NECS) to undertake a review of unscheduled care at QEUH. This review has now been completed and the NECS team are providing programme management support to ensure a swift implementation of their recommendations.

Further consideration of any recurring resources, will be defined once the Recovery Plan for Unscheduled Care is fully drafted.

2.3 GP Out of Hours

The provision of a sustainable GP OOH service is also a priority area for NHS Greater Glasgow and Clyde. Sir Lewis Ritchie was recently commissioned by the Chief Executive of NHS GGC to review the service and has made a number of urgent recommendations to improve the sustainability of the service. In response, a Chief Officer has been seconded on a full time basis to lead the GP OOH service and she commenced early in January 2020. An experienced Clinical Director has also agreed to provide additional clinical leadership to support the service and she has recently commenced that role. Support is also being provided by Scottish Government colleagues, along with the Director of Primary Care in NHS Lothian.

These additional resources are non-recurring in nature until, again, the Recovery Plan is fully developed, when a full assessment of any additional recurring resource will be defined.

2.4 Integration

Within NHS Greater Glasgow and Clyde, there are six internal Health and Social Care Partnerships (HSCPs) and the Board also works closely with colleagues within eight neighbouring HSCPs. Significant progress has been made in promoting whole system working but there is a considerable workload associated with these arrangements and it is, therefore, important that this area of work is strengthened to co-ordinate and streamline the processes of whole system working. Consideration is also being given to the appointment of a Director of Primary Care, such as that within NHS Lothian. A job description for this post is currently being developed at the present time, which again may require the approval of the Remuneration Committee, depending on its grade. Further discussion will take place with the internal Chief Officers by the end of February to finalise how best to improve the co-ordination across all the HSCPs, taking cognisance of the proposed new role of the Director of Primary Care.

2.5 Acute Division

Within the Acute Division, a new Acute Nurse and Medical Director have been appointed. In light of the very significant challenges within the Acute Division at present, the Acute Medical Director has agreed to reduce his clinical commitments for the next period to ensure enhanced clinical leadership is available.

Additional Business Manager support has also been made available to the Chief Operating Officer.

In addition, the Acute Division Directors have been realigned with a senior Director being seconded into the MFT programme and a number of the remaining Directors being moved to alternative Sectors / Directorates.

Again, the majority of these posts involve the redesign of existing posts, although there will be an additional resource requirement to backfill the post which has been moved to MFT.

3. Delivery of Change

3.1 Communications/Public Engagement

Additional senior communications support has recently been identified to assist the current team. The process to appoint a substantive Communications and Engagement Director has been concluded and it is now the intention to advertise the Deputy Director post during February. The communications team has also been enhanced with support from a neighbouring Board and advice from the Communications lead within the Scottish Government has assisted the Board. A further member of staff has also been recruited and commenced in January 2020. External support has also been provided from the Board's external training provider.

With regard to public engagement, it has now transferred to the new Director of Communications and Engagement who will work with the local team to consider the future arrangements.

It is also the intention to work with the Consultation Institute who will provide external advice in the short term, with a proposal being finalised at present.

3.2 Moving Forward Together Programme

An Associate Head of Planning was appointed in May 2019 to lead this programme, However, due to the management of the change programme and the need for a swifter pace of implementation, it is proposed that additional senior support is made available in this area and a senior Acute Director will commence work on MFT on 2 March 2020 with her substantive post requiring backfill.

3.3 Quality/Person Centred Care

In order to enhance the Board's capacity in this area, it is proposed to appoint a Deputy Director of Nursing who will increase the management capacity in this important area. This post will be funded by redesigning the current roles within the Nursing Directorate.

The Board has also been successful in its bid to the Scottish Government to undertake the Value Management Collaborative, and an appointment has recently been made to the programme lead for this initiative.

4. Support Arrangements

4.1 Finance and Performance

It is proposed to strengthen the finance team by recruiting three Senior Finance Managers to support the finance team. In addition, a Programme Manager for the Financial Improvement Programme is currently being advertised to lead that programme of work. External support is also being provided in a number of key areas. These posts involve a realignment of existing resources to deliver the current key priorities and, therefore, no additional recurring resource will be required.

It is the intention to enhance the performance team by appointing a Director of Performance. A job description is being developed for evaluation at this time which, depending on the grade of the post, may require approval from the Remuneration

Committee. Should this be approved, it will incur additional recurring resource but it is considered important to increase the focus on performance across the whole range of performance indicators that NHSGGC is required to address.

4.2 Estates and Facilities Directorate

Within the last few months, the Director of Estates and Facilities has reviewed the structure within the Directorate and a number of senior Estates posts have been advertised and appointments made to strengthen the operational and governance aspects of this Directorate. An Assistant Director of Estates has also been appointed to enhance senior leadership in this area. All posts have been incorporated into the existing Estates and Facilities resource.

4.3 Support for the Head of Corporate Governance and Administration

As outlined above, there is a very significant workload associated with the ongoing Reviews and the Oversight Board and its sub groups. In order to ensure this work is addressed timeously and in a responsive manner, a PMO has been established under the auspices of the Head of Corporate Governance and Administration. Two staff have been seconded into this office and an additional senior manager has also been seconded to ensure the routine business of the Board is maintained in an effective manner.

These posts mainly involve secondments that have not, at present required backfill, however, this will be reviewed as the work associated with the Public Inquiry increases.

4.4 HR and Organisational Development

There are a number of senior vacancies within the HR and Organisational Development Team at present. It is the intention to enhance the staff engagement processes with a redesigned senior post dedicated to this important area. Approval is also being sought to allow NHSGGC to work towards the achievement of the Investors in People Award to provide external validation for the NHS Board, as outlined elsewhere in the NHS Board papers.

5. Summary

In summary, NHS Greater Glasgow and Clyde is facing a number of very significant challenges and, in order to ensure appropriate senior leadership capacity is available, the above proposals are being implemented at present with a view to ensuring stability and sustainability over the next period.

The majority of the changes will be absorbed by realigning existing budgets. However, recurring additional resource will be required in relation to a number of the senior posts and, once the precise nature of these posts is finalised, full details of the proposed additional requirement for the senior posts will be reported through the Remuneration Committee and Finance, Planning and Performance Committee.

NHS Greater Glasgow & Clyde	**Paper No. 20/18**
Meeting:	**NHSGGC Board Meeting February 2020**
Date of Meeting:	**25th February 2020**
Purpose of Paper:	**For Approval**
Classification:	**Board Official**
Sponsoring Director:	**Director of Human Resources & Organisational Development**

Paper Title:

NHS Greater Glasgow & Clyde (NHSGGC): A Great Place to Work – Our Leadership Approach

1. Recommendation

The Board is asked to:-

- Note this report regarding the development of our leaders to support NHSGGC – A great place to work and, in particular, the future development requirements for leadership capability.

- Approve the Collective Leadership Programme and the proposal to introduce Investors in People.

2. Purpose of Paper

2.1 This paper should be read in conjunction with the paper headed 'A Great Place to Work – Employee Engagement and Experience'. (Paper No. 20/19)

2.2 The purpose of the report is to provide assurance to the Board about the importance, attention and resources that continue to be allocated to developing our leadership capacity and capability. Assurance also that the rationale is recognised that leadership is a direct enabler of NHSGGC being a great place to work, of improving patient care and of the Board's wider performance. The report has been prepared in response to recent challenges found by NHSGGC, including the escalation to Level Four of the NHS Scotland Performance Framework and the publication of the Sturrock Report.

3. Key Issues to be considered

- In Section 1 the factors and reasons why the continuing development of our leadership capacity and capability are outlined. This issue has always been recognised in NHSGGC but more recent challenges have brought the issue into sharper focus.
- Section 2 sets out our current pathway for management and leadership development in NHSGGC and a range of activities that have already been underway, some proven over a number of years, to continually develop our leadership capacity and capability. These include both local and national initiatives.
- Sections 3, 4 and 5 detail plans for additional development provisions that aim to address the questions currently being asked about leadership in NHSGGC, the measures of success and the resources required.

Any Patient Safety /Patient Experience Issues

Effective leadership skills at all levels in NHSGGC and being a great place to work for our staff are key enablers of better patient safety, patient experience and care outcomes.

Any Financial Implications from this Paper
All planned leadership development activity would be contained within current budget arrangements.

Any Staffing Implications from this Paper
Opportunities to identify future leaders.

Any Equality Implications from this Paper
Positive approach to supporting leadership development through our Equality Forums.

Any Health Inequalities Implications from this Paper
Nil

Has a Risk Assessment been carried out for this issue? If yes, please detail the outcome.
The risk of neglecting our leadership and culture development being the root cause of a significant organisational failure in patient care or safety has been identified on the risk register and the activities set out in this report help mitigate future risk.

Highlight the Corporate Plan priorities to which your paper relates
Better Workplace

Authors: Anne MacPherson, Director of Human Resources & Organisational Development, Doug Mann, Head of Organisational Development, Moira MacDonald, Head of Learning & Education.

Tel No: [redacted]

Date: February 2020

1. Introduction and Background

1.1. Since the formation of NHS Greater Glasgow & Clyde (NHSGGC) there has been significant investment in organisational development and the management and leadership skills of managers and clinicians at all levels. This continues to evolve in our Board to ensure that our taught programmes, learning resources and support draw upon and apply the latest thinking to enable our people to lead in an ever-changing health and social care landscape, and to deliver better health, better care and better value for our population. To make this happen we must deliver against our culture framework and be a great place to work for our staff, including our leaders.

1.2. Effectively applying the culture framework that we've developed for NHSGGC to make us a great place to work is therefore completely reliant on us continuing to develop leadership capability at all levels. Managers and Clinical Leads with effective leadership skills ensure that the right **organisational messages** are resonating with all our staff and the **teams they lead will be fully engaged**. These organisational messages are then reflected in what actually happens in reality across our organisation so that **trust and integrity** is developed and maintained. Managers and clinicians with strong leadership skills also ensure that **employee voices** are sought out, valued and used to improve how we do things to **sustain results**.



1.3. Recent challenges including the escalation of the Board to Level 4 of the NHS Scotland Performance Framework and the publication of the Sturrock Report have brought our leadership capacity and capability more sharply into focus. The Sturrock Report (NHS Highland) has given us added opportunity to ask ourselves questions about our own practice within NHSGGC, to look at communication, engagement, development, perceptions of bullying and harassment, and then apply learning. There is also an opportunity to reflect on the external perception of our leadership approach. Questions have been asked about how well we are developing our leaders at all levels and the culture in which they are working in order that personal accountability be demonstrated more clearly.

1.4. The development of Project Lift, the national framework and support for leadership across NHS Scotland has prompted questions about how we best connect this with our local approaches to maximise the opportunities it brings for leadership in NHSGGC. Project Lift has been designed around four strands: Values Based Recruitment; Performance Appraisal; Talent Management; and Leadership Development.

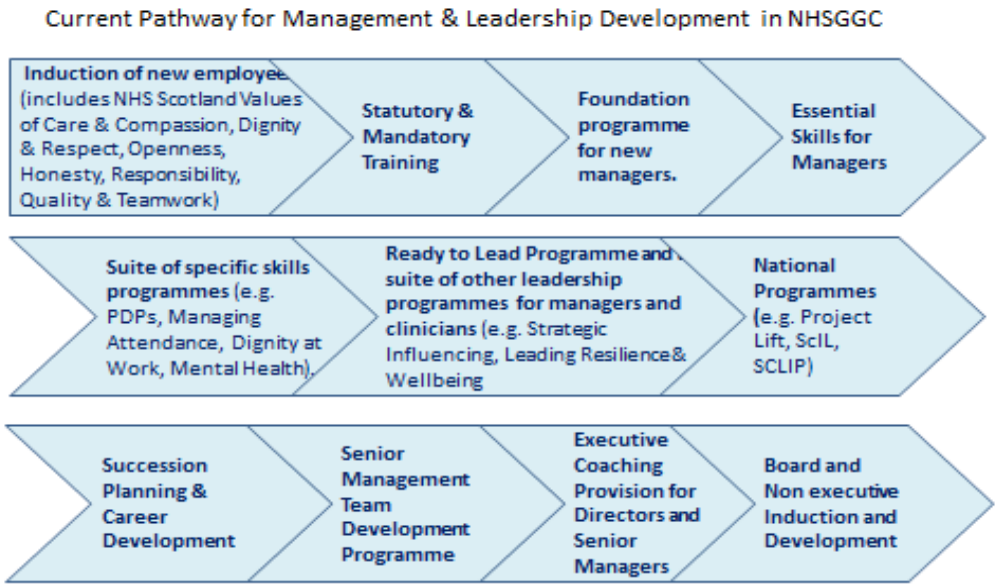
1.5. This paper sets out our current provision for leadership development and details how we will continue to learn and evolve our approach and work to address these questions.

2. Activity Underway

2.1. Close working with colleagues in NHS Education Scotland (NES) to maximise the opportunities with Project Lift.

2.2. To respond to evolving leadership development needs and to support our senior leaders deliver our culture framework our focus has been on:

- Coaching and enquiry discussion skills
- Compassionate Leadership
- Dialogue
- Crucial Accountability
- Improving psychological safety
- Review and continuous improvement of our leadership programmes
- Leaders OD toolkit to support change



2.3 NHSGGC Learning & Education (L&E) Programmes:

The Human Resources Learning & Education team and colleagues in Practice Development and Post Graduate Development provide a full suite of development programmes starting with online induction for all new employees and online Statutory & Mandatory training for all staff. The Statutory & Mandatory training compliance has seen a significant improvement in the last 18 months with over 80% compliance in all areas. A full online catalogue of management modules is available to all staff and this is supplemented with face to face training on Managing Attendance, PDPs, Managing Conduct, Dignity at Work, Difficult Conversations and Recruitment & Selection. For new and developing managers there is the Foundation Programme for New Managers and the Essential Skills for Managers programme.

2.4 NHSGGC Leadership Development

Leadership Development is overseen by the Human Resources Organisational Development (OD) Team and is a mixture of taught programmes, national provision, coaching and mentoring provision and frameworks/toolkits to support succession planning, career development, change management and team development. OD Advisors are aligned to each Directorate and they provide leadership and OD consultancy support to each Senior Management Team and their department managers and lead clinicians.

Within OD and in L&E we are constantly sharing knowledge and benchmarking with other NHS Boards and wider organisations to ensure latest thinking is being applied.

Our Fast-track Programme which focused on the identification and leadership development of aspiring Directors was recognised with an award at the UK Healthcare People Management Association Awards in 2018. Over 32 of our Senior Managers have taken part in the two cohorts of 18 months duration.

The NHSGGC Senior Management Team Development Programme was undertaken in 2019 and was put together with input from Prof. Michael West (Kings Fund) and drew on latest concepts on high performing senior management teams, systems thinking, relational leadership, crucial accountability, generative dialogue and structural dynamics.

Ready to Lead, our programme for frontline leaders, focuses on leading teams, emotional intelligence, leading change and improvement and personal effectiveness. In the last two years 210 Band 6/7 leaders have undertaken this programme.

Civility Saves Lives is a fast growing movement started by Dr Chris Turner, an emergency medicine consultant currently working in Coventry. It focuses on the clear evidence about rudeness between staff in healthcare settings not only significantly increasing the risk of clinical errors and negative effects on patient outcomes and experience, rudeness also has significant effects on performance of non-clinical staff as well. We have now started to run 'train the trainer' sessions on Civility Saves Lives with a view to a much wider rollout.

Joy in Work Framework from the Institute of Healthcare Improvement has been applied with nursing teams. It points to four steps that leaders can take using a framework of nine key components that enable a joyful, engaged workforce. The framework and questions were also used during the focus groups with staff when we were testing and asking for input for the culture framework.

2.5 NHS Scotland Leadership Development

Our staff also have opportunities to be supported and connect with National Leadership provision such as Project Lift and also programmes for leading on quality improvement such as the Scottish Improvement Leader Programme and the Scottish Coaching and Leading for Improvement Programme.

Project Lift is a new approach to recruit, retain, develop and manage talent within Health and Social Care in Scotland to ensure all leaders can be the very best they can be and reach their potential from entry roles through to boardrooms. Its focus is to embed a consistent and understood approach to leadership across Health and Social Care in Scotland, explicitly linked to the ethos of Compassionate and Collective Leadership, collaborative working and the underlying values and principles of the National Performance Framework and Health and Social Care in Scotland. Project Lift has four strands: Values Based Recruitment; Performance Appraisal; Talent Management; and Leadership Development. Over 242 of our staff in NHSGGC have completed the Project Lift Self-assessment Questionnaire and received their reports which they can then use to further inform their own development across the dimensions of:

- Professional Ability;
- Personal Ambition;
- Shared Values;
- Personal Values;
- Self-awareness;
- Leadership Ability;
- Organisational Ambition;
- Strategic Insight.

The Scottish Improvement Leader Programme (ScIL) is for developing the practical improvement science and leadership skills to identify, lead and implement improvement in healthcare. Over 56 NHSGGC clinicians have undertaken this national programme and are now using these skills to lead improvement in their own areas.

The Scottish Coaching & Leading for Improvement Programme (SCLIP) is designed for managers who have a role in sponsoring and leading change and improvement programmes. It gives them the skills to coach, lead and support those with the technical improvement skills to identify and maximise the opportunities for improvement and benefit delivery for patient care and for service effectiveness and efficiency. The second cohort of 30 managers and lead clinicians are currently undertaking this programme in NHSGGC.

3.0 Collective Leadership Programme – Reflections on Leadership Capacity & Capability in NHSGGC

3.1 It is clear that we need to reflect and listen to what other stakeholders are telling us and in particular our listening from the experience of staff, our ability to lead and deliver challenging targets and to ensure our leaders model and reinforce the right values, behaviours and culture for our staff to flourish.

3.2 Our future development to support our future priorities will now be encompassed under our Collective Leadership Programme.

3.3 Succession Planning will be further developed and embedded in each Directorate following the development of the supporting framework in 2019. The first priorities in this area will be to ensure that succession plans are in place at Senior Management Team level in each Directorate and that areas of high risk (in terms of potential skills shortage) are identified and this is addressed with targeted development.

3.4 There will be enhanced OD support for Leadership Development focusing on identifying and developing emerging talent from various levels in each Directorate. They will be supported to undertake a more thorough needs analysis for their development and will be supported to access a suite of local programmes and to connect with national provisions. The aim is again to generate more depth to succession planning and career development in each area.

3.5 There will be a renewed focus on Clinical Leadership with key stakeholders like NES and the Royal Colleges engaged. The first priority will be a modular programme run flexibly across the year specifically for current and aspiring Lead Clinicians and Clinical Directors. As well as supporting the managerial aspects of these roles there will be modules with a focus on leadership skills and on organisational knowledge (including working effectively with organisation structures and governance). All clinical leads will also be encouraged and invited (if not already involved) to take part in our 90Minute Leadership programme of breakfast sessions which run regularly across the year.

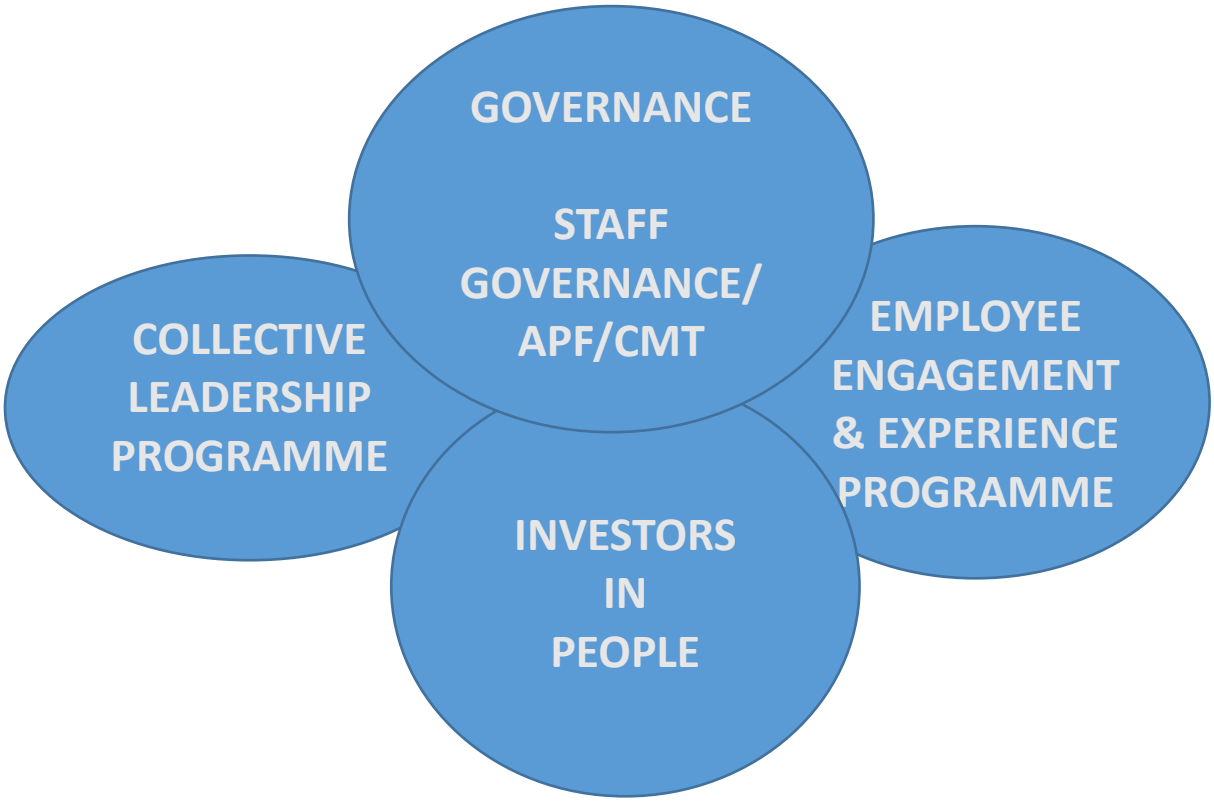
3.6 The NHSGGC Senior Management Development Programme will be evaluated and assessed for further cascade to senior teams.

3.7 The Ready to Lead programme has been further reviewed and two additional modules will now be added for 2020: Coaching Conversations and Leading with brain in mind.

3.8 We will further extend the reach of Civility Saves Lives and Joy in Work beyond the current clinical groups to all relevant teams.

3.9 In 2020 there will be a further cycle of the national Non-executive and Board Development Survey and development review. The evaluation of the last cycle and the planning for 2020 is currently underway.

NHSGGC - A Great Place To Work



4.0 Measures of Success

4.1 Improving leadership capability is difficult to quantify directly. iMatter responses to questions specifically about team and organisation leadership provide useful indication and year on year upward trends in these questions may be observed. It is helpful that iMatter component reports will in future be available to all teams who do not achieve the 60% response rate.

4.2 The rationale for improving leadership capacity and capability is to enable improved organisational performance whilst making NHSGGC a great place to work. Improvements in our measures of NHSGGC performance and culture could therefore point to improved leadership as an important factor.

4.3 Other proxy measures where shifts may be observed will be similar to those for staff experience and engagement:

- Improvements to succession and career development planning
- PDP levels and quality improvement

- Reduction in Grievance and Dignity at Work cases
- Improved attendance at work levels
- External measures and assurance from other agencies e.g. Investors in People will include elements aligned to leadership.

4.4 Consideration of further pulse surveys and of real time apps to gauge employee experience may also include leadership components and will be investigated.

5. Resources Required to Deliver Our Collective Leadership Programme

5.1 Engagement of managers and lead clinicians at every level to commit time and focus to their development and to the development of their staff and colleagues. In the past this commitment has been variable. Finding time for development in the mix of day to day pressures is an understandable challenge.

5.2 The OD and L&E teams will continue to maximise their efforts and resources to support the above.

5.3 The development of current and future leadership development initiatives are expected to be delivered within existing budgets.

6. Timescales

The Collective Leadership Programme will be over a 2 year period. The introduction of Investors in People will be by May 2020.

Succession Planning Cascade – September 2020

Senior Management Development Programme – review and cascade – December 2020

Definite dates for Boardwide initiatives will be finalised through the Corporate Management Team and Staff Governance Committee based on expert advice.

7. Conclusion

Following agreement on this approach at the NHS Board, a detailed Implementation Plan will be developed, with progress being recorded through the CMT and the Staff Governance Committee.

NHS Greater Glasgow & Clyde	**Paper No. 20/19**
Meeting:	**NHSGGC Board Meeting February 2020**
Date of Meeting:	**25th February 2020**
Purpose of Paper:	**For Approval**
Classification:	**Board Official**
Sponsoring Director:	**Director of Human Resources & Organisational Development**

Paper Title:

NHS Greater Glasgow & Clyde (NHSGGC) – A Great Place to Work - Employee Engagement & Experience

1. Recommendation

The Board is asked to:-

- Note this report about the development and implementation of the NHSGGC Culture Framework entitled NHSGGC – A great place to work, and the related priorities, current activity, progress and next steps to continue to improve employee engagement and experience.

- Approve the proposal to introduce Investors In People.

2. Purpose of Paper

2.1 This paper should be read in conjunction with the paper headed 'A Great Place to Work – Our Leadership Approach' (Paper No. 20/18).

2.2 The purpose of the report is to provide assurance to the Board about the importance, attention and resources that continue to be allocated to developing our culture and, in particular, our employee engagement and experience to ensure that NHSGGC is a great place to work.

2.3 The report has been prepared in response to recent challenges including the escalation of the Board to Level Four of the Performance Management Framework

and the publication of the Sturrock Report incorporates current and planned activity to ensure we maximise staff engagement with all staff.

Key Issues to be considered

- In Section 1 are the factors and reasons why developing NHSGGC as a great place to work is so important.
- In Sections 2 and 3 are the agreed priorities for developing employee engagement and experience including the establishing of our culture framework.
- Section 4 sets out how the Sturrock Report has added to our learning and improvement plans.
- Sections 5, 6, 7 and 8 illustrate how our NHS Scotland Values are expressed across a whole range of activities. Also the key part played by the iMatter process and additional pulse surveys in identifying our current strengths as an employer and the participation of all our staff to help us to continually improve.
- Sections 9, 10 and 11 contain our plans for 2020-21, how we will measure success and the resources required. Included is our plan to pilot and then roll out the Investors in People learning and accreditation framework across NHSGGC.

Any Patient Safety/Patient Experience Issues

Being a great place to work for our staff is one of the key enablers of better patient safety, patient experience and care outcomes.

Any Financial Implications from this Paper

The implementation of Investors in People (IiP) process is estimated at circa [redacted] for the whole organisation. The costs are likely to be spread over 2-3 years. A more detailed cost analysis will be worked out through the Corporate Management Team and regularly reported to the Staff Governance and Finance and Planning Committees.

All other planned activity would be contained within current budget arrangements and project plan.

Any Staffing Implications from this Paper
Nil

Any Equality Implications from this Paper
Nil

Any Health Inequalities Implications from this Paper
Nil

Has a Risk Assessment been carried out for this issue? If yes, please detail the outcome.

The risk of our culture and employee engagement and experience work not being effective has been identified in the risk register. Actions set out in this report help to mitigate future risk.

Highlight the Corporate Plan priorities to which your paper relates
Better Workplace

Authors: Anne MacPherson, Director of Human Resources & Organisational Development, Doug Mann, Head of Organisational Development, Moira MacDonald, Head of Learning & Education.

Tel No: [redacted]

Date: February 2020

1. Introduction and Background

NHS Greater Glasgow and Clyde (NHSGGC), through its core objectives, has included Better Workplace as a key priority and has for several years recognised the need to ensure our staff feel valued, informed and engaged to help shape our future service delivery.

1.1. The Scottish Government 2020 Workforce Vision: Everyone Matters

The Board has previously focussed on developing its culture and values to support the delivery of the 2020 Vision and evidenced progress using the Staff Governance Standards as a key measure of demonstrating continuous improvement. This is all in the context of an organisation with over 38,000 staff and multiple workplaces with different environments, local culture and identity.

1.2. Staff Governance Standards

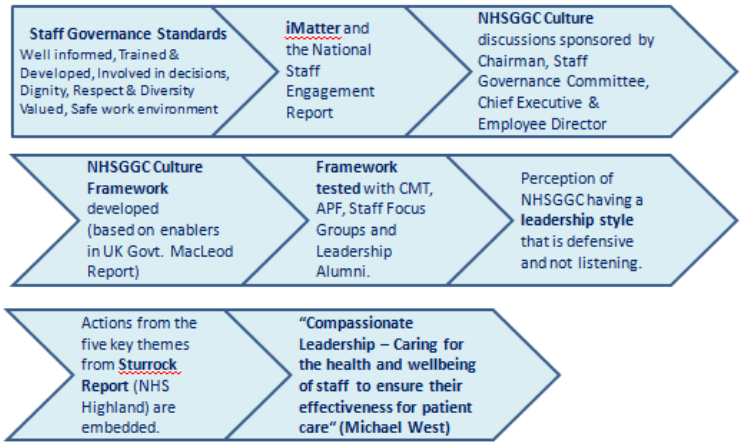
With regard to Staff Governance, in NHS Scotland the minimum requirement for all Boards is to comply with the five standards which have been part of legislation since 2004. There is also a requirement that all members of staff take their own personal responsibility to ensure that they play their part in these standards being achieved.

Boards must demonstrate that staff are:	**Staff are required to:**
Well informed	Keep themselves up to date with developments relevant to their job within the organisation.
Appropriately trained and developed	Commit to continuous personal and professional development and adhere to the standards set by their regulatory bodies.
Involved in decisions	Actively participate in discussions on issues that affect them either directly or via their trade union/professional organisation.
Treated fairly and consistently, with dignity and respect, in an environment where diversity is valued.	Treat all staff and patients with dignity and respect while valuing diversity.
Provided with a continuously improving and safe working environment, promoting the health and wellbeing of staff, patients and the wider community.	Ensure that their actions maintain and promote the health, safety and wellbeing of all staff, patients and carers.

1.3 Other Drivers

The development of our culture has been driven by the opportunity to improve staff engagement and experience and to continually develop our leaders to improve and sustain our performance and patient care. Facing the Future Together was developed from 2011 as the Boards culture and change initiative and although this was superceded by Everyone Matters 2020, there were lessons learned around implementation and ownership at local level which required us to rethink the approach.

Why focus on culture and 'a great place to work'



2. Our Culture Framework: NHSGGC - A Great Place to Work

2.1 Our approach to culture continues to be sponsored by the NHS Board, Corporate Management Team and Area Partnership Forum. The framework and current priorities and actions agreed by the Corporate Management Team were founded on research across a large number of different organisations and sectors. The key reference for the framework was drawn from the UK Government Report *Engaging for Success (Macleod & Clarke)*, which was also used by NHS Scotland in the design of the national iMatter process.

2.2 Priorities for 2019/20

The key priorities agreed by the Corporate Management Team to support Employee Engagement and Experience in 2019/ 2020 were:

- Establish the Culture Framework for NHSGGC.
- Adoption and reinforcement of the NHS Scotland Values
- Champion Employee Wellbeing
- Delivering iMatter
- Improving How We Involve Staff In Change.

3. Establishing our Culture Framework for NHSGGC

The Corporate Management Team agreed that the overall aim of the culture framework was for NHSGGC to be 'A Great Place to Work' and this would form part of the developing NHSGGC Workforce Strategy. The culture framework describes 5 enablers of a great place to work. These were tested with the Area Partnership Forum, Staff Focus Groups and our Leadership Development Alumni:



1. Having clear and consistent **organisational messages** that resonate amongst all of our staff about what is most important in NHSGGC.
2. Having **managers and clinical leads who engage well with staff** and empower teams to learn and improve.
3. Building **trust and integrity** by ensuring that what is said to be important matches what everyone actually experiences (reality matches our rhetoric).
4. Seeking out and listening to the **voice of employees** and to value and act on their input.
5. To regularly **review and sustain** our efforts in all of the above statements.

4. Sturrock Report Outputs

4.1. In November 2018 John Sturrock QC, was asked by the Cabinet Secretary to carry out an independent review into allegations of a bullying culture within NHS Highland. The report from the review was published in May 2019 and, although recommendations were specific to the findings for NHS Highland, the Cabinet Secretary asked that every Board used the report for their own learning. All Boards were asked to consider the report, its recommendations and consider actions to address any development areas within our own Boards. Within NHSGGC our approach to engagement, leadership development, staff health and wellbeing are well established, there are however areas for improvement and development to enable us to continually strive to be “A great place to work”. A short-life working group including Area Partnership Forum representatives have suggested that, in addition to our activities around the culture framework, a further three priorities will now be incorporated into our work-plan. These are identified further in the report.

4.2. The following section of the report describes activities delivered across the Board to continue to improve employee engagement and experience.

5. Adoption and application of the NHS Scotland Values

5.1. Until 2019 NHSGGC had its own values statement. However it was recognised that this complicated the expectations for staff and that the revised NHS Scotland Values were more relevant to our staff. These have therefore been adopted as the core values for NHS GGC. These are:

- Care & Compassion
- Dignity & Respect
- Openness, Honesty & Responsibility
- Quality & Teamwork.

These values are intertwined throughout our core business. The values are also widely reflected across the examples of our activity outlined in further sections of this report.

5.2 Board Workforce Equalities Group

The Board Workforce Equalities Group (WEG) is a well-established formal group sponsored by the Corporate Management Team and lead by the Director of Human Resources and Organisational Development and the Human Rights and Equalities Team. The purpose of the group is to support the workforce strand of the Board Equalities Scheme. The approach of the WEG is to be inclusive, proactive and to listen to staff concerns and ideas.

A key milestone for the group is that three staff forums are now established, representing Disability, BME and LGBT+ staff. The Chairs of each forum attend the Board Workforce Equalities Group and provide two way representation of the needs and requirements of the relevant forum members.

Following feedback from the Staff Equalities Survey, Unconscious Bias training is a focus for the Board Workforce Equalities Group over the next period. This will be led by the Human Rights and Equalities Team with the purpose of challenging attitudes and behaviours that impact on staff experience in the workplace. The nature of the training and awareness raising will ultimately support a positive impact on the experience of patients and their carers and families.

5.3 Once for Scotland Workforce Policies and Standards

In line with all Boards in NHS Scotland, NHSGGC are working towards the implementation of Once for Scotland HR Policies. Our work to implement these policies (six in Phase 1: Attendance, Bullying & Harassment, Capability, Conduct, Grievance and Workforce Policies Investigation Process) will be in partnership with our staff-side colleagues and managers to ensure that we can take full advantage of embedding the values, attitudes and behaviours required to support the new policy activity. The Human Resources team will be taking the opportunity to reinforce the person centred approach of the new policies. In addition to these Human Resource policies we will also be working with our stakeholders to implement and embed the new national Whistleblowing Standards due for launch in July 2020.

5.4 Celebrating Success

One element of our celebration of success is recognised through our annual Local Directorate and HSCP Awards and Chairman's Awards. Directorate and HSCP Awards provide the opportunity for us to acknowledge and recognise members of staff who have made an outstanding contribution in one of the areas of: Our patients; Our people; Our leaders; Our resources; Our culture. Colleagues may also nominate others in other teams where cross system working or multi-professional team working has taken place. 2019 saw a record number of nominations in the Directorate and HSCP Awards – 441 nominations were made, more than double from the previous year. The awards process culminates with our annual Celebrating Success Awards evening in November where overall winners are announced and presented with their trophies.



The Chairman's Awards offer a wide range of categories: Better Care, Better Health, Better Value, Global Citizenship, Nursing and Volunteer. New to 2019 was the category for Better Workplace to provide recognition for support to staff engagement and experience. Chairman's Award nominations can be made not just by staff but by patients, families and other members of the public as well. In 2019 there were 394 entries submitted highlighting the regard which our staff are held by colleagues and communities alike.

The judging panel for the Chairman's Awards were so impressed with the standard of entrants in 2019 that for the first time in the ten years of the awards running it was decided to make two Awards of Special Excellence in recognition of staff dedication to their services. These awards were made to the Central Decontamination Unit and the Haemato-Oncology Paediatric Team, Royal Hospital for Children.

Based on feedback from staff, the Board introduced Long Service Badges to recognise those who had reached key year milestones in their NHS careers. Staff in their thousands have taken the opportunity to apply to mark their service for 20, 30, 40 and 50 years. In 2019, 11 members of staff were presented with 50 year service badges and the Board Chairman invited this group to attend the annual Celebrating Success Awards.

The Board also recognises the contribution that staff make to high quality teaching for our next generation of staff. The William Cullen Prize for Teaching is established in collaboration with the Royal College of Surgeons, Edinburgh to pay specific recognition to the medical education focus in NHSGGC. In 2019 the passion and commitment of staff to develop an exceptional teaching and learning environment was awarded to joint winners in the Emergency department, Glasgow Royal Infirmary and the Palliative Care team, Beatson West of Scotland Cancer Care Centre.

Recognition for the contributions of our staff also extends to external honours and an example of this was highlighted by our Chief Executive's announcement of double MBE awards for two NHSGGC role models in the 2020 New Year's Honour List. Dr Tata Quasim was recognised for her work with the InS:PIRE programme, supporting patient recovery in Intensive Care, Glasgow Royal infirmary and Jennifer Rodgers, Chief Nurse for Paediatrics and Neonates for her professional and quality improvement leadership.

Awards in themselves are not the only vehicle to celebrate success and further on within the paper we outline some new ideas to ensure we embed success and appreciation at a local level.

6. Championing Employee Wellbeing

6.1. Staff Health Strategy

Our Staff Health Strategy 2017–2020 set out five priorities to support NHSGGC as a healthier place to work, these are: Health and Equality, Fair Work, Health and Wellbeing, Working Longer and Releasing Potential. Completed highlights for Year 2 of the Strategy, 2018/ 2019 included the following:

Carers – Supporting self-identification of carers and provision of carers information and support, this led to achievement of the nationally recognised Carer Positive Award.

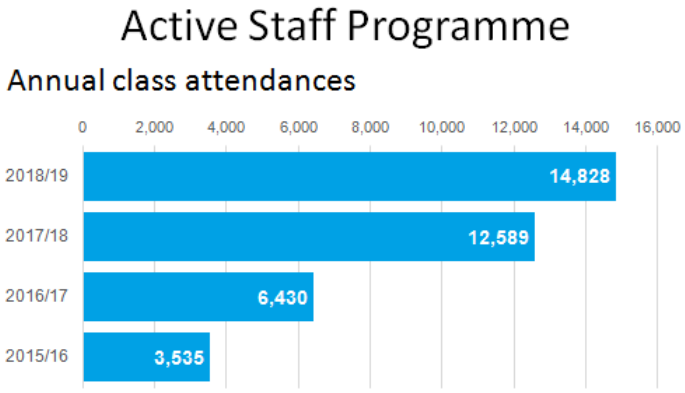
Financial Inclusion – Implementation of poverty awareness training and initial training for managers.

Mental Health and Wellbeing – Revised training for managers on mental health and wellbeing plus review of current resources to establish gaps.

Staff Health Strategy Survey was undertaken producing 3,900 staff returns. The results will help shape our future priorities.

6.2. Active Staff

Our Active Staff programme has grown from 3,535 attendances at free classes in 2015/16 to nearly 14,828 in 2018/19 across our services. Classes aim to be inclusive and cover a wide range of offerings from Metafit to Yoga.



Members of staff don't just attend classes, we also encourage staff to become local champions to encourage their colleagues to become more active. Our "Activators", volunteers who promote opportunities across the sites, support activities such as jogging clubs and act as local point of contact for questions and suggestions to help develop our active staff programmes.



Our staff testimonials highlight the benefit felt by staff attending these sessions:



In addition to Get Active programmes, additional campaigns are in place to support the full range of activities key to staff health and wellbeing, these include Weigh in @Work (672 members of staff participated), Support to Stop Smoking, Advice on Alcohol and All About Money which provides financial advice.

All of these programmes are branded under “A Healthier Place to Work”, with a one stop web site with information and signposting available on a single site and promoted with our logo.

7. Delivering iMatter and staff engagement

7.1 iMatter

Our Corporate Management Team and Area Partnership Forum recognise and support the use of iMatter to enable staff and the Board as a whole to better understand, measure and improve staff experience. The evidence is clear that this, in turn, improves care. Every member of our staff is encouraged take part in the annual questionnaire and be involved with their team to shape and agree local actions that can improve their workplace. The anonymous data gathered through the questionnaire also contributes to an annual Directorate Report, a Board report and an NHS Scotland Staff Engagement Report.

In 2019, we improved the participation to **25,400 responses**. We used the prescribed methods of online and paper versions of the questionnaire, but also led the national pilot for using SMS text messaging to replace paper copies with our HomeCare Team in West Dunbartonshire HSCP. The use of texting in this pilot saw a significant increase in staff responses and subsequent action planning. This approach, having been tested successfully in NHSGGC, has been taken forward nationally for the 2020 iMatter run across NHS Scotland.

Over the last three years our iMatter data has shown that the scores for each question have remained unchanged and have matched the national average score for each question each year. These trends are recognised in the national Health and Care Staff Experience Report and are noted as follows:

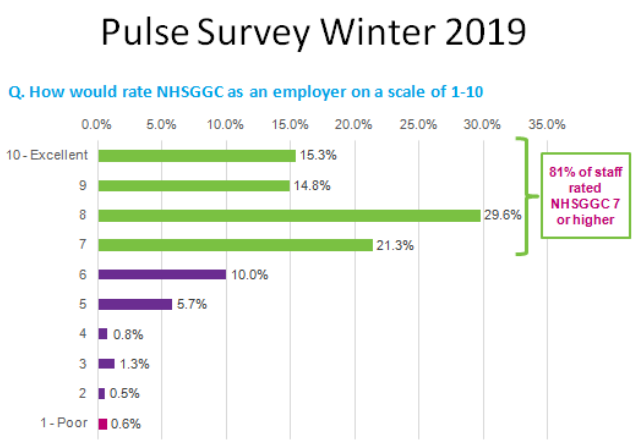
- The higher scoring questions in summary are: Positive experience of immediate line managers and colleague support, positive team behaviours and personal wellbeing, the value I place on my role and my personal commitment and job satisfaction.
- The lower scoring questions in summary are: My connection with the wider organisation and more senior management, organisational and team performance, the time and attention paid to me and my ideas, empowering me, appreciating me, developing me, and involving me in change.

Following the Strathclyde Academic Evaluation of iMatter, these questions have been developed to bring clarity in purpose and language used. We will promote these changes and the additional option of SMS messaging in our 2020 launch alongside our continued drive to support our teams with their action planning ensuring meaningful engagement is in place to develop staff experience at local departments within sectors, directorates and partnerships.

We have encouraged our teams to promote their stories at a national level and increased the number of our action planning stories submitted to the iMatter National Lead from two in 2018 to nine in 2019. We also regularly publish stories received from services in the monthly NHSGGC Staff Newsletter.

7.2 Pulse Survey - November 2019

Recognising some of the reflections from the Sturrock Report and in particular Employee Voice and to help us shape our developing Workforce Strategy, HR team volunteers undertook a pulse survey with over 2988 face to face interviews with staff at the winter flu vaccination sessions. The results identified that 81% of our staff rate NHSGGC at 7 out of 10 or above as an employer.



8. Improving How We Involve Staff in Change

8.1. Moving Forward Together (MFT)

It is important that our staff are engaged at the beginning of the change programmes aligned to MFT to help shape our services. MFT uses existing professional advisory and engagement structures within the Board to ensure that staff are appropriately updated on progress and are aware of the opportunities to provide feedback and engage with the agenda.



To support staff engagement, a Communications and Engagement plan has been agreed. This has so far included over 20 specific staff engagement sessions with more planned. Through Corporate Communications and the MFT Workforce Reference Group, key messages are made available to staff along with opportunities for staff to engage through social media channels, a dedicated email address and road shows with updates on agenda progress. Online resources are made available with videos and animations outlining key points of the strategy and reinforcing ways to engage with the transformation.

8.2. Small Change Matters

Small Change Matters is part of the Financial Improvement Programme and has enabled staff to suggest their practical ideas on how to save money. Over 900 ideas have been submitted so far.







8.3. Staff Communication

We are undertaking a corporate communications audit to review the extensive range of staff communications currently available that support staff engagement in Board activities. Our current provision includes the following and the Internal Communications team respond to requests for more information and to submit information and stories:

- Staff Communications Portal – one location to find all communication options
- Core and Team Briefs
- Social Media channels – Facebook, twitter, YouTube, Flickr,
- Staff monthly newsletter – Staff News
- All Staff emails.

The purpose of reviewing the examples is to work with our staff to ensure that these options support colleagues with relevant information regarding change in NHSGGC and that they provide real opportunities to be involved and share feedback.

8.4 What Happens If It Goes Wrong

NHS Greater Glasgow and Clyde recognises that communication and engagement can break down at different levels. Our staff can be supported through informal approaches either through local managers, Human Resources or Trade Union Partners. There are also policies which can support concerns, namely Grievance, Dignity at Work and Whistleblowing which provide opportunities for more formal redress. Our overall commitment is to listen and find solutions at the earliest opportunity. The new Once for

Scotland Policies including the introduction of Confidential Contacts at local level will be introduced from March 2020.

9. NHSGGC – A Great Place to Work – Next Steps for 2020-21

9.1. We will continue to build on the progress outlined in this paper to support staff engagement and experience activities. In addition we plan to focus on the following development areas:

9.2. **Developing our Values** (linked to our Sturrock outputs and our Culture Framework)
Priority 1: Employee Voice - embed our actions as a listening organisation which receives and responds to feedback from staff and values input from others by:

- Continuing to increase action planning from iMatter
- Engage staff views to develop an *employee voice pathway.*
- Asking staff regularly for feedback e.g. from pulse surveys and PDP conversations
- Identify accessible technical solutions to aid real time employee voice and feedback with apps such as *Trickle* and *Blink or* via Staffnet.
- Connect to the planned internal communications audit with staff.

Priority 2: Supporting appropriate visibility of our leaders

- Agree with the NHS Board and CMT how to increase visibility within all areas and be the most effective for frontline staff. This includes Board level local visits, Director team talks, Meet the Boss and encouraging local leaders to be visible across their areas of accountability

Priority 3: Celebrate success

- Broaden our ways of recognising success and provide a higher profile of these through the introduction of a success register to balance with risk register and performance.
- Learn from the success of others, externally, by improving our benchmarking with other Boards/organisations and establishing better processes to internally share best practice across NHSGGC.

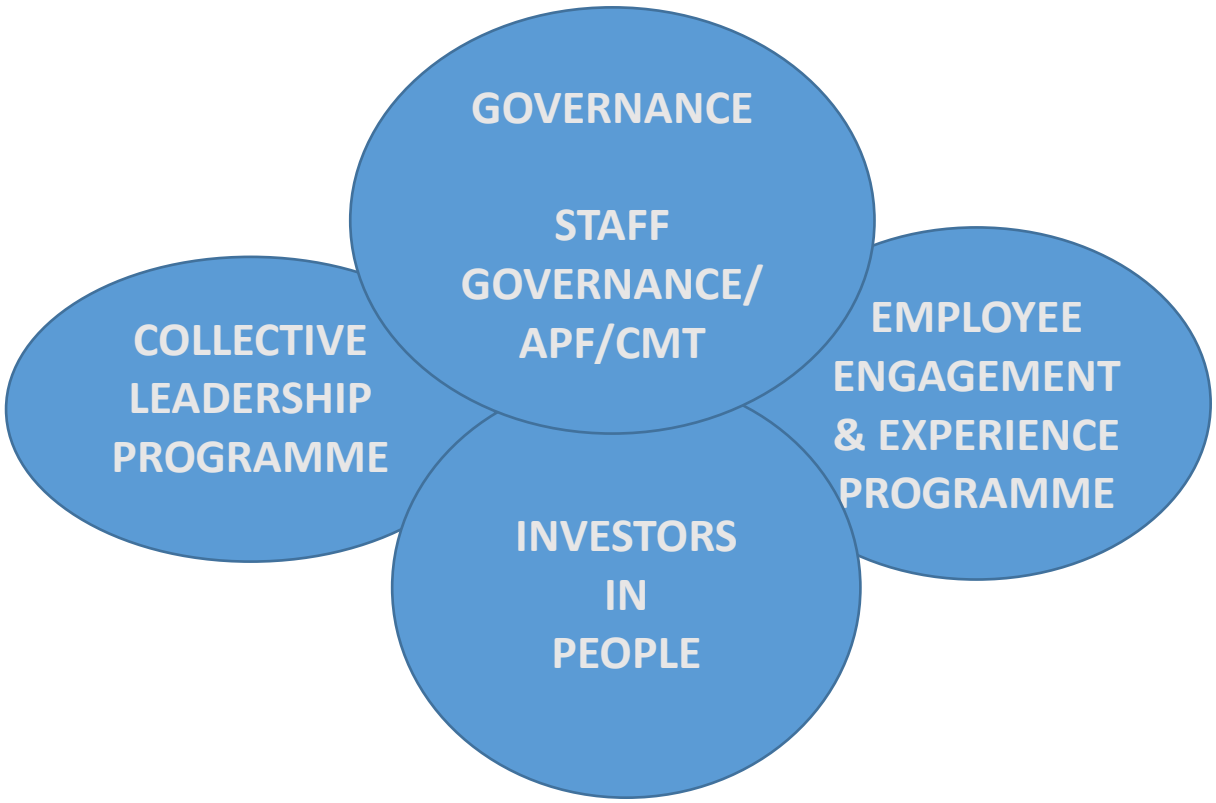
9.3. Expand on our work to date to embed ‘A Great Place to Work’ throughout NHSGGC and establish our brand. We have already begun this with our Staff Health Strategy brand – “A Healthier Place to Work”.

9.4. We will build on our Staff Health Strategy survey outputs to develop the next stage of our staff health strategy to ensure that our support meets the requirements of our staff.

9.5. "A Healthier Place to Work" is also a safe place to work and the Health and Safety Team will develop further our approach to safety and undertake a communications and engagement campaign to ensure safety is prominent in our 'Great place to work' vision to embed a safety culture with clear responsibilities across our all levels of our workforce. Work has commenced with our Health and Safety Forum to consider ideas on what does good look like to shape a policy commitment.

9.6. Great staff engagement and staff experience go hand in hand with our focus on leadership capacity and capability. We will build on collective and compassionate leadership and Board Member development throughout our programmes in 2020-21. This will combine our Collective Leadership Programme with our Employee Engagement and Experience Programme. More detail on this is set out in the Board Report, NHSGGC A great place to work – Our Leadership Approach.

NHSGGC - A Great Place To Work



9.7. Human Resources and Organisational Development will engage with Investors in People (IiP in Scotland is now called 'Remarkable') and confirm more detailed costs and resource requirements. By April 2020 we will identify the Board areas to undertake an initial pilot phase and establish a schedule to evaluate the process and if favourable to then apply the framework more widely :



10. NHSGGC – A great place to work - Measures of Success

10.1. iMatter upward data trends

Apart from observing upward trends in the Employee Engagement Index (and attaining the minimum 60% response rate to generate this) and individual scores for specific questions there are other trends that indicate the value that staff are placing on the process. These include a year on year upward trend in response rates, particularly in Directorates where iMatter uptake has been difficult (for instance due to high proportion of paper copy responses), and improvements in action planning rates. Evidence from an increasing number of success stories is also a useful qualitative measure.

10.2 Pulse surveys

We will use innovative ways to measure engagement and experience through Pulse surveys will enable us to gather data and feedback from staff on specific questions related to employee engagement and experience. For instance we may ask ‘What does “a great place to work” mean to you? What would you add? Are there different perceptions from staff in different areas or at different times? (e.g. Acute, Partnerships etc).

10.3 PDP completion levels and quality

Personal Development Plan (PDP) completion levels are easily measured, PDP quality is harder to measure. Specific iMatter questions about receiving learning support and job feedback are useful indicators and using pulse surveys about quality of PDP conversations may be helpful. Good succession planning is based on these conversations and therefore

evidence of internal candidate movement from recruitment processes will be a useful indicator. Data from the Recruitment Service about internal candidate success rates will inform this along with exploring a talent bank.

10.4 Reduction in Grievance and Dignity at Work cases

These measures are already in use and reductions in these are a useful indicator of better cultural 'health'.

10.5 Attendance

Improved attendance at work levels following on from a person centred approach to managing attendance being applied. We will measure uptake on Board development and learning programmes.

10.6 Statutory and Mandatory Training Compliance

All staff owning and taking responsibility for their core training will be evidenced by a continuing upward and sustainable trend in Statutory & Mandatory training completion rates. We will reinforce through communication, roles and ensure 90% compliance on all programmes.

10.7 Investors in People

External measures and achieving assurance from Investors in People Accreditation on a Directorate by Directorate basis with specific findings of strengths and development areas would form effective indicators. This will be introduced by May 2020.

11. Resources required

11.1. Engagement of all leaders and staff partners and their time and commitment.

11.2. Support to deliver Investors in People as per Section 9.8 (cost circa £200k plus OD resource) - Phased Approach link to engagement.

11.3. A Head of Staff Experience within the Human Resources structure to ensure we continually strive for maximum staff engagement.

12. Conclusion

Following agreement on this approach at the NHS Board, a detailed Implementation Plan will be developed with progress being recorded through the CMT and Staff Governance Committee.

NHS Greater Glasgow & Clyde	**Paper No. 20/20**
Meeting:	**25th February 2020**
Date of Meeting:	**NHSGGC Board Meeting**
Purpose of Paper:	**For Approval**
Classification:	**Board Official**
Sponsoring Director:	**Ms Elaine Vanhegan, Head of Corporate Governance and Administration**

NHS Greater Glasgow and Clyde Corporate Governance and Board Development Plan 2019/20 and 2020/21

Recommendation:

The NHS Board is asked to:

- Note the background and current context to the development of the 2020/21 Board Development Plan
- Note the summary of the 2019/20 Board Development Action Plan as detailed in Appendix 2
- Approve the proposals presented within the paper to further strengthen the Board's governance arrangements in the areas which the Board has been escalated to Level 4 of the NHS Scotland Performance Management Framework and to approve the Action Plan in Appendix 3.
- Approve that a further self-assessment of governance arrangements is undertaken in August 2020

Purpose of Paper:

The purpose of this paper is to provide an update on the work which has been ongoing since April 2019 to strengthen and improve governance arrangements in line with the standards set out in the Blueprint for Good Governance. In addition, to describe the additional focussed work led by the Chairman with Board Members and Scottish Government to critically assess the effectiveness of current governance arrangements in the context of the Board being escalated to Level 4 of the NHS Scotland Performance Management Framework. Proposals to further strengthen governance are set out in the form of an Action Plan, for approval by the Board, in Appendix 3.

Key Issues to be considered:

A self-assessment exercise was conducted by the Board in February 2019 to measure the Board's governance arrangements across the five functions of good governance as set out in the Blueprint for Good Governance (Appendix 1). The results were positive, however, it was recognised that further work was necessary and an Action Plan was approved by the Board in April 2019 (Appendix 2).

In the intervening period NHSGGC was escalated to Level 4 of the NHS Scotland Performance management Framework. This has resulted in a further critical review led by the Chairman with Executive and Non-Executive Board Members into the effectiveness of the existing governance arrangements with a view to developing proposals to ensure that the Executive Leadership Team are well supported to undertake their responsibilities in the delivery of health and social care across NHSGCC.

Consequently this paper sets out the actions taken to improve governance since April 2019 and the additional measures it is proposed are put in place to further strengthen governance arrangements in the form of a Development and associated Action Plan for 2020/21 (Appendix 3).

Any Patient Safety /Patient Experience Issues:

Improving care and experience central to good governance

Any Financial Implications from this Paper:
Nil of note.

Any Staffing Implications from this Paper: No

Any Equality Implications from this Paper: No

Any Health Inequalities Implications from this Paper: No

Has a Risk Assessment been carried out for this issue? If yes, please detail the outcome:
Risk management a key component.

Highlight the Corporate Plan priorities to which your paper relates:
Good governance is core to the delivery of priorities.

Author – Elaine Vanhegan, Head of Corporate Governance and Administration
Tel No – 0141 201 4607

Corporate Governance in NHS Greater Glasgow and Clyde

Board Development Plan

FEBRUARY 2020

1. Background and current context

1.1 In February 2019, all Boards received DL (2019) 02, in which the *NHS Scotland Health Boards and Special Health Boards – Blueprint for Good Governance* was published along with guidance on self-assessment and implementation. In March 2019, Board members completed the national self-assessment. Overall the results were positive, with Board members generally rating the functions of *Setting the Direction and Holding to Account slightly higher than Assessing Risk, Engaging Stakeholders and Influencing Culture* as being undertaken well. Appendix 1 – Corporate Governance System.

1.2 A Board Away Day session was held to consider the results. The positive position overall was acknowledged and, where further work was thought to be required across the 5 functions of good governance, an Action Plan was developed which was approved by the Board in April 2019.

1.3 One key action was to consider progress in respect of the integration of health and social care in more detail, and a further Away Day took place in August 2019. This considered the outputs of the self-assessment process undertaken by the partnerships in response to the Ministerial Strategic Group (MSG) *Review of the Progress of Integration of Health and Social Care*. The actions from this session formed a subset of the previously agreed Action Plan.

1.4 In November 2019, NHS Greater Glasgow & Clyde was escalated to Level 4 of the NHS Scotland (NHSS) Performance Management Framework in light of what was described as ongoing issues around the systems, processes and governance in relation to infection prevention, management and control at the Queen Elizabeth University Hospital (QEUH) and the Royal Hospital for Children (RHC) and associated communication and public engagement issues.

1.5 On 24th January 2020, NHS Greater Glasgow & Clyde was also escalated to Level 4 in respect of Scottish Government concerns regarding further performance issues across a number of key areas including performance on scheduled and unscheduled care and challenges with the primary care out of hours service. It was also highlighted by Scottish Government that there was a need to strengthen management capability and capacity within the organisation.

1.6 This has resulted in a further critical review, led by the Chairman with Board Members, into the effectiveness of the existing governance arrangements with a view to developing proposals to ensure that the Executive Leadership Team are well supported to undertake their responsibilities in the delivery of health and social care across Greater Glasgow & Clyde.

1.7 All Board members were asked to provide views to the Chairman on what actions they considered were required to improve the effectiveness of governance arrangements within the Board. A set of proposals were then developed by the Chairman and a meeting was held of the Standing Committee Chairs, the IJB Chairs/Vice Chairs, Whistleblowing Champion, Executive Board Members and the Head of Corporate Governance and Administration on the 12th February 2020. These proposals were considered and are included within this paper forming part of the Board's overall response to the escalation to Level 4 and will form part of the evidence considered by the Cabinet Secretary, Scottish Government, and the Oversight Board.

2. Board Development Plan 2019/20

2.1 This paper provides an update on actions in respect of the Board Development Plan for 2019/20 and the proposed actions for 2020/21 incorporating any actions rolling forward and those agreed as part Board's overall response to the escalation to Level 4.

2.2 Appendix 2 provides a summary of the progress made with the 2019/20 Development Plan. The aim was to further improve governance arrangements across the five functions of good governance as set out in the Blueprint for Good Governance. Also highlighted are specific actions agreed in respect of the MSG self-assessment agreed at the Board development session in August 2019 with particular focus on the pace of integration.

2.3 Progress has been made across all functions of good governance with some key actions forming part of a rolling annual plan e.g. review of the Scheme of Delegation, Committee Terms of Reference. A number of areas require further focus and will form part of the Board Development Plan for 2020/21 and now link to the proposed response to Level 4 Escalation.

3. Moving Forward - Improving Corporate Governance - Board Development Plan 2020/21

3.1 This section sets out the significant work undertaken in response to the Board being escalated to Level 4 of the NHSS Performance Management Framework. This has involved a series of measures led by the Chairman to engage with Board Members and Scottish Government to further review the effectiveness of current governance arrangements. This work has resulted in a number of additional new actions which now form part of the 2020/21 Development/Action Plan.

3.2 The Board Members' proposals for improving the current arrangements have been grouped under the headings used in the NHS Scotland Blueprint for Good Governance with linkage to the appropriate enablers and support set out in the blueprint.

Functions of Good Governance

4.0 Setting the Direction

Key issues - summary

4.1 The delivery of the Greater Glasgow & Clyde transformational change programme is complex, and implementation requires a more focussed approach. In particular the pace of change of the workstreams included in the Moving Forward Together programme and a delay in shifting the balance of care through the integration of health and social care is likely to impact on implementing the redesign of acute services to improve service delivery and implement the requirements of the West of Scotland regional plans.

4.2 The current governance arrangements, where scrutiny of the Moving Forward Together programme is split between the Health Board's Standing Committees and the Integration Joint Boards (with the Health Board's Finance Planning & Performance Committee being the group responsible for ensuring a consistent approach is being adopted across Greater Glasgow & Clyde), requires review to support the implementation of the changes required to transform the current system.

Actions

4.3 It is proposed that a Steering Group to support the delivery of the Moving Forward Together programme is set up with input from health and social care partners.

4.4 The Steering Group's remit should include reviewing the governance of the change programme, the programme implementation plans, the business case and the risks and dependencies that require to be managed to successfully deliver the programme's outcomes. Advising on the approach to stakeholder engagement and communicating the change programme should also be included in the Steering Group's terms of reference. Establishing the resources required to deliver these outcomes should also be included.

4.5 The Steering Group should also consider benchmarking the Greater Glasgow & Clyde approach to delivering transformational change with the approach adopted by other public sector organisations, including other health and social care providers.

4.5 A short life working group (SLWG) will be commissioned to draft the terms of reference for the Steering Group. This group should also propose any consequential changes to the terms of reference and delegated authority of the existing Health Board governance committees, if necessary. The support requirements to manage overall changes will be closely linked to reviewing administration arrangements as detailed later in this paper.

4.6 This SLWG will be led by Jacqueline Forbes, Non-Executive Director, supported by two other Non-Executive Directors, namely, John Mathews and Margaret Kerr. The Executive Lead for this will be Jennifer Armstrong, Medical Director.

5.0 Holding to Account

Key Issues - summary

5.1 The size, range and complexity of the acute services provided by NHS Greater Glasgow & Clyde Board is acknowledged and, noting the reasons for the Escalation to Level 4 regarding performance, it is incumbent upon the Board to consider if the existing governance system takes account of this.

At present, Board oversight of acute services (including scheduled and unscheduled care) is delivered at two levels - the Acute Services Committee and the Main Board. The Acute Services Committee is chaired by the Vice Chair and focuses on the services provided by our hospitals. The Board takes the work of the Acute Services Committee into account when considering both the primary and secondary care provided by NHS Greater Glasgow & Clyde and the six Health & Social Care Partnerships that cover our geographical area.

Actions

5.2 To give closer scrutiny to the delivery of unscheduled care (including the Out of Hours Service), it is proposed that a different approach is considered for the governance model in the short term. Potential solutions include additional sector related Standing Committees in respect of Unscheduled Care. While the benefits of this approach have obvious attractions for the governance of unscheduled care, careful consideration will have to be given to whether this model could have any unintentional consequences that could adversely impact on the delivery of improvements to scheduled care across Greater Glasgow & Clyde. If this approach is adopted it is proposed that scrutiny and oversight of scheduled care would continue to be overseen by one other Standing Committee. (Waiting times are currently managed across the Board area, rather than by the three geographical sectors).

5.3 To evaluate this proposition and assess its potential impact on the recovery plan being developed by the Turnaround Director, a SLWG should be commissioned to review and consider revising the current arrangements for the governance of unscheduled care. This work should include benchmarking the NHS Greater Glasgow & Clyde approach with the approach adopted by the other Territorial Boards. The work of the SLWG will need to be aligned to the support work in relation to Assurance Information Systems.

5.4 The SLWG should also consider the terms of reference and delegated authority for any new governance committee for acute services and the impact that will have on the roles of the existing Standing Committees, in particular the Acute Services Committee and the Finance, Planning and Performance Committee.

5.5 On conclusion of the SLWG's deliberations, further routine actions will be required to be included into the overall action plan for 2020/21 including;

- Review the scheme of delegation
- Further revision of relevant committee terms of reference
- Further development of the sub committee and board agenda planning and forward planning

- Review the approach to performance management and reporting and the revise Performance Framework as required.
- Consideration of public access to Board Sub Committees remains an outstanding issue from 2019/10

5.6 This SLWG will be led by Simon Carr, Non-Executive Director supported by Susan Brimelow, Non-Executive Director. The Executive Lead for this will be Jonathan Best, Chief Operating Officer and an IJB Chief Officer - TBC

6.0 Assessing Risk

6.1 It is acknowledged that recent events around the management of Infection Prevention & Control and the provision of Out of Hours services have raised questions around the effectiveness of the Board's existing risk management systems. This included questions around the Board's current risk appetite and the process for ensuring that our risk appetite is regularly reviewed and updated to reflect changes in the operating environment.

6.2 It is proposed that the Board Standing Committees should undertake a 'deep dive' into the existing corporate risks that they have oversight for in March 2020 and the Board should undertake an event to discuss the outcomes of this exercise in relation to the Board's risk appetite at the scheduled Development Session at the end of March. This event should specifically consider how the Board balances the risks in service delivery against the financial risks ensuring the quality and safety of care. This should provide the necessary assurance for the governance statement required as part of the preparation of the 2019/20 Annual Accounts. From this the Risk Management Strategy will be revised as planned for 2020/21.

Actions

6.3 Board Standing Committees will undertake further work in reviewing corporate risks in the form of a 'deep dive' into the existing corporate risks that they have oversight for to be completed in March 2020.

6.4 A Board Development Session is scheduled for the end of March 2020 to discuss the outcomes of the 'deep dive' exercise in relation to the Board's risk appetite. This should provide the necessary assurance for the governance statement required as part of the preparation of the 2019/20 Annual Accounts and consideration of any changes which may be required in terms of the Board's Risk Strategy and 20/21 internal audit plan.

6.5 This work will be co-ordinated by Mark White, Director of Finance, supported by Alan McLeod Non Executive and Chair of the Audit Committee, with external expert input being sought.

7.0 Engaging Stakeholders
Key Issues - Summary

7.1 In the Board assessment of its position against this function of good governance in 2019, it was acknowledged that further work was required in this area.

7.2 Greater interaction is required by Board members with key stakeholders – patients, service users, their families and carers, and staff working in both primary and secondary care.

7.3 In addition, consideration is required as to how Board Members can contribute more to the Board's efforts to improve engagement with the Scottish Government and the public's elected representatives at both local and national level.

7.4 The development of an engagement and communications strategy is considered essential to more effectively manage the organisation's reputation and improve public trust and confidence in the Board and the Executive Leadership Team.

Actions

7.5 A new approach to delivering the Board's visiting programme for 2020/21 has been created. This will include half day visits to acute service sites across the sector and corporate service business units. This is being arranged in a way that gives Board Members the opportunity to also interact with patients, services users, their families and carers. These will be arranged on a bi monthly basis with dates published by the end of February 2020. These will be in addition to Board Members visits to staff in the six Health & Social Care Partnerships.

7.6 A review of Board Members participation in the Scottish Patient Safety Programme is underway with a view to refreshing the current approach and will be completed by the middle of March. It is recognised that this programme provides an excellent opportunity for Members to visit the front line of healthcare and assure themselves of the safety and quality of the services being provided by NHS Greater Glasgow & Clyde.

7.7 Proposals from the Communications Director on developing NHS Greater Glasgow & Clyde's engagement and communications approach are detailed in a separate Board paper in response to Escalation to Level 4. It is anticipated that a Communications and Engagement Strategy will be brought to the Board at the end of April 2020. This will remain a key action on the Board Development Plan for 20/21.

8.0 Influencing Culture

Key Issues - summary

8.1 Significant focus has been given to organisational culture during 2019/20, however it is recognised there remains work to do. The Oversight Board responsible for performance issues has also made reference to the need to consider the impact of leadership and culture on performance in their terms of reference.

Actions

8.2 The Executive Leadership Team will continue to work with colleagues in the Scottish Government, including the Oversight Boards, to better understand the reasons behind the impact on performance and consider actions required.

8.3 Proposals from the Director of Human Resources & Organisational Development on developing NHS Greater Glasgow & Clyde's approach to leadership development and employee engagement are included in the paper on 'Making NHS Greater Glasgow & Clyde a Great Place to Work' that is going to the February Board for approval. The paper will also seek the Board's approval of the Collective Leadership Programme and proposal to introduce Investors in People. It is proposed that this work will include benchmarking the NHS Greater Glasgow & Clyde approach with the approach adopted by the other Territorial Boards.

8.4 The Board welcomes a new Non-Executive Director as Whistleblowing Champion. Work will be undertaken over the coming months to review the Whistleblowing Policy in GGC in line with national standards ahead of the implementation deadline at the end of July this year. A Board Development session is scheduled to consider the standards in May 2020.

Enablers of Good Governance

9.0 Skills, Experience & Diversity

9.1 This has been a key area of focus and discussion with current Board Members and while the Board will continue to strive to further improve diversity, Board Members assessed the current situation to be acceptable. The same is true in terms of the skills and experience of the existing group of Board Members.

9.2 In terms of where there are opportunities to make further progress, succession planning has been identified as an area which requires focus both for the Board and the Executive Leadership Team.

9.3 The quality of the induction and ongoing development programme for Board Members has been identified as an area which would benefit from ongoing review and development. This extends to the continuous development of existing Board Members' governance skills.

Actions

9.4 The latest appointment round, including the recent appointment of the new Whistleblowing Champion, will enhance the capacity for the overall effectiveness of the Board with the introduction of specific skills and experience in transformational change, finance and public relations.

9.5 The Chair and Head of Corporate Governance and Administration will bring forward proposals on the allocation of Members to Committees when new Non-'Executive Director appointments have been confirmed in March 2020. This will form an integral part of the Annual Review of Governance paper that will be presented to the Board in April 2020.

9.6 A process will be put in place by March to enable the Chair to present candidates for appointment as Vice Chair to the Cabinet Secretary well in advance of the current vice Chair's departure from the Board in May 2020.

9.7 A SLWG will be established to review, develop and implement robust arrangements for the induction and continuous development of Board Members to ensure the Board has the necessary skills to reflect sound governance arrangements. The work of the group will include benchmarking NHS Greater Glasgow and Clyde approach with that adopted by other Territorial Boards. This group will be led by Alan Cowan, Non-Executive Director supported by Amina Khan, Non-Executive Director. Executive leadership will be provided by Anne McPherson HR Director.

10.0 Roles, Responsibilities & Accountabilities

10.1 It is recognised that further strengthening the Board's governance arrangements is likely to add to the workload of existing Board Members, especially those who already support two Integration Joint Boards as well as the Board's Standing Committees.

10.2 The Chair will, where appropriate, make more use of his existing delegated authority to increase the time commitment from individual Board Members in order to increase the Board's capacity to govern in the short to medium term.

Action

10.3 The Chair has invited Non-Executive Directors to identify any capacity they may have available to provide additional input to the Board. This will be reviewed and the Chair will work with the Head of Corporate Governance and Administration to map the support into the sub - committee structure by the and present to the Board in April.

11.0 Values, Relationships & Behaviours

11.1 As part of the escalation process, work has been undertaken with Board Members to reflect on what changes in approach and behaviours could be made, individually and collectively, to improve governance and ensure the Executive Leadership Team are well supported to undertake their responsibilities in the delivery of health and social care across Greater Glasgow & Clyde.

Actions

11.2 An external expert assessment of relationships and behaviours between Non-Executive and the Leadership team in respect of our approach to governance has been commissioned. Professor Michael Deighan, the Director of the Royal College of Physicians of Edinburgh's Quality Governance Collective, will observe at Board, Standing Committee and Integration Joint Board Meetings over the next two months and provide an opinion on how Board Members conduct their business. The aim of this commission is to assess the extent to which the Board can be said to be delivering active governance.

11.3 In the longer term, NHS Greater Glasgow & Clyde will work with the Royal College of Physicians of Edinburgh to build governance capability through participation in their Governance Fellowship Programme. This action will be linked to skills and experience set out in section 9 above.

Supports of Good Governance

12.0 Assurance Information Systems

12.1 The NHSS Corporate Governance Steering Group and a 'Once for Scotland' approach has been seen as the way forward to implement a framework setting out the level, type and presentation of information available to Board Members, particularly in relation to performance. However, work to develop a more robust and transparent approach to managing the NHSS Performance Framework is not yet complete. Therefore, in the interim, NHS Greater Glasgow & Clyde will take forward a piece of work to define requirements. This will be achieved by establishing another SLWG to review and consider revising the current arrangements for ensuring Board Members receive the necessary information to support well-informed, evidence-based and risk-assessed Board, Standing Committee and Integration Joint Board decisions. This includes the arrangements for briefing Members who are providing absence cover for Integration Joint Boards.

12.2 The scope of the assurance information received will be reviewed to ensure that assurance reports are received for all the areas that the Board is held accountable for by the Cabinet Secretary, including Mental Health and Primary Care. The information assurance system will be integrated to ensure that the relationships between various parts of the health and social care system are being considered in a holistic way.

12.3 The work of this group will be informed by the work of the Turnaround Director, the approach to developing the NHSS Performance Framework and include benchmarking the NHS Greater Glasgow & Clyde approach with the methods adopted by other Territorial Boards.

12.4 This work will be led by Allan McLeod, Non-Executive Director supported by Ian Ritchie, Non-Executive Director. The Executive lead for this will be Mark White, Director of Finance.

13.0 Audit Services

13.1 In reviewing governance, no issues or concerns were raised by Board Members concerning the current delivery of internal and external audit services.

13.2 However, should the review of how the Board assesses and manages risks following the 'deep dive' by Standing Committees and the follow up Board Development day in April 2020, identify any significant issues in relation to the Board's risk appetite or corporate risk profile, the Audit Committee will be asked to consider reviewing and revising the Board's Internal Audit Programme for 2020/21.

13.3 The Audit Committee will also be asked to consider an approach to benchmarking the NHSGGC approach to risk management with the methods adopted by the other Territorial Boards.

14.0 Administration Arrangements

14.1 It has been identified further opportunities exist to improve the quality, presentation and length of Board papers.

Actions

14.2 A further SLWG will be established to review and make recommendations on:

- Current arrangements for ensuring Board and Standing Committee papers, minutes and Chairs' updates to the Board are or the highest quality and presented in a timely manner.
- The role of the Standing Committee Chairs in setting agendas, approving minutes and assuring the quality of papers.
- The process to benchmark other Board's standing committees in respect of Terms of Reference, agenda content, minutes and actions. This is already underway for the Staff Governance Committee but all sub committees will undertake this review.
- The process to benchmark the NHSGGC approach to ensuring the quality and timeliness of Board papers with the approach adopted by other Territorial Boards.

14.3 The SLWG will be led by Donny Lyons, Non-Executive Director, supported by Jim Clocherty, Non-Executive Director. Corporate Leadership support will be provided Elaine Vanhegan, Head of Corporate Governance and Administration.

15.0 Summary

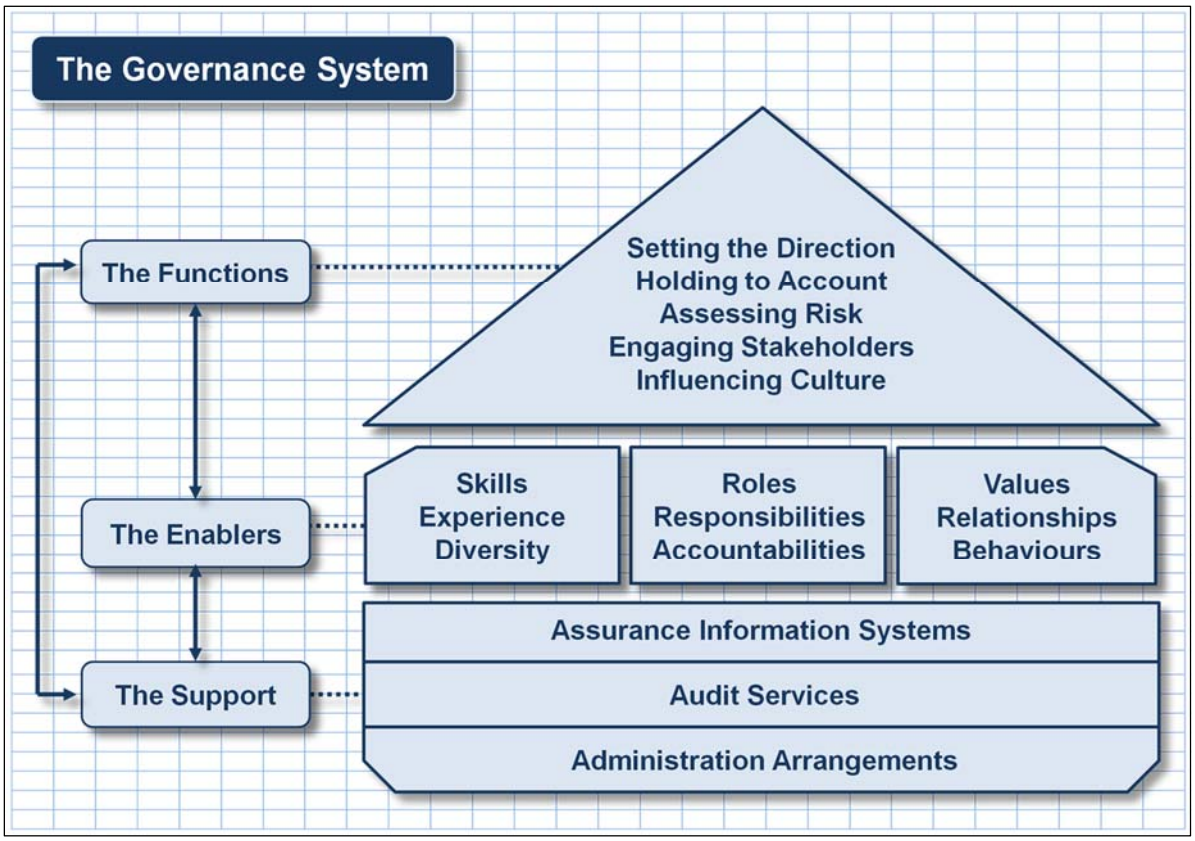
15.1 A number of actions across the dimensions of the Blueprint for Good Governance have been described within this paper, all intended to further improve the Board's governance arrangements. Appendix 3 details an Action Plan for Board approval noting lead, owner and timescale to delivery. This includes some actions rolled over from the 2019/20 Board development action plan. Overall progress will be co-ordinated and managed by the Head of Corporate Governance and Administration, with the Board receiving progress reports at the full Board meetings until such time as the plan has been delivered and the outcomes evaluated.

15.2 A further self-assessment against the Blueprint for Good Governance will be undertaken in August 2020 to consider the impact of agreed actions.

15.3 Work will continue throughout the year to ensure the outputs from the National Governance Steering Group are implemented appropriately.

Appendix 1 The Corporate Governance System

The NHS Scotland Corporate Governance Blueprint defines governance as the system by which organisations are directed and controlled and describes a three-tiered model that explains the functions of a governance system, the enablers and the support required to effectively deliver those functions.



What distinguishes this model from other governance models is its clear acknowledgement of the importance of how the Board approaches the achievement of its strategic aims and objectives, as well as its focus on performance and outcomes. Although the model is presented as three distinct sections, they are in reality inter-dependent.

Appendix 2: Action Plan - April 2019, Updated August 2019 - review February 2020

Position Report - Board February 2020

Key Area of Focus		Action			Status	Comments
Setting the Direction ***Strategic Planning***						
1.	Clarity across whole system planning, links of MFT to Strategic Plans, Community Plans, etc. National plans, for example, Mental Health, Public Health.	1.1	Map approach to strategic planning across the system eliciting linkages.		Complete	Work undertaken through the Whole System Planning Group and continues through approach to MFT and leadership of workstreams.
		1.2	Align actions to assist in whole system planning.		Ongoing	As above and linked work to CMT action below - 4.2(i).
2.	Earlier Board influence on development of IJB plans, greater synchronisation.	2.1	Ensure greater understanding of governance and decision making approval processes (*links to MSG review below*).		Complete	Complete internally - note below actions linked to MSG.
3.	Engagement and relationships with IJBs/review MSG assessment.	3.1	Chief Executive to undertake assessment and develop an action plan with COs and colleagues.		Complete	MSG review completed - Board away day in August 2019 to review required action.
		3.2	Arrange follow up session for the Board re MSG review and action plan (see shaded section below).		Complete	Session took place on 22 August 2019.
4.	MSG development session actions.	4.1	Collaborative leadership and building relationships:			
			(i)	Organise a forum with IJB Chairs, Chief Officers, Local Authority Chief Executive and Officers and GGC Executives to focus on the practicalities of delegation and enhance stronger and unified relationships through shared understanding.	Ongoing	Meetings taken place with CEOs from Health Board and Local Authorities with Chief Officers. Next steps to engage IJB Chairs and elected Members.
			(ii)	Use the above to apply to MFT to clarify across the system.	Ongoing	Link to approach for 2020/21.
		4.2	Effective strategic planning for improvement:			
			(i)	CMT to assess position/linkages to work already undertaken and create options for Board consideration.		A number of papers have been brought ot the Board reviewing the process and progress with MFT. This will link to ongoing developments for 2020/21
Holding to Account ***Maximise Efficiency and Effectiveness of Board and Sub Committee Meetings***						
5.	Ensure clarity of scrutiny role, prevent duplication linking to effective information flows and requirements from a planning and performance perspective.	5.1	Initial revision of Committee Terms of Reference.		Complete	Presented to the Board June 2019. Rolling annual action as part of 2020/21 Plan.
		5.2	Tighten Committee and Board agenda planning and forward planning.		Complete	Presented to the Board June 2019. Rolling annual action as part of 2020/21 Plan.
6.	Get the right balance between focus on strategy versus organisational scrutiny and allow sufficient time for the Board to set direction.	6.1	Review Scheme of Delegation (*linked to above planning action and approval processes*).		Complete	Paper format reviewed for the Board in June 2019. Rolling annual action as part of 2020/21 Plan.
7.	Enhance ability to offer constructive challenge and support.	7.1	Review approach to performance management and reporting - create a performance framework for the Board.		Complete	Approved by Finance, Planning and Performance Committee will link work to be undertaken as part of 2020/21 Plan and Escalation to Level 4.
		7.2	Work with teams to ensure efficient paper construction and presentation - clarity on purpose and requirements.		Complete	Paper format reviwed for June 2019 Governance review. Further work to be undertaken as part of 2020/21 Plan.
		7.3	Better utilise benchmarking (outwith Scotland).		Ongoing	Improved approach through performance reporting thorughout the year. Planned benchmarking across all Board Standing Committees as part of 2020/21 Plan.
		7.4	Undertake a broader piece of work to review governance committee and Board function; reconsider delegation levels; consider approach to public access to governance Committees.		Complete	Action complete although review ill be an annual rolling action. Note - still to review public access as part of 2020/21 Plan.
		7.5	Create an Assurance Map and an Information Assurance system.		Ongoing	National work was awaited in 2019 - however, key local action for 2020/21.
8.	MSG development session actions.	8.1	Integrated finances and financial planning:			
			(i)	Review work of established group considering Set Aside and agree approach to overcome 2-3 fundamental challenges to develop a model for integrated financial planning incorporating elements already in use.	Complete	Set Aside approach developed. Awaiting a meeting with SG to discuss practicalities of implementation. Standardised financial arrangements have been developed and included in revised Integration Schemes.
			(ii)	Test model with a specific service/pathway.	Complete	Tested approach using GRI.
		8.2	Agreed governance and accountability arrangements:			
			(i)	Organise a session with key individuals to work through the issues to test/tease out this issue and make recommendations.	Ongoing	Links to action under MSG Collaborative Leadership at 4.1.
			(ii)	Link to induction for new Board members joining IJBs.	Ongoing	Board members induction under review. Note new SG release on induction approach. Key part of 2020/21 Plan.
		8.3	Ability and willingness to share information and meaningful engagement:			
			(i)	Carry out a mapping exercise of the current flows of information between IJBs and Board and identify gaps and improvements – link to Performance Frameworks.	Ongoing	Links to Action 7.5 Key focus of 2020/21 Plan
			(ii)	Consider the information inputs to the IJB Annual Reports as a start to this exercise.	Ongoing	Links to Action 7.5 Key focus of 2020/21 Plan
Assessing Risk ***Risk Management***						
9.	Build on approach to Risk Management to date, use effectively for assessing strategic risk and to link to overall delivery and performance agenda.	9.1	Review mode of seeking assurance from respective Governance Committees - enhance communication around this. Review Risk Management Strategy.		Partially Complete	Approach to assurance through governance committees complete. Strategy for review 20/21
		9.2	Ensure appropriate linkage across the system and engagement with risk owners and Committee chairs.		Complete	Further 'deep dive' planned in March 2020 and overall findings to Board Seminar in April 2020.
		9.3	Ensure Seminar time on risk management and establish risk appetite.		Ongoing	Scheduled for March 2020.
		9.4	Review Board reporting on risk and decision making.		Ongoing	Linked to above action.
Engaging Stakeholders ***Improve our Approach to Engaging*** *(Note: engagement with staff will be considered under influencing culture,*						
10.	Maximise opportunities to communicate and engage on varying levels, for example, staff, public, MSPs, etc.	10.1	Define all stakeholders.		Complete	Meeting undertaken Feb 2020. Part of Engagement Plan for 2020/21.
		10.2	Create a stakeholder engagement framework.		Complete	Worked through MFT. Key focus on work in 2020/21.
11.	Be responsive and provide evidence of listening to ideas, 'you said we did'.	11.1	Develop an annual programme of routine engagement with key individuals or groups.		Ongoing	Part of 2020/21 Plan.
12.	Seek early engagement.	12.1	Review our approach to 'public engagement' considering the role and function of the teams involved and the various focus groups, communications links, events and the expectations placed on each.		Ongoing	Now linked to work with SG and part of 2020/21 Plan. Engagment underway with the Consultation Institute.
		12.2	Link to HSCP, Community Planning Partnerships and locality Planning processes, including third sector involvement.		Ongoing	Commenced January 2019 and continues through a variety of stakeholder events re MFT and IJB Strategic Plans.
Influencing Culture ***Improve the Culture of NHS Greater Glasgow and Clyde***						
13.	Increase focus and pace of culture change.	13.1	Review recent work on the culture framework and schedule Seminar time focus on culture.		Complete	Culture Framework agreed - through governance processes. Seminar held in January 2020. Key action for 2021.
14.	Ensure Board leadership and involvement.	14.1	Review our current methods for staff engagement and consider a broader range of tools undertaken by leaders at all levels, up to the Board - utilise opportunity of launch of Quality Strategy.		Complete	Further paper to Board in February 2020 on staff engagament and approach to Investors in People.
		14.2	Consider ways for Board member involvement and support; re-energise SPSP walk rounds, consider visit programme.		Ongoing	SPSP ogoing in some areas and for review by March 2020. Visit programme developed for 20/21 Plan.
		14.3	Consider different venues for Governance Committee Meetings/focus on visibility to both consider staff engagement and influence on an open and transparent culture.		Complete	Position reviewed - JBR meantime.
		14.4	Work on increasing iMatter uptake and agree plan for addressing recurring themes.		Ongoing	Work continues - updates regularly to CMT and Staff Governance.

Key:

Shaded items were agreed at MSG session on 22 August 2019

A54:G63G58B61:G63G58B61:G63G58B61:G63G58B61:G63

APPENDIX 3 - Board Development Action Plan 2020/21 **BOARD OFFICIAL**

Functions	Key Area of Focus	Actions	Lead	Timescales
Setting Direction	Moving Forward Together (MFT) Transformation Programme	• Establish Steering Group to support the delivery of MFT with input from health and social care partners.	Jennifer Armstrong/Chief Officers	April 2020
		• Short life working group (SLWG) to be commissioned to agree the Terms of Reference for the Steering Group. This will include consequential impact on other Board governance groups to avoid duplication.	Jacqueline Forbes supported by John Mathews and Margaret Kerr (Non Executives) Executive Lead; Medical Director, Jennifer Armstrong	February 2020
	Ongoing series of Board Away Days to focus on strategic priorities and planning.	• Confirm programme of Board Away Days for 2020 to include Mental Health, Integration/Primary Care and Public Health.	Head of Corporate Governance and Administration, Elaine Vanhegan	March 2020
	Set out specific and measurable Corporate Objectives for 2020/21	• Present 2020/21 objectives in the context of escalation and improvement plans	Chief Executive	April 2020
Holding to Account	Unscheduled Care to include Out of Hours Service	• SLWG to be commissioned to review and make recommendations to revise the current arrangements for the governance of unscheduled care and potential impact on Board committees.	Simon Carr supported by Susan Brimelow (Non Executives) Executive Lead; Jonathan Best and an IJB Chief Officer (tbc)	March 2020
		• SLWG will agree approach to benchmarking approach to unscheduled care and out of hours services with other Territorial Boards.	Head of Corporate Governance and Administration, Elaine Vanhegan	April 2020
		• Following conclusion of the SLWG the following will be reviewed: - Scheme of delegation - Further revision of relevant committee terms of reference - Further development of standing committee and board agenda planning and forward planning;		

Functions	Key Area of Focus	Actions	Lead	Timescales
		- Review approach to performance management and reporting and revise Performance Framework as required - Review of public access to Board standing committees. • Note: SLWG work to be cross referenced to the Information Assurance System work being undertaken and linked to the Performance Framework.		
Assessing Risk	Review of the Board's Approach to Risk and Risk Appetite and revise Risk Strategy.	• Board Standing Committees to undertake 'deep dive' review of existing corporate risks. • Board Development session to review outputs from 'deep dive' in relation to the Board's risk appetite. • Engage external support to facilitate review of approach. • Develop revised Risk Strategy	Chairs of Board Standing Committees; Mark White Director of Finance (DOF) Mark White – DOF / Alan McLeod Chair Audit Committee Mark White - DOF Mark White - DOF	End March 2020 Board meeting 28th April 2020 June Board
Engaging Stakeholders	Focussed programme of visits to Acute and Corporate Departments Ensure ongoing input to the Scottish Patient Safety Programme (SPSP) Set out revised approach to Communication and Engagement	• Programme of bi monthly visits interactive visits for Board Members • Review to be undertaken to refresh and confirm programme of participation in the SPSP • Develop robust communication and engagement Strategy to be and approved by the Board to engage patients, service users and their families & carers and staff working in both primary and secondary care. • Develop proposal for staff attendance at Board Meetings	Elaine Vanhegan; Head of Corporate Governance and Administration Jennifer Armstrong Medical Director and Margaret McGuire, Nurse Director (Elaine Vanhegan) Director of Communications and Public Engagement, Sandra Bustillo Head of Corporate Governance and Administration, Elaine Vanhegan	March 2020 April 2020 April 2020 April 2020

Functions	Key Area of Focus	Actions	Lead	Timescales
Influencing Culture	Further work to be undertaken to consider the impact of Leadership and culture on organisational performance.	• Recruit to agreed additional capacity to the leadership team	Jane Grant, Chief Executive	March 2020
		• Leadership team to work with Scottish Government and Oversight Board to develop actions to improve the senior Team's approach to leadership which may impact on performance.	Jane Grant, Chief Executive/Senior Leadership Team	March 2020
		• Seek Board approval for the Collective Leadership Programme and the proposal to introduce Investors in People.	Director of HR, Anne Macpherson	February 2020
		• Undertake a benchmarking exercise on leadership and culture to review approach adopted by other Territorial Boards.	Anne Macpherson, Director of HR	June 2020
		• Develop an implementation Plan to introduce new Whistleblowing Standards and hold board development session in May.	Elaine Vanhegan Head of Corporate Governance and Administration /Anne McPherson Director of HR	May 2020

Enablers for Good Governance	Key Area of Focus	Actions	Lead	Timescales
Skills, Experience and Diversity	Alignment of skills and experience to meet Board requirements and any changes to governance arrangements	• Review non-executive Board Members' time commitment.	Chairman/Elaine Vanhegan	April 2020
		• Review the allocation of roles and responsibilities of current and new non-executive directors.	Chairman/Elaine Vanhegan	March 2020
		• Process put in place to appoint Vice Chair.	Chairman/Elaine Vanhegan	February 2020
		• Establish SLWG to review and implement robust induction arrangements and development requirements for non-executive directors.	Alan Cowan Non Executive supported by Amina Khan Non-Executive; Executive Leadership - Anne Macpherson	February/March 2020

Enablers for Good Governance	Key Area of Focus	Actions	Lead	Timescales
Roles, Responsibilities and Accountabilities	Review of non-executive director workload in the context of ongoing focussed review of governance	• Review with non-executive directors what capacity exists to support interim additional Board support requirements. • Mapping exercise with capacity exercise against SLWG group view of development requirements.	Chairman/Non-Executive Directors Chairman/Elaine Vanhegan	February/March 2020 March 2020
Values, Relationships and Behaviours	Review of relationships and behaviours between non-executive directors and leadership team to formally assess if the Board is operating in an environment of 'active governance'	• Engage Michael Deighan to provide external expert assessment of Board, Standing Committees and Joint Integration Board meetings to provide opinion on how the Board conducts its business. • Set up a programme with the Royal College of Physicians of Edinburgh to build governance capability through its Governance Fellowship Programme.	Chairman Elaine Vanhegan	February 2020 May 2020

Supports to Good Governance	Key Area of Focus	Actions	Lead	Timescales
Assurance Information Framework	Review of the provision of appropriate information to support robust decision making across all areas that the Board is accountable for.	• SLWG to be established to review and define requirements to provide assurance that Board Members receive the necessary information to support well informed, evidence based, risk assessed decision making. • The assessment will be cross referenced to the actions in relation to 'holding to account' in relation to unscheduled care and out of hours services. • The information assurance assessment of requirements will be integrated to cover end to end health and social care service delivery. • The work of the SLWG will be informed by the work of the Turnaround Director, the approach to the	Allan MacLeod supported by Ian Ritchie Executive Leadership Mark White, DOF	March 2020

Supports to Good Governance	Key Area of Focus	Actions	Lead	Timescales
		Performance Framework and include benchmarking approach with other Territorial Boards.		
Audit Services	Review of Strategic Internal Audit Plan Benchmarking exercise on approach to Audit	• Review of strategic 2020/21 internal audit plan in the context of Board Seminar to be held in March 2020 re risk. • Audit Committee to direct work to benchmark NHSGGC approach to audit with method adopted by Territorial Boards (link to below action benchmarking all standing committees)	Mark White, DOF	May 2020
Administration Arrangements	Review of corporate administration support arrangements to provide robust and timely information to support the Board's governance functions.	SLWG to be established to review and make recommendations on: • Current arrangements for ensuring Board and Standing Committee papers, minutes and Chairs' updates to the Board and Standing Committees are of the highest quality and presented in a timely manner. • The role of Standing Committee Chairs in setting agendas, approving minutes and assuring the quality of papers. • The process to benchmark all Standing Committees with other Boards standing committees in respect of Board Papers, Terms of Reference, agenda content, minutes and actions to be cross referenced to the work of the 'holding to account' SLWG.	Donny Lyons supported by Jim Clocherty, Non Executives Leadership input - Elaine Vanhegan	March 2020

NHS Greater Glasgow and Clyde	**Paper No. 25/27**
Meeting:	**Additional Board Meeting**
Meeting Date:	**Wednesday 23 April 2025**
Title:	**NHSGGC Improvement Plan and HIS Review Cover Paper**
Sponsoring Director/Manager:	**Professor Jann Gardner, Chief Executive**
Report Author:	**Scott Wilson, Senior Business Manager**

1. Purpose

The purpose of the attached paper is to outline NHS Greater Glasgow and Clyde's strategic improvement programme aimed at transforming the delivery of unscheduled and planned care which fully incorporates the recommendations of the Healthcare Improvement Scotland (HIS) Emergency Department review. It sets out the rationale for change in response to ongoing system pressures, summarises the key themes and recommendations, and introduces the new strategic improvement programme – **The GGC Way Forward Framework** – a structured approach to drive whole-system reform, improve patient outcomes, and enhance staff and patient experience across acute services.

2. Executive Summary

The paper can be summarised as follows:

- NHSGGC has launched a bold, system-wide improvement programme to transform unscheduled and planned care. This initiative responds to system pressures across acute and wider services, which potentially impact care quality and staff wellbeing. Grounded in national policy, local need, and **Healthcare Improvement Scotland Emergency Department review findings**, the programme sets a strategic vision focused on improving access, embracing digital innovation, shifting care closer to communities, and enhancing population health.

- This comprehensive improvement programme will be co-designed with our staff and delivered in partnership. The **GGC Way Forward** will sit alongside our **Reform 25: Transforming Together** innovative transformation programme. Governance arrangements for these programmes are outlined. These two programmes will ultimately merge once sufficient remedial work has been completed with the **GGC Way Forward**.

- **Reform 25: Transforming Together** includes the implementation of the FNC+Plus model, development of a 1000-bed virtual hospital, rollout of eTriage across A&E sites, and better integration with primary and social care. A series of hackathons is driving innovation, while the **Reform 25: Transforming Together programmes structure** will provide Programme oversight.

- The HIS review highlighted critical issues in staffing, facilities, flow, culture, communication, and incident reporting. NHSGGC has committed to addressing these challenges through improved governance, inclusive engagement, and transparent processes. Milestones include staff engagement, professional forums, structured action planning, and rapid learning from adverse events.

- Through the **GGC Way Forward Framework** and continued collaboration, NHSGGC is committed to delivering sustainable, meaningful change to improve patient outcomes, staff morale, and system resilience.

3. Recommendations

The NHS Board is asked to consider the following recommendations:

- Approve the improvement programme outlined in the report.

- Note the governance arrangements outlined for the improvement programme, with a full Board paper to follow.

- Provide any feedback on the improvement programme and overall process to the author as required.

4. Response Required

This paper is presented for approval.

5. Impact Assessment

The impact of this paper on NHSGGC's corporate aims, approach to equality and diversity and environmental impact are assessed as follows: the overall improvement programme will focus on all aspects of unscheduled and planned care in GGC with an aim of improving clinical services and their environments, alongside ensuring that resource is utilised in the most effective way possible to resolve issues raised nationally, locally and within the HIS ED Review.

- Better Health Positive impact
- Better Care Positive impact
- Better Value Positive impact
- Better Workplace Positive impact
- Equality & Diversity Positive impact
- Environment Positive impact

6. Engagement & Communications

The issues addressed in this paper were subject to the following engagement and communications activity:

- A range of staff have been consulted following the publication of the HIS ED Review.
- Site visits have taken place following the publication of the review.
- Small group meetings and individually sessions have been offered to staff.
- A staff questionnaire will be used to gather feedback from all key stakeholders.
- A Hackathon programme has commenced as part of the engagement process within the overall improvement plans.

7. Governance Route

This information in this paper has been considered at the Board Briefing on Thursday 10 April 2025.

8. Date Prepared & Issued

Paper prepared on: 17 April 2025.
Paper issued on: 17 April 2025.

NHS Greater Glasgow and Clyde	**Paper No. 25/27**
Meeting:	**Additional Board Meeting**
Meeting Date:	**Wednesday 23 April 2025**
Title:	**NHSGGC Improvement Plan and HIS Review**
Sponsoring Director/Manager:	**Professor Jann Gardner, Chief Executive**
Report Author:	**Scott Wilson, Senior Business Manager**

1. Introduction

NHS Greater Glasgow and Clyde is embarking on a bold and comprehensive whole-system improvement programme aimed at transforming the delivery of both unscheduled and planned care. This initiative responds to ongoing pressures across acute and wider services, which are currently operating beyond safe capacity, impacting the quality of care for patients and the working conditions for staff. Driven by national policy, Healthcare Improvement Scotland ED Review recommendations, and local needs, the programme sets out a strategic vision to improve access, harness digital innovation, shift the balance of care, and enhance population health. This report outlines the proposed improvement plan, key themes from the HIS review, and the framework for action through the GGC Way Forward, setting the stage for sustainable, system-wide transformation.

2. Background

Our hospitals and wider systems are consistently operating beyond maximum capacity, leading to suboptimal conditions for both patients and staff. This unsustainable situation requires a bold, progressive transformation of care delivery. In response, the Scottish Government, in collaboration with NHS Scotland, has mandated system-wide reform, identifying key levers essential to evolving and improving the care system. The improvement plan is outlined below.

3. Assessment

NHSGGC will embark on a whole system improvement programme focusing on unscheduled and planned care. Elements of the HIS recommendations will shape part of this work, along with other national and local drivers.

3.1 Overview of Improvement Plan and Reform 25: Transforming Together

There are four key elements for a whole systems acute improvement plan.

- Improve access – deliver and sustain the changes required to reduce immediate pressures across our system and improve access to treatment.

- Harness Digital and Innovation – implement digital and technological innovation to support prevention and improve access to and delivery of care.
- Shift the balance of care – taking a while system approach, we will shift the balance of care between acute services and our communities.
- Improve population health – working with people to prevent illness and more proactively meet people's needs we will support proactive prevention.

The vision involves defining the FNC+Plus system in NHSGGC, including clear models for a virtual hospital including eTriage. Key objectives focus on shifting the balance of care, enabling more patients to remain at home, reducing length of stay and delayed discharges, and tracking progress through critical metrics. Innovative digital developments will be required to support this ambition. This vision will be led by our innovative transformation programme titled: *Reform 25: Transforming Together*.

The aim is to enhance demand management, patient flow, and overall experience for patients and staff. This involves testing and evolving systems in real time, establishing an Interface Division with strong clinical governance, and launching the FNC+Plus model. Key actions include implementing eTriage units at all A&E sites, developing a 1000-bed virtual hospital with Doccla, and collaborating on care pathways and escalation triggers. Efforts also focus on optimising the five main access points, expanding access via the NHS Scotland App, and preparing for future AI and technological advancements.

The Reform 25: Transforming Together programme has commenced with the launch of the Hackathon series. The initial hackathon focused on strategy and continuous improvement, with the second planned for summer 2025 to focus on a clinical deep dive. A third hackathon with focus on social care and the wider system. Results from each of these will underpin actions plans and development programmes.

3.2 HIS Review and Themes

Alongside the creation of the overall improvement plan, the recommendations from the Healthcare Improvement Scotland (HIS) review will contribute to developments. When HIS undertook to review the three largest adult Emergency Departments within NHS Greater Glasgow and Clyde, four main aims were identified:

1. Provide an evidence-based, balanced, objective, and proportionate analysis of the key challenges facing the emergency department in the QEUH.
2. Consider any wider implications for the emergency departments at the RAH and GRI.
3. Offer support to NHSGGC to identify practical, evidence-based and sustainable actions that may be required to improve quality and safety in emergency departments in NHSGGC.
4. Consider any wider evidence-based learning for emergency departments across NHSScotland.

The pressures within emergency and urgent care are fully recognised and acknowledged within NHSGGC. It is important to note that urgent care pressures are a challenge within NHSGGC, Scotland and the UK.

From the full recommendations (Appendix 1), and subsequent internal analysis, along with feedback from the initial meetings and site visits, the following key issues and themes are found:

- Nursing and Medical Staffing within the Emergency Department: The review identified staffing shortages, and in some instances, strained relationships between staffing groups. This led to challenges for overwhelmed A&E departments.

- Facilities and Layout of the Emergency Department: HIS raised concerns about the emergency department capacity when demand is high. This overcrowding resulted in issues such as corridor care and ambulance stacking which impacts patient care. The physical layout in some areas causes problems which need to be resolved.

- Flow and Escalation Processes into Sites and Across Systems: The report highlighted the need for better systems for escalating concerns when emergency departments were overwhelmed. A whole systems approach across each site is required for this, with all hospital departments taking ownership and working alongside ED colleagues to coordinate flow.

- Incident Reports and Learning: The escalation process needs to be improved and is not performing at an effective level. This discouraged staff from reporting adverse events, hindering opportunities for learning and improvement.

- Culture and Relationships: The poor culture, morale and relationships in the working environment were described by staff. This culture negatively impacted staff morale and patient care.

- Communication: The review found that communication between senior management and frontline staff was lacking, leading to a disconnect in addressing the challenges within the emergency departments. Staff felt their concerns were not being heard or acted upon.

In response to these findings, NHSGGC acknowledged the issues and committed to implementing improvements, pledging to address staff concerns and rebuild trust. It is important that GGC consider the short-term output and a vehicle to move forward together and consider the medium-term output with a whole systems reform. It is also vital to take time to understand and enhance relationships with everyone involved. To support this, a new way forward and structure will be developed.

3.3 GGC Way Forward

As part of the improvement plan, a framework will be developed to strategically oversee, develop and implement improvement actions plans across the Emergency Department and wider system across the organisation. This will be known as the GGC Way Forward Framework.

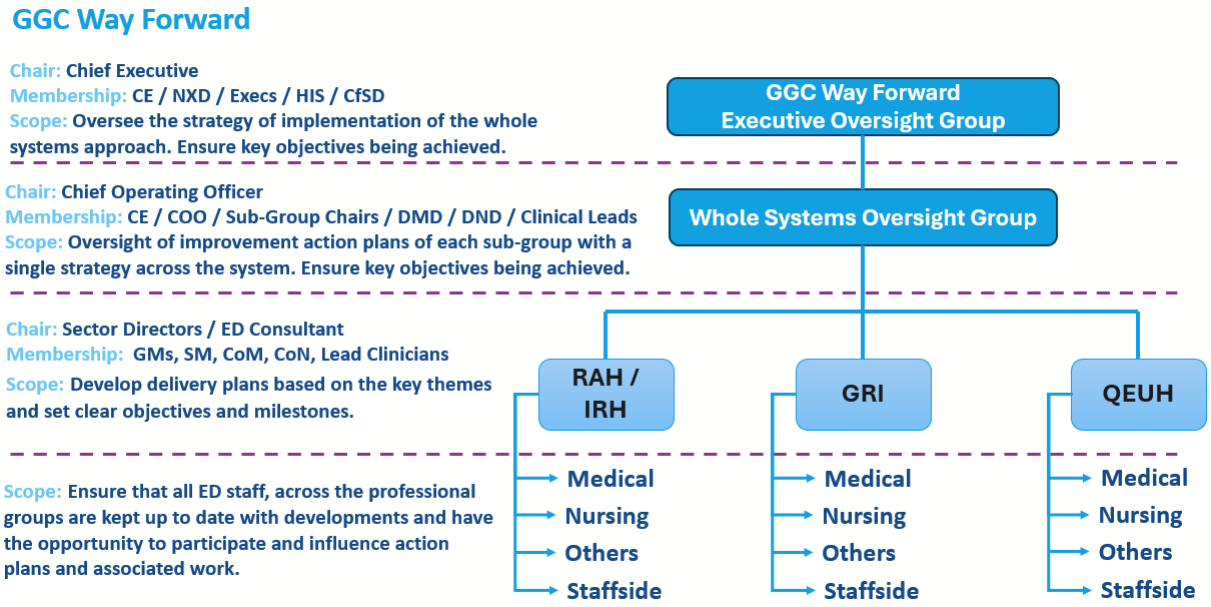
The framework will involve a wide range of staff from the ED departments and some other acute areas, with local improvement groups established and led by sector directors. This will include representation from medical and nursing staff, along with

any other professional groups in the ED and staffside. Actions will be agreed, and these groups will manage their implementation in an operational approach.

These groups will be overseen by a Whole Systems Working Group, chaired by the Chief Operating Officer. The group will have oversight of the action plans, will monitor progress and will ensure a single strategy is implemented across the sites, with local adaptations in place as required.

The Executive Oversight Group will lead of the strategy of the framework, ensuring there is a whole system and joined up approach to all improvement work.

The diagram below demonstrates the Way Forward structure.



Initial planning for the development and implementation of the framework, with suggested membership and terms of reference has commenced.

3.4 Proposed Governance Arrangements

An outline of the proposed governance arrangements for each programme of work is provided. A full paper will be submitted to the NHSGGC Board for approval on governance arrangements.

3.4.1 – The GGC Way Forward

This Executive Oversight Group for the GGC Way Forward will follow a reporting and approval route comprised of the following structure:

- Director's Meeting – Part 1 (reform of Informal Director's Meeting)
- Corporate Management Team
- Inquiry Oversight Sub-Committee of the Board
- GGC Board

3.4.2 – Reform 25: Transforming Together

This Executive Oversight Group for the Reform 25: Transforming Together will follow a reporting and approval route comprised of the following structure:

- Director's Meeting – Part 2 (reform of Informal Director's Meeting)
- Corporate Management Team
- Interface Sub-Committee of the FP&P

- Finance, Performance and Planning Committee
- GGC Board

3.5 Reform 25: GGC Way Forward – Transforming Together

The Reform 25: Transforming Together comprehensive improvement programme – linked in to the HIS review – outlined above, will be carefully co-designed in collaboration with our staff, ensuring that their insights, experiences, and frontline knowledge shape the development process. By actively involving those who understand the challenges and opportunities within the organisation, we aim to build a programme that is both practical and meaningful. Delivery of the programme will be undertaken through strong partnerships, emphasising shared ownership and collective responsibility for driving positive change across all levels of the organisation. Staffside representation will be included in this work.

The GGC Way Forward will operate in close alignment with Reform 25: Transforming Together, our ambitious and innovative transformation initiative. While the two programmes have distinct initial focuses, they are inherently interconnected and will eventually converge. Once the necessary remedial actions and foundational improvements have been successfully implemented under the GGC Way Forward, the two programmes will merge into a unified strategic transformation effort. This phased integration will ensure that *Reform 25: GGC Way Forward – Transforming Together* is built upon a stable, improved platform, setting the stage for sustained progress and innovation across NHSGGC. This is demonstrated in the diagram.



3.6 Milestones

As the improvement plan progresses, groups are established and actions are implemented, there will be a range of milestones achieved. These are described below.

- Feedback from ED staff initial meeting, site visits and result of the staff questionnaire: All information gathered as part of the consulting and engagement process following the publication of the HIS review will be made available and used as part of the action plan development.

- Professional group discussions and forums: As part of initial feedback some professional groups have requested a forum to discuss improvements for their clinical group. These will be established.

- The GGC Way Forward: As outlined above, a new structure will be created and implemented to support the improvement programme on a whole-systems approach.

- Full systems action plan created and implemented: The creation of the action plan will ensure that improvements are planned and tracked in an efficient manner with full engagement and visibility across the organisation.

- SAERS – rapid improvement work: As part of ensuring learning and improvement from significant adverse events, a review of the current process will commence.

- The merger of Reform 25: Transforming Together and The GGC Way Forward will progress to ensure sustained progress and innovation across NHSGGC.

Regular updates on the above will be provided throughout the improvement programme journey and will be made available in communications to all staff and key stakeholders.

4. Conclusions

The challenges facing NHSGGC's acute care system are significant, but they are not insurmountable. Through a clear, coordinated improvement programme and the implementation of the GGC Way Forward Framework, the organisation is taking decisive steps to address capacity pressures, improve patient outcomes, and support staff wellbeing. By embedding innovation, strengthening communication, and fostering a culture of continuous learning, NHSGGC is committed to delivering meaningful, lasting change across its services. Ongoing engagement, transparency, and collaboration will be key to ensuring the success of this whole-system transformation.

5. Recommendations

The Additional Board Meeting is asked to:

- Approve the improvement programme outlined in the report.

- Note the governance arrangements outlined for the improvement programme with a full Board paper to follow.

- Provide any feedback on the improvement programme and overall process to the author as required.

6. Implementation

The overall improvement programme and the GGC Way Forward will have formal governance routes into the CMT, which will in turn report to the GGC Board. A communication plan will be developed alongside this work to ensure transparency and engagement across key stakeholders.

This work has already commenced, and further timescales will be established as sub-groups within the GGC Way Forward framework establish their actions plans.

7. Appendices

APPENDIX 1 – Full Healthcare Improvement Scotland GGC ED Review. This provides information on all recommendations as outlined above.

NHS-Greater-Glasgow-and-Clyde-Emergency-Department-Review-Final-Report-March-2025-.pdf

NHSGGC (M) 25/02
Minutes: 30 – 35

NHS GREATER GLASGOW AND CLYDE

Minutes of the Meeting of the NHS Greater Glasgow and Clyde Additional Board held on Wednesday, 23 February 2025 at 10.00 am hybrid at JB Russell House/via Microsoft Teams

PRESENT

Dr Lesley Thomson KC (in the Chair)

Ms Mehvish Ashraf	Ms Lesley McDonald
Mr Brian Auld	Dr Becky Metcalfe
Ms Libby Cairns	Ms Ketki Miles
Ms Ann Cameron-Burns	Cllr Robert Moran
Mr Martin Cawley	Mr Colin Neil
Ms Cath Cooney	Cllr Katie Pragnell
Dr Emilia Crighton	Dr Lesley Rousselet
Cllr Chris Cunningham	Dr Paul Ryan
Ms Dianne Foy	Ms Karen Turner
Professor Jann Gardner	Mr Charles Vincent
Mr David Gould	Ms Michelle Wailes
Mr Graham Haddock OBE	Professor Angela Wallace
Ms Margaret Kerr	

IN ATTENDANCE

Ms Denise Brown		Director of Digital Services
Ms Sandra Bustillo		Director of Communications and Public Engagement
Ms Kim Donald		Corporate Services Manager Governance/Board Secretary
Mr William Edwards		Chief Operating Officer, Acute Services
Ms Morag Gardner		Deputy Nurse Director
Ms Carron O'Byrne		Interim Chief Officer, Renfrewshire HSCP
Mrs Louise Russell		Secretariat Manager (Minutes)
Ms Natalie Smith		Deputy Director of Human Resources & Organisational Development
Mr Allen Stevenson		Interim Director of Primary Care
Ms Elaine Vanhegan		Director of Corporate Services and Governance
Mr Scott Wilson		Senior Business and Delivery Manager, Chief Executive's Office

			Action
30.	**Welcome and Apologies**		
	The Chair, Dr Lesley Thomson KC, welcomed those present to the special meeting of NHS Greater Glasgow and Clyde Board which focussed on the Healthcare Improvement Scotland (HIS) Emergency Department Review. The meeting combined members joining via video conferencing and a gathering of some members within the Boardroom of JB Russell House. The Chair also welcomed members of the public who had taken up the invitation to attend the additional Board meeting as non-participant observers. Apologies were recorded on behalf of Councillor Collette McDiarmid, Dr Scott Davidson, Professor Iain McInnes, Mr Derrick Pearce, Ms Julie Murray and Mr Pat Togher. **NOTED**		
31.	**Declaration(s) of Interest(s)**		
	The Chair invited members to declare any interests in any of the matters being discussed. There were no declarations made. **NOTED**		
32.	**Chair's Opening Statement**		
	The Chair reported that a special Board meeting had been arranged to lay out the initial steps and actions of the strategic improvement programme aimed at transforming the delivery of unscheduled and planned care, which fully incorporated the recommendations of the HIS Emergency Department review. The Chair noted that a Board members briefing session had taken place and Board members had the opportunity to provide feedback prior to the meeting. The Chair reported that staff had raised concerns externally in May 2023 and acknowledged that this was wholly unacceptable, and she offered her sincere apologies that staff were required to do that. She recognised that Emergency Department staff were working under incredible and unremitting pressure, which led to feeling undervalued		

			Action
	and a sense of helplessness regarding the situation. The Chair acknowledged that this was wrong and offered her apologies to each and every member of staff. The Chair recognised that trust had been lost, however hoped that the commitment of the Chief Executive and the Board to work with staff in a co-design way would rebuild trust in order to move forward and improve in all areas. **NOTED**		
33.	**NHS Greater Glasgow and Clyde Emergency Department Review (HIS): March 2025**		
	Professor Jann Gardner, Chief Executive, provided a presentation on the GGC Way Forward – Transforming Together, which was a new programme of transformation, driving whole-system reform. This had evolved from Moving Forward Together (MFT) and was the new strategic way forward. The system-wide initiative would focus on delivering a raft of service improvements to support and ease pressures faced across Acute sites as part of a multi-phased approach. The approach was shaped by six key themes identified via staff feedback and through the recent Healthcare Improvement Scotland (HIS) Emergency Department Review. The GGC Way Forward – Transforming Together marked a new chapter for the Health Board, and reflected a commitment from Professor Gardner, to listen, learn, and act on feedback. Professor Gardner provided a timeline from when concerns were raised from staff at the QEUH in 2022-2023, through to when the final HIS report was published on 27th March 2025. Professor Gardner noted that the review was carried out from July to December 2024, and a draft report was received by the NHSGGC Chief Executive for factual accuracy checking on 21st February 2025. GGC submitted a response to the factual accuracy checking document on 10th March 2025. A final report was received by NHSGGC on 20th March 2025, however this was embargoed until the final report was published on 27th March 2025. Professor Gardner reported that throughout April, a number of meetings had taken place with Emergency Department staff. This included various site visits, small informal and formal meetings with the Chief Executive and ED Consultants. All staff were offered the opportunity to meet individually or in groups, with or without Staffside representation. A questionnaire had also been shared with all ED staff, which was due to close next week and the results would assist		

			Action
	with building the way forward for GGC. She noted that the key 6 issues were in relation to nursing and medical staffing within the ED's, facilities and layout of ED's, flow and escalation processes, incident reports and learning, culture and relationships and communication. She highlighted that these key issues sat parallel to each other and were of equal importance. Professor Gardner recognised that the key issues were complex, however noted that significant improvement was possible. The Board received an overview of the steps that had been taken to date. As part of the initiative NHSGGC were commissioning external experts to support work on improving relationships, behaviours, and organisational culture within the Health Board. An additional formal governance structure had been created to oversee the delivery of the improvement programme, with a number of new Committees created. The new Committees established were: the People Committee, Interface Committee, which would link to the Finance, Planning and Performance Committee, and an Oversight Board which would link directly to the Board. These would be co-led by clinical and managerial leaders with input from non-executive Board members. This would ensure transparency, accountability, and system-wide collaboration. Professor Gardner informed members that HIS were aware of the proposed approach and had been invited to join the Oversight Board as a speciality advisor. A review of the Committees would be carried out within the next 12 months. Professor Gardner summarised the key milestones and the next steps. The system had been re-designed to be more robust and resilient. A deep dive into the SAERs work would take place, with a desire to be more agile. Professor Gardner thanked the members of staff that had taken the time to meet with her to express their concerns. She apologised to the staff for their experiences and apologised that the organisation didn't respond more effectively when concerns were raised and staff had to escalate concerns. This was unacceptable and not at the heart of NHSGGC values. She hoped that this clear transformation plan would set out a new chapter and there was investment to improve patient care, staff morale and wellbeing. The Board members were offered the opportunity to submit questions prior to the meeting. In relation to resources for the implementation of e-triage units across all A&E sites, the Board noted that a number of improvements were		

			Action
	being considered and resources would be bolstered. This included technical integration of existing clinical systems. The Board noted that there would be augmenting of different services to build a robust GGC system, partnering with NHS24 and the Scottish Ambulance Service. In response to a question regarding the status of Moving Forward Together, the Board noted that this had evolved into the one Strategy, the GGC Way Forward. Professor Gardner clarified that the Directors meeting part 1 & 2 was in relation to the Informal Directors meeting that takes place every Monday. This had been revised and part 1 of the meeting would focus on NHSGGC Board business. The Chief Officers, Employee Director and DOP were invited to part 2 of the meeting in order to discuss whole system elements. In response to a question regarding convergence of the programmes, it was noted that time would be dedicated to the challenges expressed. It was estimated that it would be 6-9 months in order to see a way forward. During this time there would remain a focus on the established groups. The Board noted that the voices of staff would be heard on what could be done differently. The Board recognised that the staff had the solutions to make care safe. The formal process for ensuring that the recommendations were fulfilled would flow up with non-executive involvement. There were performance milestones and regular reviews would be carried out. The Board recognised the challenges that had to be addressed swiftly and noted that there would be a focus on learning. There would be opportunities for consideration, for example additional resources for front door, however it would be challenging to fix a timescale to this. The individual group action plans would feed up to the Board. The North/South/Clyde group membership had been formed and provisional dates were in the diary before 1st May. These groups would meet every 2 weeks and would drive forward the work. It was recognised the relationships were fractured and to improve relationships staff would be provided with every opportunity to move forward. This included staff meetings with the Chief Executive and seeking expert advice. It also included considering the correct methodology to move forward, including restorative work, mediation and career conversations.		

			Action
	The Board noted that the Chief Officers contribution was important for a whole system approach and another Hackathon was scheduled for June 2025. In relation to Population Health and Wellbeing, the Board noted that there would be further opportunities as work progressed and this would bring about change and broader discussion. In response to a question regarding whether consideration had been given to similar issues experienced in other areas of the Board, it was recognised that there may be pockets of issues in different areas, however tools for example iMatter bring issues to the forefront. The rapid response was welcomed by the Board, however a question was raised regarding capacity for staff to move forward. The Board noted that dedicated time had been allocated and sessions were available to medical staff. The Board recognised that staff perhaps didn't feel like there was any point in responding to the questionnaire, however it was recognised that the questionnaire didn't stand in isolation. Staff were given the opportunity to meet, the Chief Executive had written to every member of staff setting out the plan to keep them updated. The Board noted that the Employee Director had been involved in meetings and meetings had taken place with official trade union representatives and grass routes information had been fed back to the Chief Executive. In relation to iMatter results, the Board noted it had been agreed that spot checks would be carried out to ensure that action plans had been agreed. In response to a question regarding capturing feedback on how safe volunteers felt, the Board noted that systems were in place to support volunteers and gather feedback. Further consideration would be given to investing in support. In response to a question regarding supplying positive feedback, it was noted that the Communications Team highlighted stories of positive work. **NOTED**		
34.	**AOCB**		
	There were no further items raised.		

			Action
	The Chair thanked Board members, the team and the Chief Executive. **NOTED**		
35.	**Date and Time of Next Meeting**		
	The next meeting would be held on Tuesday 29 April 2025 at 9.30 am via MS Teams. **NOTED**		

The GGC Way Forward – Transforming Together Launches New Commitment To Improvement And Transformation

23/04/2025 | 3 min read

Following a special Board Meeting today (Wednesday 23 April), a new clear path forward has been announced for NHSGGC, marking a strong commitment to collaboration and improving services to positively transform the future of the health service for staff, patients and the wider community.

The GGC Way Forward – Transforming Together, is a bold new programme of transformation, driving whole-system reform.

The system-wide initiative, which marks an evolution in the way health care is delivered within NHSGGC, will focus on delivering a raft of service improvements to support and ease pressures faced across acute sites as part of a multi-phased approach.

At the heart of The GGC Way Forward – Transforming Together is a commitment to partnership throughout.

The approach is shaped by six key themes identified via staff feedback and through a recent Healthcare Improvement Scotland (HIS) Emergency Department Review:

- **Staffing** – ensuring sustainable and supported teams across the service
- **Facilities and the Physical Environment** – creating safe, modern spaces for care
- **Patient Flow and Escalation** – improving how patients move through the system
- **Incident Reporting** – fostering a culture of openness and learning among staff
- **Culture, Behaviours and Relationships** – promoting respect, professionalism, and collaboration
- **Communication** – improving how we connect with staff and patients

The GGC Way Forward – Transforming Together marks a new chapter for the Health Board, and reflects a commitment from new Chief Executive, Professor Jann Gardner, to listening, learning, and acting on feedback from frontline staff and patients.

As part of the initiative NHSGGC is also commissioning external experts to support work on improving relationships, behaviours and organisational culture within the Health Board.

An additional new, formal governance structure has also been created to oversee the delivery of the improvement programme, co-led by clinical and managerial leaders with input from non-executive Board members.

This structure is designed to ensure transparency, accountability, and system-wide collaboration and will see external partners including the Centre for Sustainable Delivery (CfSD) working alongside NHSGGC to provide support and advice. Healthcare Improvement Scotland has also been invited to join the oversight board.

Professor Jann Gardner, Chief Executive of NHSGGC, said: “We have heard clearly from our colleagues across the system, and we’re taking action.

“The GGC Way Forward – Transforming Together is about building a stronger, more inclusive culture and creating lasting improvements.

“This is a new chapter — one where we reinforce working together to deliver the best care possible for our patients by creating a much more collaborative environment which listens to and engages with staff to shape policy and tackle some of the big issues facing us.

“The challenges facing us are significant but I am confident we can make a demonstrable improvement by working together.

“The first phase of the GGC Way Forward – Transforming Together enables us to address a number of those short-term challenges, while also creating the foundation and the environment for much broader positive system-wide improvements in the long term.”

Health board 'sorry' for ignoring doctors' concerns



Staff have been raising concerns over patient safety at the Queen Elizabeth University Hospital in Glasgow since 2021

Lisa Summers
BBC News Scotland

23 April 2025

A health board has apologised to doctors for failing to act on their warnings about patient safety in one of Scotland's busiest emergency departments.

Last month health watchdogs **found a "serious breakdown" in relationships between managers and A&E consultants** was likely to have had a detrimental impact on patient care at Glasgow's Queen Elizabeth University Hospital (QEUH).

Dr Lesley Thomson KC, chair of NHS Greater Glasgow and Clyde (GGC), told an extraordinary meeting of the board it was "unacceptable" that staff were not listened to or their concerns not acted upon.

Dr Thomson said steps to implement the recommendations of a review by Healthcare Improvement Scotland (HIS) are under way.

Emergency medicine consultants at the QEUH first tried to raise concerns about serious safety risks for patients in May 2023.

This included evidence of what they said was treatment delays, inadequate staffing levels and patients being left unassessed in unsuitable waiting areas.

The HIS report into these concerns made 30 recommendations to improve processes and culture in the board.

Dr Thomson said she was "extremely sorry" that the "serious and valid concerns" of staff had not been acted upon and they had to go outside NHS GGC to be listened to.

The health board's chief executive Prof Jann Gardner, who took over the post in February, said "patient safety must always take precedence".

Prof Gardner set out initial steps to address the concerns of staff and to implement the recommendations of the HIS report.

She said it would involve a system-wide transformation of services that would take time, with a focus on rebuilding trust, making more use of digital technology and improving flow through hospitals.

Prof Gardner also said they would make it easier for staff to escalate their concerns about patient safety.



NHS GCC

Prof Jann Gardner took over as the new chief executive of NHS Greater Glasgow and Clyde in February

The HIS review found overcrowding and poor patient flow in the three Greater Glasgow and Clyde A&Es, along with concerns about insufficient management support for frontline staff.

It also said there was a lack of compassionate, respectful and positive leadership at all levels of NHS GGC.

The authors stated this problem is not unique to NHS GGC but that "it cannot and should not be tolerated".

They called for urgent work across Scotland to eliminate the "unacceptable use of non-standard care areas, given the risks to patients and the impact on staff".

Concerns not properly investigated

In 2022, **BBC Scotland revealed how A&E doctors had urged NHS Greater Glasgow and Clyde to declare a major incident** at the hospital amid fears the department would be overwhelmed.

Another request for a major incident to be declared was put forward in December last year amidst overcrowding concerns, **but this was turned down**.

Major incidents are declared when there is a serious threat to the health of the community and might include measures such as non-urgent procedures being cancelled or ambulances being diverted.

The emergency medicine consultants based at QEUH went to the safety watchdog HIS after feeling their concerns were not being listened to internally.

However, after an initial investigation HIS **was forced to apologise to the medics** for not properly investigating their concerns and then last year it launched a review of three NHS GGC emergency departments, including the QEUH.

Prof Gardner said as the board's new chief executive she has met with emergency department consultants and wider staff to establish an improvement programme that will take time to see through.

Related topics

Queen Elizabeth University Hospital **Scotland**

NHS Greater Glasgow and Clyde **NHS Scotland** **Glasgow**

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1 hour ago

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How King Charles is helping to 'reinvigorate' the shaken UK-France friendship



'PM to press Macron' and 'mushroom murders' trial



Poisoned water and scarred hills: BBC visits world's rare earths capital in China

NHSGGC Responds To Review Of Emergency Departments

27/03/2025 | 2 min read

Healthcare Improvement Scotland has today published a report following a review of emergency departments at the Queen Elizabeth University Hospital, Glasgow Royal Infirmary and the Royal Alexandra Hospital.

The emergency departments in NHSGGC, like those across Scotland, continue to be under pressure.

While we aim to provide high quality care for our patients, delays in the flow through and out of hospitals often result in patients waiting too long in emergency departments.

Under these pressures, the working environment can also be difficult for our staff.

We have received the report from Healthcare Improvement Scotland which raises these issues and outlines a range of recommendations to improve both the local NHS GGC system and indeed A&E services across Scotland.

We take the report, and most importantly the views of our patients and staff, very seriously and want to assure our patients and staff of our commitment to improve.

In the two months since NHSGGC Chief Executive Professor Gardner joined the organisation, she has been out meeting staff and hearing about our successes and challenges. Along with Medical Director, Dr Scott Davidson and Nurse Director Professor Angela Wallace, Professor Gardner has pledged to listen to staff and to work collaboratively and respectfully to tackle the challenges we face and to build trust between staff of all levels.

In addition, she has launched ambitious plans for whole system transformation at scale and pace to address the pressures in our hospitals, create capacity to treat more patients who are waiting for treatment and to support more people to be treated from the comfort of their own home.

Ensuring that our staff feel valued and respected is essential for our future success and this will sit at the heart of our work.

Whilst this is being progressed, there may be further short-term measures that can be introduced to improve the patients and staff experience within our emergency departments. The Chief Executive, along with colleagues, will meet staff early next week to begin a supportive dialogue on this.

We will build the recommendations from the HIS ED review into these discussions.

PREVIOUS
Call for GGC women to register pregnancy online before 12 weeks

NEXT
Paisley women praise the support of infant feeding team

From: Burgess E (Elizabeth)
Sent: 27 February 2019 12:01
To: Cabinet Secretary for Health and Sport
Cc: Minister for Public Health, Sport and Wellbeing; Minister for Mental Health; Permanent Secretary; DG Health & Social Care; McQueen F (Fiona); Chief Medical Officer; McLaughlin C (Christine); Rogers S (Shirley); Leitch J (Jason); Wright M (Malcolm); Morrison A (Alan); Holmes A (Ann); Watson E (Emma); Shepherd L (Lesley); Goodfellow M (Melanie); Lea-Ross S (Stephen); Communications Healthier; Taylor M (Mark); Hart S (Suzanne); Hutchison D (David); Judge F (Fraser); Roche R (Rowena); McCallum R (Richard); Grieve B (Bethany); Boddice L (Luke); Wright WA (Billy); Dunk R (Rachael); Birch J (Jason); Shepherd L (Lesley); Goodfellow M (Melanie)
Subject: RE: draft response to question from Monica Lennon MSP in Parliament today
Attachments: NHS GGC - reply to Ms Lennon - 27 February 2019.doc

Follow Up Flag: Follow up
Flag Status: Completed

PS/Cabinet Secretary

Please see attached draft letter to Monica Lennon MSP, amended as requested. This has been cleared with CNO.

Best wishes

Elizabeth

Elizabeth Burgess | Chief Nursing Officer's Directorate | Scottish Government | 2 ER St Andrew's House | Regent Road | Edinburgh | EH1 3DG | [redacted]
Email [redacted]

From: Downie J (Jack) <[redacted]> **On Behalf Of** Cabinet Secretary for Health and Sport
Sent: 27 February 2019 09:53
To: Burgess E (Elizabeth) <[redacted]>
Cc: Minister for Public Health, Sport and Wellbeing <[redacted]>; Minister for Mental Health <[redacted]>; Permanent Secretary <[redacted]>; DG Health & Social Care <[redacted]>; McQueen F (Fiona) <[redacted]>; Chief Medical Officer <[redacted]>; McLaughlin C (Christine) <[redacted]>; Rogers S (Shirley) <[redacted]>; Leitch J (Jason) <[redacted]>; Wright M (Malcolm) <[redacted]>; Morrison A (Alan) <[redacted]>; Holmes A (Ann) <[redacted]>; Watson E (Emma) <[redacted]>; Shepherd L (Lesley) <[redacted]>; Goodfellow M (Melanie) <[redacted]>; Lea-Ross S (Stephen) <[redacted]>; Communications Healthier <[redacted]>; Taylor M (Mark) <[redacted]>; Hart S (Suzanne) <[redacted]>; Hutchison D (David) <[redacted]>; Judge F (Fraser) <[redacted]>; Roche R (Rowena) <[redacted]>; McCallum R (Richard) <[redacted]>; Grieve B (Bethany) <[redacted]>; Boddice L (Luke) <[redacted]>; Wright WA (Billy) <[redacted]>; Dunk R (Rachael) <[redacted]>; Birch J (Jason) <[redacted]>; Shepherd L (Lesley) <[redacted]>; Goodfellow M (Melanie) <[redacted]>; Cabinet Secretary for Health and Sport <[redacted]>
Subject: RE: draft response to question from Monica Lennon MSP in Parliament today

Elizabeth,

The Cabinet Secretary has considered. I've made some changes and additions (in track) to the attached document. Further to this, re the list of infection outbreaks, can we include the dates beside each one? Of the 5 who have died, was infection listed as a contributory factor in each of the 5? If so, please could we indicate. Can we also check that it was 5 deaths – Ms Freeman recalls 3 but not 5? This paragraph should then be reworded to read "....of whom X died and in Y/all cases infection was noted as a contributory factor in the death..".

Ms Freeman would be grateful for a redraft by noon.

Many thanks,
Jack

From: Burgess E (Elizabeth) <[redacted]>
Sent: 26 February 2019 16:53
To: Cabinet Secretary for Health and Sport <[redacted]>
Cc: Minister for Public Health, Sport and Wellbeing <[redacted]>; Minister for Mental Health <[redacted]>; Permanent Secretary <[redacted]>; DG Health & Social Care <[redacted]>; McQueen F (Fiona) <[redacted]>; Chief Medical Officer <[redacted]>; McLaughlin C (Christine) <[redacted]>; Rogers S (Shirley) <[redacted]>; Leitch J (Jason) <[redacted]>; Wright M (Malcolm) <[redacted]>; Morrison A (Alan) <[redacted]>; Holmes A (Ann) <[redacted]>; Watson E (Emma) <[redacted]>; Shepherd L (Lesley) <[redacted]>; Goodfellow M (Melanie) <[redacted]>; Lea-Ross S (Stephen) <[redacted]>; Communications Healthier <[redacted]>; Taylor M (Mark) <[redacted]>; Hart S (Suzanne) <[redacted]>; Hutchison D (David) <[redacted]>; Judge F (Fraser) <[redacted]>; Roche R (Rowena) <[redacted]>; McCallum R (Richard) <[redacted]>; Grieve B (Bethany) <[redacted]>; Boddice L (Luke) <[redacted]>; Wright WA (Billy) <[redacted]>; Dunk R (Rachael) <[redacted]>; Birch J (Jason) <[redacted]>; Shepherd L (Lesley) <[redacted]>; Goodfellow M (Melanie) <[redacted]>
Subject: draft response to question from Monica Lennon MSP in Parliament today

PS/Cabinet Secretary for Health and Sport

Please see attached a draft letter from the Cabinet Secretary, responding to the question raised by Monica Lennon MSP in Parliament this afternoon.

Best wishes

Elizabeth

Elizabeth Burgess

Nursing & Midwifery Policy Unit
Chief Nursing Officer Directorate
The Scottish Government
2ER, St Andrews House, Regent Road, Edinburgh EH1 3DG
Tel: [redacted]
✉ [redacted]

Cabinet Secretary for Health and Sport
Jeane Freeman MSP

Scottish Government
Riaghaltas na h-Alba
gov.scot

T: 0300 244 4000
E: scottish.ministers@gov.scot

Monica Lennon MSP
The Scottish Parliament

By Email.

February 2019

Following my statement to Parliament on 26 February 2019, I made a commitment to confirm to you how many patients have been affected by the incidents at NHS Greater Glasgow and Clyde, how many patients have died and how many of these deaths have been referred to the Procurator Fiscal.

To begin with I would like to make it absolutely clear that my primary concern and that of the health board is the safety and well-being of all the patients, visitors and staff across Glasgow. I am assured by Health Protection Scotland (HPS) and NHS Greater Glasgow and Clyde that all appropriate infection control measures remain in place for the incidents reported across NHS Greater Glasgow and Clyde. HPS and Health Facilities Scotland continue to support the board to manage the incidents and any associated remedial works.

I refer to the following infection outbreaks in NHS Greater Glasgow and Clyde (although a number of incidents are now considered to be closed, there is ongoing vigilance and of course the lessons from each incident are learned and any appropriate action has been taken):

- Water contamination incident at Queen Elizabeth University Hospital/Royal Hospital for Children (HPS notified Scottish Government on 1 March 2018; no further cases of infection since 14 September 2018 and incident closed)
- *Cryptococcus neoformans* at Queen Elizabeth University Hospital (HPS notified Scottish Government on 21 December 2018; no further cases of infection since 21 December and incident closed 15 February)
- Mucoraceous mould at Queen Elizabeth University Hospital (HPS notified Scottish Government on 21 January 2019: no further cases of infection since 21 January and incident closed 15 February)
- [redacted] (HPS notified Scottish Government on 25 January 2019; screening of staff and patients continuing, therefore incident ongoing)

- [redacted] (HPS notified Scottish Government on 6 February 2019; no further cases of infection since 8 February and incident closed 12 February)
- [redacted] (HPS notified Scottish Government on 8 February 2019: no further cases of infection since 8 February and incident closed 15 February)

The information we have to date is that 43 patients have been affected by these incidents, of whom five died. In three of these cases, infection was noted as a contributory factor in the death. A further two cases have been referred to the Procurator Fiscal and the Crown Office have advised us that we are unable to comment further.

Quite rightly, people expect hospitals to provide the highest levels of cleanliness and hygiene and thorough systems are in place to ensure this is the case right across Scotland. All NHS boards are responsible for monitoring and assessing their estates and facilities to ensure compliance with NHS Scotland's National Cleaning Specifications and Monitoring Framework**.**

I hope I have provided the information you sought but that you will not hesitate to contact me if there is further information you require.

As indicated in the chamber, I am copying this information to the other party health spokespeople.

JEANE FREEMAN

Scottish Hospital Inquiry

References to Dr John Hood in Hearing Bundles

Introduction

This document has been prepared by the Inquiry Team to list all documents held by the Inquiry that make reference to Dr John Hood in connection with the water and ventilation systems of the QEUH/RHC and the evidence already heard in the Inquiry.

1. 2008

1.1. On 22 August 2008 Dr Hood sent an email to Myra Campbell cc Heather Griffin re Ventilation – Haemato oncology ward new South Glasgow Hospital (A51666715 – Bundle 43, Volume 1, Document 4, Page 15) stating that if Haem Onc at new SGH to have patients like B7 Beatson – it must be same specification.

2. 2009

2.1. Haemato-oncology Clinical Output Specification – undated – (Bundle 16, Document 15, Page 1595) Advice requested from Dr Hood regarding suitable ventilation to provide a protected environment for this patient group. There should be no opening windows, no chilled beams, sealed and ventilated. Positive pressure to rest of the hospital and all highly filtered air >90% probably best HEPA as in the Beatson West of Scotland Cancer Centre.

2.2. On 18 May 2009 an Infection Control Meeting was held where Dr Hood was not in attendance (Bundle 14, Volume 1, Document 3, Page 47 at Page 75). It is stated that the group reviewed the paper on Isolation Rooms prepared by Dr Redding, Dr Hood and Annette Rankin.

2.3. On 5 June 2009, Dr Hood sent an email to Heather Griffin cc Professor Williams with no subject but high importance (A48743262 – Bundle 43, Volume 2, Document 21, Page 323) where he confirms that the final filters in the Beatson should be the ones in the spec for the Haem Onc area in the new SGH. Professor Williams to agree similar filters for Children's Hospital.

3. 2010

3.1. On 25 October 2010 Dr Hood sent an email to Fiona McCluskey, Jackie Stewart and Professor Williams re Ventilation (Bundle 17, Document 79, Page 3032) saying he has spoken with Mr Peter Hoffman who is happy with proposal for chilled beams in renal dialysis area and explained that 6ACH is for temperature control not infection control issues (not dilution and removal as Dr Hood stated in email of 21 October included in chain).

4. 2011

4.1. No items found

5. 2012

5.1. On 9 November 2012 Dr Inkster sent an email to Mr Hoffman (Bundle 23, Document 14, Page 194) re Isolation Rooms asking if there is any disadvantage to having isolation rooms with lobbies as opposed to conventional negative and positive pressure rooms. Mr Hoffman provides HBN 4 suppl1 and explains air flows, preferring negative pressure leaking inwards and HEPA filters for neutropenic patients.

6. 2013

6.1. No items found

7. 2014

7.1. No items found

8. 2015

8.1. On 25 June 2015 Dr Hood responded to a query from Professor Williams about the use of rooms in Ward 4B for bone marrow transplant patients (Bundle 14 Volume 1, Document 13, Page 323). Dr Hood attaches spec for BMT rooms in Beatson and gives additional detail of specifications that are not on the sheet. Dr Hood suggests Professor Williams speaks to Mr Hoffman. This attachment is likely to be Bundle 23, Document 120, Page 1108 – BMT Original Specification – Gartnavel site – Dr Hood: the design specification of the BMT unit on the top floor of Beatson was developed following discussions with Andy Streifel and Mr Hoffman.

8.2. 7 July 2015 email chain between Dr Peters and Professor Williams copies Dr Hood and others (Bundle 12, Document 31, Page 238) regarding pressure in BMT. No input from Dr Hood.

8.3. On 3 July 2015 Dr Hood sent an email to Dr Peters, Dr Inkster and Professor Jones re BMT rooms: for your comments (Bundle 14, Volume 1, Document 16, Page 334 at Page 357) stating given his experience of design and commissioning of BMTUs in GRI in 1999 and Beatson in 2007/08 he would not have allowed patients into these units on the basis of information below. Aspergillus control is not only about HEPA filtration but also air changes to dilute and remove and a consistent flow of air from the room to the corridor".

8.4. On 7 July 2015 Dr Hood responds to Professor Williams email with annotated comments on draft document to clarify original building requirements and validation process (Bundle 14, Volume 1, Document 16, Page 334 at Page 369) the marked up attachment gives detailed response and agrees safest to return patients to Beatson until isolation rooms properly commissioned and validated. Professor Williams agrees (Bundle 27, Volume 3, Document 13, Page 295) rooms not built to spec and should be same as Beatson.

8.5. Document by Dr Inkster summarising events between 19 June and 7 July 2015 (Bundle 14, Volume 1, Document 27, Page 416). On 1 July (Page 417) she attended 2 incident meetings to discuss adult BMT and current ventilation parameters in which she states it was enough for her and colleagues (Dr Peters, Professor Jones & Dr Hood) to conclude the environment was not safe for patients.

8.6. On 4 August 2015 a Board Water Safety Group Meeting was held (Bundle 11, Document 15, Page 43). Item 8 (Page 44) states Allan Gallagher met Professor Williams and Dr Hood to discuss Legionella sampling. Engineering risks still being identified in line with the Policy. From a non-clinical perspective there are long term issues with temperature control.

8.7. On 7 August 2015 Pauline Wright sent an email to Sandra McNamee (Bundle 27, Volume 4, Document 28, Page 327) stating Dr Hood discussing with Ian Powrie to get information on room spec/validation data/progress with permeability testing and will discuss with Mr Hoffman. Until then no recommendation can be made regarding whether rooms can be used for transplant.

8.8. On 7 August 2015 Professor Jones sent an email to Pauline Wright and Bernadette Findlay re 2A RHC Advice required forwarding email sent to Sandra (Bundle 27, Volume 6, Document 23, Page 243) and clarifying he does not have IPC remit and that has discussed with Dr Hood.

8.9. On 10 August 2015 a RHSC BMT meeting was held where Dr Hood was present (Bundle 13, Document 117, Page 842) to discuss concerns regarding the former BMT. States Dr Hood to identify alternate English building note 2013 and send to attendees. No written comment from Dr Hood.

8.10. On 14 August 2015 email chain between Mr Hoffman and Dr Hood re BMTU RHC (Bundle 12, Document 43, page 293) at page 294 where Dr Hood states if seals fail, air is pulled into room resulting in ingress of bacteria and viruses. He forwards to Mr Hoffman who responds that room specification is irrelevant. Permeability test does not show total sealing, smoke tests show ingress of unfiltered air through gaps in room integrity.

8.11. On 19 August 2015 email chain between David Loudon forwarding Ian Powrie email to Alasdair Fernie (Bundle 12, Document 44, page 296) re BMT. IP states smoke test revealed penetrations not yet sealed and Dr Hood carried out air sampling plates within en-suite IPS and room to establish if this is reason for variable fungal results.

8.12. On 2 September 2015 William Hunter sent email to Dr Hood (Bundle 12, Document 53, Page 360) requesting smoke test time in Ward 2B so David Brattey and Brookfield can attend. Informs David Loudon (Bundle 23, Document 76, Page 762 at Page 764) will be at 4pm that day with Dr Hood, Professor Williams, David Brattey & Julie Miller attending. Rooms linked to BMS but silent. David Brattey to arrange alarm activation on Helpdesk and clarity on pressure tolerance levels to be prioritised.

8.13. On 10 September 2015 Dr Inkster sent an email to Sandra McNamee re Sealing of suites within Children's Hospital Ward 2A (Bundle 23, Document 100, Page 1018 at Page 1021) stating not been involved in discussions/attended meetings or received handover. Any decision should include estates colleagues, Professor Williams and Dr Hood. Alison, Pamela and I cannot recommend that unit is safe for transplant procedures.

8.14. On 12 November 2015 a BMT Unit Transfer to QEUH meeting was held with Dr Hood attending (Bundle 13, Document 119, Page 845). No written comment from Dr Hood.

8.15. On 30 November 2015 a BMT Unit Transfer to QEUH meeting was held (Bundle 13, Document 121, Page 848). Dr Hood was not present. Minute records that following smoke testing, sealant is required in several rooms and Dr Inkster will ask Dr Hood to provide list. Pentamidine room found to be positively pressured on testing by Dr Hood when should be negatively pressured. Room not to be used until rectified.

8.16. On 2 December 2015 Dr Hood wrote an email to Dr Inkster re BMTU Rooms (Bundle 12, Document 84, Page 732 at Page 736) saying he had amended his inspection report on BMT to state all his pressure readings tallied with digital readings for each room.".

9. 2016

9.1. On 22 June 2016, Douglas Ross sent email to David Loudon (Bundle 12, Document 104, Page 813) stating acceptance of air changes from 6 to 3 during bid evaluation/preferred bidder discussions. Mr Ross refers to Dr Hood email of 25 October 2010 and notes proposed change for renal unit accepted as air changes in non-specialised ventilation areas is for temperature not infection control.

10. 2017

10.1. On 5 September 2017 Dr Redding sent an email to Tom Walsh, Sandra McNamee and Professor Jones re Infection Control (Bundle 14, Volume 1, Document 73, Page 722 at Page 727). Understands Dr Inkster, Dr Hood and Dr Peters have recorded their ventilation concerns and cannot be ignored due to vast experience and knowledge on ventilation. GGC must take their concerns very seriously.

11. 2018

11.1. On 26 April 2018 an SMT meeting was held (Bundle 13, Document 90, Page 672) which Dr Hood did not attend but actions note that Aleks and Dr Hood did a review of negative pressure rooms at GRI and Dr Inkster to take forward.

11.2. On 4 May 2018 a Water Review Meeting was held where Dr Hood was not present (Bundle 10, Document 5, Page 22) but it was agreed that he and others would attend a meeting with T Makin.

11.3. On 22 June 2018 a Water Review Meeting (Technical) was held where Dr Hood present (Bundle 10, Document 11, Page 44) Item 1 –agreed to commence monitoring bacterial counts after dosing and Chlorine Dioxide no longer working to clear system. Agreed to

set up session to review action plan, areas affected and progress with all members invited along with Dr Hood, Jamie Redfern & Mel MacMillan.

11.4. On 27 June 2018 a Water Review Meeting (Technical) was held where Dr Hood gives his apologies (Bundle 10, Document 12, Page 48).

11.5. On 11 July 2018 a Half Day Water Meeting held where Dr Hood present (Bundle 10, Document 14, Page 56). Appears to be TK Makin meeting agreed 22 June 2018.

11.6. On 27 July 2018 a Water Review Meeting (Technical) was held where Dr Hood present (Bundle 10, Document 17, Page 68). Horne Tap contamination discussed.

11.7. On 3 August 2018 at Water Review Meeting (Technical) was held where Dr Hood present (Bundle 10, Document 18, Page 71).

11.8. On 10 August 2018 a Water Review Meeting (Technical) was held where Dr Hood attended (Bundle 10, Document 19, Page 75). Item 6 Dr Hood contacted Leeds University Hospital to request information on water feed to neonatal unit as known they have CD plant. Not likely that neonates ingesting water from tap or being washed in it, but information required and a decision made on this supply.

11.9. On 17 August 2018 a Water Review Meeting (Technical) was held where Dr Hood was gives his apologies. (Bundle 10, Document 20, Page 78). No mention of Dr Hood in minutes.

11.10. On 31 August 2018 a Water Review Meeting (Technical) was held where Dr Hood gives his apologies (Bundle 10, Document 22, Page 83).

11.11. On 7 September 2018 a Water Review Meeting (Technical) was held where Dr Hood gives his apologies (Bundle 10, Document 23, Page 88).

11.12. On 2 October 2018 a Water Review Meeting (Technical) was held where Dr Hood present (Bundle 10, Document 25, Page 97).

11.13. On 2 November 2018 Dr Hood sent email to Dr Inkster re Ward 2A/2B ventilation strategy review meeting responding to her email and attachment dated 31 October 2018 (Bundle 14, Volume 1, Document 62, Page 638 at Page 643). He finds the situation “frankly unbelievable”. He sets out questions of his real worries over lack of proper design, why not spotted at commissioning and what other nasty surprises exist.

11.14. On 16 November 2018 a Water Review Meeting (Technical) was held where Dr Hood not mentioned on attendance or apologies list (Bundle 10, Document 31, Page 121). Dr Hood mentioned at Item 6 where noted that BMT flushing system in GRI was 4 hourly.

11.15. On 23 November 2018 a Water Review Meeting (Technical) was held where Dr Hood not mentioned on attendance or apologies list (Bundle 10, Document 32, Page 123). Dr Hood mentioned at Item 4 - additional testing at Cowlairs may impact microbiology lab handling this and water testing. Dr Hood will confirm position. Item 7, IP met Dr Inkster and Dr Hood to determine ventilation requirements for outline brief to form part of tender.

11.16. On 30 November 2018 a Water Review Meeting (Technical) was held where Dr Hood not mentioned on attendance or apologies list (Bundle 10, Document 33, Page 127). Dr Hood mentioned at Item 7 where he to provide input and feedback on ventilation SBAR.

11.17. On 6 December 2018, Dr Inkster sent an email to Dr Armstrong re ventilation issues (Bundle 27, Volume 9, Document 28, Page 441). States she did testing on high risk wards with Dr Hood and found inconsistent pressures in rooms which has implications for wards 5C/D, infectious diseases and level 7 Resp.

11.18. On 7 December 2018, Dr Inkster sent an email to Andy Wilson & Ian Powrie re Estates email ventilation 4C (Bundle 27, Volume 7, Document 20, Page 378) stating ward was designed with no specialist ventilation and slightly positive pressure. Original intention to place patients in Ward 4B with specification by Dr Hood but late decision to move adult BMT into ward. Part of specification was positive pressure and HEPA filters, she has confirmed with Mr Hoffman this still appropriate.

11.19. On 13 December 2018 an ICN meeting was held (Bundle 13, Document 95, Page 713). Page 720 states Dr Hood checked 5C & 5D finding inconsistent pressures to be checked by Estates. Page 727 states Crypto Expert Advisory Group chaired by Dr Hood convened to look at hypotheses. Noted that extensive infestation on site and entry route may not be found. Upgrade of Wards 2A/2B to include HEPA filters and feasibility for same in adult Ward 4A.

12. 2019

12.1. On 8 January 2019 Mr Hoffman sent an email to Dr Inkster (cc Dr Hood) re ventilation question (Bundle 14 Volume 1, Document 62, Page 638 at Page 647) stating HBN4 supplement 1 does not describe the specialist facilities required. There is no guidance for isolation rooms for neutropenic patients, only for wards. Comments on section of

report and then on use of thermal wheels stating HEPA filtration and positive pressure in rooms (not lobbies) to be a priority over increasing air changes.

12.2. IMT held on 25 January 2019 where minutes show (Bundle 1, Document 65, Page 291) Dr Hood was introduced by Dr Inkster to be assisting with infection control issues although he is not present at the meeting. Page 292 states she and Dr Hood walked round ward 6A meeting shower contractor who informed 80% of showers had mould due to Gyproc not being water resistant.

12.3. On 25 January 2019 a Water Review Meeeting (Technical) was held where Dr Hood was present (Bundle 10, Document 37, Page 139).

12.4. IMT held on 28 January 2019 where minutes show (Bundle 1, Document 66, Page 296) that Dr Hood was not present but Dr Inkster informed the group that a separate group is being set up to look at multiple Hypotheses that have arisen from the IMT. It will consist of Dr Hood, Dr Peters, Mr Hoffman and estates representation and report back to IMT.

12.5. On 30 January 2019 Dr Armstrong sent email to Tom Walsh re subgroup to review possible routes of access for cryptococcus and hypothesis re recent incident (Bundle 27, Volume 9, Document 24, Page 430) where she states a subgroup should provide advice to IMT chair and IMT with group chaired by Dr Hood with members comprising Tom Steele, HPS, HFS, Mr Hoffman and Andrew Seaton. Asks Tom Walsh to set up meeting with subgroup, agree Terms Of Reference with Dr Inkster and invite Mr Hoffman to site for walkaround.

12.6. On 31 January 2019 Dr Hood sent an email to Dr Inkster re visualisation of water damage in Ward 7A Room 4 on 30/1/2019 (Bundle 14, Volume 1, Document 60, Page 616 at Page 629) reporting he investigated shower and toilet area of room where air sample had grown black fungus. Provides photos and notes very little evidence above vinyl – just a little crack in the corner. Compares Ward 6A and suggests water resistant Gyproc be installed in room 4 and 7A.

12.7. IMT held on 8 February 2019 where minutes show (Bundle 1, Document 69, Page 307) that Dr Hood was not present but it is noted the sub-group meeting had been delayed to give Dr Hood time to review the vast amount of data on ventilation.

12.8. On 8 February 2019 a Water Review Meeting was held where Dr Hood was present (Bundle 10, Document 38, Page 143).

12.9. Dr Hood chaired the first Cryptococcus IMT Expert Advisory Sub-Group meeting on 14 February 2019 (Bundle 9, Document 1, Page 5).

12.10. Dr Hood chaired Cryptococcus IMT Expert Advisory Sub-Group meeting on 22 February 2019 (Bundle 9, Document 2, Page 12).

12.11. On 22 February 2019 a Water Review Meeting was held where Dr Hood gave his apologies (Bundle 10, Document 39, Page 146).

12.12. Dr Hood chaired Cryptococcus IMT Expert Advisory Sub-Group meeting on 1 March 2019 (Bundle 9, Document 3, Page 16).

12.13. On 8 March 2019 a Water Review Meeting was held where Dr Hood was present (Bundle 10, Document 40, Page 150). Item 3 where Dr Hood advised Dr Inkster sought clarification if further testing had been undertaken. Dr Hood referred to the 'Little used Outlets', DK advised to remove taps, Tom Walsh advised to clarify with DMA if re-sampling was done. Page 152, Tom Walsh noted to increase CI02 levels and Dr Hood has no concern with increase.

12.14. Dr Hood chaired a Cryptococcus IMT Expert Advisory Sub-Group meeting on 12 March 2019 (Bundle 9, Document 4, Page 19).

12.15. Dr Hood chaired a Cryptococcus IMT Expert Advisory Sub-Group meeting on 22 March 2019 (Bundle 9, Document 5, Page 25).

12.16. On 29 March 2019 a Water Review Meeting was held where Dr Hood was present (Bundle 10, Document 41, Page 153).

12.17. Dr Hood chaired a Cryptococcus IMT Expert Advisory Sub-Group meeting held on 3 April 2019 (Bundle 9, Document 6, Page 30).

12.18. Dr Hood chaired a Cryptococcus IMT Expert Advisory Sub-Group meeting held on 10 April 2019 (Bundle 9, Document 7, Page 34). Mr Hoffman attended by teleconference.

12.19. On 11 April 2019 Dr Hood responds to Sandra Devine's email re HAIRT (Bundle 14 Volume 2, Document 125, Page 427 at Page 440) asking her to call to discuss the points she raises in relation to Cryptococcus and a public board meeting the following week where press will be present. He then attaches a document with "positive news" and comments on her email provided at Page 442.

12.20. On 11 April 2019 a Water Review Meeting was held where Dr Hood was present (Bundle 10, Document 42, Page 157).

12.21. Dr Hood chaired a Cryptococcus IMT Expert Advisory Sub-Group meeting held on 26 April 2019 (Bundle 9, Document 8, Page 39).

12.22. On 26 April 2019 a Water Review Meeting was held where Dr Hood was present (Bundle 10, Document 43, Page 161).

12.23. Dr Hood chaired a Cryptococcus IMT Expert Advisory Sub-Group meeting on 9 May 2019 (Bundle 9, Document 9, Page 45).

12.24. Dr Hood chaired a Cryptococcus IMT Expert Advisory Sub-Group meeting on 22 May 2019 (Bundle 9, Document 10, Page 49).

12.25. On 24 May 2019 a Water Review Meeting (Technical) was held. Apologies were received from Dr Hood (Bundle 27, Volume 9, Document 7, Page 94).

12.26. On 3 June 2019 a Board Infection Control Committee meeting was held where Dr Hood was not present (Bundle 13, Document 57, Page 417), but at item 28.5 it is noted there is to be a report issued from the subgroup chaired by Dr Hood. Multiple hypotheses being explored. Recommendation is likely to be around providing HEPA filtration for high risk patient groups and the use of antifungal prophylaxis.

12.27. Dr Hood chaired the Cryptococcus IMT Expert Advisory Sub-Group meeting on 6 June 2019 (Bundle 9, Document 12, Page 63).

12.28. On 21 June 2019 a Water Review Meeting was held where Dr Hood was present (Bundle 10, Document 44, Page 166).

12.29. On 24 June 2019 a Specialist Critical Ventilation Steering Group meeting was held (Bundle 27, Volume 6, Document 17, Page 190 at Page 208). No mention of Dr Hood on attendance or apologies list. At Item 4 (Page 210) it is recorded that Dr Hood has investigated changing risers/fire compartments in levels 3 to 11. Sealing areas will be significant challenge to Estates. Discussion on positive pressure at door corridors and installing lobbies.

12.30. On 8 July 2019 Darryl James sent email to Dr Peters & others including Dr Hood re PICU Ventilation Verification (Bundle 27, Volume 6, Document 16, Page 158 at Page 160) where he advises annual ventilation verification of PICU has failed as attached

report. Points out that verification failure was not due to inadequate air change rates but recorded pressure differentials between 4 bedded spaces and corridor which instead of being 10 pascals + were recorded as 1, 0 or -1.

12.31. On 9 July 2019 Darry James sent email to Dr Peters & others including Dr Hood re PICU Ventilation Verification (Bundle 27, Volume 6, Document 16, Page 15 at Page 159) stating there is no validation documentation only commissioning documentation. Explains caveat within SHTM that if all medical gas pipework in ceiling voids is welded instead of compressed, the leakage risk is reduced so CVGs no longer required. This will improve air permeability of the room envelope and help to achieve SHTM 0301 compliance.

12.32. On 16 July 2019 Sandra Devine sent email to Dr Peters and Dr Hood requesting their attendance on teleconference that afternoon with Tom Steel and Mr Hoffman on PICU ventilation (Bundle 14, Volume 2, Document 135, Page 550).

12.33. On 19 July 2019 a Water Review Meeting was held where Dr Hood was present (Bundle 10, Document 45, Page 172).

12.34. The SBAR on ICE Neurosurgical Theatres by Dr Peters dated 19/7/2019 (Bundle 4 Document 39, Page 157) states that Dr Peters and Dr Hood were invited to attend a meeting with Steve Russell, Colin Purdon and Darryl Connor to discuss recent validation and HFS documentation. There were no ICDs available to attend the meeting and Dr Peters attended in her role as Microbiologist giving cover for Infection Control.

12.35. The SBAR for Ward 4C by Dr Inkster dated July 2019 (Bundle 4, Document 38, Page 156) states the specification for 4B and this patient group was designed by Dr Hood (microbiologist) and comprised HEPA filtered rooms, air changes of 6/hr and positive pressures of +6PA.

12.36. On 22 July 2019 Dr Peters sent email to Sandra Devine, Dr Inkster, Dr Hood and others re SBAR PICU Ventilation Validation (Bundle 14, Volume 2, Document 138, Page 554) further to meeting last week.

12.37. Dr Hood chaired the Cryptococcus IMT Expert Advisory Sub-Group meeting held on 25 July 2019 (Bundle 9 Document 11, Page 54).

12.38. Dr Hood chaired the Cryptococcus IMT Expert Advisory Sub-Group meeting held on 25 July 2019 (Bundle 9, Document 14, Page 80).

12.39. Dr Hood chaired the Cryptococcus IMT Expert Advisory Sub-Group meeting held on 26 July 2019 (Bundle 9, Document 15, Page 85).

12.40. IMT held on 1 August 2019 where minutes show (Bundle 1, Document 75, Page 334) that Dr Hood not present but reports (page 335) he has taken air samples to assist his investigation into Cryptococcus. Recent samples (15 July) found pathogenic fungi like aspergillus in patient non-HEPA filtered en-suites (although rooms are HEPA). None found in comparative Ward 4C samples.

12.41. On 16 August 2019 a Water Review Meeting was held where Dr Hood was present (Bundle 10, Document 46, Page 175).

12.42. Dr Hood chaired a Cryptococcus IMT Expert Advisory Sub-Group meeting on 9 August 2019 (Bundle 9, Document 16, Page 95).

12.43. Dr Hood chaired a Cryptococcus IMT Expert Advisory Sub-Group meeting on 16 August 2019 (Bundle 9, Document 108, Page 108).

12.44. Dr Hood chaired a Cryptococcus IMT Expert Advisory Sub-Group meeting on 16 August 2019 (Bundle 9, Document 18, Page 120).

12.45. Dr Hood chaired a Cryptococcus IMT Expert Advisory Sub-Group meeting on 25 August 2019 (Bundle 9, Document 19, Page 130).

12.46. Dr Hood chaired a Cryptococcus IMT Expert Advisory Sub-Group meeting on 2 September 2019 (Bundle 9, Document 20, Page 141).

12.47. Dr Hood chaired a Cryptococcus IMT Expert Advisory Sub-Group meeting on 16 September 2019 (Bundle 9, Document 22, Page 163).

12.48. Dr Hood chaired a Cryptococcus IMT Expert Advisory Sub-Group meeting on 24 September 2019 (Bundle 9, Document 23, Page 176).

12.49. Dr Hood chaired a Cryptococcus IMT Expert Advisory Sub-Group meeting on 16 October 2019 (Bundle 9, Document 25, Page 204).

12.50. On 24 October 2019 Dr Inkster sent an email to Emilia Crighton requesting amendments to minutes of IMT on 8 October 2019. (Bundle 14, Volume 2, Document 154, Page 587 at Page 599). The email states that Dr Hood understands from corridor testing that it is

at negative pressure pulling in contaminated air. He was when doors are open it can be as low as 10Pa.

12.51. Dr Hood chaired a Cryptococcus IMT Expert Advisory Sub-Group meeting on 29 October 2019 (Bundle 9, Document 26, Page 218).

12.52. Dr Hood chaired a Cryptococcus IMT Expert Advisory Sub-Group meeting on 15 November 2019 (Bundle 9, Document 27, Page 233).

12.53. Dr Hood chaired a Cryptococcus IMT Expert Advisory Sub-Group meeting on 28 November 2019 (Bundle 9, Document 28, Page 248).

12.54. On 12 December 2019 a Water Review Meeting was held where Dr Hood is not mentioned on the attendance or apologies list (Bundle 10, Document 49, Page 185). Item 3 states it was thought that air sampling had been carried out by Dr Hood but no one had seen the outcome of the samples. Noted that J Hood was not available in December but his results to be reviewed in January to determine if further work required.

12.55. Dr Hood chaired a Cryptococcus IMT Expert Advisory Sub-Group meeting on 18 December 2019 (Bundle 9, Document 29, Page 255)..

13. 2020

13.1. Dr Hood chaired a Cryptococcus IMT Expert Advisory Sub-Group meeting on 9 January 2020 (Bundle 9, Document 31, Page 268).

13.2. On 24 February 2020 Dr Hood sent an email to Professor Marion Bain (Bundle 14, Volume 2, Document 125, Page 427 at Page 455) including Board meeting papers for 25 February. He informs MB of his “disquiet” over the choice of wording in two papers which will go into public domain.

13.3. Dr Hood chaired a Cryptococcus IMT Expert Advisory Sub-Group meeting on 26 February 2020 (Bundle 9, Document 32, Page 275).

13.4. On 19 May 2020 Dr Peters sent an email to Angela Wallace re Current Issues (Bundle 23, Document 70, Page 747). She states at paragraph 9 in relation to 4B that aware of grave concerns expressed by Dr Hood due to significant levels of fungi in air sampling – asks if this has been followed up and what system is in place to alert Microbiology team and if there is a finalised air sampling SOP.

13.5. On 3 July 2020 Dr Hood sent an email to Sandra Devine re inspection of level 12 plant rooms (Bundle 27, Volume 8, Document 59, Page 204) where he states that on that date he and Darryl Connor walked around level 12 plant rooms finding all clean and no evidence of pigeon ingress/fouling. Also checked AHUs and found none had been opened this year. He will visit plant rooms and AHU serving PICU, 3A, 3C & 2C on 6 July.

13.6. IMT held on 2 July 2020 where minutes show (Bundle 1, Document 94, Page 431 - also provided at Bundle 19, Document 63, Page 1420) that Dr Hood was present and it is noted that Dr Hood amended paragraphs to clarify and offer further explanation.

13.7. On 7 September 2020 Dr Peters sent an email to Dr Hood and Dr Polubothu (bundle 14, Volume 3, Document 217, Page 273) stating that she is interested that the Haemonc unit was HEPA filtered as well as the BMT unit and stipulated no chilled beams in these rooms. And that 2004 knowledge was very good.

13.8. Patient's family note anticipates a 30 September 2020 meeting attended by Dr Hood amongst others about Gail Armstrong (Bundle 27 Volume 13, Document 6, Page 34 at Page 35).

13.9. On 1 October 2020 Dr Inkster sent email to Dr Hood (Bundle 14, Volume 3, Document 192, Page 91 at Page 108) stating that the meetings over last 2 weeks have raised more questions than answers on Cryptococcus.

13.10. Dr Hood chaired a Cryptococcus IMT Expert Advisory Sub-Group meeting on 26 November 2020 (Bundle 9, Document 33, Page 286).

13.11. Dr Hood chaired a Cryptococcus IMT Expert Advisory Sub-Group meeting on 10 December 2020 (Bundle 9, Document 34 Page 290).

13.12. Dr Hood chaired a Cryptococcus IMT Expert Advisory Sub-Group meeting on 17 December 2020 (Bundle 9, Document 35, Page 294).

14. 2021

14.1. Dr Hood chaired a Cryptococcus IMT Expert Advisory Sub-Group meeting on 14 January 2021 (Bundle 9, Document 36, Page 303). This is the last minute of the group that the Inquiry holds.

15. 2022

15.1. The Report from the Cryptococcus Incident Management Team Expert Advisory Sub-Group final draft dated 5 April 2022 (Bundle 6, Document 38, Page 1115) produced.

SCOTTISH HOSPITALS INQUIRY

Bundle of documents for Oral hearings commencing 16 September 2025 in relation to the Queen Elizabeth University Hospital and the Royal Hospital for Children, Glasgow

Bundle 52 – Volume 2

Miscellaneous Documents

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