SCOTTISH HOSPITALS INQUIRY

Hearings Commencing
06 September 2024

Morning - Laura Imrie
Friday, 06 September 2024

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THE CHAIR: Good morning. I think we're now ready to resume with Ms Imrie?

MR MACKINTOSH: My Lord, before we do that, this witness has agreed to answer some questions on a couple of epidemiology papers produced by HPS, which can be found in bundle 7 at document 5 and document 7. It might mean she takes a little bit longer than I had planned.

Now, of course, some counsel have made arrangements to do other things this afternoon, and so it might be necessary to delay the start of lunch, see if we can finish it, but I'll see where I am at half past ten and report back to you.

THE CHAIR: All right. Okay. Delay the start----

MR MACKINTOSH: Half past eleven-- Continue until----

THE CHAIR: Right. In other words, go into what would otherwise be the lunch break?

MR MACKINTOSH: That might be the way to solve the problem but I'll inform everybody at the coffee break where I am in terms of my material so people can at least have some advance notice.

THE CHAIR: Right, okay. I mean, clearly counsel are entitled to assume that we're not going to go beyond half past four but----

MR MACKINTOSH: Well, the timetable----

THE CHAIR: -- is there any more particular problems?

MR MACKINTOSH: The timetable had us-- didn't have us sitting this-- in the afternoon----

THE CHAIR: Right. Okay, so----

MR MACKINTOSH: -- and that may have been a misunderstanding, but I'm keen to avoid any----

THE CHAIR: You may have given rise to a legitimate expectation.

MR MACKINTOSH: Potentially, yes, but we will-- I will keep everybody informed about where I'm getting if that's of assistance.

THE CHAIR: All right. Very well. Ms Imrie. Good morning, Ms Imrie.

THE WITNESS: Good morning.

THE CHAIR: As you understand, you're about to be asked questions by Mr Mackintosh, but first I understand you're prepared to take the oath?

THE WITNESS: Yes.

Ms LAURA IMRIE

Sworn

THE CHAIR: Thank you very much, Ms Imrie. Now, as far as timetabling is concerned, I anticipate your evidence will take the best part of our sitting day, we'll go into the-- certainly going into the afternoon. In the morning, we usually

take a break at about half past 11 for coffee but if, at any stage in your evidence, you want to take a break for whatever reason, just give me an indication and we'll take a break.

Again, as you've probably anticipated, we've got quite a large space to fill here; maybe speak a little more slowly and a little louder than you would in normal conversation. I appreciate it's not always easy to do that, but I'm very concerned that I hear what you have to say. Now, Mr Mackintosh.

Questioned by Mr MACKINTOSH

Q Thank you. Ms Imrie, can I take your full name and your current occupation?

A My name is Laura Imrie and I'm the Clinical Lead for NHS Scotland Assure.

Q Did you produce two statements?

A I did. I think there was actually three at one point, but I think I've signed two off.

Q So there's two off? There's a main statement and a supplementary statement which was actually produced before the main statement?

A Yes.

Q Yes. Are you willing to adopt those as part of your evidence?

A Yes, I am.

Q Thank you. Now, at the moment, you're with NHS Assure. Do I understand correctly that, before that, you were with HPS?

A Yes, I was a nurse consultant in HPS until April 2020 when the HAI group in HPS joined with Health Facility Scotland to make NHS Scotland Assure.

Q Right, and so were you Clinical Lead Consultant-- Nurse Consultant for HPS from 2019 onwards?

A Yeah, I was appointed as Interim Clinical-- or Lead Consultant in the HAI group in HPS, I think it was December 2018, and then I was appointed as the Lead Consultant 2019.

Q That's very helpful, just what I want to ask you about today is really broadly three blocks of material. The first is a series of-- a pair of reports that were produced by HPS. I want to go to them first and understand a little bit more about them and why they contain certain things, to the extent you can help me with.

The second thing is your involvement in the events of 2019 at the Queen Elizabeth Hospital involving the gram-negative IMT there, and the third thing is some sort of general issues of policy and how-- what the relationship is between HPS/ARHAI/NHS Assure and health boards, and particularly GGC, in the relevant periods in '18 and '19.

We will-- I was going to start with

the epidemiology reports. Now, the first one I'd like to look at is in bundle 7, document 7, page 250, and I'm going to show that to you and then I'm going to show you the other one and ask you-- So, this report is dated October 2019. I think other people have referred to it as November 2019. Might that be-- Is that when it was circulated?

A The final circulation might have been in November.

Q Yes, and this report, what role did you have in producing this report?

A So, at this point, I was the kind of Clinical Lead on the report, if you like, supporting epidemiologists who were taking the data from Glasgow and the other datasets and helping it address the questions, the clinical questions that CNO had asked us to do at the stock take meeting in September.

Q Thank you, and then the other report I want to show you is also in bundle 7, it's document 5, if we can go to that, which is page 194, which is called a "Situational awareness report" and, although it bears the date June 2019, it contains at its appendix a December 2018 report which seems to have a similar methodology. What role did you have in this report?

A So, this report, if I remember correctly, was part of the original framework from March 2018 where-- When the Scottish Government invoked the framework, they'd had asked for a report to be done that included the epidemiology going back to the hospital opening. It was delayed so long because the outbreak never really ended. So, what was anticipated in March when they invoked the framework was that this would be delivered within a couple of months as we would normally do with framework.

You do a very quick assessment and you would give that back to the government and to the board within a week or two, and then within a month you would produce a full situation assessment that would include any data or anything that had to be considered. This was delayed to allow the incident to be managed and for it to come to a point that we could then----

Q Which is presumably why it comes out in June '19?

A Yes. I think the first draft went to the board in January 2019. It was----

Q Well, that's what I wanted-- I wanted to check the board had it. That's helpful.

THE CHAIR: Could I intervene just at this moment? It's entirely my fault. I've noticed the references to "the framework." I just haven't quite got in my mind where I find the documentation that-- I've got the general idea. Scottish

government asks HPS to do something. Am I right so far?

A Yes.

Q Right. Now, where do I find the documentation that establishes the policy-- the framework?

A So, I think we have supplied it but it's also within the National Infection Prevention and Control Manual, in chapter 3.

Q Right. Okay. So, if I go to chapter 3, I'll find references to "the framework" ?

A The framework. The CNO framework, yeah.

Q Thank you.

MR MACKINTOSH: What I want to do is to go back to the first report, document 7 on page 250, and ask you some questions about its methodology. Now, the reason I'm asking you these, and if you can't answer them please say and we'll get one of the epidemiologists to come along and that will be necessary but we'll find some time, is because the Inquiry's instructed epidemiologist, Mr Mookerjee, has made some critiques of this report, and indeed HPS has responded in a-- what we call "The direction 5 response" some months ago. Were you involved in drafting the direction 5 response?

A Yes. With the epidemiologist.

Q So hopefully we will get somewhere with this.

A Hopefully.

Q The first place I want to do is to go to page 253 and understand what-- Well, the objectives of the paper, which appear to be set out in these three bullet points at the bottom, which are:

> "Describe the differences in datasets; to review the environmental gram-negative blood cultures in the paediatric haemato-oncology population, and; identify whether there's a change in the type of organism."

Now, there's also, at page 256, in the first sentence of case definition, a reference to "trends" in bacteraemia in the patient population. So am I assuming that a part of those three original objectives included looking at trends?

A Yes, it was going to look at different datasets to see how they compared.

Q Right. Now, if I understand it correctly, you've got-- If we go onto the next page-- go back-- sorry, back to page 252, what the report does is it takes a number of different GGC data sources and one HPS data source. Now, if we go forward to page 254, we see a description of the three GGC data sources, and then on the next page we see description of the HPS data source.

Now, I'm not going to go into this in great detail today but I want to check one thing I've understood correctly, that-- what's the difference between the HPS ECOSS data and the GGC ECOSS data? They appear to be different to some degree. Why does a difference arise?

A The GGC paper?

Q No, the GGC data.

A Oh, data. So, the background to us being asked to do this report was a stock take meeting that the Chief Nursing Officer had at the end of September, and that had arisen because the Chair of the IMT was recommending that the ward be opened and that the IMT stood down, and there was some anxieties from the clinicians that they wanted to interrogate the data more. I do have sympathy for them because, by this point, in the Incident Management Team, everybody was presenting data and it was being presented slightly different.

They were using maybe slightly different definitions, slightly different inclusion/exclusion. They were maybe using different organisms and, when you've got such small numbers, it was significant that things were looking slightly different depending on how the definitions had been used or how the inclusion/exclusion.

And, at the meeting at the end of September that was attended by Scottish Government HPS and Glasgow, I think Glasgow done a presentation and there was discussion around that they had included gram-positives and gram-negatives, and it was felt that, although the gram-positives had reduced, it was maybe not showing the full picture with the gram-negatives.

So, CNO at that point asked if HPS could look at the different datasets that were being referred to see why there was the differences and to hopefully allow the clinicians to understand why people were seeing things slightly different. Some of the limitations from the HPS data is ECOSS, and ECOSS is the national electronic system that pulls from the local, and depending on what stage a board is at in the current improvement plan, you might not get all samples come through because, at that point, I think you would get all blood samples but you mightn't have got all fungi samples, and I think we highlight that in the report.

Q So, effectively, before you get to the higher level stages of the framework, you're only receiving some of the data, and then, when you get to the high level, you are receiving all the data. Is that, in essence, the difference?

A In result of the framework?

Q Does the amount of data you get from the health boards change over time, whether there's a framework or not?

A The framework can be invoked for different reasons, it doesn't need to be to do with data.

Q No, that wasn't my question. My question was that you seem to be saying – and if I've misunderstood, please tell me – that, at some points, the national data doesn't include all the local data.

A The national surveillance of data is only covering the mandatory programs.

Q I see.

A So, within ARHAI, we look at the data that is commissioned by Scottish Government to be the mandatory healthcare-associated infection surveillance programs, and that's currently: one gram-positive organism for bacteraemias, which is Staph aureus; one gram-negative, which is E coli; C difficile; and we do quarterly reports on that where we look at trends and we look at if there's any boards that maybe need support.

It doesn't cover all organisms. We don't have the-- We don't own the data that's in ECOSS, and therefore, with data protection rules, we can't just go into a database and start searching through to see if there's anything interesting.

We would only start looking in ECOSS when we've been directed either through a framework or a board has asked for support and then we would start to-- but it would be a very focused approach as to what data we're taking out of ECOSS because it holds a lot of patient identifiable information. So we don't look routinely----

Q So, the primary difference between the HPS ECOSS data and the GGC is that HPS data is restricted to the national reporting organisms.

A No, I'm not explaining myself. In terms of the framework then, we could access ECOSS and look at whatever is being considered as the issue during the incident. ECOSS, the way it's set up, only draws out certain information from the laboratories, and up to a certain point, that was only bloods. So, if you were wanting to look at a national incident to do with wounds, wound infections, then you wouldn't be able to go to ECOSS, because all that information wasn't being pulled from the diagnostic laboratories and to the system.

Q Ah, now I understand. So, there is a difference, but it's not related to either the standardised reporting list or the stage of the framework. It's just there's a difference.

A There's a difference.

Q That's helpful. So, what you do, if I understand correctly, is you carry out a comparison between all four data sets.

A Yes.

Q And that is demonstrated in a graph that we see on page 259, and that's effectively a comparison between the four data sets.

A Okay.

Q Now, do I understand correctly that the conclusion from that is they're not particularly different and therefore we can go along and do our epidemiology on the HPS data set?

A They're not particularly different. There's-- and there's reasons why some of them might be different at different----

Q But at this point you then decide to do your epidemiology on the HPS data set, so all the rest of the work in this paper uses the HPS data.

A It uses data from ECOSS.

Q But HPS ECOSS, not GGC ECOSS.

A Yeah, so ECOSS is the national system. Yes, so, that would be HPS. GGC would have their LIMS system, which is their local.

Q Because if we go back to page 254, in the middle of the page, there's a discussion of an NHS GGC ECOSS extract for gram-negative.

A Yes, so what that's referring to is that we've extracted the GGC data from the national system.

Q Right, so the question that's troubling us – to jump ahead slightly – is if you go to page 265, the upper graph is headed:

> "SPC chart using gram-negative case definition for HPS data from July '13 to September '19."

And the heading below that is, "NHS GGC, Paediatric, Haemeto-Oncology, Gram-Negative." Is this using – that data that's described in the middle of that page we just looked at – the NHS GGC ECOSS data or HPS's ECOSS data set----

A So, it----

Q Or does it not matter?

A But HPS are the data owners for ECOSS. So, ECOSS is a national system, so it has all the boards' data in it. So, I think what's referred to in the beginning is to be clear that it's an extract of only the Glasgow data from ECOSS, but HPS data would be ECOSS. That's the electronic system.

Q So, there's not-- we're not-- There's not actually really an issue here. We've just got confused.

A To be clear-- No, HPS data is the extract from ECOSS.

Q And that's the data being used here?

A Yeah.

Q Right, okay, if we can go back.

THE CHAIR: This is a matter of detail which I don't think is important, but I've got two contradictory answers from you, which are no doubt my fault, not your fault. Mr Mackintosh was trying to distinguish as to why there's a difference between HPS ECOSS data and GGC ECOSS data. I think in his questioning he came to the conclusion that maybe it doesn't matter because I'm not sure that I really follow that difference. However, I've noted you as saying that HPS does not own ECOSS data, from which I took that your access to it was-- I mean, depended on somebody allowing you access. Now, what I've just noted is that HPS does own ECOSS data.

A Yeah.

Q Now, I'm sure the fault is mine. On this, does HPS have unrestricted access to the ECOSS data set?

A So, ECOSS-- the data owner would have been HPS. NSS is the organisation. So, they then have to protect the data, so they then have to follow the data protection if they are the owner of the data. That, however, doesn't allow anybody that works for HPS to just go in and extract whatever they want.

The Glasgow ECOSS data is the data that has come in from Glasgow and now sits in the national system, so although we own, or the organisation own the data and therefore then protect data, it is Glasgow's data, if you like. They've gave it from their local system, so they can ask for that data back in any form they want, because they already have those data rights. Whereas, for instance, if I had a PhD student that came in and said, “Oh, you have a great big database there. I would like to look at that,” although the data was there and it was owned by HPS, we can't just go and then start taking data out of it for our own purposes. It's held there. It's an electronic communication surveillance for Scotland, so it's held there to allow for public health programmes to focus. It's held there for incident management, if you've got a national incident management, or even to support boards so that you can go in and extract data. But you would need to have filled out the appropriate forms and have to know why you were accessing the data, because it holds a lot of patient-identifiable and sensitive information.

Q Right. I take it from that that HPS, which is part of NSS----

A Yes, it was part of NSS.

Q -- does have that data as long as-- or rather does have access to that data as long as it is using that for purposes which are within the data protection regulation.

A Yes.

Q Am I right, or am I----

A Yes, yes.

Q Tell me if I'm wrong.

A No, you're right, and we might access the data if we're wanting to review a certain procedure or to, you know, to look, but you would need to fill in the right kind of ethics forms and things to get that through.

Q All right. One might say, a legitimate purpose.

A Yes.

Q Right. Sorry, Mr Mackintosh.

MR MACKINTOSH: No, no. I think, probably, if we need to go into that in any more detail, we might talk to the data protection side of NSS. Let's go to page 257. So, I'm now asking you a series of questions that relate to issues that were raised by Mr Mookerjee. So, on the top, there are three things on this-- there's four things actually in this page I want to ask you about. The first is to understand whether the denominator data, the number on the bottom of the fraction that produces the infection rate per thousand occupied bed days, would have within it any non-paediatric haemeto-oncology patients.

A No, it doesn't have. There was checks done.

Q Right. The second thing, I'm not going to ask you about why you used occupied bed days as opposed to admissions, because I think we've now got an NSS position set out in the position paper which I can put to Mr Mookerjee, and that seems like the most productive way to take that forward, but we'll just note that in passing.

But what I am going to do is to ask you about the incident rate comparison in the middle. Now, are you sure that-- do you understand the concept that we're obviously trying to compare apples with apples here?

A Yeah.

Q To what extent are you comfortable with the idea that the Royal Hospital for Sick Children in Edinburgh and the Royal Aberdeen Children's Hospital in Grampian are suitable comparators with the Royal Hospital for Children in Glasgow, given that Glasgow has a tertiary centre for haemato-oncology and the others don't?

A No, I think we recognised that as a limitation. We were asked to do this report within 10 working days, so there was no way that we could have approached any other boards outwith Scotland or have got data from them. I think it's recognised that the-- certainly, the Royal Aberdeen might not have been as compatible but there was patient population, you know, in the Sick Children's Hospital in Lothian that were more comparable. I think the

epidemiologists would say, in writing this report, that given the time frame that they had to do it, there are many limitations.

Q Well, that was the time frame I wanted to challenge you about, because the other report uses the same comparator trio, and the other report was drafted in 2018. So, you'd had the best of six to seven months between the other report, which we'll come to in a moment, and this one for HPS to go and find some comparator data, and that wasn't done, I take it?

A No. We did approach some of the trusts in England, and although they were maybe willing to engage so far and to share some of their annual reports and things like that, they weren't prepared to share their data maybe in the way that we would have needed it to compare.

Q Did you consider using a Freedom of Information Act request or requests?

A No, we didn't. We didn't.

Q Because the Inquiry sent out 20-something requests and got four data-- well, almost four data sets back. You didn't consider that as an approach?

A No, we didn't consider that as an approach.

Q All right, no. The main question I want to ask you about this page just relates to SPC graphs-- SPC charts.

A Yeah.

Q Now, there's a discussion between Mr Mookerjee and the NSS position response to his report, but I want to discuss this in the terms of the purpose of this report and, really, what you're trying to achieve with SPC charts and how you react to various criticisms of their use in this context. So, firstly, in defence of SPC charts, do I understand it correctly that their main purpose is to spot diversions from a standard pattern that already exists?

A Spot variations, yes. They don't really tell you why you have a variation or-- They're really a trigger for you to investigate and they might help you focus on the times that you would want to concentrate on, if you were doing an investigation.

Q And so they require, in order to work, a semi-consistent pattern that already exists from which you can measure the deviation.

A That's right.

Q And that's why you've set out two standard deviations or three standard deviations as your trigger lines.

A That's right.

Q Would you accept that there is some weakness in using them in a situation where you're dealing with a new building that's only been open for, at this point, four years, where you don't

necessarily have that consistent trend within the building that you can start from?

A Yes, I completely accept that. With any kind of investigation when you're looking at data for infection incidents, you are firstly looking at “Has there been any changes? Has your patient population changed?” In this case, no, it was still the same patient population, but then you would look at things that you know would-- could affect the environment. You would look at staffing levels. You would look at, you know, there's a building change, have therapeutics changed? So, the issue we had was, obviously, the building had changed and the building was also one of the hypotheses as to why the issue existed. So, we completely accept that setting a baseline on a different building has its limitations, but what we were trying to achieve is, it was the same patient population that were receiving the same procedures and therapies, and therefore, that was really the only baseline we could use.

Q Is to compare at least those two.

A Yeah.

Q And the other criticism that's made of SPC charts is that a lot turns on the data you choose to plot in the chart, and the point I would make here is we see it in this report that if you look at, say, gram-negative or gram-positive, you are restricted by what you're looking at. So you can't-- and if, for example, gram-positive, we're told, can often be non-environmental bacteria, whereas gram-negative can often be environment but not always-- So would you accept that the choice of what you put in the data, which data you measure, is also rather important to whether you're measuring a change from the norm, whatever the norm is?

A Yes. If you're looking at bloodstream infections on a whole and you see rises in your gram-positive, then that is normally due to patient factors. The gram-positives you're more likely to see in skin. So you'd start looking at practice then, where central lines are put in, how central lines are cared for, how long lines are left in for, all the things you would put in an improvement. So if you see an indication in your data that your gram-positives are going up, you're going to start looking at, kind of, practices and certainly line management, not just central line.

If you see gram-negatives, it might be an indication that there's something else. It might be the environment depending on what the gram negatives are.

Q Of course, that's the other

thing is that if you-- and I realise this report doesn't do this, but if you simply plotted the national reporting microorganisms and you tried to measure and use those as your primary surveillance technique with SPC charts, that wouldn't tell you anything about the other microorganisms, would it?

A No. So, the mandatory surveillance for gram-negatives is E coli, and the primary reason for bloodstream infections in E coli is a secondary infection to a primary infection, for instance. Urinary tract infections are the, kind of, top reason that somebody will go on to get a bloodstream infection, so it's-- The improvement you would do there is about managing your urinary tract infection, whereas if you're looking at a different set of gram-negatives that don't live in the body and therefore it's not, you know, relocation from another primary source, then you're looking at different factors and different improvements.

Q I'm going to pull a question from my questions for the second half of this. What does that discussion you've just had about choice of what you surveil tell you about what skills you need in an Infection Prevention and Control Team? How does it inform the different tasks with the different people involved in Infection Prevention and Control?

A Yes, I think that's kind of key, and I've heard some discussion about who should lead an Infection Control team, and it seems to come down to, you know, a doctor versus nurse and I fundamentally disagree with those kind of arguments. An Infection Control team is more than doctors and nurses. There's many skill sets. For instance, scientists, both the epidemiologists that look at data and can focus where you're doing your improvements and really help the clinical teams understand what's going on, but also we have healthcare scientists' evidence. You need the evidence to write the guidance for Infection Control as well, and we're supported by our healthcare scientists. I think you can't have a functioning Infection Control team if you don't have an Infection Control doctor and you don't have Infection Control nurses and you don't have the support of others that can--

Around leading an Infection Control service and if it's nurse-led or doctor-led, I think some of that comes from the fact that the Infection Control nurses' jobs tend to be full time. There is a career framework for Infection Control nurses that you don't have for Infection Control doctors. Many of the Infection Control doctors haven't actually done Infection Control training. They are microbiologists who have developed an interest in Infection Control, some more than others,

whereas nurses have chosen Infection Control as their career pathway and there is-- the NHS Education for Scotland have a framework that they can follow, but probably the reason why most teams are led by a nurse is because the pay scale wouldn't attract a consultant medic.

So, if you look down south and in Scotland at the latest directives of Infection Prevention and Control – so the team leads – they all say as a minimum you must be GMC, General Medical Council or Nursing Medical Council, or you can be a healthcare scientist that's registered. So it's not just for nurses; they're not advertising that as it's a nurse.

Q So, can I draw a few things out from that? So, firstly, you're saying it's not either/or?

A Yes.

Q You're saying everyone needs to work together?

A Yes.

Q You're pointing out that nurses at the high level of Infection Control have been trained throughout their careers, aren't they?

A Yes.

Q And that, with doctors, there's a bit more serendipity, a bit more chance about whether they've acquired particularly relevant skills?

A Yes, and they dip in and out. So, you may have a consultant microbiologist that's an ICD for a couple of years and then they don't want to be the ICD anymore, so they go and do something else in those sessions. Infection Control nurses don't be Infection Control nurses for a couple of years and then----

Q So, once you're an Infection Control nurse, you really can't escape?

A You can't, but they tend to choose-- I mean, to be an Infection Control nurse and to progress through your career, you need to do qualifications and, you know, most of my colleagues have got at least their masters in Infection Control. So, if they are committed to that as a career path, they----

Q I suppose while we're on this topic, which is a bit off the epidemiology but it helps save time, I think there's been some suggestion that when it comes to spotting the unusual and the out of ordinary, that you rather need-- at that point, the microbiologists rather come to the fore or need to be listened to, but that when you're managing the practice and the process and keeping things under control, that's where the nurses seem to be more at the fore. If I come back with that sort of thought, would you accept that? Is that slightly wrong? How would you challenge that viewpoint?

A I don't really see it as a sequence that one person spots

something and then somebody-- Even in the national team and the report that's sitting in front of us, and although I'm happy to speak around it, that is a multidisciplinary effort to know-- So there is many different skill sets in an Infection Control team that can advise and help to get to the end result, but when I was a lead nurse in Glasgow to know if we had things reported in, we would then have a meeting with the Infection Control doctor, maybe a service manager, you would start talking around, and everybody brings something slightly different, and not just because they're a nurse or a doctor, but their experience and their skills and what they've read.

So it's a real team effort, and I do think it is a multidisciplinary service that has to be multidisciplinary because the microbiologist absolutely will bring that level of detail around microbiology and to know how the microorganism is going to be affected by certain environments or therapeutic medicines, but your Infection control nurse as well knows about practice and knows, when they see certain organisms going up or down, then what to look for, but the doctor might know that as well depending on their experience and skill set.

Q Yes, and so the essence of this is it requires teamwork.

A Yes, absolutely.

Q Right. Let's get back to the epidemiology because we were having too much fun there. Can we go on to page 253? I'm just trying to pick up a couple of points in the, sorry, 263, in what appear to be the conclusions because I want to talk about the way this report has worked and the previous report and ask if I'm right to see a difference. So after you discuss the denominator in the previous two pages, there's a section headed, "Case Level Data" and it-- at this point, there's a discussion of what's in the data, but over the next page we see at the top the observation that there was a short-- an "upward run of 10 data points," which admittedly-- Are data points monthly in this system?

A I can't-- you'd need to go back to the----

Q If we go to the next page you might see. Or are they quarterly? I think they're----

A I think they're monthly, but I'd need to confirm that for you.

Q They're more than twice a year anyway, are they?

A Yes.

Q Yes. So should we go back to the previous page? There's an observation, there's an "upward shift run of 10 data points" from March to December '17 with various breaches of the upper warning limit and then the next

page reports the environmental group-- Sorry, the next paragraph. Sorry, go back to previous page, discuss the environmental group definition and upper warning limit breach and the same for the environmental enteric group, and then figure 7, which has actually been so heavily redacted we can't see it, so we'll pass over that, and then at the very end there's an observation:

> "No change was observed where crude comparisons were made between the rates with the exception of the gram-positive group, which significantly decreased when comparing the overall incidence before and after the move to the RHC."

The reason I read the last sentence out is that almost seems to be-- other than the paragraph about paragraph figure 7, which we can't actually see the table, those are the only two points when this report discusses the change around the move. The report doesn't actually say there is or isn't a change around the move. Have I got that right?

A Yes, because the primary aim of this report was really to compare the data sets. At the stock meeting, I think Glasgow had presented the data that the chair-- I think it was the chair, that had presented the data to support the IMT closing and the ward reopening to all admissions, but if I remember right, there was gram-positive and gram-negative within the presentation, and I think it was Professor Reilly that raised the issue around if you had done improvements in your gram-positive and, for the reasons I was speaking to a minute ago, those improvements wouldn't necessarily have an effect on your gram-negatives, but they had done a lot of improvements and they had seen an improvement in their gram-positive bloodstream.

Q Yes.

A So, when they were put together you weren't getting the true picture around gram-negatives.

Q So, this report effectively separates them out?

A Yes.

Q Right. Now, I'm going to just look at the next two pages. I'm not asking you to analyse them live on evidence, but if we just look at the next two pages, would you accept that they do actually show data points before the move for all four groups of data? So, this page and the next page. The way it works, if we look at the gram-positive one at the bottom, we have data from before the move in 2015. We then have a period in the middle and then we have a another big line, which is-- we have to zoom in. Can we zoom into the bottom half of the page? Yes, so, on the left-hand side we have-- on the left-hand axis

we have the rate per 1,000 occupied bed days, and the bottom axis is time, and the graph shows movement throughout time in that period in the blue line, and we have a vertical column at Royal Hospital Children's opening and a further vertical column on the right-hand side, which is the move to 6A, 4B, and so, even though you haven't reached a conclusion, there is actually data that runs before the move. Have I got that right?

A Yes, the upper control limit is----

Q No, you've got data from before----

A Yes, yes, it goes back, yes.

Q So, if we could zoom back out again, wouldn't it have been helpful at this point to actually reach the conclusion about whether there had been a change around the move?

A So, I think further analysis would need to be done, and I'll go back to the time frame that we were given to look at this, but this-- I think we had the meeting at the end of September. Glasgow were asked to provide data by the beginning of October. I think there was slight delays in getting all the data, so this report was put together very quickly and the epidemiologists that worked in the report would have rather spent more time doing further analysis.

Q Okay, if we can go to the next page, there's then a section on comparison with other health boards, and obviously we have received submissions that draw attention to this section, but I'm assuming that this section is connected to your observations about the comparability point, about whether there is a comparability point and the extent to which is-- because we've already had your evidence about that.

A Yes. I mean, if you were doing proper analysis and comparing two centres, then you would be looking at the patient population in more detail to see if they were comparable but, as explained earlier, that was the data that we were asked to look at-- or the data that we had available to look at.

Q And this, effectively, is a relatively quick study to get some numbers, but mainly to see if the data sets are different.

A Yeah, I think the chief nursing officer's concern was that there was different presentations and different reports going around, and they were all saying something maybe slightly different or----

Q Because they're selecting different data.

A Yeah, or the inclusion criteria-- I mean, when you're doing any kind of study like this, then your definitions and your selection criteria is so important, and

especially when you're dealing with such small numbers that, you know, one/two cases could significantly change the results.

Q Could I now ask you to look at the other report, the one that was done earlier in the year that was delayed because the incident was ongoing, and that is at bundle 7, document 5, page 194? Now, what I was proposing to do with this was to look at appendix 4, which is at page 205. Now, the reason I've jumped over the rest of the report is I read the rest of the report as discursive reportage about what had happened. Have I got that roughly right?

A Yeah.

Q Yes. Now, this looks like – and this is what I want to put to you – a not dissimilar piece of work to the other reports a few months later, but one that actually does look at the change between before the move in Yorkhill and afterwards, and again, do I understand that correctly?

A That's right.

Q Right, and so-- and this report was supplied to GGC in January of '19, you think?

A The report was commissioned by the Scottish Government as part of the framework and it was given to Scottish Government and GGC in January as a final, kind of, draft, and then we received comments back from Glasgow, and this was the final report that was submitted to Scottish Government.

Q So, this is after the Glasgow comments?

A This is after the Glasgow comments.

Q Right. The thing that I wanted just to absolutely check that I've got right, because you'll recollect that I was asking you questions that turned out to be not very helpful about the different data sets, is: have I understood correctly that this one, at the bottom of the page-- we see discussion of what turns out, if you go over the page, to be five or six groups of patient-- or groups of microorganisms?

A Yes.

Q And we're going to see attempts to plot and analyse each of those sets?

A Yes.

Q Right, and we've-- you've discussed-- if we go back one page, sorry, we've discussed already some of the issues around gram-negative, gram-positive environmental about-- of this selection seems important?

A Yes.

Q Now, if you were-- well, if you're picking what to analyse, which is the group of these ones listed here, or any of the others that we discussed, that is most likely to be connected to practice

amongst the different groups of microorganisms you can analyse?

A So, it depends.

Q Depends. I thought you'd say that, but could you expand on it?

A So, your Staph aureus, as I've said before, we do-- Staph aureus lives in the skin and to know-- practice, obviously, an insertion of any invasive device or surgery or anything might then affect the rates that you see of Staph aureus infection. Other gram-positives as well, some are-- whether you might see.

Q And within gram-positives, which you've already described might be connected to practice, there will be gram-positives that might be environmental as well. It's not a cut and dried line.

A They might be from the environment, from, you know, contact or from contaminated equipment or surfaces. They might be from staff. That we would sometimes see, outbreaks with gram-positives when it's maybe a staff that's got a skin condition or there's-- you know, something went on there.

Q When it comes-- Sorry, carry on.

A No, sorry. So, they're the things that you would maybe be looking at practice and when you look at improvement bundles for these things, a lot of them will focus around hand hygiene, patient education and managing lines, line insertion, things like that.

Q And so those ones-- those sort of issues, in your mind, are to some extent tied or associated with gram-positives, Staphylococcus, that sort of stuff. What about gram-negative? To what extent is it reasonable to take the view that-- Are they-- All the lists here, they have a slightly higher-- not connection, but association with environment or potential association with environment?

A Well, I think that's why it's broke down into gram-negative and environmental bacteria because a lot of your gram-negatives might actually be the patient as well. As I explained, the E coli bacteremia-- the most common reason that someone gets bacteremia is because they've had a primary infection that hasn't either been detected or treated, and then they've then went on to become a bacteremia, and I think there was much discussion back and forward around, you know, you can't include all the gram-negatives.

There's also-- I think one of the hypotheses during the investigation was gut translocation as well, where, you know, certain treatments-- you might get the bacteria from the gut and then in the blood, and that's-- so, that's, like, the patient, kind of, risk factors rather than the environment.

Q So, am I right to think that you're saying that gram-negative, you've got to be careful? Within gram-negative, there might be-- there are bacteria that are quite often associated with things other than the environment----

A Yeah.

Q -- and therefore you, sort of, need a tighter list, which is what this fourth category is, of the environmental bacteria where, again, there's a greater likelihood they're going to be environmental?

A Yeah.

Q Yes, and so, are the environmental bacteria, to some extent, a subset of gram-negative, or are they a mixture of the two?

A I think they are a subset.

Q Right. If we go over the page, we then have some non-environmental bacteria, which I think you've discussed before, and then we have some fungi, and that would include-- would fungi include Aspergillus and----

A Yes.

Q -- Cryptococcus neoformans?

A Yes.

Q Yes, it would, right. Now, what I want to do is-- you've used the same methodology. So, this section seems to describe it's the same data for the denominator, same route to the data. Have I understood that correctly, as the other report?

A Yes.

Q It's the same attempt to use an SPC SCART to show incident rates with outliers, threat shifts, and trends?

A Yes.

Q I mean, not entirely the same. It's in the same territory.

A Yes, I think there was a different baseline set.

Q I think there is, but it's the basically-- broad, basically set of methodologies. Right.

A It's the same principles, yeah.

Q We go over the next page and then there's the same comparison with Aberdeen and the Sick Kids in Edinburgh, and then there's a discussion of the number of episodes and the incident rates and we see charts on the next page.

Now, what I wanted just to understand was what this report is saying or seems to be saying about change between before the transfer to the new hospital and afterwards, and figure 1 appears to be for the gram-negative group and we have on the next page at the top-- sorry, at the top of the previous page, we have a discussion of what is being shown, and in that section of the top page, it describes an upward shift. The 10-month upward shift still appears that we have in the previous report----

A Yes.

Q -- in the second paragraph?

A Yeah.

Q And then we have in the last sentence:

> "In addition, comparison of the overall incidence of gram-negative blood cultures before and after the move to the RHC indicated the rate was higher after the move in the 2A/2B group but did not change for the Other Group... "

Because the bottom is the whole of the children's hospital isn't it?

A That's right.

Q Yes, and that's for the gram-negatives. Now, the next page we have, again, the same methodology for gram-positives, and it describes in its second sentence there was an upward shift prior to the move, and then there was an outlier and rates above the-- what's the UWL? Upper warning line?

A The upper control line.

Q Yes. So, there's some outliers here, and this is the group that you would see has the greater connection to practice, potentially?

A Yes.

Q Yes, and then for the 2A/2B group there was also an upward shift after the move but in the last sentence:

> "In addition, comparison of the overall incidence of gram-positive blood cultures before and after the move to RHC indicated the rate was higher after in both the 2A/2B group and the RHC Other Group."

But we also see, not that it's commented on in this data set, an actual reduction in the rate at the end of the graph, don't we?

A Yes.

Q And that presumably is what we were talking about.

A Yes.

Q Am I right in thinking that might be-- people argued that was associated with the work of the CLABSI line group?

A That's right, yes.

Q Yes. Right, and then we go to the next page, which deals with the environmental bacteria group, and again, the second paragraph, we have another discussion of the changes and, again, discussion of the difference between around the time of the move, and we can read all this. Then the same thing occurs on the next page-- a different thing appears on the next page. So, we'll stay on page 210 for the moment and I'll ask you a couple of questions. We can obviously read the report and we can discuss it with the Inquiry's experts in due course. It seems quite an interesting piece of information, is there-- and you've explained why this wasn't done in

September 19 following the meeting which Professor Reilly attended but what I----

A Sorry, this is a different report. This is the June----

Q Yes, exactly, but it wasn't re-done in 20----

A Okay.

Q What I want to understand is this, from the point of view of your team and NSS, what role does this report play in your understanding of whether there is a change of the rate of any of these infections after the move to the new hospital.

A So, I think it's actually page 18 that shows----

Q Let's go to the next page. Before you say what it shows, can you just explain what the graph's doing because it's a different format?

A So, again, you've got the vertical line showing when the Royal Children's Hospital----

Q Can we zoom in the top half of the page, please?

A -- opened, the number of episodes, but this time it's broke down into the different pathogens, and you have it split up for Ward 2A/2B group again and the rest of the Royal Children's Hospital, and what it showed and what I think is the most significant graph in the whole report is the diversity of the pathogens that were being reported.

Q Because it seems from a-- it may be the colours that's doing this, of course, and colour can affect perception in graphs, can't it?

A Yes.

Q I mean, I notice, for example, that whoever picked the colours has tried to spread the colour range across the level of, in simple terms, how unusual the bacteria are because, I mean, you could have colour coded it from "This is quite normal, this is quite surprising," but they haven't done that here. Have I got that right?

A No, I think it was just chance----

Q Chance, good, right.

A -- with the colours.

Q Okay, so it seems to be showing that there's a greater selection of bacteria on the right-hand side.

A Yes.

Q But isn't there quite a lot of variation in those 2014 columns as well, on the left-hand side?

A So, you will get infections, and there is the, kind of, what you expect versus actual, and I think it's the range of pathogens that was seen in the 2A/2B group, and it goes back to, you know, the unusual nature of these pathogens that was quite significant.

So, we do get gram-negative

bloodstream infections in, you know, paediatric and adult care, and they would be expected to a certain level. I think what this shows is the range of pathogens that-- some of them I hadn't dealt with before and they were very unusual.

Q And the black spots, what do they mean?

A I can't remember.

Q Could they be the-- They're not the first time it turns up because yellow has a lot of black spots.

A They might-- I think----

Q The dots represent the first and recurrent episode.

A I think the black spot is either when the patient's had more than one----

Q So the idea is that you get, sort of, patients with lots of infections.

A So, there's more pathogens than there is patients because what we were also seeing was samples where you-- either in the same sample seen multiple different gram-negatives or you seen a patient with one gram-negative and then a subsequent blood culture a few days later grew something different.

Q Now, you were explaining that this, you felt, was the most important page in the report. Is there anything more you want to say about why you think that?

A I think it's just the unusual pathogens that you see, and when I say "unusual," I mean that they're not commonly encountered or expected in, kind of, healthcare, and certainly not within, kind of, sterile sites like blood and-- Yeah, that would be what stuck out the most.

Q Can we go to the bottom half of this page? Because there's a section about comparison with other hospitals, and do you notice how the last sentence of that first paragraph is "There is no difference in the rates of gram-negative blood cultures between these three hospitals"?

Now, I get the impression that that observation sits rather uncomfortably with the idea that the types and number of infections that you were seeing in the previous graph on the right-hand side in 17, 18, 19 is in some way unusual, or would you say-- how would you describe its quantity?

A So, the rates are limited by the data that we were provided to look at, you know, and the small numbers and the tests that the time allowed to be done on them. So I would say that the whole report needs to be written alongside the kind of caveats and limitations to what data was being used.

Q Yes, because if we just, in a sense, pick up all the caveats at once, it's a snapshot; it's done-- it's used occupied

bed days, which I'm not going to get into now but there's certainly dispute about whether that's the correct measure; it's used SPC graphs when arguably there might not be a trend to compare against; and it's made a comparison where there's some questions about whether there's a comparison with Edinburgh and Aberdeen.

But, within those caveats, what's it shown overall? If you drew out the top three things in this report, what would they be?

A I think it's shown that there was something that happened, even acknowledging all the limitations from the SPCs. I think there was something happened, if you look at the SPCs and you look at the kind of variation shortly-- not immediately when they moved into the new hospital but there's a certain period and then we see upper control limits and the kind of trend-- and the diversity of the organisms that were being reported, I thought were worrying.

Q Okay. What I'm going to do now is just doublecheck my notes. Take this off the screen, please. Yes, the final question on this epidemiology section is to what extent is there a connection between this earlier report, which seems to have been in June '19, and the escalation of GGC to Stage 4, as far as you're aware? Is there any connection in terms of the internal processes that caused that escalation?

A I'm not sure the-- what the----

Q In the sense-- Was it used in a meeting, or was it used as part of the data?

A So, I remember we had the stock take meeting at the end of September. These things were requested. I think the escalation was November or December of that year.

Q I just wanted to understand whether this appendix 4 of the earlier report was still being looked at within NSS and, as far as you know, the people in the Scottish Government you sent stuff to as they made that decision, or whether it wasn't considered at all. If you're not the right-- You can't help me with that?

A I think-- You'd need to ask someone at the Scottish Government.

Q We will do that now. Now, what I want to do now is to move onto some broader issues, many of which you've already answered, so we should be able to canter through this, but I'm not going to ask you the questions about the difference between Infection Control doctors and nurses because we've already covered that.

But what I want to understand is the role of HPS ARHAI because we may have got some-- I want to clear-- get clarity of what are the strengths and

limitations of what can do and maybe some of the questions that you were asked about the datasets we've just-- might expose that we need to know more.

So, please stop me if I get any of this wrong. So, firstly, in normal times, ARHAI receives information about a series of nationally reportable organisms, which is a relatively short list, and that's what you you get all the time from everybody. Have I got that right?

A We have national-- We coordinate the national surveillance.

Q Yes. We've heard about the HIIAT system where the-- as I understand it, the Health Board assesses whether it's a red, amber or green and, since 2016, they report all three.

A That's right.

Q Is there any other mechanism by which NSS can notice that there have been unusual infections in a population at quite small numbers?

A So, we have a planned program of work that has six priority programs in it, one of which is the data and intelligence, and that's led by a consultant scientist.

So, they coordinate the surveillance, and that's set out as a priority for surveillance, but there's other surveillance programs that they might support, either at local or UK level, to-- you know, we do surveillance of different antimicrobial resistance and things like that. From a board point of view, would we be able to see a trigger that there was something happening without a board telling us? No.

Q So, just to take an example, which I'm going to come to in detail, is let's imagine there was a Cryptococcus neoformans infection in a health board, it's a relatively rare disease, we're told that there are, say, 30/40 cases in the UK in a year.

You won't know there is one until the board makes an assessment about whether to report it? Correct?

A That's right.

Q Of course, in some cases the board wouldn't report it because it might be in one of the populations where it's not an unusual thing.

A The board might make that decision.

Q The board might make that decision, right. Now-- So, in essence, if a board doesn't think-- doesn't notice a decision, it won't carry out a HIIAT and therefore you won't know?

A Yeah, there's two ways that we might not know. The board might know about it and they might assess that they don't report it up for whatever reason that they've assessed or, if their local surveillance systems don't pick it up, then they might not know about it either.

Q Because, since April 2016, if a board decides to apply the HIIAT system to the infection, you're going to know about it because, even if it's a green, you're going to know.

A That's right. Previous to April 2016, it was kind of voluntary, boards could offer the information, and it was only ambers and reds that had to be communicated but, since April 2016, they tell us all their HIIATs.

Q But if they don't either notice or they don't apply a HIIAT, you won't know about it?

A Or if they apply a HIIAT and don't tell us, we still wouldn't know about it, you know, so we only know once the board reports that in.

Q But surely, if they apply a HIIAT, whatever score they get, they're going to have to report it to you?

A So, they should, yes.

Q But they might not?

A They might have a PAG and decide, you know, not to use the formal HIIAT.

Q So, again, that's helpful. So, the fact there's a PAG doesn't mean you're on an inevitable road to a report? What means you're on an inevitable road to a report is you decided to use a HIIAT?

A Well, chapter 3 sets out when the board should be assessing and reporting. I'm just trying to give you examples of when that might not be applied.

Q Because one of-- I think what I might do is take you to chapter 3, which is later on in the document list, which is bundle 27, volume 4, page 178. Now, I think ultimately this is a matter later on in the Inquiry but I wanted to just see if I can get a preliminary view from you.

If you look, for example, at the definition of an "exceptional infection episode," can we zoom into the top half of the page, please? Which is just below 3.1, definitions. Sorry, higher up, please. Top half of the page. There we are. Perfect.

So, we see there:

> "An exceptional infection episode: a single case of infection which has severe outcomes for an individual or has major implications for others, the organisation or wider public health. "

Would you accept that that requires quite a lot of judgment on the part of the Health Board?

A Yes, that definition has been-- I think this October, this version's been taken, the manual.

Q Yes, there's a review going on.

A No, that definition has changed since then, after discussion----

Q Can you help us? I mean,

we'll go and get a copy but how has it changed?

A I can't remember exactly but I agree with you that the interpretation by some boards would have been a single case that somebody had an infection present and they had died, and they might feel that they would report in every patient that died that had an infection because they were reading it as a single case of an infection a severe outcome, which is death, but other boards would have related that to an incident rather than just a single case. So that definition has changed and I can----

Q Yes, the other one that struck me as odd was four down, "A healthcare infection data exceedance" ----

THE CHAIR: Just so I'm following it, you say that definition has----

A In the current document----

Q -- has changed in the-- Is that a drafting change in the current manual?

A It has changed. I can't say exactly when it did change but I can let you know what version it----

MR MACKINTOSH: We will need to work with the new one – that'd be helpful – but on a similar line, the fourth one down, "A healthcare infection data exceedance." Has this changed, as far as you know?

A No.

Q Because the question I was asking was, "A greater than expected rate of infection compared with the unusual background rate for the place and time," what worries me about that is, if you have an infection where, and this has happened a lot, we hear people say, "I've never had one of these in my career before," you just did it a few minutes ago, one would imagine that there's a view you could take that the expected rate of infection is none, and so----

A So one case----

Q One case is but, equally, you've left a judgment there, expected rate of infection might be "one, occasionally" ----

A That's right.

Q -- so you wouldn't report one, and would you-- I mean, it may just, us being lawyers, would you accept that there is quite a of room for professional discretion in these definitions?

A Yes, and, if you look at the WHO's core components of Infection Prevention and Control, it will describe what the national team does and what a local Infection Control team does. So I think what's important when you're looking at the manual is the Infection Prevention and Control Team know their patient population, they know the risks within that patient population. They know what-- you know, what the general pattern is and what they're looking at.

There might be national surveillance that is done at a national level because it's that level of priority, but if you're working in a health board, you might choose to do surveillance on renal patients on a certain organism, because you know that that's causing issues. Local Infection and Control teams should be using the guidance to inform their practice.

Q Because this may be an excessively rigid question to ask, but if you can only carry out surveillance on data that you've been given, because there's been a HIIAT, and we're dealing with very unusual infections that occur at very small numbers, is there not a gap that you, as the national system, won't know, and the one case that happens that might presage a couple more doesn't get told to you until the next two or three occur? Is that not a gap in the system, albeit I don't quite know what the solution is, but is that a gap in the system?

A I think if that happened, it would be a gap in the local laboratory escalation system, because within microbiology laboratories you get very experienced-- not just doctors, microbiologists, but scientists who also know the patient population very well, and if they see something coming up, they would escalate that.

Q Are there any consequences to a health board that chooses not to escalate something and then eventually you discover there's been a problem? Other than them getting put into the framework, is there any other consequences that can flow?

A Not that I'm aware of.

Q Now, you just mentioned the need to organise local surveillance. So, how do you think a board should organise its testing, and microbiology, and such things, and IPC team to notice unusual organisms and react in a prudent manner?

A So, I think in the last decades, the----

Q Do you want me to take this off the screen, by the way?

A -- surveillance has moved on remarkably. When I first started, you walked over to the laboratories, and they wrote stuff in a book, and you took it off the book and then you went back and looked to see if you had had any other cases, and it was very kind of resource-intense and person-dependent.

Most of the boards in Scotland now have an electronic system, which is ICNET, and what ICNET does is it pulls the information out of the local laboratory systems and out of the kind of patient management systems. So, it not only tells you what the organism is, it tells you where the patient was, and you can set up these systems now to send you an

email, to do whatever, to say, you know, you have got this. Now, that might not account for what you were talking about a minute ago, that, you know, you've never heard of it and then suddenly one comes up. You are relying on your experienced laboratory staff to escalate that and----

Q Is this back to teamwork again, so that the laboratory staff----

A It absolutely goes back to teamwork, but for surveillance, if you have a national alert-- organism, you can feed that into the electronic system. You can set your triggers as well. You can tell it, you know, who it should tell when the trigger is met, so—

And I know Scottish Government as well are looking at the moment through their strategy at a Once for Scotland electronic system that would allow boards to talk to each other as well, because sometimes what you can have, is a patient is transferred to another hospital, and they have an alert organism, and the other hospital didn't inform them, and then you have a patient going in, and so it would be-- They're looking at a Once for Scotland system, acknowledging that there is a lot of referral centres now and boards refer, you know, across, and we are hoping that that will also have a national part to it as well that would allow us to run the, kind of, surveillance and take some of the resource away from the boards to comply with the national surveillance, because I must stress that surveillance is very resource-intense.

Q Yes. The other question I wanted to ask before we stop for a break is: there's been some evidence – and there's some other evidence to come – that there's a sort of disagreement about whether it's a good idea or not to have the Infection Prevention and Control team in Glasgow not be managed by the same management team who manage the microbiology, and the impression I've gained from those who think it should be all within the same management structure in the board is that that would promote teamwork, and the impression I've got from reading the statements of people who think it's perfectly fine as it is is that it's quite a good team of Infection Control nurses, managers, and the doctors whose sessions fall under that responsibility.

Now, this seems to be related to the idea of how you manage-- how you spot unusual things. Do you have any views about whether-- how you should manage microbiology and infection control together, separately? How would you think it should be done?

A I can see it working both ways. I think it's about the leadership, the communications, the-team building, the development that you have within the

team and how you develop that team. I think that's more down to personality.

MR MACKINTOSH: I think, my Lord, this would be an appropriate point to break for a coffee break, and if we were able to return quite promptly, we might be able to get this done before lunch.

THE CHAIR: Would quarter to 12 count as promptly?

MR MACKINTOSH: Yes. Just to inform-- I think I've done about 30 per cent or 40 per cent of my pages, which may help people.

THE CHAIR: Right. We'll take a coffee break. Could I ask you to do that for a quarter to 12, and you'll be shown into the witness room. Thank you.

(Short break)

MR MACKINTOSH: My Lord, would you be willing to sit on until half past one or so? I think we'd be able to finish this witness if we did that.

THE CHAIR: From my perspective, that seems a good idea. Does anyone have any difficulty with the prospect of getting away by half past one? Right, I'll take that as a yes. Ms Imrie, just to keep you abreast of what we've decided, Mr Mackintosh thinks he can probably finish by half past one if we sit beyond one o'clock, so as long as that's fine with you----

THE WITNESS: That would be fine.

THE CHAIR: -- that's what I would propose to do.

THE WITNESS: Yes, thank you.

THE CHAIR: Yes. Mr Mackintosh.

MR MACKINTOSH: Thank you. I wonder if we can go back to bundle 7, page 211? So, the top of the page, please. Yes. The reason I wanted to have this on the screen is just to focus a question that's been suggested I should ask, which is that I'm looking at the top right-hand corner of that graph, the-- what you describe as the "unusual" infections that are recorded there. It's been suggested, I think, by some people involved in this incident-- or these incidents, that these unusual organisms could have, to a material level, been brought into the hospital by the patients as opposed to by the water supply, or in-- Do you have any view about whether that is a significant or reasonable conclusion-----

A So I think----

Q -- or hypothesis?

A Sorry, going back to, you know, when you see a change in your data and the kind of things you look at; so, you're looking at has there been a change in patient population? Has there been a change in your catchment area to look at if there's things in the community that you serve, have they changed, that's going to affect what you're seeing in the

samples? But if your patient population has remained the same, i.e. it's your Haemato-Oncology and you've got a catchment area, then I don't think that would be something that would be the first hypothesis that would jump to my mind when I see something like that. So there's no change in patient population, no change in treatment, but there's been a change in the environment.

Q Thank you. Now, the other thing that we discussed just before the break was various changes to the – you can take this off screen – National Infection Prevention and Control manual, and in your statement on page 288 – that's the supplementary statement – you discuss at page 288-- bottom of this long answer, you recommended that:

> "ARHAI Scotland should consider these findings when developing methods to support other boards and monitoring of infection risk associated with environmental organism."

And in August '23:

> "Development of a proof-of-concept environmental surveillance system has been completed, and the next step is to undertake a pilot study during the 2023-24 financial year."

Which, if any, boards have volunteered to take part in that pilot?

A We've done a proof-of-concept with NHS GGC, NHS Grampian and NHS Teesside. I think one high, kind of, risk unit in each of those health boards, and NHS Teesside and NHS Grampian have agreed to be pilot boards for the next stage.

Q Were you given a reason that Greater Glasgow didn't want to be, if that's the case?

A It's the healthcare scientist consultant that's leading on that. I think that Glasgow just turned down the offer after we'd done the proof-of-concept with them. It was in the neonatal unit, I think, was the high-risk unit they used in Glasgow.

Q Okay. Thank you. Right. Now, what I want to do is to go back to-- Take this off the screen, please. If you recollect, we were discussing what happens if you-- with reporting, and I probably don't need to do this with too much detail. What I'll do is I'll do it by reference to one particular set of infections. So, this is Aspergillus.

A Okay.

Q Now, I'll put it to you-- if you need me to take you to the IMTs to nail down the dates, then please tell me, but there are five groups of infections that I'm aware of and I'm about to put to you. So, the first is in Summer 2016 where there's a PAG. The second is in spring of 2017--

Sorry, there's a PAG and an IMT. There's a-- Spring 2017, where there's an IMT. Autumn 2017, where there's a PAG. Summer '18, where there's a PAG, and Summer '19, where there's an IMT, and from the data supplied by NSS, that we have in a spreadsheet that I took Ms Rankin to, only the first, second and fourth of those were reported to HPS/ARHAI. Now, is this something you have knowledge about, or do you want me to go to it? I want to ask you a consequence of this rather than to drill in.

A Yeah, I think you shared, as part of the evidence table, some of the PAG and IMT meetings.

Q Yes. So, the point I'm going to take is not necessarily whether I'm completely right about the five and the three, but if you have a situation where there are a series of what some people would describe as unusual infections, in this case Aspergillus, and they happen two one year, two the next year, one the year after, and only some of them are being reported to HPS, to what extent is the surveillance system effective then? Are you not just flying blind as a national organisation if you don't know, in that case, all of the infections?

A So, absolutely we rely on the boards reporting in, and I think, for ARHAI, there's two separate roles that we play and are reactive in the reporting in, and the first one is the communication to the Scottish Government and how we give them assurance that the IMTs are being managed appropriately, the investigations are being done, there's controls in place, but the second one, which is just as important, is we are looking for boards to report in any incidents so that we have a national picture and that we can pick up quickly if there's anything changed in healthcare.

Where that's really important is sometimes in a board you might not think it's significant because you've had one or two cases, but we might have seen one or two cases from one board and one case from another board and one case from another board that, on their own, are not significant, but at a national level when you start to see a picture of-- An example I'll use is Burkholderia, you know, we started to see coming from different boards, and we start to ask questions then about-- you look at the patient journey, you look to see-- but that turned out to be linked to a product that was used in hospitals. That might have taken a long time had there not been, kind of, UK wide investigations and things going on as well. So, when boards don't report things in, it's not just that we're not aware of it; it's that we're losing that national intelligence to plan for any emerging issues.

Q So, I understand that you're trying to spot things at a national level, but to what extent is there an issue about your ability to spot the very unusual within a single board? So, I use an example, the obvious one, the suggestion here that the building's environmental systems, the water and ventilation, are somehow connected to the infections. Now, that would mean the issue only arose in one hospital, in one board. Well, I suppose it's not inconceivable you might have a problem of practice that only applies in one team, because one team is doing something very strange they really shouldn't be doing. How does your system-- or does your system enable you to catch these problems that are local but have serious consequences?

A No, that's not the role of the national IPC team.

Q Right.

A So, we're relying on our extremely skilled and experienced workforce and the boards to escalate. It's an escalation. You know, there's many things that they might deal with on a day-to-day basis that they don't escalate up to ARHAI and we are certainly not resourced nor do we have capacity to give assurance for every ward in NHS Scotland.

Q So, in fact, if somebody is looking for a-- if someone thinks there's a problem in what this Inquiry is investigating and they're looking for a solution to identify local unusual harmful sequence of events, firstly, you'd say that ARHAI is not that organisation at the moment but also it probably shouldn't be because that should be really for the boards. Have I got that right?

A Yes. So, the role in the boards is to do the local surveillance that is tailored, if you like, to the patient population and the risks that are held within that because, you know, the work of an Infection Control Team in a cottage hospital will be completely different to an Infection Control Team that are looking after two or three high-risk units like renal transplant, ITUs. You know, they're doing-- there's different work being done there. Different surveillance would be getting done. So, the local Infection Control Teams would be the ones that would be highlighting where there's risks.

Q If you-- So, could it be that you're saying that if there's a problem and it's a local problem, we should be looking for local solutions, not a sort of national police force to check up?

A So, on many occasions, there might be something that's been identified locally that they think might be a problem and they'll contact ARHAI for support. Now, that support comes in all different forms that the boards might not have

locally, small teams, but we'll do literature reviews, rapid reviews. There might be people that have experience or training in the area that they don't hold in a local team, and when we talk about Scotland, the Infection Control Teams are very diverse as well. You know, you have very small teams.

Q You just explained that, yes.

A Yes, and we have, on occasion, even provided senior cover for boards when they have had long-term sickness or they haven't been able to fill a post. The HAI executive lead has kind of negotiated that if there was anything they needed oversight of, not necessarily an outbreak but, you know, any kind of senior cover, that ARHAI would support them there. We do a lot of, kind of, support without going into escalation, or-- it's not as soon as you contact ARHAI, you've got to do, you know, a HIIAT, a HIORT and everything.

Q So, you wouldn't want us to get the impression that you're primarily a reactive body, you're more----

A No----

Q They are offered-- you provide help and support?

A We also do an annual work plan which is based on the priorities and to set the annual work plan, each programme in ARHAI works with stakeholders and service providers so that-- and Scottish Government. So, I would say 80 per cent of the time that staff spend is in delivering the annual work plan and 20 per cent is maybe in reactive.

Q Thank you. I need to go back to something you said in your evidence earlier this morning, which was about-- do you remember I asked you about whether you-- your attempts to obtain comparator data from hospitals south of the border, and you explained that it couldn't be supplied in the format that you would have wanted. Could it be that what you were effectively looking for was the same quality data as you had from the ECOSS system that had patient-specific information embedded within it?

A I think what we were looking for was data that we-- so, if you went to another trust down south or whatever that you were able to get, whether it was admission data or occupied bed days or, you know, that you were getting the same thing back.

Q Because if you do Freedom of Information Act requests, you are reliant on them extracting the data from their systems in what they think is compatible with your request.

A That's right.

Q And so are you aware that there's obviously a criticism of the Inquiry's-- Mr Mookerjee's work because

he's relied on FOI data?

A I think it just wasn't clear the actual questions that were set to the other boards or how they extracted the data to provide back. I think that is-- it's a limitation if you go to anybody else and ask for data and I think if it's acknowledged then it's accepted that it's a limitation.

Q So, in effect, what you would have liked is data of the similar quality and an understanding that you had of your own data but that's-- you couldn't be given that because of data protection purposes?

A Yes, so-- I mean, for us to do a Freedom of Information, I think, you know, it's 28 days to respond. We had 10 working days to do the report.

Q I understand. That's very helpful. Right. Now, I wonder if we can go back to the National Infection Prevention and Control Manual, which is bundle 27, volume 4, page 178, and if we go to the bottom half of the page. Right. So, the reason I've gone here is I just wanted to put something to you, which I suppose is, in a sense, a little bit of a criticism of the structure here, and the idea that this process, which describes how you detect and recognise a healthcare infection incident outbreak or data exceedance, rather requires the health board that's making the decision to have data against which to compare. Would you accept that as a fair criticism of this process?

A If it's-- yeah, if they're looking for-- Well, you don't need data. You can have that-- you can do-- have an IMT and a PAG and fill in a HIORT or other reasons rather than you have a trigger in your data.

Q But if it's something where the issue ultimately turns out to be sometime down the track, that there ended up being a series of infections that are in some way unusual, the benefit of hindsight looks back and goes, well, how do you not spot-- how do you spot the first one? I think you've, sort of, already slightly answered this in your evidence, but do we get back to the idea that to spot the first one, you're reliant on effectively the team in infection prevention and control to notice the unusual? You can't do anything more than that?

A Well, you can set up triggers in your electronic surveillance systems. You can----

Q So, you can trigger-- The trigger is any----

A You can trigger one case.

Q One case.

A So, you know, you set up what the pathogen is that you're interested in and in some cases, you might only be interested in a pathogen if it appears in

oncology, ITU, you know, in other areas you might not be interested in.

Q So, you might, for example, say, "We're interested in Cryptococcus neoformans and we're particularly interested if it appears in haemato-oncology patients"?

A Yeah.

Q Right, yes. So, in a sense, there's nothing preventing a health board having a very long list of triggers, albeit that they will almost never get triggered.

A For the health boards that have electronic surveillance systems then, yeah, they can put in as many pathogens into like----

Q Thank you. Now, in this manual, page 245, I just wonder what the status of chapter four of the manual is.

A So, in the most recent----

Q No, I've gone entirely the wrong place. Let me just get to the right page because that's not going to be helpful. So, if you go onto the next page. No, it's quite a long way. Give me a second. If we go to page 183, this is your chapter on Infection Control and the built environment. Would you accept that, at the moment, it's currently, broadly speaking, a literature review at the moment?

A In the version that you're showing me, yes, not in the current version.

Q Well, we'll go away and look at that, and we'll come back around. Right. What I want to do now-- Oh, yes, I want to think about-- Take that off the screen, please. To what extent do you think it's ARHAI or NHS Assure's role to take an interest in Legionella L8 risk assessments and whether they're being carried out with a suitable frequency by a health board for their hospitals?

A In the sense of routine reporting or----

Q Yes, or noticing or being concerned?

A We get many HIIATs filled in because there is no patient cases but there's water tested positive for Legionella, and we're invited to a lot of IMTs as well.

Q So, whilst I'm not going to ask you to hypothecate about any particular decision that might have been made or might not have been made, it's not inconceivable that a health board might take a HIIAT because their L8 risk assessment has failed or is high risk?

A No, it happens across health boards.

Q And then, because you are currently in the role of Clinical Lead at NHS Scotland Assure, it's been suggested that the current role in NHS Scotland Assure in respect of new builds or refurbishment-- to what extent does it

involve you actually checking physically that the new building is built in compliance with statutory requirements and Scottish Government guidance?

A So, within the Clinical Team, there's two nurse consultants supported by a consultant microbiologist that support these projects, and they physically go on-site with hard hats and high vis jackets and things to, you know, work with the teams and the board to see. I would have to ask you to speak to Thomas Rodger or Julie Critchley really about the detail about the whole assurance team and how often they go on site but I certainly know that the consultant-- the clinical consultants do visit the site.

Q I think it's quite possible we will talk to them again in due course. Right, what I'd like to do is turn to the actual involvement with the hospital and the water incident debrief meeting, which is on 15 May 2018. It's bundle 14, volume 2 at page 211.

Now, this appears, I'm told, to be a meeting you chaired in May '18, at what was-- I'm assuming was thought, at that point, to be the end of the water incident.

A Yeah, it was thought to be the end of the water----

Q But it wasn't the end of the water incident.

A No.

Q No. Do you remember the meeting?

A Yes.

Q So, what I wanted to understand was what would you characterise the mood of this debrief amongst everybody present?

A I remember being slightly anxious going into the meeting, but my memory from the day was that there was a lot of discussion and we managed to move through the debrief tool and to collect the information fairly smoothly.

Q And so you obviously weren't at all the meetings the following year, but you were-- and we're going to come to it in detail, but you were at, for example, some IMTs in September 2019 when you would go with-- you and Annette Rankin together.

A November, I think.

Q November. Are you able to tell us whether there's any change in tone between these two periods of time, this meeting? I know it's a different meeting. This is a debrief, that's an IMT but is there any change of tone and atmosphere in that 14-month period?

A So, I didn't support the incident. It was Annette Rankin and Lisa Ritchie that supported the incident. I went along to the November meeting, partly to-- I think maybe Lisa and Annette were on annual leave and the report was

going to the IMT as well. It was quite a tense meeting.

Q And does that in any way contrast with this one?

A Yes. I mean, IMTs and PAGs are quite tense because there's an emerging situation that needs to be investigated and controlled, and I think everybody that attends them is aware that there's consequences but this, I think, was a different sense of tenseness, and indeed both Annette and Lisa had approached me as the Interim Lead Consultant to look for my support that they didn't attend the meetings on their own prior to the meeting that I went to.

Q And then you went to one in November when the water----

A I went because they were on annual leave but, prior to that, I can't remember exactly when, they both spoke to me independently and felt that they wouldn't-- and normally a consultant goes to an IMT themself. They might take along a scientist if there's a particular aspect of support that they think the IMT might need but, from then on in, I agreed that they could attend together.

Q Okay. What I want to do is just look a little bit more at this debrief meeting. There's a-- We're not going to go through the minutes, don't worry, I'm not going to ask you questions about the detail but would I be right in thinking that, at this point-- Was there anybody at this meeting who didn't, at that point, think or express the view-- Sorry, was there anybody who expressed the contrary view that the incident was not over at this meeting?

A I don't remember anybody expressing that view. I mean, no, I can't say----

Q Because if we were to take that this is a debrief, it wasn't necessarily entirely easy but it was a lot less worrying than you thought it was going to be and, at that point, everyone thought the incident was over, would that be a reasonable group of inferences to draw from this meeting?

A Yes.

Q Right. There's a document I'd like to put to you, which is bundle 27, volume 5, document 19, page 46. Now, I'd like to understand what this is, and you may have seen it. Ms Rankin thought you might have seen it. We can look at the next page and go to the end, keep going down. It records various things. I'll come back to what they are in a moment.

Keep going, keep going, keep going, keep going, keep going, keep going, keep going. It lists various action points of various people. I notice you're not recorded as an action point but, onto the next page, which I think is the last page, it bears to have the name of Dr

Inkster on 5 June.

If you go back to the start of that document, page 46, is this something you've seen before?

A Yeah, it's a template for, kind of, debrief of an----

Q So this is the template you were talking about?

A This is a template. So, as far as I remember, Dr Inkster was the Chair of the IMT and she asked me to chair the debrief meeting because, I suppose, I was neutral, I hadn't been involved in any of the IMTs so I could facilitate a meeting and ask questions of the members to try and get the debrief template complete, and the----

Q And who would have actually physically completed it?

A I think it was Dr Inkster as the Chair of the meeting.

Q Right, well----

A If you like, it's kind of wrapping up her chairing.

Q And so is this-- Does this actually inform the agenda in some senses? This template?

A Yes. We would----

Q So the two things, the minute and the report, are complementary in some way?

A Yes. I mean, the point of the debrief is really for lessons learned and to know-- to gather the members of the IMT's views on what went well, you know, what lessons they would learn for the future and what actions should be taken.

Q And would you encourage that in general terms after IMTs?

A I think it's good practice, yes.

Q Now, what I want to do is just to go to the bottom of this first page, and you see it records the causative organism as, "Environmental gram-negatives and fungi from biofilm" and the main presenting illness as Bacter anemia and then main primary exposure is listed as, "Food…" but unfortunately the list continues over the page as, "...water, air, general environment, person to person, other." Could that be a ticklist that's not been deleted?

A I think-- I don't-- The highlighted bit is water.

Q Ah, right.

A That will be on the template and then you will----

Q So you think that might be a highlight----

A Highlight or delete----

Q -- or delete.

A -- as appropriate, yeah.

Q And then the next one indeed is "Source of exposure: contaminated water supply. Duration of incident: ongoing," and then there's a discussion here, "Complex incident, contaminated water supply." What would you

understand by, "Long-term preventative measures will take some time to implement"?

A I think that was around the dosing of the system.

Q Right. So, even though the incident's over, it's not put to bed at this point?

A I think the IMT considered they had done the investigations and had implemented the controls but they would obviously still be monitoring.

Q What I want to do now is to move onto 2019. Now, I appreciate you had less involvement. You didn't attend lots of these IMTs. Could we go back to volume 4 of bundle 27, page 209, which is document 17, which bears to be an email to you from Dr Peters, and obviously Dr Peters has now publicised the fact she's a whistleblower, which is why I can use it in this context, but what did you do in August '19 when you received this email?

A Firstly, Dr Peters had contacted me by phone, and I asked her to raise her concerns in writing, in an email, to allow me to escalate. I shared it with the whistleblowing executive within NSS, who's Professor Reilly, the Medical Director within NSS and I'm sure I shared it with the Scottish Government as well.

Q This is obviously 16 August and the IMT at which you are not present, in which the chair changes, is 23 August. Did you do anything between 16 August and 23 August to draw the substance of this, if not obviously identity, to the attention of GGC?

A So, going through the kind of process, the policy, whistleblowing, I went back to Dr Peters to offer her support of where she might get help, how she should go through the process. As I remember, the Medical Director in NSS contacted the Medical Director in Glasgow to say that there had been an anonymous whistleblowing complaint come in and we were referring it back to policy. I shared with Scottish Government some of the content of the letter.

Q Right, because on the-- You can take that off the screen. I'd like to look at a question-- an answer you gave in your statement, which is on page 240 of the statement bundle, which is question 50, because, although you weren't present at the IMT on 23 August, you have described in your statement something that you say happened immediately afterwards, and that's from page 240-- not 14, sorry.

So, you are asked by us, "Were you aware that Dr Crighton was appointed chair of the GMB IMT?" and we give you a reference to the minute. "If so, were you surprised by this? What was your

opinion of her appointment?" and you've given us an answer, which is, "I was aware as Annette Rankin shared the news in a SHAIPU update." What is an SHAIPU update?

A It's Scottish Government Healthcare-Associated Infection Policy Unit.

Q So, who gets that?

A The HAI Policy Unit sit within the Chief Nursing Officer's directorate.

Q I appreciate that but, given that Ms Devine, the IPC Director at Glasgow, has replied, I was rather taking it that it's got a wider circulation than that.

A So, whenever we're communicating up an incident to Scottish Government, whether it's an amber, a red or a green that we think we should highlight, if there's-- if we're giving support. We copy in the board where the incident is occurring so that they were, you know, open and transparent in the communications that we're having.

Q So, you would have copied in Ms Devine and of course the then-lead Infection Control doctor, Dr Inkster.

A Yes.

Q Right, and would anybody else in the Glasgow Board have been copied into that email?

A I can't remember. They may have been.

Q But definitely those two.

A Yes.

Q Right. So, in that context, you report in this message-- Do you still have this message?

A I will have, yes.

Q It may turn out to be useful, and we might ask you for it.

A Okay.

Q You reported that the Chair agreed—that-- Ms Devine responds:

> "The Chair agreed to be replaced in order for her to have time to review incident, results and actions. Other ICDs on the site were asked to chair and declined. National guidance confirms that it is appropriate for a CPHM [I'm assuming that's a consultant Public Health doctor] to chair an IMT."

And then, Dr Inkster replies to the group, and so this is a reply-all email, effectively. It's nothing more than that, yes?

A Yeah.

Q Stating:

> "The chair did not agree to (inaudible) review the incident, results, actions. The Chair was asked to demit due to feedback from everyone at the last IMT that the meeting was difficult. This however was not corroborated at the IMT today by senior clinicians, HPS or

the microbiologists who were present, and that is not the reason that she had been replaced."

Now, firstly, how unusual is it to get this sort of reply happening when you email the policy unit?

A Unusual.

Q And you've expressed your surprise. I'd like to break that down in a little bit of detail. From your practice over the years in HPS/ARHAI/Assure, how often are chairs of IMTs replaced in Infection Prevention and Control?

A I mean, chairs of IMTs may be replaced for different reasons. An incident may run on and a chair is going on annual leave. They might be off sick. Their priorities might have changed. I think, for this, it was an IMT that had been running for such a long time. There had been many investigations, controls, discussions had, and that was my surprise: that for such a complex IMT to-- I think I'd have been less surprised if they had maybe put in a deputy chair to support the chair or something like that, but to remove Dr Inkster with all the kind of historical knowledge and-- of the investigations, I was surprised at.

Q Would an ICD be able to review an incident results and actions if they were no longer chair of the IMT?

A Not necessarily, if they're not getting access to the information. It depends.

Q Depends on what? What would it depend on?

A Well, if the chair was a consultant microbiologist, I mean, they could still access the microbiology results or some of them, I suppose. They would not see maybe some of the actions that Estates have taken or any of the reports.

Q Because in these investigations everything comes together in the IMT, doesn't it?

A Yes.

Q And in fact, sometimes that's why the IMTs take so long, is because lots of data is coming in, so if you're not in the meeting you don't know what's going on.

A Yes, and in an IMT, because you're bringing together the kind of multidisciplinary team beyond the Infection Control Team, that's where a lot of the detailed discussion goes on, and where you get the understanding of what hypotheses you're going to investigate, or how you've ruled out some of them, but you're not privy to if you're not a member of the IMT.

Q The discussion in the response from Dr Inkster about feedback that she was told existed-- Could you take this off the screen, please? Are you aware that there was a meeting in the boardroom of NHS GGC on 20 August – that's three

days before – involving some quite senior people to discuss whether to remove Dr Inkster as the chair?

A No, not until I think I've seen it in this.

Q I'm not going to take you to it because you weren't there and we can discuss it with the members when they give evidence, but just in terms of-- I'm conscious that you've explained quite a lot of the role that ARHAI, HPS and Assure a play. Do you think they should have told you they were thinking of replacing this IMT chair?

A I think at that point in the investigation, Scottish government may have wanted to know of such a significant change.

Q And you're the conduit, effectively.

A Yeah.

Q And if you were thinking about how to remove someone from chairing a meeting and you wanted to obtain feedback from the people at the meeting, who would you want to talk to and obtain information from?

A The members of the IMT.

Q Would it be appropriate to only obtain information from some of the members of the IMT?

A No, I think if you want a balanced view-- Often discussions at IMTs, you have people with kind of different opinions, and that's part of the positive when you bring people together, and they can listen and hear. So, I think if you only go to part of the IMT, you're maybe only going to get-- and you might get a biased view.

Q Right. I wanted to discuss the moment in the autumn when there's all these reports being produced by various people and the extent to which-- and what happens in the balance of 2019, because I'm conscious that we end up in the pandemic in a few months time.

A Yeah.

Q But in those remaining six months between the-- or seven or eight months between this change of chair and lockdown, how do events proceed, from your point of view, in ARHAI HPS, as this IMT is working its way through?

A From memory, the results started to reduce. We weren't getting as many cases reported in from around October time. I think the decision was made to open 6A back up to all admissions, and they did so successfully, and I don't think there was another cluster after that.

Q Because the question that I was thinking of-- well, the series of questions is ARHAI was-- HPS ARHAI was brought into-- involved in the water incident. Would you disagree with the text of that document I showed you, the

template that seemed to suggest that the source of the infection was the water? We can go back to it. Let's go back to it: bundle 27, volume 4, page 46-- Volume 27, volume 5, page 46, yes: "that the source of exposure [on the second page] is contaminated water supply," and then there's the other point of note. Would you disagree with that?

A No.

Q No. So, if we look forward into 2019, we know that in the autumn of 2019, chlorine dioxide dosing is fitted to the system, and we know that point-of-use filters are what rolled out in high-risk areas, and we know that there's the move to 6A, and that the BMT patients largely move to 4B. And we see from the IMT minutes that there's discussion of dust in chilled beams being something that comes up, and we see from the IMT minutes that there's discussions about the drains, and we've had some quite strong evidence from Susan Dodd about how the-- that she can see the black grime in the drains. Now, it does seem to be the case that by the end of 2019 the number of infections is lower than it was in 2018, and we also seem to know that when we go back into the Schiehallion refitted 2A two years later, the number of infections is lower.

A Yeah, yeah.

Q So, what do you think is happening causally between spring '18, when you're not disagreeing with this, this view and the end of '19? What are the causal factors that are driving or still driving either the rate of infection or the reduction in the rate of infection in that year and a half period?

A The environment and the controls, so there's still point-of-use filters and there's still dosing within the hospital. So, in effect, normally, with an IMT you might put controls in and then you'll take them out once you've solved the issue. The controls are still there, so I don't think we've ever tested whether, if you took those controls away, if the issue would return, and it wasn't just water. There was ventilation issues as well that then came to light that we weren't, if you like, aware of as we were going through.

Q So, at this point in May '18, this doesn't discuss ventilation issues in any detail?

A No.

Q I mean, I risk one can over-complicate these things, but could it be this is a multi-source environmental risk?

A I think what you have when you have a contaminated water system and you have problematic airflow and pressures and things, is that you're pushing things that are in the air, including water droplets and aerosols and things from water, into areas that you

maybe don't intend to, or from dirty to clean, so that I would say, yes. I think some of the issues-- some of the infections you could maybe think that they were more involved in ventilation, and others more involved in water, but I think when they came together, you got the kind of cohort of unusual infections.

Q Because one of the suggestions that's made, and admittedly, you're not at these IMTs in the summer of '19, is that there's in some senses a tension between those who see the problem as resolved, because there's point-of-use filters and there's chlorine dioxide, and those who see the problem as more complex and are talking about the drains and the ventilation having an impact. Do you have any sympathy with either of these views or do you take a different position?

A Yes, it was an extremely complex situation. I think what happened after they moved to 6A further complicated it because you had the point-of-use filters in, and the dosing of the water system, and they were still seeing unusual infections popping up in this patient population when they had moved them into 6A, but then there was other environmental factors that they hadn't accounted for: you know, the water damage and ingress.

So, you can have point-of-use filters

on your water, which means that the water when you turn the tap on is filtered, but if you have a leak in a pipe, and it then, you know, causes water damage and things, then that's a different source than what's in your tank and what's coming through your tap, and I think that's what complicated some of the IMTs thoughts as we got into the kind of 6A period.

Q Right, and so you-- What I'm interested to know is how relations between your organisation and GGC Infection Prevention and Control have evolved since you started getting involved as an organisation in 2018? How would you describe that evolution?

A I mean, Glasgow have a large Infection Control Team, a lot of highly specialist experienced doctors, nurses, scientists, and they may not be as likely to come to the national team for support or to share, but we have had challenges when we've maybe went for more information on a-- Now, it's routine that the team in our ARHAI, when they receive a HIIAT and might go back to a health board and ask questions, and the pushback that we got from Glasgow became such that the government asked for myself and Sandra Devine to sort it out between the two organisations.

Q And did you manage to do that?

A So Sandra and I meet every week now so that if there's any ongoing incidents in Glasgow and there's anything that has to be raised, I'll take it to the meeting, or if Sandra has anything that she wants to raise with me about, kind of, ARHAI, then we can discuss it there.

Q So, at one level, that's obviously helpful that you've got a system, but to what extent is it slightly troubling that that needs to be there to have this systemised meeting? Do you have a view on that?

A Yes, I think it is troubling. I mean, I think, although Sandra and I have a good working relationship, my concern is we've got other senior members in both organisations that should be able to have a working relationship as well, yes.

Q To what extent do you feel that might be perhaps a natural consequence of the disagreements that underlie the work of this inquiry?

A There's been challenges with issues that are not related to environmental.

Q Right. Does, from your point of view-- I mean, I appreciate that the scale is so much bigger that, at one level, it's a silly question to say, how is Infection Prevention and Control in Glasgow and Greater Glasgow and Clyde different from in Shetland? Of course it's different.

A Yes.

Q The scale is different. But to what extent does the approach of NHS Greater Glasgow and Clyde differ from the other-- not quite as large but larger health boards in Scotland in Infection Prevention and Control from your point of view?

A I think some of the communication styles and things.

Q That's a very soft word. Can you be a bit more precise?

A I think some of the Infection Control doctors in Glasgow don't like to be challenged or don't like to be asked questions, and what we ended up getting is a situation where our senior nurses, Infection Control nurses, who-- they are the kind of primary contact and are hired to deal with incidents and outbreaks and they would do the, kind of, first screening of anything that come in and then discuss it with the consultant. When they were going back to the Board and asking the questions, the Infection Control doctors didn't respond well to that.

Q I mean, at one level, isn't there a sort of obligation on everyone in medicine to act civilly to each other and try and work to a solution?

A Yes, I think it may have been a, kind of, lack of understanding of the role that ARHAI were playing in that. I'm not sure.

Q Could I ask you to look at bundle 27, Volume 5, which I think is the same bundle, document 13, page 33? Now, you've redacted this already. So, this appears to be an email that you've provided to the Inquiry from a nurse, so it's not one of the existing whistleblowers. Obviously, we don't, in the Inquiry, know who it is. You haven't told us, and it describes some concerns about the infectious diseases in wards 5C and 5D. Now, what I want to do is take it off the screen and just ask you a couple of questions about what action did NSS take to investigate the issue?

A So, NSS, again, I reported it to the whistleblowing executive and the medical director. They shared it with Glasgow. There was communications going back and forward with Glasgow. As I remember, they informed our executive whistleblower that a similar complaint – and we don't know if it's from the same person – had went to Healthcare Improvement Scotland, HIS, and they had done a full investigation because they do have a scrutiny role, and the NSS whistle blowing executive had that confirmed by HIS that they had been in and done an investigation.

Q Yes, so we're going to recover that investigation, but what I wanted to understand was: at the time this emails come in and you are engaging with

Greater Glasgow, were you aware of what the ventilation was, other than from this email, in those wards/what the ventilation standards were?

A No.

Q Because if you have a ward, an infectious diseases ward that is operating at 2.5 to 3 air changes an hour with chilled beams and minimal room negative pressure caused by the ensuite air extraction-- Now, that's come from AR-- from Mr Bennett's report.

A Yes.

Q If that's right, is that the sort of information you need to know in order to know how to react to events in that ward?

A That's the sort of information that I think the local Infection Control need to know, and they need to highlight the risks associated to that, and I would expect the health board to hold that in a risk register.

Q Yes, because one of the things that may be the case – and we're still sort of investigating, and one of the problems with this Inquiry is we have to call people in order, but you don't learn everything in order – is there seems to be some suggestion that it took quite a number of months, possibly more than a year, for the Infection Prevention and Control team in Glasgow to realise that the general wards in their hospital – new hospital – met that standard, or rather didn't meet

the standard. To what extent would you consider that to be an issue for the work of the infection control team?

A Yes, I would say it's an issue if you don't fully understand the risks that you're operating in. If you presume that things have been built and you've not been involved in any of the derogations, then it's often not till a problem pops up that you might find out that things haven't been done.

Q So, for example, we talked about Aspergillus as an issue. To what extent is it important or material that the team investigating those infections knew what the air change rate was, for example, in the ward they were occurring in?

A Yes, I think it's important.

Q Now, the same thing applies more difficultly for the water system. To what extent do you think that the practice of an Infection Prevention and Control team would be affected by whether it knew that there was effectively a failure in the building's Legionella risk assessment-- it's L8 risk assessment? Would that affect the way that the Infection Prevention and Control team were conducting themselves?

A I think if they knew there was a failure they might be monitoring it closely and, you know-- but it might give them an indication when the next thing happens that, "Wait a minute, we've had a Legionella and now we've seen something else."

Q Even if you don't have a Legionella, even if the failure of the assessment is not because you found Legionella but because the temperature is out of range, the water is too cold in the cold and too hot-- too hot in the cold and too cold in the hot, would that still have a similar effect on the way that a team should behave?

A Yes, and, as I said previously, many, many boards will ask for our support if they've had either one of the clinical staff or the engineers to attend their IMT. So, yes, I think Infection Control would be important.

Q What I want to do is just pick up a couple of questions from your statement with some more information that we will find useful. This is on page 230. I think you've already dealt with that, so I think we don't need to go there. Can we go to page 235-- foot of page 235? You've provided-- Actually, it may well be 236 is the best place. You provided an answer to a question that appears on the previous page about the Ward 6A incident and gram-negative. Now, we asked a very gentle question, which was, "What was your understanding of the Ward 6A incident and the gram-negative situation at the

time?" and you provided us quite a long answer, which focusses on the kitchen in Ward 6A, and I want to check that you were talking about the same thing that we've had some evidence about. So we've had some evidence of a kitchen leak being found in September 2019, and some photographs were found. Do you think that's the same kitchen leak?

A I think it might be, yes.

Q Because there's only one kitchen in each of these wards, isn't there?

A Yes.

Q Yes, right. Is the suggestion a-- or are you suggesting that the issue would have had to been there for some time, perhaps back to construction, for this to be a factor?

A So, I've thought about this quite a lot, and I wasn't a member of the IMT, but I was shown pictures of significant water damage, and it was only once, I suppose, that I also learned of the work that Dr Hood had done in investigating the Cryptococcus incident that the flows and pressures in 6A were problematic, which really made me think about if every time the front doors opened in 6A and the pressures changed, and what I was led to believe was the peripheral rooms that the air was in was then sucked out into the corridor from kitchens and other rooms where there

was leaks, then it seems to be that we're pushing things into the corridor, and then learning that, because it was a temporary Paediatric Ward, they didn't have the same play facilities and the children were actually-- their play area was set up in the corridor.

So-- and this is my personal opinion based on the things that I've put together. Given that there was a leak that had caused some damage and the air was getting sucked out of the kitchen into the area where the children were actually playing, and once the leak, as far as I'm aware, had been repaired, I mean, the infection rates went down.

Q Are you effectively suggesting that there's an alternative hypothesis to the drains and the chilled beams? This is another possibility.

A Yes, and when I attended the meeting on the 5th, I was there to talk about the data.

Q This is 5th November?

A 5th November. I asked that they may consider that-- I mean, fully acknowledging that I wasn't a member of the IMT, but to note to say-- but I remember at the time the director of facilities saying, no, that was just a puddle and it was dealt with straight away. Now, I don't know if he was referring to a new leak that had occurred that week or something, but there was

certainly no discussion at the IMT when I was there about whether that leak would be thought about as a hypothesis. I do know----

Q This minute is bundle 1, page 392. So, just-- So, while we're talking, it's a big meeting and you're recorded as having left at 4.40.

A Yes.

Q That's a long meeting.

A Yes.

Q Let's find the section that talks about the kitchen. So, that could be at 399. So, this is "Hypothesis Update."

A Yes.

Q Now, would it-- what would be your-- So, looking at this minute, and I appreciate that it's just a minute, and so it might not contain all the detail, but the first sentence reports you describing the hypothesis-- raising the hypothesis and then there's-- Ms Joannidis reports the samples in the water did not match anything growing from the patients within the ward. Now, would that be definitive either way?

A No.

Q Why?

A I don't know if she's referring to being typed or-- I think what it's demonstrating when you have water damage that you're able to isolate gram-negatives from is that you have a source there.

Q So, let's imagine you----

THE CHAIR: Sorry, I just missed the end of that answer. Could I ask you to repeat the answer?

A You have a source, so you've created an environment where gram-negatives are able to live and multiply.

Q Thank you.

MR MACKINTOSH: We're going to try and find you the picture so we're talking about the same thing.

A Okay.

Q But I just want to understand, from you, your perspective on matching samples at any level. So, if we just take the first level, which might be that you take a sample from the environment and you find microorganisms A, B, C and D, but they're not in the patients. What's in the patients is E and F. Depending on what those microorganisms are, of course, can you exclude a connection with that sort of information?

A I think the difficulty is when you're looking at environmental samples – and particularly with water and where you've got a biofilm – is that you are only taking a sample at that time. The other difficulty that is widely reported in the literature is when you do single colony picks. So, if you've grown something and you only pick out-- you know, for typing, you're only picking off the agar plate, a selection where water experts would say,

"I think, it's about 30 or 40 colonies you should be picking out to make"----

Q So, if you do a blood sample infection-- If you do a blood sample infection-- Now, what we're going to do is I'm going to ask-- Can we put bundle 27, volume 2, document 17 up? I think it's page 7. Document 17, yes. No, page 17. Yes. So, before we go any further, are these the pictures you saw, or are they different pictures? We'll go to the next page.

A I can-- I don't think there they are, but-- that one, certainly I can't-- I couldn't say it with any great certainty.

Q No, but we'll just try, and we'll see what happens. Next page please.

A Yeah, that looks----

Q Is it the picture looks familiar or the place looks familiar?

A The picture, the damage and the wall and things.

Q Okay, and the next page?

A I can't say that that's a picture that I've seen before the Inquiry. I know that I've seen it after.

Q You saw-- If we could take those away and go back to the minute in bundle 1, please. So, just to think about what you were saying around taking environmental samples, I want to just understand a little bit about what you're reporting about taking samples. Is this from your own knowledge or from what you're told by microbiologists?

A It's what I've been told working with microbiologists that have a specialist interest in water. Also, what I've read in the literature as well, some of the limitations about doing water sampling and environmental sampling.

Q Well, we'll put that to the microbiologists, but what I wanted just to see is do you know at this point whether this would have been discussion about whole genome sequencing-- or it would have certainly been species matching from this minute?

A I'm not sure.

Q Right.

A I don't think that was the meeting I was at. I think this is the minutes from the meeting after the one I was at.

Q That might well be true. Yes. In that case, your kitchen scenario is not recorded in the minute of the meeting you were at. Can you take that off the screen? Let's focus back on your kitchen scenario, as it were, just to understand. Are you able to help us about what you're describing? You seem to be describing a hypothesis that there was water damage in the kitchen behind the units that might have been there for some time. Is that right?

A Yeah.

Q Yes, and that then creates--

encourages certain organisms to grow. Would they then become aerolised?

A Could be.

Q Or spores, and those will go out into the corridor in the air?

A I think it was when I learned around the pressures when Dr Hood was doing his air sampling and testing and, as far as I can remember, it was when the main doors to the wards opened that it sucked the air from the other rooms, peripheral rooms.

Q Thank you. Now, what I want to do is ask you a few questions about the whistleblowers, the ones who have gone public, as it were because on page 231 of your statement-- now, this is more than one whistleblower. The question we asked you at the bottom of this page is, "What was your perception of Dr Peters' concerns in response to them?" and your answer is that you felt that all the whistleblowers appeared genuine. However, what I wanted to do-- You then refer to the Dr Peters' email----

A Yes.

Q -- that we've already looked at----

A Yes.

Q -- and you quote her three bullet points.

A Yes.

Q So, I feel it's important that I ask you-- I appreciate that you were learning about these events to some degree at second hand. Do you have any opinion on whether there's any merit to these three bullet points that you've chosen to reproduce at this point?

A I don't know-- I think when you get any kind of whistleblowing thing in, you have to take it very seriously. You're wanting-- We, NSS, don't have that kind of role around and there is a definite, you know, route that whistleblowing can go, and a policy that you would follow. I think I was significantly concerned that I raised those points up to the policy unit.

Q Right, and therefore, effectively, it's for others to decide whether they are correct? You were just concerned.

A Well, yes. I don't have a role that I can intervene.

Q No. Well, could we take that off the screen, please? What I wanted to ask you is a few, sort of, higher level questions about the effectiveness of the work that Assure/ARHAI/HPS do and did. Now, obviously you're reporting matters up to the policy unit and ultimately to ministers, but from your perspective in HPS ARHAI, you had been brought in in the early part of ‘18. You had been through various processes through ‘18 and ‘19. At what point did the ministers and the policy unit give indication to you that they were aware there was an issue

that required to be addressed at this hospital?

A Quite quickly, when they invoked the framework.

Q And that's when they invoked the Stage 3?

A No, when they invoked the framework and the National Infection Control Manual for-- so----

Q And that would have been in March----

A March.

Q -- 2018, right. Beyond invoking the framework, did they give any other particular instructions to NSS, that you were aware of?

A The Chief Nursing Officer was very involved. I think there was a low ARHAI in the role due to the communications between the Board and the Scottish Government. I think they felt that there was some direct conversations and actions that were given. I know the Cabinet Secretary visited the Health Board and had meetings as well. So, I think as the incident went on, the interest obviously increased.

Q Thank you. Right, now, in your statement from page 246 onwards, you've given a little bit more detail about the matter that you discussed in your evidence a few moments ago about communications between NHSGGC and ARHAI, and you've said something that intrigues me and I'd like to know more about, which is the second paragraph on that page in the second sentence:

> "NHS GGC has developed its own governance structures around carrying out HIIAT assessments and criteria for reporting infection-related incidents which appear not to align with NIPCM reporting."

Now, conscious that I can see statements from senior people in NHS GGC that say they do align. So, what is your understanding of these structures? What do they do that is not in alignment?

A I think it was during one incident that had been reported up and some of the questions been asked. I received an email back from Sandra Devine that outlined that they had an SOP that had went through their clinical governance structure, where they'll decide whether they do a HIIAT assessment or when an IMT is necessary.

Q So, they've got a policy?

A A standard operating policy, yeah.

Q Which appears to be new-ish. When is this roughly?

A I think these emails were 2023 sometime.

Q And have you seen this SOP?

A I don't think so, no.

Q But you just-- What is it? You're just worried that it exists, or you've heard something that's unusual about what it says?

A It's going back to the point that you made. As a national body, how can you give assurance that nothing's happening if you're not sure that you've been told anything?

Q Yes.

A So, that was what I was highlighting to my line manager, my professional lead.

Q So, it's more that you're worried rather than you know there's something wrong?

A Yes.

Q And should a board require anything other than the manual to decide whether to have a HIIAT or an IMT?

A So, every board has their own clinical governance, and I suppose they can take-- they can delegate from guidance and record it as such.

Q Because the manual is online. I mean, arguably, we should have found the latest version and put it in this bundle. Can you take that off the screen, please? But if the board has an SOP that does something either absolutely different or matter of emphasis or provide-- inserts an additional qualification somewhere or suggests a different factor to consider, then the board's not operating the manual. It's doing its own thing. Is that a problem, or is that perfectly fine in localism and subsidiarity and all those sorts of things?

A I think it's a problem if the national body of Scottish Government don't know what they've delegated. So, if no board has come to you and said, you know, "Your manual says A, B, C, but we're only going to do B and C," then when you're reporting, you might be reporting that we have no cases in Scotland. However, there's a board or two boards that have chose not to tell you when-- or, you know, not to do a HIIAT in these occasions. Then, if you know that information, you can put those caveats around the message that you're giving when you're putting any kind of national epidemiology or any national assurance you're giving to government.

Q Does it say in the manual, "You don't have to follow this. You can change your mind if you want to"?

A So, the manual used to say that it was mandatory in NHS Scotland to follow, and indeed I think the DL that CNO Fiona McQueen put out in December 2019 also stated it was mandatory for NHS and good practice for non-NHS, so your health and social care, but during the pandemic we were asked to remove mandatory and say that it's good practice by Scottish Government.

Q And that hasn't changed now that the pandemic has passed?

A So, that changed during the pandemic and it's as it is now.

Q So, at the moment, you can't be certain that every health board is operating through the manual. They might be doing something slightly different?

A They might be doing something slightly different.

Q And you're just a bit suspicious is about as far as you can say on this?

A I think in general people do speak. If they want to do something different, they will come and ask, you know, “The board are considering to do this derogation,” and I think some of the Health Board's HAI executive leads would certainly ask for a conversation to occur with Scottish Government or ARHAI. Now, I can't say whether NHS GGC have had those conversations or not.

MR MACKINTOSH: Could I ask you to look at one-- I think it might be one final thing? Which is, going back to the manual, bundle 27, volume 4, document 16. Page 166. It's really, "Organisations must ensure..." Now, firstly, has this paragraph, with its three bullet points, changed? Are we out of date or is this the current version as far as you recognise?

A I can't say with any certainty whether it's changed or not.

Q Well, we'll doublecheck, but what I wanted to ask is it occurs to me that the third bullet point is a requirement there is an:

> “...organisational culture which promotes incident reporting and focuses on improving systemic failures, that encourage safe Infection Prevention and Control working practices including near misses.”

Now, I want to focus on the period between 2015 and 2019 only. To what extent do you consider that, during that period, NHS GGC met that third bullet point?

A What part of NHS GGC? Because I think the Infection Prevention and Control Team would be the one that would report but I don't know how much they knew to actually report a failure.

Q I think, at the higher level, it has to be-- NHS GGC, if I understand it correctly, is the legal entity.

A Mm-hmm.

Q It chooses to manage itself in the way it chooses to manage, it has its sectors, it has its teams and it has its directors and all these people doing various roles, and they have a complicated organogram. So, I think it'd probably be invidious, with no notice, to

ask you about individual bits of that organogram.

So I'm simply asking about NHS GGC as a whole. Is there an organisational culture which promotes incident reporting in respect to Infection Control, because this is the National Infection Control Manual, and focuses on improving systemic failures, that encourage safe Infection Prevention for working practice?

Now, it might be they do some not all, they might do all, they might do none but do you have an opinion on whether they meet that standard or met it between '15 and '19?

A I think there's been a breakdown, certainly if there was known to be what would be considered a near miss. So, that's how some boards will report in positive Legionella in water samples to know that it's not got any clinical cases but----

Q You do realise there weren't positive Legionella samples. That's not the issue. It's the temperature is out of range.

A Yes, but I'm saying just if they discover something that's a safety issue that's kind of broke down-- So, if there had been something discovered that they didn't have the full discussion with the Infection Control Team to allow them to report, because it is normally the Infection Control Team that will use the HIIAT so it would----

Q So, you're highlighting a possible disconnect between other parts of the organisation and the Infection Prevention and Control?

A Possibly.

Q Yes. Since you raised the possibility of me asking you a different version of that question, I'm going to do it anyway, which is, if you just, I mean, look at the Infection Prevention and Control Team in GGC between '15 and '19, do they meet that third bullet point, or did they meet that third bullet point for that whole period?

A I think at times they did.

Q That sort of implies at times they didn't. Is that what you want us to hear?

A I wasn't part of the IMT, so I think what I'm saying is I did see evidence at times that that was, and certainly some of the examples you've shown me today like the debriefs-- and to try and capture, you know, some of the lessons learned show that there was the kind of culture to move on but, again, some of what's maybe been fed back from the IMTs-- there maybe wasn't, by some, as enthusiastic attempt to capture and to improve the failures.

Q So would I be right in thinking that it's not a ringing endorsement, but

you've seen some good practice in the time?

A Yes.

Q And you don't have full knowledge across the rest of it?

A Yes.

Q Right, okay. My Lord, this might be an appropriate point to break for ten minutes to see if any of my colleagues have questions. Conscious that at least one counsel is watching remotely.

THE CHAIR: Yes, I was going to-- Obviously you don't need reminding, but I understand at least one counsel is following this remotely and therefore may take longer to communicate.

MR MACKINTOSH: Yes.

THE CHAIR: As Mr Mackintosh has explained, there may be further questions in the room, so we will break for 10 minutes or so with a view to coming back and either asking you additional questions or confirming there are none so could I----?

(Short break)

MR MACKINTOSH: I have one question, my Lord.

THE CHAIR: One question. I'm told we have one question.

A Okay.

MR MACKINTOSH: Thinking back to the evidence you gave about the way that you and your team respond to effectively what amounts to whistleblowing emails that come in from people around the country, and you explained at the time you don't have a role to investigate and that effectively all you do is you report it both up to the policy unit in some cases, but also back to the health board in an anonymised form. Do you think the NSS should have a role in reacting to and, to some extent, investigating these anonymous whistleblowing complaints?

A So, I think there's a difference between the time where we received those whistleblowing and the current. So, there is now a new body in Scotland that will investigate whistleblowing complaints and concerns, which wasn't in existence then.

Q Is that the whistleblowing ombudsman?

A Yes.

Q So you would see that as the solution?

A Yes, and I would say that we may be an expert body that they would come to, to explore any issues.

Q Because the criticism that might be made is that using an ombudsman still requires the actual organisation that's being complained about to do the investigation.

A Okay.

Q So, if you want a health board-- if you're a nurse and you have a concern like the one we just looked at, that doesn't become a whistleblower incident that requires to be investigated with all the systems that the health board have and the protections of the Act for Employment Rights unless that nurse goes to the health board. If they just come to you, you know about it. You might remember it, but no one investigates it.

A If they come to me, the health board executive for whistleblowing will be made aware of it.

Q And do you find out what they do?

A No. In these cases, it was when the health board came back and said that HIS had already investigated the same complaint and they did have a role that we just confirmed with HIS that they had done the investigations, and in the case of Dr Peters that you put up, I escalated that up to the Scottish Government.

Q So, you think there should be somebody, but it's probably not you. It's probably this new whistleblowing ombudsman. Is that what you're saying?

A Yeah. I mean, when you look at whistleblowing, people whistleblow for a whole range of reasons, so I would say that you have a body that has the responsibility and the role around the investigations' whistleblowing, and you might have different organisations that support that body depending on what the issue is.

Q Thank you very much. I've got no more questions for this witness, my Lord.

THE CHAIR: Right, I take it that there are no further questions. Ms Imrie, Thank you very much for your attendance today, and thank you also for the amount of work that backed up that attendance. I fully appreciate that that will have been very significant, looking at documents and preparing a witness statement. I'm very grateful to you for that, but you're now free to go.

THE WITNESS: Thank you.

(<u>The witness withdrew</u>)

THE CHAIR: Now, my understanding is that we're in a position to begin again on Tuesday, with perhaps Mr Connall asking questions.

MR MACKINTOSH: Yes. It will be Mr McLaughlan from-- formerly with NSS is the morning witness.

THE CHAIR: All right. Well, can I wish everyone a good weekend and, all being well, we will see each other on Tuesday at 10.

MR MACKINTOSH: Yes.

(Session ends)