SCOTTISH HOSPITALS INQUIRY

Hearings Commencing
19 August 2024

Day 18
Wednesday, 11 September 2024
Dr Christine Peters

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10:04

THE CHAIR: Good morning. Now, I think we're able to begin with today's witness, Dr Christine Peters.

MR CONNAL: That is correct, my Lord.

THE CHAIR: Good morning, Dr Peters. Now, as you know, you're about to answer questions from Mr Connal, who's sitting opposite you, but, first of all, I understand you're prepared to take the oath.

THE WITNESS: Yes.

THE CHAIR: Sitting where you are, could I ask you to raise your right hand and repeat these words after me?

Dr CHRISTINE PETERS

Sworn

THE CHAIR: Thank you very much. Now, we anticipate you'll be giving evidence today and into tomorrow. Our timetabling is that we usually take a coffee break at about half past eleven – 20 minutes or so – but if, at any time, you want to take a break for whatever reason, just give me an indication and we can take a break. Just feel that you are in control of that, but with that by way of preliminary, the only other thing I would say is I would encourage you to maybe speak a little louder than you would in normal conversation. The microphone should help. Frankly, I'm hard of hearing, so I'm very conscious of the need to project. Now, Mr Connal.

Questioned by Mr CONNAL

MR CONNAL: Good morning, Dr Peters. I think you've provided a statement to the Inquiry which, unlike some, you prepared that statement. Are you content to adopt that statement as part of your evidence at this Inquiry?

A Yes, I am.

Q Thank you. Your statement is written, essentially, in chronological order, and therefore I'm going to use it as a guide to take us through various things that you say, so I'll try to stick to that in the main. Just by way of preliminary, in the introductory sections-- so we're at page 110 on the electronic version of the statement. I just want, briefly, to pick up one or two things there. You say you joined the Board as a consultant in August 2014. Was that your first appointment with that Board?

A No, I trained in Glasgow, at NHS Glasgow, so my first appointment was in 2000. I did an SHO post in microbiology and then I went on to become a registrar and did all my training, until 2012, in Glasgow.

Q Right. Thank you, and you set

out there some of the structures and some of the personnel, many of whom we've encountered already or will encounter, in the course of this Inquiry. I see on the next page, 111, that you actually became a consultant – in other words, achieved the rank of consultant – in 2012, is that right?

A That's right, yes.

Q Now, can I just ask, are you following along from a paper copy of your----

A I have a paper copy, but I've also got the screen, so I can do either.

Q Well, conveniently, what you will find is that page 11 on your paper copy is page 111 in the bundle, so we shouldn't have any difficulty with that. I see you first took a consultant job in Oman, a very exotic location. A consultant in what?

A In clinical microbiology as well.

Q Thank you, and then you came back and you went to Crosshouse Hospital in Ayrshire?

A Yes.

Q In a similar role?

A Yes, clinical microbiology consultant.

Q Now, one of the issues that cropped up during the evidence yesterday was that a witness explained to us that, traditionally, it wasn't very common for people involved in infection control to know much about buildings and Estates matters, and possibly vice versa. Did you get some experience on matters concerning the built environment when you were at Crosshouse?

A Yes, but before that, as a trainee, I had quite a lot of experience and I would say that, in microbiology, it's a component part of our curriculum is to understand particularly theatres but isolation suites, water and ventilation because it pertains to infection risks. So, in order to choose the right diagnostic tests and to make informed decisions about the likely sources of infection and what treatments to give, we do need to have a thorough understanding of the environment of a hospital.

So, I would say that, right from the beginning of my training, which was since 2000, I had a very acute awareness of the built environment and its relationship to particularly hospital-acquired infection, and at that time, there was a lot of information and attention beginning to be paid to hospital-acquired infections. So, I think, as part of training, that was a very key component part.

Then I built on that in Crosshouse because we had new-build projects, had issues with the ITU, issues with the haemato-oncology unit that all involved using and building on that knowledge and seeking advice externally, as well, so I

think most people leave training with a basic level and then you always respond to what situations arise in your practice and then you develop further experience.

Q Thank you. I think you mention in paragraph 9 of your statement that you made a contribution to the writing of what we call HAI-SCRIBE, H-A-I-SCRIBE, is that correct?

A Yes, it was being revised. It was Geraldine O'Brien, I think, who's been mentioned before, who had come down to Crosshouse because we had some building issues and I was chairing a HAI-SCRIBE meeting. I think it was Geraldine and somebody else from HFS came and gave feedback that they thought it had gone well and that I was asked to help, you know, respond to a draft.

Then we did some training for Estates. I know that's come up a few times, the crossover of expertise, so I did a training session for the contractors in Crosshouse on HAI-SCRIBE and infection, the basics of infection risk, and a few years later I did the same at the Victoria Infirmary in my consultant role. So I think it's been a thread throughout my career of just trying to mesh together different expertise areas to that crossover of engineering plus infection risk.

Q Thank you, and in fact, I think we see on page 112-- I'll use the electronic numbers because it helps the operators.

A Sure.

Q Page 112, paragraph 10, you say you now lecture on a postgraduate course that started last year on related topics, is that correct?

A Yes, so that's been set up by GOSH and UCL by Professor Cloutman-Green, so I do a couple of days. It's been running three times a year, but I think the funding is maybe not there, so I'm not sure what it's going to be next year, but I have contributed to that.

Q Thank you. You go on, in the next section of your statement, to mention some of the colleagues that you had and other microbiology consultants. Can you just help us understand the relationship between being a microbiologist in a hospital and being an infection control doctor, whether lead or not, in a hospital? Are these always the same or-- What's the link between them?

A They're not always the same and it's developed differently in different countries. So, when I worked in Oman, for example, infection control was led by infectious diseases and, quite often, people mix up infectious diseases and infection control doctors.

So different countries have developed this differently. In Scotland and in the UK in general, infection control

has, as a specialty, been born out of microbiology because clinical microbiology here has been under the Royal College of Pathologists, so we're doctors, we're medics and then we specialise in laboratory-based medicine, which is a subsection of pathology, which is microbiology.

So it's changed a lot since I started my training in 2000. It was pretty well the microbiologist who was the whole infection control team because you've trained and you have an awareness of how infections transmit, how to intervene with that, how to diagnose it. You've got access to the laboratory. It's not the only way to divvy up the needs of a hospital that perhaps span the whole of the infection problem, if you like, but here, it's very much come out of microbiology.

So usually-- and again, it's horses for courses in different places. You might have one of the microbiologists as a dedicated infection control doctor, and everything will be channelled to them. It used to be you'd have more single-run-- you'd have hospitals with just one microbiologist and, of course, that's it, they're the ICD as well, whereas in somewhere like Glasgow, which is so big, you have over 20 microbiologists.

There's no need for everybody to be fully specialised in it, and there is an element of some people want to, some people don't, but we all have to have a basic level because we all cover out-of-hours. So, out-of-hours and weekends, you are effectively the infection control team, so you wear a double hat, if you like, but it's not-- you don't cease becoming a microbiologist when you're doing your infection control. You're doing infection control as a microbiologist.

Q Just so I understand the point you make about out-of-hours operation, does that mean that people who are not labelled "infection control" can be doing infection control work----

A Definitely.

Q -- covering out of hours?

A Yes, and also covering sick leave, covering annual leave for your infection control doctors. The way I would view it is the microbiology consultant body is a team and we maybe have subset interests, so I, for example, will do cystic fibrosis microbiology, but it doesn't mean that when I'm off on holiday there's nobody covering it. You have to be able to work as a team. You have to be able to share that information and ensure everybody's keeping up to speed to a certain level to be safe when others aren't around.

Q So do you get infection control doctors who are not microbiologists, or is that not the case?

A In the UK, I think there are

some public health doctors who would act as an ICD and perhaps a virologist, perhaps. But they would-- usually because of the way the curriculum and the training is in medicine, it's been channelled through. So I wouldn't say never, but overwhelmingly, whereas, as I say, in other countries, it's different. In America, they have hospital epidemiologists who will do some of the work of what we would maybe do as microbiologists doing infection control.

So, there are different models that have evolved and, depending on how it's evolved locally in your hospital. If you don't have infectious diseases, for example-- In Crosshouse, we did have one infectious diseases consultant, but obviously they couldn't be on all the time, so we would cross-cover, whereas in somewhere like Glasgow, you've got a whole specialist infectious diseases unit. You don't then have to cover that aspect of infection. So I do think there's a lot of variation, rightly, depending on the needs of your particular situation.

Q When you were first appointed to a role at the Queen Elizabeth Hospital, what role were you appointed to there?

A I was appointed as a clinical microbiologist consultant.

Q Right, and did that involve doing infection control work?

A Yes. So, initially, after I got the job-- you go for an interview, you get offered the job, and then when you start, there's conversations about how your sessions are going to be, what days you're going to work. I was asked to take on the infection control remit for the Southern site with my colleague who was also sharing it with me, Pauline Wright.

The person who'd been doing the other half wanted to give it up, so I said, yes, I would do that. At that time, the job planning wasn't so well exercised as it is now, so you had two sessions, but it didn't really mean much, other than you were infection control. So, you could be on the rota and something would happen in infection control; you'd have to balance both.

So it's not like two sessions is a block of time where I had a Tuesday afternoon and a Wednesday morning or whatever; that wasn't it. You are infection control, and the way we split it was because I worked three days a week, I covered Monday to Wednesday, and Pauline would cover the Thursday, Friday, and we'd make sure that we both knew what was going on.

Q Presumably, if there's some kind of incident, that can happen at any time----

A Any time.

Q -- regardless of work patterns and will then engage the attention of

someone from the infection control team.

A Yes.

Q Is that right? Now, at that point, I understand from looking at page 112 of your statement that your line manager was Professor Leanord, who was head of microbiology, and his line manager was Professor Jones, both names we've come across. Then there was someone who was the lead ICD. Now, what did-- did you understand what that meant, to be the lead ICD at that time?

A It was a very different setup from Crosshouse because there wasn't an extra layer. So, if you were the ICD, you had a very close relationship with the infection control nurses, Estates. You were light on your feet, you could respond quickly to emerging problems and you had rapid access to senior management of the hospital. The infection control manager there had an ICN background----

Q Is this Crosshouse?

A In Crosshouse. So, just to set the difference, so when I came from that setup to try and understand the new setup, it wasn't clear to me. I didn't have a job description for what areas of responsibility differentiated a sector ICD versus the lead ICD. There was two lines of accountability, one for microbiology – so Alistair Leanord was for the south only and then Brian was north and covered north and south – and Prof Williams covered infection control across the whole of GGC. So there was from the start ambiguity about what exactly that meant, what you could crack on and get on with, and what you had to pass by and get approval for.

Q For completeness, you mention in 112 the existence of also a nursing team which had infection control responsibility, the lead ICN being Mrs Devine and others that you mentioned there. So that's another part of the jigsaw, is it?

A Yes, so I was used to working with-- so it's the ICN and the ICD at the real core and then, in a bigger team, there was Surveillance and all sorts of aspects because it's a much bigger setup. So, you know, it's advantageous to have lots of people with specialist areas of responsibility and time, primarily time, because the workload is so big.

But because there were multiple sets of people, the ICNs had meetings that infection control doctors weren't always invited to and would feed up through the ICN chain, so there would be a whole lot of discussions that were invisible, if you like, to the ICD. So, there was-- and then the ICNs would go up through Sandra, and Sandra would then liaise with Craig and Tom, who was the

ICM. So, it was just a bit clunky to make things work in that way where you need to be able to act as a team rapidly in certain situations.

Q You picked this up at your statement at 113, where you say there was "no job description," that nobody actually wrote it all down for you.

A No.

Q And then you say there:

> "In practice, any issues relating to the management of outbreaks would be discussed with the lead ICD [that's Professor Williams] by members of the IPC team."

Presumably whoever was involved, is that right? Then you say there's an SMT, so a senior management team for infection control, is that right?

A Yes.

Q And that was the lead ICN, Mrs Devine, Professor Williams and Mr Walsh.

A Yes.

Q And then you explain that there were regular meetings. Just so we know what you're referring to, you talk there about the surveillance leads. What was a surveillance lead?

A So, after the Vale of Leven, there was a lot of work put into keeping track of certain infections, C. diff primarily and MRSA, and they were nationally mandated heat targets initially. It's a lot of work to do a proper surveillance system, and clearly the old-fashioned way of having piles of paper in laboratories isn't good enough. So, there was a lot of good work done around automating it and having people responsible for making sure that that was done.

So, I think at the time it was Anne Kerr and then, after that, more and more people came on board. But surveillance nurses would be appointed to do things like surgical site surveillance. If there was-- C-sections, for example, was I think one of the first to be under surveillance. They would go fill in the appropriate information – go to the ward, get the information, then come back and fill it in – so that there was a proper, tied-up system of surveillance, and that was part of the team as well.

Q And the operation you're referring to there were C-sections?

A Yes.

Q Caesarean sections.

A Sorry, yes.

Q Yes, just so we're absolutely clear what your point was.

A Yes.

Q When you joined that team in August 2014, the new hospital was presumably up but not occupied yet, is that correct?

A Yes, it was up.

Q Can I ask you about something that you don't deal with in your statement? You may or may not be able to help us. There's been some discussion about smells deriving from neighbouring uses and what impact that did or did not have, and I don't need to ask you specifically about that side of it. But the question I had was, do you remember any discussion about whether the proximity of the neighbouring uses, particularly the sewage plant and the scrap plant, gave rise to any infection risk to the people in the hospital?

A I was at the Southern site for half my training because I moved between the Victoria and the south, and so it was always a matter of ridicule, in a way, that the smell at the south is really bad. It can be, and I've been a patient there myself with illness that includes nausea and it is very bad for you when you are feeling unwell.

In terms of infection, I think there was vague suggestions that that can't be a good thing, but I never heard that before the building was up. If you're talking about the old site, I don't think I ever was party to discussions around, "Shall we find out if this is a risk or not?" I do not recall any conversation around that.

Q Do you remember whether that was raised or discussed after you started to work actively at that site? I'm thinking not so much of is there a smell, but is there an infection risk?

A I think only when infections started to happen around what has been referred to so often as the water incident, there was people beginning to say, “Well, is the sewage works-- is that part of it?” I think the smell aspect of it-- I don't know enough about what vapours are involved in that smell, but I do think that there could be the risk of airborne microbes in the air. Whether that's enough of a bio-burden in the air to reach, when there's so much wind up there, to be enough to get in through the ventilation system to cause infection, that would require some pretty careful study. I think it's theoretically possible, but I don't think it's-- it doesn't jump out at me.

But the more interesting thing, I think, is if there's ever been leakage with works done in that area that heavily, heavily contaminated the ground when there was groundworks, or whether that could have got into water systems. So there's a potential, and I'm not sure that either of those have been fully elucidated.

Q Now, on 113, you then turn to what you describe as early experiences at the Board, and you say you became concerned about the culture.

A Yes.

Q Now, the first thing you say about that is that you say that you were told by Professor Williams not to put stuff in writing in case of inquiries and things. Now, are you sure that's something that he said to you?

A Yes.

Q Because I have to say that Professor Williams says he never said that to you; that's not something he said. Is your recollection clear about that?

A Very clear indeed. It was on the phone. I know exactly when it was. It was after an incident where we had a case of Neisseria meningitidis and I didn't think it had gone very well from an infection control point of view, and I'd put it in writing and around trying to get prophylaxis for exposed staff members.

There was a lot of issues around getting occupational health where the-- I felt it was important to get the lessons out of this incident, and I straightaway got a call on my phone to say, "You're in Glasgow now. We don't put things in writing because of inquiries and things." I remember the words and it was-- I was pretty shocked.

THE CHAIR: Can I just get as much detail on that so we can tie it to a specific incident? So you're talking about a phone call.

A Yes.

THE CHAIR: Phone call was initiated by Professor Williams, you were saying?

A Yes.

THE CHAIR: And, "You're in Glasgow now. We don't"----?

A "We don't put things in writing."

THE CHAIR: Right. Now, this arose in relation to a particular case and I think you mentioned an infection, a particular microorganism, and I didn't get it.

A Neisseria meningitidis. It causes meningitis.

THE CHAIR: Right. Right, can I take that-- a dictation? Menin----?

A Meningitidis, M-E-N-G-I-- Sorry, I'll have to write it.

THE CHAIR: M-E-N----? Sorry, this is not supposed to be a spelling test.

A I know, I can't quite think of it.

THE CHAIR: Right.

A M-E-N-I-N-G-I-T-I-D-I-S.

THE CHAIR: Right. Thank you.

A Sorry.

THE CHAIR: Just on a sort of administrative point, Mr Connell, I wonder if you are on the same page as the screen? I think you've referred to paragraph 19 as being on page 113.

MR CONNAL: Yes, I'm not on the same page as on the screen. You're quite right.

THE CHAIR: I don't think it necessarily causes a problem, but----

MR CONNAL: Yes, the numbers seem to be different to the ones I was advised of, so, yes. My set of papers suggests page 113 is a different page, but not to worry, we'll follow that. So, we should be at 112 on the electronic.

THE CHAIR: Yes.

MR CONNAL: In fact, the information I gave you, Dr Peters, is incorrect. The numbering is out by one, so page 13 in the paper copy is 112, which will cause a few quirks later. In any event, I think you were telling His Lordship that there was a specific incident. You thought some things needed to be done and lessons needed to be learned and, what, you emailed or wrote?

A Yes. I emailed.

Q Who did you email?

A Prof Williams, and I would have emailed-- I would have to check the email – I'm sure I can find it – but I would expect that I would send it to Pauline Wright, my colleague, and the ICNs involved because Pauline was involved in that incident because we'd gone down to the-- we were doing an IT ward round together. It was very early in my days there, and we'd had to call the ICNs, who were busy doing something else, so we just dealt with this. It was an-- I mean, I remember all about the case, but it was-- we thought people had been exposed because they hadn't worn PPE, so we were quite keen to get the prophylaxis sorted.

Q Just so we come back to that, your reaction to that was shocked. Why were you shocked?

A Because it's good practice to record, to get lessons learned, to avoid ambiguity, and because we're across a big site, emails are the main way of communicating in writing. So we had SMTs once a month, which isn't the place to do your discussions, if you like, talking about situations. If it was-- In other settings that I've been in where the ICN comes to the lab, you'd maybe discuss things every day, but this was a much--

We had an SMT that was on another site, quite aloof, and in order to keep him up to date as my lead, I thought it was important for him to understand and to maybe come back with, "Well, actually, this is a better way to do it. We should let-- Here are the actions we need to do," and instead, I got a phone call to say, "Don't put things in writing." And I'm sure I discussed it with my colleagues to say-- and, basically, people said, "Yeah, that's Craig."

Q What did they say was great (sic): writing it down or not writing it down?

A Not writing it down. Don't put things in writing.

Q Now, the other issue that you talk about in paragraph 19 of your statement is something that you say happened at your first SMT meeting.

A Mm-hmm.

Q Were you routinely at an SMT meeting? Because that's Mrs Devine, Professor Williams and Mr Walsh.

A Yes, so there's a bit of confusion about that. The SMT management trio are what we've already discussed. The SMT meetings were ones that the ICDs and the lead ICNs and Surveillance and Public Health would come to once a month. They were the SMT meetings, which are different from the three meeting up separately. I don't know what meetings they had or how they were recorded, but this was called the SMT, and there's minutes, I think, in your bundles of that meeting

So we were expected-- It was the only meeting, management meeting, that we were expected to go to as ICDs at that time. We did not attend AICC or BICC, which were two levels of management meetings above where the local ICD would sit, which, I think, again, was problematic because throughout the organisation you've got the person with the responsibility and the training of doing the infection control doctor work, and then you've got levels of meetings that you're blind to or at least that you cannot

participate in.

Q Can I ask you about participation, because what you say here is that you were told you really shouldn't ask questions?

A Yes.

Q Now, again, are you sure this is something that you were told?

A Yes, very sure.

Q And this was by a Dr-- I may not get the pronunciation right----

A Bagrade.

Q Bagrade?

A Yes.

Q Who's a lady, I think?

A Yes.

Q Who is she?

A She was at the time the ICD for Clyde. She was in the Clyde sector. She'd been involved in the Vale of Leven and all of that as well, and she would attend this meeting. All the ICDs attended this meeting, and I went to my first one just having come from Crosshouse, where meetings were all about hearing what people had to say and working through issues, coming to some consensus and then getting actions that we could all sign up to. And everybody knew, walking away from the meeting, what-- just a functional meeting.

And so I was keen to talk about things that I'd wanted to know more about or present. I can't remember if that one

was before or after that incident, but there were, you know, other things that I discovered that I wanted to talk about. And afterwards, Linda said to me, you know, "We're not here to ask questions," and we had a bit of discussion and I said, "There's no point in me being at a meeting if I have to be silent."

Q You say you raised concerns with your line manager, Professor Leanord, is that right?

A Yes.

Q When you say you raised your concerns, what were you concerned about?

A I think that was a couple months more in, because I thought, "This is maybe just bedding-down time," but I spoke to Prof Leanord. He was in an office just next to my office, basically, and he was my lead from a microbiology point of view, so he was actually the person there. I was aware that there had been a lot of issues, prior to my starting in Glasgow, between the microbiology and infection control, even though it's actually all microbiology because it was Prof Williams and Prof Jones and Prof Leanord. So there had been a lot of difficulties, I think, with those teams working.

And I remember saying to him, "Look, you've tried to sort out the situation in microbiology with the way that Prof Williams was managing it, but you've put him in infection control and then you've allowed us ICDs-- you just pushed us there, and nobody's monitoring how that team is working as well."

So, I did try to raise it with him and say that some of the concerns were there were no minutes of our-- Well, the ICD meetings were very ad hoc; they weren't minuted. I felt that my colleagues were very fearful in the meetings. There was anxiety in attending meetings, anxiety anytime you got a phone call. People would describe shaking. It was just a really unhealthy situation.

Q Now, perhaps we could just go on to the next page, which is 113 – or 14, as we're now working out, on your paper copy – because you say there you had identified a number of areas of concern. Now, so far as ICD meetings, what, apparently, Professor Williams says is that there were ICD meetings and they were deliberately not minuted, and you weren't comfortable with that and complained about it. Is that correct or incorrect?

A They weren't minuted, that is correct, and I was uncomfortable with it because what happened was, there would be what we thought was a decision, an instruction, some sort of conclusion. You'd go away, you'd act on it and then, the next time, "Oh, no. That

wasn't the decision." So you felt like things were taken out from under you.

It was not an informal, you know, supportive chat, which would have been quite a nice thing to have. It was a place where decisions were made, and there was different opinions and then there was no record of it, so you constantly felt like you didn't actually know-- It was very insecure. I liked – and my colleagues also wanted – it minuted, to know, "This is what we discussed," or, for the people who missed it – because you're on annual leave or you had to cover in microbiology, whatever you were doing – there was a record. It just seemed basic, obvious practice to do.

Q One of the issues that crops up, Dr Peters, when people talk about your own performance is whether you respect the views of others. Are you comfortable with an open discussion where different views are expressed?

A Very much. I think that's exactly what's needed, and that's what I would practise when I was clinical lead in our weekly meetings. I instigated weekly minuted meetings specifically for that purpose, and it's an opportunity to ask other people what their opinions are, because in any group of microbiologists, you are going to have a range of experience, a range of expertise. Somebody may have just read a paper you've not read. It's an opportunity for peer review and check.

I work across multidisciplinary teams, have done all my career. I very much value everybody's input. So, yes, I think it's vital to have multidisciplinary and also within team. You need a situation where people feel comfortable as well to bring a different view. And usually I would, if ever I-- When I was chairing meetings, saying my piece, I'd say, "Does anyone-- does anybody else have a different view?"

Q Just so we've got the individuals correct, you say in that list of concerns, at (iv):

> "Interactions between the Microbiology lead and the infection control lead were dysfunctional."

Who were these two individuals?

A Craig Williams and Brian Jones.

Q I think Professor Williams would say he was not aware of any dysfunction in the relationship he had with Brian Jones.

A Well, he would not attend the microbiology meetings, Medical Microbiology Management Team meetings, and this was always noted by Prof Jones. There is a document I think I've attached which delineates in Prof Jones's handwriting Prof Jones's views

on Craig Williams' interactions with microbiology. So, it was not-- I was not the first person. I walked into a situation of great dysfunctionality, and I was not the only person, and indeed when there was the ODM session with Dave Stewart it was clear that there were big issues, and they weren't all related to me.

Q I think you also mention on the same page that you felt bullied, and others, you say, felt bullied, is that correct?

A Yes.

Q You've mentioned Professor Jones, and then, ultimately, a significant number of people, you say, supported a document complaining about Professor Williams, is that correct?

A Yes.

Q Now, Professor Williams would say he knows nothing about that document, he's never seen it. Can you help us on that? Was it something he would see or not?

A It was written by Prof Jones, who was head of service, so I would have expected Prof Jones, in his role and with communications with higher management, to ensure that those matters were discussed.

Q But you don't know directly whether----

A No, no.

Q -- he did or did not.

A No.

Q Other things you complain about about Professor Williams we find on 114, where you say he was away a lot. Now, he doesn't accept he was away a lot. Do you have anything to add on that?

A I think it would be hard to evidence now. That was-- it was a impression a lot of us shared. He wouldn't answer his phone or you'd find out he was away. He did cover the Western Isles, so he'd be up at the Western Isles.

There was no-- Because he didn't work within microbiology, we would-- within our department, we'd have a calendar so you would know exactly when everybody was off on annual leave, so you could plan around it and you try not to overlap with other people. His was invisible to everybody else. So I have no proof of it. I would just say that was the impression.

Q You mention that he had this post in the Western Isles, and I think Professor Williams accepted a post in the Western Isles, but he says that was only a day every few months.

A He was on call for them all the time, along with Dr Valyraki, so that was the impression.

Q Okay, thank you very much. Right, let's move on. I see on that page,

we're turning to the-- so I'm heading towards the opening of the new hospital. Professor Williams, at that time, was to be the lead ICD. You were sharing sector ICDs with Dr Wright. That you've already told us. You say there you took the lead on issues relating to the built environment, is that correct?

A Yes, I mean that's a-- it's not a role, so I wasn't "lead for." It was between the two of us; we would divvy up jobs. So, Dr Wright wasn't interested or was happy for me to take on the-- more ventilation. That emerged because there were issues in the old estate that I identified, so, having come from Crosshouse with experience of HAI-SCRIBE and all of that, this particular thing that brought it to us discussing, like, who would take it forward was just the corridor into our old ITU had a really bad leak from the ceiling tiles just exactly where people were trollied into ITU.

Q This is the oldest estate?

A Old estate.

Q This is not in the new hospital?

A Yes, in the old estate, and so I thought this was not a good thing and I wanted to progress, decide with Estates. So, between us, we discussed that I would take that forward, she wouldn't have to deal with it on a Thursday/Friday. So that's what I mean by taking the lead. It was not a lead role.

Q In terms of your then colleague, Dr Wright, was there any difficulty with her that you were focusing on one thing and she was on another?

A Not at all. We worked very well together.

Q Although I see she had responsibility for Legionella, specifically. Now, what you then say is that, as you were heading towards approaching the opening, you were asking for information about ventilation and water. What kind of things were you looking for?

A Just an overarching-- I knew nothing about the building, and I felt that, as-- being the ICD, we should understand what rooms we have, what's the ventilation strategy, specialist water systems, the high-risk units, what we need to put in place going forward for monitoring, just all the really basic things you'd expect an ICD to do.

I would have liked to have the heads-up to this huge building. It was going to be a massive effort to put these three hospitals together, and there was going to be a lot of challenges. It's definitely not an easy thing to do, but for our role in microbiology, there was all the stuff around the diagnostic tests, how we were going to deal with those big numbers coming and, in terms of infection control, I wanted to have an awareness and be informed so that if

there were problems – and you can anticipate problems in any building project – that I was in a position to start to understand it and clinically risk assess as things and went on. So, yes.

A Now, we're going to come back at a later stage of your statement to some exchanges over, in particular, ventilation air change rates which happened in 2016, but just to try and stick to the chronology for the moment, this is presumably, what, late 2014 running into 2015?

A Yes, I would say more into 2015. I did have a tour at the end of 2014 with Dr Wright. So that was part of our orientation, so you could get an orientation tour, but it was really a building site. We had to wear helmets and it was really just, you know, “Where's the ITU?” so that-- because we do daily ITU ward rounds. “Where's the theatres, where's the--” That sort of thing.

So I did have that tour, and the first time I think I started to think, “Hmm, I'm not sure this is right” was on that tour. I think it was Mary MacLeod, who was on the project team, and Jackie Barmanroy was-- happened to be on that same tour, and I did notice the sinks had greenish puddles just where the drain is. I'd commented on it, and Jackie said that they were compliant, the sinks were compliant, and that was all okay.

Then we went to the isolation room in the ITU setting, and because we'd put in PPVL rooms in Crosshouse for the ID unit, I was familiar with the parameters for it. She said it was a negative pressure room, and I said, "It's not a-- it can't be a negative pressure room. This doesn't look like a negative pressure room." And she just said, "Prof Williams has signed it off as a negative pressure room." That's what she said. Whether he had or not, I don't know, but that was what was said.

Q This was the stage before there were patients in the hospital, is that correct?

A Yes, this is before. It was a building site, basically. There was people-- loads of workers everywhere.

Q Can I just ask you generally, when you were trying to get information that you thought would be useful to sort of set you up for the time when patients were in, did you find that easy to get?

A I got no information, no. I asked at the SMT and Sandra McNamee said that it was fully naturally ventilated, and I thought that that can't be right, and I think at one stage she described----

Q Why did you-- Sorry to interrupt, but why did you think that can't be right?

A Well, A.) you've got specialist units, so you're going to have to have a mechanical ventilation to some degree,

and secondly, all the windows are sealed, so everybody was talking about these sealed windows because of the smell. So, there was that, so the windows weren't opening. You could tell that as you went around anyway because normally there's a way to stop them opening too far, so there's no opening device. There's nothing; they're sealed.

Q Yes, I think you're talking about a device to basically prevent people opening them and falling out.

A And falling out, yes, and it's a very tall building, so-- There was a discussion and I thought-- I was taken aback because I thought, "Oh, maybe I don't understand ventilation at all" because she mentioned some chimney effect and there's some very modern way of channelling air through buildings that would work. Whether that was discussed at some point, I don't know, but in terms of what I'd seen, I thought, "This cannot be fully naturally ventilated."

But when I emailed-- So I'd asked for a vague handover. I think-- I'm not sure I've submitted that email. I'd sort of said, "Can I have all this information that'd be really useful before patients come?" and then patients moved, I hadn't seen anything, and then I think it goes on to when I start to discover more issues. But prior to patients moving in, I had nothing.

THE CHAIR: Just so I'm following, are these questions being raised at SMT meetings or----

A Yes, both.

THE CHAIR: I mean, can you just give me more detail as to how you were raising these questions and with whom?

A So, at the SMT meeting, I asked, "Can we have details of the ventilation?" I can't remember if I said water or not. I definitely said ventilation because I'm actually more interested in ventilation, but I did ask for specs on the building and then I followed up with an email to Prof Williams.

THE CHAIR: This is in 2014 or 2015?

A '15, early 2015.

THE CHAIR: Right, in one SMT meeting or more than one?

A I think it was probably one because there was also-- at the same time as me saying about these non-minuted ICD meetings, there were cancelled SMTs. So, in 2014, there were a whole lot of-- I think we went four months without an SMT, and I raised that as a problem as well with Tom Walsh. I think that's probably why-- One of them was made to be a special SMT to discuss the Vale of Leven report, so they replaced the SMT with a Vale of Leven report, but we'd had one cancelled because it was too close to Christmas

and we'd had one cancelled before that.

So there were cancelled meetings, and I thought that we had a lot-- I mean, we're massive and we were just about to open this big building and there were ongoing matters to discuss, so that's maybe why I didn't raise it. I only recall raising it at one meeting.

THE CHAIR: Right. Now, I take it there should have been Stage 4 HAI-SCRIBE completed sometime in 2015, but I'm also working on the basis that you had nothing to do with that.

A Nothing.

THE CHAIR: Right.

A I don't know if one was done.

THE CHAIR: Right. Now, what was Professor Williams' response to your request for the information that you've listed with Mr Connal?

A The first email, no response.

THE CHAIR: Just absence of response?

A Absence of response.

THE CHAIR: At the SMT meeting, I take it he was present?

A I don't recall him saying anything at that SMT. I remember Sandra, that-- All I recall is Sandra saying that. I do recall at three other SMTs----

THE CHAIR: So Mrs Devine made the comment about natural ventilation at the SMT?

A Yes, yes, yes. I don't absolutely remember if Craig was there at that meeting, but I recall that at an SMT – and I can't place if it was exactly the same one or not – he mentioned about ventilation, water, he was dealing with it, things were sorted, just at that level of, "There's been discussions about TB, MDR TB, water's under control." That was the impression.

So, I wasn't at that stage questioning that anything was wrong at all; I had no idea things were wrong. I was just asking for the information to enable me to do my job. So, at that stage, I had-- I really didn't expect there to be a problem.

THE CHAIR: Now, we're talking about when you had the tour with Dr Wright, probably at the end of 2014. Did you say that Mary MacLeod was with you on that occasion?

A I think it was Mary McLeod. Somebody showed us around who was part of the project team. I didn't really know who was in the project team. I didn't have locus or visibility of any of that. I knew Jackie Barmanroy was somehow linked with it because she mentioned she'd chosen the sinks and she'd been involved and-- I don't know the mechanics of it. I had no visibility of it.

THE CHAIR: Now, it was during

that visit, if I'm following you correctly, that somebody said to you that Professor Williams had signed it off.

A Yes.

THE CHAIR: Can you remember who told you that?

A Well, I think it was-- I have notes that I thought it was Mary MacLeod, but I'm just now-- I don't know her very well, so I'm not sure I would be absolutely sure about that. I could check my emails; I think the name would be there.

THE CHAIR: When that expression was used to you, how did you understand it? I mean, signed what off?

A Yes, I understood it to be an HAI-SCRIBE because I signed off SCRIBEs in Crosshouse, so I thought that's it signed off.

THE CHAIR: But if the hospital was still a construction site, that was perhaps a little early to do a Stage 4 HAI-SCRIBE.

A Yes.

THE CHAIR: But?

A It could have been an earlier stage, so it could have been signed off. I didn't take it as, "Signed off, ready for patients to go in," I took it as, "Signed off, this is what we want."

THE CHAIR: Right, okay. Thank you.

MR CONNAL: Yes, just for completeness – and we needn't go back to it – at 113 of your statement, you touch on the discussion on the Vale of Leven Hospital and your reaction to what the focus of the discussion was, which, you say, was on coverage of costs, not on people. So, I needn't bother to get you specifically to read that, but sticking now to 114, you're saying you had no involvement in the design or commissioning of the hospital because by the time you got there it was well under way.

I think on the next page, 115, electronic-- Sorry, my Lord, I'm now discovering the page paragraphs of my copy are quite different from the page paragraphs-- I think that's because I have a copy of Dr Peters' paper. We'll deal with that. (To the witness) What you say there is that you understood, and I assume you've got that understanding just from talking to people, that Dr Hood and Dr Redding had been involved, Annette Rankin and the ICD involved in a new project. You understood----

A Yes.

Q -- it was Professor Williams who, at the time, was the lead ICD. Now, I think Professor Williams will say that he didn't sign off on anything of substance other than some discussions about individual rooms; certainly didn't sign off anything general. Did you have any specific information about his role, or is

this just general----

A This is from SMTs where he would report back, and also from an email I got from Tom Walsh that-- when I asked after the patients were in, when I started asking more urgently for information, Tom Walsh indicated that it was Prof Williams and Jackie Barmanroy.

Q We'll come to that just----

A Yes, that's later.

Q -- in a moment.

A So that's what that's based on, and I think there was just a perception, because he was lead ICD and it had not been delegated or there was no-- there were no meetings or anything that we were involved in, we didn't have visibility of it. So the impression – and, I suppose, assumption – was that it was those people involved.

Q You say in your statement that you were getting some general updates about the building from Professor Williams but not technical information about it, just sort of how things are going, presumably?

A Yes.

Q So you actually record at the end of paragraph 27, which is on electronic 115, that prior to the opening, you didn't get any information about the ventilation and water systems, although you would have found that helpful.

A Yes.

Q In fact, in the next section of your statement on that page, you're dealing with HAI-SCRIBE and I was going to ask you about Stage 4 HAI-SCRIBE for the new building on opening, but you don't know whether one was done or not?

A No. I think not because of what we found, because HAI-SCRIBE part 4 is basically you're finishing off and you're going around and you're saying, "Yes, the ventilation has been-- is as, you know, SHTM says." It's got a whole lot of tick boxes that you have to check, you have to visibly-- you know, it's a check, and the fact that those things were not there, I assume it wasn't done or I'm not sure if they were picked up where the actions went, because you would expect actions to flow from that SCRIBE if it was incorrect.

Q Thank you. Yes, because if you pick something up, you're supposed to do something about it, presumably?

A Yes.

Q So your current assumption is that one wasn't done?

A Yes.

THE CHAIR: I think it's pretty clear from what you've said already, Dr Peters, but just-- can I absolutely nail this down? It appears to me from your previous answers that you are familiar with the HAI-SCRIBE procedure, have actually

carried it out in previous roles.

A Yes, yes.

THE CHAIR: Have you carried out a Stage 4?

A Yes, with the team in Crosshouse, but it wasn't for a big build. It was for a refurbishment, so it was a small one compared to what would be required for this and it involved-- the way I experienced it, it involved, like, fire people as well as the clinical team and it wasn't a piece of paper. To me, a SCRIBE was a meeting of people at key points, so-- and that's where Geraldine and Brian came and observed what we were doing because we weren't treating it as a piece of paper.

The SCRIBE isn't the paper; the SCRIBE is the content that goes into the paper, so you could-- Say, you know, Fire are happy with the fact that we've now got these dampers – or they're not happy, usually, because we haven't got the double doors or whatever it is – and then, if you want work to be done, and we'll have grand ideas of how it should be done, then Fire will come and say, "You can't use that route."

So, you've got to work together on all the competing interests to make sure that, A.) the project, while it's being done, is being done safely, and B.) that the project is worth doing because it delivers the improvement that you're wanting.

THE CHAIR: Yes, that answers my question. Thank you.

MR CONNAL: Thank you, my Lord. (To the witness) I was going on to paragraph 30, which starts at electronic 115 – it's page 16 on your paper copy – where you say you first became aware of some issues. In fact, as it happens, you've given us the evidence about the drainage outlet on the sinks in terms of explaining your first walk around, and then you're also saying you were looking at a room that was under construction and you were told it was an NPV, a "negative pressure room." Why would you have a negative pressure room in a hospital?

A For airborne isolation, so they're specifically designed to prevent aerosol infectious risk from coming out of the room and also from concentrating up within the room. So if you have a patient who's breathing out, coughing out an infectious agent such as TB, chickenpox, coronavirus, MERS, you would be not wanting those aerosols to leak out into the other parts of the ward or to infect anybody coming into the room because they need to be removed rapidly. So it's not just the pressure, it's the air changes, so you need rapid dilution as well, so they're very carefully designed.

So a negative pressure room, to me, is not just a single room that happens to

have a little bit of negative pressure one way half the day and the other way the other half. It's a designed and validated suite that should function for negative pressure, so it is primarily for aerosol infection.

Q Yes. In paragraph 30, I think you're probably going back there to the point that you discussed earlier, that you were shown what you were told was a negative pressure room and you said, "That's not a negative pressure room," and you were told it had been signed off as one by Professor Williams, and that was because, I understand from your statement, that it was a positive pressure room but it had a lobby.

A So no, it wasn't a positive pressure room, it was a positive pressure ventilated lobby room. So the positive pressure pertains to the lobby, not the actual room, and, to be fair, the person who said it was a negative pressure room possibly wouldn't have known. There is a lot of debate about whether these PPVL rooms are adequate for your highly infectious aerosol protection and your highly immunocompromised patients.

So, people-- It's a bit niche to understand the differences, but I'm sure you do because of the Inquiry, but not everybody does so, if you say, "Negative pressure room," it's shorthand for saying, "That's where we're going to put our TB case." So, I'm not sure the person was saying that Prof Williams thought it was a negative pressure room. I don't believe he did.

It's a positive pressure ventilated lobbied room. The question emerges as to whether that's the correct design for a highly infectious aerosol transmitted disease, and the second question is, is it built to actually meet the spec of a PPVL room? So there's two aspects to whether that was the right room or not.

Q Thank you. Now, moving to paragraph 31 in your statement, which is on electronic 116, you're talking about a different walk around, and you were trying to plan for viral haemorrhagic fever admissions. Is that something you needed to do?

A Yes, it's something that all ICDs were involved in doing because there was an Ebola outbreak in Sierra Leone and I'd already-- in Crosshouse, we'd had a query case before, so-- and in Glasgow, they'd had a Crimean Congo fever case, so there was a lot of awareness that we weren't really prepared for this kind of infection if they just turned up at our A&Es.

So we were all tasked with-- and I'm sure, if you spoke to ICDs across the country, it was a time of great activity, going into your A&E trying to work out what the plan was so you didn't get

caught on the hop. So, how would you triage? How would you know somebody might meet the criteria? Where would you place them? Where's the PPE? How you would house them, route through the hospital. So it was very much a national effort at planning because you would never know where somebody might turn up with-- At that time, the biggest threat was Ebola, but there are other serious, high-consequence infectious diseases, as they're termed.

Q In the course of this walk around-- Now, this is after the patients or just as the patients are moving in?

A I think it's after because I had been doing it in the old sites, so I'd already done the Victoria Infirmary and the old Southern A&E, and one of the features that everybody-- We knew it wasn't a great setting for if a patient came in – there was a lot of risks – but we kept saying, "Oh, but in the new hospital, we're going to have isolation rooms in A&E, so it's gonna be dead easy," and then I thought, "Right, we'll just walk it through."

I think patients were in, but I can't be sure 100 per cent about that date in April; I'm sure I could check. I don't exactly remember because it was down in A&E and I didn't go into where patients would be. I just went into the room -

Q Anyway, you went into a room. I assume, from what you were telling me, that you'd be looking for a negative pressure environment?

A Yes.

Q In fact, you found a room that had a number of defects with it, which you've listed, and you tried to find out whether it was a negative pressure room or, if not, where the negative pressure rooms were. You then say you were told there weren't any negative pressure rooms anywhere.

A Yes.

Q Was that not something that surprised you?

A Very much, because there was a-- we'd moved our infectious diseases unit across the city to be in this, you know, state-of-the-art premises. We had nice suites, negative pressure rooms at the old Brownlee unit and, yes, I was a bit astonished by that.

I think this room was a decontamination room, which is meant for chemical incidents, so it has slightly similar features in that you don't want contaminant – be it a different kind, not a biological contaminant – you don't want that coming out of the room, but it serves a very different function.

I would also say that, for viral haemorrhagic fever, if you were planning for it and were building for it, you would also do it a bit differently from MTB

because there's a bigger risk of contact transmission, so droplets, so you wouldn't really want a positive pressure in the lobby, and you want a big lobby so you can have-- and you really want a dirty to clean flow-through. So you want somewhere where your staff can don, put on your PPE, go into the room and then come out and doff in a different place so that there's not cross-contamination.

So, I wasn't expecting an HCID room, although it was a missed opportunity really not to put one in, but I was expecting probably a negative pressure room with a really big lobby, but it was just a funny design for this chemical disinfection. I'm not an expert in chemical disinfection, so I don't know whether that was appropriate or not for that purpose, but it seemed to me that it wasn't functioning for what I was expecting it to function for.

On top of that, there was, you know, the ceiling tile, there was a ladder, the doors kept opening and closing, the water wasn't coming out, all these features that I've mentioned. So it seemed to me that, on that day, if an Ebola patient came in today, this is not where we want to put them.

Q Now, Dr Kennedy suggests that, at the time you're talking about, the Brownlee unit hadn't yet moved into the new hospital. Is he correct about that?

A The first visit potentially, but they moved-- the second time I went they definitely did because we were then starting talking about MERS patients with Dr Bell. So, it's possibly true that on that day they weren't there, but this was a planning meeting. I don't know the exact date that Brownlee came over.

Q He also suggests that it's the public health team that were in charge of significant infectious disease planning for the new hospital. Is that correct?

A He chaired a meeting that was for serious infectious disease, but that didn't mean that the ICDs didn't also have a role in preparing it. So, there was-- clearly there's a massive public health role because of the risk to public, but there's also a massive infection control role in dealing with a VHF, and I think you'd find in every hospital the ICDs were very much involved in ensuring that the details of an admission clean-up and how you would decontaminate a room, all these things needed to be planned for.

Q Thank you. Well, let's see if we can move on to another period of time, which you've helpfully given us a heading for: June 2015, paragraph 32, still on page 116 electronic. You said, and I think you've probably told us this already:

"[You'd] sought information

from Professor Williams in the hope of being reassured. [You] asked for technical information like ventilation schematics."

What would you do if you got ventilation schematics? Can you read them?

A Yes.

Q This is probably the point that we touched on briefly in passing earlier, that you were in touch with someone called Anne Harkness, who was who?

A She was the acute sector general manager.

THE CHAIR: Sorry, just so that I'm following, I'm not entirely sure that I know what ventilation schematics might be. Do you want to tell me?

A Yes. So, for example, if you're looking at a PPVL room and you're getting it validated, you'd have where the ventilation supply and extract is, and you'd get the pressure differentials. There is, on top of that, a much more detailed schematic of exactly where all the ducting would go, whether it fed into what air handling unit, were there air handling units close by, which level they're on. So, it's understanding-- From an infection point of view, all you need to know is where's the air going: how much air and where's it going.

THE CHAIR: Yes, so what that's suggesting to me is something like a drawing but not necessarily drawn to exact scale. Is that right?

A Some are drawn to scale, so if you were looking at-- So there's two things: there's how it was designed and the as-built, as somebody's already referred to, and then there would be-- I would have seen the validation data. So we're very used to looking at validation for these suites and theatres.

Then you can see-- The bigger drawings will show you how it relates to the rest of the hospital, so you can see where your routes might go-- There's a word for it: adjacencies. So you can see where these rooms are in proximity to A&E and to other parts, X-ray. You can see-- If you have time – and most of our problem is we don't have time – you can follow through the scheme of where the actual ducts are going so that you can check that it's not recirculating air to somewhere else, that sort of thing.

So, I wouldn't have expected an engineer's level. I'm not an engineer, so I'm not going to be able to assess it like an engineer and check where all the dampers are and all those kind of pressures, but I'm looking at them from an infection control point of view, which is, are the supplies in the right place? Are the pressures in the right place? Do we have the air exchanges right? And if you've worked in infection control, you

know that's often wrong.

THE CHAIR: Right, so going back to just getting an idea of what might be comprehended by schematics, I think it includes drawings.

A Yes.

THE CHAIR: And from what you just answered, it would include scale drawing.

A Yes, not precise scale. So, in the end, I got these big, huge, laminated maps. I suppose it's maps rather than schematics of where the electricity is. I mean, I've seen those kind of schematics and they're not very helpful for what I need to see, but it's more a map roughly to scale but not exactly to scale.

THE CHAIR: Right. Okay, I think I've got the idea. So it's quite detailed information you are looking for.

A Yes.

THE CHAIR: Yes, right. Sorry, Mr Connal.

MR CONNAL: Perhaps I can just check, then, if there are two different phrases appearing here because you say you asked for technical information like ventilation schematics, and did you get it? There's a next logical----

A No. Eventually I got the theatres-- what they called the validation, but I think-- I'm not sure which stage of validation that was. That was sent to me and that was to be taken forward through

Craig and Anne Harkness as well. So, schematics, I don't know. I'm maybe using that too non-specifically. For me, a schematic is a drawing on a piece of paper that I can understand the parameters that I need to understand the infection risk.

Q According to your statement here in paragraph 32, you say that you told Anne Harkness you would review the ventilation specifications. Now, is that different from schematics?

A The schematics should reflect the specification. So, when you see validation – and you know from SHTM what it should be – and then you see the readings, and then you can surmise that it's either correct or incorrect, you'd be surprised that we are actually able to pick up problems.

I think sometimes people don't-- like the theatres and neurosurgical theatres, they've been validated and validated and validated, but then you get a fresh pair of eyes looking at it from an infection point of view and, actually, there's some pretty serious defects going on. So, it is surprising that doctors are able to identify what you might think are engineering issues, but we are trained to be able to highlight those specific parameters of engineering that pertain to infection risk.

Q In any event, you were in touch with Anne Harkness and you said

you would review the ventilation specifications, and she told you, "Oh, you don't need to because Professor Williams has done it." Is that correct? Is that what she said?

A Yes.

Q But Professor Williams, I think, says that he didn't sign off on specifications at all.

A Yes, so it was mixed messages. I didn't know what was going on. I think those specific specifications were for that contamination room, and the reason I wanted them was that was the plan for an Ebola case and nobody seemed to know where the air comes in and goes out.

Whether it's public health or anybody else, it was just, "This is the room we're going to use," and I wanted to be able to check so that-- use my training in order to say, "Well, actually yes, this is good, the air goes this way," or not. And if what they say, just-- and then if that is the only option, can we risk mitigate or is there another better option?

So, it's asking for a granularity of information that you actually require to do a proper job, a proper clinical job on infection risk. So, I didn't then know who had the information, who'd looked at the information, and that was very worrying.

Q You mention mixed messages. If we go on to electronic 117, you record there – it comes from over the page as well – that, according to you, Professor Williams said, "Oh, everything's fine," and then he said, well, actually, it wasn't really his thing, ventilation. Was that said, you know, actually said to you by Professor Williams?

A It's the emails. I think that bit is all in emails.

Q And you were directed to Mr Powrie for information in the Estates department.

A Yes. Yes.

Q Now, did the fact that you were being told to go and ask Estates about the ventilation concern you?

A No, it seemed-- well, Estates would be the people who know, but I was thinking of asking who I thought was the infection control doctor who would know about the spec from an infection control point of view, so would be able to say, "Yes, we're going to use this room and it's negative pressure in the lobby. It's negative pressure. We've got X amount of air changes, and here's what we'd have to do to decontaminate it."

That's the kind of handover by somebody who's already planned the thing out and done the work already. That would be great because then I can understand and say, "Okay, now I know," whereas, fair enough, Estates will have schematics and they will have it from an

engineering point of view and they'll be looking at it from-- how do they keep this functioning? Are there any defects? They will be coming at it from their job point of view.

Q I wonder if we could look at bundle 14, volume 1, 320, please. Now, I see here, in the middle of that page 320, we've got an email from you to Tom Walsh, copied to Teresa Inkster, saying:

> "Hi Tom, Craig indicated to me that he had not had information on the ventilation systems and that I should liaise with Ian Powrie. [Can we discuss?]"

So you were in touch with Mr Walsh as well?

A Yes. So Craig was on annual leave then. Teresa I copied in because she was covering for his lead role and he's the manager, so that's the next person to go to for information.

Q Can we just go onto 321, please? Can we just see-- Ah, yes, so this is you. You're in touch with Craig Williams, but that arises from a communication with someone called David Bell. Who's David Bell?

A He's an infectious diseases consultant who, at the time, had responsibility for the VHF-type pathway.

Q And this is where there's a reference, I see-- you're asking about the decontamination room, so the specific room that we've been discussing.

A Yes.

Q He's saying to you, "[Can I have your infection control] input … particularly around … ventilation… We were that told it was suitable…" And it says, "Craig Williams via Anne Harkness." And then they identified another area. Then there's some discussions about PPE, so is that the kind of exchange that you're telling us about?

A Yes.

Q Thank you. Well, if we go back to your statement where we were before, at paragraph 33, you say you were starting to question the sign-off of the new building, and you describe a decontamination room, and then you say that's the same one we've already discussed. Then, in paragraph 34 on the same page, you say-- you asked, well, who's signed off? And Mr Walsh tells you it's Professor Williams, Dr Hood and Jackie Barmanroy. Is that right?

A Yes.

Q I won't ask you about it again after this, but I think you probably know that Professor Williams denies any significant role in signing off ventilation on the new hospital. Are you able to comment on that one way or the other?

A No, I don't know for a fact who

signed off. All I know is what I was told, so that's what I was told.

THE CHAIR: Can I ask you again, what do you have in mind when you use the expression "signed off"?

A At that point, that's a different sign-off. That's a SCRIBE 4 sign-off. That's a "we're ready to put patients in this room" and even if you'd not done every single room in the hospital, the one room-- I mean, there are many rooms – you should do it for all of them – but this is a really high-risk room, both for chemicals and, you know, on a risk register, this is a room you've got to get right. So, that's when I started to worry about the SCRIBE 4 sign-off, if you like, that it's ready for people now.

THE CHAIR: Okay. Again, it's Stage 4 HAI-SCRIBE?

A Yes.

THE CHAIR: Right, okay. Thank you.

MR CONNAL: Just so we've got that, can we look at bundle 14, volume 1, 205, please? So this is you asking how was the design of the new build signed off from an infection control point of view. Is that the point you're trying to make? That's what you're trying to find out?

A Just finding out the information that I need to do my job.

Q Yes. Can we just go back to 204 to see if that helps us? I think if we just shrink the page a little so we can see all of page 204. Ah, yes. This is the reply that you've talked about, the reply from Tom Walsh, saying:

> "Hi Christine. Craig led on most of this with some input from John Hood. Design sign off was by Jackie in the south team whilst she was seconded to the project."

Now, Jackie Barmanroy was what?

A An ICN.

Q Infection----

A Control Nurse.

Q Control Nurse. Right. Thank you. And you then decided you wanted to meet with Mr Powrie to discuss a number of these issues, is that right?

A Yes.

Q Did you arrange to meet him?

A Yes, so I'd had discussions with him. I had never met him before this all started kicking off, so I'd wrote-- I don't think you have all my emails, but I wrote him to introduce myself and say – and copied in Pauline and Teresa – that, "We're the local ICDs. We'd like to have some information."

I think I met him-- because he was in the same building. They're just on the ground floor. Estates are on the ground floor and we're on the fourth floor. He was extremely busy, and he agreed that it would be a good idea to tee up. He had

concerns of his own, is the impression I got, and he seemed very keen to come to a meeting if I was to organise it.

Teresa was standing in for Craig as lead ICD, so it seemed the appropriate group, just as a preliminary, “What's going on? Where are we at? What--” It seemed like-- We didn't have any information, so this was a fact-finding exercise, and Ian was very helpful with that.

Q You also suggested, or someone arranged, perhaps, that somebody from the contractors, Brookfield----

A Yes.

Q -- appeared, and also from the commissioning team.

A Yes. David Hall was there.

Q David Hall?

A Yes.

Q Then you go on, thereafter, to discuss-- If we now go back to your statement, we'll get to paragraph 34 on your statement, which is on 117. You set out there a number of issues, and the first one touches on water. Now, you say there were verbal reports of possible Legionella contamination. So this is June. So this is just about the time when patients are coming in, is that right?

A I think the migration was well on its way. I think it started at the end of April, so I'm not sure about the final

dates, but there had certainly been lots of people. A lot of the hospital had been migrated by that stage. I'm not 100 per cent sure of that timetable.

Q You said there wasn't anything in writing, and Mr Powrie, according to you, said he didn't want to put it in writing. Is that right?

A Yes. There was mention of positive Legionellas and there was mention of high TVCs actually as well, and I said to-- I remember the conversation just outside the laboratory block, the front doors, and I said, "That's something you're going to want to put in writing. I need that in writing. I need to know what's going on," and he said he wouldn't do that.

Q Now, you say you asked for risk assessments for waterborne infection in the new hospital and you didn't get them. Why did you want to get the risk assessment?

A So that I could understand where we were with the risk with water. I was a local ICD. I was working with Pauline. We both agreed that this was something that we wanted to see.

Q Now, I'm going to jump a little bit because I've been asked to put certain matters to you here. You say you asked for these. Did you ask once, or was this an ask that continued?

A I asked two or three times.

They're in my emails, so I asked-- I put in writing to Ian Powrie because Tom had said he was the best person to ask, so I asked. I copied in Tom Walsh, as far as I recall, and Craig, and then I-- And Mary Anne Kane, I can't remember how she got the email, whether I directly asked her, but I was basically moved around the houses. There was "Ask the project team," then there was, "Oh, we're no longer here. Ask the Estates team." Mary Anne Kane replied she doesn't know why I was asking her, and Tom Walsh was chair of the Board Water Safety Group, I believe, at the time. Nobody seemed to have this information.

Q Now, we know from other evidence in the Inquiry there was a firm called DMA Canyon that did a report in 2015. Can you just tell us, just while we're on this point, when you first knew that the-- saw this report?

A 2019. I was off on sick leave due to an incident at work, and it was towards the end of my sick leave, I think, because I was feeling better enough that Teresa Inkster came to visit. We're kind of jumping ahead in chronology of what had happened between then----

Q Yes, I appreciate that.

A She showed it to me there, at that point. That was the first time I knew of its existence.

Q Can you assist us at all – and if you can't, please just say – have you any information as to who was aware of that prior to it emerging in-- well, we've been told 2018/2019?

A The only information on that I know is from following the Inquiry, so I understand Ian Powrie was in possession of it. I did not know that until the Inquiry.

Q In the first bullet point at paragraph 34, you mention somebody who sat on the Water Safety Group. Is that Tom Walsh?

A Yes.

Q Did you get the information from him about the water testing?

A No.

Q Thank you. My Lord, I'm conscious I've slipped slightly past the 11.30 schedule.

THE CHAIR: It's only an approximate----

MR CONNAL: Any time is as good as any other at the moment, so I'm content to rise.

THE CHAIR: Right. Okay, Dr Peters, as I said, we usually take a coffee break at about half past eleven, so if you could be back for five to twelve.

(Short break)

THE CHAIR: Mr Connal.

MR CONNAL: Thank you, my Lord.

If we can just go back for reference to where we were in the witness statement, which was paragraph 34, electronic 117. That paragraph has a number of bullet points, and in effect I've just dealt with the first bullet point.

The second one raises a slightly different question, which is that the representative from-- I'll just call them the contractors, and the commissioning team – that's the Board's commissioning team – said they didn't know the infectious diseases unit – that's what we've called Brownlee – and the BMT unit, which is sometimes also called the Beatson, because it's the adult BMT unit-- I'm assuming that's what's being referred to, rather than the paediatric BMT unit.

A Yes, it's the adult.

Q And the suggestion is that they didn't know they were on site, in the hospital?

A That's what was stated. In fact, we had a conversation that we said they were there and they said they weren't. It was that stark. We said, "No, they're here because we're getting microbiology samples," and they're saying, "No, they're not here because that was never agreed." It just seemed very strange.

Q In fact, according to your statement, they said they didn't know that there was ever to be an infectious diseases unit in the new hospital.

A Yes.

Q I mean, perhaps, was that the contractor, or was that the contractor and the commissioning team?

A My memory of it is that that was from David Hall.

THE CHAIR: He's the Brookfield representative?

A No.

THE CHAIR: Is he the commissioning team representative?

A Yes, as far as I'm aware.

THE CHAIR: Right.

MR CONNAL: Do you happen to remember who the Brookfield representative was?

A He was also called David, but I didn't get his second name, so I know there was another David. I didn't-- I never met him again, never met him before, but Ian Powrie had pulled-- had told-- I wouldn't have known who these people were. It was on Ian's suggestion of who would be the most appropriate people to pull together for this quick fact-finding meeting. So David Hall, I think, did most of the talking, but my impression was, all around the table, the people who were there were not in agreement that we had actual bone marrow transplant patients for an infectious diseases unit on site.

THE CHAIR: Right. It's no doubt

my fault. I don't think I've come across David, the name David Hall before. Is----

MR CONNAL: I think David Hall, my Lord, appears in the earlier part of paragraph 34 of this statement, I think, where this witness talks about "a representative of the Health Board commissioning team, David Hall."

THE CHAIR: Yes, right. Health Board commissioning team, right. Sorry, I missed that.

A That was my understanding of who he was. I don't have confirmation of that. At the meeting, that's what I understood his role was.

THE CHAIR: Right. You know what his professional background was?

A Engineering, I think. I don't know beyond that.

THE CHAIR: Thank you.

MR CONNAL: So this was you from infection control, Ian Powrie from Estates, somebody from the commissioning team – i.e. the people who were supposed to get the hospital up and running, to use layman's terms – and the contractor who'd been involved in the build.

A Yes.

Q In fact, if we stick to David and David, we discover at the end of that bullet point that David Hall, according to you, said he was going to discuss it with another David, David Loudon.

A Yes.

Q Who was David Loudon, as you understood it?

A My understanding was that he was the director of Estates for GGC and also he was the lead on the project.

Q The lead on the project. So that question of bone marrow transplant and infectious diseases unit, who knew what, was going back to David Loudon?

A Yes.

Q Now, you deal with a number of other issues in this paragraph, which appears on electronic 118. We probably don't need to delay unduly on all of these. You say ventilation arrangements relating to theatres were concerning. Why were they concerning?

A Because nobody seemed to know what was happening with them, whether they'd been commissioned, so I would have expected commissioning and-- So there's a few-- there's two ways of using the word "commissioning." I think we've already been through the engineering commissioning.

We also refer to microbiological commissioning of theatres, so that's air sampling. That's a very discrete set of commissioning data. You wouldn't normally do that for ultraclean theatres, but for your normal theatres, at the very beginning, you would expect there to be some microbiological testing.

So-- but even-- I was aware that that hadn't been done, or at least I'd asked Ian Powrie, but Ian Powrie also said he wasn't aware of what the theatre validation and other commissioning was. He didn't have access to that, so that in and of itself was concerning.

At that stage, I wasn't able to say that's a problem, you know, that they shared prep rooms. That came later. At that stage, just merely the fact that we couldn't instantly say, “And here's the stuff that you need to confirm that everything's done and dusted."

Q Just so we're clear, you mentioned three different things there. Ian Powrie was talking about the kind of commissioning and validation data, so commissioning by the contractor, validation by the Board, usually through a specialist, which was done from a-- what you described as an engineering perspective.

A Yes.

Q Then there's a separate type of commissioning, microbiological commissioning, which you were explaining involving some form of testing. Is that right?

A Yes, air sampling and there are cut-offs. In order to do that, you'd need access. Ian Powrie would have to organise access so he would-- you don't just wander into a theatre suite and start doing plates. He would have had to organise that, so he suggested that that had never been done. Later on, I asked Craig and others and it was clear that hadn't been done.

So there's emails later that we then start to look at the theatres as well and that was to go up through Anne Harkness's group as well. So, at this point in time, I didn't have specifics on if there were any issues with the theatres, just simply the fact that we couldn't see it had all been done appropriately so that we could be certain we were moving into theatres that were meeting the standards and were commissioned.

Q The next bullet point you mention is the Ebola pathway, and you say the A&E department had no infection isolation rooms, which presumably you need if you're going to have an extremely infectious patient, is that right?

A Yes. I think because I was expecting there to be one, because that had been-- In fact, I'm sure Anne Harkness had said, because I had pointed out I have-- previous to this, when I'd been doing the VHF pathways, I'd put together number of risks that were inherent in how we were planning to deal with them in A&Es, and really, the solution was it's all going to go away once-- as soon as we open the new A&E.

So, each A&E department will

decide. I think the clinicians would be the best people to know what they want in terms of isolation. You know, you might have one or two single rooms with shut doors. You may have a negative pressure room or, if you were going to be the centre for all Ebolas to come to, if there were, you'd try and spec that up.

So, I was expecting something to be there that would be, “This is our-- this is designed and planned” rather than retrospectively going and saying, "I wonder where we can put one of these cases if they come in." Because it's a new build, I'd have expected this to be inherent in the progress of the design and planning.

Q The next bullet point says there were PPVL rooms, so that's pressurised rooms with lobbies.

A Yes.

Q Positive pressure rooms, which didn't have their own toilet facilities. Why is that worthy of mention as an issue?

A Because the validated template, if you like, the design template for a PPVL room, which was designed by Malcolm Thomas as a solution to the problem of having rooms that you switch from negative to positive, and you can get it wrong and that can have serious consequences--

So this is a clever design to mitigate against that, and it has in it a very clear cascade of air, an air directionality, that goes from the positive pressure room through the baffles, mixing in the room and then under the door into the en suite and then extracted out.

So, in and of itself, if it was a deviation from the template, you would expect there to be some sort of accompanying, "We know it's not what it says in the SHTM, but here's how we've validated it to show that this works for the purpose that we're trying to use it."

So, it could have been a-- it was a problem if you had an ambient-- a patient who was able to go to the toilet themselves, so then they'd have to come out and use another toilet, so that's not going to work.

In an ITU setting, you could conceive of-- theoretically, you could have a room like that that didn't need a toilet, but the problem was these rooms were in ITU, but they were going to be used for your ID patients who didn't necessarily need ITU treatment, so then you needed a toilet in the suite. So it's a bit nuanced, but the idea of having predetermined and pre-thought through what you were providing in different parts of the hospital seemed to be missing.

Q I think later in your statement, you come onto a later stage of events where you actually had a conversation

with the individual who designed these clever solutions, as you mentioned them, to avoid – am I picking it up correctly? – a previous possibility of having a room with controls on pressure which allowed you to make it negative or positive, depending on what you wanted.

A Yes. There's good references. There's good evidence in the literature that they can often go wrong, so they're a no-no now. You don't do those kind of rooms.

Q I understand that. Now, the next point you make was vertical drains leading to pooling water in sinks.

A I don't mean vertical, I mean horizontal. Sorry about that. So it's the drain in the back of the sink.

Q Yes.

A So, instead of your normal drain plug hole, because they're known to become contaminated, so this is a solution that you don't get splashback from the water coming from the tap and then pushing back up whatever the nasty stuff down the drain is. It's to the side, which sounds like a good idea, but I think you have to have the sink at exactly the right angle as well so it is fully draining.

What I didn't know but I know now is that there's a problem with the sealant causing a lip. I was not aware of that previously. I just-- on the basis of my visual checks, there's little pooling at that exit point, and you get a rim of green, which would imply biofilm and collection of bacteria.

Q The final bullet point in the list is rooms described as NPV rooms were not negatively pressured. Now, is this something we've discussed before? Is this a new point?

A No, it's the same point. So, people were referring to the PPVL rooms as negative pressure rooms and they were planning to use them in the same way as a negative pressure room, which is not appropriate. So, you need to understand how you would monitor it and how you would know with regard to the pressure differentials and to know what the risk factors are in the PPVL room as opposed to a negative pressure room, and the main--

Apart from the lobby-- If you just think of the lobby as a space to change, that's a very different concept from your lobby is actually an airlock, if you like, an airspace that will prevent air coming one way or the other. So, the importance of the doors both being shut, never having both doors open at the same time, that sort of thing, and the bedroom where the patient is, in this concept, is neutral pressure to the corridor.

So the only thing that's positively pressured is the lobby, not the neutral pressure bedroom, and that's where

there's controversy because one line of thinking – which would be represented, as I understand it, by Peter Hoffman, who I've discussed it with – would be that that doesn't actually then do the job it needs to do for an immunocompromised patient where you want a positive pressure around the patient themselves and not allow ingress through all the little gaps, and the reverse for immunocompromised patients where you actually want a negative pressure in relation to the corridor.

Q Now, I think you said immunocompromised twice there, once for positive pressure, but it's an infectious patient that needs a negative pressure, is that right?

A Yes, sorry, infectious patient.

Q Yes, so the challenge, as I am understanding you, is if you have an immunocompromised patient-- I'm just keen that his Lordship understands the point you're trying to make. An immunocompromised patient requires positive pressure to ensure that stuff from outside doesn't get in and infect them, to be very lay in my terms. So, under this system, the lobby is the only bit that's positively pressurised?

A Correct.

Q So that, it's presumably designed to stop anything going into the lobby.

A It prevents air from the corridor ingressing through the lobby, which is the main space of air. That's-- you know, when you open the door, that's where the most risk of air going one way or the other is, so it's a very good design for that.

What it's not so good at is all the little leaks that will-- Even if you do a leak test over time, things will disintegrate and you will get, for example, where the services go in the walls, there will always be little gaps between, which, for a immunocompromised patient, could be an issue if there's a leak, for example, and you get mould in that space behind. Okay, you're not getting air from outside coming in, but you've potentially got ingress of mould into the room, whereas if the bedroom is positively pressured, the air is always going away, always going out of the room.

It's quite an-- the controversy is about how much that matters and how much the leakage-- what risk it poses. The issues I've identified – and not just me, my colleagues within the Queen Elizabeth – in using these rooms is that, actually, where they're placed is also very important. So, for example, one of them-- well, a few of them are immediately opposite an open bay bed, so the design seems to think about a corridor where there's no patients.

So you've got it neutral to the corridor, so that's-- you know, it's not a very high-risk space, whereas if it's in the middle of an ITU, that wall and this big window with potential sealant breaking down and with the-- I think I put it in somewhere, the mechanism for the blinds breaking, you've actually got a hole about this size and you've got another patient there.

So, if you had MDRTB in there, there's no negative pressure pulling it in. You could have-- if you open the door here, some of it will come out. How to quantify that risk, you'd need somebody who does the modelling and maths around it. Just conceptually, it doesn't seem to be what was designed, what was expected in the SHTM.

Q Now, this debate is all about the use of lobbies as a mechanism as opposed to simply, for instance, a negative pressure room for an infectious patient.

A You can have suites. So, as soon as you've got a bedroom and a lobby, you call it a suite, so you can have a cascade of negative pressure so the room is higher negative pressure than the lobby, and the lobby is also negative pressure to the corridor, so the air is always going that way.

And the reverse: you can have a positive pressure room which is positive to the lobby, which is positive to the corridor, so the air is always coming this way, and the lobby is handy because then you can do activities in there and have a double lock. So you're massively increasing the protective factor by having two doors, so you can open one, open the other, and it's giving an extra factor.

Where the PPVL rooms really come into their own is where you've got an infectious, immunocompromised patient. So, say you have an immunocompromised patient who also has chickenpox, you can't have negative and positive at the same time in the room, but the next best thing would be to have-- So they do have, I think, a role and a unique property, but whether they're the right thing for an ICU ID-type patient, I don't think they fit there.

That's if they were all built exactly right. The problems we had at the Queen Elizabeth was that they weren't actually built to the design anyway, so I accept there is dubiety around whether they're the right choice of suite, but that comes second to whether they were built to plan in the first place.

Q So I'm understanding this as a non-ventilation engineer, the example that you posited was somebody who was both immunocompromised and had caught some illness which was infectious. So you've got two things driving in a

different direction: one, you can't allow contact with outside contaminants because the person is immunocompromised. On the other hand, you don't want the air spilling into the corridor and infecting other people. So, am I right in understanding you're saying that a lobby system can work there?

A Yes. It's a good way of getting (inaudible) compromising on both risks.

Q So what would you have in a neutral room?

A Yes, so the PPVL room, so the neutral room, because then it's minimal amount coming in and out, it's not nothing. The other-- the reverse concept, which I think is in the American guidance, is a negative pressure lobby, so the air, instead of being pushed into the lobby, is removed through the lobby, and that's what is used for that exact same circumstance. So there's a number of solutions and, as long as you understand what you've got, you can use it appropriately and I think that was the basic factor here.

Q Thank you. Now, just for completeness, if we could look at bundle 14, volume 1, 332, please. Ah, right. I'll need to go back to 331. My fault. That's it. What you say in your statement is that, following the meeting during which a range of things are discussed, you sent a summary to Mr Powrie. This is where David comes in, I see, and you summarise there:

> "Whole building mechanically ventilated... None of the positive pressure lobbied rooms have HEPA filtered supply... None of the lobbied rooms have been leak tested... extract in the bedroom (in the roof) [and various other things]."

So this is you trying to summarise a range of issues for Ian Powrie, is that correct?

A It was to check that I'd picked it up. Usually after a meeting, I would-- that's not a formal, minuted meeting, I would do a list of what I thought I'd taken from it to get that.

Q So you might have got something wrong, in which case, he'd come back and tell you?

A Yes, yes.

Q On 332, I think that email just completes with a whole range of other points about commissioning and validation data, not had infection control sign-off, no easy-to-read collection of relevant documents for specialised ventilated areas including design spec, commissioning and validation data. That was obviously another issue.

A Yes.

Q Light fittings in Schiehallion not

sealed. Now, Schiehallion was designed to be the paediatric BMT unit, is that right?

A Yes.

Q So, they would normally require high air change rates and pressure differentials as well?

A Yes.

Q Am I right in thinking you can't really have the pressure differentials if the room's leaking?

A It's difficult to achieve the pressure, but you could if you put lots and lots of air in, but the issue with this-- it's hard to achieve the pressure differential because it's leaking out. It's like trying to blow up a balloon with holes in it. If you put a lot of effort in, you could maybe sustain it for a bit of time.

The other problem is-- with the ceiling not being sealed off is that, whenever you have a ceiling space, there's always dust in there, there's always bits, and so you've got ingress of air that is not filtered coming into the room. That's the big problem.

The Schiehallion aspect of it was Teresa had been alerted to this and she had been dealing with the Schiehallion aspect because she was covering for Craig, who was not only lead ICD, he was the paediatric ICD, so she was covering him for that. So I didn't really have any remit over the paediatric side of it.

Q Now, it sounds, from the bit at the end of that email, as if one possible output of the meeting was you were going to get a nice, neat-- let's call it a folder for the moment, in old paper speak, of ventilation specifications for everything with validation data and so on. That's what you were hoping to get, was it?

A Yes.

Q Did you get it?

A Never.

Q Thank you, and a number of matters were to be discussed with Mr Loudon. Now, can we go back to your witness statement, please? Because we're going to move on to a slightly different topic in an area that ultimately turned out to involve quite a lot of issues, which was the Ward 4B, the intended home for the Beatson bone marrow transplant unit to move into. Now, the first question is, why were you involved at all in looking at 4B at this early stage?

A At that stage, Teresa hadn't come over to the south. There had been discussions of her being in charge of regional, so it's a regional service, and there hadn't really been any agreement about how the infection control sessions and responsibilities, rather than sessions, would be divided up. Teresa was cited as the acting lead ICD when Craig was away on these issues and we decided just together that I would go up-- she was

dealing with Schiehallion and other issues. I would go up and just have a look.

Q You say there you'd seen the ventilation specification. What had you seen?

A Ian Powrie had shown me a piece of paper – I'm trying to remember exactly what – and what I picked up from it-- I think it was probably the-- it had "2009" written in handwriting at the top and it had what I think was John Hood's suggestion of a spec for 4B, for a haemato-oncology, not BMT ward, but now we had bone marrow transplant.

So what I was looking for was the 10 pascals, 10 ACH, positive pressure monitoring, HEPA filtration, all of that stuff, and what he showed me didn't match with that. Then also, I'm not sure where it comes in my statement, but straight after that meeting with David Hall, Teresa and I liaised. As soon as they said they didn't think bone marrow transplant were there, red flag, so I said I'd go up to 4B and just see what was there, and that's how it progressed.

Q Okay. Let me just take you back----

A Sure.

Q -- at least one step in that answer. I can understand the red flag because if the builders say, "Oh, we didn't know there was a bone marrow transplant unit from the Beatson here," your question is, "Well, is the place there meant to be ready for them?" I can understand that, but you reeled off a list of things that you would be expecting for a BMT unit. I think it started with 10 air changes. Where do you get that from?

A Neutropenic rooms, so they're also a very standard concept.

THE CHAIR: I'm sorry, can you just give me that again?

A Neutropenic rooms. Neutropenics from the SHTM before----

THE CHAIR: Right, okay.

A Yes.

THE CHAIR: So, sorry to be so pedestrian, was your source SHTM 03-01?

A Yes.

THE CHAIR: Right, and you had familiarised yourself with that before this----

A Oh, yes.

THE CHAIR: Sorry, that's the wrong way of putting it. You were aware of these parameters----

A Oh, yes.

THE CHAIR: -- before the meeting?

A It would be a question in your FRCPath. So, you know, our exams for FRCPath may have questions on ventilation, so it's something that I would teach trainees now. It's a very basic understanding of what positive pressure

is. It's not just about the positive pressure; that's a kind of shorthand-- it's a shorthand for that kind of room.

So pressure in itself isn't enough. It's also the air exchanges and also where the air goes, so it has to be from dirty to clean, as well as the materials that you would use. So there's a whole host of things that go in because the underlying premise is that you are trying to minimise any contamination that the patient who's completely neutropenic or high, high risk of infection, so it's a pretty basic concept.

MR CONNAL: I didn't mean to be pejorative when I said you'd reeled off a list, but you gave us fairly quickly a list, which started with, I think, 10 air changes an hour, and with also a figure for pascals of pressure?

A Yes, 10, but there's-- The way John Hood would explain it is that, as long as it's between 5 and 10 so that it's enough to be a constant pressure, whereas something around 2 pascals is too small, and even your instruments to measure that-- there's an error range in your measurement.

So if you do 0.1 positive, for example, it means nothing because your instrument isn't really able to differentiate and it's a meaningless amount, so you need a good-going positive pressure. If you say 10, there's a bit of room for

wiggle room, and some guidance will have it higher, 12, but that's the sort of idea.

Q Did you say a pressure cascade----

A Yes.

Q -- as well? That's to what effect in a room for a neutropenic patient?

A Positive in the room to the toilet, so nothing comes back out of the toilet, and positive to the corridor, and if you have a lobby as well, positive to the lobby and the lobby to the corridor, so the air is always going away from the room.

Q Did you also mention alarms?

A I don't think I mentioned alarms just now, but yes, that would be integral. So you'd have to have a way of-- a visual measure of what the air pressure was doing in real time, so either a gauge that has like an arrow on it or a digital gauge, but a gauge, and then an alarm system so that if it drops below a certain amount, then you would be alerted to it and could act accordingly.

Q Thank you. Now, in paragraph 36 of your statement on electronic 118, you expressed the fact that you were concerned. You'd seen the specification, thought it was inadequate. Why have you ask about Legionella positives? You seem to have asked Mr Powrie about them.

A Because he mentioned them

to me, verbally.

Q Was he able to tell you whether they'd come from 4B?

A No.

Q Then, in fact, in answer to a question from his Lordship, you explained that you might well get a question on air changes in a neutropenic room in your FRCPath exam. I see here you also record you were familiar with SHTM documents from your time in Crosshouse.

A Yes.

Q So, you were concerned about it. You'd spoken to Mr Powrie, which didn't allay your concerns, and then you-- so you actually went to go and see the ward?

A Yes.

Q You describe here being approached by a member of the nursing staff, is that right?

A She's a manager, quality manager. I can't remember the exact title, but yes.

Q It may not matter for our purposes, but somebody from the nursing team approached you. Now, am I right in thinking that in the transfer from the Beatson, it wasn't just a question of physical rooms, but people moved across as well?

A Yes, so the team-- it's a very highly specialist team. The bone marrow transplant and haemo team, they came across as a service. It includes the expertise as well as the rooms, so the two go together.

Q Yes, so if you're talking to somebody, at least at that time, when it's all just happened in 4B, they're likely to have been someone who'd been working in the Beatson and had moved across.

A Definitely, yes.

Q Yes, I see, and the member staff explained that there was a concern about pressure gauges. Is that what you've just been telling us about?

A Yes, it was-- I just went up and I introduced myself because I didn't know them. I hadn't worked at the Beatson. I'd never worked in the north, and I said I was infection control doctor on the site and they were delighted to see somebody from infection control. They just had these really big concerns because it wasn't the same as what they'd come from and they know enough, obviously, that positive pressure and a protective environment is really important for their patient cohort, and they couldn't visibly see any signs that that was in place because they would be used to checking on the gauges where it was at.

Q Right, so I think the narrative in paragraph 37, which continues on electronic 119, suggests that you did what I might kindly describe as a less than highly scientific testing mechanism

to see what you could find.

A Yes, so actually, a visual indication of which way the air is going is actually better. So I also do biosafety in labs, so when we have a cabinet, a biosafety cabinet, the best way of knowing for sure which way the air is going is to have a visual.

So we used to have a ribbon in our cabinets to show that the air is going in and not coming out, because any instrument you use has a failure rate. So when you're doing something like working with TB that you really don't want to inhale, to have a visual-- Now, a ribbon's an old-fashioned way, but also you have now clear ducting so you can see that the air is pushing and taking it.

So a visual measure of which way the air is going is better. So, you can use a piece of tissue and it's not giving you magnitude, so you can't say, "Oh, I can tell that it's so many pascals." All you're doing with a piece of tissue is saying, "The air is going that way" or, "It's going that way." And if it's going the wrong way, it doesn't matter what the gauge says; it's not doing what it's meant to be doing.

Q You used a tissue on a patient room in 4B to see what would happen, is that right?

A Yes, and the air was going in.

Q Which is, presumably, the opposite of what you want?

A It's negative pressure, so you want it coming out, and it was going in.

Q Did you do this once or more than once?

A I did it on a number of doors, yes.

Q Were the results the same or different?

A Some, there wasn't much movement, but mostly it was going in. It was variable, but you'd expect that and also, it depends where you do it on the wall. So air's movement is very complex in the space and because you can't see it, it's quite hard to-- you need an indication of what's happening. So, it could be because of the air stratification. If it's warmer higher up, the air might be going in and lower down it's coming out, so there is a range of it.

So, I was doing it at the bottom of the door because that was the biggest gap, so it was-- the air was going in mostly. It wasn't-- as you say, it's not scientific enough to say this is a fail or a pass, but it's enough to say, "This is not doing what I expect it to do," which would be a good-going positive pressure at every stage with the door shut.

Q Then this is perhaps a slight side issue to the more general question of 4B, but you went to something called a pentamidine room.

A Pentamidine room, yes.

Q Pentamidine, yes. Apologies for my mispronunciation. This, you record – and I think we have this elsewhere – is a substance that has toxicity to a particular cohort, which is women who happen to be pregnant and, therefore, you try not to let any of it out, presumably?

A Correct.

Q Did you use your tissue test on that one?

A Yes, and it was positive pressure, so it was coming out. And that had also been-- that became a bit-- people denied that that was the case later on and I've always been a bit confused because all I can be sure of is on that morning or afternoon, whatever it was, I'd expected it to be negative pressure and there was like a good-going draft coming out. I, at different stages, saw people there trying to sort it out and they apparently found it very difficult to change it.

Then, at one stage, I've been told that, actually, because-- it needs a local exhaust and if the local exhaust wasn't on it wouldn't be negative pressure, and that was the reason. I don't know. I haven't seen enough details, but I've also seen in some of the documents that, actually, somebody else said it was actually negatively pressured later on.

So I have to say, I have an open mind on that. I'm not sure what the absolute evidence is for that, but I did raise it. Even though it wasn't infection control, it's a health and safety issue and given there were so many other things that weren't as they ought to be, I highlighted that and I haven't followed that through because, as I say, it wasn't our remit.

Q Yes, because you're not dealing with infection there----

A No, it's not an infection issue.

Q -- you're dealing with a safety issue.

A Yes.

Q I see. Now, in the next paragraph, paragraph 38, I'm not clear from your statement whether you're with something that cropped up on your visit after you met the member of the nursing staff or whether this is a more general comment on issues about blinds breaking.

A It's more general. It's not from that visit. I don't think there were anything breaking in 4B that I recall. It's more a-- At about the same time, there was lots of people reporting issues. You'd go round wards and they'd have plastic aprons stuck up on the windows because it becomes a privacy issue because they're internal blinds. So, if you can't shut them and if they've locked

open, if you like, there's a big privacy issue for the patients inside.

Q As I understand it, this is the design that you sometimes see where there are two panes of glass with a, call it a Venetian blind, set of blinds in between the glass.

A Mm-hmm.

Q And the issue was whether you could get them to open or shut.

A There was a mechanism – as I understand it, defect – almost throughout the whole building, so there was a big programme of works to replace them. The relevance of that is really that when you've got a sealed room that you're bothering to do a leak test on and you've got this mechanism, which basically just opens up a hole straight from the leak-tested room into the corridor, that's a defect.

Q Now, when we go on to paragraph 39 – still on electronic page 119 – you say all the rooms in 4B are meant to have HEPA filtration. Now, that's presumably because the patients have to make sure that they have clean air at all times.

A Yes.

Q And the HEPA filter we know is a high degree of filtration which filters out the vast majority of things that might be harmful, to take a non-technical description. Is that correct?

A Yes.

Q According to this, you were told by Mr Powrie that some of them didn't have HEPA filters, but nobody knew which.

A That's right.

Q I take it it's not obvious when you just go into a room?

A It is actually, if you look up into the-- Because they're point-of-supply filters, you look up through the supply grill, you can see the HEPA filter. If it was up in the air handling unit, as some places will do the HEPA filtration at the level of the air handling unit-- but I think because these were such long pieces of ducting going down to the rooms, it would be sensible to put HEPAs at the point of supply. So you can actually see visibly if they're there or not.

Q You make a comment about the rooms also not being sealed. So, if you have a HEPA filter but the room's not sealed, does that work for protection?

A No, because the HEPA is one aspect of it and the positive pressure and the air changes are another aspect of the control of the air level of contamination. So the HEPA is purely about the air coming in from outside being cleaned so that you can be sure that it's a HEPA-grade level of air that is being supplied.

The air exchanges are about diluting, so there are other ways for air

bacteria spores of fungi to enter the room. That can be, for example, as I mentioned, mould in the area or people coming in or somebody coughing – say a staff member coming in with COVID, coughing – then you want that removed. The HEPA is doing nothing for you in that setting.

So you want the air to exchange quickly and you also want it to go in the right direction. You want it to go out through the en suite and up and out. So you've got control. The whole point of a ventilation system is to have control of what's happening with the air, where it's going, and giving some sort of thought to where the contamination is coming from and what it's likely to do.

Q Now, according to your witness statement, you had this visit on 25 June 2015, and you say in paragraph 40 of your statement that you were "escalating them immediately" because you thought they were causing "immediate risks." Who were you escalating them to?

A Tom Walsh is the manager, and I copied in Brian Jones as he was the microbiologist who gave clinical microbiology advice to the bone marrow transplant unit. So those were the two routes, and also Teresa was included in all my emails as well because she was acting for Craig. Tom Walsh was the manager, so he would be in the best position to coordinate and take things forward.

I actually didn't know what else to do. It's a really surprising situation to be in, and I did-- For me, the immediate impact was the highly infectious type of patient, which we could expect because we were now the Brownlee unit, and the very immunocompromised patients who were there and then having their bone marrow transplants done, so they're giving treatments.

So life-saving treatment, essential treatment, not the sort of thing you want to put off, in a situation which was-- it was just uncontrolled, and that's not what you want. You want a controlled setting where you know what the risks are, you know exactly what standards you're meeting so that you can do something sensible around reducing the risk to those patients.

Q Now, at that time, when you went to 4B, were there patients in it?

A Yes.

Q So, whatever stage their treatment at, these were people that had come over from the Brownlee BMT unit?

A Yes.

Q Can we look at a bundle 12, 225, please? So this is dated 26 June, which is the day after your visit. You're sending it to Tom Walsh, as you

mentioned, copied to Teresa Inkster and Pauline Wright. And the BMT issue is number two.

A (After a pause) I make an error there. I've put 5B and that was actually-- that's what was the-- that meeting we had with David Hall. Everybody was talking about the BMT unit being on 5B. There was confusion even as to what floor it was on. Now, I should have known because I went to the fourth floor, but for some reason I had it in my head it was 5B because that's what everybody was talking about, but that is in fact an error; it should be 4B.

Q And at that point you're-- say you're awaiting documentation on the specification and also on validation?

A Yes.

Q The tailpiece of that email is basically saying, "Well, tell me how to pull this all together to best effect." I'm paraphrasing.

A Yes.

Q What did you expect to happen when you had patients in an environment which, on the face of it, even with your non-scientific test, wasn't what you would have expected?

A I would expect a pretty high-level escalation quickly with some sort of meeting to find out where we were, what we could do immediately to mitigate those risks, try and quantify the risks and

then, secondly, find out how we'd got here and how extensive the problem is.

Q At that point, did you know what the air change rates were?

A No. Well, I knew there was a spec and it seemed wrong to me anyway, but I didn't know what was actually supplied. So when I say spec, I hadn't-- it's not that-- it's not, "This is what we've got. We think this is what we asked for." That was a phrase, actually, that the person from Multiplex used in that meeting was, "You've got what you've asked for," and I said, "I haven't asked for anything. All I'm interested in is my patients today."

So I just-- there was a bit of a kickback as to, "Why are you asking for this information?" and I was saying, "Well, I'm an ICD today, and I have patients today and I need to know where to put them," and so that's where that conversation – sorry, I'm backtracking a little bit – about, "Well, they were never meant to be here, so you've got what you wanted. You've got what you wanted."

THE CHAIR: Sorry, it's entirely my fault because I was----

A Yes, sorry.

THE CHAIR: -- reading the minute and not paying sufficient attention to the evidence. The meeting at which you are told, "You've got what you want," just remind me, when was that and with

whom?

A I'm referring back, sorry, to the meeting with Ian Powrie and David Hall and Multiplex.

THE CHAIR: Right, okay.

A So that was the phrase, and it kept coming back throughout is, "It's what you've asked for, so you can't get something different." I had a different approach, which was, you know, "I have patients now. Where are we?"

THE CHAIR: Yes, right.

A So that then-- I think, by this stage, there was a lot going on and I thought it was of immediate infection risk and I didn't know what to do. I didn't know the system. I didn't-- part of this being AICC, BICC, the only thing you can do is escalate through your channels. So I escalate up to Tom Walsh and I specifically ask, "What should I do?" You know, "I'll do whatever I need to do."

I was willing to take it on, whatever, but it needed to be coordinated because we'd already had-- I was conscious of a lot of emails and you can see all of them, if you like. I kind of just put this summary one. I'd done a gap analysis for both a bone marrow transplant patient and also for the infectious diseases patients.

I'd done a few-- as things emerged, I wanted to make sure people were up to date. I sent-- I believe I sent this specific email on to Brian, even though he's not copied in. A lot of people needed to know, but how you were going to get a solution was the tricky bit.

MR CONNAL: Yes. Thank you. Can we just look at 227 in the same bundle, please? This is Tom Walsh coming back to you on the same day, saying at the top there, "Thanks for all the information. We're escalating to the chief operating officer and medical director." Now, the chief operating officer, do you know who that was at the time? You may not remember.

A Grant Archibald.

Q And the medical director?

A Jennifer Armstrong.

Q We can leave that document, thank you, and go back to the witness statement. In paragraph 41, you talked about doing-- that's on page 120, you talked about doing what you describe as a gap analysis: what PPV patients needed and what BMT patients needed. So when you, as we described it, reeled off things that a BMT patient needed – 10 air changes, 10 or thereabouts pascals of positive pressure, air cascades, alarms or gauges – is that the kind of thing that you were talking about laying out?

A Yes, and at that stage I would have checked, cross-checked with the SHTM. So, you know, I had an idea, but the SHTMs aren't the sort of thing you hold in your brain in their entirety, so you

always go back with reference. So I went back, re-read and I put the references, and of course CDC is another source of very good information on this sort of thing.

And also for the bone marrow transplant, I was aware of the JACIE guidance, which is the organisation that accredits a bone marrow transplant service that covers the entirety of the service, and you really need that to have a quality-assured process around bone marrow transplantation.

So I was keen that our input from a microbiology-- infection control point of view was as informed by those streams of information so that I could be sure. My memory's not-- because you do forget these numbers, even though I said I can trip it off, but you still make errors. So I did double check in doing that gap analysis, and then I-- I left a gap in the column for what we actually have because there was a lot of unknown information.

So I had hints and I had thoughts and I had some verbal reports, but I wanted to have, you know-- Basically, we didn't have validation, and that's the problem. We didn't know what we had, so you're forever playing catch-up. You've got no starting point, and it was just this lack of a starting point that became very difficult.

Q I think other things were done in 4B at that time that you tell us about. In paragraph 43, you're talking there about a program of Legionella water surveillance in that particular ward, and you say the Beatson monitoring program hadn't been implemented. What's the point there?

A So the Beatson was a long-standing setup, and it was deemed to be world class. John Hood had spent a lot of time designing and validating that building, and he would give us lectures as a trainee about, you know, setting it up. Water was always a big component and I think they had-- I'm not as au fait with water systems as I am with ventilation, but they had a point-- a heating system near to the outlet, I think.

But there was-- Teresa had been, for a number of years, involved in the monitoring of the environment there. So air sampling results and water results, they had a system in place which I was not familiar with, so it wasn't something I would say-- it wouldn't be off my own bat. Pauline had liaised with Teresa because this is-- it was separate. This is really separate to our finding issues. It was more, "Here's what we do. We've now migrated. Let's make sure that we've migrated the good practices as well from a microbiology point of view." So that's where that came in.

And because I'd heard there was Legionella and we hadn't seen those results, then we kind of need to start from scratch. At least now, those results should be following the normal process, which would be to the infection control doctor who's covering that area, which became Teresa when she covered regional.

Q So the net result of all of that was a regular program of checking in that ward for water safety issues like Legionella?

A I've not been involved in those, so I can't say when that started or what those results did because, as I say, Teresa became-- and they moved back anyway, so it actually became a moot point.

Q The next paragraph, you move from water back to air sampling.

A Yes.

Q Because there was 30 June, so that's a few days after you've been in the ward and after you've escalated to Tom Walsh and he's escalated elsewhere. There's then air sampling in both 4B and 2A, which is the paediatric BMT unit. Is that right?

A Yes.

Q Now, this is just what it says, isn't it? This is just taking samples of the air and then trying to check what you find there in terms of particles?

A There's two components to air sampling in this setup and you do particle counts, which can be-- Some of those will be infectious particles and others won't: they'll be inert. So dust-- so particle counts can go up with pollution, with all sorts of things, whereas the agar plates-- so we'll use now old-fashioned way of monitoring air.

So the monitoring of air quality has come on massively, particularly through COVID, but at that time, it was a fairly standard process. So you have a-- it's called an Anderson sampler, and it pulls air at a certain volume over a certain time onto a-- it impacts onto an agar plate and you--

There's a very well-established system that was already in place in the Beatson that I'm sure Teresa could speak more to, but I was aware of it, where over five/six years, they've very well-established levels of what you would expect to see, and then if there's a deviation from your norm, you go in and you inspect it. Quite often, you will find either a source of damp or something else.

So there's a sort of heads-up with the particle count, and then there's a qualitative and semi-quantitative idea with the agar plates. So then you would-- it takes quite a while for fungus to grow through. So you incubate for five to

seven days, and then you identify what you grow.

As far as I'm aware, they weren't doing bacterial testing, and I think bacterial air testing is probably becoming more considered to be a useful way of understanding how the environment and microbes within a space interact. So, at that time, it would just be looking for fungus, counting them, counting the particles, and you would expect less than one – basically zero – moulds, and particle counts should be below 100.

Now, if you get an aberrant count, you may look for reasons. Maybe somebody came in and shook the bedclothes or something could put the particle count up quickly. So a one-off is not meaningful, but a trend is. However, in this situation, the counts were just-- I mean, they were in the millions. It wasn't just a little bit off, it was just wildly off.

There was lots of fungus on all the plates and huge counts in some rooms. Massive counts, kind of as big as outdoor counts, so-- which you're going to find a lot more particles outdoors and the filters in the system will be reducing that down to your indoor space.

So, it was-- you don't do things just to achieve a-- your testing results of zero, but the testing is a tool, a signal, a point of data that helps you analyse what your environment is like. So it's not an end in itself, it's a tool to help you understand what's going on. And if you already knew-- like, if you knew there was no HEPA there and there's no positive pressure and there's three ACHs, for the sake of argument, you would really expect these. You'd say, "That's not surprising."

So you don't need the testing to tell you your ventilation's wrong. It's unfortunate the way this happened because there was so little information, but this then really became something that people could focus their minds on. People who maybe didn't understand ventilation and expectancy. Maybe it's-- it does matter because we've now got something physical to show.

Q If you get high particle counts in areas of the hospital with immunocompromised individuals, is that risky?

A The particle count in itself is not a risk. It depends what those particles are. It's an indicator of a bigger problem, so the risk is the amount of-- the risk is that the particles indicate that there may be high rates of fungal spores, bacterial spores in the air.

Q Thank you, and this was done in both 4B and in 2A?

A Yes.

Q Were the results similar or different? Can you remember?

A So, from what I understand, yes, from conversations, but I would not have seen the 2A results. I just know from Teresa and from us discussing it. Yes.

Q The reason I ask that is, this is back in 2015. Now, we know that things were then done about 4B. We can debate what was done, but things were done fairly rapidly: people went back to the Beatson and so on. 2A wasn't altered for-- well, major alterations didn't take place in 2A until well into 2018 or thereabouts. It just seems a little odd that you're picking up these things so early and yet there's a gap. Just looking in very general terms, do you know why it took so long?

A I think it speaks to a lack of a joined-up approach where we really needed to say, "Let's start again from scratch. We don't actually know what we have and take it from there." There wasn't a systematic, everybody-involved-- Things seem to happen in pockets of activity across the organisation that I wasn't privy to. Teresa wasn't privy to some of it.

From my limited visibility, I raised things, got involved and then blocked out, and there's no further information, and you're then in the position where you're hoping something's happening but not in the sure knowledge that something's happening.

Q So, in any event, what happened at this time in relation to 4B was, pretty swiftly after the air sampling was done, there was a meeting. Leave aside whether there were attempts to put it off – doesn't matter now – and the meeting was chaired by Gary Jenkins?

A Correct.

Q You've listed others present, including Mr Powrie, Ms Joannidis, Jackie Barmanroy and yourself. Basically, that was a kind of meeting that didn't come to a conclusion because you felt needed more information.

A There was a-- It is a very big thing to move a bone marrow transplant unit back. I mean, that was going to be a huge deal, so was-- We didn't have enough knowledge at that stage to know-- you know, maybe it's just a HEPA missing. I didn't think it was, or maybe there's something in the system somewhere that explains this. Surely, we haven't got it that badly wrong, and maybe there's things-- We needed to do things straight away because there were patients there.

So, whenever you have an infection control incident, your first thing is what immediate actions can I take, and safety, and then what more information do we need, and then how do we take forward a plan in a risk-assessed way? So, a lot of

things----

Q The----

A Sorry.

Q The question I wanted to ask you, I think, just----

A Sorry.

Q -- to follow that was this, that this is only, you know, July 2015, so this is pretty quickly after the hospital opened. But, according to what you've said here, people who'd been gathered didn't know what the position was. That might be thought to be a little odd that no one in the room was able to say, "Oh, well, the answer is X or Y or Z."

A Yes, and I had a meeting with them, but I'm aware that the-- well, I was aware at the time because I walked in on a meeting. There were other meetings that I was not invited to. I definitely had a sense that there were conversations going on that I wasn't privy to as well, and that's why I'd asked Tom, like, "How do we pull this together?" There's so many spin-off communications going on.

So, we really did push hard for that meeting where absolutely the clinicians had to be involved. We needed some more information to bring to the clinicians, so we couldn't say, "Oh, I think it's probably not that great." You needed to say, "Here are what we think the problems are, and we've tried--" So there was an attempt to increase the ACH.

And it's at that point I learned from Ian Powrie, and Ian Powrie was incredibly helpful. My impression from him at that time was he was completely in lockstep with Terese and I about concerns about these parameters. And he first drew my attention to the fact that you can't just ramp up any air handling unit to twice the amount, and that showed the kind of engineering limitation of my knowledge at the time.

I was just, "We need this air changes." That's as far as I could go, but that's how-- In the middle of an incident you up your expertise because he explained the electrics are all spec'd for this, the ducting spec'd for this, the fans, the everything, and it's to a capacity that we don't have a lot of wriggle room. So he was educating us as we were educating him about this situation, and he was extremely helpful in that situation. So, I think things were becoming news to him as well, and we were liaising very closely about that.

Then Brookfield were somehow involved, and that would be Ian's involvement with them. The impression I got was there was a lot of pushback about how we would-- you know, what were we expecting because this is what we wanted, and me, as a-- primarily concerned with the patients in the rooms, it's immaterial, in a way, who asked for

what. These are the patients now without the right amount of air and with really very heavily contaminated air, and we're knocking out their bone marrow to give them the treatment they need. So, that's a very long answer. I'm sorry, I've forgotten exactly what the first bit was.

Q Not to worry at all. I'll ask you perhaps, with his Lordship's permission, one more question just before we break. If we go to electronic 120. Sorry, 121. We're looking there at the meeting we've just been discussing in paragraph 45, "Decision that further information was required." And then you email the project team to try and get more information. Did you get it?

A No.

Q Okay. Right, I think that, my Lord, might be an appropriate point at which to stop. We are in the middle of a narrative, but it's likely to run a little longer.

THE CHAIR: Yes. Well, we'll take our lunch break now. Dr Peters, if you could be back for two o'clock?

A Thank you.

(Adjourned for a short time)

THE CHAIR: Good afternoon, Dr Peters.

A Good afternoon.

THE CHAIR: Now, Mr Connal.

Q Thank you, my Lord. If we could just bring the witness statement back onto the screen, please, basically where we are. (To the witness) Now, I think, just before lunch, we dealt with the meeting on 1 July, which was inconclusive in the sense that the matter was urgent but it was felt more information was required and you told us about trying to get some of that information.

We see from your statement that, very shortly thereafter on 3 July, there was a meeting which took a decision on this. I mean, you set it out there, but just summarise it for us: why did you have to take ill people who'd been moved from the Beatson to the Queen Elizabeth back to the Beatson?

A So this was, I think, on a Friday afternoon, the meeting, and Guy Jenkins had pulled together the haematologists who were the clinical team, as well as Estates. David Loudon was there, Brian Jones was there, Tom Walsh was there, myself and I can't quite remember if Teresa was at the meeting or not, but the aim of it was to really weigh up the risks and what was the best option. By that time, we had checked-- well, Teresa had checked whether the old Beatson was still fit for purpose, could be, you know-- rapidly re-cleaned the air and

everything, water flushed, all of these regimes, quick enough to move people back.

So there was actually an alternative, a viable alternative, and there was a full-scale discussion, I would say, of-- the main downside and the reason the Beatson had moved, as I understand it, was the provision of ITU care, which is an absolutely fundamental aspect of care for that patient group because they can become ill so quickly. What was tied up with that was that they decided to close the old ITU, so they had had ITU. It wasn't that they didn't have it before the Queen Elizabeth, but that ITU was being closed down to join with this ITU.

So, that was really the main reason, as well as the logistics of moving back. I mean, it's no small thing, but it was unanimous. The clinicians and everybody around the table had an agreement that things were such a risk within the environment there that-- especially with things like JC standards, they were looking to get JC accreditation. All these basic standards were not in place in the current housing, and so it was agreed to move back.

I think I have emails where I'd written that, you know, we could only give the infection control risks, and it really had to be weighed up against clinical risks, and that isn't something that we can do, but it was pretty well unanimous. It was unanimous at the end; nobody stood down from that decision.

Q One can understand that must have been quite a major decision to move out again.

A Yes.

Q You say in your statement that someone called Anne Parker wrote an SBAR. Who is Anne Parker?

A She was the clinical lead for the bone marrow transplant at the time and she wrote an SBAR situation and background assessment recommendation type of communication around the move and the reasons for it.

Q Perhaps we might just look at that briefly. Can we have bundle 12, 234, please? (After a pause) Now, I think we probably need to scroll down from the email exchanges there just to see the substance of this. Here we are. So this, as you say, is a situation background report, and we see, on 236 of the electronic bundle, a narrative that:

> "The clinical haematology and Scottish adult allogeneic patient transplant in patient service has moved into potentially unsafe accommodation ... in the new facilities [and so on]."

Then, there was a quotation I see from the NICE guidelines----

A Yes.

Q -- which I don't think, in itself, sets out things like air change units. It sets out other parameters, is that correct?

A Yes, it's a very general-- I mean, I think there's a slight problem with both of these sets of guidance, is they're not very specific and just minimises airborne microbial contamination. It's not a standard, it's an aspiration.

Q If we move down past the quotations into the full paragraph that starts about two-thirds of the way down with, "The transplant team," in effect, what that says is, "We had good accommodation where we were"----

A Yes.

Q -- "which met our requirements. We knew there was one issue, which was the lack of negatively pressured anterooms." However, they say, and this is the-- is this the clinicians saying this? Who's saying that, "We were assured?"

A Oh, that must be the clinicians, yes. I mean----

Q So, "We were assured--":

> "The transplant team were assured that the quality of environmental care provided would be sufficient for their population's needs and met regulatory standards."

Then, they explain that they were able to co-locate with acute facilities such as, no doubt, the ITU that you mentioned. Then there was questions about additional spaces, and then it said:

> "It was understood that, prior to the move, the accommodation had the appropriate specifications for [that] population and, during commissioning, validation had been carried out ... [and] there was no indication ... there was any problems."

Then, we go on to what happened after that. So clearly, you've got some unhappy clinicians, would that be fair?

A Definitely. It was a huge task, I think, just listening to them, to move over. There was a lot of high expectations, I think, across the whole hospital. You know, this was the promised land, in a way. People had put up with a lot in their old sites for a good number of years, waiting for this brand-new facility.

It's not just disappointing, but, you know, quite devastating to have to go back and lose the advantages, the really substantial advantages, of being co-located with all these other-- not just ITU but, you know, you've got renal, you've got so many specialties co-located in that building that that's-- for any medical team,

that's going to be a real bonus.

THE CHAIR: Right. Could I ask a question of detail? If we go four lines up from the bottom of what we've designated page 236, in the email, there's a reference to central-- the air handling system had central monitoring. I mean, you're not the author of the email, but do you happen to know what might be meant by that?

A I think-- So, there's two ways of monitoring it. You can have the pressures in the actual room at the nurse's station alarming, but you also have the building management system that will alarm if there's any problem with the air handling unit, if there's any malfunction or if the flows are wrong, all the possible consequences that would be flagged up, and so--

I mean, years later, I got an explanation from Ian Powrie about that and the management system, they had a lot of problems understanding how it worked, but you could set triggers. So there was a central management system, but it wasn't in a way that was immediately usable.

And also, if, say, you set the pressure differential to be exactly 10 without much leeway, you're going to get an alarm every-- so there's hundreds of red flag alarms on their system, apparently, for a host of reasons, and

then it loses its utility because you don't actually know what it's meaning. So I think that's-- You know, they were maybe told, "It's okay if you don't have an alarm system in the ward, it's being managed centrally."

THE CHAIR: Thank you.

MR CONNAL: I suppose, in fairness, we should just complete this by looking at 237. So, we see the end of this email, and we see about three lines from the top:

> "None of the rooms on ward 4B came close to the standards required to provide a safe environment."

This wasn't a marginal decision, it was clear then. Is that right?

A Yes.

Q Major works would be required, and then there's an analysis which essentially summarises what's gone on, and then a recommendation basically to move back and put a plan in place to sort things.

A Yes.

Q Thank you. We can leave that now. I see in your witness statement in paragraph 46, which is where we were a moment or two ago, you say two things, that-- You say, "Well, it wasn't air sampling that found the problem, it was actually looking at the design which

started the process."

A Yes.

Q And that's something you did?

A I think-- yes, between us, Teresa and I. So we didn't-- we didn't go up to the ward because of air sampling, we went up because of the information we were given at-- and I went straight from the meeting with Ian Powrie, David Hall, etc., straight up to Ward 4B, even though I thought it was 5B, and that-- we then were saying, "Well, what's the air sampling? At least we need that done."

Q Did you mention David Hall there?

A No.

Q I'm not sure whether I remember or not. Do you remember being told precisely who he was?

A No.

Q That's fine. I needn't ask you anything further, then. Then you say that, so far as 4B was concerned, that was not something you dealt with thereafter until it cropped up again in October '18?

A '17. 2017, sort of September/October----

Q So, you were-- Sorry.

A Later, yes. Nothing since-- between 2015 and 2017, no involvement.

Q And that's when people were trying to work out what to do and----

A Yes.

Q -- putting in hand what was to be done?

A Yes.

Q Thank you. Now, you note in paragraph 47 at the foot of electronic 121 that there was an AICC meeting. Now, just so we're clear, we have looked at this already, but AICC is what?

A Acute Infection Control Committee.

Q So that's above the structures that you're working in but below the Board Infection Control Committee, is that correct?

A Yes, and we'd just been started. The sector ICDs had been invited to the AICC, which they weren't at the beginning of my time in GGC.

Q Right. Now, what you-- you were obviously at this meeting?

A Yes.

Q And Professor Williams was back. He'd been away during the immediate flap over the 4B problem, and David Stewart was chairing the meeting. David Stewart was?

A He was the associate medical director for acute and, at the time, I understood him to have a role in infection control because he chaired this meeting. It wasn't exactly clear where or how, but that was my understanding.

Q Now, according to you, your note, Professor Williams says at the meeting there were no issues with

ventilation.

A Yes. I believe that's in the minutes as well.

Q Now, Professor Williams says that he didn't say that because he already knew there were issues with PPVL rooms, so he wouldn't say there were no issues with ventilation.

A Well, the title of the agenda piece is "Ventilation," and I was expecting, fully expecting-- because I'd also said to-- I have an email with Tom Walsh saying, "Can we bring this up at AICC?" and I replied to say, "Yes." So Prof Williams started off and said there were no problems, and I said, "Well, actually, there are a number of problems," and I listed off all that you've seen I've already pointed out.

It was very fresh in my mind because it was just the previous week, and the minutes then recorded it as I suggested there were one or two small sort of snagging-type issues. I think there was, you know, problems with pressures in a room, that sort of thing. There wasn't any recognition in that meeting that we'd just moved Beatson back to-- across the city or we were about to, and it was due to these really quite significant ventilation issues.

Q Well, perhaps we should just look, please, at bundle 13, page 250. These are, I think, draft minutes of the meeting, which lists a large number of people present, including yourself near the bottom of the first list and Professor Williams at the top of that list. Can we just scroll on to the next page just so we can see what they do say? "Clinical risk." Where does ventilation come in? Further on?

A Further on. Further down, yes. Further on. It's got its own heading.

Q Okay. Carry on, please. So we're now on----?

A "Theatre Maintenance/Validation."

Q Sorry. Can we go back to 254? Thank you. So this is electronic 254, small letter h in the draft minutes: "No particular issues to report, all theatres up and running," and then you're noted as saying:

> "There were some issues with ventilation within a couple of areas and in particular within one room at the new hospital, discussion around HEPA filters."

Maybe I'm misunderstanding the purpose of the Board's infection-- sorry, the Acute Infection Control Committee, but it looks a little odd, perhaps, to an outside observer that you don't almost start with banner headlines saying, you know, "BMT unit having to be sent home again."

A So, I was waiting all the way through this meeting for something like that and it was coming near the end of the meeting, as you can see, and I thought ventilation was probably the last point at which it would normally come in. That was literally what I recall Prof Williams saying, that there's no issues, and then somebody else updated – I don't remember if it was Ms Hamilton, I can't remember who that is – about theatres, and it--

I took a very deep breath, because it was quite an intimidating thing to do, and just launched into updating what I thought would be critical information. That was not an accurate reflection. I had a list of, as you can imagine, of all PPPLs, Schiehallion, nothing for theatres. I had mentioned theatres because that's under the theatre heading, that we've got paediatric and adult theatre suites that we have no clue about, and so on.

Q When I ask you the next question, apart from Teresa Inkster's name, don't give me any of the other names involved, but did Dr Inkster tell you that she'd had an instruction from another party not to raise ventilation at that meeting?

A Yes.

Q Do you know why you would be told, after such a big event, not to raise it at the meeting?

A I think it-- this was a minuted meeting, so you avoid taking uncomfortable things to minuted meetings is what I understood to be the ethos.

Q This sounds an odd idea because there must have been a very large number of people, in a sense, aware of the fact that the bone marrow transplant unit had moved and was moving back again. There'd be clinicians, there'd be nurses, there would be patients and relatives of patients, lots of people would know that.

A I think the reason for it wasn't very clear, that there was this sort of mysterious problem with air quality which is vague enough not to nail it to actually, "This was not designed or validated and we moved patients in," which was the reality. So, as these meetings are very controlled – you're not encouraged to speak up – I did have a conversation after the meeting with some other members of the group who were just reeling from everything I'd said.

At the following meeting where I said, "Well, actually, I'd mentioned a lot more than what's in the minutes," there was comments about, "Yes, they couldn't believe what the minutes said," after all I'd said, but they can see these are still draft, so I don't actually know what happened with the final minute.

Q Thank you. Can we move away from that document, please, and go to paragraph 48 on-- Yes, here we are, on page 122. You make a small point in 48 – small in volume perhaps, not necessarily small in significance – that you were told by Dr Inkster that air sampling-- now, air sampling from where had shown aspergillus?

A I think that was Schiehallion.

Q If you can't remember, don't worry.

A I know that, with the timings-- because I think the sampling happened later, although I would have to double-- I'm sure I could check, but I will have to double check. I know there were issues in both sets of sampling, whether that was the day, 23 June, whether those pertained to Schiehallion or the other unit, I can't be sure at this minute.

Q Thank you. Well, moving on. So we've had this issue with 4B. Now, you've said you weren't involved after that, but you do seem to have been involved in an exchange with Professor Williams about the specification for, I assume, 4B.

A Yes.

Q And you deal with that in paragraph 49 of your witness statement.

A Yes, so that was at the same time. So I went off on leave not long after Prof Williams came back. So it was

either the same day as the AICC, because the AICC happened in the morning, from recollection, on the Monday morning after he came back, and we'd just moved everybody out on the Friday.

Then either that day-- I think it was the same day, there was an email that went round. I think he'd been asked for an explanation of what had gone wrong with the unit, and there was this document and I think there's a table in it. I think it was basically cut and pasted from the one I'd filled in on the gap analysis, but it had been altered.

There was a bit of explanation around it and I didn't agree with it and neither did John Hood and neither did Teresa, and we let Brian Jones know as well and he agreed with us that this was not an accurate reflection of the views of the group. So that's what that's about.

Q Well, can we just, then, try and take this in stages? What your witness statement says in paragraph 49 is that Professor Williams emailed a range of people, including you, and:

> "… asked us to confirm that, if the building was supplied to the original specification, it would provide a safe environment."

That, of course, begs the question of what the original specification was.

Perhaps we should simply look at that. That's in bundle 12, I understand, at page 240, if we could have that. Now, I think we, in the typically annoying way in which emails print out, we go to the bottom of the page and we see an email from Craig Williams to Teresa Inkster, John Hood, Brian Jones, Christine Peters, Gary Jenkins, copied to Tom Walsh: "Attached is a draft of a document to clarify the original building requirements." Now, can I just pause there? Did the people in the Beatson not know what their requirements were and thought that's what they were getting, or not?

A So, the people in the Beatson are clinicians whose training isn't to do with the-- they have a perception that we need a protective environment, they have a perception that it's positive pressure. They were using the rooms, but it's not their remit or their responsibility to make sure that what's delivered is correct.

So, they know what they need in discussion with the designers and that's the infection control role, is that we do have locus in that and how these things are delivered. We should be trained in how these things go wrong. We should be, you know, trained in the SHFN 30, which came out in 2002.

So, it's a bit-- I think it's not-- the clinicians have got their clinical job to do, and they should be able to walk into a new building and have what they need to do their job safely. So they would have had input, of course, things like, "Well, how many beds do you need?" "We're going to have 30 bone marrow transplants at one time and so we need 30 beds that meet the requirements." That's-- or, you know, "We're going to start doing a new thing, we need a new type of room."

So a building won't always last the next 30/40 years because medicine changes so quickly. So that's where the clinical team come in. They tell us what is-- what their patient cohort is, what they're going to do procedure-wise, treatment-wise, how many flow-throughs, ITU capacity, renal, you know, all those things. That's their role in the planning and delivery of a hospital.

Q Yes, well----

A Whereas infection control is something else.

Q You have highlighted a slight oddity, that we're talking about a pretty major exercise in which an entire ward has had to be told to go away again. Professor Williams sends you an email timed at 10.35 asking for comments by 11.30, according to the email, which presumably gave you quite a tight timetable, particularly if you were doing other things.

A Yes, I was on a ward round. I

recall I was on ITU. I think I got a phone call – because I didn't have emails on my phone at that time – from Teresa to say we've got a document we have to respond to, so I rushed back and had a look and, considering the scale of what's going on, the complexity of the discussion, the lack of actual information, it didn't seem to me the sort of thing you could just write back in 20 minutes and say, "We asked for the right thing and we weren't given the right thing."

Q Can we just look at 241, the same bundle? Not sure I see it here, but I'm just looking for the reply that you sent.

A I did put comments on it----

Q Right.

A -- on the document. I sent it back. It's a separate email from this one because Teresa also sends a comment and I agree with her, and I also put in comments and John Hood also sent in comments on that document itself.

Q Well, perhaps we could look at bundle 14, volume 1, 372. Now, according to our notes, that's the reply that John Hood sent. Do you recognise that?

A Yes. Yes, I do, except it had "2009" written in handwriting at the top, from memory.

Q Yes. Was that not the issue that turned out to be the case, that there was a question of referring to a haemato-oncology unit as opposed to a bone marrow transplant unit and somewhere along the lines the existence of BMT had not appeared?

A Yes. From what I understand, that-- so the old Southern site had its own haemato-oncology unit, which actually did have a couple of positive pressure rooms in it, and it was replacing that, rather than for-- Because the Beatson had just opened and, as I think John Hood says here, why would he expect the Beatson to move when he'd just basically opened it?

So, the information he gave back in 2009 seems to have been very much for the non-bone marrow transplant, but also immune-compromised, with some subgroups of that group needing the neutropenic-type rooms. So, throughout somebody's treatment, they may become more immunosuppressed, so you still need the scope for what you term neutropenic rooms.

And most, like in Crosshouse, it's not a central BMT unit, but it's got HaemOnc. You have some positive pressure rooms, so you have the capacity for that. So it's not that the whole thing is a unit, but you still need your neutropenic rooms.

Q I don't know whether that document is another page. Let's just check at 373.

A I think it does.

Q Oh, yes, which talks about air filtration, commissioning.

A So he does point out, sorry, that it doesn't include the other important bits of the spec----

Q Yes.

A -- and I think that's the important part. It doesn't read like a proper table of, “This is what exactly we need.” It's almost informal, "Roughly, you're going to need some consideration of the intake of clean air and positive pressure." It's not a table of exactly what's required.

Q And we see in the second paragraph that's been highlighted the question, "Where were the validation documents?" which is the kind of question you'd already been asking.

A Yes.

Q In fact, prior to that section of the document, it had been pointed out that the ventilation in the Beatson, the old Beatson, had been designed involving international experts from overseas.

A And I understand it took a year-- delay to get it right as well. So, there is history of, not just in Glasgow, across many hospitals, as lots of experts have said, of getting things wrong, but it's the learning from them that seems to be omitted. So it did take a year, I think, to fix the Beatson.

Q Go to 374, and then there's a table there, "HEPA filtration, positive pressure 5 to 10." That's the point you made to us earlier. It doesn't have to be 10 necessarily, according to Dr Hood. Air exchanges to be more than 12, sealed room, and then there's a question about particle counts. This is being marked up on the original document, as I understand it, to add comment on the actual original that Professor Williams had provided.

A Yes, so this table is his table, and the underline is just John Hood's then, like, tracked changes. So the only bit that's added to Professor Williams' original is the tracked changes which are underlined.

Q The conclusion at the bottom of that page appears to say that the original specification would have provided a safe environment. I rather thought I had you noted as saying that it wouldn't.

A That's right, so that's why I couldn't sign up to this document.

Q In your witness statement, at paragraph 50, you say that what Dr Hood said was, "2009 specification did not apply," set out what proper commissioning would have included. Then, if we go to bundle 14, volume 1, 225. I'm just trying to find where Professor Williams appears in this exchange. Perhaps we can just scroll down. So this is Ian Powrie sending

material.

A Yes.

Q What you'd noted in paragraph 50 was that Professor Williams said, "Well, there's going to be a group to discuss this and we'll take it forward."

A Yes. Yes, so we did get sent at that stage-- by that stage, Ian had got hold of some documents. When I'd come back from holiday – that's why there's a gap in August – I've been told-- sorry, I'm jumping ahead of the story a bit, but I had resigned, but then as soon as I came back, I was told I had to carry on with ICD.

So, in picking up the pieces, I made a list of things that I needed to follow up on, and this was clearly one of them. I wanted to be sure what the expectations were of the site ICD around-- I didn't want to end up in a position where suddenly it was my job that I hadn't done.

Q Why do you say in paragraph 50 that Professor Williams didn't seem to recognise the urgency? What draws you to say that?

A So, the review of these should be taken forward by the group by Anne Harkness. There was no-- And I have another set of emails-- Oh, yes, no, it's this email. Tom says he's "not sure if infection control were included," which just seems really astonishing because we haven't had an infection control sign-off of

this building. We've got infection control issues with it, we're setting up another group to sensibly sort it out and there's still no clear infection control involvement. That's why I thought that.

THE CHAIR: It's my fault. I'm just, I think, lagging a bit behind. Now, we looked at Dr Hood's response, as I understood it, to the original email enquiry by Professor Williams. Now, am I right in thinking that when Professor Williams refers to the specification, we see that in a document which I think is bundle 12-- is it page 245, Mr Connal?

MR CONNAL: I think that may be right, my Lord. Maybe not 245. I don't think we've looked at that one.

THE CHAIR: Well, in that case, maybe I have another question: when Professor Williams was referring-- asked the question, "If the specification was delivered by Brookfield, would you be satisfied?"-- I think at that stage, I wasn't sure where we find that specification. It's no doubt my fault for not keeping up----

MR CONNAL: No, I don't think it's entirely clear from the email exchange where one might find it.

THE CHAIR: Ah, right. So, we don't-- I was wondering if there was an attachment somewhere and that I had found it at 245, but that's not right, is it?

A No, so he does have-- The specification, I think, is cut and pasted

and copied from the document that I'm referring to with “2009” written in handwriting on the top, so that is a separate-- that is the specification from 2009----

THE CHAIR: Right, okay, and that's not----

A He's quoted that.

THE CHAIR: That's not something we've looked at?

A No, not yet. No, I don't know if you've got it.

THE CHAIR: Right, okay.

MR CONNAL: Well, just answer me this question: whatever you saw on the 2009 handwritten document, which we'll call for the moment the 2009 specification, did it provide for 10 air changes, 5 to 10 pascals, you know, alarmed systems, clean air cascade and so on?

A No, not for a bone marrow transplant unit. It looked like an idea for a normal haemato-oncology ward with some extra protection rooms.

Q Now, this comes to be an important stage in events from your own perspective, I think, because you've been brought in, you've found a problem, alerted everybody. Big issues, move back to the Beatson – must have been at the least an unusual event – gone to the infection committee, and that's not immediately apparent from what's on their agenda and you bring it out, and so on. I gather you were also unhappy with what was said publicly about the move, is that correct?

A Yes.

Q Now, probably the best thing to do here is to bring up bundle 14, volume 1, 412. Now, I understand that this is a press release, so this is very swiftly after the exchanges that we've been discussing. In fact, the same day as your exchanges with Professor Williams, a press release by the Board about the movement. Now, it starts by referring to a higher particle count. I may be wrong, but I'm not spotting anything else in that press release about any of the other things that were found.

A No, that's-- and a higher particle count isn't the issue. As I mentioned before, that's not the risk. It's an indication, it's a tool, it's a piece of data. But actually, what we found was fundamentally a wrong delivery or design or actual what was present, even if you didn't agree with how it had evolved. The reality on the ground was we were not providing the expected level of environment that took care of these patients' needs.

Q I suppose, if I wanted to be pedantic, I might say if I was reading this as a layperson, I would see, oh, it's something about higher particle count

and as a precaution while we explore remedial measures for the higher particle count----

A Yes.

Q -- we're going to move somewhere else in the meantime, which wouldn't make any sense from a technical perspective, would it?

A No, but I think there is a level at which public statements-- if they're too technical also, people don't understand it. So, part of it was that, if you're being pedantic, that isn't how we found out there was the problem. It does seem to minimise it. The real issue I had with this was that the issue relates only to the adult hospital, and that the kids' hospital was separate and unaffected.

So, yes, I did think it didn't reflect the reality, but I understand, having been involved in making statements, that-- how much information is too much and how much is communicating what needs to be communicated accurately. So there is a-- there's, you know, room within that for wording.

But the sense of it, I think, was minimising that there had actually been risk, as opposed to, "It's desirable." You know, that there was actual risk to patients after they moved in, and that it wasn't precautionary, it was-- we had to do that, we had to do something about it. Otherwise that whole group of specialist people wouldn't have agreed to move them back.

So there was a few aspects to it, but also because I hadn't normally been sent the Q&A that goes behind the public statement, but that also had information in it that seemed to me to be not in keeping with what I had seen.

Q Well, can we just look at 421 of the same bundle? As, I think, in the way that communications people function, they put out a press notice and then they have available a sort of "What to say if asked the following questions" kind of crib sheet, if I may call it that, which-- Well, we can no doubt debate endlessly whether all the questions-- whether all the proposed answers answer the questions, for instance, "Why is it not picked up sooner?" The answer is, "As soon as we picked it up, we dealt with it"----

A Sure.

Q -- which arguably doesn't answer the question, but leave that aside. The second question is:

"Why were these issues not picked up during the commissioning process?"

Answer:

> "There is a process for validating that facilities are in line with specifications [and we are trying to find out why this was not identified]."

At that time, no one had the validation results, did they?

A No.

Q And on some material we've been given, there never was a validation of that unit.

A That's what I understand.

Q Yes, and then there's a question about the health of the patients, perfectly proper: what's going to be required? We don't know yet. Well, this is a very quick press release. And then question 8, I think, is the one that you were concerned about because, I suppose-- If we're getting this story: you've discovered something in 4B, but you've also discovered high particle counts in 2A, and you've reported on that to the Acute Infection Control Committee, quite apart from those who were directly involved. So all that's been done, and it's been escalated, and the question here-- the proposed question is:

> "In view of these issues only being discovered now, what reassurance can you provide that all other areas of the hospital are safe for patients?"

Now, the answer is, "We are not aware of any other issues." Now, in your view, was that an accurate answer?

A No. If you see the list that I'd sent to Tom Walsh and all those emails and the summary that I had done to the AICC, this was by no means the only issue.

Q I mean, on one view, you might not be able to answer the question unless you'd carried out a survey of the entire hospital and then said, "Well, we've checked everywhere and it's all fine." But leaving that possibility aside, this proposed answer simply says, "We are not aware of any other issues."

Now, everybody you escalated these issues to, including everybody at the Infection Control Committee, presumably had some information about other issues elsewhere in the hospital?

A Yes, and I know because I did it.

Q Yes, you were there. Now, you say that senior board officials must have known.

A Yes.

Q Why do you single out Dr Armstrong?

A Because Tom mentioned that he'd escalated it up, and the reason I mention her is that she is the person at the board level with responsibility for infection control.

Q Right, so Tom Walsh has escalated up. I think we saw in part of your earlier statement a number of the issues that you've identified. Would she know about the AICC?

A I don't know.

Q In any event, you felt that that was not an accurate reply to put on the crib sheet?

A I found it to be-- well, I would say misleading. I think that was misleading.

Q In fact, you were so concerned that you felt you didn't want to continue in your then role, is that right?

A Yes. By this stage, it wasn't just that there were problems. A lot of infection control is picking up problems, so you don't expect to never pick up problems. The real big deal breaker for me was that there didn't seem to be the correct levers to try and do your job and at least find a way through the problems in a way that was controlled, good governance, collaborative, good practice. Just normal, functional working.

In a complex situation, of course it's complex. You know, nobody's thinking, "This is a straightforward walk in the park," but I felt that I couldn't, in good conscience, carry on. And then I contacted Brian Jones and I said, "Look, I can't-- I just can't carry on in this role. How would I go about asking to give this up?" and he said, "You just send me a resignation letter" because he's head of service, so he's in charge of whose sessions go to infection control.

So I sent to him a resignation, and I wanted to be open about the fact that it wasn't just a sudden thing, that I had already had issues within-- concerns and issues, none of which I'd been hiding, if you like. I had discussed it with my appropriate line management, who were quite aware.

So I wanted to put it all together openly, and also I definitely stated that if there was a period of crossover or advance notice, that obviously I would serve that – you can't just leave it – and that, you know, I also recognised I couldn't just never touch infection control again because that's an intrinsic part of your normal day-to-day job as a microbiologist, so I would do the duties at weekends and on call.

So I was basically asking to give up the remit of infection control doctor as a specially set-aside role, which other people had done before as well. So-- and I had discussed it verbally with Brian and he said that's how to go about doing it.

Q Can I just ask you a general question first of all in relation to that answer? You mentioned the words "lack of a collaborative approach."

A Yes.

Q Now, I think you're probably aware that one of the criticisms that's levied against you is that you don't like a collaborative approach because if people

don't agree with you, you don't collaborate with them. Do you accept that criticism?

A Not at all. I only function in teams. You know, it's only with collaboration you can do a good job. You need-- but you have to have a shared goal, if you like. You have to have a shared understanding of how to collaborate and what information you're going to use to enable that collaboration, and I didn't feel that with this--

When I say "the team," I don't mean the whole team. I don't mean all the ICNs. I don't mean that; I mean the SMT. So the way that it was working through, the way it was interacting with public health and the managers-- so things being syphoned off to Anne Harkness, for example, without any involvement of the local ICD. And I understood that it would be my role to have involvement – not to take over, but to have locus in this – and I wasn't the only one who thought that. It was a number of us.

And Teresa also resigned at the same time, or tried-- When we say resigned, "asked to give up". And the term used by Brian was "resign," but in fact I now know the right terminology was to "ask to give up your sessions in infection control." In fact, nobody else would take it on.

So, I was not alone in my views of

that setup, and Dr Wright also wanted to give up, didn't want to carry on, and they couldn't find anybody willing to take on those sessions. So, when I came back, I just had to carry on.

Q Okay. Let me just step back a little bit from that conclusion because we'll come to it again just in a moment, if we may. In paragraph 52 of your witness statement, which we'll find on 123 of the electronic bundle-- I think we've talked about Dr Williams. You see here, you felt there was a lack of transparency.

A Yes.

Q What are you getting at there?

A It's bound up with, you know, the minute-taking, the decision-making in a place that's not visible, never actually knowing what your role is. You know, there was just-- it felt very-- It's really hard to describe because you're trying to do a job and you're just not getting the information. You're not getting the responses in a normal way, and I know because I've worked in a really good, normal team in Crosshouse, and this wasn't that.

And it was decisions made between Tom and Craig that weren't really-- weren't told to us, and then, as in now, you know, suddenly it was somebody else's job to have done something. And that was always my fear, is that-- And I had an experience of that because we'd

agreed when we reorganised the sessions that Teresa would be Regional, Craig would be Women's and Children – which was a different directorate, which covered maternity – and I would be the old Southern-- not the old Southern, but the new Southern without the Regional.

And then there was an incident with a TB incident in the Maternity Unit, and so I let Craig know, and he said it's nothing to do with him; that's my job. So I contacted Tom and I said, "It's Craig's patch," but then rather than, "There's a clinical need. I should have the skill set to deal with it. It's not officially my patch," I would like to have argued and said, "It's not my patch."

It was really near Christmas. It was a really tough time, so I did it. I did the IMT. I managed the whole thing, but I brought it up then later, and I got in touch with Anne Cruikshank. And this was an example of that feeling of, "If I'd refused point blank to do it, that would be unprofessional. It's not the right thing to do." But equally, when you step up-- and then when we checked back through the minutes, there, right enough, we had agreed it was Craig's remit.

So it's that-- You know, the things aren't minuted, which would be fine if there was, you know, an absolute level of trust and everybody had perfect memories, which we don't anyway. But, moving on, how can you go back? How can you audit? How can you revisit your decision-making? Is everybody sure that they understand? Because we're a big, big organisation, so we need to pay really close attention to those sort of communications and record-keeping, and I didn't see that in the team. So, yes, that's what I mean by that.

Q Perhaps we can look at bundle 14, 414, please. This is, I think, a letter to Brian Jones, which is what you've been requested to do.

A Yes.

Q Then you set out-- Am I right in thinking that this is the kind of stuff you were talking about?

A Yes, exactly.

Q I'm quite interested in the second-- in the paragraph under the heading "Sub-acute reasons," a very medical heading.

A Yes.

Q You said you've found a lot of issues, and you say:

> "On three occasions I was told that the issue was initially not considered to be that serious as it was 'just Christine'."

Who said that to you?

A Ian Powrie mentioned it. Tom Walsh said it at the meeting that we had to move the patients back, sort of

saying-- implying that it was a bit of a surprise that actually everybody agreed that there was a problem. And also Anne Cruikshank, that she'd been told it was "just Christine."

Q Thank you. Can we just go on to 415, just so we've seen the whole of the document? So, yes, it's very medically headed. So “chronic” is persistent.

A Yes.

Q So persistent issues, and you're talking about communications and your efforts to get things minuted and so on. I won't ask you to read through that because----

A Sure.

Q -- I think we can see what you say in that resignation letter. I think when you sent that, you then went on holiday?

A I did.

Q Because a point that Professor Williams makes is it's a bit thick for you to complain about him never being there when you went off for a long period at this stage.

A It's the one----

Q Was there a reason for that?

A Yes. It's the one time in 26 years as a doctor I've ever had four weeks off of annual leave in a row, and it was to go to India where I was brought up, and we had a big school reunion in the boarding school that I went to. So we

took a family trip and went back to where I was up, and that had been in the books for a very long time because it was well pre-planned.

Q Thank you. Now----

A And just-- Sorry, if I can just put that into context.

Q Of course.

A There are members of my team who every year take five-- four to five weeks off every year in a row, and I've only done it once.

Q Well, can we go back to your witness statement, please? We're now going on to paragraph 54, which we'll find at the foot of electronic 123, and this is you coming back from your holiday----

A Yes.

Q -- and being told, "Well, you resigned, but you can't resign because we can't get anybody else."

A Yes.

Q If there wasn't a problem, why couldn't they get other people to do it?

A There was a problem. There was a huge problem, and it was a well-known problem.

Q And, at that point, you understood that Teresa Inkster also wanted to resign?

A Yes.

Q And she, I think, had quite a lot of experience in infection control.

A She was very experienced,

yes.

Q Do you know why – I mean, just to ask you at this stage, just in general terms – why others were not prepared to take on this role?

A They had similar views to me. They found the setup unsafe. People were scared going to SMT meetings, scared to speak up, scared of the ICD meetings. There was-- It's hard to describe because we're all grown-ups, but there's fear involved in that-- There was a toxic relationship within that team, and I was not the only one to experience it.

Q Okay, can we move on to the next page of your witness statement, electronic 124? A couple of things crop up in paragraph 55. Dr Wright, so that was the person you originally shared the role with when you started, said that they "detected mould including Mucor ... in air samples from 2A." Is that a significant finding?

A Yes, Mucor is particularly-- a very virulent organism in the wrong patient, and these are the wrong patient group. It can be overwhelming infection within a few days. It has a high mortality rate, and it's the one that would strike fear into you, basically, if you have a patient with Mucor, even more so than Aspergillus. It's a very nasty-- It's actually not one bug, it's a number of

different species fit into that, that category. But they're basically rapid growers and very pathogenic in that patient cohort.

Q Because 2A was still functioning as a paediatric BMT unit, is that correct?

A Yes.

Q Now, in the next paragraph, there's a name that crops up, Anna Maria Ewins. Who's she?

A She's one of the paediatric haemato-oncologists.

Q She's raised concerns about safe patient placement. Now, I know that's an issue that has concerned you at various points.

A Mm-hmm.

Q Just so we're all understanding what we're talking about, safe patient placement, what are we talking about here? What's the question?

A Where's the best place to put this patient?

Q So somebody arrives and someone has to say, "Oh, this patient is suffering from X. Where best to put them?" Is that what we're talking about?

A Yes, so if it's a TB patient, you shouldn't have to be running around wondering what the pressure cascades are. It's Room X on Ward Y. For the bone marrow transplant patients who need a protective environment, we know

which ward it is. We know which rooms that they are.

So patient placement policy within Schiehallion, where there's a range of different room types, if you like, you need to know, “Right, well, which patients and when do they go into this room, and which patients go into these rooms?” And “safe” means it's a short term, I would think, for they've met the standards and the validation and are under the continuing monitoring quality assurance process that you would have wherever that is.

Q So, if the validation's been done and the quality of the environment in the room has been monitored in the way you suggest, presumably someone needs to know which rooms are where and what properties each of them has?

A Yes.

Q If I'm understanding it correctly, if there is-- if that information is readily available with all that information, then there's no great difficulty to it. You don't need to consult anybody, you just know, "Well, there's a negative pressure room with this pressure available on ward such and such."

A Yes, so a big hospital like that, not everybody might know what's in all the wards, so you need an SOP or a place where people can go, or if you're new to the hospital, so you can say this is where we put these types of patients, which is different from getting to that document. Getting to that document, you would have to have all the information in order to come up with that document, but the patient placement in itself, it's not a difficult thing to interpret, but it has to reflect reality.

So you could produce a piece of paper that actually doesn't reflect reality. So you might say, "All these PPVL rooms are where we're going to put all our TB patients." Fair enough, but if you know that actually they've not been leak tested, they've got HEPAs missing, all that sort of information is what underpins the SOP to make it a useful document reflective of reality.

Q Well, I suspect we may come back to SOPs, but if I can just ask you a general question at the moment: as of 10 August or thereabouts in 2015, were you aware of an SOP which allowed you to access that kind of information for patient placement?

A No.

Q And when Anna Maria Ewins raised these concerns, what are the concerns that are being raised?

A So she'd raised them with Pauline, so that was when I was off, and she had emails with Pauline. And Pauline was updating me on my return to say – I think that it's email but also

discussion – that clearly the situation in Schiehallion hadn't been utterly resolved in that timeframe.

Q Now, in paragraph 56 on the same electronic 124, you refer to a conversation with Professor Leanord, who was, I think-- was he your line manager?

A Yes.

Q Was he still your line manager at that time?

A Yes, yes.

Q And you were talking about your concerns about the building and the infection control setup. According to your note, he says, "Why would you raise your head above the parapet?" Are you sure he said that?

A Yes.

Q And again, according to your witness statement, he says, you know, you'd be better to pipe down or things will be difficult, or words to that effect.

A Yes.

Q Now, again, is that something he actually said to you?

A Actually said, yes.

Q You then, rather more positively, say, well, you don't think he was threatening you, he just was trying to help you.

A Definitely, there was no threat involved at all. It was just genuinely, "You don't want to go there." Because I was probably agitating a bit, like, what can happen now? This is a problem. I've tried to resign. I can't resign. There's problems with the buildings. It was weighing on me and, at that time, I had a good relationship with him, and he was aware of all the difficulties I'd had with Craig Williams.

I was suggesting that we needed to do more about the building, and that was his-- his take was, "Why would you put your head of the parapet?" It was, you know, "Don't go there." It's friendly advice, I think, is how I took it.

Q I suppose the follow-on question is this: if you're raising issues which are, to use that horrible phrase that everybody likes, patient-focused or focused on patient safety or patient health, whatever you'd prefer, presumably, the consequence of not putting your head above the parapet is you don't raise them?

A Yes.

Q Which sounds a little odd if you're focusing on the patient.

A I just can't get my head around that idea at all. I think you've got a duty to patients, whatever, you know, to act in their best interest. And it's fair enough to say that not everybody will readily see what the risks of ventilation-- like, you know, the bit of pressure differential, the missing-- Not everybody appreciates

what that-- how that actually materialises as real risk. And it's not to every patient, it's to specific cohorts of patient.

But, you know, I think in our training, in medical training, it's really a core foundational principle of any interaction with patients that you've got a responsibility to act in their best interests. And just, you know, a bit of discomfort for you or just not being terribly popular, that doesn't come into any equation that I know of for patients. So, you have to act in the patients' best interest. That is, you know-- That is a foundational part of your job. If you're not doing that, you're not doing your job.

Q So, at this time, we're still in a situation where you've tried to resign but can't. Teresa Inkster has tried to resign and can't also, is that right?

A Yes.

Q No one else is willing to step up. Then there is something called the David Stewart review appears on the scene, commissioned by the Board. Now, you say you believe that came about as a result of Anne Cruikshank. Now, just so we're quite clear, Anne Cruikshank is?

A She was the clinical director for diagnostics at the time.

Q Perhaps we can just give you a moment to get the top off that bottle.

A Sorry. Thank you.

Q No problem.

A Thank you.

Q And Mr Stewart was who? Dr Stewart?

A David Stewart was the chair of the AICC and, I understood, he was an associate medical director who had some sort of role with infection control.

Q This was the individual that you knew he chaired the AICC----

A Yes.

Q -- but you weren't quite sure what position he held that----

A Yes.

Q -- made him do that. So you and Dr Inkster got in touch with him when that was announced, is that right?

A Yes. I think we'd had some dealings with him before through Anne Cruikshank. I think Anne Cruikshank suggested that this might be a way forward. I think there was recognition that this was not a good circumstance and that we needed to work through it.

I think I'd sent him some copies of emails to illustrate what had happened in that summer and why-- the reasons behind and Teresa and I stepping down. What I'd understood from Anne Cruikshank was that Tom Walsh had said he had no idea why we had done that.

I would have expected-- The reason I sent my resignation to Brian Jones as head of service is that I would

have then thought he'd have shared it with Tom Walsh. Now, I don't know if he did or not, so it may be fair that Tom Walsh didn't know why we'd resigned, and that came to the fore later because Anne Cruikshank--

And there's some mistakes in some documents that suggest I resigned twice that year, but it's a misunderstanding of the fact that I sent that original resignation letter to Anne Cruikshank because eventually she said, "Well, Craig doesn't know either why you resigned," and she wanted to show him my letter.

So, obviously, I thought that was fair, sent it Anne, she showed it to Craig at that point. So, it does seem that, in the interim, neither Tom nor Craig knew the contents of my resignation letter. On the other hand, I think I'd been very clear with them at the meetings I'd had with Tom and Craig about things I wasn't happy with, like I wanted meetings and minutes and those sort of things.

I'd already mentioned that and had already spoken to Tom about difficulties I was having with Craig. So, whilst the exact content they may well not have seen, the underlying features of it, they should have been, you know, aware of.

Notwithstanding, I had sent some of those things to Dave Stewart and my understanding of the point of that meeting was-- Dave Stewart meeting with all of us was to understand the patient safety issues because that was really the-- that was what was concerning us far more than the difficulties with working within the team.

The only reason we brought up the team working was it was so intrinsically linked with not being able to deal with the patient safety issues, so you have to-- you can't really deal with one without the other. It would be foolish, really, because it doesn't make sense otherwise. So, we had a meeting with Dave Stewart. Sorry, I think I went on there.

Q Can we look at bundle 14, volume 1, 478, please? Now, I think this is said to be the communication that you sent to David Stewart.

A This was after the OD meeting, so he set up a meeting and interviewed a number of people within the infection control team, one of whom was Brian Jones, and that's where that document comes in that was handwritten by Brian Jones about Craig.

The reason I have that was Brian had given Teresa and I a copy because he was really concerned that we would go into Dave Stewart and not back him up. So he had things to say about the way infection control was working in relation to microbiology, and that there were so many people in microbiology who struggled to work with Craig that

Brian was definitely anxious that we would go in and speak to David and undermine him in some and not speak up on what was going on, so he wanted to check with us that we were willing to back him on these issues.

The interview I had with Dave Stewart, I focused on what we've just gone through, the narrative of the new build and trying to-- just being unable to do anything about it and that there was real patient safety issues and I didn't feel I knew how they were going to be resolved, were they resolved and what should I do.

But then the report that came out was that we would have an OD event, one day when we'd all get together, team working, which is good. I mean, that's a good idea, but we were concerned there's no output from our meetings with Dave Stewart about the patient safety issues, so that's why we felt we needed to write it again.

Q That's essentially what we see in the first paragraph, where you say:

> "Whilst we acknowledge there are issues within the IC team with respect to functioning, governance, behaviour and culture, the focus of our concerns was and remains patient safety. It's unclear to us how the event this month will adequately address these concerns."

Then, you set out material, I think, on 478 and probably if we go also to 479, please, and, just for completeness, on to 480, possibly 481. You run through a whole range of issues of the kind we've been discussing earlier today and basically say you're not convinced things are being dealt with.

A Yes, and we recommend-- we ask for external expert opinion because I think, at this stage, we were saying something, if you like, and there were others saying other things and it gets to a stage where it's entrenched, and this is a repeated theme.

You really get to the point where you need somebody else from outside to either come with the evidence-- you know, with an expert eye, come in and say, "Oh, do you know, it really doesn't matter that you've only got however many air changes and here's why. We've got this brand-new piece of evidence. There's been a study somewhere" or, "We've done this in another hospital and we managed to get around it," you know?

I think nobody has a monopoly on all the knowledge, but I certainly wasn't seeing evidence that was convincing me that it was all okay, and I was not the only one. We felt we still had a duty to really get to the bottom of it, and that's why we suggested external input.

Q Well, I might just jump ahead a little bit and look at the output from the event, which is in bundle 14, volume 1, 464. Now, I don't want to ask you very much about this because a lot of it is self-explanatory.

"General findings." First of all, there's "tensions exacerbated by the operational structure," there's "leadership style, an ongoing theme," although it's suggested these are being dealt with. “Greater clarity needed around roles and responsibilities.” The one point I did want to ask you about was, near the foot of that page, given that you were an ICD:

"Whilst it is clear that concerns for patient safety is the primary motivator for ICDs when arriving at decisions"--

So let me just pause there. Is that correct?

A Yes.

Q Then Dr Stewart says:

> “There appears on occasion to be a lack of appreciation by some ICDs of the need to risk assess decisions [so presumably the same decisions] from an organisational/political perspective.”

Now, first of all, do you agree with that proposed need?

A There is a need for risk assessment and, I would say, clinical risk assessment because patient safety is why-- you know, hospitals exist for patients. Organisational risk I've heard a lot about over the years, usually in the context of weighing it up against patient safety, and I don't think that's an appropriate use of risk management as a concept.

As for political risk, I have no idea what that means. It's not something that I think is appropriate in the discussions around patient safety. I think organisational risk, if it's about, "Well, we may need to close a ward, we may need to move this service," yes, that's organisation in the sense of having to organise things in your service, but not organisational in the corporate image or your PR image. I have heard that on a few occasions, "But what about organisational risk?" and what is meant by that is reputational risk.

Q It crops up again, if we just scroll on to 466, where, in the second column, i.e. the first one with text in it, fourth bullet point, it says, "Lack of political/big picture awareness of some ICDs." Now, when you're taking the decisions that are mentioned on the first page about-- decisions about patient safety, do you require a political and big picture awareness?

A You need awareness in the sense that, say, you're going to move the Beatson back, you're going to have to tell

the Scottish government. That's why you have a route through ARHAI. You know, we've already heard about ARHAI, so they need to know what's going on so that they can know how to accurately inform people.

There's maybe things you, as an infection control doctor, haven't thought of about the knock-on effects, but not as a weighing up against, so, "We're not going to move the Beatson because it's going to be very embarrassing for us." That's not a thing. You're not going to move the Beatson because it's not safe for the patients.

If you do need to move the Beatson because it's not safe for patients, then you need to inform the right people to make it happen, and I think there's a subtlety in there and I would absolutely reject any suggestion that any of us didn't understand-- have a political awareness, if you like, or reputational awareness. What we weren't doing was going along with the concept that that weighed in the balance against-- one against the other. I don't think the concept of pitting reputational damage against patient safety and the actions you need to take for that is something that I can buy into.

THE CHAIR: Can I just ask a question of detail? We've been looking at what I take to be Dr Stewart's report.

A Yes.

THE CHAIR: It's undated. Can I take it that you were shown a copy of that prior to-- well, maybe you weren't. Help me with that. We've looked at your letter of the 9th-- your letter and Dr Inkster's letter of 9 November 2015. Had you been shown a copy of Dr Stewart's report before then?

A The first time I saw it was in the bundle. We got an email from Dr Stewart. I'm not sure if I've submitted them, but just saying that there would be an OD event, and I wrote back to say, "Is this all we get?" basically, to say, “What about all those patient safety issues?"

THE CHAIR: Right, so you did not-- Now, you say, "There will be an OD event." Help me with "OD."

A Organisational development, so usually that's HR-run, it's departments not getting on. It's, you know, a really important part of HR management of any organisation, organisational development, but it was being used and repeatedly used as a sidelining of the patient safety issues. So, to me, an OD event is not a solution to patient safety.

THE CHAIR: Right. I think I understand that. So, Dr Stewart conducted what he described as an organisational development event----

A He had an interview process. I'm not sure that that was organisational development. He did an investigation by

speaking to a number of us, loads of us, and then the outcome was a recommendation to have OD interventions.

THE CHAIR: Right, sorry, so I'm being slow on that. So, individual interviews.

A Yes.

THE CHAIR: He prepared that report but didn't provide it to you, and then there was some sort of meeting/gathering described as an operational development event. Did that take place?

A I don't think it took place. I don't remember it taking place. I remember that we wrote to say-- well, you've just seen the email about all the things, so it was recommended and I think-- I don't recall there being-- it may be a gap in my memory. I don't remember an OD event following on from this recommendation.

MR CONNAL: But we'll come back to that to some extent, my Lord. Thank you. (To the witness) Can I just take you back to your witness statement that we're effectively-- We're going on to paragraph 58, which is still on electronic 124, and what we're dealing with here is an email thread which you say includes a statement from Professor Williams that:

> "What [you] understood to be the ward 2A PPVL rooms were built to a national standard specification and were 'okay to be used for any purpose including transplants.'"

You disagreed with that statement, is that correct?

A Yes.

Q Why not? Why weren't they safe for that use?

A So, these were the PPVL rooms that were not built to the design, so they had the extract in the wrong place, for example. They didn't have the right turnover in the en suite and, you know, a whole lot of other issues.

Q Then you say:

> "Throughout August [so this is still August 2015] ICDs continued to be asked to confirm the safety of isolation rooms for infectious patients."

Who was asking?

A So, normally, if you're an ICD or you're on call-- so as microbiology, it's not unusual to get a call to say, "We've got a query MERS patient, where should we put them? What's the best place to put them?" So you need to know.

Also, if your rooms fill up-- so, say you've got two designated rooms for ID and you've got two TB patients, you may have a third, and with the best planning in the world, you can't always predict the

capacity for exactly what you need. You then risk assess and say, "Right, where's the second best place?" and to have that ability to have an informed choice, you need to understand what you've got and we get called about this both from wards but also from Infectious Diseases. So the infectious diseases consultants would call and say, "Right, where's the best place for this patient?"

Q I see.

A Or email.

Q You say in your witness statement that you kept asking Professor Williams for information about remedial works on isolation units so that you could help on that point.

A It was a moving feast, so it wasn't a point at which we had, "Oh, all the rooms are now fit for purpose." So sometimes some would fail, others were having work done. It changed all the time, which-- you know, you can have an Estates program and that's all very well, but the impact on the clinicians are, "We've got a patient today, now, in A&E. Where do we put them?"

Q You note then an incident, which you date as 30 August 2015, where high-risk infectious disease patients had to be transferred to Monklands, so you couldn't take them in the hospital. This is in paragraph-- still in 58. I'm being reminded it's now page 125. So they had to be sent somewhere else?

A Yes, and that was due to, I think, there were so many incidents with the PPVL rooms, but I think I probably picked on that one because I had an email trail on it where the PPVL room clearly failed. So it was not plus 10 pascals from the lobby into the corridor, it had gone either to negative 20 or plus 20, something completely wrong, and I think a damper had come down. But there were so many incidents around the PPVLs that that's why there was a constant stream of, "Which one's right? Which one can we use safely now?"

Q What you said was that the same design was used for the isolation rooms in 2A, isolation rooms in the PIC, which is paediatric intensive care unit?

A Yes.

Q Adult intensive care unit for infectious diseases patients and BMT patients, and two rooms in 4A, is that right? So these were all designed in the same way?

A Yes.

Q You say, "Well, maybe that means we have a problem in more than one place."

A Yes. I think once you realise that-- If there was going to be any validation and effort made around ensuring something was right, it's going

to be these higher-spec units. So, if these aren't right, you begin to think, "Well, what else isn't right?"

Q Do you remember which rooms they were in 4A or do you not?

A There were two rooms, and I think this actually is some of the root cause of some of the issues. They were-- Craig would refer to them as "the BMT rooms." I think the concept was the procedure; it was almost like there was a procedure that would happen in these rooms.

They were actually not on 4B, they were on 4C, and, actually, that was meant to be renal rooms, and they had actually wanted negative lobby rooms and that was for your infectious immunocompromised combined type of patient, and that's in the original ask, I think, from renal.

So not the PPVL room, but the negative ventilated lobby room, but then those two rooms became, I think, in some of the correspondence I see those are considered "the BMT rooms," almost like it's a procedure, but actually what you need is accommodation for the longevity of their immunosuppressed state. So it's not just you pop in, you get your procedure----

Q And you go home.

A -- and then you go-- yes. So you need a bone marrow transparent unit accommodation for the duration. I think that's where some of the confusion-- because some of the air sampling was only done in those, or was going to be done in those two rooms, but it wasn't-- I wasn't leading on that. I wasn't doing it, but piecing the bits together, those two rooms caused confusion. I don't know which numbers those rooms are now.

Q I suppose the question might be that, as at end of August 2015, was there a patient placement SOP which identified which rooms were okay, which rooms were substandard, which shouldn't be used and so on?

A No, no. Not to my knowledge.

Q In paragraph 59, you gone to make a general point about the ability to isolate infectious patients because that's an area of risk, and I suppose we can understand that. Then you say that the whole question about PPL rooms kept going right up until 2020.

A Yes.

Q What happened in 2020 that meant it wasn't an issue?

A So, it's a really long-- lot of information around PPVLs because they needed leak testing and there was problems with that. There were baffles that were in the wrong way, they were upside down, and we got piecemeal information around when these were being fixed.

I think I've put in some emails around Pamela Joannidis was tasked with getting a list of all of these and when they were finished off, and that was right back in 2015. Then early 2016, I asked for-- "Can we have this list?" and it hadn't been done and then the suggestion was that it had actually been my task, even though I've got emails to show that it had been allocated Pamela.

So, again, try and start again, find out what's going on, go visibly check. You know, if it says there's a HEPA and there is no HEPA, then there is no HEPA, and try and nail down the realities. On top of that, there's this nagging issue of they're not the right design. So even if you've leak tested it, even if you've got 10 ACH in the actual bedroom, you've still got the extract in the wrong place in the bedroom. The importance of that is that you can-- if you've got the extract immediately where the clean air is coming in, it can be sucked out straight away. So the rest of the room is not actually having an ACH.

The air change can be calculated because you're putting in X amount and you're taking out X amount, so you reckon you know what's going in, but it doesn't take into account that it's not doing the job it's meant to be. So it's just going (makes suction noise). You've got hyper-clean air at this level of the ceiling, which is not where you need it. You need the air to be moving from where the patient is contaminating the area.

So that's where this-- I sort of alluded to earlier, that's-- the second big question is are these actually functioning as we want them to? This became really, really important in COVID because COVID is airborne, and ventilation is utterly key to minimising the longer, distant risk. So if you're very close to a patient, it's PPE that's vital, but at a more distant space, you need ventilation to remove the aerosols.

The first few cases-- we obviously, at that point, didn't know it was going to be such a huge pandemic, but the first few cases we were treating as a high-consequence infectious disease like MERS because it's not that dissimilar. It's a virus that's vaguely related to MERS, so that would be the sort of ballpark we were thinking.

So the first few cases we would plan to go into the best airborne containment that we would have. That's where it became important again. It brought it to everybody's mind, is that we are preparing for these cases. "Where's the best place to put them?"

And it turns out that we still didn't really know, and by that time, Marion Bain was involved. You know, there's a lot of events in between, but I remember

having a meeting with Marion Bain in the paediatric unit and they were wondering about where paediatric cases could go and whether these PPVLs were good enough. I said, "Well, I can go and have a look at them because here's"-- you know, just rattled off all the potential problems with them, and she said, "No, you're not allowed to. We don't-- you're not-- we don't want you involved in this."

But then I bumped into one of the paediatric ID consultants running around – because they had enough to be worrying about trying to get their clinical plans ready for this potential influx of pandemic patients – and she would say, "Oh, I need to speak to Estates. Apparently, they're not negative pressure rooms. They're PPVL rooms." Starting from scratch again, and I felt, "This is not fair. This is not their remit. It's not their area of expertise." We're, what are we, four years into the building, maybe five years, and we've lost the learning that we should have started in 2015. It was really very frustrating.

It turns out that PPVL rooms, of course, are better than something that doesn't have specialist ventilation. They're not negative pressure, but that's-- this gradation of, "What's the best we've got?" And when the-- you know, when things take off, you've got to just say, "What's the best we've got?" That you're

no longer in the planning stage.

But it also then got confused, and in COVID, it became-- the ventilation being poor in the normal rooms became a big issue because, obviously, we very quickly went beyond the few 10 people. We've had more than that very quickly. You couldn't put them all in the PPVL rooms, so now you've got your single side rooms, and that's where the ventilation being 2.5 really starts to matter. If you want, I can go on, but we can come back to that----

Q No. I think I probably picked up a reference to 2020 and set you off on that trail.

A Probably, yes. Yes.

Q So that fault is entirely mine. Can we just go back, then, to the chronological steps through the process because we're coming now to a section headed "October," and another name appears, Dr Redding. Now, the Inquiry's already heard from Dr Redding, and she seems to have written to David Stewart saying that a number of people are still concerned about the building. Are her concerns similar to the concerns that you and Teresa Inkster had?

A Yes, they'd be-- I think she would be acting on our concerns and other colleagues' in the department.

Q So she writes to Dr Stewart, and perhaps we don't need to go through her letter, which no doubt says similar

things, and then in paragraph 61 – it's at the foot of electronic 125 – we go back to the organisational development day, to which you respond by saying, "Well, I think we've more important things to do than organisational development, however interesting that might be." And I think the letter that's referred to there, or the summary of concerns, is the same one that we've looked at just a little earlier in the course of today.

A Yes.

Q So I won't ask you to go through the bullet points which follow if we go on to 126 electronic because these are all points that you've touched on in one way or another.

A Yes.

Q I do want to ask you about paragraph 62 because what you say there is you were involved in an investigation. Now, who involved you and what kind of investigation was it?

A Yes, that's maybe not the best phrase. So, as an ICD, you get involved in things like increased rate of surgical site infections. So the orthopaedic team-- so in my role as the site ICD, which I had not been allowed to give up and so obviously you're trying to do your job--

The orthopaedic surgeons were concerned about their rates of infection. I think any clinical team doesn't like hospital-acquired infections. It's generally

a very bad thing for any specialist clinical team. They're busy trying to fix hips and knees and give cancer therapies, and an infection is usually a bad thing for their patients, really bad outcomes sometimes.

So if a clinical team ever says to you, "I think we've got a problem," you have to take it very seriously. It's not something that-- you know, they're the experts in their own patient group. So, I had a----

Q And was this about October 2015, just to ask that question, as far as you can recall?

A I think if I've said around that time, it must be. I'm slightly foggy on-- It would have been after, because those theatre validation dates-- information went to Craig, who-- and it went up to Anne Harkness' group. And then this was me beginning to rediscover or find out for myself what was actually going on in the theatres.

So there was an increase in surgical site infections, so I pulled together a group, as an ICD would, to look at A.) what the concerns were, pull some data, get the organisms that would be involved, and then the WHO have agreed a lot of data-- you know, things you have to look at for surgical site infections from temperature of the body during the operation, antibiotic prophylaxis.

So I basically just did a whole--

every single possible contributive factor and we nailed-- you know, went through them. Theatres and how they work is one of them, and how doors-- how many times doors open and close during a procedure is very much related to contamination and infection rates, and also practices in and around the theatre. So it turned out quite a few of the orthopaedic surgeons had concerns about the suites and how they worked.

So I went and did a visit, a walk around, and at one point, I took John Hood with me because he's, you know, an expert in ventilation, and there were quite a lot of issues for a brand-new theatre suite. So this is the new QEUH suite, and I knew that the air was going from the prep room, which is normally the ultraclean bit-- sorry, not the ultraclean, but cleaner, so you have a cascade of cleanliness.

So the clean air comes into the prep room where you lay up instruments. They get moved into the theatre where you're going to do the operation, and the air has to go there and then the air has to go out of the theatre to the less clean areas.

So the most clean area in that setup should be the prep room, but it was being used as an access point into the theatre because people, the users, thought it was an access point and the air was coming

the other way, so going from the theatre into the prep room.

So I actually took a bubble machine in to demonstrate which way the air was going, and Ian Powrie was there as well, and John Hood. Because I thought-- at first, people didn't believe me that the air was going that way, so the bubbles demonstrated beyond doubt that is where the air is going. So that would change how you would use the whole thing.

The other really big issue was the doors were automatic doors and they were set too sensitive, so the minute anybody was anywhere near them, they would open. So the whole time through the operations, the doors were flapping in all directions, so this is very bad for turbulent flow.

So I identified physical issues. There is an allowance for the shared prep room in the HTMs, from memory – the English suite but not in the Scottish suite – but that's okay. There's some basis for it. If you use a shared prep room, you have to have interlocking doors. So, if you're going to use that design, you must have this feature. That feature was absent. There's other-- I wrote a long document about it.

Q I think there are a couple of questions I want to ask you about that because what you say in paragraph 62 is two things: one, that the orthopaedic side

of the world, the orthopaedic team and management, were happy with you doing this and what you'd done.

A Yes, very.

Q And the second thing you say is that they say they've been struggling to get anybody to do anything about it.

A Yes.

Q Now, Professor Williams says he knows nothing about anyone commissioning a report by you into these areas, and the Surveillance team does surveillance all the time. Taking these in order, would he not know if you were doing a report on these theatres?

A Yes, definitely, but I didn't need it commissioned; that was my job. You identify a problem and you deal with it, so I was informing him of what was going on.

Q So no one needs to come to you and say, "We hereby commission you to do a report on the orthopaedic theatres and the infection rates"?

A That would be odd.

Q I think the inference is Professor Williams doesn't remember there being a problem that needed dealt with because the Surveillance team was doing surveillance. Is that right? Is that what they do?

A Well, this is the problem, is that the Surveillance team were saying there's no problem. The orthopaedic surgeons are saying there is a problem and the problem with the surveillance is that it was being--

Well, I went through the-- I did a case-by-case check and there were-- we had too high a rate and I realised that some cases were not being counted by the Surveillance team because they missed the cut-off by a few hours. So there's a-- oh, I can't remember the number of days. Sorry, I'm beginning to get tired.

There's definitions, right, there's definitions that are WHO and also UK-wide for what constitutes a surgical site infection. They're different for C-sections, orthopaedic sections-- infections and neurosurgical, for example. But one of definitions is the surgeon themselves say it's infected, so if a surgeon says to me, "That's an infected joint," I'm not going to be arguing with them; that's an infected joint.

Because you don't always get cultures, you don't always get other signs of infection. They've gone into the joint, they've seen the pus, whatever it is that they say is an infection, they're treating it as an infection. I would, as a local team, be saying, "Right, we're going to count that as a case and we're going to count this as a case." And Surveillance will come and say, "No, that's not a case because it doesn't meet these

definitions," which are to the hour, and some of them were just missed.

So, I compared-- I got my own list because I'm able to get it. Because I'm a microbiologist, you have access to what's going on. My colleagues also felt that there were too many orthopaedic infections. It's just a-- you know, sometimes you can't quantify it. It's just something in the air, so you go and you find out, is this an issue or not?

And then, at the meeting, the first meeting I had, there was quite a lot of tension between the orthopaedic surgeons and the Surveillance team because there was this “no problem,” “there is a problem,” “there is no problem.” And my view was, “Let's go through all the checklist, make sure we've got everything in place already.”

You always find things you can tighten up, always. But the theatres being so colossally wrong, if you like, they weren't functioning, that was, to me, the outstanding factor that we found and that needed to be fixed. And then once you've fixed that, you can then say, "okay, the doors aren't opening. Everybody's using the theatres properly and we still have a little bit of excess. Is there more that we can do?"

So, I did get a very complimentary email from the manager for orthopaedics and, as a result of that, we actually set up a MDT for orthopaedics and microbiology, which is still going to this day, and it's-- I'm no longer involved, I just helped set it up. My colleague Pauline Wright and then other ID consultants have run with it and it's been one of the most outstanding sort of developments of quality of microbiology input into clinical teams, and that came about through this interaction with the with the orthopaedic surgeons.

THE CHAIR: Right, that was quite a lot.

A Sorry.

THE CHAIR: It's my job to keep up. I wonder if we could tease out what you've said. Now, the starting point is when Mr Connal put to you what he understands Professor Williams' position is, that he didn't know about what work you were doing with the orthopaedic surgeons. He was not aware that there was a problem because the Surveillance team were, as it were, surveilling. Now, point one, have I understood what the Surveillance team is and what they're doing? Now, what I think it is is a reference to microbiologists in the microbiology lab. Now, am I wrong about that?

A No, so the Surveillance team----

THE CHAIR: You've got to take me through it step-by-step.

A Yes, sorry. The Surveillance team is what we referred to before the ICNs, who are tasked with surveillance, so that was Anne Kerr who was leading on surveillance, so that comes within the infection control team. And they do surveillance of C. difficile, they do MRSA and nowadays they do E. coli, Bacteraemias. That's fairly new since then, and they would choose-- each trust would choose which surgeries they would do surveillance for, so it's very select.

THE CHAIR: Right, okay, so it's not the microbiology lab----

A No.

THE CHAIR: -- it's the Infection Prevention and Control team.

A Yes.

THE CHAIR: Now, the object of their surveillance, is it limited to the surgical theatres or is it not?

A It's limited to the type of operation, so you can choose to do C-sections – so Caesarean sections – and, say, hip operations, but you're not doing every single orthopaedic operation. You're choosing a subsection, and you've got definitions and surveillance tools to follow up hip operations, for example.

THE CHAIR: Right, and your surveillance tools are what triggers in relation to specific infections?

A Yes, and they would follow up-- I think, at the time, they would follow up any positive culture from an orthopaedic sample. Or you could clinically let them know that, "I think, this is an orthopaedic infection," and if it was a hip operation, be followed up. And that was part of the problem because there were knee infections as well, so if you're not looking at it, you don't see the whole picture.

So the surveillance is national. Some of it's mandatory, some of it's opt-in/opt-out. It's very resource intensive, so you do need a big team and data backup. But it is no means comprehensive and it doesn't always cover the areas that you need covered in the context that you're working.

THE CHAIR: But it does include every positive report?

A They will have access through ICNET, through the positive reports.

THE CHAIR: Right----

A How they work that, I'm not 100 per cent sure on. How they use that as a trigger tool, I don't actually know.

THE CHAIR: Again, if I followed you, it says, what-- relying on sampling may miss----

A Yes.

THE CHAIR: -- an occasion of infection, which is simply clinically identified. In other words, the person looks ill.

A Or I know in the orthopaedic

setting, the joint, the loosening, the tissue, you might not grow an organism because either they've been on antibiotics – so that really reduces your ability to grow the organism – or it's a fastidious organism that's very difficult to grow.

So there are reasons why, and whilst you've got a much more confident diagnosis if you've grown, say, a Pseudomonas from the inside of a joint, which should be sterile, you're sure, but equally, in any definition, you have a surgical opinion that says, "This is an infected joint as far as I'm concerned."

THE CHAIR: Okay. I think I've got sufficient command over it. It's just I wasn't keeping up.

A Sorry, I'm going too fast.

THE CHAIR: Mr Connal, I don't think this is a topic dealt with in the statement.

MR CONNAL: No, no it isn't.

THE CHAIR: Right.

MR CONNAL: So, I think just to follow up on that last point raised by your Lordship, a surgeon who spends their life doing hip ops or whatever, and many of them specialise in a limited number now, you may think he might know whether the hip is infected or not.

A Or he might say it may be, but then if they see five that are maybes and we've not grown anything from it, you may start to think, "What's going on?" There's very little that's totally black and white in diagnostics anyway, but I think your first port of call is to take your clinician seriously.

Q Thank you. Now, we can probably move through a few paragraphs now. If we can go to 127 of the electronic bundle, paragraph 63, you were saying there you'd "raised your concerns through the IC management structure," and you were:

> "… aware that senior Board employees had been told [...] Dr Armstrong, Mr Archibald, David Loudon, and Bob Calderwood. "

How did you know that, just in passing?

A Penelope had told me about Bob Calderwood. I knew about Dr Armstrong and Mr Archibald through that email from Tom, and David Loudon because I had been at that meeting and he was present at the meeting that we'd move the Beatson back.

Q Your immediate line manager was Professor Leanord----

A Yes.

Q -- but then Dr Cruickshank was----

A Yes.

Q -- his manager, and then you decided at the end of November to set

out a whole raft of things for her to look at. One of the criticisms that's made of you is that you send too many emails, probably with the odd adjective attached to that phrase. Why was it necessary to send another email with a whole list of concerns?

A I think because there were more incidents happening. In between, we had an Ebola case that actually came in, we had neurosurgical issues. There didn't seem to be resolution and also we were offered this OD event.

We weren't getting anything back from Dave Stewart, and Anne Cruickshank already knew about this. She was very approachable and sensible in saying she understood how the organisation worked. If she said, "Actually, you need to go this direction and do it this way," that would be very useful.

So, we were just exploring what's the appropriate move here. I can't give up infection control because nobody else will do it. I'm still not assured about patient safety issues or the approach to patient safety issues. I have a duty of care to patients across the board. I mean, when I say “across the board,” I don't mean across the whole Board. It's just a phrase, so not responsible, but anything outside that site. And so, yes, it was another-- and my colleagues still had

concerns as well, so I knew I wasn't the only one.

Q I'm just puzzled by the juxtaposition of different paragraphs here because here you are saying, "I'm still not happy, I'm writing again in detail," and then, in paragraph 64, it appears that Dr Stewart comes to you and Dr Inkster – because you're both the people who wanted to resign – and saying, "Well, can you confirm whether your concerns have been addressed?" It seems an odd sequence, but can you shed any light on that?

A I presume Dr Cruikshank spoke to Dave Stewart. I think I've got-- There's quite a few emails around that. I think that's exactly what happened, because we hadn't heard anything back after our email delineating those issues with bone marrow transplant, Ebola planning, all the neurosurgical theatres. These are big things, you know. These aren't just small issues – a few MRSAs here and there, or urinary tract infections going up. These are massive issues in anybody's workload.

And so in between that email to Anne as a sort of poke, "Are we expecting something else or is this it over? What's going on?" And then we get this, which is "I'm assuming everything's fixed now," and I-- it just seemed-- I wasn't sure how that it had

been fixed.

Q Okay. Perhaps we can look at bundle 14, volume 1, page 490, please, and I think what we're told is your reply. This is copied to Teresa Inkster and Anne Cruikshank. I think actually we see at the foot of that page David Stewart saying, "Well, we haven't replied formally, but things have moved on and many of these things have been looked at."

A Yes.

Q And you're saying-- well, in your email, you say, "Well, thanks for your letter, but my concerns remain, and further issues have arisen." So, perhaps if we just look at the fourth paragraph starting, "The key here."

A Yes.

Q So here we are. We're in December, so the building had been occupied for six, seven, eight months:

> "We are picking up problems with regard to the building and continue to have question marks over the suitability of the accommodation with regard to specialist areas ... ID unit, isolation rooms, theatres, BMT in children and adults."

I think you're trying to encourage some external assistance, since whatever you're concerned about hasn't been resolved, is that right?

A Yes.

Q Can you tell us-- I mean, this must have come as a disappointment to Dr Stewart because he was hoping you were going to say, "Yes, everything's fine now. Thank you very much," and instead you say, "Well, actually, there's more stuff now." Did you get a reply to that, that you recall?

A I don't think I got a reply.

Q Okay.

THE CHAIR: Something puzzles me. You had written to Dr Stewart on 9 November listing a number of pretty substantial concerns, some at least of which dealt with the state of the hospital building. And he writes back, maybe about six weeks later, on 22 December, and says, "Is everything okay?" I mean, that seems a rather odd way of--

A Yes.

THE CHAIR: First of all, you're raising questions that couldn't really be dealt with within six weeks and probably would have required work on the hospital building----

A Yes.

THE CHAIR: -- which he would presumably be aware of in a general sort of way. I mean, it's an odd question to ask if he has read your letter of 11 November-- of 9 November.

A I think this illustrates why I had to keep writing letters. And I have to say,

it's not easy to write letters like this up the chain. You know, you do-- you feel-- you feel bad about it somehow. I would have loved to say, "Yes, it's all fine. Lovely." You'd be popular if you said that, but it wasn't. I couldn't just say, "Yes, it's okay" because I've no evidence.

Maybe he'd done things, but I doubted it because I kept having these problems, and I'm on the wards, I'm seeing what's going on and I'm hearing from clinical colleagues who are also bemused as to, "Where are we with all of this?"

So, I think that put me in a bind. I felt that that-- It's quite-- I would say it's a technique, and it's not unique to GGC, where it puts you, as a lower-down person, in a bind to try and please higher-up. It's hard to explain, because your instinct is to go, "Good news story: we fixed it," but actually, you've got to then steel yourself and go back with bad news. So it was decidedly not reassuring.

THE CHAIR: So it's not really an honest letter?

A No, I find----

THE CHAIR: I'm talking about Dr Stewart's letter.

A Yes, it was-- It seemed to me disingenuine (sic), and I wanted to call it out without being insubordinate. It's difficult.

THE CHAIR: Thank you.

MR CONNAL: My Lord, I'm conscious of the time. I'm quite happy to carry on, but I know there are issues about when we should rise.

THE CHAIR: Well, in a sense, it's not just a matter for you and me, Mr Connal.

MR CONNAL: No.

THE CHAIR: Other people organise their time. Do you have a view on timing more generally? Is another day enough for Dr Peters?

MR CONNAL: Purely judging on the wholly unscientific basis of page numbers, we're about a third of the way or thereabouts – or just under – through the wording of the original statement, and I'm conscious that some of the latter stages are more narrative, less documents than those that are in the bit in the middle. I'm not sure I can say more than that. I would still hope that we can complete it tomorrow, but it's perhaps a little difficult to know exactly.

THE CHAIR: It's not entirely satisfactory to address the room, but that's what I'm going to do. Is anyone going to be inconvenienced if we were to sit for another half hour? (No audible response) Right, I'm getting that as a no. How about you, Dr Peters? Are you quite happy to?

A Yes, I'm happy to.

THE CHAIR: Right, well, we do

have backroom people who have to be considered as well, so let's go on to half past four but not beyond.

MR CONNAL: I'm obliged. I'm conscious it's a long session for you as well, Dr Peters, but I think we can probably cover a few more parts of the exercise.

A Yes.

THE CHAIR: (Discussion with unknown speaker *sotto voce*) Sorry, Mr Connal.

MR CONNAL: I'm obliged, my Lord. Well, conveniently, we're turning into a new year, a bright new year, January 2016, the second chronological year in which the hospital has been functioning. And what you say, notwithstanding my cheery demeanour in raising that paragraph, is that at the start of 2016 the position was still unsatisfactory. There was still concern about PPVL rooms, ID consultants were still asking questions about the likes of TB patients and so on. You, in paragraph 66, confirm you went to the Intensive Care Unit and found two rooms with incorrect pressure. So, in summary, beginning of January, you're still finding issues.

A Yes.

Q So, issues haven't all gone away in a happy way. Now, in the next paragraph, so that's 128 on the electronic version, you introduce a topic that the Inquiry has heard quite a lot about, Horne taps. You'll be pleased to know I'm not going to ask you lots of things about Horne taps, but the point you're making in paragraph 67 is you were told that there was an issue about Horne taps and their use in high-risk settings and whether that was a concern. You presumably heard that with something of a sigh because you thought, "Here's another issue." Is that correct?

A Definitely. Very disappointing.

Q So the point you make is one, perhaps, that's easily missed, which is that, in paragraph 68, you make the point that although the Beatson cohort had gone back to the Beatson, they still needed to come back to the Queen Elizabeth Hospital for certain issues, particularly, perhaps, intensive care-type issues. Is that correct?

A Yes.

Q So that was another of the factors. So you still had their cohort of immunocompromised people coming back, and you've mentioned PPVL rooms before and now taps. You went to see some rooms with Mr Powrie, is that right? In 68 in your statement? What were your away with Ian Powrie to have a look at?

A I think those were the PPVL rooms that were failing and, at that stage, we did a bit more analysis of what was

going on. There were so many incidents – I'm not sure which one this one was – but it might have been that a damper had come down and hadn't reopened, but because there was no alarms, nobody would tell and the pressure cascade was wrong.

So, that should have alerted, but a number of times I've picked up issues just by walking past and clocking, which is not the way to monitor a specialist ventilation place. It shouldn't rely on somebody with knowledge walking past. I would be hard-pressed, I think, just to remember exactly that occasion. There were so many of them.

Q It may be that an individual incident we needn't delay on because in paragraph 69 you deal with a quite different event, which is Professor Williams resigns, and you say, "Well, we better get a proper handover note" because he's the lead ICD, presumably. I think Professor Williams says he has no recollection of being asked for a handover note, but do you remember whether you ever got some kind of handover, any analysis of what was going on?

A I did not get any handover at all, and I did-- When I eventually handed on to my colleague, I wrote a handover. You don't need to be asked, basically. It's good medical practice to hand over.

Q The other thing which, perhaps-- I sometimes find it useful to look at these as if I was a complete outsider reading these things for the first time. But Dr Inkster – who was somebody who, according to you, had shared a lot of your concerns about what was going on and had participated in a lot of the email exchanges and letters and so on and so forth, wanted to resign but was told she couldn't – she's then appointed by the board as lead ICD.

A Yes, so they advertised for the post, which is good because they didn't always advertise roles; they were just sort of handed over. But there was a strange incident where Brian Jones came to speak to me and said I should tell Teresa not to apply because Alistair Leanord wanted the post, and that he, Brian Jones, was going to make sure he got on the interview panel and that I should tell Teresa not to apply. And I said I wouldn't do that.

I went to Anne Cruikshank and I said, "I'm really concerned that this is a setup. You know, this is-- It's open. It should be open competition. Anybody should be able to apply." I didn't understand why-- If Alistair was going to get the role on his own merit, there should be no need for Brian to be on the interview panel, and there should be no need for me to tell Teresa not to. The

reason given was, "Alistair needs to get to the board level somehow."

So, instead, I encouraged-- Teresa wanted to apply; I encouraged her. We even did a sort of, like, a mock interview-type thing just to get her ready for the interview. It's a big step. And, in the end, she got the role in open competition.

She's extremely well qualified. She has a master's in public health, for example, a lot of experience with being in the old Beatson, specialist in water, all the rest of it. She teaches master's level. All of this. She was a very good candidate for the role, so----

Q So, whatever the discussions were, there was a competition, Dr Inkster applied----

A Yes.

Q -- and got it in that competition.

A She did.

Q Thank you. Now, moving to April 2016. We see here you're talking about a water leak and, read short, I think what you're telling us here is about the discovery of a section of mild steel.

A Yes.

Q I suspect it's relatively obvious that if something should be stainless steel and it's mild steel, then it's within our knowledge that mild steel isn't as good in preventing corrosion, and there's an argument about whether it should have been there at all. Is that essentially what you were looking into?

A Yes, it was Ian Powrie who told me that this is the wrong-- it's not WRAS approved or it was very corrosive. He had taken out a piece and I saw a section of it. It was very corroded inside, which, for a new system-- I mean, you go to talks on water systems and you see these horrible pictures, you know, of biofilm within, and the perfect conditions are these corroded metalwork, and the biofilm just becomes very concentrated. There's nutrients, there's iron, there's all sorts in there, so it was not good.

The comment he made was that, having found one defect, so one piece of this kind of piping, it was likely to be reiterated throughout the building because they wouldn't have bought just one or two of these. They bought in bulk because it's such a massive, massive problem, and his worry was that how on earth are we going to locate where all of these are? I'm not sure they ever did or not, but that was, again, that education. I was being educated by Ian about this.

Q Now, from your angle, presumably the issue of concern was that corroded piping was a good breeding ground for organisms of one kind or another, which were undesirable.

A Yes, for Legionella and others.

Q Well, I'm going to ask you-- In fact, I think there's a typographical error

in your next heading where it says June 2017. I think it's June 2016.

A Yes. I beg your pardon, yes.

Q Before we get into June 2016, I'd like to ask you about a completely different topic, which is not covered in your witness statement. Because one of the issues that has arisen is when did people know that there had been some arrangement – and I'm using that in a neutral term for the moment – to not deploy SHTM 03-01 rates throughout the hospital? And how had that occurred, in what form, and so on, and when did people realise that?

I'm going to try and deal with this shorthand because we don't necessarily have every email in the bundles that are available here and to all of the participants in this Inquiry, although we can make them available in due course.

Ian Powrie dealt with this in his statement, and he basically talked about being chased for information about air change rates by people such as Christine Peters. Would it be right in saying that, from time to time, you were chasing people like Ian Powrie to tell you what the air change rate arrangements were for different locations?

A Yes, I think the earliest one-- email I found is either October or November, which was on the back of questions from Dr Erica Peters, who's an

ID consultant, and that was really on the back of having an Ebola case that had been on 5C, and we realised that there was no information about--

I'd been taken up with the PPVL rooms because that's where the patients were meant to go, but actually what is the spec for 5C. So I first started emailing about that, I think, late 2015. I don't believe I got it, but then the next time I was chasing it was a trigger from the CF team.

Q That's cystic fibrosis?

A Cystic fibrosis, yes. For cystic fibrosis, so, similarly, it's a respiratory ward. If you were going to build a brand-new CF unit, you would actually go much higher in your ACHs, even above six anyway. I think Papworth has up to 15, 10 to 15, so you're talking much better air changes.

But there was issues with the clinical team-- said, "We're really concerned about what turned out to be chilled beams," and at that stage, I didn't know about chilled beams, which had a lot of material on it. It looked really dirty. So, to an ordinary person, you say, "That's filthy. That's really disgusting."

So, I was trying to find out some information about risk to these patients as well. And I think it was the CF scenario that triggered the final information that I actually got back from Ian Powrie, which

said 3, I think, to begin with, and then at various times it was readjusted to 2.5. So sometimes it was 3, sometimes it was 2.5. Either way, it was half or less than half of what I would expect.

Q What Ian Powrie said, at least in his witness statement, was, yes, he was helping you.

A Mm-hmm.

Q He found air change rates of 2.5 to 3.

A Yes.

Q He thought this was a bit odd----

A Yes.

Q -- and sort of got back to the project team and said, "Surely not. That must be a breach of something" and was then referred to certain documents. Then he was chivvied again and went and got some more documents until eventually, he had a more complete set.

I wonder if we could look at bundle 20, please, 1495. Now, this doesn't have attachments. Just leave that aside for the moment. But what we have here, and I'll come to what follows it just very quickly, is an email from Ian Powrie to Teresa Inkster----

A Yes.

Q -- who may well have asked similar questions, and----

A I think she'd have – sorry – done this on the back of me telling her about the CF situation.

Q Right, thank you. So, this is an email that Ian Powrie sends to Teresa Inkster, Shiona Frew, who is what? Do you know who she is?

A No, I'm sorry. I don't know who Shiona Frew is.

Q No, and then he copies it to David Loudon, who we know was the project director or something of that kind; Anne Harkness, we've come across already; and Thomas Walsh. There are four attachments, which we needn't trouble with for the moment. But he says:

> "Hi Teresa, I can confirm a typical single room with en-suite is supplied with air at a rate of 40 l/s (equating to 3.1C9 ACH) and an extract derived via the en-suite at 45 l/s. The move away from the requirement in SHTM 03-01 for 6 ACH was agreed by the Board prior to formal contract award, the justification for the proposed variation to that specified and its acceptance is provided in the following attached documents."

If you just take it from me that number one is what we sometimes call a ZVP report, the ward ventilation strategy, two is an extract from something, a sort of exchange of communications which was put in a log, and then there's a

signed-off ventilation drawing. He then says:

> "As can be seen from the clarification log, the board accepted this proposal with the caveat, 'Negative pressure to be created in the design solution.'"

And then it said that "achievement of negative pressure design has been validated by Brookfield's design team..." So that seems to be a general change. So that was sent to Teresa Inkster. The Inquiry has that email in its system, as we've just demonstrated. As I understand it, on the same day, Teresa Inkster sent that email on to you. Is that correct?

A I've seen it before, so I'm sure she did.

Q Yes. Well, my information is she sent it on to you, not necessarily with all the attachments at that stage, but certainly in terms of narrative, and you replied saying:

> "Questions for DL [presumably David Loudon]: what was the IC input into the decision to deviate from the recommendations and on what evidence base?"

And then some comments about, "Was this regarded as enough for various patients with issues given that you were at that time looking at cystic fibrosis?"

And you also asked, "What negative pressure was stipulated and were HFS consulted on such a major change?"

A Yes.

Q So, the email from Christine Peters to Teresa Inkster which contains that information is not currently in the bundles that are available to the CPs or to the Inquiry, but it came to our attention, unfortunately, too late to be put in a bundle in time to use it in a bundle today. But these can be made available, obviously, in a bundle in due course, and I can simply say that I'm literally reading from the email as I put that to the witness.

Can I ask you a follow-up question, which is this: before you saw that email saying, well, is how it's all been agreed, did you know anything about a departure from SHTM 03-01 in terms of air change rates?

A Not in terms of design, but in terms of what was delivered. So, Ian Powrie had been, in the CF context, measuring and saying, "This is actually what it is." I thought that would be not what was asked for, so I did not know until then that that is in fact what was asked for.

Q That would accord, if I'm picking you up correctly, with what Mr Powrie said in his witness statement, that he finds air change rates of 2.5 to 3----

A Yes.

Q -- assumes that must be an error or fault or something, goes to find out about it and is eventually told, "Well, actually a different arrangement has been reached."

A Yes, that would be my memory of it as well because we were actually getting measurements, but it should have been picked up on validation, and the validation should have been available, so he shouldn't have had to measure it to find it out.

Q Well, I think we know the validation wasn't available.

A Yes.

Q I think my next question is-- I mean, you've been there since 2014. Mr Powrie was there earlier than that, in a reasonably senior position in Estates, you were in a senior position in infection control. Do you know why nobody seemed to know about this until, lo and behold, it appears in May 2016?

A No, it would have been part and parcel of the project. So, the same process that should have been gone through for the other specialist ventilation should have been the same process for all the ventilation because it's fully mechanically ventilated. So there was never a discussion around, "We're doing this because--"

You know, there may be there may be evidence, there may be something that says, "You can do this and mitigate it by doing something else." I have not seen that, and I've read a lot about ventilation, but you'd expect a derogation of that significance to come with a scientific justification and evidence base that says it's as good as or better than what you have.

Q In any of your discussions from 2014 until May 2016 on sundry subjects, some of which touched on ventilation, has anyone mentioned the fact that there was a-- let's call it a derogation, just for want of a better word for the moment?

A No, it was news. It was absolutely news at this stage. I thought-- I think, in my mind, I thought that it was-- that the design would definitely be six, but that there was-- because there was no validation, as in the experience we had with the PPVL rooms, maybe there was an error somewhere in the system that was delivering the wrong thing, and that we would maybe just need tweaked to get it right. So it wasn't a surprise that it was wrong when we measured it. The real surprise was that it was intentional.

THE CHAIR: Just to be clear, a typical single room with en suite, we're talking about hundreds of rooms in the----

A Yes.

THE CHAIR: -- hospital.

A Over a thousand.

THE CHAIR: Maybe approaching a

thousand?

A Yes, a thousand.

THE CHAIR: Mr Connal?

MR CONNAL: No, I'm just keen to check that nobody you encountered during any of your debates about ventilation at any of the meetings or any of the exchanges----

A No.

Q -- ever said to you prior to that, "Well, don't you realise that something different has been done on ventilation here?"

A No, and I'd have picked up on it immediately. It's also a very well-known standard. There were lots of people saying how hot the rooms were. The rooms were stuffy. They couldn't open the windows, so people felt-- And this is why I thought it was such a big issue. That's why I really wanted it bottomed out in CF because if you've got any respiratory issue, you can imagine just the feeling of stuffiness is actually-- it's claustrophobic. It's really horrible to be in that situation.

People wanted fans so they could feel air coming over them. People were just desperate to open the windows to get some fresh air in. That's why I wanted to bottom it out. I thought there could have been problems with the heating system. It was overheating and that's why-- you can confuse the feeling of heat and breathlessness as well, but it was really horrible for patients. It was a dry and stale, unpleasant place to put somebody with respiratory problems.

Q What happened after that, according to your witness statement at paragraph 74, is that Dr Inkster, who was, by this time the lead ICD, asked you to put together a list of ventilation queries that you wanted answered. The only question I have for you about that was, why would you be asked to do that as opposed to anyone else?

A I think, by this stage, you know, I knew what was going on. I'd already produced bits of documents, I'd done talks in the department. Nobody would have been surprised if she'd asked Dr Hood to do something similar for the other site, so she asked me to do it and I think, between us, we had a recognition that I was interested in ventilation and she had a greater interest in water. It's just one of these things that develop. I have a working knowledge of water. I wouldn't say I was hot at it.

Q Thank you very much, Dr Peters. Now, that brings us to 4.30.

THE CHAIR: Yes, I don't intend to sit beyond 4.30. Dr Peters, thank you for today and we look forward to seeing you tomorrow.

A Thank you.

THE CHAIR: I think, subject to

anything you have to say, we'll sit at ten rather than earlier. Are you content with that, Mr Connal?

MR CONNAL: I'm content. It's quite difficult at the moment to speculate. It depends on the extent to which we need to go into documents, not simply into the witness statements, but my anticipation is that some of the later sections we can, as I say, do on fewer documents.

THE CHAIR: All right. Well, we'll stay with ten o'clock. Well, can I wish you a good afternoon and we'll see each other tomorrow.

(Session ends)

16:32