SCOTTISH HOSPITALS INQUIRY

Hearings Commencing
12 June 2023

Day 4
Thursday, 15 June 2023
Dermot Murphy

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10:00

THE CHAIR: Good morning. Mr Duncan, I think we are ready to begin with our next witness.

MR DUNCAN: That is correct, my Lord. We have Dr Dermot Murphy ready to give evidence.

THE CHAIR: Right. Good morning, Dr Murphy.

THE WITNESS: Good morning.

THE CHAIR: As you appreciate, you are about to be asked questions by Mr Duncan, who is the counsel to the Inquiry. First of all, I think you are prepared to take the oath.

Dr Dermot Murphy
Sworn

THE CHAIR: Thank you very much, Dr Murphy. Now, the plan for the day, I do not know exactly how long your evidence will take, but it may go over into the afternoon. In fact, I think it probably will. We usually take a coffee break about half past eleven, so you can anticipate that. I say this to every witness, if for whatever reason they want to take a break, they must feel free to do so. So if you want to take a break, we will simply do that, but now I will hand over to Mr Duncan and ask him to ask what he wishes to ask.

THE WITNESS: Thank you.

THE CHAIR: Mr Duncan.

Questioned by Mr Duncan

Q Thank you, my Lord. Good morning, Dr Murphy.

A Good morning, Mr Duncan.

Q Can I just perhaps begin by having you give us your full name, please?

A Yes, my full name is Dr Dermot Matthew Murphy.

Q Are you a consultant paediatric oncologist?

A Yes, I am.

Q Where are you based?

A I am based at the Royal Hospital for Children in Glasgow.

Q What positions do you hold there?

A So as you have already alluded to, I am a consultant paediatric oncologist at the Royal Hospital for Children in Glasgow. I am an honorary clinical associate professor at the University of Glasgow and I'm co-national clinical director for the Managed Service Network for Children and Young People with cancer.

Q Thank you. Dr Murphy, it may just be me, I am having slight difficulty hearing some of what you are

saying. Could you maybe just slide the microphone a wee bit towards you, and one of the things that we have to do here is speak unnaturally slowly, which might help us a bit as well. I have got some further questions about you before we move on. I have some questions about the hospital and about your patients. I will ask you this question, why paediatric oncology? What drew you to that?

A So, paediatric oncology is a privilege to work in. It is a combination of the most old-fashioned doctoring. So you are at the patient's bedside and the family at a time when they are at their most anxious and most worried and most concerned and you combine that with cutting edge molecular medicine. So it's a fantastic combination of modern 21st century healthcare with very, very old-fashioned medicine that Hippocrates or anybody else would have been practicing in ancient Greece. So it's a wonderful combination of the old and the new, and it's a total privilege to be allowed to do that.

Q Just picking up on the new, do I detect from your statement that paediatric oncology, in a sense, is quite a recent subspecialty?

A Yeah. So, probably only 35/40 years old as a recognised subspecialty, and I think it's probably important to say it is a subspecialty rather than a specialty in itself. So in other words we're both paediatric specialists and oncology specialists, so we're very niche, and we deal with the incredibly rare and incredibly unusual, so it's relatively new as a speciality. Our organising body, overarching body within the United Kingdom, Children's Cancer and Leukaemia Group, grew out of something called the UKCCSG, United Kingdom Children's Cancer Study Group, and we had our 30th anniversary about two years ago. So that gives you an idea of how long we've been going as a specialty.

Q Thank you. A couple of points that I think arise from what you have just said that you allude to in your statement. How many centres for paediatric cancer care are there in the UK, roughly?

A Yeah. So, within the British Isles there's 20 centres for dealing with paediatric oncology. So we're supra-regionalised, and that's because we are dealing with stuff that is so rare and so unusual. So you need to have a large population to be able to generate patients so that we can keep our skills up.

Q The further point that

arises from that, I think, that you also allude to, does it follow from that that there is a lot of discussion with colleagues outwith Scotland and elsewhere?

A Yeah, yeah. So, I think I'd take it a step back from that. So even within your own hospital, there's an awful lot of discussion that happens with your working colleagues, and that's medical across the clinical spectrum. So, doctors, of which they'll be surgeons, radiotherapists, paediatric oncologists, but also physiotherapists, occupational therapists. It takes a whole team to look after a child with cancer. We can't do it on an individual basis, and all of those people will be specialists within their own rights. So you'll have pharmacists, for instance, who are paediatric oncology pharmacists. You'll have physiotherapists who are paediatric oncology physiotherapists.

So you're supported by highly trained, highly competent clinical colleagues, and even with that degree of support, there'll be questions that you are unable to answer with that group, and so we would then go out to colleagues, either within Scotland-- So we work very closely with colleagues in Grampian. We have joint tumour boards with colleagues in Grampian,

so that's Aberdeen. So we will have that discussion with them at a weekly meeting, and if we can't resolve it or we think we need to get further discussion, we'll either talk to colleagues in Edinburgh, or we will talk to colleagues who we know have a particular interest in the problem that we're looking at.

That may be a disease, or it may be as a consequence of the treatment that we're going to give, and if that expertise is within the United Kingdom, that's fine. If not, we'll go outwith the United Kingdom, and paediatric oncology is a very small world, and I use that term judiciously. So if there's someone in the States who is a recognised world expert, I will phone them or email them; if it's someone in Germany or in Italy, and we meet one another regularly enough that you can have that kind of conversation, and even if you haven't met them personally, you will have a professional colleague that you both know, and you'll make the introduction that way. So pride doesn't get in the way of delivery. You know, what we are is looking after children with cancer who, if we don't get it right, will suffer terrible consequences.

So, we go out of our way to make sure that we get the best evidential

care and, again, I think it's important to think that paediatric oncology and paediatric haemato-oncology is absolutely at the forefront of evidence-based delivered care. It might surprise you to know that an awful lot of healthcare actually isn't that evidentially based. Paediatric oncology absolutely is. Everything we do, we try and do from results of trials. Now, whether that's the combination of chemotherapy that we give or when you time your surgery or, in fact, the supportive care that goes on as well.

Q Thank you, and if we just take this question at a general level at this point, because it is one we will return to later when we start to look at this story. Am I to take from what you have just said that, as and when particular questions or problems or challenges arise, you and your colleagues would see that there is a network, not just within your own hospital but outwith the hospital and worldwide potentially?

A Yeah. Absolutely. Absolutely.

Q Now, can I ask you some questions, please, about your patients?

A Yeah.

Q Can you tell us a bit about the cohort of patients that you look after?

A Yeah, yeah. I look after patients with malignancies, so that's cancers, and those are cancers of what are called solid tumours and brain and spinal cord tumours. So that's any lump that you have anywhere in your body that isn't a blood cancer or a lymphoma. Yeah.

Q The age range of your patients?

A Is zero to however old the hospital will allow me to take, which is up to about the age of eighteen.

Q You have touched on this in your statement and, indeed, already in your evidence just now, the particular challenges from treating children are what?

A So there's a biological challenge, and that is that cancers that children and young people get are very different to the cancers that you or I or adults may get. They're biologically different, although we treat them in very similar ways, so with chemotherapy, radiotherapy, surgery, and now immunotherapy, but they are different. The particular challenges then of age group are that they're growing, so that the consequences of the therapy that we give is on a growing individual. So their potential

for getting problems from their therapy is higher.

We also have a unique problem, if that's the word, that most of our patients are cured or are curable and, therefore, we have to consider what's the long-term consequences of their therapy, and this is coming back to them being growing individuals. So it's fine to cure them, but you want to cure them so that they're not deafened. You want to cure them so that their hearts are still working, their kidneys are still working, and that has to be not just in 10 years' time, but in 60, 70, 80 years' time. So, if you like, that's the biological difficulty.

The other consequence of doing cancer work in children and young adults is the developmental things. So, communication with children and young people and their families is absolutely key to the delivery of healthcare, and the other thing that we have to bear in mind is consent, and we have to be able to give information in a way that the children can understand, and the families can understand. Obviously, if you're two, your level of understanding is different from if you're seven, which is different from if you're 10, different from if you're 15, and so we have to tailor the way we deliver information to children

and families dependent on how old the patient before us is.

Q Thank you. Now, I want to start to move through your evidence if I may, and I will take this chronologically.

A Yeah.

Q Now, we will start with the period of the delivery of the new hospital, if we can put it that way. Now, we have already had some evidence about this, and we have already had evidence on the extent to which those who would be delivering care, like you and your clinical colleagues, were consulted about the plans and the design for the hospital. What would your position on that be?

A So, there was a degree of consultation when we were in Yorkhill. My reflection now is that our opinion may have been sought; how much it was listened to is a different kettle of fish. The units that we ended up with was not what we would have considered to be what we would have liked in the beginning. There were things that we had in Yorkhill that we were promised would be present in the new unit that aren't present and that's a shame. There was things like having co-location of pharmacy colleagues, having co-location of social work colleagues that make the day-to-day

running of the unit much better and make the efficiency of the unit much better. Those things weren't delivered, and I think it's important to remember that we weren't designing a cancer centre. We were designing a cancer unit within a children's hospital, and I think that's different. I'm not sure that message was heard, and it's very difficult to quantify the impact of not having those things.

I think it's important to say that our ability to cure patients hasn't been impacted, but cancer care is an awful lot more than are you cured, are you not cured? It's about how do you rehabilitate and how do you pre-habilitate and what's it like whilst you are an inpatient. I think the patients that we look after in the west of Scotland, although they are physically more comfortable because the rooms are bigger and the bathrooms are great, certainly don't have the input from non-medical colleagues that they would have had in Yorkhill, and that's a shame, and simple things like a playroom, a school room, all of those things are vital. You know, childhood is a lot more than just your health and your ability to carry on doing schoolwork, your ability to carry on play is vital.

Q Thank you. Now, I want to just ask you about one particular aspect of the delivery of the hospital that has received quite a lot of evidence and that is to do with its proximity to the nearby water treatment works or sewage works, depending on your perspective. Have you got any observations about that matter?

A Yeah, certainly when the location of the new children's hospital in Glasgow was being considered, there were many sites that were thought about, and within the consultant body, and I think outwith the medical staff, but I can only talk for medical staff, we would have preferred to have been on another site in Glasgow. Part of the reason for that is that being next to a sewage work as your place of work is not that pleasant and, yes, it certainly smells.

I mean, we were told and, again, I think it's fair to say, we were told before we moved across that actually there would be remedial works to the sewage works so that, although it was currently smelly, it wouldn't be smelly for the new children's hospital or the whole new campus. This is not only Scotland's biggest hospital, this is one of the biggest hospitals in Western Europe, and I think most people, if you were asking them, "Would you build

Europe's biggest hospital next to a sewage works?", would say, "Well, that's a bit of a silly idea." You have to reflect that the Southern General was on that site, it's been on that site for a hundred years or so. So, there always has been a hospital there, but I think to have continued something unpleasant just because it's been going for a hundred years is not necessarily a great idea.

Q Thank you. Now, just one further point on that. I take you in your statement to be saying that as far as you consider it and as far as you understand it, the impact from the nearby sewage works is around comfort rather than risk of infection. Is that right?

A Yeah, absolutely. Now, I'm not qualified to talk about the risk of infection from sewage works, that's not within my training, but we were reassured that there was no health impact from that, and as I say, there's been a hospital on that site for many, many years and the clinical outcomes from that hospital are no different from ones that aren't next to sewage works.

So, does it have a direct impact on our ability to treat children and young people with cancer in terms of outcomes, are they dead, are they alive, how well can we cure them? No,

it doesn't have an impact on that, but it certainly has an impact on people who are working in there and families when they arrive, and for families who come to a supra-regional cancer centre for the first time, they're anxious, they're nervous, and they need to be able to trust the professionals in front of them, and if the first thing they're presented with is the smell of sewage as they get out of their car, then that's not a great start. It's surmountable, but it's not a great start.

Q Thank you. Now, just picking up on something that you have said and that you say in your statement, I just wanted to clarify something. Are we to understand from your evidence that you understand there to have been advice from Infection Control colleagues that there was no infection risk?

A That's my understanding yes.

Q When you say it is your understanding are you able to say how you have that understanding?

A Yeah, there's something called the Yorkhill-- or was something called the Yorkhill Medical Staff Association, which was the body that represented doctors within the old Yorkhill, and when that body was discussing with managerial colleagues

the site of the new children's hospital, it was brought up that, "Are we sure it's safe next to a sewage works?", and we were reassured that it was safe, so yeah.

Q Can you remember whether you ever saw anything in writing or whether that was in----

A Yeah. No, I didn't see anything in writing and, to be honest, I would have been surprised to have seen something in writing. There has to be a degree of trust between clinicians and managerial colleagues, and I wouldn't have demanded in writing that where I was going to was safe to treat patients. As I say, there has been a hospital there for a long time. So there are some things that I want in writing, but that wouldn't have been one of them.

Q It was probably my question, I was just wondering whether the advice from Infection Control was something that was communicated to you verbally only?

A Yes, verbally only. Yeah.

Q Yes. Now, I want to just ask you to help us clarify one further aspect around the move to the new hospital, and I wonder if I might have you just look at a section in your statement. So, Mr Russell, it would be the statement bundle, please, and I think it is at page 855 and it is paragraph 102. I wonder if we might just enlarge that.

A Yeah.

Q If you take a moment to read that, Dr Murphy, and tell me once you have done that.

A Thank you. 102. Yeah, okay, great. Yeah. So, what I'm alluding to there is that when we first moved into the hospital, there was a-- I can't remember now if it was a six-month or a twelve-month period whereby, as I understood it, the contract was that if we came across anything that was non-functioning, that we highlighted that because that would be therefore remediated under the building contract, and if it was after six months or after twelve months and it was highlighted, then that wouldn't form part of snagging.

So there was a real push that if you had a loose tap or a light bulb that didn't work or a door that wasn't working properly that that was highlighted, so that that could be fixed under the terms of the new hospital deal. I say after that, there seemed to be much less interest, and part of that is because if you are pushing to get things done and you come to a timeline and that's it, and you've then missed the opportunity to get things

fixed, then you will be standing back a bit and saying, “Well, okay, fine, we’ve missed the boat there.”

Q Okay, thank you, and just concluding this chapter of your evidence. I mean, just trying to capture things broadly then and thinking about what you said in your witness statement as well, I mean, what would be your overall assessment from the perspective of the clinicians of how the planning and delivery of the new hospital went?

A So, I think that depends-- Are you talking about the clinicians within the haemato-oncology group or---

Q Yes.

A Yeah, okay. So I think we were all disappointed that we didn’t get what we were promised at the outset in our new unit. So, very much we were told at the start that when you move to the new hospital, as a minimum, you will get what you currently have, and you may well have an improvement on what you currently have, and we very clearly did not get an improvement, and we very clearly did not get what we currently had. So, it was disappointing in that sense, and we had to change the way that we worked to accommodate the change in the physical circumstances where we were.

Q I am thinking really about the process of consultation with you and your clinical colleagues. I mean, are there any observations or lessons learned that you think might arise from all of that?

A Yes, I think that in any situation where you don’t get the outcome that you want to get, you need to look at why that is, and a bit of self-reflection’s helpful. I think we didn’t engage with the new hospital’s group as effectively as we could have done. I guess that’s actually axiomatic because if we had, we’d have got what we wanted. So, to a degree, on our part, we could have made our arguments more cogent. We could have been more constructively engaging with them.

However, the other thing to say is, I think we got lost in the minutiae. In other words, you know, where are the plugs going to be, how many lights are there going to be in the room, as opposed to the big question about how many beds are we going to have, are we going to have a seminar room, all of those kinds of things. I think the input we had from new children’s hospital colleagues, architectural colleagues, right from the beginning wasn’t as helpful as it might be, and

we had an engagement with them that wasn't as fluid and as productive as it might be.

Q Thank you. Now, let us move further on in the chronology and start the story from soon after the migration of patients to the new hospital. What I want to do is just to break this up into stages, and if we begin really with the pre-2018 stage. We have obviously had quite a bit of evidence this week already about a number of these events, and so what I might do from time to time is simply summarise what we have heard and ask you for your observation if you are okay with that?

A Yeah.

Q If we start with 2015, and I am thinking about the summer of 2015, you indicate in your statement some awareness at the time of concern around the absence of HEPA filtration for BMT patients just shortly before the move. Is that right?

A Yes.

Q Could you tell us a wee bit about that?

A Well, I should say that HEPA filtration is a way of filtering air into patients' rooms, and it's particularly important for the bone marrow transplant patients, and Prof Gibson was the Transplant Lead at the

time. There were walkarounds on the new site for clinical staff prior to patients coming across. On one of those walkarounds, Professor Gibson and her PA noted that, although the space was there for the HEPA filters, the HEPA filters themselves weren't in place. Now, that would have meant that the transplant patients couldn't come across, and if the transplant patients couldn't come across, then the rest of the ward couldn't come across, and if we weren't coming across, that would have meant that the rest of the children's hospital couldn't come across. So that was a potential big issue. So, I know that they got the HEPA filters rapidly and put them in place but, yeah, that was the issue with the HEPA filters.

Q Yes, and did you have any awareness of further issues that were experienced in relation to the bone marrow transplant rooms, again, in the early part-- or rather in the summer of 2015?

A Not that I remember, but if you expand on that a bit, I might be able to talk to you about it.

Q Well, we have had some evidence that there were concerns around the presence of high fungal counts in the corridors and sealing of rooms and concerns about pressure in

those rooms.

A Oh, absolutely. So, the timings of when the fungal counts were done and when we became aware of pressure changes I can't be certain about, but I can be absolutely certain about that we became aware that there were high fungal counts in corridors, in rooms, and that's not just in the transplant room. It was in-- throughout the unit and, yeah, so that was a big concern for us.

Q Yes, and did you have any awareness yourself about issues being experienced in the adult Bone Marrow Transplant Unit at that time?

A Yeah, that's difficult to answer with the degree of certainty that I think you need, because I may well have been aware of corridor conversations or it was mentioned in passing, but when that was, I honestly can't remember. I was aware that the adult transplant unit was having similar problems, but what those problems were and when I became aware of that, I can't be sure.

Q Thank you. Now, what I am really working up to is to try and understand whether you at the time had any concerns about the as-delivered hospital at that point?

A So, again, it's really tricky to talk clearly about, "When does a slight anxiety become a bit of a concern, become 'we really ought to take this seriously' to 'this is a major issue, and we need to be working forward'?" I think from-- in the first year we were in the children's hospital, it was a new movie. It was a new place and, therefore, anything that didn't quite work-- was that because it was a clinical issue, or was that because you were just bedding in and it was a new way of working and, in any new build or new car, there's always going to be things that you don't quite realise how they work. So, within that first year, I think, we were probably thinking, "Well, this is just-- it's change and, therefore, it's not a real issue with the build itself."

The longer we were in and those things didn't go away, then we became more concerned that this was this was permanent, that this was not just because we were in a new build and we were doing things slightly differently and it would it would all settle down. I think the first year we wouldn't have been at a position where we thought this was this was really difficult, but you may well have been saying to one another, "That's a bit odd," but that didn't translate into "We think there's a structural issue here." The longer you were in, the more you

were concerned that there were problems within our patient population, and we were concerned about the physical build of the hospital. We didn't necessarily put those two things together at the time, but you became very aware that things weren't working as well as they should. Doors were sticking or sinks were blocking and those kind of things. That wouldn't necessarily make you jump to think that's a cause of infection in children. You would see that our children were getting unusual infections, but you wouldn't necessarily have merged those two things together at that point.

Q Yes, thank you. Well, just thinking about the absence of the HEPA filters. I mean, the way it has been described to us in the evidence is that the casings were there but the filters were not. In your statement – and trying to put this reasonably neutrally – you expressed some surprise, if I can put it that way, about that. Does that really connect to what you have just said, that the surprise is around the way that it had been built, rather than a concern about risk?

A Yes. Precisely. Not having HEPA filters in place in a paediatric transplant centre is bizarre. Right. I mean, it's like taking delivery of a car and there's no tyres on. So

then you do start to think, "Well, okay, if a problem then comes up further down the track, is this because that's an isolated issue, or is this part of a systemic problem because they didn't put the HEPA filters in?" So if they're not putting the HEPA filters in what else are they not doing? And it's as I alluded to earlier; we do like to think that we are an evidentially based speciality and, therefore, you don't want to jump to conclusions but, yeah, if you've got one thing that's so fundamental like no HEPA filters being in place and then the taps start not to work, or the doors don't close or there's fungus growing behind walls, then you start to think, "Well, is the HEPA filters not being in just a great description of how this hospital was built?"

Q Thank you. Now, what I want to move on to now is to think about infection patterns, and I will try and, again, break this up into chunks of time, and we have had a bit of evidence on this, so I will try and take this reasonably quickly. I am going to deal with the-- If we deal with 2015 to 2017 now, the evidence-- It may be easiest to do it this way-- I will tell you what the evidence is thus far, and you can tell me whether you have any material disagreement with it. What

we have been told this week, so far, is that in 2016 and in 2017 from time to time there were concerns among clinical and microbiology colleagues about infection patterns. Would that be your point of view?

A Absolutely, fine, yep.

Q What was also said in evidence was that there was no advice at that point or reported suspicion from Microbiology or IPC of a suspected link to the built environment. Would that also be your recollection?

A Yes, that would be my recollection, yeah.

Q One of the things that Dr Chaudhury mentioned in her evidence – and I think she was thinking in particular about 2017 – was that she recalled also there being no, what she described as, “clustering of infections”?

A Yes. Because I didn’t hear Dr Chaudhury’s evidence, it’s difficult to totally agree with that statement. I think that it’s certainly true to say that we were seeing increasing numbers of unusual infections, and quite when they became very obviously “clustered,” to use Dr Chaudhury’s word, I couldn’t possibly say. So, yes, I wouldn’t necessarily disagree with what Dr Chaudhury is saying, but it’s very

difficult for me to agree with that without hearing the full thing.

Q That is reasonable. Thank you. The other thing that we have had some evidence about – and I think we will have more evidence about – is that-- and I think, in fact, you touch on this in your statement-- is that there was a possible hypothesis, and I put it no higher than that, being considered at the time around line care?

A Yes.

Q Is that your recollection also?

A Yes. Absolutely.

Q Okay. Now, the next thing I want to ask you about is just moving towards the end of 2017, if you are able to cast your mind back to that. So ,we are about to move to what came to be called “the water incident” in 2018. So, it is really up until that point. Were you aware of any concerns about the hospital environment being raised by Infection Control colleagues at the-- particularly at the end of 2017?

A No.

Q Yes. The evidence from Professor Gibson was that-- I think the way she put it was she was aware of an “undercurrent” but not the detail.

A Yes. I think that’s fair,

and I think that probably reflects where we all were as clinicians, but we-- I don't think we were-- well, we certainly weren't aware that there was any formal link being made at that point.

Q Yes, I do not think it is being suggested that a link was being made. I think the evidence or the suggestion may be that reported concerns about the environment were being made and, in this context, were you aware and did you see at the time an SBAR that had been written by Infection Control colleagues towards the end of 2017?

A No.

Q Now, if we move forward into 2018, and what I will do is I will try and do the same thing, which is I will give you the precis of what we have heard, and you can tell me whether you materially disagree. So, the evidence we have had so far is that-- and I am going to again break this down into stages, if I may, focusing only on March 2018 at this point. The evidence is from your colleagues that there was a perception that there was an increase and a clustering of gram-negative infections, and there is references to Cupriavidus, Stenotrophomonas, Pseudomonas. Does that accord with your recollection?

A Yes.

Q The evidence also indicated-- and this is all channelled through discussions at IMTs, some of which you were at at that time. Investigations were thought to indicate contamination of the water supply with bacterial and fungal pathogens in the children's hospital and in the adult hospital. Is that your recollection?

A Yes, it is.

Q And there was an early response following discovery of the first case at the end of February and March, which involved various restrictions and measures such as restrictions on the use of water, dosing of the water, mobile hand wash units. Is that----

A Yes, absolutely, yeah.

Q Ultimately, that particular IMT we understand to have been closed at the end of March, really at the point, I think, where point-of-use filters had been fitted? Is that right?

A Yeah.

Q Yes. But the evidence we also had was that what at least was being said at IMTs at that time is that there was a widespread problem in relation to the water, or rather there was a suspected widespread problem in relation to the water supply in the RHC. Is that your recollection?

A Yes, that is my recollection.

Q Okay. Now, I want to just clarify one matter with you that came up in evidence, and that is in relation to an IMT that you attended on 6 March. Now, I know that you were given a reading bundle. Have you had an opportunity to read some of it?

A Yes, I have.

Q Thank you. Do you have a recollection of being at an IMT around about that time, and do you have any recollection of any concerns being raised by Infection Control about the fact that Infection Control had raised concerns with management and perhaps others and the question of whether or not there had been a response?

A Yes, I remember being in the IMTs at that point. Would it be possible to have the minute of the IMT up?

Q Absolutely, yes. Mr Russell, could we go, please, to bundle 1 and, it is page 56. So, if we just first of all use the first page to identify the document, 6 March, and I think we see that you are there along with Professor Gibson?

A Yes, absolutely.

Q Yes. If we go over the page, please, and if we-- no, we are on page 57, yes. Mr Russell, if we could enlarge the bullet point above "Control measures"? So, the one that says "BG and DM queried"-- yes, that one.

A Yeah.

Q Thank you. Do you want to take a moment to read that, please?

A Yes, please. Thank you.

Q Let me know when you have.

A Yeah.

Q I suppose my questions are really twofold-- well, threefold. First of all, do you recall a conversation along those lines?

A Yes, I do.

Q Yes. Now, my next question is what was the concern that TI, I take to be Teresa Inkster-- What was the concern she was raising?

A Well, she's raising the-- or she's echoing the concerns that myself and Professor Gibson are raising that we are seeing unusual infections, and those infections are potentially environmental. In other words, that the bugs could be as a consequence of the building, and she is concerned that they may be as part of the building, and that she's looking into that, and she's telling us how easy or not-- how difficult it is to make that association-- to make that link to prove that. She's also agreeing with us that

she thinks it's very important that these concerns-- or (a) that the knowledge of these organisms and then the concern that they may be linked to the environment within the hospital are passed up the managerial chain so that our senior managerial colleagues, both within the hospital for children but also within the greater estate, therefore QE, and then further up to the Board, they are aware that there is a potential problem with what was, and still is, Scotland's flagship hospital.

Q Just thinking about what is written there, can you confirm whether you recall Dr Inkster saying that she had reported these concerns to the highest level in GGC already?

A I don't remember her saying that, but the fact that it's in the minute reassures me that that's what she said.

Q Do you have a recollection of you and Professor Gibson having a dissatisfaction around this?

A Yes.

Q Can you expand on that a little?

A Well, we were concerned about the number and type of infections that we were seeing in our children. Sorry, that's not "our" children, in the children that we were

caring for. The concern is, "Is that our practice?" In other words, that's alluding back to the way that we are either putting the lines in or the way our nursing colleagues are handling the lines, or is that part of a bigger problem? In a way, if it's because of something we're doing, we can fix that, and we want to know "Is there something that either we as individuals or we as a team are doing that is exposing children who are under our care to risk?" and then we can mitigate that risk, but if it's within the built environment, there's nothing we can do on a personal level to mitigate that risk and that information, therefore, needs to be looked at by colleagues who know much more about built environment and environmental infections. Senior managerial colleagues need to be aware because, if it is true, then they've got a big problem on their hands.

Q Are we to take-- I mean, you say you have a recollection of this-- are we to take from this-- or, rather, tell me this: does this indicate whether or not you had a concern that you were dissatisfied at what you were being told about the response from senior management?

A I think we were dissatisfied by the absence of

response to our concerns rather than what we were being told. It was probably that we weren't being told anything rather than we were actively being told.

Q Yes, thank you. We can put that to one side. Now, again, just to maybe complete this part of the chronology. The evidence of Professor Gibson as regards what she took from the IMT process over this period of time was that she was concerned that there was something fundamentally wrong with the infrastructure. Would that accord with your recollection?

A Yes. Yeah.

Q She also said that-- she mentioned that Dr Inkster was saying that she had had no response to the concerns that she raised, and Professor Gibson considered that to be a very serious matter and that she wanted that escalated to the highest level. Would that have been your understanding also?

A Absolutely.

Q Yes. Now, if we move then a little bit further forward in time, I want to take the next chunk, which would be the summer of 2018 up until the decant in September 2018. I suppose I will start with this question, which is what caused the Schiehallion

Unit to be closed? I will ask you what is your recollection of the reasons why there had to be a decant from 2A and 2B?

A Okay. So my recollection was that we had a documented increase in the number of gram-negative infections and that many of those gram-negative infections were potentially environmental gram-negative infections. There was also a concern about the ventilation within the unit, and so the response was that we had to come out of 2A/2B, the Schiehallion Unit, to ensure that the infrastructure within 2A/2B was fit for purpose. That would mean that there would be work done within-- with the physical structure of the unit.

Q Thank you. Now, that is very helpful. I mean, in your statement, you put it in these terms that there was "unanimity" among your clinical colleagues that, as you put it, you wanted "off the unit" at that point. Is that right?

A Yes.

Q Yes. Again, what I will do then is I will just set out to you a precis of what we have been told thus far and, again, you can say whether there's material disagreement on your part. First thing we have heard is that,

notwithstanding the remedial measures that began in March, there had been a return of a concern about infections in May and in June 2018. Would that be right?

A Yes.

Q In addition to gram-negative cases there are a case or cases of atypical mycobacterium?

A Yes.

Q There is a suggestion of drain-swabbing, disclosing various gram-negative bacteria. Is that right?

A Yes.

Q According to Professor Gibson, the advice coming from Infection Control at that point – and perhaps others – was that there may be a site-wide problem?

A Yes.

Q Really just confirming what you have just said that by mid-September the staff were concerned that the unit was not safe. Is that right?

A Correct. Absolutely.

Q And was it-- if we were to really sum up the reason why there was a decant, was it that?

A Yes.

Q Yes, thank you. Now, I am going to ask you a little about the choice of the decant options. Now, again, we have got a lot of evidence on this, and so I do not need to take up a great deal of your time on that, but you do in your statement raise one point which may be of some interest. You say something about the possibility of having built a temporary facility. Can you tell us a bit about that?

A Yeah, at the time, we were all concerned about the inherent safety of the ward we were on and, as I said, and as you've echoed, there's unanimity of opinion that we ought to move out of that environment. The question was, where do we move to? Although we're paediatric oncologists and paediatricians, we're also doctors, so there was a very clear understanding that if we were to move somewhere else, somebody else would have to be displaced. So, that might be your mother or my mother not getting her hip replaced or not getting her coronary arteries stented. So, we understood there was a real issue that by moving we would be displacing other activity, and there was also a concern that if there was an estate-wide problem, that moving off 2A/2B-- we would just move into an area that was similarly built and we would have the same problems again. So, I have been lucky enough to have colleagues who have worked as doctors and

nurses in the military, so I am very aware that they are able to build hospitals very, very quickly in battle zones, so I did suggest to managerial colleagues that they could very quickly and easily build-- get the military in and build something on the QE site, something completely separate from the physical infrastructure of either the children's hospital or the adult hospital.

As I said in my statement, I can understand why that wasn't taken forward but, yes, I mean, the underlying reason for that suggestion was because I had a concern that the whole of the infrastructure of the QE site was going to be replicated or would replicate the problems we were having on 2A/2B. So by moving from 2A/2B to another unit, either within the children's hospital or within the adult hospital, wouldn't necessarily solve the problem. I think when we went to 6A, that proved to be the case. Within my statement, I refer to children/young people with cancer as "canaries in the mine," and if you want to demonstrate "Is my hospital fit for purpose?" then this is a unique and vulnerable population which will rapidly show whether the unit you are on is fit for-- environmentally fit for them to be looked after.

Q Thank you. Now, a piece

of evidence that that was given by Professor Gibson and agreed to by Dr Chaudhury was around respective responsibilities as between clinicians, management, Infection Control. They both – it might be said quite emphatically – said that your job is the delivery of care in the built environment. The delivery of the built environment is somebody else's job.

A Absolutely.

Q So I say that in this context that-- insofar as there were discussions with clinical staff, clinical consultants, including you, about solutions, the decision of what was going to be done was not yours to make. Is that right?

A Correct, absolutely.

Q Yes, but just on the point of the temporary facility, I think the evidence that we have already got from two of your managerial colleagues, who are going to give us evidence next week, is that the delivery time on that was, relatively, at the time, thought to be considerable. I think maybe a period of 12 weeks was mentioned. Do you have a recollection of that?

A Delivery time for?

Q A temporary facility.

A My recollection was that it was not even seriously considered,

so there was no discussion about delivery time.

Q Can you say what the expectation at that time was as regards the likely duration of the decant?

A Yes, we thought that it would be a period of weeks going into a month or two and, in a way, that was an iterative process throughout. We always thought that we would be off the decant within the next couple of months and, of course, the "next couple of months" just kept on being the "next couple of months."

Q Thank you. Now, just something I would just like to have you clarify in your statement. You say in your statement that at some point you had a conversation with the chief executive about whether it might have been better to build a new oncology unit for the children?

A Yes.

Q Can you recall a little bit more about that?

A Yes, so Scotland's got a population of five million approximately, and there's always been a discussion about how many paediatric oncology units should Scotland have. That's not for this Inquiry, but it would have been a great opportunity to build a whole new

paediatric oncology/haemato-oncology department, including bone marrow transplant unit, either for the whole of Scotland or for a greater area of the West of Scotland, and lots of the concerns about the cost of a single site or of a dual site would have been allayed because of the nature of the build. The other thing is that, as I've alluded to earlier – and I think probably more importantly – the Paediatric Oncology Unit-- the Children and Young People's Oncology Unit that was built for us was not what we were expecting, and this would have been an opportunity for them to have rectified that.

Q Can you remember when this conversation took place?

A No.

Q Relative to events, was it around about the time of the decant?

A Oh, yes, absolutely. Yep.

Q Yes. Okay. Now, I am still going to stay in 2018 and something that you have already touched on. Can you perhaps expand a little on what you recall or understand of the issue to do with ventilation that was identified in late 2018?

A Can I have a bundle up to----

Q Of course, yes. Well, I will first of all just tell you what the evidence of Professor Gibson was, and you can say whether that is the issue at all.

A Yes.

Q Professor Gibson told us that in November 2018 – so after the decant has happened – investigations of the ventilation system on the ward were reported as indicating that the non-BMT rooms on 2A were not positively pressured and were instead set to neutral or slightly negative. Do you have a recollection of that?

A Yes, I do. So, again, it's interesting that I'm aware of the degree of pressure that there is throughout the units and the separation of BMT and-- sorry, bone marrow transplant and non-bone marrow transplant patients. I think if you were to talk to most paediatric oncologists in the country, they would tell you that, "Yes, bone marrow transplant cubicles need to have bi-directional flow," so in other words can be positively pressured or negatively pressured, and that there needs to be a pressure gradient in an oncology cubicle, but they certainly couldn't tell you about what the kilopascals of that flow should be, nor of the differential, and the fact that we're aware of them

tells you all you need to know about the problems that we were having with flow. It came as a surprise to all of us that the flow that we thought we were getting, or should have been there, wasn't there.

Q Yes. The way that Professor Gibson-- and she framed her explanation essentially in the way that you have. I take you to be saying, "I'm not a ventilation expert."

A Precisely.

Q Yes, "but my understanding is," as you've just set out. What she said was that she understood the point of a positive pressured room to be about keeping out particles and infections from immunocompromised children----

A Patients. Absolutely, yeah.

Q I asked her the question of, going back in time to 2015, whether she had understood that those rooms were going to be positive pressure. In all fairness, I think she was not able to say whether she had known that. What would your position be?

A Mine would be exactly the same.

Q Yes. Now, there was a second matter that she mentioned, and she said that there was also an issue with something to do with – and

this, again, I think, is the non-BMT rooms – that the ventilation ducts were connected to the ensuite toilet, and there was a concern about air being sucked from the toilet and ending up in the room.

A Yeah.

Q Do you have any recollection of that?

A I just have a recollection that that was a concern, but no more than that.

Q Okay. Now, you did ask to have a look at a document, and I am going to have you look at a document now, please. It is really just to assist us in order that we get to see it, in a sense. Mr Russell, can we have from bundle 4, please, page 132. Thank you. Yes, that should be fine. Hopefully everybody can see that. Now, that appears to be an SBAR emanating from the Estates department and going to the director of Property Planning and Facilities Management. Would it be fair to take from that that that's not something that's likely to have been sent to you at the time?

A No. Sorry, yes, it would be fair. No, I didn't see it.

Q Yes, thank you. If we just look at the situation-- well, first of all the date of it is 12 November 2018. It says:

> "Single bed room accommodation has a nominal Air Change Rate (ACR) of 2.5 Air Changes per Hour (ACH) with the single rooms being neutral to negative pressure relative to the ward corridor..."

Just pausing there. That is the point about pressure that you have already told us about out.

A Yes.

Q

> "... this combined with the potential risk of air recycling from en-suite WC's to the supply air stream via air passing through bypassing the thermal wheel heat recovery unit introduce a potential for cross contamination between single room suites."

Now, just thinking about what is written there, do you have a recollection of any of that being said to you at the time?

A No.

Q Or an understanding that that was what the issue was?

A No. So, part of that is-- this document kind of really neatly surmises when Professor Gibson and I talk about not being ventilation experts: "A thermal wheel heat recovery unit," I have absolutely no

idea what that is. What I can say is that we were aware there were concerns about ventilation, but not what those concerns were to this level of sophistication.

Q Can you recall whether the concerns at the time were of the sort that the ventilation system, as you would see it, as the treating clinicians and not as ventilation experts or Infection Control experts but in that context, can you recall whether, from your perspective, the understanding of the ventilation system at the time was that it would or would not be appropriate to your patients?

A I can recall that one of the reasons for the decant off was that there was a concern that the ventilation within the unit wasn't fit for purpose.

Q Thank you. Now, if we move on, then, in time, and I am going to early 2019. Now, we will in due course, Dr Murphy, slow down a bit once we get to late 2019 where you are quite heavily involved in the IMTs, but if I may, I might just continue to proceed in the way that we have been doing.

A Sure.

Q So, what I want to ask you about, first of all, is if we put issues to do with infection and concern

about risk of infection to one side, I am quite interested to know about your impression of your colleagues and your patients' experiences on Ward 6A, thinking particularly about early 2019. Do you want to tell us a bit about that?

A Yes. Can I ask just for context what-- you're thinking about how the patients and families found Ward 6A?

Q Well, let me take a step back. It probably was far too vague a question. Let me ask the question this way. Can you say whether or not you considered that Ward 6A was a suitable ward for paediatric haemato-oncology patients?

A So, it was a suitable stop gap that meant that we could carry on treating children and young people with cancer within the West of Scotland and not have to send them to colleagues in Aberdeen or Edinburgh or Newcastle. So it was seen as preferable to shutting the service. The infrastructure, in terms of how the patients would have felt when we first moved-- you know, the rooms were the same size and the bathrooms were all ensuite, and I think it probably is important to reflect that wasn't the case in Yorkhill. So, the kind of hotel infrastructure within the new Children's

Hospital and within QE was much better than we had been used to on the old Yorkhill site. Our ability to deliver chemotherapy, treat infections, do our day-to-day work was-- it was possible to do that, but it was a cramped environment. The space that was available for doctors and nurses and pharmacists and everybody else was much less than was required. It made working very difficult and, again, when we were there, it became rapidly obvious that the infrastructure on 6A had the same problems or similar problems to infrastructure on 2A/2B.

I think I've alluded in my statement to the fact that we got so used to rooms being closed for remediation that you didn't even notice that the rooms were closed. So I can't remember how many beds there were on that ward but, say there were 15, if two bedrooms were closed, you didn't bat an eyelid because it was an everyday occurrence that another room would be closed because, you know, there was a problem with the sink or a problem with the toilet, or there was increased fungal counts within the room. So, 6A was a reasonable place to decant to on a temporary basis that meant that we didn't have to send children outwith the West of Scotland, but it was by no

means perfect.

Q So, just thinking about that in terms of the ability to deliver care and putting risk of infection to one side, does it go back to what you said a moment ago about the duration-- the two months becoming another two months?

A Yes.

Q So, had it been a few weeks or a few months----

A Absolutely, and I think it goes back to two things. So, if you think you're only going to be there for a short period of time, you're much more prepared to put up with things that are an irritant than you would if you were told at the outset you were going to be here for three or four years. The other thing is it depends on the metric that you're looking at. If the metric is, "Are you able to produce the same kind of cure rates for children with cancer," then the answer to that is, "Well, yes, we can," but that's not what 21st century medicine is all about. The children and their families in the West of Scotland deserve to have a world-class environment, and it was very clearly not a world-class environment.

Q I detect from your statement that you are familiar, to some extent at least, with the evidence that the patients and families gave.

One thing that they all said, almost without exception I think, about Ward 6A was-- well, they painted quite a bleak picture of just thinking about those, as it were, non-clinical aspects of being on the ward. Is that something that you would recognise?

A It absolutely is something I would recognise. I think that you cannot underestimate the impact of having a diagnosis of cancer in your child. For a parent, that's beyond their worst nightmare. To me, if you meet me as a parent, that's never a good thing, for the first time, and so they're already in an emotionally vulnerable place. Then you are told that not only are you not going to be in a children's hospital – there's all the things that go with being in a children's hospital – but you're going to be in a place because the place you should be being looked after has got the potential for getting your child infected. That's a really, really difficult place to be. Then, on top of that, no playrooms. You are physically distant from things like just going down to physiotherapy. It's a much longer journey. You know, everything was made more difficult by being in a adult hospital in a ward that wasn't designed for either children or young people or children/young people with cancer. So I'm not surprised the

families found it particularly bleak. It was a difficult place to work.

Q Then, just picking up on that and the difficult place to work and thinking about you and your colleagues then, one of the things that you mentioned in your statement and that we see mentioned in other statements in the evidence is the multi-site aspect of the care that was now being provided. Can you tell us a bit about that?

A Yes. So, the bone marrow transplant patients had to be looked after on a recognized bone marrow transplant unit, so that meant that they were on the adult Bone Marrow Transplant Unit, which was on the fourth floor and we were on the sixth floor. At one point, our day care was in the children's hospital-- on the first floor in the children's hospital. That made for inbuilt inefficiency. So, you can't have children alone in an adult hospital environment without paediatric trained staff there, so you had to have paediatric nurses present on the adult bone marrow transplant unit. You had to have paediatrically trained doctors on the adult Bone Marrow Transplant Unit. That means that they are, therefore, not delivering care outwith their transplant patients because they are physically separate

from the unit.

So, for instance, if one of our registrars was-- Let me start another way. When the Transplant Unit is embedded within the wider paediatric Haemato-Oncology Unit, it means that when you're not actively looking after your transplant patients, you can physically go and see haematology patients or oncology patients if they become unwell. You can't do that if you're two floors away, so there's an impact on the number of staff that you need to have to staff your unit. Similarly, if your day care is physically further away than it was, it means that staff are shuttling up and down between day care, between the Transplant Unit, between the Transplant Unit and the Haemato-Oncology Unit. So, it just becomes more inefficient. It means that you have to have more staff to look after your patients in the same way.

Q Yes. One thing that has been mentioned many times, and you mentioned it in your statement, is around separation from services, and one in particular that seems to have attracted a lot of concern was separation from the PICU.

A Yes.

Q Do you want to tell us a little bit about that?

A Yeah. So, the physical distance between the PICU, the Paediatric Intensive Care Unit, and 6A was greater than the physical separation between 2A and PICU. So, in the Children's Hospital, PICU was one floor down from the Paediatrics Haemato-Oncology Unit, which meant that PICU staff could easily come to the ward to do what you call pre-ITU works. In other words, if we're concerned that a patient is unwell and is going to become more unwell, the way PICU medicine has evolved is that we get the Intensive Care staff involved early to try and prevent them going to the Intensive Care Unit so that you institute measures before the patient becomes really unwell to try and prevent them going to the Intensive Care Unit.

It's much easier for ITU staff, ICU staff to come from somewhere that's relatively close to just have a look at your patient, professional handholding so that you would have a discussion with your PICU colleagues saying, "Look, we're doing this. We're doing that. Is there anything else we should be doing?" That kind of physical separation made that kind of interaction more difficult. It also meant that if the patient needed emergency transfers, that again became more

difficult and again, for context, it's not unusual for paediatric haemato-oncology patients to become so unwell that they need to go to the Intensive Care Unit. That's part of our routine counselling that we say to families when they arrive that that's potentially one of the things that would happen. That's because of the side effects either of their chemotherapy or because of their disease.

THE CHAIR: I am afraid it is entirely my fault, no doubt. Know this. I think you're using the acronym PRC. Have I got that right?

A No, sorry, PICU. Paediatric Intensive Care Unit. I'm sorry, that's my enunciation.

Q No, it is my hearing. Paediatric Intensive Care Unit.

A Yes.

Q Right.

A Sometimes we'll call that ITU. That's the Intensive Therapy Unit which is an older acronym.

Q Yes. I was expecting PICU, but I am somehow hearing PRC.

A Okay. I have a similar problem, so-- So, transfer when the patients became unwell was also more difficult. It wasn't so difficult as to be a clinical compromise because that wouldn't have been acceptable, but

when you're talking about going with a potentially ventilated patient in a lift down five floors, instead of down one floor, and down many corridors, as opposed to one corridor, that becomes more tricky. Again, for patients and families, let alone for staff, that increases their concern, and if they've had to make that journey, it absolutely increases their concerns. So, being physically separate from the whole of the Children's Hospital infrastructure was difficult.

PICU is a great way of modelling that, of describing that, but it's everything else that goes with being within a children's hospital. If it wasn't important to have the adjacencies, we wouldn't have children's hospitals; we would have paediatric wards in adult hospitals. One of the glories of working in Glasgow is that it is a children's hospital, and you have infrastructure and professionals that are solely dedicated to working with children and young people, and to be divorced from that was difficult. It's simple things like if you want to have a discussion with your colleagues about any problem that your patient is having-- So, say, for instance, I've got a child whose blood pressure is concerning me. If I'm in a children's hospital, I will be walking through that,

and I will bump into one of the renal physicians, and I'll say, "Whilst you're here, listen. I've got this child," and they'll either say to me, "That's great and you're doing all the right things," or, "That's very interesting. I'll pop along and come and see that child." Of course, if you are absolutely concerned about a child's blood pressure, you will pick up the phone and talk to the renal physicians, but the fact that you're physically going out of your way to do that and you're doing it at a later stage is one of the reasons why being in a children's hospital makes all of these things much, much easier.

And, again, it's not just about other doctors. It's about social workers. It's about pharmacists. It's about occupational therapists. It's about all of the supporting infrastructure that goes to looking after an acutely unwell child or a chronically unwell child, and children with cancer have-- I smile because it's my everyday, but they are extremely unwell, and you need to have a whole team looking after those patients. It can't be done by doctors alone. It can't be done by nurses alone. You need a whole team to look after them, and we were physically dislocated from that team, and it just made

everyday working more difficult, and it deprived the children of the West of Scotland of the kind of services that they deserved.

Q Thank you. Now, it might be important just to mention one qualification or addition to that evidence which you mentioned in your statement. It is, again, in relation to the PICU. You have given us, obviously, a lot of evidence now about the challenges and, I assume, anxieties in terms of that disaggregation or separation----

A Yes.

Q -- but I wonder if you could maybe just help us with this? To what extent, in your view, were children ever actually put at risk as a result of that?

A Yeah, okay. That's a really good question, and I guess it comes to defining what risk is and whether it's excess risk and whether it's real risk. So, you can't have a PICU next to every child's bed, so there will always be a physical separation of the Intensive Care Unit from the other units within the hospital. I think that if there had been a-- or I know if there had been a concern that our distance from PICU was so great that children were being put at an unacceptable excess risk, we wouldn't

have moved. We would have just said we are too far away. So in between those two extremes there's going to be an increased risk, and is that an acceptable risk, and what can you do to mitigate that risk?

We certainly had conversations with our Intensive Care colleagues when the move was mooted as to whether that would put our patients at excess risk, and if it did, what could we do to mitigate that? So, for instance, it sounds silly, but we had signage put up so that, especially at night time, the junior doctors who were looking after the hospital at night knew where we were so that they could get to us quickly. So there's absolutely an increased risk, but it was a risk that we could mitigate. I don't believe that our patients were put at an unnecessarily high risk because of that physical separation, but we absolutely needed to do things to make sure that that risk was minimised.

Q Thank you. Now, again, staying with early 2019, and I think we might make this the final chapter of your evidence before the break. You have given us now quite a bit of evidence about the challenges around clinical care and the delivery of clinical care and the impacts upon patients and families. What I would now like you to focus on a bit is perceived further problems with the environment and concerns about infection risk. What, if any, concerns did you have about the built environment in the early part of 2019 on Ward 6A?

A Yeah. So, as I said previously, I was concerned that if we were-- let's use the "concern" word again. If we were concerned that there were environmental problems on Ward 2A/2B and we were moving within the same built environment, why would it be that this was not a systematic problem? One of the questions we had asked/states colleagues and managerial colleagues was, "Are the problems that we're seeing on Ward 2A/2B confined to Ward 2A/2B? Are they throughout the Children's Hospital? Are they throughout the whole of the estate on the old Southern General site?" I guess reasonably they told us they couldn't answer that question with a degree of certainty, which meant that I was concerned that if we were to move within the hospital site, we would merely be moving to another place with exactly the same build quality problems that Ward 2A/2B had, which was why I had earlier talked about, "Could we not build something entirely separate?"

Q Thank you. Now, I think you have already alluded to this in your evidence, and you say in your statement that it felt like there was-- I think what you say in your statement is that, regularly, there seemed to be issues with rooms, and you mentioned sinks and toilets, that kind of thing. What about issues to do with patient safety at this time? Do you remember issues arising or concerns arising in early 2019 while you were on Ward 6A?

A Could you expand on that a bit further?

Q Well, we have had some evidence so far-- and you do mention this in your statement, and I am not proposing to go into this in any detail, I will reassure you, but we are aware that there was a concern-- two things. There was a concern, first of all, at the end of 2018 and going into 2019 about cases involving something called Cryptococcus. In addition to that, we have had evidence this week of reports from Infection Control about high fungal counts being found on the ward and that, in addition, investigation revealed an issue to do with the shower area. Can you tell us a wee bit about your recollection of those things?

A I can tell you that I absolutely recall all of those things. I can tell you that we were doing fungal counts within rooms, and it was difficult to interpret those because there isn't actually an evidential base against which you can interpret the results of those things. We were also finding that behind leaking showers, for instance, there was very obvious fungal growth on the walls and so, yeah, there was a concern about the physical infrastructure on Ward 6A at that time.

Q Can I ask you this question just on the fungal growth behind showers? If you cannot recall, please say. Can you recall how widespread a problem that was?

A No, I can't recall how widespread that was, but I can recall that it wasn't just in one room.

Q Yes. We know from the evidence we have had already this week that then came a point towards the end of January and into early February where there was a decant back to the Children's Hospital to go to the CDU. Do you recall that?

A Yes, I do.

Q How did you feel about-- Well, two things. I will take them in turn. What was your impression or assessment of concerns around the building at that point?

A Well, I think it confirmed my previous concerns that the whole of the estate had problems and it wasn't confined to Ward 2A/2B. You know, in some ways moving back into the Children's Hospital-- we felt glad about that because it made all of those adjacencies that we've been talking about earlier easier but, equally, we were going back into the Clinical Decision Unit, which has a huge impact on the Emergency Room and their ability to function properly. So whilst the primary focus is on the health of the children that you're primarily responsible for, we also understood that we were displacing other unwell children within Glasgow, and that doesn't make you feel good.

Q Just on the first aspect of what you said there, in your statement what you say is, "We would have had concerns about anywhere on the Queen Elizabeth site." Is that right?

A Yes.

Q You say that, "Every clinical area where we had been was proved to have defective build issues."

A Yes.

Q Is that your assessment of this?

A That was my assessment, yes.

Q Yes. Now, just on the

question, then, of the move back to the children's hospital. Given that that was somewhere that you had left not that long ago because of perceived concerns, and given that there had then been a further concern about ventilation, did you have any concerns about going back to the children's hospital?

A I think probably the best way to summarise how I was feeling at the time was I was anxious about the whole estate, and I was anxious that wherever we moved to within the children's hospital or within the adult hospital, we would uncover similar problems to the problems that we were leaving behind.

Q It may not be possible to answer this question, but are you able to describe to us or assess the level of your anxiety and that of your colleagues at that time?

A Well, we certainly talked about and did transfer patients out of Glasgow for a while. So if you were a newly diagnosed patient, we asked colleagues in Aberdeen and Edinburgh to take over the management of those patients until we could be sure that the environment was more secure, and I think that shows the degree of anxiety that we had that the physical infrastructure that we required to look

after children with cancer wasn't there.

Q Thank you. Now, I am about to move on to a further chapter. Dr Murphy, my Lord, I think this might be an appropriate point to break.

THE CHAIR: All right. As indicated earlier, Dr Murphy, we have been taking a coffee break of about 20 minutes and we will do that now. We will try and sit again at ten to twelve and I would hope you have the opportunity for a cup of coffee. Mrs Brown will take you to the waiting room.

A Thank you very much.

(Short break)

THE CHAIR: Mr Duncan.

MR DUNCAN: Thank you, my Lord. Dr Murphy, I was about to move to a new chapter, but I am going to go back to the chapter we have just been on because I have been asked to clarify something with you.

A Yeah.

Q And it is really just to go back to this question of the perception and the impact upon patients and families, and I took you earlier to accept the description of some of them that they had felt things were quite bleak on 6A. Is that right?

A Yes.

Q Now, the evidence that we had from time to time, from a number of them, was that in fact some of them felt institutionalised.

A Okay.

Q That was something I put to Professor Gibson and, well, I will ask you what your reflection on that would be.

A Well, firstly, I'd want to know what they meant by being institutionalised, and that sounds pejorative and it's not meant to, but it is a-- you know, it is a term that can mean different things to different people. I think if you're talking about the fact that you are isolated physically and emotionally, I can understand that because that's what they were. I'm very saddened to hear that families felt institutionalised. We weren't as staff made aware of that at the time. That term is new to me today, but I would certainly understand that emotionally it was an incredibly difficult place for families to be. I don't know if it's because if you have moved from one environment that's relatively accessible and friendly into another environment that isn't, that accentuates the feeling of isolation. It's difficult to say, but I can certainly understand why families felt isolated and alone on 6A.

Q Thank you. Just to pick up on what you have said, I think my understanding of what was being said around the use of that word was that it was essentially, first of all, that sense of isolation. I think, secondly, it was that sense of being cut off from the bits of the service that are, as you say, vital. One bit of evidence that I remember vividly was the description of one patient who had felt very strongly that they never, ever wanted to go onto nasogastric feeding, but they felt that the dial moved on 6A. Things just became more difficult. So I think it was that kind of overall feeling of just being stuck in this place and enclosed.

A And I can absolutely understand that. I think nasogastric feeding is a good example, a good model to think about, and I'm going to take it away from that patient – I don't know who that was – but it's fairly common for children and young people with cancer to require what we call augmented feeding, which is nasogastric feeding or can become nasogastric feeding; and we would endeavour to either start that very early so that you don't become cachectic and lose weight, or we would try and avoid it, and then if we need to step in, we step in.

But the starting of nasogastric feeding requires coordination between clinicians, nurses, dieticians and to a degree pharmacy colleagues. That is much easier to get that degree of coordination if you are all physically together in the same place. I'm not surprised that families felt the degree of disconnect that there would have been when we were on 6A – not between ourselves and the family but between ourselves as professionals – and that they may well then have reflected that either they got nasogastric feeding too early or they got nasogastric feeding too late. Whichever it was, I can certainly understand why it would feel like that to families.

Q Yes, thank you. Now, if we move on then to where I was about to take you, which is the period of the summer to late 2019, and again I will break that up into stages. I think probably there are three stages that we will look at, and the first stage is-- And again, I will do it the way I've done already, if I may, and you can just tell me whether you agree or disagree. First of all, I am going to deal with a period where we understand there to have been restrictions as regards admissions to 6A. The evidence we have had so far this week and in other

witness statements is to the effect that, in the summer of 2019, there was a re-emergence of gram-negative infections, and I think there was also a gram-positive infection. Does that accord with your recollection?

A Absolutely, yeah.

Q And in her evidence, Professor Gibson said that she considered or understood at least some of these, as she put it, to have been definitely hospital-acquired. Can you recall whether that was your understanding at the time?

A Yes, it was, and we did have discussions with colleagues outwith the department within IMTs about whether they were hospital-acquired or not, but the feeling from clinicians was that many of those infections would have been hospital-acquired.

Q Yes. Now, that is helpful, Dr Murphy, because it allows us to trail where we are going later, and where we are going to go after this is to look at the process of the discussion around that to then look at the process of the ward opening up, and then at the very end I am going to ask you to help us a bit with what is an unusual or not unusual infection, and we will look at that in a bit more detail.

THE CHAIR: Mr Duncan, if I

could just interrupt for a moment, really a question of vocabulary----

MR DUNCAN: Yes.

THE CHAIR: -- because my understanding, which I would encourage you to immediately correct, is that one definition of a hospital-acquired infection is really simply by reference to time. If the patient has been within a hospital or any healthcare environment for 48 hours and acquires the infection, that would be defined as a hospital-acquired infection.

MR DUNCAN: Yes.

THE CHAIR: Again, correct me if I am wrong about that. That is really independent of the mechanism by which that infection occurred. So, really just to help me, lest by adopting healthcare or hospital-acquired infection, one seems to be making an assumption as to source.

MR DUNCAN: Yes.

THE CHAIR: Could you maybe help me with that?

A Yes, and I am not surprised you're-- It is difficult because the definitions are difficult and change depending on where you read them, and I was looking at this last night, actually. So, there is a difference between a hospital-acquired infection and a hospital-associated

infection, both of which are called HAIs, and there is also a difference between-- which I think you are getting to, which is "What is the aetiology of this infection?" So, is it that the infection or the temperature occurs 48 hours after the patient has come into hospital? Therefore, fulfils the definition of a hospital-acquired infection but, actually, we know that Mum and Dad have got a cold and brother has got a cold and, actually, this is the same thing and it is nothing to do with the hospital environment, or is it an infection that has arisen because of the hospital environment? Those two things are different and may have different names. So the terminology is tricky. Does that help?

Q It does, and maybe just, with Mr Duncan's help, we will find out where the questions are specifically directed.

MR DUNCAN: Thank you.

A I think what I would say is that when you're looking at tight definitions of a hospital-acquired or a hospital-associated infection, that's the realm of the Infection Control team and the Microbiology team, and they will be able to give you very strict definitions of those things.

Q Thank you, and it might be useful to clarify where we are going

at this stage. Later in your evidence, I am going to ask you to explain to us a bit about what you say about two things.

A Yeah.

Q Whether patterns of infections were unusual, and secondly, whether in your view a link can be made----

A Yeah.

Q -- and the reason I am going to ask you about those things is there is already quite a bit in your statement about those things, and I think it would be quite useful to go over it. What I am just trying to get at this stage is just a broad understanding of what people thought, and it is, I think, quite helpful to just pause on the language that I had used.

A Yeah.

Q If we were to put it in these terms that-- as at this stage in the summer of 2018, was there a concern in relation to this increase in in infections that you have already said that was being seen, that there may be-- or there may be a hypothesis-- or a concern might be the better way to put it-- that it could be something to do with the hospital environment.

A Yes, absolutely.

Q What we have also heard is that, at this point, patients and staff

were close to breaking point and a perception by the staff that whoever was looking into this had not got to the bottom of the problem. Would that be right?

A Yes.

Q The way it was put in evidence was that the staff thought there may be---- or were concerned that there may be something fundamentally wrong with the campus. Can you remember whether that is how you felt?

A Absolutely, it's how I felt.

Q Against that background, what we heard was that, over the summer period, a restriction of some kind, I think, maybe as regards new patients. Would that be right?

A Yes, it was put in place.

Q Okay, so that is the first stage. Now, we also know that there were a number of IMTs over this period, and I am now going to take you to two IMTs that occurred in August 2019, both of which you attended.

A Okay.

Q Now, something that was mentioned to you earlier and I have mentioned to other witnesses, we are very conscious that, other than you and your clinical colleagues, many of the people involved in these IMTs will not be giving evidence in this chapter

of the hearing. So, we have been treading quite warily, and I guess what we are interested in here is more around the processes and what was being said rather than anything to do with the personalities. So, against that background, can I ask you to look please in bundle 1 at page 343, and we have got an IMT of 14 August, and I think we see that you were one of the attendees, and this was prior to there being a change in the chairing of the IMTs. Is that right?

A Yes, it is.

Q What I am going to do is I am just going to pick up on some references, and then I will maybe ask you to help us a bit and, again, I am going to give you a caution that we have been giving to all witnesses and to help, I hope, reassure core participants as well. The purpose in doing this is simply just to get an understanding of whether or not it is accepted that the things being said were said.

A Okay.

Q The question of whether or not the events described were accurate or not is for another time.

A Okay. Yeah.

Q So, just staying then on the first page, on page 343, we see there is reference to 11 patients by this

stage meeting the case definition----

A Yeah.

Q -- and if we go over the page, please, Mr Russell, to page 344, we see under case definition that-- if we just-- yes. That is helpful, thank you, and we will just go through this in detail. It says it was "pointed out that the numbers of bacteraemia have not increased," and there is reference to an epidemiology report, and then there is as a reference to it being the nature of the bacteria that were a concern?

A Yeah.

Q Then at the end of that paragraph, "It is likely that CLABSI work and excellent practice has driven rates of these down. The organisms we are seeing are environmental in nature and associated with water / soil."

A Yeah.

Q There has been quite extensive redaction here. Can you say whether you can recall-- and please say if you cannot. Can you say whether you can recall there being any mention of whether or not any of the organisms identified were said to be associated with dirty water?

A Yes. So, well, I can say that, as that minute points out, the concern wasn't so much the total number of infections, it was the nature

of the infections that we were getting and, on the background as it talks there, we were seeing these infections despite changes in nursing practice, line handling practice, the way the lines were being put in, and so one would hope that if one's instituted change, that that would actually decrease the number of infections. So the fact that they're not decreasing is of concern rather than the fact that they are increasing, and the other thing is that it's the type of infection they are. So, as it says, these are environmental gram-negatives that we're seeing. So, I can't then make the distinction that they would be waterborne and that water was in the hospital, but the concern is these are environmental gram-negative infections that may be part of the water supply.

Q Yes, and just on the point of detail as regards whether or not you are able to recall anyone saying that any of these pathogens may or may not be the sort of thing that you expect to find in dirty water. Is that something that you recall or not?

A No, it's not something that I recall.

Q Thank you, and just, again, picking up on the detail of what is on this minute. If we go a bit further

down the page, please, Mr Russell. So, the bottom paragraph, please, and if you just take a moment to read the first two sentences, please.

A From Dr Inkster?

Q **"**With the presence of Pseudomonas." Sorry.

A Okay. Yeah, okay.

Q Let me know once you have done that.

A Yeah, okay.

Q I think we see the same thing mentioned in the paragraph above and, by "the same thing," I am referring to chilled beams.

A Yeah.

Q Can you say whether you can recall there being a discussion around a concern about chilled beams?

A Yes.

Q Thank you. If we go over the page, please, to page 345, and can we enlarge the top paragraph please, Mr Russell? Thank you. Again, Dr Murphy, just take a moment to read that and tell me once you have done it.

A Yeah, I've read that, yeah.

Q Do you have a recollection of a discussion of that nature, and if so, are you able to help us a bit with what you understood it to

mean?

A Yes, so, I do have a recollection of that discussion. I think what Dr Inkster is pointing out here is something called the negative predictive value or the positive predictive value of a test.

Q Could you say that again, sorry?

A Sorry, the negative predictive value or the positive predictive value of a test. So, the absence of a positive result doesn't mean that the bug isn't there. It just means that your test isn't very good at picking up the bug, and I think that's what she's saying here. So, she's saying that there's too much emphasis being placed on negative results. So, in other words, the fact that you don't grow something doesn't mean that it's not there. It just means that your system hasn't grown it.

Q Thank you, and just, again, to complete the picture at this stage, if we go to page 346, please, and if we just enlarge the section under "Hypothesis" and, again, just take a moment to read those and tell me when you have done that-- the two paragraphs under "Hypothesis."

A Yeah, okay. So, the two paragraphs under "Hypothesis," not the paragraphs under "HIIAT."

Q No, just the----

A Yes, yes. So, that's fine.

Q Again, just can you confirm whether, as far as you can recall, those were the hypotheses that were being discussed at that point?

A Absolutely. Yes, they were.

Q Thank you. Okay, we can put that to one side please and move onto the next IMT in August, which is at page 348 of the bundle, and, again, we will just pick up on some references, and just on the first page, again, we see that this is an IMT that you attended----

A Yeah.

Q -- and that there has been a change of the chair by this stage. Is that right?

A Correct.

Q Yes, and is this an IMT you have a recollection of?

A Yes, it is.

Q Thank you, and if you go over the page, please, to page 349, and if we enlarge-- Under "Incident Update," if we enlarge that section. Can you take a moment to read the paragraph beginning "The haematologist/oncologists," and then tell us when you have done that.

A Okay. Yeah, okay.

Q Can you confirm whether you have a recollection of a discussion along those lines?

A Yes.

Q Are you able to say who it is that is likely to have said that-- or rather which group of people, if I can put it that way?

A Yeah. So, it would certainly have been the doctors in the room.

Q Do you mean the clinical doctors?

A The clinical doctors. So, I can't remember which of my team were there, but it would have been myself, Dr Ronghe, if he was there, Professor Gibson saying that we require a safe environment to treat our patients, and we were very clear all the way through that, as you alluded to earlier, what our job was was to treat children and young people with cancer, and we needed our facilities and managerial colleagues to provide us with the environment to do that, and we were seeking assurance that we did have a safe environment to treat those high-risk patients.

Q Thank you. Yes, in a sense, are we to take from that that this is a record of the concern that was being set out by colleagues?

A Absolutely.

Q If we go over the page,

please, Mr Russell to page 350, and if we can enlarge the bottom two paragraphs, and if we just take matters from the reference to the Great Ormond Street Children's Hospital, do you see that?

A Yeah.

Q If you just read from there, till the end.

A Okay. Okay, yeah.

Q Then if you could go, please, to page 353.

THE CHAIR: Mr Duncan, can I just interrupt before we finish? It is the reference to Great Ormond Street Hospital where they reported four gram-negative bacteraemia within its patient population, but none within the nature found during this incident. Now, I think I can guess what is being meant, but "within the nature" is a odd way of putting it.

A It is. I would agree with you, and I had a similar anxiety. What I read from that is that Great Ormond Street had reported four gram-negative bacteraemias but none of those were environmental. That's my reading of that sentence.

Q Right. Thank you.

MR DUNCAN: Thank you, my Lord, and if we could go, please, to page 353 under "AOCB":

> "The group agreed that a peer review should be carried out of Ward 6A from someone who works in a similar ward (Great Ormond Street or Leeds Children's Hospital)."

So, just pausing there and taking these last two references, what was your understanding of what was being discussed in relation to Great Ormond Street and what was being discussed as regards the peer review?

A Yeah. So, Great Ormond Street in this context is because-- or I'm assuming is because we had got data from them previously. So, they'd already provided us with data. Leeds because Leeds is a big children's hospital; they'd got a very well-established paediatric haemato-oncology unit, and I think this reflects the concern amongst clinicians that there was a change in emphasis with a change in chair and that the reflection was that this was normal and there was nothing to be seen here, and so we thought it was important that we got external review of the number and type of infections that were being seen within our unit because, frankly, hospitals don't publish this kind of data.

So, although we can say, "Well, we've not seen this before" and doctors training is such that you do

tend to move around hospitals. So, I mean, if I use my training, for instance, I trained in multiple hospitals. I mean, so many that I can't remember how many hospitals I've trained in, but it's more than 10, more than 15, and I hadn't seen this pattern of infection before. Now, that doesn't mean that it doesn't happen elsewhere and, as I alluded to earlier, paediatric haemato-oncologists are unusual beasts in that we like everything to be evidentially based, so the absence of evidence we find disturbing, just generally. So, for us, getting someone outside to come in to say, "Actually, do you know what? This fits a pattern that we are seeing in our own hospital. You have nothing to worry about," would have at least given us a comparator or, conversely, if they came in and said, "You are quite right to be concerned about this," then that would amplify the concerns that we had, and we would then hope that those would be accepted and taken on board by manager or colleagues.

Q Thank you, that is very helpful. I indicated earlier that towards a later stage of your evidence I am going to ask you to just help us understand a bit more about why you and/or colleagues thought what you were seeing was unusual, and I think you have identified, as it were, two of the possible sources that I am going to-- or, rather, possible comparators that I am going to ask you a bit about. One is your own personal experience of what you have seen before and the other is what is being seen in other similar hospitals. Is that right?

A Yeah.

Q Okay. Now, just in terms of what you said a little before that, about sort of change of approach and, as I say, I am only interested in the methodology----

A Yeah.

Q -- no more than that. What I took Dr Chaudhury to say of this stage was that the process up until this point had been that the suspicion of a connection to the environment must remain until it is disproved.

A Yeah.

Q Was that what you thought?

A Absolutely, yeah.

Q At this point she indicated things changed to the opposite, and I took her to say that essentially the approach became the suspicion had to be positively proved if it was to be maintained. Is that right?

A Yes, and the tenor of the meetings went from a "let's try and find out what's the cause of what is being

seen," and I think an acceptance that there was an increase in number of concerning environmental infections, to one where there wasn't an acceptance that there was an increased number of infections that we needed to be worried about and that, therefore, there was no concern that they were environmentally linked.

Q Thank you. Now, just to move us a little bit further forward in the chronology, we have heard evidence this week that the consultant body wrote to the chief executive to seek an external review, I think in the way that you have just described----

A Yeah.

Q -- and my question is this: are you aware of such an external review being done?

A I'm aware of Professor Stephen's external review, but at the time of that letter being written I don't think there was an external review done on the back of that letter. I think there were efforts-- I was told efforts were made, but it was actually very difficult to get people to agree to come and do an external review.

Q Yes. Dr Chaudhury said in her evidence that she understood there to have been some difficulty in getting somebody to do it. Was that also your understanding?

A That was my understanding.

Q Do you know where you got that understanding from?

A I think from managerial colleagues and at a children's hospital level, and I can understand why if someone asked me, for instance, to come and look at a problem like this in another hospital, you would want to have a team that could do this justice, and it would be a very difficult external review to do, and that's outwith any of the media attention there would be to any external review that came along. So I can understand why individuals may look at that and say, "No, not for me, thank you."

Q Thank you. Now, if we move a little bit further forward in time, please, to the next stage of things – the period from the end of August until the reopening of things – and I am going to ask you to look at a couple of IMTs that you were at, and it is really just to clarify a bit of your evidence----

A Yeah.

Q -- if I might. Mr Russell, could you take us, please, to, in bundle 1, page 354? Again, I think we see it is an IMT of 6 September, and we can see that you were present.

A Yeah.

Q Is that right?

A Yeah.

Q If we go over the page, please, to page 355, and if we enlarge the top paragraph, and I am really just wanting you to notice the discussion involving you, and if you could read from that sentence until the end of the paragraph.

A Yeah. Okay.

Q Now, you do deal with this in your statement and, again, reminding us all that, other than you, no one mentioned here is giving evidence at this chapter of the hearing, and I just noticed what was being said in the final sentence about the advice that this technology should not be deployed for these patients. Well, before I ask you this question, in fairness to you, if I ask you to now look at another IMT, could we go to page 360, Mr Russell? We will come back to this one, but it is just to let you see something, and it is an IMT of 13 September.

A Yeah.

Q It is the one immediately after the one that we have just looked at. I am not sure whether you are noted as attending at it or not. I do not think you are.

A No, I am not. I have sent apologies for that.

Q Your apologies are noted. The reason I am asking you to look at it is If you just look at the minutes of the last meeting in the second paragraph, there is a reference to that section, "Page 2. 1st para". Have you got that?

A Yeah.

Q Just take a moment to read that. "Page 2. 1st para – Dr Ritchie and Dr Murphy".

A Yeah.

Q Now, I do not know how these alterations to minutes work, but I do notice that what is set out there does not contain that final sentence.

A Yes.

Q Do you have anything to say as regards to what we might take from that?

A I think you do well to note that that final sentence has been removed, and I don't know why it's been removed.

Q Yes. The reason I, as a matter of fairness, put it to you was because I think in your statement that you say you have a recollection of the sentence. In the first IMT----

A Yes.

Q -- you have a recollection of that being said. It might be-- and I simply do not know. I have no idea what the position on this is, but I think, as a matter of fairness, I have to draw

that to your attention because it could be that somebody has said that that is not their recollection of what was said.

A Obviously, that could be the case.

Q Yes.

A That could be the case.

Q I guess where I am finally getting to is do you have a recollection, or are you dependent on the minutes as regards to this?

A No, I have a recollection that-- If we go back to the previous minute.

Q So, page 355.

A That's where we have Tom Steele advise that this technology should not be deployed for these patients. I remember that meeting, and I remember that we had a discussion about chilled beams and, listen, again, as a doctor to know what a chilled beam is, that shows you why we're here today. So this was around, though, the specifics of what was allowed in technical minutes, and we'd talked earlier about the hotel accommodation in the new children's hospital – and by that I mean what the physical infrastructure is like – and there are technical manuals-- these SHTMs that dictate to a certain extent what is and what is not acceptable. This is going to the core of what is and

what is not acceptable. My reflection had been that just because it's not said it's not acceptable, that doesn't make it acceptable, and the individual mentioned there in that final sentence had said that he didn't believe that this technology should be deployed for these patients.

Q Thank you. Now, if we move on-- sorry, if we can go back to page 360 of the same bundle, please. If we go, please, to-- noting, as we already have, that this is not a meeting that you were at but-- before we look at a particular passage, can you recall whether you were-- or are you able to say whether it is likely that you would have been updated about what was said at this meeting?

A Yeah, I can recall that I wouldn't have been updated about----

Q Say that again, sorry?

A I can recall that I would not have been updated about this meeting. One of the things about the whole of the governance around this was it was very difficult to maintain a narrative arc through the IMT process, because if you weren't present at a particular IMT meeting, there was no formal dissemination of ongoing decision-making. So it did make it difficult to be kept formally aware of where things were going. Obviously,

we had discussion amongst ourselves about what was said at the last IMT, but frequently we wouldn't see the minutes until the morning of the next meeting, or they would be given to us at the meeting itself.

Q If we go, please, to page 362, and if we just enlarge the top third to the second paragraph I would like to look at. If you are not able to recall the precise chronology on any of this, please do say, but just noting what was being said there about the ward being microbiologically safe at the time. Can you remember if that was something that was fed back to you at that point?

A It wasn't fed back to me as an individual, but I would have been made aware of that by colleagues who were present at that IMT meeting. I think if either Professor Jones or either of those two gentlemen had said that it wasn't safe, then the consequence of that would have been we would have to have moved off Ward 6A. So it would have been obvious that that was their opinion.

Q Yes. Now, can I ask you, please, again, just picking up on some of these references so that we have all seen the important documents. If we move through the bundle a little further, please, to page 373 of bundle

1, please. I think we can see this is an IMT of 8 October, and you are recorded as attending at least for some of it. Is that right?

A Yes.

Q Maybe just picking up on that point, maybe it is not possible to generalise, but it would be helpful to hear your thoughts on this. How long did these meetings tend to last?

A Yeah, they could go on for a very long time. So, I know that this one started at 16.00, and I left at 16.55. That was likely because I had to go to the ward to do some clinical work. They could last much longer than an hour. I mean two/three hours.

Q Yes, I mean, I think we can see-- just even staying on this page, we can see that Professor Craig White attended the meeting up until 20 past 7?

A Yeah, that's not unusual.

Q That was not unusual?

A It wouldn't have been-- sorry, to be clear, it wouldn't have been unusual for a meeting to have gone on for that period of time.

Q Yes, why would this one have been going on as long as that, would you think?

A As I say, I think that the fact this one went on for 3 hours/3 hours, 20 minutes, that's not

surprising.

Q Yes. Why do you say that?

A Because many of them did go on for a very long period of time.

Q And was that sort of a reflection of what, would you say?

A Of the complexity of the situation.

Q And the anxiety of the situation?

A And the anxiety of the situation.

Q Just to pick up on a point of detail, please, if we go to page 378 on this minute, and if we can just enlarge the middle part of the page, please? Do you see the reference to the suggestion that "this is not a typical outbreak"? A "pseudo-outbreak".

A Which paragraph is that?

Q I am sorry. It is the one beginning "Dr Deighan".

A Okay, thank you. Yeah.

Q Can you remember whether you were-- It is page 378, and it is about halfway down, "Dr Deighan". So, there is an expression of belief that this was not a typical outbreak. It was like a pseudo-outbreak, perhaps the first described in the world. I suppose my first question is can you recall whether you were present at that part of the discussion?

A I don't think I was present at that part of the discussion.

Q Okay. Do you recall being advised about this?

A Okay, so I recall that "pseudo-outbreak" became something that was discussed. I have no idea what was being meant by "pseudo-outbreak". I think that's very difficult to define. I find it interesting that a hypothesis that is the first described in the world is being taken forward as the most likely outcome here.

Q Do you want to expand on that a little?

A Just that one would want to be very, very sure that one had excluded any other possibility before arriving at a statement that says this is the first time this has been reported in the world.

Q Yes, we can put that to one side now, Mr Russell, thank you. You have got quite a bit in your statement about this stage of things, and we will obviously take all of that on board. If we were to sum up how things stood at this point, I would be interested in your thoughts on, I suppose, what might be described as the competing or the various considerations around keeping the restrictions on Ward 6A and in what

way are they competing – if that is the way to put it, "competing" – considerations. Thinking very much from the point of view of your patients, what would those be?

A So, the child and their family has to be absolutely-- and their safety absolutely has to be at the centre of all the care that we deliver. So, on the one hand, you want to ensure that you're not harming them by placing them in an environment that's inherently unsafe or by doing things to them that are more unsafe than they need to be, and I choose those words carefully because any medical intervention carries risk, so you want to make sure that you are not exposing them to excess risk that they would otherwise not be exposed to. On the other hand, you don't want to put undue restriction on families that are unnecessary because there isn't an issue with safety. So, for instance, if you are saying you can't come out of your room because we're concerned about infection within the ward environment, that's going to have-- just being isolated in the rooms we've alluded to earlier can have a very negative impact on the family. So, you need to balance up the requirement to keep that child and their family safe with the impact of the measures that

you've put in place to try and ensure maximal safety. So there's always going to be a trade-off between those two things.

Q Yes, thank you. If I was to try and summarise the considerations that we have picked up on in the evidence this week so far, including yours, first of all, there is the concern about whether it is safe to open up the ward but, secondly, something that was emphasised by Dr Chaudhury is the concern about not admitting sick children; a situation that Dr Chaudhury described as "untenable". Was that your thinking at the time as well?

A Absolutely. So, you have supra-regional paediatric oncology units for a reason, and the fact that we were unable to have as open access to ourselves as previously was immensely concerning. So, we had-- as well as at one point not taking any new patients into the unit, we also increased the amount of what's called "shared care" that we do. So, in other words, children who were becoming unwell with fevers at home were looked after in associated hospitals – so in Forth Valley or in Crosshouse or Dumfries and Galloway – to try and decrease the throughput through our unit. So there are real concerns that

families are not getting the kind of care that we would like to deliver.

Q Now, I wonder if another consideration was the continuing use of prophylactic medication? Before you answer that question, I will just, again, trail where we are going. One of the other themes I am going to ask you about in a bit more detail is around the use of prophylactic medication. So, it is a matter for you. If you want to go into detail just now, please do so but, equally, I would be content if you kept it at broad strokes at this point. Was that a concern at this point?

A Was what a concern, sorry?

Q The fact that there may have been a requirement to continue using prophylaxis if the concerns about the ward remained?

A Yes, so in broad brushstroke terms, you don't want to do anything extra to any patient, be that child or adult, because anything that is effective is going to have a degree of side effect. So, introducing anything new is great if it improves the situation, but there's always going to be a cost to that. So if the only way that we could keep seeing children within the confines of the QE campus was to introduce prophylaxis, well, on the one hand, the prophylaxis allows

you to carry on working. On the other hand, well, what's the side effect of the prophylaxis going to be? So there's always concern that when you're introducing something new, you don't inadvertently add to the burden the patient is going to get.

Q So, I mean, when you take all of these things together, together with the other aspects that you mentioned, can you say – I think you probably already have – whether you agree with Dr Chaudhury that the situation just could not go on like that?

A Correct.

Q Yes. Now, if we jump ahead a little in time – and, again, this is really just more to help all of us to make sure that we have got the timeline – we know that there was an IMT that took place on 5 November 2019, and there was a presentation made, I think, by Professor Leonard, and you say some things about that in your statement. I mean, if you were to summarise your thoughts as regards the analysis that was being presented, what would they be?

A Well, it was an elegant--elegant piece of work----

Q It was what, sorry?

A An elegant piece of work, and it was very well run as an experiment. I just think it was asking

the wrong question and interpreted in a way that I would not have interpreted it. So, yeah.

Q This is something I am going to return to later. Thinking about you as a treating clinician, as an oncologist, is the assessment of that work something that is within your expertise?

A So, the assessment of the methodology-- sorry, the assessment of the generalisability of it is within my expertise. I'm certainly not expert enough to be able to have done the experiment.

Q Can you just help us a bit on the bit that is within your expertise, because you do mention this in your statement, and I was not sure I understood what you meant. You said that you disagreed with I think the generalisation of his results. Could you explain that a little bit?

A Yeah, so Professor Leonard had looked at the-- whether he could see whether the type of bug called E. coli were from the same family or not. So, he was looking at their genome to do that, and so that's great. That's a really nice piece of work, but we weren't interested-- Well, it's not that we weren't interested. What we were much more interested in was the environmental gram-

negative infections, rather than the non-environmental gram-negative infections. So, by saying that the non-environmental gram-negatives didn't seem to have a familial link or a physical link together, that doesn't mean that you can then say, therefore, the environmental gram-negative infections similarly don't have that link. That was my concern.

Q Thank you. So if we were to just ask this question then: so, at this stage, can you say whether or not you yourself were satisfied that it was safe to reopen the ward?

A I think that's a different question to Professor Leonard's experiment. So, I was happy that-- "happy" is a loaded word, isn't it? I was content that I had been as reassured as I could be by my colleagues that the ward was safe to reopen. I told Professor Leonard at the time that I didn't think his results were generalisable, and that's not surprising. As clinicians and scientists you will disagree on how you can interpret evidence.

Q Yes. Now, it is important, I think, that nobody is misled by the question that I asked there. In particular, I was not suggesting that it was Professor Leonard who advised that it was safe

to open the ward. Apart from anything else, we can see from the IMT minute from that meeting that the ultimate decision would be taken by the Chief Nursing Officer.

A Yep.

Q If we go a little further ahead to the IMT of 14 November, which is at page 402 of the same bundle, thank you. Again, we can see that you were present with clinical colleagues. I just want to take you to page 403. Underneath "Incident Update". If you just take a moment to read the first two paragraphs, and then I will ask you a question.

A Okay, yes.

Q Do you have a recollection of-- even in broad terms-- of what is set out there being discussed?

A Yes, I do.

Q Are you able to explain it to us?

A So, my concern was that-- So, if we take the first paragraph, so we've got a report from HPS that the ward-- that the GGC can lift the ward restriction. My concern was that the absence of evidence isn't absence of cause. Although, as I say there, the source of infection wasn't found, that doesn't mean the source of infections was found somewhere else, and so my concern is that if we haven't established why are the patients in the haemato-oncology service getting these infections, then moving back in opens up the possibility that they're going to get those infections again in the future.

Q Are we to read this-- or can you confirm whether we are to read this as indicating a discussion along the lines that there was now advice that it was safe to open but that you, as a treating clinician, are continuing to express a concern? Is that right?

A Yes.

Q If I ask you, please, to look over the page to page 404 and if you look under-- it is paragraph-- the number 7, Mr Russell, "Risk Management/Control Measures," we can have a look at that. Again, just take a moment to have a look at that, please.

A Okay, yes.

Q What is it with that-- I am thinking in particular about the reference to the clinical team being happy. It might go back to what you said a moment ago, and maybe wonder if this is the point in time where this is what is being said. If you could explain your recollection at least?

A My recollection of this is

that as a clinical team we had attended many IMTs and there had been repeated assurances that mitigation was being put in place. Despite that mitigation, we continue to have further and ongoing problems. So the clinical team would be naturally anxious that when we're told that it's safe to go back to somewhere because we haven't worked out why are these children still getting all those infections-- that we are reintroducing children into an environment where potentially those infections are going to come back. I think at this point it wasn't so much that we were convinced that there was a major issue that hadn't been addressed on 6A; it was that we had been reassured so many times in the past, and that reassurance was given with all due respect and with all good intention, that despite those reassurances our patients have continued to carry on having infections. So, if you're telling us "It's safe to go back," well, okay, we need to-- we accept that, but we need to have a very clear understanding and perhaps further discussion about why that is the case.

Q Yes. Can you confirm whether-- We have had evidence already about this this week. I am anxious not to lead you on this, as I

am sure you will understand. Can you recall whether there came a point that clinicians were able to say, "Well, on what we are being presented with, we are content," if that is the word?

A Yes.

Q Yes. Maybe it is important at this point to just mention two things.

I think our understanding within the Inquiry team is that the ward was reopened around about 21 November 2019. Would that be right?

A That's my recollection, yeah.

Q Just thinking about-- and by "the ward," of course, we are talking about Ward 6A. Just thinking about the period since then, throughout the whole of the period that you remained on Ward 6A, did you or your clinical colleagues or indeed Infection Control see anything that you considered to be untoward or concerning or unusual in infections from that point?

A To answer that in a way that's useful to you, I'd need to see the infection run charts and, so, yeah, without further study, it would be remiss of me to talk about that, I think.

Q Can I frame the question in this way? Do you have a recollection of there being any concern about a return of unusual infections

after matters opened up?

A After 2019?

Q Yes.

A I'm sorry. I can't untangle when in the timeline my concerns about infections dissipated and disappeared. What I can say is that I have no concerns now, but it's when I lost those concerns, I can't say.

Q I think I am understanding what you are saying. Am I taking you to say that the concerns-- that there may still be a problem-- may have continued past 21 November 2019?

A They may have continued past that, yes.

Q But the question of whether you, in fact, as colleagues, saw patterns of infections that concerned you is a different question?

A That's a different question.

Q What I am asking you is whether you recall whether there ever were such continuing patterns?

A Yes, I don't recall that. That doesn't mean they weren't there.

Q Yes, well, it is only fair, I think, to put this evidence to you that the evidence of your fellow consultants this week is that they have no recollection of such concerns.

A Yeah.

Q I am not taking you to say anything inconsistent with that. Would that be fair?

A Yeah.

Q Thank you. Just one further detail on this chapter, and it is just a document that I would like you to look at and I know that you have seen before. If we could go to bundle 6, please, Mr Russell, and at page 10, and you have got before you an SBAR, and if I take you, please-- if we go to page 600-- sorry, page 12, E6.12, just the end of it. It is an SBAR by Mr Andrew Murray, the Forth Valley, dated 12 December 2019 and, I think, at least for the purposes of this hearing, I think this is something that has been drawn to your attention. Is that right?

A Yes.

Q Can you recall whether you-- Oh, sorry, let me take a step back. Having read the document, you will understand that Mr Murray was engaged to do a piece of analysis around the prescription of prophylaxis and also the communication around that. Is that right?

A Yes.

Q It is our understanding within the Inquiry – and we will hear from Mr Murray next week, perhaps, on this – that this came about as a

result of the Oversight Board's work?

A Yeah.

Q Can you yourself recall having any meetings or discussions with Mr Murray?

A Oh, yes, absolutely. So, I should say just for clarity that Mr Murray and I now work very closely in the managed service network of which he's the Chairman and I'm the Clinical Director, but I remember meeting with Mr Murray in the Clinical Director's Office in the ground floor of the Royal Hospital for Children to discuss this.

Q If I can take you, in particular, to-- if we can have a look at the paragraph on-- Sorry, Mr Russell, can we go back to page 10? If we go to the paragraph that begins, "Haemato-oncologists have provided confirmation". Have you got that?

A Yeah.

Q "Haemato-oncologists have provided confirmation that they are reassured regarding the safety of the water and the environment in 6A, based on evidence from a range of sources and the longstanding improvement approach to Infection Control." Can you say whether you recall discussing that matter in your discussions with Mr Murray?

A So, no, I think that was-- we didn't have an active discussion about that because it was statement of fact. My meeting with Mr Murray was more around the practicalities of using prophylaxis and going on from Cyprofloxacinto TauroLock. So as a meeting between two clinicians, because Mr Murray is an ENT surgeon, it was very much on the basis of, "Okay, how are we going to move forward with prophylaxis and what are you doing, and have you got the government structures around that?", rather than a discussion about, "What's happening on 6A at the moment?"

Q Yes. If we maybe just break that sentence into two questions, with the first question being whether you yourself provided that information to Mr Murray, and the second question being whether what is set out there would be something that you would have accepted.

A Okay. So, the way I read this, and I don't have a direct recollection in answer to your question-- the way I read this is that we would have confirmed having been asked that we were reassured by the safety, rather than doing the reassuring ourselves. That may be semantic, but that's the way that I read

this and, yes, at that point I was similarly reassured that 6A was a safe place to have Children and Young People with cancer. Again, if we weren't reassured that it was safe, we wouldn't have carried on treating children in that environment.

Q Thank you. My Lord, I wonder if this would be a convenient moment to break, unless there are any further questions arising on this document from your Lordship's point of view.

THE CHAIR: We will take our lunch break. I mentioned that the BBC had asked for Facilities to do some filming and you would notice the camera crew this morning. My current understanding is that the BBC will not be requiring further Facilities, but I am just alerted to that being a possibility. So, the bottom line is that if people want to use the hearing space over lunch, they are free to do so. We will sit again at two o'clock.

MR DUNCAN: Okay.

(Adjourned for a short time)

THE CHAIR: Good afternoon, Dr Murphy. Mr Duncan.

MR DUNCAN: Thank you, my Lord. Good afternoon, Dr Murphy.

A Good afternoon.

Q We really concluded the, as it were, chronological aspect of your-- the narrative aspect of your evidence, and I want to just move on to some themes as we move towards the end of your evidence, and there is two that I would like to spend a bit of time on, and they are to do with infections.

A Yeah.

Q One that both myself and Lord Brodie have asked you some questions about already today, and that is about the question of what an unusual infection pattern is, but I am going to mention what the second theme is, just so that we are all clear of the distinction. The second theme I am going to ask you about is about the question of whether or not, as you see it, there is evidence to support a link between infections and the built hospital environment, so I am going to take it in those steps. So, let us just begin then with what are unusual infections. Now, I have got a preliminary question, and I think we have probably already dealt with this, but it would be interesting to hear your further thoughts. It is really this, Dr Murphy, on what basis would you say that you and your fellow clinical colleagues have expertise in saying whether something is or is not

unusual?

A Yeah, that's a really good question, actually. So, as you may be aware, Lord Brodie may be aware, when you have cancer and you're treated with chemotherapy, you become immunocompromised, and that means that you're more at risk of getting infection. So the management of infection is absolutely bread and butter day-to-day work for any oncologist, but particularly for paediatric oncologists. That's because kind of counterintuitively, the intensity of therapy that you can give to children is much higher than the intensity of therapy than you give to adults. So, essentially, because their kidneys work better, their hearts work better. So because of that, they are more immunocompromised and therefore they get infection. So we see an awful lot of infection a lot of the time, and at any one time on the ward, many of those inpatients won't be in for having chemotherapy, they'll be in for management of infection. So we are very used to seeing and dealing with infection in children who are being treated for cancer.

So that gives us a background of, if you like, what's normal in terms of our microbiological load. So, by that I mean what's normal in terms of the

number of children who get infections, the frequency of infections, the type of infections that they get, and then the particular subtypes of those infections.

Q Yes, and just maybe teasing aspects of that out, thinking about your experience and the experience of colleagues, and what I am taking you to say is, in a sense, you are informed observers. Is that right?

A Yeah. Yes.

Q Presumably, thinking about your experience and colleagues' experience of seeing infection, you have also discussed infections over the years, not just with clinical colleagues but presumably with Infection Control colleagues?

A Absolutely. So, again, it's probably worth making clear that the management of children with cancers, as I said previously, is a team approach.

Q Yes.

A So that's not just about the diagnosis, it's not just about the way we treat them in terms of chemotherapy, radiotherapy, surgery, immunotherapy, it's about all of their supportive care as well. So we would routinely involve colleagues from microbiology and Infection Control in the diagnosis of infection and then the

subsequent management of infection in those children. They attend our lunchtime handovers. We have a weekly-- what in the old days would have been called grand round on a Friday, which is a more discursive----

Q Sorry, what did you say there?

A What would have been called a grand round in the past. So that's a much more broad-ranging discursive discussion around patients, and we have time set aside for our microbiology colleagues to attend that meeting. So we would be treating infections absolutely in lockstep with our colleagues from microbiology and Infection Control.

Q Again, at the risk of leading you, but I think it is implicit with what you are saying, thus, you will have had experience of not just yourself observing infection and asking yourselves whether it is unusual but discussing that with experts who are expert at actually analysing cultures and bacteria. Is that right?

A Yes. Yes. Completely correct.

Q Another thing that I think-- I am just teasing out from what you said, one of the reasons I take you to be saying that you are informed observers is because you are familiar

with the inherent susceptibility to this?

A Oh, precisely.

Q Yes.

A Absolutely.

Q I mean, we have already had quite a bit of evidence on this, this is a group of patients we take from the evidence we have heard and from what you have just said to be susceptible anyway to endogenous and exogenous infection. Is that right?

A Absolutely, yes. That's absolutely right.

Q And, let us be clear, to also be susceptible to gram-negative infection?

A Oh, absolutely. So, again, just as an illustration, when I'm on call at night, what keeps me awake is the thought that the children will either get gram-negative sepsis or fungal sepsis because gram-positive sepsis will make you unwell but tends not to be life-threatening or kill you. Gram-negative infections can make you very unwell, very quickly. Again, by way of example, we could have a child who has been seen routinely in our Day Care Unit, assessed, thought to be well enough to have chemotherapy, someone that's as good as they could be, and before the chemotherapy is hung, they're being resuscitated and taken to the Intensive

Care Unit because they've got an overwhelming gram-negative infection. So we routinely see gram-negative infections, and they keep me awake at night because they can make you very unwell very quickly. Similarly, fungal infections they tend not to make you acutely unwell very quickly but the consequence of them can be devastating.

Q Yes. I think everything you have just said resonates with something that I detected you saying in your statement which, when you were talking in your statement about the pattern of infection being unusual, you said, "unusual, even by our standards."

A Yeah, absolutely. Again, one forgets that what is normal for yourself within your own professional group is not normal for even other paediatricians working within the hospital for children. So, outside of our infectious diseases' colleagues, we would be much more aware of and skilled in the management of unusual infection than most paediatricians.

Q Yes, thank you, and just, again, still thinking about the nature of infections that your patients are susceptible to, are you able to help us with the term "an environmental infection"?

A Yes.

Q What would you mean by that?

A So, an environmental infection would be an infection that you acquired from your immediate environment. So that could be the water supply, for instance. It could be if you've got building works going on, but you've disturbed the soil and aerosolised infections come from there.

Q Thank you. Now, that is helpful in terms of us understanding, I think, the basis upon which you say that you are able to offer an informed view of what is and is not unusual. So I think my next question is, what was unusual, but before you answer that, there is yet again a prior question. What period of time are you talking about when you are talking about unusual? Are you talking about the whole of the period or just bits of it?

A Well, it would be bits of it, because as I alluded to earlier on, when we first moved in and we began to see infections, it's impossible at that point to say-- If it's your first infection, then you don't know that it's going to be one of a subsequent 10, 11, 12, 13, 14, 15. It might be a standalone and that would not be an unusual thing. We've seen from the Great Ormond

Street report, they had gram-negative infections. They didn't have any environmental ones, but they're not unheard of in our patient population, but what was unusual was the number of gram-negatives that we were seeing. What was unusual was the fact that we were seeing multiple gram-negative infections at the same time in the same patient, and the type of gram-negative infections that we were seeing. All of those things were unusual.

Q Yes. I am going to try and nail down the particular aspects of the infection pattern that led you to the conclusion that there was something unusual going on here, but just trying to nail down the time scale that we are talking about. Would it be your evidence that we are really talking about the period from March 2018 onwards?

A Yeah, yeah.

Q And thinking about the particular bits of that chronology that we have spoken about today. Would that be right?

A Yes, that would be correct.

Q Thank you. So the period in March 2018, the period in the summer of 2018, yes?

A Yeah.

Q Then the issues that presented in 2019.

A Yes.

Q So if we can then try and just tease out what the unusual features are, and I think probably you have just mentioned all of the ones that I think I have on my list from what I take from your evidence. The first one that you mention in your statement is unusual names?

A Yeah.

Q What did you mean by that?

A Well, so, for instance, one of the infections we were seeing was something called Elizabethkingia. Now, I had never heard of Elizabethkingia before I came to Glasgow, I hadn't heard of it in the first 10 years of my time here. I think if you were to go to other paediatric oncology centres in the UK and say, "Have you ever come across Elizabethkingia?", they may well think you were talking about either a patient or an individual rather than an infection. So we were seeing bugs that were unusual, even by our standards.

Q Yes, and I think another one that you mentioned in that context in your statement is Mycobacterium chelonae.

A Yes.

Q Yes. Now, the second aspect, and actually this may be no more than a repetition of the first, was around the type of organisms that you were seeing. Is there a different point around the type rather than just, "I've never heard of it before"?

A Well, it was that we became increasingly aware that we were seeing a greater number than we would have seen previously of gram-negative infections that are associated with the environment, so environmental gram-negative infections. So that was unusual.

Q Yes. In your statement, I think you talk about Elizabethkingia, Stenotrophomonas and the Pseudomonae family.

A Yeah, yeah.

Q Were there any others that you can think of?

A No, I mean, those would be the main ones.

Q I think you just said this, and those were ones that there would be an environmental association, as you understood it?

A Yes. Absolutely.

Q The third aspect that you mention in your witness evidence-- in your statement evidence is, are we to understand that there may have been cases where more than one positive

culture was identified?

A Yes. Yeah. So, again, for some context, it's not unusual that you might see, for instance, a gram-negative infection and have also in the same blood culture bottle a gram-positive bug at the same time, and we would normally take that as indicative of poor technique. So either that the gram-positive came from the fingers of the clinician who was taking the blood sample-- So, in other words, it was grown in the child's blood culture, but came from the doctoral nurse who was taking the blood, or that it came from the skin of the child as you pierced their skin with a needle, and that's not unheard of. It might be a once a year thing, but it's not unheard of, but to see two gram-negative infections, again, unusual, not earth shattering, but one would comment on that. But to see three or four gram-negative infections from the same child in one blood culture bottle, that's really, really unusual.

Q Thank you, and you have probably just answered the question I was about to ask, which was really just to clarify exactly what we are talking about here. Are we talking about a situation of a child who is presented with symptoms of an infection, a blood culture being taken or a blood sample

being taken, and that disclosing a number of different-- Now, what would we see at this point, bacteraemia?

A Yeah, bacteraemia or septicaemia, depending on how well or unwell the child is, and it may help if I just elucidate a little bit on process. So, our families are told that if their children have a fever of greater than 38 degrees to bring them to hospital. At that point, all of them would get a series of bloods done, one of which would be a blood culture, and a blood culture is blood that you take off an individual and you keep it in a warm environment to grow any bacteria in that blood culture bottle that are actually in the patient's bloodstream. So for some of our children, they will come in with fever, but won't be unwell with that fever.

However, we would subsequently grow organisms within their blood, and that's why we automatically put children onto broad-spectrum intravenous antibiotics at the start, because it's impossible to tell whether you've got infection on board or no infection on board, or if you've got infection on board, whether it's a really serious infection or not a serious infection. So you could grow a gram-negative bug, gram-negative organism, from an otherwise well child,

and that's not unusual, "Okay, well, we're glad we've picked that up before they've become unwell." However, the majority of children who have gram-negative infections are unwell with their gram-negative infections, and they come in unwell.

Q Thank you, that is helpful. The fourth aspect of, as it were, the evidence base that I take you and your colleagues to be relying upon is comparisons with other hospitals.

A Yes.

Q Now, there is a few aspects to that in itself, I take you to be saying and, indeed, your colleagues. One aspect is previous experience at Yorkhill.

A Yeah.

Q Do you want to tell us a bit more about that?

A Well, so we were dealing with a very similar patient population when we were in Yorkhill. So the geography of our catchment area was unchanged with the move, and the types of cancers that the children were presenting with and therefore the ways that we were treating them was broadly similar. Now, we have evolved in terms of our treatment regimens but, in broad brushstroke terms, the population was the same; the type of

cancer we were treating was the same; the way we were treating them was the same. So they're a useful comparator group, and we weren't seeing the type of infections and the number and distribution of infections in our patient population in Yorkhill that we saw when we moved over to the QE site.

Q Say that again, sorry.

A So when we were on the Yorkhill site, we weren't getting the same pattern of infections that we got subsequent to the move.

Q When you say pattern, are you talking about amount? Are you talking about frequency? Are you talking about clustering? Are you talking about the----

A All of those.

Q Are you also talking about the unusual type of infection?

A Yes.

Q In your statement, you indicate that what you and colleagues were seeing was greater numbers of the sort of infections that you are speaking about than were being seen elsewhere.

A Yeah.

Q Now, what are we to take from the reference to elsewhere?

A By that I meant other hospitals.

Q Yes.

A I just want to, if I may, go back to just the statement we were talking about previously. We certainly saw gram-negative infections in Yorkhill, there's no question about that, and we saw a number of gram-negative infections in Yorkhill, there's no question about that; but they were of a different type and a different-- I think "cluster" is a good word in this situation, a different type of clustering. That's what the concern was. In terms of other hospitals, that's about experience that we all brought from other places that we'd worked. So, for me, before I came to Glasgow, in terms of paediatric oncology centres, I'd worked in the Royal London Hospital in Whitechapel, in Great Ormond Street, in the Royal Marsden Hospital, and had not seen in those hospitals the types and variety of environmental gram-negative infections that we were seeing in the new children's hospital in Glasgow.

It is difficult to be completely evidentially based about this. I know I keep harking on about evidential basis, but that's just because of my background and my training. It's very, very difficult to get from other hospitals what their infection rates are. So when we were working with Infection Control

colleagues and microbiology colleagues to say, “Is what we’re seeing unusual within the context of Scotland or the context of the United Kingdom or the context of Europe?”, it’s really, really difficult to get that data. So all you can do is talk to your colleagues at meetings and say, “How much infection are you seeing? How often are you seeing this? How often are you putting patients into intensive care units?” The reflection we were getting back from those conversations was that we were seeing far more infections in Glasgow than similar units were around the UK.

We worked very closely with colleagues in Grampian, we worked very closely with colleagues in Edinburgh, so we had a direct Scottish comparator or comparators and we were seeing more infections than colleagues were in Scotland and it seemed that we were seeing more infections than colleagues were, both in the UK and when we were at European meetings, people were saying that we were seeing more infections than they were, but obviously that’s not hard evidence. That’s a clinical reflection.

THE CHAIR: I apologise to Mr Duncan if I am jumping in where he was going to clarify. When you say

that, from your experience and from speaking to colleagues, in the Royal Hospital for Children you are going to get a different type and a different clustering. Now, as far as type is concerned, is that a reference back to the four particular bacteria----

A Yes, it was a reference to the----

Q The four you identified.

A Yes, and the environmental infections that we were seeing within the QE campus.

Q Right. And clustering?

A By that I mean that they-- We did see environmental infections in Yorkhill, there’s no question about that, and I think you will see environmental infections in any child who’s being treated on any unit at some point. So Great Ormond Street reported they had four gram-native infections, but no environmental infections. The fact that they’re reporting they don’t have an environmental infection means that they are on the lookout for environmental infections, so it’s recognised that paediatric oncology units may have a problem with environmental infections in their patient population. That doesn’t mean that they’ve got a problem with their environment though, and what was different for us from an experiential

perspective was we were seeing way more environmental infections than we would have thought was normal. Does that help?

Q Can I come back to clustering? That suggests to me some sort of coincidence of time or place.

A Yes.

Q So what was different about, in your view, the Queen Elizabeth clustering?

A Was that we were seeing more environmental infections as a total number and we were seeing them within a tighter timeframe.

Q Right. Thank you. Sorry, Mr Duncan.

MR DUNCAN: Thank you. No, I am grateful for that, my Lord. And just on the point about the four infections, are you saying that those are the four that were unusual or-- Sorry, rephrase that: are you saying there were only those four that were unusual?

A No, I'm saying that those are very good examples and are illustrative of the kind of environmental gram-negatives that we were seeing.

Q Yes, and in fact I am going to have another go at that question. What I am really asking is, in terms of coming across infections that you either had not heard of or were just exceptionally unusual, are you giving us those four as examples?

A Yes, as examples.

Q Thank you. And in terms of the discussion with colleagues in other hospitals, are we to take you as saying that you would effectively be discussing this with equivalent clinicians, treating clinicians?

A Yes. Absolutely, yeah.

Q So other informed bystanders?

A Yes.

Q And was the position among you and your treating colleagues, who must also have discussed this, that you all felt that what you were seeing was unusual?

A Yes. I think it's fair to say that amongst the consultant body in the paediatric haemato-oncology department in Royal Hospital for Children, there was unanimity that we thought that we were seeing an unusual spectrum of infections.

Q And at least up until August 2019, can you say whether that was a view that was shared by your Infection Control colleagues?

A I think it was, yes. It was a view shared by Infection Control colleagues, yeah.

Q And just one final point on this theme about unusual infections and subject to any questions Lord

Brodie may have about it, just to go back to the pseudo-outbreak and understand where this fits into the analysis. Is the pseudo-outbreak explanation something that addresses the question of a link to the environment, or does it address the prior question of whether this was even unusual?

A I think you'd be better off addressing that question to the person who used the term. I would not have personally used the term pseudo-outbreak – that may be because of my training – but the fact that it was being posited as the first in the world potential pseudo-outbreak says a lot to me.

Q Just staying, though, with whether it says anything at all about whether or not the pattern was unusual----

A I think the fact that you have stated, or one has stated it's a pseudo-outbreak means that one has to recognise that there was something to be concerned about in the first place and that your explanation of an unusual pattern is that of a pseudo-outbreak.

Q Yes, so to go back to my original question, it sounds as if, and I entirely take your point that it is for the person who said it to answer this but, you are the person who either heard it or heard of it, am I taking you to have understood that it was more about the explanation for the infections rather than whether the pattern was unusual or not?

A Yes. I mean, I think you have to take that as exactly that, that if you're saying, "We believe this is a pseudo-outbreak," you're saying there is something to be described. Otherwise, you would say, "There's no outbreak here."

Q Thank you. My Lord, I am going to go on to the link question. I do not know if there's anything more your Lordship wants----

THE CHAIR: No. Thank you.

MR DUNCAN: Now, we will move on, then, to the second theme as to whether or not you consider there to be a link between the infections and the built hospital environment. Now, again, I am going to start with my prior question of expertise. Upon what basis are you able to opine on this second question?

A Now, I think it's important we clear that before I opine. So I am coming at this as a clinician with a training in paediatrics, in children's medicine, and I'm coming at this as a subspecialist, as a paediatric oncologist. What I'm not coming at it

is either as an epidemiologist or an infection control physician or a microbiologist, so we have to be really clear that that's where my expertise lie. So my reflection is that as a paediatric oncologist, the number and type pattern of infections that I was seeing was outwith anything I'd ever seen previously and I couldn't find anything in the literature that described a similar outbreak.

Q Thank you. So when the Inquiry moves on to consider the question of whether or not there was a link between the infection pattern and the built environment, are you saying that you would see that as being a question to be addressed by epidemiologists and microbiologists?

A I think they have to be part of the group that are asked an opinion, yes.

Q Well, I will maybe slightly rephrase my question then. Would you see treating clinicians as not being part of that group?

A No, absolutely not. I think our reflection is very helpful and our experience is very important but, much like you need a team to treat children with cancer, you're going to need input from many different kinds of professionals to be able to come to a conclusion here, and that includes

people who build hospitals, people who design hospitals and infection control teams and everybody else.

Q I think what you say in your statement is that – you have said this already today, in fact – you are somebody who spends a lot of time evaluating evidence.

A Yeah.

Q And is it, again, that you see you and your colleagues as being able to give us an informed view, at least as regards to the questions that might be asked?

A Yes, absolutely. Yes.

Q So if we can all take on board what you have said----

A Yeah, got the caveats in.

Q Yes, exactly, and as aware about the limits of how far your evidence can go, what is your overall position?

A Yeah, as you can imagine, I've taken a lot of time to reflect on this, and my overall position is that I believe that there was a contribution from the environment to the number of infections that we were seeing in our paediatric oncology population in the west of Scotland.

Q Thank you. Now, what I would like to do is just to understand the basis upon on which you reach that view. Would you see that as

being a question about looking at the overall circumstances?

A Yes, so that's taking a step back and looking at the pattern of infection and the way that it's changed over time. It's looking at the change in practice that we've put in place, and it's also with a knowledge of infections in immunocompromised children.

Q So in part, in a sense, it is a repeat of the evidence that goes into the question of whether this is unusual. Is that right?

A Yes, absolutely. Yeah.

Q So the use of this really is being about-- There are a number of different strands to this. Is that right?

A Yeah.

Q So one strand would be, "There were unusual infections." Is that right?

A Yes.

Q And another one that you mentioned, the fact of people developing multiple organisms in a single blood culture, yes?

A Yes.

Q I mean, you do say something about that particular aspect in your statement and just taking that particular aspect, do you have a position on, as you see it, how strongly that points either towards or away from

an environmental explanation?

A No, I don't think that you can hang your hat on any single piece of evidence, whether that's multiple infections, whether that's type of infection, whether that's the number of infections seen in a period of time. I think you have to look at the bigger picture. I think the other thing you have to think about is looking for an understanding of the aetiology of why we had a problem. So the first thing is, did we have a problem? And I think if you've described the fact there's a pseudo-outbreak, you've accepted that there is a problem. So if you accept there's a problem, then the question is, where has that problem come from? And you need to go through an iterative process to work out what the underlying aetiology or aetiologies of the infectious burden seen in the population. Once you have ruled out things like the way the building is cleaned, the way that lines are put in, the way that lines are handled, all those other things, then you are left with, "Is it something to do with the environment?"

We have changed an awful lot of things in our practice, which makes it very difficult to be absolutely sure about which bit of those things has made a difference. It may well be that

line care was not as good as it should have been, and that part of the improvement has been we've put a huge quality improvement program in place. But what one can say is that the number and type of infections we're currently seeing in the hospital after a massive change to the hospital environment has dramatically decreased, so, you know, you have to be cognisant of that. You also have to be cognisant of a £12 million refit program, and I don't think any organisation would undergo that kind of refit program if it didn't think that it had a problem with its environment.

Q So I take from what you have just said that another aspect of the circumstances that you have regard to is any correlation that there is between the understood state of the environment and the pattern of infection. Is that right?

A Yes. Absolutely.

Q And I take you to be saying that the understood state of the environment currently is that, as you say, a large amount of money has been spent on creating something that is said to be as safe as it could be. Is that right?

A Absolutely right.

Q And there is no concerning pattern of infection. Is that

right?

A That's absolutely right. I was just going to say that we have to be really careful between correlation and causation, and again, this comes back to scientific method, and I don't think you can say any more than there was a correlation between change in practice and change in environment coinciding with an increase in environmental gram-negative infections in our patient population, and then a subsequent decrease in those numbers when again we change practice and changed environment. Now, correlation doesn't equal causation, that's axiomatic, but it warrants further investigation and further deep thinking.

Q Well, I think, let us go back to that point then, that distinction, and go back to what you set out as being your overall position. In terms of your overall position, then, are you saying-- you are only saying there is a correlation or are you saying you actually think it goes further than that when you put all of the evidence together?

A Yeah. So I think the correlation is undoubtedly there. It's very, very easy to see. When you go to causation, you have to take a view and that view is based on experience

as much as anything else, and my view, and it is only a view, is that there was a causative association with our environment and the infections we were seeing in our children.

Q Thank you, and just to pick up on one of the strands of the circumstances that you mentioned, which is the question of them being picked up from the environmental infections. In other words, it does not necessarily follow that they would be picked up. Sorry, let me rephrase that. It does not necessarily follow that an environmental infection would be picked up inside a hospital or other environment.

A Absolutely, yeah.

Q Now, you mentioned this in your statement and in particular you mentioned something about thinking about the unusual nature of infections, and you postulate how likely it would be for those to have been picked up outwith the hospital. Can you say a bit more about that?

Q Yeah, so any environmental infection of course can be picked up in any environment. So the fact that you have an environmental gram-negative infection doesn't mean, coming back to Lord Brodie's point earlier on, that it's been acquired from the hospital within which

you are being treated. It could be acquired from your home, it could be acquired from your school or a farm that your parents own or something like that, but one of the difficulties when we were going through trying to work out what was going on was that, again, coming back to your point, sir, about hospital-acquired infections, many of these children would come in with fever from their home and therefore some of our non-clinical colleagues were saying, "Well, it can't be the hospital environment because they're coming in from home."

But of course, if you look at where has that child been over, say, the past two months, 60 days, if they've spent 55 of those days within the hospital and five days at home, it becomes much less likely that they've picked that infection up at home than it has that they've picked it up in their hospital. Equally, we treat people from a very diverse geographical region. So, you know, you'd have to postulate that there was the same environmental infection in Dumfries and Galloway, in Mull, in Aberdeenshire, and that their final common pathway was that they were coming to be treated by us, and I thought it was more likely that the patients were coming from those places and picking up those infections

in the environment that was common to them.

Q Yes. In your statement, you say something along the lines of, if these infections were being picked up outside hospital, you would have seen this in the Glasgow population in the last 10 years or something like that.

A Yes.

Q Could you explain what you mean by that?

A So if you're saying that these patients are, you know, that environmental infections are being picked up outwith the hospital, then you have to say to yourself, "Well, why were we not seeing those environmental infections when we were in Yorkhill?" Because the population is the same. Where these patients are coming from is pretty much unchanged. So my house was built in 1882. The plumbing is not quite 1882, but it's been there for a long time, and one would expect then that if we had a background of environmental infection within the Scottish built environment that we would have seen that previously.

Q Thank you. My Lord, I do not know if there is anything further you want to explore on this.

THE CHAIR: No, I am content to follow you here.

MR DUNCAN: Thank you. I am going to move on now and I really just seek some clarification from you and a couple of things in your statement, still really on the question of infection, and I am interested now to just understand what you are saying in relation to impacts of infection. Now, I am going to ask Mr Castell to put up on the screen a couple of bits from your statement, just so we understand. Mr Castell, it is page 897 of the statement bundle and it is paragraph 264. The bit I am interested in-- You probably want to read the whole paragraph just to reorientate yourself. It is really just the final sentence I am interested in. You say:

> "However, in our population we saw a high number of gram-negative infections and we saw a proportion of those patients go to the intensive care unit and we saw a proportion of those patients in the intensive care unit get very unwell."

A Yeah.

Q What I would quite like to tease out is whether you are intending to say there that-- Or rather, are you speaking there about a cohort of patients who you consider to have had infections associated to the built hospital environment?

A Yes.

Q Thank you. And if we go on then to paragraph 266, and if you just read that and take a moment to orientate yourself. Again, it is the same question. Are you saying that these are patients that you consider to have had infections linked to the environment?

A Yes.

Q Thank you. And in terms of the basis for those judgments, is it essentially what you have just been telling us about?

A Yes.

Q Thank you. You can put that away, Mr Castell. Thank you. I am going to move on to a further theme, which is prophylaxis, and you have given us, as have your colleagues, quite a lot of evidence already in your witness statement, and I don't want to take time up on going over matters again. Now, I have been asked to clarify one matter, just to go back to something we were discussing earlier, which was the reopening of Ward 6A and, in particular, there was the discussion around Mr Murray's SBAR and the question of reassurance. My question is this: was the reassurance that you and your colleagues had at that time sufficient to stop prescribing any additional

prophylaxis as a result of any concerns about the environment?

A Yeah, so that's a good question. I can't remember the exact timing of when we de-escalated the amount of extra prophylaxis that we were using. To be honest with you, the de-escalation of that was more around the side effects that we were seeing from the prophylaxis rather than necessarily the need for the prophylaxis itself, and those two things may well have coincided, temporally coincided, so timewise they may have coincided, but the switch from Cyprofloxacinover to TauroLock was not so much that we didn't need to prophylax our patients but that the prophylaxis itself was becoming problematic.

Q It is difficult to do this without papers in front of us, obviously, but picking up on what you said about de-escalation, can you say whether it is your recollection that the prescribing of additional medication stopped immediately or, to use your word, it was something that was "de-escalated"?

A Well, there was process around it. So when we saw that we were getting a lot of side effects from the quinolones, from ciprofloxacin, we then looked at what alternative

methods could we put in place, and it took a period of weeks to do that piece of work. It won't surprise you to know that we went and we had a look at the evidence and we went to see what we could do that was most evidentially based, and then we drew up a series of standard operating procedures to change over and built into that the ability to see whether the change that we'd made was actually effective or not. So that took time and I think when I'm referring to de-escalation, that's what I'm referring to.

Q And that presumably is all set out in documents.

A Yes.

Q Now, what I am about to ask connects to the same thing. Can we go back to the statement bundle, please, and if we go to paragraph 298, which I think is at page 905 of the bundle. Again, just take a moment to read it. What I am interested to understand is what the drug-drug reactions are. I think you may have already answered this question, but just to be clear about that.

A So, a drug-drug interaction means that when you are prescribing what we call polypharmacy, so more than one drug, the enzymes that either work on the drug or the drug works on can be

common across drug classes. So you may find that if you add a third drug to two other drugs, that you then have to either increase or decrease the dose of the other drugs because the third drug is interacting with the first two, or you may find that the extra drug potentiates a known side effect of the first two drugs, so they interact in a bad way rather than in a good way.

Q Thank you. And the further part that I think it would be useful just to hear you say a wee bit more about is the introduction of TauroLock. You have mentioned it a few times. Can you tell us a wee bit more about that?

A Yeah. So, if it's okay, I'll take a step back and say, why did we use ciprofloxacin, there was an evidential base that in adults being treated for cancer with chemotherapy. The addition of Cyprofloxacindecreased the number of gram-negative infections, but no evidence that it decreased the number of environmental gram-negative infections. So it was on that basis that Teresa Inkster, I think, suggested that we try that.

There are many reasons why that's a very good idea, and there's many reasons why it might not be such a good idea, and one of the good

things about paediatric oncology is that, as I've said before, we do try and be very evidentially based. So we kept a very close eye on side-effects of those medicines to see whether we were helping or hindering our population. It turned out that adding Cyprofloxacin, which I was completely in agreement with, was not as good an idea as we thought it would, or thought it was, because of the side-effect profile we were seeing.

So you then have to ask yourself, "Okay, fine, if Cyprofloxacin isn't working, should we take it away? And if we take it away, do we still need to prophylax? If we do need to prophylax, what should we prophylax with?" So the iteration, the decision-making, was we ought to stop using Cyprofloxacin if we possibly could. Do we then stop and not use any prophylaxis? That was certainly discussed. Or do we carry on using a prophylaxis but use a different prophylaxis? Again, either of those two seemingly diametrically opposite outcomes is a viable alternative. What's important is that you follow up the outcome of your decision-making process. So if we hadn't carried on prophylaxing, we would have then been looking at, "Are we getting an increasing number of infections

again?", that kind of thing.

We decided that we would go down a TauroLock route. Having done a literature review, and the introduction of TauroLock has coincided-- again, this comes down to correlation rather than causation-- has coincided with a remarkable decrease in the number of environmental and other gram-negative infections within our patient population. But it's been done at the same time as many other measures, and so it's impossible to say whether the prophylaxis with TauroLock has been of any use at all, has been partly responsible, or is majority responsible, but it's a non-toxic agent with very little in the way of side-effects. So, actually, it's been very useful in terms of prophylaxis.

Q Thank you. I might just ask you a few questions about that, but I too will take a step back in doing that. The evidence that we have had thus far, and is in your statement, I would summarise as follows: that our understanding thus far is that as a matter of course, and in line with protocols, children going through chemotherapy may be prescribed prophylaxis, right?

A Absolutely correct, yes.

Q The second thing is that our understanding is from the evidence

we have had already, and in your statement, and we can see this from the IMTs, is that from time to time over the story we have been discussing, additional prophylaxis was prescribed as a result of concerns with the environment. Is that right?

A Absolutely correct.

Q The third thing is that, again, the IMTs would indicate, and what you have just said indicates, there were from time-to-time concerns around side-effects from that prophylaxis. Is that right?

A That's absolutely correct.

Q Okay, now the fourth thing I am going to ask about in a minute which is communication to do with prophylaxis. We will come back to that. I just want to go back to what you have just said, because it connects to the further question that I asked you. Are you telling us that the prescription of, or the use of TauroLock, was also something that was – as it were – additional as a result of ongoing concerns?

A Absolutely. Absolutely. So, as you've said, it is routine that children who are getting chemotherapy are prophylaxed against serious infections. I know you've gone through this previously, so very quickly: particularly against something called PCP, Pneumocystis pneumonia, and particularly against fungal infections. So there's routine prophylaxis against that. Now, which patients get prophylaxed depends on what disease they have and the intensity of the treatment protocol they're getting. Those two are absolutely standard. What is not standard is Cyprofloxacin. What's not standard but has been used in other units is TauroLock.

Q Thank you. I said I was going to ask some questions around communication. I am thinking in particular about communication with patients and families – I guess families, really – about the use of additional prophylaxis. These are very difficult questions to answer when we are looking at matters as broadly as this, but doing the best that you can, what was the approach that you took, if and when you were having discussions with families about additional prophylaxis?

A So any time we start a new drug, whether it's a prophylactic drug or any new drug, we would have a discussion about that with the child if they were old enough, and most children are, and the family. So the reason for the discussion with the child is it may well be as simple as saying, "You're going to have to take some

extra medicine, and do you like that to be a tablet, or do you like that to be a liquid? And it's going to taste of raspberries and we need to do that so that you don't get an infection." If you do that kind of prep with a child they're much more likely to take medicines, because no child wants to take medicine. So you'll have a discussion with the child, and the older they are, the more information you can give them in a way that they can reasonably handle.

So, for instance, a teenager-- I would have exactly the same conversation with them that I would with their parents, but whenever we start a new medicine in a child, and this is across all "paeds" not just paediatric oncology, you have to explain why it is that you're using that medicine, what it is you're using it for, what's the reasonable expectation of that medicine, what side-effects can they expect from that medicine. You have that as a conversation – information exchange – rather than a didactic, "You're going to get this, and this is what is going to happen."

That's because parents, especially in the children's cancer world, they need to be able to trust their physicians and their nurses. They will not do that if you are just

blindly delivering therapy without engaging them in conversation about that. So although we don't get folk to consent for prophylaxis, like we don't get them to consent for antibiotics for treatment of infection, written consent, we get verbal consent from them for that to go ahead, and we have that conversation. It's just no parent is going to allow their child to take medicine that they don't know anything about. It's just not the way that we work.

Q Yes. I suppose what I am really getting at is the discussion around the reasons for it. If we are talking about – as we can see from the IMTs and from the evidence of you and your colleagues – we are talking about instances where additional prophylactic medication is being prescribed as a result of a concern to do with the environment. I am interested in knowing what you were saying to the patients.

A So if we start with, say, when we added Cyprofloxacin, so the conversation there would have been along the lines of, "As you know, we have moved to a different environment because there are concerns about the infections we were seeing on Ward 2A/2B. We would be concerned that we want to minimise those infections

and that one of the ways that we can do that is to prescribe this antibiotic," and that would be the start of the conversation.

Q So, I mean, your recollection of what you at least would have been doing is that the fact that this was to do with a risk from infection, to do with the environment, is something that would be mentioned?

A Oh, it would be risk of infection, absolutely no question about that. Whether we were absolutely explicit that we were concerned it was about the environment or not, I can't put my hand on my heart and say that. What I can do is reflect on my recollection and that is that implicit within, "We have moved from 2A to 6A", is there's a problem with the old 2A environment, and implicit in the fact that we are starting an antibiotic to decrease your risk of infection means that we're still concerned that there's a potential for infection in your child. Now, whether I said that upfront, whether that came out in discussion like we're having, that's difficult for me to say but, very clearly, we would have been saying to these families, the reason for prophylaxis is because of our excess risk of infection.

Q Just to be clear, you are speaking, I think, not just about what your practice was, but are you saying that your expectation and indeed understanding was that would be the practice of others?

A Absolutely.

Q But for one theme, Dr Murphy, that really completes everything I was going to ask you. I think it is only fair, having put you through all of this and the effort of preparing the witness statement, that the last theme should be about the impact of all of this on your patients, and on you and on your colleagues. So I wonder if you might tell us just a bit about that?

A Yeah, I mean, I think we should start with patients and families because that's why we're here today. That's why I do my job. They are by far and away the most important people in this whole Inquiry. They have very eloquently, I think, discussed how difficult this whole situation has been for them. That's on the background of having a child with cancer. Children having cancer is my everyday. That's my everyday reality. So, for me, seeing a child with cancer is my normality. For parents, it's the polar opposite. Children's cancer is incredibly rare. To be told that your child has cancer is totally and utterly devastating.

So part of the reason why I do paediatric oncology is because I'm privileged to be there at that time and to help those patients and help those families through at the time that they can't even comprehend how appalling it is for them. So to have an additional burden on top of that stress of not being sure that the environment in which the most precious thing to them, which is their child, is being treated, is safe, can only have been appalling. It's an appalling vista. That's why we were so concerned to ensure that the environment in which we were treating very vulnerable children and very vulnerable families was as best-- well, actually, not as best as it could be, wholly safe. So it was a huge impact on the families and they don't need me to advocate for them. They're very, very good at doing that themselves.

The impact on the staff has been enormous. We've had a very large turnover of staff within the department which leads to de-skilling and has a negative gearing effect because the more new staff you take in, the more training you have to do. The more training you have to do, the less time you have to deliver care. So it's been an inordinately difficult time for colleagues within the department.

Q Thank you, Dr Murphy. I do not have any further questions for you at this point.

A Thank you.

THE CHAIR: I do not have any further questions either, Dr Murphy. However, what I propose to do is to take a break for no more than 15 minutes just to allow the other legal representatives in the room to consider whether there is anything in what you have been asked that they had not anticipated and therefore might wish further questions to be asked. So we will rise for no more than 15 minutes. Once I find out what the position is, I will invite you back to either perhaps be asked further questions, or just to confirm that there are no further questions. So can I ask for a further 15 minutes or so of your patience?

A Okay.

THE CHAIR: Thank you.

A Thank you.

THE CHAIR: Well, again, I think we are now familiar with the procedure, and I will learn whether there is anything else that arises.

USHER: Please stand.

(Short break)

USHER: Please stand.

THE CHAIR: Mr Duncan?

MR DUNCAN: Thank you, my

Lord. I do not understand there to be any further questions.

THE CHAIR: Right. Thank you. Can you ask Dr Murphy to return? (To the witness) Dr Murphy, we have no further questions for you and therefore you are free to go. Before you do go, can I express my thanks for you attending to give evidence today but, possibly even more significantly, in the amount of work that you have put in to assist the Inquiry by answering the questions required to draft your witness statement. What is very clear is that you and your colleagues have very important and very difficult work to do, and I am very conscious that in assisting the Inquiry, you have been diverted from that very important work. There is little I can say beyond that, other than I very much appreciate what you have been prepared to do and the consequences of that. So thank you again, you are now free to go.

THE WITNESS: Thank you, sir. Thank you.

(The witness withdrew)

THE CHAIR: As I understand it, Mr Duncan, we are not taking evidence tomorrow?

MR DUNCAN: That is correct, my Lord.

THE CHAIR: Right. But we will be sitting on Monday, and I think the witness-- is it Mr Redfern?

MR DUNCAN: That is correct.

THE CHAIR: Right. Well, all being well, we will see each other again on Monday, and can I wish you a good end to the week and a good weekend? Thank you.

(Session ends)

15.28