1 **Wednesday, 18 September 2024**
2 **(10.00 am)**
3 **LADY HALLETT:** Mr Scott.
4 **MR SCOTT:** Good morning, my Lady. Please may we call
5 Professor Charlotte McArdle.
6 **PROFESSOR CHARLOTTE McARDLE (sworn)**
7 **Questions from COUNSEL TO THE INQUIRY**
8 **MR SCOTT:** Good morning, Professor McArdle. Would you
9 please give your full name.
10 **A.** Charlotte McArdle.
11 **Q.** And you are the former Chief Nursing Officer of
12 Northern Ireland?
13 **A.** That's correct.
14 **Q.** I would just like to go through your personal
15 background, which is set out at paragraph 20(a) of your
16 statement. You are a registered nurse and have been
17 since 1991. You moved to Northern Ireland in 1993, and
18 have been working in the Belfast Trust, rising up the
19 ranks until in 2003 you became Deputy Director of
20 Nursing for the Royal Hospitals group?
21 **A.** That's correct.
22 **Q.** In 2007 you were appointed Director of Nursing, Primary
23 Care and Older People in the South Eastern Health and
24 Social Care Trust?
25 **A.** Correct.

1 **Q.** Then you were appointed as Chief Nursing Officer for
2 Northern Ireland on 5 April 2013, and remained in post
3 until 31 October 2021?
4 **A.** Correct.
5 **Q.** And you're currently employed at NHS England as Deputy
6 Chief Nursing Officer?
7 **A.** Correct.
8 **Q.** You are a visiting professor at the Ulster University,
9 a trustee and vice chair of the Royal College of Nursing
10 Foundation, and a board member of the Faculty of Nursing
11 and Midwifery in the Royal College of Surgeons
12 in Ireland?
13 **A.** Correct.
14 **Q.** I would like to start with your role as CNO in
15 Northern Ireland. You say that you are -- have the lead
16 departmental policy on patient experience, amongst other
17 aspects of your role. How much did your role change
18 when the pandemic started?
19 **A.** It changed quite significantly. At the start of the
20 pandemic, I suppose in the early days, we tried to keep
21 everything going as normal, but it became clear
22 relatively quickly that that would not be sustainable
23 and, as the department moved into both its emergency
24 planning plan and we instigated the business continuity
25 plan in the department, a lot of my normal functions, in

1 terms of policy and normal business, would have reduced
2 considerably in order to enable me to focus on work on
3 the pandemic, for which I had lead responsibility and
4 for which, as a member of the strategic planning cell,
5 I would have undertaken.
6 **Q.** Like a lot of people from Northern Ireland, you speak
7 quite quickly.
8 **A.** Okay.
9 **Q.** I will ask you just to make sure you're not going too
10 fast.
11 **A.** Apologies.
12 **Q.** Believe me, I've been caught out by this many times
13 before, so --
14 **LADY HALLETT:** I just live in Northern Ireland, so ...
15 **MR SCOTT:** I just want to talk about some specific features
16 of your role during the pandemic.
17 So you didn't have any operational role in the
18 design or delivery of care to patients; is that right?
19 **A.** No, in the devolved administrations, which is different
20 from the role in England, the Chief Nursing Officer sits
21 in the Department of Health, and its primary function is
22 to advise ministers, senior civil servants and across
23 government on matters that affect nursing and midwifery
24 and also to lead areas of policy development. So the
25 operational responsibility for the delivery of care sits

1 with the five integrated health and social care trusts
2 in Northern Ireland and their executive teams.
3 **Q.** So if you're then in the department, did you have any
4 opportunity to be on the front line, as it were, during
5 the pandemic?
6 **A.** Well, as part of my role I took a lead responsibility
7 for the development of the Nightingale hospitals, both
8 facilities, and the reason that I undertook that role
9 primarily was because I had worked in the health service
10 for a considerable period of time and had strong
11 connections with the teams of the five health and social
12 care trusts and indeed the wider health system in
13 Northern Ireland.
14 You will understand that Northern Ireland is a small
15 community and in that small team you are required to do
16 many things, and I would have strong connections and
17 strong operational experience as being an executive
18 director of nursing, and therefore undertook that role,
19 and in doing so, in taking the lead role for the
20 development of the Nightingale hospitals and a fairly
21 important leadership function on the surge planning
22 element, I was out in the system quite a lot. I visited
23 facilities, I visited the Nightingale facilities with
24 the minister, I visited other facilities in our health
25 system. I was in touch regularly with frontline nursing

1 staff, and I met daily with the executive directors of
2 nursing and the wider nursing community in
3 Northern Ireland, and often on occasions more than
4 daily.
5 And when it came to the vaccination programme,
6 I undertook shifts in the vaccination team over the
7 Christmas and New Year period when the first vaccination
8 became available.
9 **Q.** So you were fairly well plugged into what the
10 experiences were of those who were actually
11 delivering --
12 **A.** Absolutely, and indeed at the time I -- 2020 was the
13 Year of the Nurse and the Midwife global campaign, and
14 in recognition of that the minister had agreed to me
15 delivering a leadership programme for nurses and
16 midwives under the age of 35, so they would have been
17 early career nurses, and that programme wasn't able to
18 be developed in the way in which we planned because of
19 the pandemic and most of it was online, so I met
20 regularly with a group of nurses who really described
21 for me in detail the changes that they'd had to make in
22 their practice and how they'd had to change location,
23 change rotas, the impact of having their family, young
24 children, et cetera, so a lot of that intelligence and
25 information was very much in my thinking in

1 decision-making at the department.
2 **Q.** So it's fair to say that you were fully aware of all of
3 the concerns of nurses --
4 **A.** Yes.
5 **Q.** -- of all ages and in all areas of speciality?
6 **A.** I think so.
7 **Q.** Sometimes it's not that easy for someone, particularly
8 maybe a junior nurse, to say exactly how they're feeling
9 to the Chief Nursing Officer. Do you think you did
10 receive the unvarnished truth from those who were
11 working?
12 **A.** I mean, I think there's a natural anxiety maybe about --
13 and outside of the pandemic I would have experienced
14 that in regular visits to organisations and to talk to
15 frontline staff, but because I had done quite a lot of
16 that and had a very strong connection, both with nurses
17 on the front line and through the RCN, the Royal College
18 of Nursing, as an example, I was very familiar with many
19 of the staff who were working in our system and I was
20 also quite communicative with them through social media,
21 so they had plenty of opportunities to contact me,
22 either directly or indirectly, to raise their concerns,
23 and indeed I had representation from ICU nurses on
24 particular issues from -- that I had met and had spoken
25 to previously, and because they had that connection they

1 felt able to do so.
2 **Q.** I just want to confirm your responsibility for some
3 areas during the pandemic. It's right that you were
4 responsible for leading the development of visiting
5 guidance in Northern Ireland?
6 **A.** That's correct, yes.
7 **Q.** That was a role that you were given in the pandemic, it
8 wasn't one that you'd had prior to the pandemic; is that
9 correct?
10 **A.** Well, we didn't -- we didn't have a national guidance on
11 visiting that would have been for --
12 **Q.** Sorry, just to interrupt, when you say "national" there?
13 **A.** Sorry, I mean Northern Ireland regional. Each
14 individual organisation would have their own visiting
15 policy. But in the pandemic, both in terms of my
16 communications with directors of nursing, which I said
17 was very frequent, and our collective concern about
18 safety of patients, staff and the population of
19 Northern Ireland, we recognised there needed to be
20 a policy position on visiting because --
21 **Q.** I'm going to come back to the specifics of it, it's just
22 at the moment about what your responsibility was --
23 **A.** Okay.
24 **Q.** -- and when it was given to you.
25 Just in terms of the infection prevention and

1 control, so it's right that there was an IPC cell set up
2 in Northern Ireland, I think it was called the regional
3 IPC cell; is that correct?
4 **A.** That's correct.
5 **Q.** That had been established by the department. Do you
6 remember when that was established?
7 **A.** It was established as part of gold command and its
8 structure, so I can't remember exactly the date, but it
9 would have been March time 2020.
10 **Q.** You weren't a member of that regional IPC cell?
11 **A.** No, I wasn't.
12 **Q.** What oversight did you have of that regional IPC cell?
13 **A.** The IPC cell was chaired by the executive director of
14 nursing in the Public Health Agency and the Public
15 Health Agency in Northern Ireland had responsibility for
16 public health and essentially everything to do with
17 outbreaks, infection, et cetera.
18 The IPC cell reported through the command structures
19 we had in place at the time, and my oversight was
20 a professional oversight, because I'm not an IPC nurse
21 or specialist by background, and my oversight was to
22 support the chair in his role as the chair of the group
23 and to provide professional leadership and support. So
24 effectively that meant regular communication, usually by
25 telephone, about issues that had arisen, to take

1 a second opinion on things, to seek assurance that the
2 direction of travel was consistent, and to think about
3 any complex challenges that might be for the system and
4 how we might overcome them.
5 **Q.** So given that you didn't have any IPC particular
6 expertise, I think you were just saying, it wouldn't
7 have been your role to review the guidance and point out
8 areas that you thought were wrong; is that right?
9 **A.** I certainly would have reviewed the guidance, but from
10 a general nursing leadership perspective as opposed to
11 a scientific specific infection control perspective.
12 **Q.** So routes of transmission, for example, would have been
13 completely outside of --
14 **A.** Absolutely. It would have been --
15 **LADY HALLETT:** Sorry to interrupt, when you mentioned
16 getting a second opinion, what did you mean by that?
17 **A.** So, for example, one of the examples I've provided in my
18 statement is at a point in time there was an issue
19 raised with the IPC cell in relation to fluid shield
20 masks and a poor fit, and they had come up with kind of
21 interim solutions to overcome that problem until a new
22 mask could be found, and the chair of the IPC cell asked
23 my opinion on that, whether I thought that was a viable
24 option or whether it was something we could support
25 nurses with.

1 And similarly when we were trying to outline
2 different pathways and risks, so we had red (high-level
3 risks), amber (medium) and (low-level) green on
4 a traffic light system, the IPC cell produced a draft
5 document which they asked me to look at from an
6 operational sort of management senior nurse perspective
7 and whether I thought it was feasible or workable,
8 whether the language was correct, whether, you know,
9 things were clear. It would have been that kind of
10 second opinion role.
11 **MR SCOTT:** The relationship between the regional IPC cell
12 and the UK IPC cell, is that realistically that the
13 UK IPC cell would be providing -- obviously there was
14 a Northern Ireland representative on the UK IPC cell --
15 but was it effectively any guidance or direction, in the
16 broadest possible sense of the word, that came from the
17 UK IPC cell was adopted by the regional IPC cell?
18 **A.** Effectively a member of the regional IPC cell was at the
19 national cell. The national cell was very much
20 a working group, a consensus group, bringing together
21 experts in the four countries. Whatever was decided
22 then at that national cell was taken back to our
23 IPC regional cell for sign-off and agreement and then
24 the guidance was issued by Public Health England.
25 **Q.** But at any point in time did the regional IPC cell go

1 against any guidance?
2 **A.** No, I'm not aware, we implemented the PHE guidance, or
3 UKHSA guidance as it became.
4 **Q.** Thank you.
5 The Inquiry's heard on a number of occasions about
6 the fact that the healthcare system in Northern Ireland
7 is different to the others in terms of its level of
8 integration. Integration means that the health and
9 social care trusts are responsible both for social care
10 and also provision of healthcare; that's right?
11 **A.** Yes, that's correct.
12 **Q.** Did that structure help or hurt the provision of
13 healthcare in Northern Ireland during the pandemic?
14 **A.** In my opinion, it definitely helped. From my own
15 perspective, my thought processes were always about
16 health and social care, and how a patient or service
17 user or a client manages their way through that pathway
18 in an integrated and joined-up way.
19 At the time we supported the independent healthcare
20 sector to deliver care, more acute care, out-of-hospital
21 care, and we were able to do that by the provision of
22 more IPC trained nurses from the trusts into the
23 independent sector, we were able to open up training and
24 provide extra training through our clinical education
25 centre free of charge for primary care in the

1 independent sector, and we shared PPE and provided PPE
2 for the independent sector. It moved. I mean,
3 obviously there were concerns about the availability of
4 PPE, but we were able to share the supplies and make
5 sure that everybody in a catchment area under the
6 responsibility of the trust, because they are the
7 commissioners of the care of patients in the independent
8 sector, so it worked very effectively as a system
9 approach.
10 And it also meant that, you know, I worked very
11 closely with my chief professional colleagues, Chief
12 Medical Officer, Chief Social Worker, in the policy
13 guidance and directions that were given to the whole
14 community.
15 **Q.** It sounded to me like all of your examples there were
16 about moving from the healthcare sector into the
17 independent or the care sector. Did that cause
18 a difficulty in accessing resources in the healthcare
19 sector during the pandemic?
20 **A.** Well, it certainly meant that from the acute hospital
21 acute trust provision they had to provide more staffing
22 out into independent sector to support care homes, their
23 local care homes, but there was recognition that it was
24 the right thing to do, and (b) it smoothed the pathway
25 for patients, and (c) it meant that we could free up and

1 keep the flow going through hospitals.
2 So for a very sick patient coming into hospital the
3 beds need to continuously move and circulate in order to
4 be able to admit people, to admit them to ICU, to come
5 out of ICU, to recover back out into the community. So
6 to make that process work well there was recognition
7 that wider resources needed to be provided, so it was
8 difficult. There is no getting away from the fact that
9 there was limited capacity and a limited amount of
10 staff, but the system working together in that way had
11 a greater benefit.
12 **Q.** I think you say in your statement that in
13 Northern Ireland there are about 27,000 nurses and about
14 1,200 midwives; is that right?
15 **A.** That's correct.
16 **Q.** Is that the system at its maximum capacity or is that
17 the actual number of staff members that there were?
18 **A.** That's the actual number of -- so the Department of
19 Health doesn't record the number of nurses working in
20 the independent sector, we've very good data on nurses
21 and other healthcare staff working in the HSC sector,
22 but that number that you refer to, the 27,000, is the
23 number of registrants on the NMC, a list working -- in
24 Northern Ireland -- registered as working in
25 Northern Ireland.

1 **Q.** Let's just think about the staffing within the
2 healthcare sector, as opposed to the independent care
3 sector at the moment. At the start of the pandemic,
4 roughly how many vacancies were there, ideally in terms
5 of the percentage of roles, as opposed to raw numbers?
6 **A.** So, the workforce data in 2019, the vacancy rate for
7 nursing, registered nursing and midwifery was 11% in
8 2019. That is, I recall, the highest vacancy rate
9 during those pre-pandemic years, and it stemmed back to
10 previous workforce planning. In 2009 to 2012, where the
11 commissions are set by the Department for the
12 Undergraduate and paid for by the Department for
13 Undergraduate Nursing and Midwifery Places and, at that
14 time, in 2009, the commissions were around 790, and over
15 that period --
16 **Q.** Sorry, I don't want to go too far down the road about
17 that but you're saying that those high vacancy rates
18 stemmed from decisions that were taken --
19 **A.** Much earlier.
20 **Q.** Yes.
21 What did that 11% vacancy rate mean in terms of the
22 number of nurses that there were available to work in
23 hospitals in primary care and other healthcare settings?
24 **A.** Well, that would be a significant level of vacancy.
25 It's probably -- in ideal terms, you would like vacancy

1 rate, in my opinion, of around 4%, which allows for
2 natural turnover, retirements, moving, et cetera. So it
3 was significantly higher. That, coupled with the impact
4 of sickness and self-isolation, really meant, in
5 reality, the availability of the nursing workforce would
6 have been closer to 20%, 25% non-availability of work.
7 So that was very stretching.
8 **Q.** At what time, just to pick up that 20/25%
9 non-availability, at what point?
10 **A.** Well, if the vacancy rate is 11 at March, or at the end
11 of December and we know that the sickness absence,
12 I think, in the first wave was around 8%, and then if
13 you add on a bit more for self-isolation -- so in that
14 early first wave, March/April time of 2020.
15 **Q.** That 11% figure, that's smoothed out over all roles, all
16 areas; is that right?
17 **A.** Yes.
18 **Q.** So there would be areas where there are peaks, so there
19 are higher vacancy rates; is that fair?
20 **A.** That's true, and there are traditionally areas in the
21 health service that, when vacancy rates become an issue,
22 it's more prevalent in certain areas, and they would be
23 medical unscheduled care -- the pathway through the
24 emergency department, for example, theatres would also
25 be a high turnover rate -- and they're the areas that

1 would emerge first, and I think it's also fair to say
2 that the profile of the nursing workforce in Northern
3 Ireland, 50% of that workforce are on band 5, which is
4 the entry level grade into nursing.
5 So 50% of those would be frontline care delivery
6 nurses that you would meet in any ward or department or
7 outpatient area in the hospital.
8 **Q.** I'm going to come back to some of those specifics later
9 on when we talk about ratios.
10 **A.** Okay.
11 **Q.** But is it an effective summary that the Northern Irish
12 healthcare system didn't really have any capacity that
13 it could afford to lose during the pandemic?
14 **A.** It didn't have any spare capacity, it was very stretched
15 at the time.
16 **Q.** So while you say that the systemic benefits as a system
17 operate between health and social care, is it not
18 problematic to the provision of healthcare if you then
19 have to lose nurses to the provision of the independent
20 sector?
21 **A.** Well, it means you're diluting your workforce further,
22 but it's a balance of risk and it's about how we enable
23 the system to work effectively because there would be no
24 point in keeping the staff in healthcare if we're unable
25 to discharge anybody out of the system.

1 Q. Those were conscious choices, I presume, that were taken
2 to provide nurses to the independent sector?
3 A. Absolutely, by each of the organisations.
4 Q. Do you think that they were decisions that were taken
5 with the intention of trying to provide the best level
6 of care for people in all different sectors?
7 A. Absolutely, and in terms of providing support to smaller
8 providers, to independent sector and to environments
9 where there were actually less nursing staff, qualified
10 nursing staff, dealing with much more acute care. In
11 nursing homes, primarily, they wouldn't normally
12 provide. They needed a higher level of both nursing and
13 a slightly different skill set in terms of their
14 expertise.
15 Q. On reflection, do you think that those decisions were
16 the right ones or should have been taken in a different
17 way?
18 A. It's the way the system works and I think it was the
19 right thing to do and I really don't know how we would
20 have done it differently.
21 Q. I want to move now to visiting restrictions. You say in
22 your statement that Northern Ireland led the way in
23 ensuring restrictions were applied in a person-centred
24 way. What do you mean by that?
25 A. So at the start of the pandemic, obviously we made

1 a decision to restrict visiting, which is a normal
2 protocol, in terms of infection prevention and control.
3 So you would see that happening across hospital systems
4 where there's an outbreak of an infection, where
5 visiting is limited and restricted. It would normally
6 be for a number of days or a week and at the start of
7 the pandemic we made that decision, that we needed to
8 restrict visiting to protect very vulnerable patients,
9 to protect our healthcare staff and to protect the
10 public.
11 And those guidance -- we didn't at that time think
12 the pandemic would be as long as it was. So as we
13 became more familiar with the virus, its transmission,
14 the impact that visiting was having on families, and we
15 heard many, many stories about the impact of that,
16 indeed there were lots of communications, both to the
17 minister's office and my office, and my small team
18 worked to try and provide a solution to many of the
19 queries that had been raised with them. But that was
20 all fed into our decision-making around our flexibility
21 with the guidance as we moved forward, which is probably
22 why we had so many iterations of the guidance, because
23 at every point possible we tried to flex them and be
24 flexible, taking into account the feedback that we were
25 getting from families and service users.

1 Q. I'm going to go through some of the iterations.
2 A. Okay.
3 Q. But if you're saying that you didn't expect it to last
4 as long, does that mean that the intention, when the
5 initial visiting restrictions were brought in on
6 26 March, that they were effectively intended to be
7 short term and that the intention was to keep people
8 out, in order to protect them and healthcare workers?
9 A. That would have been the normal thing to do in
10 an infection control emergency, that you restrict
11 visiting. So we used what we knew to be the best
12 evidence base and to work well. But, as I say, we had
13 no indication that we were going to have a pandemic for
14 the length of time that we had.
15 Q. Yes, but in terms of the original intention, was it that
16 there was meant to be quite a firm separation, in the
17 sense that you were trying to keep visitors out because
18 you didn't think the restrictions would be in place for
19 that long?
20 A. Yes.
21 Q. Is it right then that, effectively, the ground moved
22 under your feet and so you had to change the approach to
23 allow people in?
24 A. Well, we were learning about the virus, we had a number
25 of different variants of the virus, we didn't have

1 a vaccine until the end of 2020, testing was being
2 developed. So, yes, the ground was shifting on a very
3 frequent basis, in terms of the virus, the evidence we
4 had, what we were learning, and what strategies we could
5 put in place to protect people.
6 Q. But right back at the very beginning there must have
7 come a point in time where you thought "Our initial
8 approach has to change because we have to let people
9 in". Was that something that you then realised changes
10 had to be made?
11 A. We did that very early on, we tried to make exceptions
12 for palliative patients, for women who were pregnant,
13 for children, for people with additional needs, very
14 early on, as best we could in the environment that we
15 had at the time, and also understanding that the
16 non-pharmaceutical interventions, the distancing, the
17 wearing of masks, the hands, were having an impact.
18 Q. But there wasn't a pre-pandemic plan for how to manage
19 visiting in the event of a pandemic, was there?
20 A. No, other than the IPC manual.
21 Q. Well, the IPC manual didn't provide for how you might
22 approach visiting in the context of a pandemic, did it?
23 A. No, as I say, only in a normal outbreak situation.
24 Q. Yes. If we can just go, please, to INQ000376875, this
25 is a document dated 21 April 2020 and it's created by

1 the Critical Care Network Northern Ireland. Can you
2 just explain who they are, please?
3 **A.** The Critical Care Network is a network which connects
4 all of the intensive care units across Northern Ireland,
5 they're funded by the Health and Social Care Board,
6 which is -- which was at that time the Commissioner for
7 Health and Social Care in Northern Ireland. They're
8 overseen by a clinical leadership team and a manager and
9 they co-ordinate and deliver best practice and really
10 network all of the intensive care units in Northern
11 Ireland.
12 **Q.** Seven intensive care units in Northern Ireland?
13 **A.** Seven?
14 **Q.** Are there seven?
15 **A.** I would have to --
16 **Q.** Okay, we'll go over the page and please tell me if there
17 are any that are missing here. This is dated 21 April
18 2020. If we could just please go to page 2, thank you,
19 so this provides in terms of the background a brief
20 overview. So on 26 March, all general hospital visiting
21 was stopped. Is that the initial decision that you were
22 talking about where you realised there needed to be
23 a brake on visiting applied.
24 **A.** Yes. All general visiting.
25 **Q.** Yes.

1 **A.** There were exceptions at that point.
2 **Q.** Yes, and the exceptions were critical care areas where
3 one visitor was permitted, and another exception was
4 those in established labour; is that right?
5 **A.** Yes.
6 **Q.** To what extent was the department monitoring how those
7 exceptions were being applied by the trusts?
8 **A.** Well, I met, as I say, regularly with our -- we had our
9 director of nursing huddle meeting. In the early days
10 of the pandemic sometimes it was three times a day but,
11 in the main, we met regularly at midday and all of those
12 issues were discussed and how those restrictions were
13 being implemented, any issues that were being identified
14 with them, and any possible changes that we could
15 implement because each of the directors of nursing and,
16 indeed, the nursing staff were very conscious of the
17 impact that this was having on families.
18 **Q.** So you were being informed by the trusts about how they
19 were applying these --
20 **A.** Yes, and then as we moved through the process, and you
21 maybe want to come to this later, when we changed the
22 guidance to have local ability to deviate through risk
23 assessment, but at that point that was reported on
24 a weekly basis to the minister.
25 **Q.** Again, just in terms of the timeline, on 9 April there

1 was an update:
2 "With immediate effect all intensive care and
3 general hospital visiting across Northern Ireland has
4 now stopped."
5 **A.** Yes.
6 **Q.** Then:
7 "Although palliative ... care outside of Intensive
8 Care was listed as an exception, there was no exception
9 for those patients receiving end-of-life care within
10 Intensive Care Units."
11 **A.** Yeah.
12 **Q.** Why was that decision taken on 9 April to stop all
13 intensive care visiting?
14 **A.** I deeply regret that we had to make that decision but we
15 were in the peak of the first wave, we were expanding
16 our capacity for ICU, we had additional ICU beds in most
17 intensive care units, some of which had limited space,
18 and you will appreciate that an intensive care bed comes
19 with both a lot of kit and a lot of staffing
20 requirements, and it wasn't possible in a high-risk area
21 with aerosol-generating procedures and the implications
22 of donning and doffing to enable staff to allow visitors
23 in through the donning and doffing process, to be extra
24 people in an already very confined space and when our
25 staff were extremely stretched at that point in order to

1 provide direct care. So we, for that period of time
2 during that first wave, we had to further restrict
3 visiting and we reverted to virtual visiting at that
4 point.
5 **Q.** How long did you expect those restrictions to have to be
6 in place for?
7 **A.** Only during the peak of the wave and they actually --
8 **Q.** If I can push you a little harder, how long roughly was
9 that: one week?
10 **A.** A couple of weeks.
11 **Q.** A couple of weeks? Did that view influence your
12 decision about needing to go so far to prevent any
13 intensive care visiting?
14 **A.** My view that it would be relaxed within a couple
15 of weeks?
16 **Q.** Yes.
17 **A.** I felt at the time we were between a rock and a hard
18 place, there was nowhere else to go with this. It
19 wasn't a decision that I either wanted to make or would
20 want anybody's family to have experienced but it was
21 a balance of risk between protecting patients, staff and
22 the public, and I really do understand the implications
23 of making that decision. I've had very personal
24 experience not being able to visit my own mother when
25 she died in hospital, so I do understand.

1 **Q.** In the middle of April, there was a review conducted.
2 Was that because you realised the toll that it was
3 taking on people?
4 **A.** Say that again, sorry?
5 **Q.** In the middle of April, there was a review conducted
6 about visiting at the end of life in intensive care.
7 **A.** Yes.
8 **Q.** Was that because you realised the toll that it was
9 taking?
10 **A.** Absolutely, yes.
11 **Q.** If we can please just go over to page 3 because I want
12 to see how that end of life in intensive care was being
13 applied. So we have there at the top, there's a list of
14 -- this is where the number seven came from --
15 **A.** Yes.
16 **Q.** -- intensive care units. There's no more missing there,
17 is there?
18 **A.** I don't think so.
19 **Q.** Okay. Then if we can just go down to question 1, it
20 says:
21 "Does your unit recognise end of life as a special
22 circumstance and allow loved one(s) to visit, where
23 possible?"
24 So this is 21 April, this document, end of life
25 visiting was permitted at that time; is that right?

1 **A.** 21 April?
2 **Q.** April. Well, it wasn't expressly forbidden; that's
3 right, isn't it?
4 **A.** Yes. So even in this extremist part of the wave, if
5 staff could have facilitated a visit in any way, they
6 would have done so, of that I'm pretty certain.
7 **Q.** Because the reports you were receiving back was that
8 only two units out of the seven facilitated end-of-life
9 visits and one of those was non-Covid and the other did
10 have Covid-19. What was your view about the difference
11 that was being applied by the different trusts?
12 **A.** I think there are a number of different circumstances to
13 be considered here and I am absolutely certain that,
14 where possible, staff -- nurse in charge and nursing
15 staff -- tried to accommodate even a short visit where
16 they knew a patient was at the end of life. It depended
17 a lot on the environment and the estate, I suppose, of
18 the intensive care units, and they had expanded out into
19 outside intensive care units. So they would have had
20 patients potentially in theatre recovery in other areas
21 and -- so depending on that environment, the
22 availability of space, the availability of staff, the
23 sickness of the patients, all of that needed to be in
24 context of supporting people to come in at the end of
25 life, and so I do understand that some areas were better

1 able to facilitate than others.
2 **Q.** Did you think at this point -- well, I'll ask a slightly
3 different question, I'll come back to that one.
4 If we can have up, please, INQ000475219.
5 **LADY HALLETT:** While the document's coming up, Professor
6 McArdle, can I just check: at this stage, the document
7 to which Mr Scott has just taken you was dealing with
8 intensive care units, and so all general hospital visits
9 had been stopped.
10 **A.** Yes.
11 **LADY HALLETT:** So the only hospital visits that were taking
12 place were some hospitals were letting families go in
13 for end-of-life --
14 **A.** Yes.
15 **LADY HALLETT:** -- visits, and two units were letting people
16 in for end-of-life visits to intensive care. So things
17 like maternity wards, there were no visits at all there;
18 is that right?
19 **A.** So for maternity, at all points a pregnant lady was
20 allowed to have a birthing partner in active labour.
21 **LADY HALLETT:** That's throughout?
22 **A.** Yes.
23 **MR SCOTT:** But not around.
24 **A.** Sorry?
25 **Q.** But not around active labour, simply in active labour,

1 at that point?
2 **A.** Yes.
3 **LADY HALLETT:** So birthing partner during active labour?
4 **A.** Yes.
5 **LADY HALLETT:** Is that the only other category of visit that
6 was permitted?
7 **A.** Yes. We did also make exception for children to have
8 one parent with them, very soon after that period.
9 **LADY HALLETT:** What about people who had particular needs,
10 like somebody who was used to a carer or somebody who
11 had dementia.
12 **A.** Yes, and, again, that was down to discretion of the
13 nurse in charge, and for people -- it was in the
14 guidance, people with additional needs should be
15 discussed with the nurse in charge to accommodate that
16 arrangement.
17 **LADY HALLETT:** Sorry to interrupt. You might have been
18 coming to it, Mr Scott.
19 **MR SCOTT:** What guidance did you give nurses in charge about
20 how they should apply their judgement at that time?
21 **A.** Well, their guidance was set out in the region guidance,
22 which then would have been supplemented by trust
23 guidance and support for them through their senior line
24 manager.
25 So, again, this is down to circumstances on the day

1 and we encouraged people to use a risk based approach to
2 accommodate people where possible and, at all times in
3 the guidance, we iterated the need for people to have
4 their family as part of their wellness pathway or an end
5 of life, and we recognised the importance of that being
6 person centred and thinking about individuals, rather
7 than a bland approach.
8 **Q.** Is that right on 26 March or did that come later on?
9 **A.** That came slightly later on, as I said, as we became
10 more familiar with -- at that point, in March, it was
11 really a decision-based on safety.
12 **Q.** But you -- and when I say "you", those within the
13 Department of Health -- had taken the decision from the
14 Department of Health to prevent visiting, what guidance
15 was the Department of Health giving trusts about how
16 they should apply those exceptions?
17 **A.** So they should apply the guidance in its totality.
18 **Q.** This document that we have up on screen, it's the PHA
19 and CNO Covid-19 regional huddle, and it's held on
20 17 April 2020, so it's a couple of days before that
21 CCaNNI document that we were just looking at.
22 This is a section of visiting policies in that
23 meeting, those top three paragraphs -- I presume you
24 have had a chance to have a look over the document?
25 **A.** Yes.

1 **Q.** It doesn't appear from those paragraphs that the
2 decision to allow visiting was being driven from within
3 Northern Ireland. It looks like Northern Ireland was
4 responding to views that were arising in England and in
5 Scotland; is that right?
6 **A.** Well, as stated there, the Secretary of State at the
7 time had said that no one should die alone. We were
8 very aware of that, and we were coming down from the
9 peak of wave 1 at that time anyway and, as I said, the
10 measures that were put in place were done so purely
11 during the peak of wave 1 where we were seeing --
12 maximum numbers of intensive care patients for wave 1,
13 I think, was at 57, increased medical admissions,
14 et cetera, so -- and the peak was the middle two weeks
15 of April, so we would have been considering how we could
16 flex and reduce the very tight restrictions that we had
17 anyway, and we were very conscious of the need to have
18 people, particularly for end of life, for maternity and
19 for children.
20 **Q.** Hesitant to apply too literal a reading to a note of
21 a meeting but, again, it doesn't seem like there's
22 a real driver from those present at that meeting that
23 visiting is something that absolutely had to happen at
24 that point in time; is that fair or not?
25 **A.** I can assure the Inquiry that visiting was -- if you

1 look at the minutes of the huddle meetings and other
2 nursing meetings, it was a regular feature, it was at
3 the forefront of everybody's mind, it was an issue that
4 we spent considerable time on.
5 **Q.** It may have been something you spent time on but there's
6 a difference between spending time on discussing the
7 topic and people saying in a meeting "This is absolutely
8 something that has to happen now". Was anybody making
9 that point in the middle of April 2020?
10 **A.** Yes, I think all of the directors of nursing, myself,
11 were working to expand and reduce the rigidness of the
12 guidance, and we were reviewing that on a daily basis,
13 that was my point about the meeting is, while it may not
14 be documented in your minute here, the purpose of us
15 having that discussion was to be as flexible as we could
16 and extend the opportunities for people to visit.
17 **Q.** If that can come down now, please, if we can go to the
18 arrangements of visiting patients who were approaching
19 their end of life, that was published on 11 May 2020.
20 That's at INQ000120721.
21 **LADY HALLETT:** While that document's coming up, and
22 I apologise for keeping interrupting, you said at the
23 beginning, when Mr Scott started asking you questions
24 about visiting restrictions, that Northern Ireland led
25 the way to ensure that the restrictions were applied in

1 a person-centred way. What did you mean by you led the
2 way?
3 **A.** So, my Lady, further on in the pandemic we developed two
4 specific pathways, one for hospital and hospice care and
5 one for care homes, and while this module is not looking
6 at care homes obviously in an integrated system we
7 devised policy guidance for both, and we developed
8 a Care Partner scheme, which we implemented from --
9 effectively the guidance went out in September 2020,
10 which recognised the need for families to be with people
11 in long-term care, for families to be present with
12 people who had additional needs in hospitals.
13 And that Care Partner policy was the first of its
14 kind. It was evidenced from Canada. And in terms of
15 the four countries we were the only country at that
16 point to have such a policy. And indeed in my current
17 role and -- I have been working in NHS England to
18 develop a Care Partner policy for NHS England with
19 patients, families and advocates like John's Campaign
20 and the Patients Association.
21 **MR SCOTT:** Those features that you're relying on came later
22 on in the pandemic. Would you say that you led the way
23 at the start of the pandemic in terms of visiting?
24 **A.** No, I think we were doing what other countries were
25 having to do and make very difficult decisions.

1 **Q.** So the document we have up on screen is 11 May. This is
2 what followed on from a review. At this point in time
3 you're well past the initial period of time you thought
4 the visiting restrictions would be in force, is that
5 right?
6 **A.** Sorry, which --
7 **Q.** Sorry, let's go to page 1 of that document, just so you
8 can see it. It's 11 May --
9 **A.** Okay, 11 May, yes.
10 **Q.** Yes, there you go.
11 Thank you. If we can just go back to page 7,
12 please.
13 In this document, this is where you set out fairly
14 strident principles in terms of what's expected, so we
15 see at paragraph 3.3.1:
16 "People have the right to be with a loved one ... at
17 the time of death and this should be respected and
18 accommodated where possible."
19 That's the starting point, was it, that people
20 should be applying when considering visiting
21 restrictions?
22 **A.** Sorry, I'm having trouble hearing you.
23 **Q.** That was the starting point that should be applied when
24 people were considering applying visiting restrictions;
25 is that right?

1 **A.** That people should have a right to visit.
2 **Q.** People have the right --
3 **A.** Yes, yes.
4 **Q.** Then if we can just look at paragraph 3.3.5, that:
5 "Only in extreme cases should family members/loved
6 ones next of kin be denied the possibility to be with
7 a patient at the time leading to or of death ... reasons
8 should be clearly outlined to the patient and his/her
9 family members and/or loved ones."
10 Then if we can also look at 3.3.8, please, that:
11 "Infection prevention and control requirements
12 should not be so rigid as to prevent family
13 members/loved ones from saying goodbye in as humanely
14 a way as possible -- this includes the ability for them
15 to hold hands and touch the dying person."
16 Do you think those fundamental principles were being
17 followed by trusts in Northern Ireland in the summer of
18 2020?
19 **A.** Yes.
20 **Q.** Were you receiving any complaints, comments,
21 suggestions, thoughts by family members that those
22 weren't being followed?
23 **A.** I had several complaints from families about
24 restrictions on visiting and access to services.
25 I'm not aware of any particular case that was in

1 relation to a person dying. I am aware of a number of
2 cases where people have travelled from other countries
3 to come to visit and when they arrived to see a dying
4 relative, usually a parent, they were unable to visit,
5 and in those circumstances, where that was known,
6 a solution was found to accommodate them.
7 **Q.** How did you ensure that these principles were being
8 complied with by trusts?
9 **A.** Because I was in daily contact with directors of
10 nursing, who have responsibility for the provision of
11 patient experience and services in those trusts, and
12 I was assured by them. I was also in contact with
13 staff, and I wasn't hearing that they were unable to
14 accommodate visiting. I was hearing their concern,
15 absolutely, about having to find ways round issues to
16 support people to visit.
17 **Q.** Are you satisfied, then, that in every reasonable
18 instance, let's not say every instance, but in every
19 reasonable instance that people were able to be with
20 their loved one at the point of their death?
21 **A.** Yes.
22 **Q.** Is there anything more that you think you could have
23 done or should have done to make sure that any of these
24 principles were being complied with?
25 **A.** I think that we did our best in the circumstances. We

1 tried to be flexible with the iterations of the guidance
2 as new evidence became available, as we became aware of
3 particular difficulties, and I'm not sure that I could
4 have personally done any more or my team. It was a very
5 difficult time and decisions were the least worst
6 option.
7 **Q.** Just in terms of the timing of the dissemination of this
8 guidance on 11 May, isn't it right that you'd actually
9 provided a briefing paper on 6 May that enclosed this
10 guidance?
11 **A.** To the minister?
12 **Q.** Yes.
13 **A.** Yes.
14 **Q.** Why did it take five days to come in?
15 **A.** The minister -- obviously I produced the paper to the
16 minister, the minister was receiving a lot of papers
17 from different policy areas, there was a lot going on in
18 the department, and him and I potentially, although
19 I don't remember for certain, on this occasion would
20 have discussed the issues before he signed off the
21 paper, and it may have come back with queries from the
22 minister before the final paper was agreed.
23 **Q.** Well, if I can just take you then to INQ000103665, just
24 on that point of queries, so that you have that, that's
25 gone to the permanent secretary and the minister, dated

1 6 May.
2 **A.** Yeah.
3 **Q.** If we just go, please, to page 3, those are responses
4 from the minister --
5 **A.** Yeah.
6 **Q.** -- on 4 May. Are you aware of the reason why it took
7 five days for that guidance to come in, or is this
8 a question better put to the minister?
9 **A.** Or is this question about?
10 **Q.** Better put to the minister.
11 **A.** I think that's a reasonable timeframe, given the work
12 that was going on in the department, the fact that we
13 were in a pandemic response, the fact that the minister
14 and his team had questions that required answers before
15 he signed it off. I think that's appropriate challenge
16 on the minister's behalf.
17 **Q.** There was then the next iteration of guidance was on
18 30 June 2020, which was the regional principles for
19 visiting.
20 If I can please take us to INQ000103667, at page 11.
21 So this was the advice that had been given at the
22 end of June, so it's another step beyond the end of life
23 guidance that had been on 11 May; that's right?
24 **A.** Yes. So --
25 **Q.** It appears -- sorry. It appears from this grid that,

1 depending on the surge level, that actually there were
2 times when the end of life guidance was being watered
3 down; is that fair or not?
4 **A.** Depending on the level of -- as set by the UK CMOs. So
5 it was clear from March to June that there were a number
6 of instances where people were confused by the number in
7 of iterations of the guidance. We set it out in this
8 format so that the public would be clear, based on the
9 alert level, what they could expect in times of
10 visiting.
11 So in high surge -- and I think the only other
12 period that we had alert level 5 during the pandemic was
13 the third wave in January 2021, where again, if you look
14 at the guidance, there were restrictions on ICU visiting
15 for a limited period of time during the alert level 5,
16 but it was in an effort to try to make clear to people,
17 so they could go to the website and link our visiting
18 guidance to the alert level and also to provide clearer
19 guidance for staff so that they could plan more
20 effectively on the alert level.
21 **Q.** But why did the principles that we've been looking at at
22 11 May, why would they not have been able to apply
23 during the higher extreme surge period?
24 **A.** Because we said in extreme circumstances it may be that
25 visitors could not be accommodated and that was

1 an extreme circumstance in UK level 5 --
2 **Q.** But --
3 **A.** -- with a new variant in January 2021.
4 **Q.** But then again, wouldn't that only have applied to Covid
5 settings rather than non-Covid settings, because at that
6 point in time you had different pathways?
7 **A.** We did have different pathways, but the nature of the
8 virus, it was very hard to maintain pathways, and we
9 do -- as part of the visiting guidance we did a review
10 of the evidence around the impact of visiting on the --
11 on nosocomial transmission in particular, and in the
12 studies we looked at, the Covid study, which you'll
13 appreciate at that time was early evidence, suggested
14 that patients had a role in -- or visitors definitely
15 had a role in the spread of infection. We looked at
16 a SARS paper and we looked at a MERS paper, and both of
17 those indicated -- the MERS paper indicated that 12% of
18 infection spread in hospital was due to visiting and the
19 SARS paper had no nosocomial spread but they had really
20 restricted -- no visiting at all, even in a paediatric
21 unit.
22 So I think we were aware of the evidence and we knew
23 that in high surge, where the virus was in a lot of
24 circulation in communities, and the transmission routes
25 coming from communities into hospital, that it was too

1 big of a risk to take in the peak of the surge. And
2 they were the only two times during the whole pandemic
3 that ICU -- restrictions on visiting to that extent.
4 **Q.** But this applies to non-Covid general wards as well.
5 Surely you haven't got the same considerations in
6 a non-Covid general ward in 2021 or 2022 that you would
7 have in ICU?
8 **A.** But given the spread of the virus from community
9 transmission, the risk is bringing that virus into the
10 hospital and then spreading it among vulnerable,
11 susceptible patients who are acutely ill with medical
12 conditions, many of which are respiratory anyway.
13 **Q.** So what use did you make of testing to make sure that
14 you knew they were negative at that point?
15 **A.** For patients, for relatives --
16 **Q.** Of the visitors.
17 **A.** At which point?
18 **Q.** 2021 or 2022.
19 **A.** In 2021, our testing capacity was being developed. We
20 had lateral flow testings. They were, as you may know,
21 a high false positive or false negative rate. We had
22 other measures, IPC measures, in place to --
23 non-pharmaceutical interventions -- to support the
24 reduction of nosocomial spread. But even at all of
25 that, the risk to vulnerable populations and people in

1 hospital is significant and also to the healthcare
2 worker workforce. The vaccine only began to be rolled
3 out at the start of 2021, so at that point, in January,
4 we didn't really have widespread vaccine, we only were
5 starting to protect the most vulnerable in our society.
6 Q. I'll move on. Were you aware of concerns being raised
7 about the inappropriate use of DNACPRs in
8 Northern Ireland?
9 A. No, I wasn't, and I think if you're referring to
10 inappropriate decisions being made, in my professional
11 opinion, that would be totally unacceptable and outwith
12 any code of conduct of any healthcare professional.
13 Q. I'm more interested about whether you were actually
14 informed that --
15 A. No, I wasn't. I wasn't. And the department developed
16 an ethical framework to support clinicians to make those
17 decisions in very difficult times, recognising that they
18 are decisions that unfortunately are made on a day in
19 daily basis by our clinicians in hospital, so the
20 guidance was to support them in this extra challenging
21 time to do that. And that then followed with it
22 subsequent bereavement support guidance for staff and
23 for people who had been affected by the pandemic.
24 Q. Staffing numbers and particularly nursing ratios in the
25 surge times. So it's right, isn't it, on 1 March 2020

1 there were 88 critical care beds in Northern Ireland?
2 A. That's correct.
3 Q. The first wave surge plan, the final version was dated
4 17 April; does that sound about right to you?
5 A. Yes.
6 Q. And that indicated a need for 140 Covid and 35 non-Covid
7 critical care beds, so effectively doubling the number
8 of critical care beds; is that right?
9 A. Yes, but we did also develop a surge plan that took us
10 past that to --
11 Q. Yes.
12 A. Okay.
13 Q. But that's what was intended --
14 A. Yes.
15 Q. -- that you were looking at effectively doubling the
16 number of critical care beds.
17 Was there ever the nursing capacity that would have
18 been able to deal with the number of critical care beds
19 that were anticipated?
20 A. It would have been extremely challenging. It would have
21 meant reducing the ratios significantly, it would have
22 meant taking further action to reduce other services and
23 to bring additional staff into work in ICU, as most
24 countries did have to do anyway, to support the critical
25 care nursing team to deliver that care. So in normal

1 times a 1:1 ratio for a ventilated patient was not going
2 to be possible.
3 Q. Can we please have up INQ000377063.
4 This is feedback from nursing staff about the
5 workforce, and it's noting a conversation on
6 23 April 2020. That conversation didn't involve you.
7 A. No, but it involved one of my senior nursing advisers,
8 which I'd brought in to support me in the pandemic.
9 Q. So you would have been aware of the discussions that
10 were going on?
11 A. Yes.
12 Q. If we could please go down to paragraph 3.4, and it's
13 talking there about the modelling, and it's talking
14 about effectively going up through the ratios. This is
15 23 April.
16 Can I please take you to INQ000438043. This is the
17 letter that you sent to the executive directors of
18 nursing across the five trusts in Northern Ireland, and
19 it's dated 22 April, so the day before that
20 conversation. Then effectively this letter says:
21 "Delivering Care staffing should be adhered to as
22 far as possible ... At this point suspension of
23 Delivering Care ... Nursing or midwifery staff should
24 exercise professional judgement in determining safe
25 staffing requirements that maximises the knowledge and

1 skills within their teams and if necessary adopting
2 a more task based approach to the delivery of care."
3 There seems a disconnect between that letter on
4 22 April, where you're effectively saying to the trusts
5 "You need to look after the staffing numbers based on
6 the information capacity you have available" and then
7 the discussion the next day that's talking about nursing
8 ratios.
9 A. So we had a safe staffing policy in Northern Ireland
10 from 2014 which covers broadly medical, surgical and
11 other specialities. The ICU module of that safe
12 staffing policy hadn't yet been signed off prior to the
13 pandemic, so we're talking about slightly different
14 things here.
15 The ICU guidance was from the critical care society
16 which -- and they're very well known and -- as standard
17 nurse staff ratios for critical care for levels 1, 2 and
18 3. The letter was a broader letter, recognising that,
19 in order to accommodate ICU expansion, we would have to
20 move staff from other places and other wards, and in
21 order to do that we could no longer meet the safe
22 staffing requirements of the policy in 2014. And indeed
23 it was on the back of a conversation with the directors
24 of nursing, who were looking for my support to share the
25 workload and move people around and they needed me to

1 stand down that policy in order to do that safely.
2 **Q.** Was that effectively what happened, that it was just
3 moving people to wherever they were required across
4 Northern Ireland?
5 **A.** It was moving people, yes.
6 **Q.** Were you actually capable of setting staffing ratios or
7 was it simply going to be: we have capacity issues here,
8 we're just going to have to put people in those places?
9 **A.** We tried to maintain staffing ratios as best that we
10 could in order to maintain safety. I think there were
11 limits on what we were prepared to do and not do. We
12 all recognised that it was extremely challenging and we
13 would have to dilute the staff, but that we could not
14 have a situation where there would be no nurse in charge
15 and no nurses with skills to care for patients in -- in
16 any unit, and certainly in intensive care. It was
17 agreed with the network and you see the -- in that
18 evidence paper, the proposal to stay at 1:1 for as long
19 as possible and then move to 1:2 and 1:4, and I don't
20 believe that during the pandemic we ever moved past 1:4
21 in any ICU situation.
22 **Q.** Was the fundamental problem a lack of nurses?
23 **A.** Yes, we didn't have capacity to do what we needed to do.
24 **Q.** Because in October 2020 isn't it right that you asked
25 chief nursing officers in England, Wales, Scotland and

1 the Republic of Ireland if they would provide you with
2 extra staff?
3 **A.** Yes, that's correct.
4 **Q.** And no one was able to help you?
5 **A.** Correct.
6 **Q.** How bad was the situation in October 2020 that you
7 needed to ask the other nations of the UK to provide
8 staff?
9 **A.** At that time we had particular challenges in --
10 particularly in relation to intensive care, and our
11 ability to flex up, so we were monitoring the ICU bed
12 usage through the critical care network on a -- I would
13 say a twice daily benefit basis, and I was in regular
14 contact with the ICU hub on a regular contact, and
15 I knew that we had a small number of beds that we could
16 still staff at that -- at the required level in October,
17 but if we had a sudden surge or an event that -- where
18 a number of ICU beds would be required, for example in
19 a non-Covid situation, that would be very challenging
20 for us, so this was an attempt to plan for the
21 worst-case scenario. And in fact the agreement with the
22 Republic of Ireland was that while they couldn't
23 transfer staff, they would be able to take a number of
24 patients for us if we needed to.
25 **Q.** Did the numbers available impact upon patient care in

1 the first wave, second wave or third wave?
2 **A.** I think that it certainly impacted on our staff's
3 ability to deliver the care and I am quite sure that
4 that impact on staff had an impact on patient
5 experience, at least. I don't think we have the
6 evidence to say that it impacted on someone's outcome,
7 but it certainly impacted on experience of both staff
8 and patients.
9 **Q.** You had the workforce appeal. I think it's right that
10 actually there weren't a huge number of people who
11 returned in terms of nursing staff, through the
12 workforce appeal?
13 **A.** Correct.
14 **Q.** Why were the numbers so low about who was able to
15 actually then rejoin, or have you set that out in your
16 statement because I'm just conscious of the time?
17 **A.** We ended up with 447 nurses from the workforce appeal.
18 The numbers did drop significantly from those who had
19 applied to those who ended up, that's correct, and there
20 were a number of reasons for that. Many, many, I think,
21 felt an emotive response to the call for action and
22 I certainly was very vocal and visible in that call to
23 action, but they didn't necessarily either want to work
24 in frontline services, didn't necessarily have the
25 skills, the particular skills that we needed, or they

1 had very rigid rotas that we couldn't facilitate.
2 Others wanted permanent jobs that weren't going to be
3 provided through this workforce appeal. So there were
4 a number of different reasons and, in some ways, I think
5 we had better success with the vaccination programme.
6 **Q.** But in terms of the workforce appeal for numbers,
7 particularly when you're going through that second wave,
8 was there anyone who had expressed an interest or made
9 an application through the workforce appeal who you
10 think may have been able to provide the skills but,
11 actually, the way that the workforce appeal was
12 structured meant that they weren't then able to be
13 deployed? I'm not asking for individuals, I'm just --
14 in terms of did you make available use of everybody who
15 expressed an interest?
16 **A.** I can't answer that question because I wasn't directly
17 involved in the workforce appeal, and the trusts would
18 be better placed to answer that.
19 **Q.** Again, this is one thing that we hear frequently, that
20 the trusts are better placed to answer that in terms of
21 the Nightingale, the workforce appeal. Is there not
22 a lack of control from the Department of Health when
23 these issues are then passed on to the trusts?
24 **A.** I don't believe so. I think that the Department of
25 Health have a very specific role in overseeing the

1 health and social care system. During the pandemic we
2 became closer to that system in a number -- I was very
3 involved operationally but, in terms of the response to
4 the workforce appeal, it was managed through HR and the
5 workforce policy director at the department and what I'm
6 saying to you is I'm not close enough to know the detail
7 of that.
8 **Q.** Just a few very minor questions left -- sorry, not minor
9 questions, just a small number, that's what I meant to
10 say.
11 The RQIA suspension, I'm going to ask the CMO about
12 the reasons for that. Were you asked what view you had
13 about the impact of suspending the inspection of the
14 hospitals by the RQIA would have upon the protection of
15 healthcare workers?
16 **A.** I don't recall being directly asked, but I would have
17 been aware of the conversations between the chief
18 executive and the CMO at the time, and I understood that
19 the direction that was issued from the department was on
20 the back of a conversation with the chief executive of
21 the RQIA at the time, who had a professional background,
22 she was a nurse, and saw the opportunity for RQIA staff
23 to be more helpful --
24 **Q.** Yes, sorry to cut across you, but in terms of is there
25 a benefit of a regulator, such as the RQIA, maintaining

1 inspections of IPC provision in hospitals; is that
2 beneficial during a pandemic?
3 **A.** I think that we -- the flexibility allowed them to
4 inspect if they needed to inspect. I think that, during
5 the pandemic, their staff provided a more beneficial
6 role in the work that they undertook in terms of
7 supporting particularly independent sector and working
8 with the Public Health Agency in particular around
9 communication and management of outbreaks, and
10 supporting healthcare staff.
11 I think the trusts have an IPC team, a very skilled
12 and expert IPC team, there are processes in place in
13 organisations to oversee IPC and I would also note
14 I think the RQIA report, when they did visit hospitals,
15 suggested that, in the main, with a couple of
16 recommendations, there was a high standard of adherence
17 to the IPC guidance.
18 **Q.** Yes.
19 Finally, the impact upon nurses. Did you come to
20 learn about any concerns or issues that were being faced
21 by ethnic minority nursing staff?
22 **A.** I was aware of the information from the other countries,
23 in terms of the mix of healthcare staff. I think it's
24 fair to say in Northern Ireland we have a different
25 population mix, probably, than the other three countries

1 and, because we have a smaller ethnic minority mix,
2 I think -- and again we would have discussed this
3 through both IPC cell and the nursing huddles -- the
4 nurse directors and the senior nursing teams were very
5 aware of where those staff were located, and
6 I understood that all of the same level of support
7 and -- was provided to them as to all other members of
8 staff.
9 **Q.** Then finally, was there sufficient provision being made
10 for nurses who were suffering from Long Covid?
11 **A.** Again, that's something that I wasn't directly involved
12 in from a policy perspective, but I do know that there
13 was a group at the minister's request set up to examine
14 the impact of Long Covid and the provision of services,
15 which were set up in Northern Ireland through a clinic.
16 I myself became aware of the work of Dr Elaine Maxwell
17 and the work that she'd done reviewing the international
18 evidence around sequelae --
19 **Q.** I think you've set that out in your statement.
20 **A.** Yes, okay, thank you.
21 **MR SCOTT:** Thank you.
22 My Lady, I have no more questions.
23 **Questions from THE CHAIR**
24 **LADY HALLETT:** Thank you.
25 Some more questions, Professor McArdle, on visiting

1 restrictions. First of all, one of the core
2 participants has asked: when you mentioned additional
3 needs for the purposes of making individualised
4 exceptions to visiting suspensions, what was the
5 guidance on additional needs?
6 **A.** It was simply additional needs, so it's broad enough to
7 cover anyone who has a specific set of circumstances,
8 should that be a learning disability, a mental health
9 issue, dementia, a child with additional needs, any
10 patient or service user who has a requirement to have
11 another person with them, either to act as an advocate
12 or to communicate on their behalf.
13 **LADY HALLETT:** The other question they've asked is: you said
14 that you felt the principles about family visits at the
15 time of death or about the time of death were applied in
16 Northern Ireland. The suggestion is that there is
17 evidence that exceptions to the visiting restrictions
18 were not always subject to an individual risk assessment
19 and that patients with additional needs or at the end of
20 life were not permitted to have visitors or
21 family/carers with them. Now, you've said you relied on
22 your directors of nurses and contact you had with
23 frontline staff. Were there any other steps you had to
24 take to monitor whether what you were being told was
25 actually happening?

1 **A.** Well, my Lady, as I said, whenever we moved the guidance
2 on to provide more flexibility and to take account of
3 local transmission -- so in one area of Northern Ireland
4 you might have had a population with a high transmission
5 rate present and in another lower transmission, so the
6 flexibility for organisations would depend on that as
7 well. But, in the case where organisations moved away
8 from any of the regional guidance, they reported that on
9 a weekly basis through me to the minister, so that was
10 the assurance that organisations were adhering to the
11 guidance.
12 **LADY HALLETT:** So if they didn't allow or didn't conduct
13 risk assessments because they had a high number of
14 cases, that would be reported to you, and are you saying
15 you didn't get any such reports?
16 **A.** I'm saying that where they deviated from the guidance,
17 so say, for example, they didn't allow an end of life
18 visit --
19 **LADY HALLETT:** Yes.
20 **A.** -- they had to document why that was so.
21 **LADY HALLETT:** Did you get such reports?
22 **A.** We did. We got a very small number but they were
23 exceptional circumstances and, whenever we went back to
24 the individual organisations, they were able to explain
25 why specifically on that occasion the guidance wasn't

1 adhered to.
2 **LADY HALLETT:** Thank you.
3 Right, I think, Ms Waddoup, you've got a question or
4 two. You've over there. Can you see?
5 **THE WITNESS:** Yes, thank you.
6 **Questions from MS WADDOUP**
7 **MS WADDOUP:** Good morning, Professor. I ask questions on
8 behalf of 13 Pregnancy, Baby and Parent Organisations
9 and we'd like to focus on restrictions on parents and
10 families being with their babies in neonatal units.
11 Would you agree, Professor, that parents, and in
12 particular both parents, being with their babies on the
13 neonatal unit is a positive thing not just for parents
14 but also for babies, for the health and development of
15 those babies?
16 **A.** Yes, I would agree.
17 **Q.** Could you perhaps explain some of the ways in which
18 that's important?
19 **A.** It's important for bonding, it's important for family
20 interventions, it's important to ensure the growth and
21 development of the baby and to have that support network
22 around them from parents, it's also an important
23 opportunity for staff to talk to both parents in
24 a neonatal unit, where obviously there is a very sick
25 child and to prepare them for whatever the outcome is

1 going to be, hopefully positive, and to educate and
2 support them at the time.
3 **Q.** Thank you, that's helpful. Is it right that it wasn't
4 until the 7 May 2021 iteration of the visiting guidance,
5 the pathway to enhanced visiting guidance that you were
6 speaking about, that, as a general rule, both parents
7 were permitted to be with their babies on the neonatal
8 unit at all times?
9 **A.** Yes, that would be correct, there was provision for one
10 parent.
11 **Q.** Prior to that guidance?
12 **A.** Yes.
13 **Q.** So it wasn't until May 2021 that, as a general rule,
14 both parents could be there at all times?
15 **A.** As a general rule but, as I say, at that point local
16 risk assessment was in place, so where that could have
17 been facilitated it would have been facilitated.
18 **Q.** So, given what you have said about the importance of
19 family care to these, by definition, very vulnerable
20 babies, and given what we also know about the very
21 severe and distressing impact of restrictions in this
22 distinct context, do you agree, as your Welsh
23 counterpart said she did yesterday, that parents should
24 always have been considered as one unit for the purposes
25 of so-called visitor guidance in this context, ie that

1 both should have been allowed to visit?
2 **A.** I think that that will be down to individual
3 circumstance. I think it will depend on the mix of --
4 the babies in the neonatal unit, as you said, are very
5 vulnerable, they're immunosuppressed, immunocompromised,
6 and a risk assessment should be made based on the
7 environment, the babies, the staff and the parents and,
8 where possible, I think of course, yes, both should be
9 accommodated.
10 At the start of the pandemic, when we did not
11 understand a lot about the virus, we were learning as we
12 went along, that would not have been possible, and
13 I think, on reflection, it would be -- which is why we
14 amended the guidance so many times, to support people,
15 to be more flexible. But, as I've said previously,
16 these were very difficult decisions that nobody wanted
17 to make, and they were made in the best interest of
18 protecting young babies, families and the public.
19 **Q.** Thank you.
20 Finally this: you've spoken about the guidance being
21 kept under continuous review, about Northern Ireland
22 leading the way in this respect, the charity Bliss,
23 which advocates for sick and premature babies, have
24 received reports, including from neonatal staff at one
25 trust in Northern Ireland, of restrictions on wider

1 family access, so by siblings and grandparents,
2 continuing all the way into May 2023 with Covid-19 being
3 given as the justification.
4 Are you aware of that happening?
5 **A.** I'm not aware -- I'm aware of it happening in line with
6 the guidance during the pandemic of 2020 and up until,
7 as you say, 2021, when we made that change. I left my
8 post in October 2021, so I can't really comment on what
9 happened after that period.
10 **Q.** You're not able to assist us, if that was happening, in
11 fact, all the way into 2023, why that might have been
12 happening?
13 **A.** I would only -- I would understand from my experience
14 that that would be down to local circumstances in the
15 neonatal unit at the time, potentially the number of
16 cots, the number of staff and the physical environment
17 of the unit.
18 **MS WADDOUP:** Thank you, that's helpful.
19 Thank you, my Lady.
20 **LADY HALLETT:** Thank you.
21 Mr Wilcock?
22 **Questions from MR WILCOCK KC**
23 **MR WILCOCK:** Professor, I represent Northern Ireland Covid
24 Bereaved Families for Justice, and Mr Scott has
25 helpfully already asked you most of the questions we

1 wished to ask you but her Ladyship has given us
2 permission to ask you two relatively short questions in
3 relation to visiting restrictions.
4 Before I do that, can I just confirm, you've told
5 us, haven't you, that you've had lots of communications
6 about the impact these restrictions were having on
7 people in hospitals and care homes during the course of
8 the pandemic?
9 **A.** Yes, that's correct.
10 **Q.** Just for the record, can I say that I'm not asking you
11 about care homes, for the very simple reason that, as
12 you pointed out earlier, the Inquiry has made clear to
13 us that that would not be within the scope of this
14 module, and it may be that her Ladyship will consider
15 recalling you to give evidence on this topic in a later
16 module on care homes. So I'm really only asking about
17 hospitals at this minute.
18 Many of the families I represent have reported what
19 they see as inconsistent implementation of the visiting
20 restrictions that were in place in different hospitals
21 at any given time. In that context, can I ask you these
22 questions:
23 First of all, do you agree that any impression that
24 visiting restrictions were being inconsistently
25 implemented was inevitably confusing and distressing?

1 **A.** I agree, it was confusing and distressing. But I think
2 it's a complex area, and I think it's subject to the
3 virus, the local arrangements, as I've described, local
4 transmission, hospital estate, availability of staff,
5 risk assessment of the patients. There are a number of
6 complex factors to be considered and I appreciate that
7 that is not easily understood for people from
8 a non-healthcare background and, in that context, yes,
9 it was somewhat confusing and indeed frustrating for the
10 public.
11 **Q.** So, given the balance between, we accept, the complexity
12 of the situation you were dealing with and the distress
13 that would be caused to individuals affected, apart from
14 your decision whether or not to answer the complaints
15 you directly received, what was the formal review or
16 complaint mechanism in place for someone directly
17 affected by what they saw as an inconsistent application
18 of the visiting guidance, so that they could register
19 their view and receive from the healthcare system the
20 explanation for what was happening; what was the formal
21 system in place?
22 **A.** Well, there were two systems in place, firstly through
23 the trust caring for the patient in the normal
24 complaints procedure, contacts through the nurse in
25 charge and on up through their organisation and a formal

1 complaint if necessary, and also the Patient and Client
2 council, as a route to advocate on their behalf and,
3 indeed, the Patient and Client Council did work very
4 closely with us, and I accept your point about care
5 homes, but they were engaged in that process through
6 with other patient association groups, patients who'd
7 come to them, and they were a very good source and,
8 indeed, they carried out a survey for us which was very
9 helpful in feeding back people's experience of visiting
10 policy.
11 **MR WILCOCK:** My Lady, two questions occur to me, they're
12 very short and they've probably already occurred to you;
13 may I ask them?
14 **LADY HALLETT:** You may, Mr Wilcock.
15 **MR WILCOCK:** Thank you.
16 So there was no individual system, there was no
17 system specific to the pandemic: it's just what existed
18 before?
19 **A.** It would have been normal governance processes in the
20 health system.
21 **Q.** Was that sufficient, given the distress the inconsistent
22 application would cause?
23 **A.** I would be of the opinion that, if anybody raised
24 a concern with the nurse in charge or with the trust and
25 the organisation, they would have made best efforts to

1 rectify that situation, as did happen in the number of
2 cases that I was aware of.
3 **MR WILCOCK:** Well, comment may be made on the phrasing of
4 that answer, but I've no further questions.
5 Thank you, my Lady.
6 **LADY HALLETT:** Thank you, Mr Wilcock.
7 Thank you very much Professor McArdle. Those are
8 the questions we have for you. As Mr Wilcock has
9 presaged, there is a possibility we will have to ask you
10 to come back, and I'm sorry about the impositions we
11 make but thank you for your help so far.
12 **THE WITNESS:** Thank you.
13 **(The witness withdrew)**
14 **LADY HALLETT:** I shall return at 11.35.
15 **(11.21 am)**
16 **(A short break)**
17 **(11.35 am)**
18 **LADY HALLETT:** Ms Carey.
19 **MS CAREY:** Thank you. May I call, please, Professor
20 Susan Hopkins, and may she be sworn.
21 **PROFESSOR SUSAN HOPKINS (affirmed)**
22 **Questions from LEAD COUNSEL TO THE INQUIRY for MODULE 3**
23 **MS CAREY:** Professor, your full name, please.
24 **A.** My name is Susan Hopkins.
25 **Q.** Thank you. You have made a statement to Module 3 dated

1 31 January with the INQ000410867, and I think you have
2 a copy in front of you.
3 **A.** I do.
4 **Q.** Professor, I have a number of topics to deal with you
5 over the course of today. Can I just start, please,
6 with your personal background. Is this right, you are
7 a professor of infectious diseases and health security
8 at University College London?
9 **A.** Correct.
10 **Q.** You maintain what is described as an active research
11 portfolio and you continue to work clinically as
12 a consultant at the Royal Free Hospital?
13 **A.** I do.
14 **Q.** You, in 2021, in October, became the interim Chief
15 Medical Adviser to UKHSA --
16 **A.** I did.
17 **Q.** -- UK Health and Safety Agency, but we're calling it
18 UKHSA for short -- and then was formally appointed to
19 the post in June 2022. Prior to joining UKHSA, is this
20 right, you were the deputy director of the National
21 Infection Service at Public Health England from 2018 to
22 2020?
23 **A.** Correct.
24 **Q.** I know there is various other responsibilities you have,
25 but that will probably do for our purposes.

1 Can I ask you, please, we have heard a little about
2 the WHO, World Health Organisation, guidelines, and
3 I just want to establish at the start: is it the
4 position that the UK is bound to follow WHO guidance
5 and/or advice?
6 **A.** Absolutely not. I think, first of all, the consensus
7 that WHO will come to will actually be a consensus
8 bringing in lots of different countries, and UK will
9 usually be a member of those advisory groups that help
10 inform WHO advice. It is really important to recognise
11 that each country develops advice for their own
12 situation, but that the evidence base that we are using
13 tends to be very, very similar, and the knowledge that
14 we are sharing, both nationally and internationally,
15 tends to be from the same evidence base.
16 **Q.** But the WHO doesn't mandate action in any given country;
17 is that right?
18 **A.** Correct.
19 **Q.** If the WHO advice is not followed, presumably there's no
20 sanction or anything like that?
21 **A.** Similarly to guidance in this country, likewise.
22 **Q.** We're going to come on to the UK guidance, right.
23 Can I deal with, firstly, Public Health England and
24 a little bit about their roles and structures, and then
25 do the same with UKHSA just so that we're clear about

1 the two different bodies. I think, is this right,
2 Public Health England or PHE was set up in 2013 --
3 **A.** Correct.
4 **Q.** -- with the aim of protecting and improving the nation's
5 health and wellbeing and reduce health inequalities, and
6 they are to carry out the Secretary of State's statutory
7 duties and functions to promote the health and wellbeing
8 of the nation?
9 **A.** Correct.
10 **Q.** All right. During Covid, did Public Health England have
11 the following two roles: they were to provide scientific
12 advice and guidance to the Chief Medical Officer?
13 **A.** Correct.
14 **Q.** Translate SAGE's advice into guidance for clinical
15 settings and audiences?
16 **A.** To all settings and audiences, not just clinical
17 settings.
18 **Q.** Thank you. And they were to undertake specific
19 scientific tasks, for example, testing and contact
20 tracing?
21 **A.** Those were some of the tasks, yes.
22 **Q.** Quite, yes, there's a lot more. Right. Is this the
23 position, that Public Health England acted as advisers
24 to the UK IPC cell?
25 **A.** So UK -- PHE and subsequently UKHSA were one of the

1 teams of advisers to the IPC cell. It was all of the
2 public health agencies and the NHS coming together, and
3 therefore had a role in advice, but as did the advice
4 coming from SAGE or the expert groups from SAGE as well,
5 or other advisory groups from government. All of that
6 came together within the IPC cell.
7 **Q.** Yes, it wasn't to the exclusion of the other public
8 health agencies, but --
9 **A.** Absolutely not.
10 **Q.** -- we'll look at the IPC cell a little later, and if
11 anyone wishes to know more about PHE's engagement with
12 other bodies, it is set out in full in the statement and
13 I'm not going to go through it with you now.
14 UKHSA came on 18 August 2020, the Secretary of State
15 announced the new body. It went through various names,
16 which I won't trouble you with, but is it right that the
17 name changed to UKHSA on 24 March 2021 and UKHSA
18 formally launched on 1 April that year?
19 **A.** So it formally launched with the chief exec and the
20 chair on 1 April but actually it came into formal action
21 on 1 October of 2021.
22 **Q.** Right. Their responsibilities and roles included
23 preventing and anticipating threats to health and help
24 building the nation's readiness, defences and health
25 security. They had detection functions, an analysis

1 function, a responsive function and to what's called
2 "lead strong and sustainable global, national, regional
3 and local partnerships designed to save lives [and]
4 protect the nation from public health threats, and
5 reduce inequalities"?
6 **A.** Correct.
7 **LADY HALLETT:** So what was the real difference between that
8 and Public Health England?
9 **A.** So Public Health England included infectious diseases,
10 external health threats, health improvement through
11 non-communicable diseases, so things like obesity,
12 smoking. Public Health England also held the public
13 health grant that was given to local authorities on
14 behalf of the department. UKHSA does not do
15 non-communicable diseases, health improvement such as
16 obesity, smoking, alcohol, and the lead role for health
17 disparities or health inequalities sits with the
18 department as part of the Office for Health Improvement
19 and Disparities, the other half of what PHE was.
20 **MS CAREY:** So in the event of a future pandemic, the burden
21 is going to fall on UKHSA?
22 **A.** So I think the operational burden will fall on UKHSA.
23 It will require the whole of government. And it will
24 also require the department, in its role with health
25 improvement and disparities, to work with us very

1 closely on those elements.
2 **Q.** Can I ask you about one other group that we've heard of,
3 it's the Senior Clinicians Group, is that the same thing
4 as the senior clinical leads, do you know?
5 **A.** Well, I presume it is, I've seen both used. I think we
6 called it Senior Clinicians Group because it wasn't
7 necessarily just leads from organisations, and
8 individuals were invited to that to provide views or
9 opinions so that a range of people from a range of
10 organisations across the four nations could come
11 together.
12 **Q.** And I think in your statement you say that the Senior
13 Clinicians Group was convened by the Chief Medical
14 Officer's office, it included the Chief Medical Officer,
15 the deputies, the NHSE medical director -- was that
16 Sir Stephen Powis predominantly for the time --
17 **A.** It was, yes.
18 **Q.** The NHSE director of emergency planning -- who was that,
19 please?
20 **A.** That was Professor Keith Willett.
21 **Q.** Thank you. The PHE medical director?
22 **A.** That was Yvonne Doyle.
23 **Q.** Thank you. And then there was various -- there was
24 a PHE incident director?
25 **A.** That was me and Professor Nick Phin, who -- we shared

1 that role for the first nine months of the pandemic.
2 **Q.** And the Senior Clinicians Group first met on
3 16 March 2020, and the membership gradually widened to
4 include the four nations' chief nursing officers,
5 the CMOs and relevant DCMOs, and with various experts
6 invited to attend individual meetings; is that --
7 **A.** And that was very rapid, I think within a week it was
8 a four nations group.
9 **Q.** Professor, can I ask some overview questions at the
10 beginning, predominantly about transmission.
11 Do you agree that determining the mode or modes of
12 transmission has consequences for the IPC measures that
13 are recommended?
14 **A.** I do agree, and -- but I would also highlight that when
15 we determine the mode of transmission and the measures
16 that are going to be done, we use a lot of information
17 that has developed over many years and evidence that's
18 developed over many years in the literature, for both
19 the mode of transmission but also the evidence for what
20 we will do.
21 **Q.** All right. I think are you aware that we are familiar
22 with three main routes relevant to respiratory viruses:
23 the droplet route, the aerosol route -- do you agree
24 that "airborne" and "aerosol" are used synonymously?
25 **A.** So I think -- can I just put this in a really simple

1 way? I think that in traditional terms there has been
2 dichotomies, simple binary dichotomies that I think the
3 pandemic has shown are not helpful.
4 Q. Pause there, please, because we're going to come on to
5 that.
6 A. Yes.
7 Q. I just want you to understand that we're aware of the
8 three main routes. We'll look at whether they are good
9 one, bad ones or perhaps ought to change in a moment.
10 But to go back to my question, do you agree that
11 generally "airborne" and "aerosol" are used
12 synonymously?
13 A. "Airborne" and "aerosol" are -- I don't know if it's
14 used synonymously, I think "aerosol" is meant -- to me
15 is a component. "Airborne" I think more aligns with
16 respiratory route of transmission.
17 Q. Well, for these purposes and the Covid-19, yes. And
18 obviously we are familiar with contact, both direct and
19 indirect, or fomite, however you want. So they're the
20 three routes we are going to be concentrating on.
21 In your statement, when you refer to droplets, what
22 particle size are you referring to?
23 A. So I think if we look at traditional measures of
24 droplets that were used throughout the early days of the
25 pandemic, droplets were regarded to be larger particle

1 sizes that would fall close to where the patient is or
2 where individuals are in the public. I think that there
3 were dichotomies and measures that are taken, and we can
4 discuss those, but I think that, again, this was about
5 simplifying complex matters into terms that people could
6 understand.
7 Q. So in the vein of simplicity, in your statement, what
8 droplet size are you referring to when you say droplets?
9 A. So I think in the statement I think what it's referring
10 to is that the traditional infection prevention and
11 control measures that were used were droplets -- were
12 large particle sizes, usually in the order of multiple
13 microns to hundreds of microns wide.
14 Q. Can you give us a figure? We're going to come on and
15 look at the 100 dividing line, but I just want to
16 understand what your position is so that people know at
17 the outset when they see in the statement of
18 Professor Hopkins referring to a droplet, she is talking
19 about a particle size of what?
20 A. So I'm afraid I think that I would say that the
21 traditional particle size of droplets and aerosols that
22 have been used throughout the pandemic have been based
23 on evidence that was built on for many years. The
24 aerosol droplet size has traditionally been measured as
25 a sort of 5-micron, things that get into the narrow

1 parts of the lung, but I would also highlight that what
2 we have done and the evidence that has emerged during
3 the pandemic means that that dichotomy is no longer
4 useful or helpful.
5 Q. I follow that and we will look at it, but I just want to
6 understand some basic parameters at the outset.
7 So when you are talking about aerosols you are
8 referring to particle sizes of 5 microns or smaller; is
9 that correct?
10 A. That's the traditional --
11 Q. All right, and can we take it that if it's above
12 5 microns, that is potentially you referring to it as
13 a droplet?
14 A. Correct.
15 Q. Right, thank you.
16 Are you aware that Professor Beggs' evidence was
17 that particles of 100 microns or larger behave
18 ballistically?
19 A. I am aware from --
20 Q. You've read his statement?
21 A. I have.
22 Q. He says that particles of 100 microns or under behave
23 like aerosols, ie they float and travel larger
24 distances?
25 A. So I recognise that that is the particle physics that he

1 describes.
2 Q. Do you agree with that dividing line?
3 A. So I agree that, again, the dichotomy of 5 microns
4 versus 100 microns is not helpful and that we should
5 recognise a range of particle sizes that come through.
6 I think that what we've seen emerge throughout the
7 pandemic is that these simple dichotomies are not
8 helpful in understanding how transmission occurs and the
9 interventions that could control transmission.
10 Q. All right. Do you think that the 100-micron dividing
11 line is about right?
12 A. I again think we should be thinking about respiratory
13 transmission in general and about the range of particles
14 that people emit through a range of procedures, and that
15 actually what we are seeing from all of the evidence
16 accumulated in the pandemic and a review of a lot of the
17 evidence before, that we should be talking more in
18 general of respiratory transmission and what we can do
19 to reduce it rather than talking about particle size
20 per se.
21 Q. I follow that, but it would be helpful to have on the
22 record whether you agree the 100-micron dividing line is
23 a sensible one. You may say 110, you may say 90, but
24 give us a ballpark figure.
25 A. I mean, you know, I think the problem is that if we

1 develop into a new number as a dividing line then we
2 don't actually overarchingly think about what are the
3 measures that we can do to reduce respiratory
4 transmission and what are the interventions that are
5 helpful in doing that. So in my way of thinking, what
6 we have is a continuum of particle sizes that go from
7 very small to much larger, some that are visible by the
8 eye and the majority that are not visible by the eye,
9 and things that we can't measure routinely in practice,
10 and therefore what I think is really important in
11 thinking about that is: what are the interventions that
12 will help us reduce the risk of respiratory transmission
13 in a wide variety of settings to prevent people getting
14 infected.
15 **Q.** All right.
16 Do you think in future there needs to be a more
17 multidisciplinary approach to the formulation of IPC
18 guidance?
19 **A.** So --
20 **Q.** Not just clinicians but with physicists, engineers and
21 the like?
22 **A.** I agree that the multidisciplinarity is important.
23 Multidisciplinarity occurs in hospitals with hospital
24 engineers contributing to IPC teams. I think, again,
25 the feeds into the IPC cell who are writing the ultimate

1 guidance for operationalisation in the NHS were
2 multidisciplinary, through the advisory groups, which
3 are multidisciplinary, to government, and specifically
4 the SAGE Environmental Modelling Group which had
5 multidisciplinarity. So I think the feeds in need to be
6 multidiscipline, because they will bring in all of those
7 aspects, and then I think that in developing the
8 guidance that needs to be thought about the range of
9 individuals who will be using that guidance and whether
10 it's understood by them and can be practised by them.
11 **LADY HALLETT:** Sorry, just going back to your answer,
12 Professor, how can we reduce the risk of respiratory
13 infection in a wide range of settings, that sounds as if
14 you don't think there's any purpose whatsoever in
15 deciding whether it's aerosol or droplet transmission
16 because circumstances can vary and you ought to be
17 catering for every possibility?
18 **A.** So I think --
19 **LADY HALLETT:** Every reasonable possibility.
20 **A.** Yeah, I agree. So I think what we've learnt through the
21 pandemic is that respiratory transmission occurs in
22 a wide variety of different ways and that when we're
23 looking at the ways of controlling it we need to look at
24 a wide variety of ways of controlling it: knowing who is
25 infected, knowing the risks of the person who may be

1 about to see somebody who is infected, knowing how we
2 can improve the ventilation in the environments, whether
3 that be through temporary measures or more permanent
4 measures, thinking about how we isolate individuals and
5 quarantine them, having widespread testing available.
6 I'm happy to go into this in more detail. But I think
7 it's really important to recognise that a golden bullet
8 or a silver bullet won't work if we just think about it
9 in binary terms, and I'm really keen, coming out of the
10 pandemic, that we understand the multidisciplinarity
11 that's important but also the multiple different
12 interventions that we need to use at once as complex
13 interventions to reduce infection transmission.
14 **MS CAREY:** All understood, Professor, but the bottom line is
15 that early on in the pandemic droplet transmission was
16 deemed to be the main route of transmission.
17 **A.** Agreed.
18 **Q.** So it may well be now, in 2024, our understanding has
19 evolved, if not changed, but I do need to deal with what
20 was known back in 2020 and onwards.
21 So in that vein, as at January 2020, I think it was
22 Public Health England that published the first Covid-19
23 IPC guidance on 10 January, and that's paragraph 290(c)
24 if you want to look.
25 As at 10 January, what was Public Health England's

1 understanding about the mode or modes of transmission?
2 **A.** Well, the emerging information that was essentially
3 shared with us from WHO was that the main route of
4 transmission was close contact transmission and likely,
5 therefore, to be related to droplet transmission, as
6 that close contact was the predominant route.
7 **Q.** Right. So that accorded with Public Health England's
8 understanding?
9 **A.** So that was the best information. We had no information
10 in country at the time.
11 **Q.** Right. Then at that time, in January, we know that
12 shortly after that guidance Covid became an HCID,
13 a high-consequence infectious disease, and that
14 accordingly, therefore, various precautions were needed,
15 including the use of FFP3 respirators when dealing with
16 an HCID; is that correct?
17 **A.** Correct.
18 **Q.** It was declassified in due course on 19 March.
19 I'm not going to ask you about the classification
20 and declassification decisions, but is this the
21 position, that the January 2020 guidance was based on
22 MERS guidance?
23 **A.** So we had established guidance for MERS and for SARS and
24 for diseases that were neither endemic, epidemic or
25 pandemic, so these were all very rare infections that

1 were not circulating in the community and so the only
2 exposures that we would see in the UK were imported
3 cases that were then being managed in healthcare
4 settings, and therefore it was very clear about that
5 what we wanted to do was reduce the risk of any
6 transmission when we are trying to find out more
7 information.
8 Q. Now, putting aside the fact that MERS was designated as
9 a high-consequence infectious disease, the MERS guidance
10 said that MERS was transmitted by large respiratory
11 droplets, direct or indirect contact, it may also have
12 been detected in blood, faeces and other bodily fluids,
13 and, under certain circumstances, airborne transmission
14 was thought to have occurred, particularly from
15 aerolised respiratory secretions. So a number of routes
16 of transmission for MERS there. And MERS guidance
17 recommended FFP3; is that right?
18 A. Correct.
19 Q. Now, of course it was an HCID as well, so that may add
20 a complication into it. You mentioned, I think, SARS.
21 Do you agree that SARS was transmitted by the airborne
22 and droplet route as well?
23 A. So again the majority of evidence from the SARS epidemic
24 from 2003 was that the majority transmission was through
25 droplet and, actually, it was from the SARS epidemic

1 that occurred that the idea of aerosolise -- generating
2 procedures actually came to the fore, predominantly
3 because the people who had not -- had just worn no face
4 masks or only fluid-resistant surgical masks were
5 transmitted in healthcare, having performed a procedure,
6 an aerosol-generating procedure. If those people were
7 in -- doing other forms of healthcare, so normal
8 healthcare routine delivery, without FFP3s, we didn't
9 see transmissions. Transmissions occurred at those AGP
10 moments.
11 Q. Right.
12 A. So a lot of the evidence that we used for MERS
13 subsequently is based on what we learnt from those
14 hundreds of cases that were then transmitted in other
15 countries during SARS.
16 Q. Right.
17 LADY HALLETT: You're like me, you speak very quickly, could
18 you slow down. It's just that some of the words you're
19 using, I'm watching the transcription -- it's not easy.
20 MS CAREY: So you have MERS transmitted via number of
21 routes, you've got SARS transmitted via airborne and
22 droplet but the majority is considered to be droplet
23 transmission.
24 A. Correct.
25 Q. You have the WHO considering that Covid was droplet

1 and/or contact transmission but, obviously, there is
2 some reference to airborne, and I'm trying to understand
3 why at the outset airborne seems to have dropped off the
4 radar, if I can put it like that.
5 A. Yeah, I think that when we look and when we consider
6 airborne -- and we've got a number of diseases that we
7 consider airborne -- we often think about transmission
8 at long distance, rather than short distance, and what
9 we saw during the early cases that were identified for
10 SARS-CoV-2, as it's now known, or Covid-19, that the
11 cases that were being identified were very close contact
12 and that those were predominantly within a metre but
13 definitely within 2 metres.
14 When we have looked at airborne transmission for
15 other infections -- and I think the two classic examples
16 that are often used are TB and measles, where actually
17 transmission often occurs in the next door room or in
18 another environment where you can see that it's
19 transmitting, has to transmit through the air because
20 it's not been in the same room. And we see that in
21 healthcare as well, particularly for things like TB and
22 measles, where we know that these can jump from room to
23 room and that's where the traditional component of
24 transmitting through the air for these infections has
25 occurred, whereas for infections that are transmitting

1 to people within the same close confined space has been
2 traditionally used as droplet.
3 Q. Right, so in relation to Covid, it was considered to be
4 droplet and, therefore, the risk was greater the nearer
5 you were to the infectious person?
6 A. Correct.
7 Q. Can I ask you this: when did Public Health England first
8 consider there was evidence to suggest that Covid-19 was
9 transmitted via the airborne route?
10 A. So I think that was an accumulation of evidence over
11 time, I don't think I could put at a single moment,
12 there's -- this was not just Public Health England's
13 evidence but other evidence from other teams globally,
14 where we regularly reviewed the evidence. A lot of that
15 evidence came together at advisory groups where Public
16 Health England was one of many providing evidence,
17 either through SAGE subgroups or to NERVTAG, and I would
18 say that by 2021 -- we were pretty clear in 2021 that
19 there was some element that was happening through the
20 air but that, even then, there was thought to be lots of
21 other circumstances around why this might happen.
22 For example, PHE was doing studies all the way along
23 on -- in hospital rooms and collecting air samples, and
24 collecting it from the environment, so the touch
25 surfaces that people touched and, in doing those

1 studies, we were reviewing the analysis at each point
2 and, in those, we only found two samples where it was
3 through the air, one in a room that an AGP had been
4 performed and another in a room where lots of people had
5 merged into that room to provide healthcare and there
6 was thought to be disturbance in the air. And those
7 things were all sort of saying: it is definitely
8 possible but it's not dominating because these are rare
9 events, rather than finding it in the air at all times.
10 **Q.** Can you help us with when the UK IPC guidance first
11 mentioned that Covid could be transmitted by the
12 airborne route?
13 **A.** Well, I think it mentioned it for aerosol-generating
14 procedures from the start --
15 **Q.** Put those to one side because that's specific. Just
16 generally.
17 **A.** So I cannot recollect when it particularly mentioned it.
18 I do recall that in UK -- PHE, as it was then, brought
19 together independent experts to do a Respiratory
20 Evidence Panel in spring of 2021. In that spring of
21 2021, along with experts from SAGE Environmental
22 Modelling Group, there was a consensus that there was at
23 least some airborne component, and that that should be
24 started to be reflected in the guidelines. It was
25 probably later than that when --

1 **Q.** Yes.
2 **A.** -- it was full on that there is clearly airborne.
3 I think that was probably 2022 --
4 **Q.** Yeah, we think it's either the end of 2021 or certainly
5 by January 2022, when there is reference to either
6 wholly or it became predominantly airborne transmission
7 and we'll look at the terminology later, all right.
8 So spring 2021, I think you said you, among with
9 other groups, there was a consensus by that stage that
10 it was capable of being transmitted via the airborne
11 route?
12 **A.** There was definitely a consensus that there was some
13 components of transmission where -- covering through the
14 airborne route, but that the dominant mode was still
15 close contact through droplet.
16 **Q.** Do you agree that where there is an accepted risk of
17 aerosol transmission, FFP3 masks should be recommended?
18 **A.** So I think this is, again, quite a complex area and
19 I think that, if I may, I would say that, when we look
20 at the components of fluid-resistant surgical masks
21 versus FFP3 masks, we look at the evidence that we have
22 available and their effectiveness of use. Both the
23 laboratory evidence, which is one element, but then the
24 evidence in clinical practice.
25 And where we looked at it, and repeatedly looked at

1 it and are still looking at it, the evidence is weak
2 that they actually -- FFP3s protected more than
3 fluid-resistant surgical masks. And the judgements from
4 many of the consensus groups that were being discussed
5 is that there is a whole host of interventions that we
6 needed to do, that FFP3 -- and I'm sure you've heard
7 mention before of the hierarchy of controls -- is at the
8 very bottom of the hierarchy, rather than at the top and
9 that the other elements were more important to be
10 introduced rather than a binary, fluid-resistant
11 surgical mask versus --
12 **Q.** Pause there, please, because you're right: FFP3 is part
13 of the PPE which is at the bottom of the hierarchy of
14 controls. But I just want to come back to what you were
15 saying. I had understood the position that respirators
16 offer a higher degree of protection to those wearing
17 them than those wearing an FRSM mask; do you agree or
18 disagree with that?
19 **A.** So they offer a higher degree of protection that's been
20 studied in laboratory procedures. When we look at it in
21 clinical trials of various different types, it is very
22 mixed, actually, and, in some studies, there is no
23 difference between them.
24 **Q.** If that was the case, why bother putting them on then
25 for AGPs at all?

1 **A.** So again AGPs are pushing out -- what was thought and
2 what is considered to be thinking is that AGPs are
3 pushing out a large volume of aerosols and you're in
4 very close proximity to the individual and that that
5 higher level of protection therefore may help.
6 When we're looking at wider airborne, what we're
7 trying to do is a variety of different components of
8 control and we are looking at all of the different
9 elements of practice to try and reduce any elements of
10 respiratory transmission.
11 I would say that, if we were to look at the evidence
12 and use and require FFP3s, then, given people are coming
13 to hospital with respiratory viral infections all the
14 time, then we would be asking people to wear them all
15 the time, but we don't, we ask people to wear them at
16 very specific moments, using all of the other elements
17 as a priority.
18 **Q.** Professor, can I just ask you this: I understand that
19 you're drawing a distinction between the level of
20 protection that is deemed as a result of a lab-based
21 experiment and you said it was different in a clinical
22 context but, if, in reality, in a clinical context it
23 makes no difference, why on earth is there all this
24 controversy about whether you should wear an FRSM and
25 an FFP3 if, in reality, it makes no difference?

1 A. Well, I think that we can ask lots of people that
2 question. I think that there's benefits that are seen
3 where you can eliminate the risk of an infection.
4 However, when you're in the middle of a pandemic, you
5 can't eliminate the risk of infection. What we know is
6 that healthcare workers and the community were suffering
7 infection rates at the same, roughly the same rate in
8 the population, because the infection was transmitting
9 around us in all places. Therefore what you're trying
10 to do in healthcare is really, where the risk is
11 considered the greatest, provide the greatest level of
12 protection to bring that risk down to where the level of
13 protection is for everyone else that is circulating.
14 Q. Quite. There is a load of infected people in a Covid
15 ward and nurses having to deal with them day in, day
16 out, there's going to be a higher level of viral load
17 and therefore you want to protect the healthcare workers
18 from contracting Covid, and the way to do that is FFP3?
19 A. So that would suggest that all of the transmissions in
20 healthcare occurred from a patient to a nurse. We know
21 that's not the case. The transmissions were occurring
22 from healthcare worker to healthcare worker, from
23 healthcare worker in the community, and I think that
24 what we -- it's really important to be able to reduce
25 the infection transmission risk to the level that is

1 circulating in -- at all levels in the community at the
2 time.
3 Q. Forget who brings in the infection, whether it's the
4 healthcare worker, a visitor, when they were allowed, or
5 the patient. If there's lots of people in a ward with
6 Covid, there's going to be a higher viral load in the
7 room, is there not?
8 A. If they are in the early course of disease, yes.
9 Q. Yes, quite. In those circumstances, I just want to
10 understand why, if there's no real difference between
11 the protective measures provided by FFP3 and FRSM, there
12 has been such widespread controversy, why it dominates
13 the IPC guidance if, as you say, there isn't any real
14 difference in a clinical setting?
15 A. Well, I mean, I think that's one of the challenges that
16 we have and one of the things that we need to learn from
17 post-pandemic and understand better because, actually,
18 there were harms from wearing FFP3s as well: there was
19 blistering on faces, and there were significant harms.
20 I think that, from my point of view, that having these
21 discussions in the middle of a pandemic is very
22 challenging, that we need to have an ongoing discussion
23 and ongoing evidence about whether these masks actually
24 do protect people better in real life settings in wards.
25 Q. So if there were a pandemic in a year's time and we're

1 back in the position we were at the beginning of 2020,
2 what would your recommendation be for healthcare workers
3 on a general ward; what level of mask should they wear?
4 A. So, again, I think it would take the level of risk
5 that's on the ward that's there, I think the level of
6 ventilation that's there, and I think that it would also
7 take the views of the healthcare workers and the views
8 of the evidence. I think that it's really important
9 that, if the evidence was strong that FFP3s really
10 protected people from it, and we saw a definitive
11 reductions in it, it would have been recommended.
12 Even at the end of the pandemic, this was low
13 quality evidence and it may have reduced infection, and
14 those words are really important, I think, when we're
15 thinking about future evidence. I think that we need to
16 bring this, actually, as a learning point for the future
17 about how do we develop pandemic guidance before the
18 pandemic occurs, so that people are actually able to
19 input into it and be able to provide that rationale and
20 discussion at that point.
21 Q. Well, whether it's right scientifically in a lab or in
22 the clinical context, clearly we need to look at the
23 fact that there were distinctions drawn between FRSM and
24 FFP3.
25 Can I ask you this: what was the evidence base for

1 deeming Covid to be transmitted via the droplet contact
2 route at the start of the pandemic?
3 A. So that was based on the studies that were performed in
4 China and then in other countries about how many people
5 were infected and what the proximity to individuals were
6 that were being infected. It was based in this country
7 when we started to see cases on looking at where the
8 infections occurred and how the infections occurred in
9 the community and in other settings.
10 It included collecting specimens from the
11 environment where the individuals were with infection,
12 both in the home environment but in the healthcare
13 environment and in other workplaces as well, from
14 samples taken from surfaces, samples taken from air and
15 samples taken from contacts.
16 Q. Do I take it, therefore, that PHE considered the
17 evidence base sufficiently strong for that to be then
18 the cornerstone of the IPC guidance, it's droplet and
19 contact mainly?
20 A. So I think that the evidence was sufficient for us to
21 have that knowledge, both from our organisation but from
22 all other public health organisations and health
23 organisations and evidence organisations globally.
24 Q. Does it follow that PHE did not consider there was
25 sufficient evidence of aerosol transmission at the start

1 of the pandemic?
2 A. Correct.
3 Q. If there was no evidence to include it, was there
4 evidence to exclude aerosol transmission at the start of
5 the pandemic?
6 A. It's very difficult to exclude elements.
7 Q. If it couldn't be excluded, why wasn't the guidance
8 based around the fact that, well, we don't know, so
9 we're going to take a precautionary approach and
10 recommend IPC guidance that covers droplet, aerosol and
11 contact transmission?
12 A. So I think it's important that IPC guidance is built on
13 the years of evidence that have gone before and the
14 evidence that we've had from other respiratory viruses,
15 influenza, MERS, SARS, and the evidence that we've used
16 in previous pandemics and in other studies as well. So
17 the evidence is not just based on the precise
18 information we have but multiple documents that people
19 are constantly reviewing, new evidence that's emerging,
20 and that when we think about the approach to IPC, the
21 aim for infection prevention and control that is taken
22 nationally and internationally is very much about
23 reducing the risk.
24 It was not possible in a pandemic to eliminate the
25 risk because we were all having events happening to us

1 in the community, on travel to work, in our households,
2 that were causing transmission. So this was not
3 an event where you can eliminate risk in healthcare
4 because the risk will be there outside healthcare as
5 well.
6 Q. Of course, there's nothing to stop the healthcare worker
7 getting on the bus and catching it on the way to work
8 and then going into the hospital and infecting other
9 people, I follow that, but why doesn't the guidance say
10 at the start: we think it's droplet and contact, we
11 can't exclude aerosol and, therefore, at the moment, we
12 are recommending the highest level of protection until
13 we know more about the route of transmission?
14 A. So my understanding is that the pandemic Covid-19
15 guidance was based on the pandemic flu guidance, which
16 again is a respiratory virus, and, while there are
17 differences, I think that in Professor Beggs' report he
18 highlights the similarities as well. I think that the
19 important point here is that IPC guidance is there to
20 facilitate the use of a wide range of interventions to
21 reduce transmission in healthcare, and that is based on
22 the evidence that is available to us at the time or that
23 is evolving.
24 We would rarely say all of these other things need
25 to be done as a precaution because that is -- has risks

1 and benefits and, in medicine, we use risks and benefits
2 in looking at the various different elements at all
3 times. At the very outset, so in March 2020, the risks
4 were that we had never asked people to wear FFP3 masks
5 for prolonged periods. Actually, when we saw that we
6 saw them get ulcers on their faces and having challenges
7 in breathing and challenges in being dehydrated. That
8 was clearly important. The second point was that FFP3s
9 were not routinely used in healthcare, apart from
10 specialist teams, such as teams I've worked on, because
11 we manage infectious diseases regularly and, therefore,
12 that healthcare workers weren't fit tested and therefore
13 could not have been rolled out at speed or at scale.
14 It would have taken many, many, many months to do
15 that everywhere and, actually, what that may have done
16 is taken the use of FFP3 to places which were considered
17 at lower risk at the time, rather than places that were
18 considered at highest risk.
19 Q. I follow that but that comes down to whether we've got
20 enough FFP3, which --
21 A. Not just enough FFP3, enough people to train people,
22 enough people to test people, enough different types of
23 masks and also whether that risk was proportionate to
24 the benefit of doing it. And it was considered, as it
25 is for much IPC, that the risk balance here was in

1 favour of fluid-resistant surgical masks for the
2 majority and FFP3s for those with the highest risk
3 procedures, based on what was known already.
4 Q. All right. So does it come to this, that at the start
5 of the pandemic, let's call it March 2020, although
6 there was no evidence to exclude aerosol transmission,
7 one of the reasons or the reasons why it wasn't
8 recommended is because there's a comfort issue,
9 a fit-testing issue, it's not routinely used and there
10 was a need to prioritise it for those areas deemed to be
11 at highest risk?
12 A. And the evidence wasn't there for their use.
13 Q. Right. Can I ask you this: there are many who think
14 that, rather than being led by the science, it was the
15 lack of FFP3 that drove that early IPC guidance and
16 caused it to not recommend FFP3. What do you say that
17 that, Professor?
18 A. I do not recall that that was the decision-making
19 process.
20 Q. Now, in 2024, what is UKHSA's position about the routes
21 of transmission for Covid-19?
22 A. So I think Covid-19 is a respiratory virus and, as with
23 many other respiratory viruses that there is a route of
24 transmission that is through the air and that is not
25 just big droplets that are close but smaller droplets

1 that may be within 1 to 2 metres, and that there's some
2 components of those droplets that can stay in the air,
3 of which some of those may be infectious and infect
4 other people.
5 So a range of droplets -- a range of sizes of
6 respiratory particles that comes out of the mouth and
7 a range of those respiratory particles that may be
8 infectious.
9 **Q.** Yes, and presumably contact?
10 **A.** And I think that contact is still potentially a role, as
11 for many other viruses. I think that, you know, the
12 idea that we are going to throw hand washing out in
13 managing infection would be a wrong thing to do. Not
14 only does it manage this but it manages many others.
15 **Q.** So, although the language would be different now in
16 2024, in reality, you're saying all three routes of
17 transmission are considered to be the routes for
18 Covid-19?
19 **A.** I think all three routes but I think it's important to
20 recognise that the closer you are to somebody and the
21 longer you spend with somebody, especially in a confined
22 space, is most likely to result in transmission.
23 **Q.** Okay, now, you've alluded a number of times to the fact
24 that you don't consider the dichotomy between droplet
25 and airborne to be useful any longer and, indeed, you've

1 written as such in letters, I think, indeed, one to
2 Mr Jones from CATA.
3 If that distinction is no longer useful, what does
4 that actually mean now for IPC guidance; what is it
5 going to say, Professor?
6 **A.** Well, I mean, again this is -- I can give you my view,
7 I can give you some of the view from my organisation but
8 I think this needs to be a consensus exercise across
9 multiple scientific disciplines to bring this together.
10 I think we need to separate out what we think is the
11 route of transmission and how we think that route of
12 transmission goes to the strength of evidence for the
13 interventions that we need to do to reduce that mode of
14 transmission. If I may, I would say that, in
15 healthcare, one of the biggest things that we can do to
16 reduce respiratory infections that happen every single
17 day and transmission of respiratory infections is to
18 improve the ventilation in healthcare and also consider
19 the -- where patients are placed in delivery of
20 healthcare, whether we have enough single rooms, how we
21 can use those rooms effectively.
22 I then think that we need to think about ensuring
23 that we can test people regularly so we know what they
24 have, and that we think about the individual level risk
25 mitigations that people have, including vaccination. So

1 vaccination very much changes people's level of risk and
2 their perception of their own level of risk but, of
3 course, many healthcare workers vote with their feet and
4 decide that they no longer need vaccination for Covid or
5 flu, or many other things.
6 I then think that there's the final element then --
7 and there's many other elements I could go into -- but
8 the final element is in relation to masks. Personally,
9 I think that we should have an enabling situation with
10 FFP3s, and I call it enabling, rather than mandating,
11 and that means that people are able to judge their own
12 personal level of risk better, that they are able to get
13 fit tested regularly, that there's a range of masks
14 available to fit them. For example, I know that I only
15 fit one or two masks and lots of other masks don't work
16 for me. So that means that organisations need to be
17 able to have all of those skills in place in order for
18 people to be able to take their view on the risk and the
19 risk on the procedure that they may be doing.
20 I then think that in terms of evidence I think what
21 we've seen in terms of the evidence that has developed
22 throughout is that FFP3 masks may -- and I think all of
23 it says "may", provide a higher level of protection than
24 fluid-resistant surgical masks. I think we need to look
25 at that better, I think we need to provide and perform

1 studies better in the NHS to allow us to understand this
2 better in between pandemics, so that we are ready for
3 pandemics. Then I think that, when we are considering
4 how we work with healthcare workers to inform their
5 level of risk, that that is very much informed about the
6 environment they're working in, the organisation they're
7 working in, and how -- that we need all of those things
8 to come together to improve our IPC guidance from where
9 it is now, which is still in the dichotomy mode, into
10 much more a patient level and a healthcare worker level
11 of risk.
12 **Q.** Do you think, therefore, that the terminology -- the
13 dichotomy, to use your words -- needs to be clarified
14 and/or changed?
15 **A.** Yes.
16 **Q.** Do you know if there's any work ongoing -- but the WHO
17 to one side -- in the UK to try and reach agreement
18 about the terminology that should be used for
19 a respiratory virus?
20 **A.** So we are working within our organisation to develop the
21 better evidence base. I think one of the things that we
22 need to do and which we are doing is working with wide
23 variety of different scientists and looking --
24 **LADY HALLETT:** Please slow down.
25 **A.** Sorry.

1 **LADY HALLETT:** It's an awful lot of substance.
2 **A.** Sorry! We are working with a wide variety of scientists
3 of multiple different disciplines to try and come up
4 with consensus statements, which is one of the things
5 that we tried to do during the pandemic in difficult
6 scenarios because, I think, each organisation may have
7 different views on the practicability of it, the
8 operationalisation of it, the feasibility of delivery,
9 but I believe that we need to have that sort of
10 consensus statement in the UK ready for the next
11 pandemic but also ready for the day-to-day management of
12 respiratory infections in the NHS.
13 **MS CAREY:** Is that, do I understand it, work being done
14 within UKHSA?
15 **A.** Within UKHSA but also with our advisory committees,
16 NERVTAG advisory committee for dangerous pathogens,
17 et cetera.
18 **Q.** What about across the UK with the public health agencies
19 in the devolved nations, has that work started?
20 **A.** So I think again, within the public health agencies, we
21 have forums within the four public health agencies to
22 come together, we have a health protection committee and
23 a health protection oversight group, we share regularly
24 our views within the public health agencies. I think
25 it's important that there is a public health agency

1 evidence but I also think it's important that the
2 operationalisation of this evidence is considered by the
3 NHS.
4 **Q.** Her Ladyship heard, I think, in earlier evidence in
5 another module the suggestion that UKHSA appeared
6 reluctant to admit airborne transmission outside of
7 AGPs; do you agree or disagree with that statement?
8 **A.** I think that as it changed over time and as the evidence
9 evolved I think that we did acknowledge this, and
10 actually it's acknowledged on our website, so -- but
11 I think that we were cautious in the early days because
12 of the lack of evidence, and as an organisation we
13 needed to ensure that we were taking views from many
14 different parts of our organisation, with many different
15 views in it, but also the evidence that was collected
16 not just by our scientists but by scientists from other
17 organisations, in delivering statements on government
18 websites.
19 **LADY HALLETT:** Can I just ask, I don't know if you read the
20 Module 1 report in which I spoke about groupthink, a lot
21 of the evidence base you're talking about seems to have
22 come from a group of scientists, you say around the
23 world, and the WHO then uses that expertise. How do you
24 ensure that there isn't just an element of "Well, we all
25 think this is droplet, the WHO says it's droplet, so

1 we're all going to go along that path" and you just end
2 up confirming each other's -- is it called confirmatory
3 bias? I can't remember what it's called in scientific
4 terms. But how do you stop that kind of groupthink
5 developing? Whether it's right or wrong, how do you
6 stop a bunch of scientists all saying basically the same
7 thing, and nobody is saying "But wait a minute, the
8 emperor's got no clothes"?
9 **A.** So, first of all, I think systematic reviews are one of
10 the big things that we do in medicine and in health
11 delivery in general, and so that's about
12 independent ex -- individuals who have got expertise in
13 gathering together from a wide variety of different
14 sources, weighing up the strength of evidence in it and
15 summarising what it says into whether things are
16 low-quality or high-quality evidence and the range of
17 outcomes that it's looking at.
18 Those evidence reviews were often done rapidly in
19 the pandemic because they needed to be done in days
20 or weeks rather than a prolonged period of time. In
21 normal time we would normally take one year to do
22 an evidence review, it would have lots of different
23 meetings, bringing people together to hear a wide range
24 of opinions. And I think it's really important that
25 a wide range of opinions are viewed and in many cases,

1 in internal conversations or in conversations across
2 organisations, those are. But then at the end of the
3 day we have to reach scientific or health consensus, and
4 that is where everyone's views are heard, that people
5 are able to provide the evidence for their view, and
6 then where that evidence is not robust that we're
7 thinking about what science do we need to do next to
8 improve the evidence there in order to base the
9 consensus on the decision of most.
10 It's really important though that consensus
11 decisions in health are not one and done. They're
12 decisions that are -- change over time. Which is
13 I think what we saw during Covid-19. Lots of things
14 changed over time.
15 So new information, new evidence was constantly
16 being reviewed and that allowed people to change
17 opinions, but it doesn't change fast, because if it
18 would change fast then we wouldn't have an evidence to
19 do that, but if something big came about then that's
20 what would happen.
21 I mean, I can give you the example. For example
22 Mpox, that we dealt with recently, in 2022 started out
23 as a high-consequence infectious disease. We learnt
24 quite rapidly it wasn't airborne, it was mainly close
25 contact, and therefore we de-escalated the

1 high-consequence infectious disease. And that's the way
2 that we do it. And it wasn't -- so it's not about
3 rigidity of thinking, it's about having an open mind,
4 learning from everything that we see, bringing that
5 together from a wide variety of different angles to then
6 share that in summary.
7 And I think in -- the Environmental Modelling Group
8 did that really well for the environmental stuff,
9 because they brought together such a wide range of
10 opinions, to then summarise where the evidence was and
11 where things were weak or low and where further work
12 needed to be done.
13 **LADY HALLETT:** Can I just -- I'm sorry to interrupt,
14 Ms Carey, can I just challenge.
15 You say the evidence base in the early days of the
16 pandemic was such that the consensus became that it was
17 droplet and close contact, but did you really have that
18 much evidence in the early days? I mean, so you're
19 relying on some research carried out in China, and no
20 doubt because you couldn't really examine that in maybe
21 the ways you'd like to, there may have been problems
22 with that. Other than that you knew about cases which
23 had been exported. But how did you then know that it
24 was close contact? I mean, what was the evidence base
25 at that stage to come to the consensus that it was close

1 contact and droplet?
2 **A.** So, I mean, I can give you lots of different examples on
3 that. So each country as they -- as individuals were
4 identified in a country were doing very detailed
5 investigations around cases. So if I can give you the
6 examples here, for the first two cases we identified in
7 late January 2020 we tested lots of people around them
8 to try and understand. We looked at all of the
9 different elements that they had done in their
10 infectious periods, and we called the infectious period
11 two days before they developed symptoms, until they were
12 isolated, and we could only find transmission in those
13 very close contact individuals. We didn't find
14 transmissions in taxis, we didn't find transmission in
15 a dorm room, we didn't find transmission in restaurants.
16 Equally, what became known as the cluster related to
17 skiing in Brighton, which again had quite a number of
18 cases involved, we did a detailed investigation
19 internally but then also, with all of the other
20 countries where cases were, to look at what their
21 contact was, what their route of transmission was, and
22 there was no infections identified in people who had
23 transient contact. We tested and looked at and followed
24 up for symptoms a variety of different households,
25 a variety of different workplace settings, and that's

1 where -- all of that slowly emerging evidence. That's
2 just two examples but I could -- you know, every single
3 case in those first hundreds had a detailed
4 investigation around it where we were following people
5 on a daily basis to see if they developed any symptoms,
6 and testing them very regularly if they did.
7 So it was all of that that brought us to the
8 understanding of how it was transmitted, in the best way
9 that we could over time. And we continued to do that.
10 **LADY HALLETT:** I'm no scientist, as you obviously will know,
11 but there were limitations on the work you carried out.
12 I mean, for example, you said two days -- you were
13 tracking them for two days before their symptoms showed.
14 You didn't know how long people were infectious at that
15 stage, did you?
16 **A.** No, we didn't, and again that is an approach that we
17 take from any respiratory viruses, where we recognised
18 that people often have very mild symptoms they wouldn't
19 recognise in the day or two before, and so we always
20 went back two days prior to where those symptoms -- what
21 I'm saying is that even in those two days prior we would
22 not find people who they had transmitted to outside
23 people who had been in very close contact with them.
24 **LADY HALLETT:** Ms Carey.
25 **MS CAREY:** One final question because I'd like to move on,

1 Professor. You said a moment ago that you think that
2 PHE were cautious in the early days. There are many in
3 the room who think PHE were not just cautious but slow
4 to accept airborne transmission and in particular the
5 possibility of far-field transmission. Now, some years
6 on, do you agree or disagree that PHE were slow?
7 **A.** I mean, I think developing evidence is slow. Making
8 statements as a national organisation requires evidence.
9 It's therefore our job to ensure that the statements
10 that we make are fully evidenced, and I think that we
11 tried to do that, and showed a variation in approach in
12 doing that over time, as the evidence consensus built.
13 **Q.** Is that a no?
14 **A.** So I think it's a no.
15 **Q.** Can I turn, please, to the UK IPC cell. I think you are
16 aware, we've heard quite a lot of evidence in the last
17 few days about the cell and indeed about how the
18 guidelines were drafted, what level of sign-off -- my
19 words, not anyone else's -- before ultimate publication,
20 and I just want to be clear what -- PHE and in due
21 course UKHSA's stance on it. Do you agree that it was
22 the IPC cell that drafted the guidance?
23 **A.** Correct.
24 **Q.** That it then went to the Senior Clinicians Group?
25 **A.** No.

1 **Q.** Right. Help us then, what happens after it's drafted by
2 the UK IPC cell?
3 **A.** So I think -- first of all, it varied at different times
4 during the pandemic. And so that's really important,
5 because it was not one size fits all. The first IPC
6 guidance that PHE released was emergency guidance.
7 **Q.** Yes.
8 **A.** That was done by PHE. The second IPC guidance was
9 guidance that the Deputy Chief Medical Officer,
10 Professor Jonathan Van-Tam, commissioned from NERVTAG
11 members as the pandemic Covid-19 guidance. That was
12 cleared --
13 **Q.** Was that the March?
14 **A.** That was the March guidance.
15 **Q.** Thank you.
16 **A.** That was cleared by NERVTAG at advisory committees, was
17 reviewed by public health agencies and the NHS, but was
18 essentially signed off by NERVTAG.
19 **Q.** And the UK IPC guidance?
20 **A.** The UK IPC guidance, so the UK IPC guidance really
21 became as a routine from thereafter.
22 **Q.** So from the April guidance onwards?
23 **A.** April guidance onwards.
24 **Q.** All right, fine, okay. Put the pre-UK IPC cell guidance
25 to one side.

1 **A.** Yeah.
2 **Q.** It is drafted, I think you agreed, by the UK IPC cell,
3 and then once we're in April 2020 was it then that it
4 went to the Senior Clinicians Group?
5 **A.** No, it was -- it would -- so the IPC cell was the
6 operational cell led by the NHS, and this guidance was
7 for the NHS, and had four public health agencies
8 inputting into it as well as the IPC nurses and leaders,
9 doctors from NHS England. The IPC cell guidance was
10 then ratified by the IPC and by their senior responsible
11 officer --
12 **Q.** It's my fault, you're right, I missed out that stage,
13 you're right, we heard that it had to be ratified by
14 each of the public health agencies and then went to the
15 Senior Clinicians Group?
16 **A.** The Senior Clinicians Group was not a sign-off group on
17 this. The Senior Clinicians Group had moments where
18 there was differences -- sufficient differences of
19 opinion that the chief nursing officers could not come
20 to an agreement on, and then it was escalated to the
21 Senior Clinicians Group.
22 I can only recall a few occasions that happened.
23 One was the guidance that we released in early April
24 wearing face masks for all, because that was outwith
25 traditional IPC guidance. One was the shortages

1 guidance, which went to the Senior Clinicians Group for
2 discussion. And then at various points the Senior
3 Clinicians Group discussed components of it but never
4 ratified it and it was not ratified by the Senior
5 Clinicians Group.
6 **Q.** So to use your words, who had sign-off?
7 **A.** So the sign-off was the IPC cell.
8 **Q.** If we have heard evidence that said that PHE signed off,
9 I assume from that answer you would disagree with that?
10 **A.** The IPC cell was there to create the four nations IPC
11 guidance for operationalisation into the NHS. UKHSA
12 published it on behalf of the four nations, and that was
13 really important, and one of our roles was to ensure
14 that it was consistent with other guidance that was on
15 gov.uk and other guidance that was being published, and
16 that it had those same principles in it that were
17 sitting across government as a cross-government
18 document. From our point of view that was not us saying
19 "You are wrong, IPC cell"; if we thought there was some
20 consideration where we thought it needed to be
21 reconsidered, that was asked for the IPC cell to
22 reconsider it and gain consensus.
23 **Q.** I see the distinction that is drawn, but we heard
24 yesterday from the Chief Nursing Officer that PHE could
25 effectively say no. I think indeed Dr Ritchie said,

1 I'm paraphrasing, effectively the same thing.
2 Can I ask you this, because there may be some
3 confusion, it may not help now to go through the rights
4 and wrongs of it. Was it set out anywhere: you draft
5 it, we approve it, you publish it?
6 **A.** We -- I mean, you shared an email that -- earlier on
7 that you might want to bring up, which I think was --
8 highlighted the sort of sign-off for publishing, but
9 I think it also highlights in that email that you
10 shared, that was from early February 2020, that it went
11 back to the IPC cell if there was disagreement.
12 I think I just -- can I just come as a doctor and as
13 a healthcare professional --
14 **Q.** Please do.
15 **A.** -- and somebody who has worked in healthcare in this
16 country in lots of different ways.
17 Firstly, and in Public Health England in lots of
18 different ways over time, there is no situation where
19 Public Health England has had a veto about something
20 that's happening in the NHS and for any guidance that's
21 delivered into the NHS. That is not our role, we are
22 advisers, we try to bring together scientific evidence,
23 we try to support organisations in their delivery, but
24 there is literally on nothing that the NHS delivers
25 is -- we would have a veto. Quite rightly, because we

1 are one part of it.
2 Equally, and something that was for a four nations
3 approach, Public Health England is one of four public
4 health bodies, and health and public health is devolved,
5 and there is no occasion that one organisation could
6 therefore overrule other organisations, nor would it be
7 expected.
8 Equally in things like Senior Clinicians Group or
9 advisory groups, the idea is always to try to drive
10 a scientific or health consensus rather than a single
11 component driving our decisions, because that's not
12 helpful in delivering a system-level approach to
13 anything in healthcare.
14 Q. So no one has the right of veto, Public Health England
15 want to ensure there is consistency before it's
16 published with other agencies, departments who have put
17 out things on the website and the like, but that's not
18 the same thing as you saying: no, that's the wrong
19 guidance. Am I understanding that correctly?
20 A. Correct.
21 Q. Does it come to this, then, that once the IPC cell reach
22 a consensus, effectively no one is going to overrule it
23 unless it diverges from something that you see another
24 government agency or department has put out?
25 A. Another government agency, another government, another

1 organisation. If it disagreed with SAGE
2 recommendations, for example, it would be reconsidered.
3 Really important that the IPC cell took advice from
4 various subgroups of SAGE, various advisory bodies for
5 SAGE, various government advisory bodies like NERVTAG,
6 and that it was about taking all of that in and
7 translating what was scientific advice to government
8 into an operational guidance that could be delivered in
9 healthcare settings.
10 Q. So once the UK IPC cell come up with the guidance and it
11 is seen by the public health agencies in the respective
12 four nations, there may be some toing and froing, some
13 changes, once it's been through that process
14 effectively, therefore, it becomes the guidance unless
15 someone else says something different about it and PHE
16 need to align that with another body or another agency;
17 is that it?
18 A. Correct.
19 Q. Right, now that we've got to that position, do you think
20 it would have been helpful for that to have been set out
21 anywhere?
22 A. I think clearly with hindsight and with people's views
23 that can change over time and, you know, it feels like
24 it may be necessary to, but I think it's really
25 important that this is a well established mechanism for

1 both working together collaboratively as organisations
2 and thinking about things as we go forward.
3 I would say that we did recognise this to some
4 extent and have developed a memorandum of understanding
5 with the department and NHS England, so I think we need
6 to go wider and think about it as a four nations
7 approach.
8 Q. Can I turn, please, to some of the guidance, and we're
9 not going to go through it all, Professor, but you have
10 helpfully in your statement set out different tranches
11 of time when guidance changed and there were perhaps
12 some of the more significant changes. That's not to
13 belittle the other changes.
14 January to March 2020, can I ask you this: by the
15 time that Covid-19 was declassified, was there in fact
16 enough FFP3 to supply all healthcare workers in
17 patient-facing roles?
18 A. I -- my understanding was that there were -- I was never
19 told the exact number at the time -- I do know the
20 number now in retrospect -- but the role I had -- I was
21 told at the time and I was told in the guidance that
22 I wrote, was involved in writing, and for the wider mask
23 wearing and FFP3 wearing in the health system, that
24 I shouldn't be considering guidance for what supply was
25 available, I should be considering guidance --

1 Q. That's a different question.
2 A. But I think that's really important because I did not
3 know in March 2020 what the supply of masks were, that
4 was not --
5 Q. Right.
6 A. -- part of my role and I think that was not part of --
7 the organisation was not told at any time and I don't
8 recall anything saying at any time that we must change
9 this guidance because there won't be enough FFP3 masks.
10 Q. So you didn't know then whether there was or wasn't
11 enough FFP3. I think you said that you now know --
12 A. Well --
13 Q. -- there wasn't?
14 A. Well, I know that there were in the order of 26 million
15 FFP3 masks and that there were more being purchased all
16 the time. It then would depend on how much you used
17 an FFP3 mask and whether you used it once per patient,
18 which would mean 30 or 40 masks per day, or even up to
19 100 if you were doing lots of interactions, versus one
20 per session, which could mean two or three masks a day.
21 So it really would depend on the use of the masks and
22 how they were used.
23 Q. Can I put it another way you told us in due course there
24 was a need to prioritise which AGPs and areas, hotspots,
25 call it what you will, for FFP3. Doesn't it follow that

they were prioritised for a reason, because there wasn't enough FFP3 at that time?

A. I think they were prioritised to prioritise the greatest risk areas that were considered at the time to the protection that was available to protect people.

Q. Can I ask you about the extent to which the lack of supply or supply difficulties affected the early guidance, and can we look on screen, please, at INQ000398198_2. It's an IPC cell meeting from 4 March. Now, you're not in the cell, are you, Professor, I want to make that clear. But just to look through you, if I may, can we see the supply chain update as at 4 March?

Can we highlight that, thank you very much.

One of the contributors there is talking about noting that there's a healthy supply of FFP3 but there is concern around demand for swabbing patients:

"Model being looked at is that 10,000 patients will be swabbed a day from next week ...

"[Someone else] noted that supply chain are looking at releasing stock from the pandemic stockpile [but] the model ... may not fit with people's current usage ..."

Then this, another contributor:

"... noted that pragmatic approach may differ. For [healthcare workers] looking after patients who are confirmed, they should be the priority for wearing FFP3

rather than those in minimal/short contact."

I just want to understand what PHE's position is. Is this pragmatism driving the guidance, rather than the science, if I can put it like that?

A. Well, I think what you can see also is that -- on the line above is that it's about fit testing so there a degree of how things can be operationalised, I think, which is often called pragmatic in the NHS. So can you actually get out whole new types of masks that all need to be fit tested with different people and how do you prioritise the masks that people are used to wearing and are appropriate for individuals, recognising that there can be ten different FFP3 masks but only one is suitable for an individual, and how those are therefore prioritised for use. And I think again about prioritising it for where the highest risk is, is coming through at this point.

Q. Now, in fairness, as at 4 March it's still an HCID, so we always need to keep that in mind, which may have slightly altered the way in which people are talking about these things. Come 6 March though, there was updated guidance, and I'm at your paragraph 295 if it helps you, Professor. There was an updated version of IPC guidance and, in short, the guidance advised that FFP3 for use by workers conducting AGPs or in

confirmed -- sorry, contact with confirmed cases, and FRSMs should be used for close patient contact of a possible case.

So that was where we were just before we went into lockdown, effectively. Is that right, that that stayed the position then for most of 2020?

A. Well, I think, actually, the position changed in the sense that traditional infection prevention and control is only used for where infections are suspected or confirmed and, actually, what we did was we changed that to all patient contact required fluid-resistant surgical masks or any contact in areas that AGPs were being performed, not necessarily in confirmed, and then, more widely in June, that all staff in hospitals wore fluid-resistant surgical masks to prevent the spread to each other and to patients.

Q. Okay, we'll come onto that. Can I ask you this, though, 6 March, Covid is still an HCID. Why at that time were you requiring the use of FRSM, unless carrying out an AGP, when it was still classified as an HCID and therefore should have been FFP3 for at least another week?

A. Well, I think that, again this, was about operational -- I'm just reflecting. I'll just be clear that this is a moment in time, I don't recall the exact

decision-making. As I said, I wasn't sitting in the IPC cell. The components that I think would have been considered at that time are things like the -- whether individuals who were being possible cases, of which that is many individuals coming into hospital with a fever or with a cough or with a wide variety of symptoms, and the probability that they might have Covid-19, at which point, at this stage in early March, it was still relatively low probability.

So if you think that there are many thousands of people coming into the NHS each day through emergency departments and through elective procedures, and that actually it would be still -- it was still at this point for this guidance very rare that individuals were being detected as positive. And so it was to allow people to have some level of protection for those cases that might go on to develop or be Covid but recognising that the vast majority were not.

Q. My Lady, can I just deal with the position in early April 2020 and then perhaps break for lunch.

Professor, can I ask you, please, if you turn in your bundle to paragraph 308 and on 2 April, on behalf of the UK IPC cell, PHE published updated Covid-19 guidance and can we look, please, at INQ000348325_0004. This made a number of changes to IPC guidance but it's

1 the sessional use that I'd like to ask you about,
2 please, Professor.
3 Now, let me ask you this: was this change to
4 requiring sessional use of PPE driven in reality by lack
5 of PPE or supply chain issues?
6 A. It was driven for two reasons. So one is that we had
7 never used PPE in this way in the NHS before. So I've
8 been working in the NHS for more than 20 years but,
9 throughout my time here and actually at any time before
10 that, through people who have worked here for longer
11 than me, I have -- we have never asked everyone in the
12 NHS to wear some form of PPE all the time. It's always
13 been a rare event. So maybe one in 20 patients at most
14 that you would see in hospital would you wear personal
15 protective equipment. Therefore, the supply chain was
16 not resilient to this amount of PPE being used.
17 The trade-off, therefore, in the views of a number
18 of us who were developing this guidance was to
19 provide -- use things sessionally, so that they would
20 provide protection for both the wearer and the -- to
21 others, was to -- was an effective way of mitigating
22 this, which would be extraordinary use if we were taking
23 it on and off for every patient.
24 That was discussed with Health and Safety Executive,
25 who said that they would expect fluid-resistant surgical

1 masks to last a few hours and FFP3 masks to last at
2 least a day.
3 Q. I follow that, Professor. Is the short answer: yes, it
4 was driven by --
5 A. So it was driven by extraordinary demand in
6 an extraordinary setting, that was never -- was not
7 preconceived pre the pandemic to be the way we would use
8 personal protective equipment, so this was
9 an unprecedented piece of guidance.
10 Q. All right. Aprons and gloves still single use but
11 respirators, surgical masks, eye protection and the long
12 sleeve disposable fluid gowns can be subject to single
13 sessional use in various circumstances. Can I ask you
14 this: how long would a session be?
15 A. I mean, it would vary, so we typically in -- when we're
16 doing, say, for example, a ward round, you would
17 typically start your ward round and go to the end but
18 you might take a break if it was particularly long at
19 the time. I suppose a bit like our day here today. It
20 would never last less than two hours a session, at the
21 same time -- you would be expected to work at least
22 two hours, and frequently people would be expected to
23 work four hours often without a break or for a very
24 short toilet break if necessary. Hospitals are very
25 busy places and we are required to see a lot of people

1 in a short space of time.
2 In some parts of the organisation that might be
3 shorter, so if you were doing a very high intensity task
4 that required a lot of concentration, you might break
5 after half an hour or an hour to have a break, but then
6 in other situations, like in some complex surgery, you
7 might keep going for 12 hours.
8 So I don't think it was -- it was allowing people to
9 break down those sessions into how they worked rather
10 than saying one hour, two hours, three hours. And again
11 that was based on the overarching evidence from HSC that
12 these masks would be able to tolerate this.
13 Q. Well, it goes on to say, as we can see there on page 5,
14 it's on our screen:
15 "While generally considered good practice, there is
16 no evidence to show that discarding disposable
17 respirators, facemasks or eye protection in between ...
18 reduces the risk of infection transmission ... Indeed,
19 frequent handling of this equipment to discard and
20 replace it could theoretically increase risk of
21 exposure ... The rationale for recommending sessional
22 use in certain circumstances is therefore to reduce the
23 risk of inadvertent indirect transmission, as well as to
24 facilitate delivery of efficient clinical care."
25 And should it say "and also because we don't have

1 enough at the moment"?
2 A. Well, I don't think that was the -- that was what we
3 based the guidance on. As I said, when I was involved
4 in writing this guidance, this was probably the piece of
5 guidance that I was involved in because it was such
6 a seismic shift from infection control guidance to say
7 "We'll only use it if somebody has a confirmed
8 infection" to "We'll use it at every interaction in the
9 NHS that we're going to do from now on". And that
10 required -- this was one of the pieces of guidance that
11 had robust discussion at the Senior Clinical Group, as
12 you can imagine, because of that seismic shift for the
13 unprecedented moment that we were in.
14 And I would say that when I was involved in this
15 I was never told "You must do this because there's not
16 enough PPE", but it was -- it made sense that we tried
17 to deliver it in an effective way.
18 Again, I'll come back that if you are delivering
19 care to 30 patients on a ward and you're going to see
20 each one of them and after each one of them you've to
21 take off all of this equipment, wash your hands, then go
22 and find new equipment, that slows you down too, so it
23 was really to think about how we provide care to both
24 protect patients and to protect healthcare workers.
25 MS CAREY: My Lady, would that be a convenient moment?

1 **LADY HALLETT:** I'm going to be incredibly generous and give
2 an extra two minutes for our hour of lunch, otherwise
3 I might be facing a rebellion. 1.55.
4 **MS CAREY:** Thank you very much.
5 **(12.53 pm)**
6 **(The short adjournment)**
7 **(1.55 pm)**
8 **LADY HALLETT:** Lesson to self, slowly.
9 **THE WITNESS:** Exactly.
10 **LADY HALLETT:** Ms Carey.
11 **MS CAREY:** Thank you, my Lady.
12 Professor, can we turn to April to November 2020,
13 and that timeframe. Can I -- we just looked before
14 lunch at sessional use, that was on 4 April, but a week
15 later there was actually quite a large change, wasn't
16 there, in relation to the IPC guidance?
17 Can we put up on screen, please, INQ000408929, and.
18 Whilst that's being done, notwithstanding the
19 sessional use guidance the week before, there was now,
20 by 11 April, a shortage of disposable fluid-resistant
21 gowns; is that correct?
22 **A.** Correct.
23 **Q.** The recommendation ended up being to prioritise gowns
24 for AGPs, and I want to look at how this came to the IPC
25 cell's attention. You were involved in the email chain.

1 Can we go to page 5. Thank you very much.
2 Here we are, 10 April, an email from you saying:
3 "1. The supplies of gowns have not arrived into the
4 country as expected.
5 "2. HSE have assessed gowns that have arrived as
6 not suitable -- apparently 23,000 -- to confirm that
7 these were not usable in any scenario.
8 "3. If there are no gowns over the weekend, will
9 HSE support the use of aprons instead of gowns?"
10 Aprons, my word, are far flimsier, if I can put it
11 like that, than the gowns that you were relying on; is
12 that correct?
13 **A.** Correct.
14 **Q.** All right. Do you remember now how many gowns we were
15 expecting to arrive that didn't turn up?
16 **A.** Well, I think, according to here, it was 23,000. I --
17 **Q.** Ah, I thought that was 23,000 had arrived that weren't
18 suitable?
19 **A.** Oh, right, okay, sorry, I don't know how many gowns had
20 not arrived.
21 **Q.** All right.
22 **A.** I will recall that around this time Keith Willett, who
23 led the operational response in NHS England, called me
24 and said "We need help and support from you to try to
25 develop risk mitigation if these things don't arrive."

1 I will also recall that many countries were not
2 exporting even things that were paid for because they
3 were holding them for their own, and we were not a make
4 country for equipment at this point, it happened later,
5 and therefore we were at the behest of what was managing
6 to get into the country.
7 **Q.** I follow that.
8 **LADY HALLETT:** By a "make country", you mean what, a country
9 that manufactured their own?
10 **A.** A country that manufactures their own.
11 **MS CAREY:** Although can we just look now, please, at page 4,
12 as we go backwards, as it were, through the email. You
13 receive an email saying:
14 "1. I've had an update ... a consignment has
15 arrived ...
16 "2. HSE has not assessed any gowns as unsuitable."
17 So querying what was said in the earlier email.
18 "We have spoken to Burberry about the gowns they are
19 proposing to produce and are waiting for tests ...
20 "3. The coveralls piece in a separate chain is
21 relevant here, these are more likely to be appropriate
22 than aprons particularly if AGPs are involved. If you
23 are able to identify what communication was received
24 from HSE and when on those we can look to join the two
25 things together."

1 Can you just -- where are we going with this email
2 chain?
3 **A.** So I think this was NHS England saying to me that we're
4 short of stuff.
5 **Q.** Yes.
6 **A.** Me asking for support from HSE to identify what is the
7 best alternatives, as the incident directors are
8 co-ordinating components of it. Subsequently there were
9 worries about lots of different supplies happening over
10 this weekend and I was subsequently asked to lead
11 a piece of work, working with HSE, NHS England to
12 develop shortages guidance.
13 **Q.** Fine. And if we go up to the next one, you're basically
14 trying to understand what HSE's position is going to be,
15 is that it, in the event that we run out of the
16 fluid-resistant gowns and potentially have to consider
17 reverting to aprons, hence why you say there:
18 "... if there are no gowns or coveralls, what is
19 your view ... of aprons."
20 And can I ask you this, Professor, are we literally
21 talking about we've got a day's supply left? Do you
22 know how low supplies were?
23 **A.** So, again, this was through verbal communications that
24 we were down to days, and if -- you know, if supplies
25 didn't come into country on Wednesday, it would be --

1 there would be no supply to deliver at the weekend. So
2 at that point in time it was -- they were managing
3 supplies into country and then delivering out to not
4 just only hospitals but also care homes and primary care
5 services on a day-to-day basis, depending on demand and
6 supply.
7 **Q.** It was clearly -- if we put that down and just look up
8 page 3, middle of the top of the page, you're saying:
9 "I need an answer ... today in case there are no
10 gowns.
11 "Keith is on the email trail."
12 It was pretty urgent, wasn't it, that this got
13 resolved?
14 **A.** It felt pretty urgent at the time.
15 **Q.** If we go then to page 2 in the email, you are engaged
16 then in, I think, some email traffic with the HSE. If
17 we look at the bottom email, they say to you:
18 "Susan,
19 "We have received some testing data on 200k
20 coveralls at the Daventry ... although a view on this
21 won't be available today, hopefully tomorrow.
22 Emily Lawson ..."
23 Is she at the DHSC?
24 **A.** So Emily Lawson, she had a variety of roles, she was at
25 Cabinet Office, DHSC and NHS England, and she led a lot

1 of supply chain co-ordination across those multiple
2 organisations. I can't say what her particular role was
3 at that --
4 **Q.** Fine, don't worry, we can find it out.
5 And:
6 "On aprons all we can offer today is the gowns v
7 aprons document published on our website earlier ... Any
8 further more specific answer would be dependent on the
9 whole proposed ensemble ie the type of apron, single use
10 or resuable and what was worn underneath and again we
11 would not be able to turn around an answer on that this
12 evening. If there is a more specific ..."
13 Questions effectively.
14 Can I just ask you this: did you consider that the
15 HSE were being helpful here in their response?
16 **A.** I think HSE were considering all of the components that
17 they had available to them. I think that -- I think
18 that the HSE very much go by the regulations and the
19 things that they've laid down. That often doesn't work
20 in practice --
21 **Q.** That's what I was going to ask you. I'm not suggesting
22 this was a deliberate attempt by them to be difficult,
23 but if it is urgent, as we are going to run out in a day
24 or days, did you think they got the urgency?
25 **A.** I think they got the urgency but I think they were

1 staying within their lane and saying what was approved.
2 And, you know, I think this, again, is about how
3 organisations come together in emergency response,
4 bringing their own specific expertise but also
5 recognising the challenges of the system.
6 **Q.** All right. And if we just go back to the top of page 2
7 Mr Willett from NHSE says -- thanks HSE for their input.
8 He says:
9 "... we are ... not going to [get] ... DHSC supply
10 chain sufficient gowns this weekend to equip staff in
11 multiple hospitals ...
12 "We now need to offer an agreed position to all NHS
13 organisations and staff the default PPE that should be
14 adopted to substitute for a gown ..."
15 And then he sets that out.
16 "Is it to follow the WHO guidance on this to default
17 to a single disposable apron as per the Standard
18 Infection Control Precautions?
19 "I'm sorry to press but I currently have staff
20 across the NHS caring for 17,000 confirmed COVID 19
21 positive patients."
22 How did this play out, Professor? What was the
23 upshot of this exchange?
24 **A.** So the upshot of this exchange was that myself, other
25 individuals in PHE, individuals in NHS England and

1 across the public health agencies worked with HSE to
2 develop, first of all, a -- what we would call a straw
3 man. So using the guidance that was available
4 internationally for shortages, which was available from
5 CDC, which was also available from World Health
6 Organisation, and evidence that we were able to glean
7 from the literature, which was pretty scanty I would say
8 at this point, to come up with a proposal for how we
9 would manage to use, reuse or wear for a prolonged
10 period elements of the personal protective equipment.
11 That was subsequently discussed again because it was
12 out of standard practice with the senior clinicians and
13 I would say that there was considerable amount of
14 differing views at that point that were expressed, and
15 I think, if I recall, Ruth May may have even mentioned
16 it in her statement. But this was an emergency
17 situation where, as a last resort, we wanted to ensure
18 that the elements of protection that we could provide
19 were the best we could do within the confines of the
20 situation.
21 **Q.** Right. And I think the position was so out of the
22 ordinary that the Secretary of State was informed about
23 this shortage, and indeed is it right that he
24 effectively approved the guidance that came out on
25 17 April, I think it was?

1 A. The guidance was shared across all of the organisations
2 that I've mentioned. It was agreed at the Senior
3 Clinicians Group that this was **in extremis** guidance but
4 we should release it rather than doing it for each
5 individual item as they came along, and that it was so
6 unusual a situation that the Secretary of State was
7 informed and asked for his approval. But I think
8 I would say that the Secretary of State is not going to
9 disagree with the consensus health view at that time, he
10 was there to really purvey that political viewpoint --
11 Q. I wasn't suggesting that he was going to veto this, but
12 you don't normally run all the guidance past the
13 Secretary of State, do you?
14 A. No, it was because it was so exceptional and out of
15 kilter.
16 Q. And what happened, did we run out of gowns that weekend;
17 do you know?
18 A. Well, I think what we know from the stories with my
19 colleagues and peers and also from many other stories
20 that we've heard throughout is that there was moments
21 where people did not have the right thing at the right
22 time. I think that there was never zero in the stocks,
23 there was never zero going out, but there were moments
24 that the right place did not quite have the right amount
25 of equipment for them at that moment.

1 Q. So --
2 A. And that improved quite rapidly over the course of the
3 next six weeks.
4 LADY HALLETT: Was the reason why we ran out of things in
5 the right place at the right time, however we're going
6 to describe it, because we hadn't got sufficiently large
7 stockpiles?
8 A. So I think -- well, I think one is that the stockpiles
9 were insufficient for the scale of the pandemic and the
10 scale of the personal protective equipment that was
11 being used. The second was that some elements in the
12 stockpile had been there for many years and, whilst they
13 had been validated that they were still fit for purpose,
14 when people used them they fell apart. So whilst they
15 may have had the right filtration efficiency, the
16 plastic had denatured, so some of the stuff in the
17 stockpile just was not fit.
18 And the final bit I think is that the unprecedented
19 delivery of PPE to all of the care homes, which was not
20 considered pre-pandemic, all of the GP surgeries, as
21 well as the hospitals, had not been considered
22 previously, in my understanding, and so the stockpile
23 was there predominantly for hospital use but, given what
24 we understood about this virus, we were trying to ensure
25 that there was wider protection in the health and care

1 system.
2 MS CAREY: The guidance, I think, was published on 17 April.
3 I don't need to take you to it, but can I ask, please,
4 that we put on screen INQ000106357. My Lady, this is
5 a central alerting -- a CAS document.
6 It doesn't come from you, I appreciate, Professor,
7 but effectively it's how the 17 April guidance was sent
8 out, as I understand it, across NHS England and, if you
9 note, my Lady, it was originally issued at 17 April, it
10 was a Friday, at 16.43 in the afternoon and I raise it
11 because, of course, you've heard evidence about things
12 coming out late on a Friday.
13 If you turn over -- sorry, go to page 2, you can see
14 this alert aims to highlight the sessional use and reuse
15 of personal protective equipment and there are severe
16 shortages of supplies. The considerations are to ensure
17 that health and care workers are appropriately protected
18 from Covid, where items of PPE are unavailable. The
19 reuse of PPE should be implemented until confirmation of
20 adequate resupply is in place.
21 I'm using this as a vehicle, Professor, to ask you:
22 do you think that when there were changes to the
23 guidance like this at short notice, it caused a degree
24 of fear and upset amongst the healthcare workers when
25 they were told they had to do something different this

1 time?
2 A. I completely agree and I think that, you know, the
3 emergency release of these types of guidance on a Friday
4 evening was something that really happened at those
5 early months, when things were rapidly developing.
6 Later, and I couldn't give you the exact date, there was
7 an agreement that the guidance could not be released
8 after Thursday and, ideally, on a Monday or Tuesday,
9 where people had plenty of time to do it.
10 I would highlight this was emergency release, we
11 were worried that people were not going to have supply
12 at the weekend and I would particularly highlight that
13 the big thing we were talking about here was sessional
14 use first and reuse second. Again, having already
15 talked about sessional use but having heard from people
16 in organisations who were calling me saying that people
17 still don't feel comfortable with sessional use, so it
18 was really to try and prioritise sessional but, if we
19 needed to, to reuse in an emergency situation to ensure
20 that there was a level of protection.
21 Q. Do I take it from everything that you've said that you
22 do agree that this change to IPC guidance was driven
23 purely by a lack of stock?
24 A. I -- yes.
25 Q. Okay.

1 **A.** Both a lack of stock now but also potential lacks of
2 stock in coming weeks.
3 **Q.** All right.
4 I want to move on to December 2020 but can I just
5 help you to this extent. On 4 June, EMG produced
6 a paper to SAGE saying droplet and indirect are still
7 the most important routes of transmission; there was
8 weak evidence in June of aerosol transmission.
9 Can I turn now to December 2020 and, if it helps
10 you, Professor, paragraph 325 in your statement. We are
11 now in the Alpha variant era, and I think you say that
12 Alpha variant was more transmissible than the Wuhan
13 variant, or call it what you will, from March 2020; is
14 that the position?
15 **A.** Yes. So, to be clear, the Alpha variant was the first
16 major variant that we were able to detect and study. We
17 believe, looking back, there were other variants
18 previous to that but that was when genomic sequencing
19 was at sufficient level that we could really understand
20 this, and that we had sufficient testing and
21 surveillance that was allowing us to make an improved
22 understanding about what the virus was doing, and what
23 we could see was that the transmission rate was
24 increased.
25 The thought -- there was two reasons considered for

1 that and, over time, that developed better. The first
2 was that people were getting infected with a shorter
3 incubation period or faster, so, from one person to the
4 next, it was jumping really fast; and the second was
5 that the number of people who were infected by a single
6 individual seemed to be greater than it was on the
7 earlier stages.
8 **Q.** Against that background, I think it's right that the IPC
9 cell were asked to review the IPC guidance and
10 effectively said no change to the IPC guidance but can
11 I ask you please about some of the minutes and can we
12 put up on screen please INQ000398244.
13 This is the IPC cell minutes for 22 December 2020
14 and I would like, please, to go to page 3 of that
15 document.
16 My Lady, we looked at this briefly with Dr Ritchie
17 but can we go to the middle of the page with the entry
18 saying "CB". CB was a representative of Public Health
19 England?
20 **A.** Correct.
21 **Q.** In that meeting, he said that:
22 "Our understanding [ie PHE's understanding] of
23 aerosol transmission has changed. A precautionary
24 approach to move to FFP3 masks whilst we are awaiting
25 evidence should be advised."

1 What was the change?
2 **A.** Well, what was -- so, first of all, I'd say that the
3 guidance at the time had FFP3 masks in AGP hotspots,
4 et cetera. We -- through our regular contact with our
5 peers in hospitals and through people working in
6 hospitals, and including CB, I think, at this time, we
7 were noting that some hospitals were going further and
8 they were making the decision based on transmission that
9 was happening in their hospital or ventilation that they
10 were seeing in their hospital to moving to more wide use
11 of FFP3 for patients with Covid. I would say that, at
12 this point, there were no shortages and there were
13 plenty of supply of all types of masks. So there was
14 clearly an ability to go more widely, if it was
15 considered that that was the approach.
16 **Q.** Pause there. I'm not suggesting that it's anything to
17 do with supply at the moment. I just want to know what
18 it was that led to the phrase going in there "our
19 understanding"; what in PHE's understanding had changed?
20 **A.** Well, I think, you know, you've mentioned the EMG
21 evidence of low risk, we had seen that there were
22 outbreaks occurring in hospitals, that those outbreaks
23 were bigger than what we had seen in the wave 1
24 outbreaks in particular, and that there was some
25 increasing understanding that aerosol was a mode of

1 transmission.
2 **Q.** When it says "a precautionary approach to move to FFP3
3 whilst we are awaiting evidence should be advised", what
4 evidence was it that you were waiting for?
5 **A.** Well, I think that, at the time, we were worried more
6 about was this something that was just happening in some
7 places, rather than more generally and was this evidence
8 that FFP3s were going to be more effective or less
9 effective for this. I would say that I don't know
10 exactly what CB was thinking in this meeting and I don't
11 know what it was.
12 I think that there had -- there was an increasing
13 view that, where people were risk assessing that there
14 was a risk assessment locally in hospitals, that they
15 should be at least enabled to wear FFP3 masks, because
16 they were available and that individual hospital
17 situations and circumstances differed very greatly
18 across the country, and so I think this was part of that
19 approach.
20 **Q.** I want to be clear whether PHE was recommending
21 a precautionary approach at this stage because Alpha was
22 more transmissible or because the evidence have aerosol
23 transmission had changed or both?
24 **A.** I think it was probably both, though it's -- only one
25 thing is mentioned here.

1 **Q.** Yes.
2 **A.** But my recollection is that we were -- PHE through its
3 evidence of and the study Alpha, had recognised its
4 increasing transmissibility. I think that was the first
5 thing that we recognised about it. We did not know and
6 understand why that increasing transmissibility was
7 there at this time but, obviously, alongside the
8 emerging evidence on at least some aerosol transmission,
9 this was one of the components that was being discussed.
10 **Q.** Can I ask you this, why was PHE recommending
11 a precautionary approach at this stage of the pandemic,
12 when it didn't do so in March 2020?
13 **A.** So I think this was an individual recommending it.
14 I think it's really important that individuals come to
15 meetings and raise a wide variety of components.
16 I think there was a view and remains a view in PHE and
17 UKHSA that there needs to be a more enabling approach to
18 use of FFP3 where the risk to patients or individuals
19 healthcare workers is warranted, and I think this was
20 part of that developing evidence.
21 **Q.** Okay, can I ask you this then: why were you recommending
22 FFP3 when, as you told us earlier, there was only weak
23 evidence that FFP3 was more protective than a mask?
24 **A.** Well, I think you can see here in this -- this is again
25 the discussion at the IPC cell, as one part of the

1 discussion to bring it to discuss and to bring to the
2 consensus view of the IPC cell.
3 I have discussed, after this, with various members
4 of the team and there were various discussions within
5 Public Health England at the time and, actually, one of
6 the discussions was did we have strong enough evidence
7 that we would say that this must be done and, actually,
8 at the time, though evidence was very weak, there were
9 lots of discussions with the environmental modelling
10 group about the other elements of control that were in
11 place, and that FFP3 was only one, and I think the
12 general view at this time and the consensus statement
13 that came through after this, from both the IPC cell,
14 which PHE contributed to, was that FFP3s were only one
15 measure and that the overarching components of the virus
16 had not changed and, therefore, that what we would do in
17 PHE was look at the evidence in a way, which is what we
18 subsequently did by convening a Respiratory Evidence
19 Panel.
20 **LADY HALLETT:** Could you ask your question again?
21 **MS CAREY:** Yes, certainly.
22 I understand that but you told us this morning that
23 the evidence was weak that FFP3s protected more than
24 FRSMs and, I'll be frank with you, it's caused a great
25 degree of consternation amongst many in this room. If

1 that position is right, what you set out this morning,
2 why here is a representative of PHE recommending FFP3?
3 **A.** Well, because I think that the appropriate thing is to
4 discuss things in IPC cells, where it is discussed and
5 then agreed as a consensus opinion. Again, this is the
6 sort of contrary to groupthink, where everyone comes in
7 and says the same thing. It's coming in with different
8 opinions and views --
9 **Q.** I'm going to interrupt you there; that's not an answer
10 to the question I asked. If you genuinely think that
11 FFP3 is less protective, why on earth is your
12 representative in December recommending it on a
13 precautionary basis?
14 **A.** So I've never said it's less protective. I said it may
15 be more --
16 **Q.** You said the evidence is weak that actually FFP3 is
17 protective more than fluid-resistant masks and goes on
18 to explain that lab conditions were not the same as the
19 clinical context.
20 **A.** Correct, but that is not the same as that they are less
21 protective.
22 **Q.** All right. Well, given your answer this morning, can
23 you see a disconnect between what you said to us and
24 what is being said here in December 2020?
25 **A.** And I think again what I would highlight from this is

1 this is views being expressed to bring consensus to
2 discussion. It is also views that were then brought
3 back into PHE to discuss further, and the decision at
4 that was to go and further review the evidence to decide
5 whether the evidence was strong enough to do that.
6 **Q.** I think you have seen Professor Beggs' statement and he
7 said at paragraph 211, for anyone who is following it:
8 "Historically medical professionals have placed much
9 emphasis on randomised control trials and effectively
10 have tended to downplay evidence from observational
11 laboratory and modelling studies."
12 What do you say to his observation about that?
13 **A.** So I would say that medical evidence is graded and that
14 it comes in a variety of ways, that laboratory studies
15 are one element but, for example, when we take drugs,
16 for every hundred drugs that are developed, only five
17 get licensed because what happens in the laboratory
18 doesn't work in practice. And so we have a gradation of
19 evidence, the evidence is not just randomised control
20 trials, it's also case theories, other studies that are
21 performed and, from the point of view of looking at
22 respiratory evidence, we looked at all of the different
23 types of evidence that were there and available.
24 **Q.** So do you agree or disagree with him?
25 **A.** So I agree that the randomised control trials --

1 actually, meta analysis of randomised control trials is
2 the highest evidence; I disagree that we only look at
3 one type of evidence.
4 **Q.** Are you expecting there to be randomised control trials
5 in relation to whether FFP3 is better than FFP2 when it
6 comes to protection against Covid?
7 **A.** So I think that those trials have not been conducted but
8 there have been trials looking at FFP3s versus
9 fluid-resistant surgical masks in Covid and also prior
10 to Covid.
11 **Q.** Is your view that evidence on the effectiveness of masks
12 will continue to be weak if there are no positive
13 results from randomised control trials?
14 **A.** So in the terms of how we grade our evidence that's true
15 but I think that what that means is that we need to do
16 those trials properly to allow us to look at this, not
17 just for Covid but for other respiratory viruses that
18 circulate because, otherwise, we are not advancing
19 knowledge in the way that science advances knowledge.
20 **Q.** Do you agree with the advice being tendered by your
21 colleague there?
22 **A.** So I think that my view at the time, and my view remains
23 now, is that the FFP3s were one part of the control
24 measures that, in this scenario, that it was
25 a reasonable thing to propose but it was not the only

1 view that was expressed, either in PHE or in other
2 organisations.
3 **Q.** All right can we look please at the following day's IPC
4 cell minutes, INQ000398242, and can we go to -- I think
5 it's page 2. Again, Professor, not a minute that you
6 were in but, if we look on page 2, essentially what
7 happened there was, following what had been said the day
8 before, all of the four nations were asked for their
9 position to try and reach the consensus, as you told us.
10 I'm not going to go through Scotland Wales and Northern
11 Ireland but that's the thread.
12 Can we go to page 3 please, at the top of the page,
13 there was an agreement with a consensus. There are
14 concerns from one of the participants that the use of
15 FFP3 -- due to availability and capacity for
16 fit testing. There is evidence that other IPC measures
17 are not being adhered to:
18 "What is the process if PHE make a different
19 statement to the IPC cell?"
20 We assume that's a reference to the fact that the
21 day before they were recommending the precautionary
22 approach and yet that wasn't meeting favour with the
23 rest of the cell. Dr Ritchie said the IPC cell was
24 requested to provide a position statement on whether any
25 change is required to IPC PPE guidance, in relation to

1 what became, I think it was, Alpha:
2 "If higher levels of PPE of Parliament recommended
3 at the time, in the absence of evidence, it would be
4 difficult to go back on this. We need to look more
5 closely at healthcare worker to healthcare worker
6 transmission."
7 Then one of the contributors asked if PHE had
8 evidence of increased aerosol transmission, and the
9 person said:
10 "There may be an increased risk of aerosol
11 transmission following evidence re singing, shouting and
12 enclosed spaces."
13 We've heard from Dr Beggs about a particular choral
14 study/trial -- I'm sure the Skagit, I think that's how
15 you pronounce it -- which spoke about these things.
16 Then, effectively, the meeting came to a close and the
17 paper was put forward, I think, to the Senior Clinicians
18 Group.
19 Do you or were you informed there was any resistance
20 to PHE's proposal by other cell members?
21 **A.** So I don't recall that. I do know that the PHE staff
22 came back and it was discussed within PHE. I know that
23 there were further discussions in PHE about what the
24 evidence base looked like, and rapid evidence reviews
25 that had already been conducted were looked at and

1 reviewed again, with a variety of different senior
2 medical advisers, senior clinicians and scientists in
3 PHE at the time.
4 I know that we subsequently brought this and wider
5 face masks, face coverings and FFP3 discussions back to
6 senior clinicians groups, to have further discussion,
7 again, because this was about making sure that we all
8 understood what the evidence was that was available at
9 the time and thought about the decisions in healthcare,
10 in hospitals, in care homes and in the wider system.
11 **Q.** Did you ever see the minutes that we've now got?
12 **A.** I did not see them until I was displayed them for the
13 Inquiry.
14 **Q.** For the Inquiry, all right. Did anyone ever say to you
15 there was a concern that if higher levels of PPE were
16 recommended at this time, in the absence of evidence, it
17 would be difficult to go back on this?
18 **A.** I don't recall that.
19 **Q.** I mean, do you read that as them wanting to save face,
20 in short?
21 **A.** It could be read as that but I think that we also need
22 to recognise that -- you know, that the components here
23 were worried more, I think, about how they were going to
24 explain the decision. In what I can see from reading
25 this, not having been in the meeting, I think that, you

1 know, the really important component moving forward, for
2 us as an organisation, is to provide the best evidence
3 and the best recommendations we can to enable the NHS to
4 do their work.
5 **Q.** We know, in due course, that the IPC guidance didn't
6 change in light of the Alpha variant but the reference
7 to PHE having increased understanding of aerosol
8 transmission, it appears to have got lost; would you
9 agree with that?
10 **A.** Well, I think it was increasing, I think that when we
11 released the Respiratory Evidence Panel review, which
12 I believe was in May but, of course, would have been
13 discussed internally and seen drafts of it before that,
14 it was highlighted that there was an increasing
15 understanding from aerosol transmission. So I think it
16 was gradually coming through, slowly but surely, and
17 I think that the important point was that we were
18 looking not just at how it was transmitted but the
19 overall mitigations to prevent transmission.
20 **Q.** Can I ask you this: you can't speak for the member,
21 obviously, in the cell, but why didn't PHE stand their
22 ground and say "No, we've now got some evidence of
23 aerosol transmission, the IPC guidance needs to change
24 and offer a higher degree of protection"?
25 **A.** I'm afraid I don't know that.

1 **Q.** Can you answer why PHE didn't say, "Well, in addition
2 this variant's more transmissible, so, in fact, there's
3 two good reasons now for having a higher level of PPE"?
4 **A.** I don't know. But I would have expected that the start
5 of the meeting, which I think the piece that you showed
6 us the day before talked about PHE providing
7 a situational update, which is what would have usually
8 happened. I don't know actually what was said.
9 **Q.** It may be thought by many that PHE were right here about
10 aerosol transmission but ought to have stood their
11 ground and fought their corner. Do you think this is
12 an example perhaps of groupthink?
13 **A.** Well, I think the fact that PHE was giving and airing
14 a different view is an example of not being involved in
15 groupthink. That I think, you know, it does come back
16 to scientific consensus about the evidence that's there,
17 the evidence that's available, and the majority view and
18 how that's done. I don't think this was the only group,
19 I would highlight, so there was -- this group would have
20 been taking input from the hospital onset Covid-19
21 group, the Environmental Modelling Group, SAGE, NERVTAG ,
22 as I've said, and would have had the option, and did on
23 this occasion, and, as I recall, discussed it at the
24 Senior Clinicians Group, which would have had the
25 four nations' CMOs, chief nursing officers and also

1 a wide variety of senior medical and health individuals.
2 So I think it would have been challenged and
3 questioned and about whether this was the right thing to
4 do at the time.
5 **Q.** Do you think PHE capitulated too easily here and should
6 have said "No, come on, this is a really serious
7 development, it can affect our IPC measures, we need to
8 reconsider the evidence about aerosol transmission now
9 by December 2020"?
10 **A.** So with the risk of sounding like this is going back
11 into, you know, a long time ago, I think this was
12 a really challenging moment in the pandemic. We were
13 almost at Christmas Eve and you will recall the societal
14 components that were happening at the same time. This
15 came back and was discussed again in the -- in January,
16 in great detail, and kept getting discussed, and we kept
17 reviewing the evidence.
18 I think the -- again coming back to how
19 organisations work in pandemics, I think it's really
20 important that people put forward their views, that they
21 have the evidence, that they get a wide variety of views
22 to bring this forward, and I think that, you know, given
23 the moment in the pandemic that the IPC consensus and
24 the consensus from other groups that were sought at the
25 time has to be considered the moment -- that moment,

1 that view at that point in time.
2 **Q.** Do you think, upon reflection, the IPC cell were asking
3 the wrong question and, rather than concentrating on the
4 transmissibility of the variant, they should have gone
5 back and considered the route of transmission at the
6 outset?
7 **A.** I think they did consider that the route of transmission
8 was in a similar way to previous and that's probably
9 true actually, and I don't think we've got evidence that
10 the route of transmission for Covid-19/SARS-CoV-2 has
11 changed at any point.
12 But there is evidence that it became more
13 transmissible and invaded the immune system more
14 progressively over time. I think, again, this is really
15 difficult to look at this moment in time at this point
16 here. I do know that there was a lot of robust
17 discussion happening and a lot of robust discussion
18 continued to happen about what were the right
19 interventions to reduce respiratory transmission in
20 hospitals, in communities, in schools, in workplaces,
21 and PHE was involved in many of those different
22 discussions with many different actors across the time
23 period.
24 **Q.** Okay, that can come down, thank you.
25 Can I move on in time, please, to February 2021, and

1 you were aware, I think, Professor, that the Royal
2 College of Nursing commissioned an independent review of
3 IPC measures and we're going to hear from various
4 parties over the next few weeks dealing with it but, in
5 short, did the review from the RCN amount to they wanted
6 nurses to be assured that face masks were effective and
7 that quality of ventilation would be investigated.
8 **A.** I believe so. This is the HSSIB report; is that
9 correct?
10 **Q.** No, this is the RCN's independent review conducted by
11 Professor Dinah Gould, which is a slightly different
12 matter, and it's at paragraph 330, if it helps you, in
13 your witness statement. I'm sorry I jumped --
14 **A.** Apologies.
15 **Q.** No, it's all right. Take a moment. 330, RCN published
16 their independent review.
17 **(Pause)**
18 I think it led, correct me if I'm wrong, that there
19 was a Respiratory Evidence Panel convened by PHE. Have
20 I got that right?
21 **A.** That's correct.
22 **Q.** Was that result of the RCN's independent review?
23 **A.** No.
24 **Q.** Okay. Pause there then, please. In relation to the RCN
25 independent review, in short they wanted the assurance

1 about the protection provided by face mask and the
2 quality of ventilation, and I just want to ask you about
3 ventilation. We haven't dealt with that very much but
4 do you think that issues around ventilation got lost by
5 the concentration on this being a droplet contact borne
6 virus, as opposed to also having the route of aerosol
7 transmission?
8 **A.** I think perhaps it did but I also believe that -- well,
9 when I work in hospitals, the hospital teams work very
10 closely with the engineering departments who understand
11 the air changes that happen in different parts of the
12 organisation, and ventilation is considered an important
13 part of the hospital infrastructure and delivery, and
14 I think -- sometimes I think that what got lost is that
15 we were too involved in looking at, you know, whether it
16 was fluid-resistant surgical masks, whether it was
17 FFP3s, whether it was droplet or versus aerosol, rather
18 than going to the principles of things that we know are
19 really helpful to reduce infection in healthcare
20 settings, not just Covid-19 but a wide variety of other
21 bacteria and viruses.
22 And I think that, actually, you know, trying to --
23 some of the components here is about trying to get us to
24 understand these things better and to ensure that the
25 multidisciplinary way of working is bringing all that

1 together to reduce infection.
2 **Q.** So help us, please, then, why was it that the
3 Respiratory Evidence Panel were commissioned or convened
4 to look at the role of face coverings in -- I think it
5 was May -- or before May but it was published in May?
6 **A.** So actually this came from some of the discussions we've
7 just had about December 2020.
8 **Q.** Tell us about that, please?
9 **A.** And so, essentially, we brought a variety of papers
10 looking at the rapid evidence reviews that PHE were
11 doing at the time and the role of face masks and face
12 coverings in a wide variety of settings because
13 recognising that Public Health England's role, the NHS
14 was well known component but we were also talking about
15 schools and workplaces, supermarkets, the environment
16 and the general public, and we were trying to ensure
17 that the evidence was looked at across all of those
18 settings, rather than just one area.
19 And in January 2021 at the discussions at the Senior
20 Clinicians Group we asked whether the Senior Clinicians
21 Group would endorse us setting up a Respiratory Evidence
22 Panel, an independent panel where we would invite
23 a range of experts to come and give their views and to
24 allow us to move the debate forward, if you like, so
25 that it was not seen as PHE as an organisation asking

1 for things to happen. But we were really trying to
2 bring together a group of experts.
3 1 April was when it started and it reported in May
4 so I think it's just important to get the timeline. So
5 these things take time to get the people in, to ask them
6 whether they're willing to give up their time and then
7 to provide the evidence.
8 **Q.** Can we look at the findings of the REP and it might be
9 easiest to call up on screen your statement. Could we
10 have INQ000410867_0134 and paragraph 335 in your
11 statement, Professor.
12 Thank you. Could we highlight paragraph 335:
13 "At the meeting on 17 May [2021] the REP assessed
14 review-level evidence to consider the potential
15 effectiveness of face masks ... The findings presented
16 included:
17 "a. Airborne transmission beyond two metres was
18 possible and contributory factors include poorly
19 ventilated indoor settings, prolonged exposure and
20 activities that may generate more aerosols.
21 "b. Certain [variants of concern] are likely to
22 have increased transmissibility ...
23 "c. Evidence to date suggested modes of
24 transmission of [variants] had not changed so it was
25 likely that the IPC measures should be adequate.

1 "d. The evidence suggests all types of face mask
2 are, to some extent, effective in reducing transmission
3 of [Covid] in both healthcare and public, community
4 settings. N95 respirators are likely to be most
5 effective."
6 Is that an equivalent of FFP3?
7 **A.** So it's equivalent to FFP2 --
8 **Q.** Thank you.
9 **A.** -- and I think that was used because there was more
10 evidence for N95 but very little evidence for FFP3 in
11 the literature.
12 **Q.** All right, fine. We'll come back to FFP2 later, if we
13 may, but FFP2 respirators are:
14 "... likely to be the most effective, followed by
15 surgical masks, and then non-medical masks, although
16 non-medical masks (such as cloth masks) made of 2 or 3
17 layers may have similar filtration efficiency."
18 So there was, was there not, another piece of
19 evidence supporting airborne transmission, albeit making
20 the obvious point that, if it's a poorly ventilated
21 area, it makes aerosol transmission worse, prolonged
22 exposure makes it worse and there may be some activities
23 that generate aerosols.
24 As a result of these findings, I think is it right
25 that you asked the IPC -- or the IPC cell were asked to

1 review the position and didn't change?
2 **A.** Can I just actually --
3 **Q.** Yes.
4 **A.** -- highlight that the next (e) point on that --
5 **Q.** Oh, right. Yes, certainly.
6 **A.** -- I just think to make sure that we give the full
7 evidence review summary -- highlights that might be more
8 effective, so it was still rather uncertain and I just
9 think that that also comes into an important part of
10 consideration of evidence.
11 So, in essence, what we're looking at is what are
12 the sort of biological laboratory-based experiment and
13 then looking actually in healthcare about the evidence
14 that was available.
15 **Q.** You still say evidence of low or very low certainty from
16 SARS and other respiratory viruses suggest in healthcare
17 FFP2 respirators or equivalent might be more effective.
18 All right, I understand that point but I actually want
19 to concentrate on the airborne transmission point, as
20 this was another piece of evidence to put into the mix
21 suggesting that airborne transmission had been
22 overlooked at the start of the pandemic and, as
23 a result, I think you said, in your paragraph 339,
24 Professor, that the IPC cell met to discuss the findings
25 of the REP evidence and the IPC cell majority view was

1 that there was no need to change the approach to RPE,
2 based on the findings of the Respiratory Evidence Panel;
3 have I got that right?
4 **A.** I believe that was because they had also added and
5 recently changed the guidance to have a more risk
6 assessed approach to do it.
7 **Q.** Yes, they did.
8 **A.** So that, in a way, because some of this had already
9 happened, to allow what I think PHE was calling for,
10 which is more ability for organisations to use FFP3s in
11 areas --
12 **Q.** Let me ask you this then: how do you risk assess
13 properly, if you are risk assessing for a droplet-borne
14 virus, when in fact you are dealing with an airborne
15 one?
16 **A.** So I think what you're asking is about the ventilation,
17 so you're actually saying -- what he is saying here is
18 airborne PPE are likely when working with a cohort of
19 Covid positive patients and that means that what we're
20 asking hospitals to do is to consider that there is
21 a risk of aerosol in certain areas and to look at
22 a multiple range of components, including ventilation
23 and considering where that needs to be done to what
24 other measures that need to be considered, again
25 recognising that some hospitals had made those

1 decisions, that the guidance was there, as I think
2 Health and Safety Executive put it, as the minimum
3 standard, but there was nothing at this point stopping
4 people to go further, if they decided there was
5 an issue, an outbreak, an incident on the ward,
6 ventilation failure or a very high density of infection
7 patients.
8 **Q.** Well, forgive me, Professor, but you have told us that
9 IPC measures shouldn't be seen in isolation. So
10 ventilation is clearly one of the matters to be
11 considered in a risk assessment, I take that point, but
12 my point is: how on earth are the healthcare workers and
13 indeed those risk assessing going to be risk assessing
14 properly if they don't know what the route of
15 transmission is?
16 **A.** I think what we're saying here is that we're increasing
17 evidence of some airborne -- airborne PPE, there was
18 also evidence in the statements that there was
19 increasing statements coming out and I think, at this
20 point, we had released publicly our REP findings about
21 the potential risk for aerosol. So Public Health
22 England had released this into the public domain and
23 shared it with people.
24 We were talking about it, about let air in, about
25 ventilating on, as part of our general public health

1 advice. So we were talking about letting air in,
2 opening windows, ventilating well, as components, and
3 hospitals understand their own environment where they
4 may have areas that ventilation was poor, with their
5 experts in each of the hospital infection control
6 infectious diseases, engineers and environment.
7 **Q.** So if they're in an old estate with poor ventilation,
8 how are they going to conduct a risk assessment that
9 catered for an airborne transmitted virus?
10 **A.** I mean, I think this is underestimating what hospitals
11 and hospital staff are capable of doing. There are many
12 experts sitting in hospitals working on this on
13 a day-to-day basis. They were reviewing the evidence
14 and were reviewing the papers that came out, and they
15 provide risk assessments for all variety of infections
16 that come into hospital and risk assessments on how
17 patients are managed and how -- and the precautions in
18 healthcare workers for a variety of components of
19 infectious diseases, and other health and safety
20 measures all the time.
21 **Q.** Do you think it would be helpful though, for those risk
22 assessing, to know categorically now that there was
23 evidence suggesting there was airborne transmission;
24 would it not help them in their task?
25 **A.** I mean, I can't recall what was exactly written in the

1 guidance at this point but I do think that there was
2 increasing public information about ventilation, letting
3 air in, opening windows, so that this was being
4 discussed openly to the whole population about the
5 measures to reduce the spread of Covid-19.
6 **Q.** Okay. I'm going to canter through December 2021 to June
7 2022 because there was, I think this is right, no
8 changes to the IPC guidance when Omicron variant
9 emerged. I think the IPC cell were asked to consider
10 whether mask guidance should be reviewed and, as
11 I understand it, PHE maintained their view they wanted
12 greater use of FFP3.
13 Professor, if it helps you, I'm at paragraph 350 in
14 your statement.
15 8 December, there was a meeting of the IPC cell, or
16 UKHSA. UKHSA, as you now are flagged their opinions
17 based on the output of the REP and the limited evidence
18 regarding the emergence of Omicron variant highlighting
19 a greater need for FFP3 mask use, and they say this:
20 "This is a rapidly evolving situation in the absence
21 of scientific certainty, as previously recommended by
22 PHE for Alpha. A more precautionary approach, including
23 the wider use of FFP3 respirators should be considered
24 by the IPC cell."
25 So not dissimilar to the position in December 2020,

1 if I can put it like that; do you agree?
2 **A.** I agree.
3 **Q.** Right. I suppose the same questions again, really,
4 there was no change to the guidance, do you think now --
5 what are we -- a year on, PHE ought to have been more
6 forceful in saying "Hold on, come on now" --
7 **A.** So --
8 **Q.** -- "FFP3 please, FFP3 please. Put it in the guidance".
9 **A.** Well, I think, you know, it's a similar situation to
10 where we are right now, not just for Covid-19 but for
11 a wide range of respiratory viruses and I think that we
12 need to think about transmission of respiratory viruses
13 in three ways in healthcare settings: what is the risk
14 from the environment; what is the risk from patient to
15 patient and healthcare worker; and what is the risk
16 between healthcare worker and healthcare worker and to
17 patient?
18 All of those require slightly different elements but
19 I would come back and say that FFP3 is one element only
20 and that my belief in coming out of this pandemic is
21 that we need to look at the wider elements of reducing
22 infection, rather than just the dichotomy of
23 fluid-resistant surgical masks and FFP3, and that we
24 need to improve the evidence base on which we make
25 decisions, which we can do because respiratory viral

1 infections are going to continue to spread.
2 **Q.** That brings me on to I think January 2022, when the IPC
3 guidance wasn't Covid-19-specific but was published for
4 seasonal respiratory viruses, so presumably flu, RSV and
5 the like. All right.
6 Can we have a look, please, on screen, at
7 INQ000348433_20.
8 And this is from that guidance and you will see
9 there that RPE or FFP3 or powered air purifying
10 respirator hoods, it says:
11 "A respirator with an assigned protection factor
12 (APF) 20, that is, an FFP2 respirator (or equivalent),
13 must be worn by staff when:
14 "• caring for patients with a suspected or confirmed
15 infection spread by the airborne route (during the
16 infectious period)"
17 And:
18 "• when ... [AGPs are being done] on a patient with
19 a suspected or confirmed infection spread by the droplet
20 or airborne route."
21 So no reference there to Covid, because it's wider
22 than that, but can I ask you this: reading that, does it
23 sound like RPE should now be used for all encounters
24 with patients with Covid or suspected of having Covid?
25 **A.** So I think it could be read like that, yes.

1 **Q.** Yes. And does it now sound like healthcare workers have
2 got to now work out whether the infection is being
3 spread by the droplet or airborne route?
4 **A.** Well, I think that that is true to some extent but
5 I think there was also -- information would have been
6 provided in this guidance about what infections were
7 spread by which route.
8 **Q.** Ah, because we looked to see if there was a list that
9 set out that neatly and we couldn't find one and maybe
10 we've -- we're at cross purposes, one or other of us
11 will be correct, and we'll check it out, but do you
12 think, even just standing back for a second, that's not
13 particularly helpful guidance to the healthcare worker?
14 **A.** I agree.
15 **Q.** At this time I think it was asked that the word "wholly"
16 and "predominantly" were being discussed in the IPC
17 cell. Can I just deal with it in a nutshell: do you
18 think that guidance that refers to "wholly airborne" or
19 "predominantly airborne" is helpful to the healthcare
20 worker?
21 **A.** No.
22 **Q.** No, all right.
23 Finishing the IPC guidance, if I may, we come to
24 April 2022, when the Covid-19 IPC guidance was withdrawn
25 and the National Infection Prevention and Control Manual

1 was published, I think on 14 April that year. Does that
2 bring us roughly to the end of the guidance in most of
3 our relevant period?
4 **A.** I think so.
5 **Q.** All right, can I ask you this though please: about the
6 impact of the withdrawal of the Covid-19 IPC guidance on
7 clinically vulnerable and clinically extremely
8 vulnerable people, do you know whether any consideration
9 was given to the vulnerabilities of those groups when
10 determining that no future Covid-19 guidance was
11 required?
12 **A.** So when any guidance was done it was looked at as -- in
13 a sort of public sector equality duty, which would have
14 included this to -- as part of it.
15 From my point of view, in hospitals, in particular,
16 there are usually wards where these individuals are
17 cared for more than others, so a haematology ward or
18 an oncology ward, where you're getting cancer treatment,
19 for example. And there, hospitals would define what the
20 precautions are to be used in those wards. For example,
21 I know that lateral flow testing continued to happen on
22 those wards much after others, and actually in some of
23 those wards, routinely in the winter or when there's
24 lots of viruses circulating, that staff routinely wear
25 fluid-resistant surgical masks to reduce spread of

1 infections.
2 So -- sorry.
3 **LADY HALLETT:** I'm getting messages.
4 **A.** So staff routinely would use fluid-resistant surgical
5 masks to prevent the spread of infections on those types
6 of wards, so I think that is the normal course of events
7 within healthcare, to consider the individual factors of
8 the patient as well as the infections that are
9 circulating.
10 **MS CAREY:** Can I ask you in a similar vein: do you think
11 that air filtration, for example the use of
12 HEPA filters, was given sufficient priority in the IPC
13 guidance?
14 **A.** I don't believe it was.
15 **Q.** No. Do you think that IPC guidance in future should
16 look to the use of portable air cleaning equipment like
17 that?
18 **A.** So I think -- and I will say that this is one of the
19 reasons why I think we need to have a wider discussion
20 about some of this, I think a lot of the ventilation
21 components are dealt with by building memoranda and
22 technical memoranda that are done by the technical
23 estates, facilities and engineering teams in hospitals.
24 However, where the -- bringing ventilation,
25 particularly where you talk about portable ventilation,

1 UV HEPA filters, into the front and foremost
2 consideration of hospitals, so that they're not just
3 redesigning a building or rebuilding a building but
4 actually thinking how they can improve ventilation, is
5 an important thing that should be brought into the
6 guidance in the future for infection prevention and
7 control teams to consider.
8 Can I just finally, there was and there remains that
9 Health and Social Care Act, and there remains in that
10 Health and Social Care Act the components of infection
11 control that need to be considered to reduce the risk of
12 nosocomial infections. That includes things like
13 ventilation in estates. And I think that IPC guidance
14 needs to reflect that in a greater way going forward.
15 **Q.** I was going to ask you about nosocomial infections as
16 the next topic, so let's deal with that now, please, and
17 it's at paragraph 160 in your statement please.
18 And I just would like briefly if you could, please,
19 Professor, to help us with the establishment of the
20 Nosocomial Transmission Group, which I think was
21 established by SAGE as a subgroup. It had PHE's
22 Director of National Infection Service on it.
23 Is this right, it was focused only on hospitals?
24 **A.** Correct.
25 **Q.** In due course it became the Hospital-Onset COVID-19

1 Working Group, HOCI?
2 A. HOCI I think it was named.
3 Q. And various pieces of data then from HOCI were added in
4 and the data came to sitreps and they were verified by
5 Public Health England. And if anyone wants to know more
6 detail undertaken by PHE in this area, it is set out at
7 pages 77 to 86.
8 Can I explain why I'm cantering over it? Because
9 tomorrow we're going to hear from Dr Warne, who is one
10 of the IPC trio who is going to take us through some of
11 the challenges in determining the extent of nosocomial
12 infections. And so, with your Ladyship's permission,
13 I'm going to leave it to him, if I may, and I mean you
14 no disrespect, Professor.
15 It does, though, bring into play, does it not, the
16 ability to test symptomatic, asymptomatic and
17 presymptomatic patients and healthcare workers, would
18 you agree?
19 A. I absolutely agree and think that the -- I don't know,
20 I can't recall off the top of my head right now, but
21 I think the changing in testing, both in patients and
22 healthcare workers, made dramatic shifts in that first
23 year, both due to testing availability in the health
24 services and otherwise, the capacity to do that, the
25 turnaround time. And I think this remarkable shift also

1 happened when we started to be able to use the rapid
2 tests that we then all became used to using, which PHE
3 was really part of, the development of and validating
4 of, of those tests.
5 Q. Can I just ask you about asymptomatic transmission,
6 which is not the same as asymptomatic infection, we
7 understand that difference, just so that you're aware,
8 but -- and clearly there was an evolution in
9 understanding about how much asymptomatic transmission
10 there was; would you agree with that?
11 A. Absolutely.
12 Q. When do you think PHE came to the view that there was
13 evidence of asymptomatic transmission?
14 A. Again, I don't think this was a moment where there was
15 an electric light bulb that went on. I think there was
16 gradually increasing, slowly-but-surely evidence that we
17 were seeing people who at first that we thought -- were
18 testing positive but would go on to develop symptoms,
19 because, again, it was quite common for people to have
20 that presymptomatic phase. But then when we did studies
21 looking at individuals over time we recognised that
22 30/40% of individuals never developed symptoms but that
23 some of their households became infected.
24 So in the studies that we did in households or in
25 organisations where we would find one of these

1 individuals and then follow their household, we could
2 see that they were transmitting particularly through
3 their household.
4 And that's good evidence because they would have all
5 been staying at home, hopefully, following the guidance
6 to stay at home with those symptoms.
7 Q. If it helps you, certainly by 1 April 2020 Public Health
8 England said that there was the possibility of
9 asymptomatic transmission but other analysis would
10 provide the best evidence.
11 The reason I mention that is this: we have in our
12 evidence a statement from Matt Hancock, the
13 Secretary of State, who says this, that:
14 [As read] "During January until 3 April 2020
15 I repeatedly raised my concerns about the potential for
16 asymptomatic individuals to infect others with those
17 advising me. However, up to that point I was repeatedly
18 advised by PHE both that we should not assume
19 asymptomatic transmission ..."
20 And I would like to know, did you -- not you
21 personally, but did PHE advise Mr Hancock in the way he
22 sets out?
23 A. So I don't know what -- and I can't recall. I presume
24 this was in individual discussions with Mr Hancock,
25 which I was not in the room with Mr Hancock until late

1 May 2020.
2 Q. Okay.
3 A. So I would say that that may have been the perception of
4 people communicating.
5 I think if you look at the science advisory papers
6 to NERVTAG and to SAGE, it was much more nuanced and
7 there was uncertainty, and I -- I personally would,
8 I think as you've realised, don't believe that we can be
9 so clear-cut for some of this, and that would not be my
10 way of explaining things to ministers.
11 Q. Can you help us if it wasn't you in the room with him or
12 in the rooms with him who was it likely to have been
13 that was advising him?
14 A. So my understanding from the early meetings were the
15 director of the national infection service, the medical
16 director and the emergencies(?) medical director and the
17 chief exec -- of Public Health England --
18 LADY HALLETT: Sorry to interrupt again, there's also quite
19 a difference, isn't there, between you shouldn't assume
20 that something's happening and there's some evidence it
21 may be happening. I mean, they're not the same thing,
22 are they?
23 A. Agreed. And I think that the whole point of scientific
24 exploration is that you say what you know at the time,
25 because you have to be clear and communicate what you

1 know, but that you also continue to study it to see if
2 you are wrong.
3 **LADY HALLETT:** We're not assuming it's happening, but it may
4 be?
5 **A.** And it may be and we don't --
6 **LADY HALLETT:** That's why we're going to look further?
7 **A.** Exactly.
8 **MS CAREY:** I diverted briefly --
9 **A.** Apologies.
10 **Q.** -- to deal with asymptomatic, but can I return to
11 nosocomial transmission, and I think a study conducted
12 by UKHSA into the efficacy of interventions to prevent
13 nosocomial transmission.
14 And could we have up on screen INQ000348244, please.
15 It's at your paragraph 188, Professor, if you need
16 to look at it, but it might be easier to use the
17 document.
18 Can you just give us a background as to why UKHSA
19 commissioned this piece of work?
20 **A.** So this was part of our modelling work, so UKHSA, and
21 Public Health England beforehand, had
22 a healthcare-associated or nosocomial modelling team.
23 So these are teams that take assumptions that we
24 understand, with things that we know about the virus,
25 and then work them into large-scale models that the

1 computer will one run hundreds of thousands and millions
2 of times to provide estimates of what might happen in
3 real life and allow those variations to be seen.
4 For example, in looking at masking, it was not
5 a study that said masking only around --
6 "... only around patients prevents 56% of
7 infections ..."
8 This would have been a number that they would have
9 put into the model about how effective masking was, and
10 then they would have let the model run for thousands or
11 millions of iterations and then it would have come out
12 saying: this -- doing this, in this model, looks like it
13 reduces these amount of infections.
14 Does that --
15 **Q.** Yes.
16 **A.** It's just -- it's the complexity of models, which
17 I think is important to do. This was not a real life
18 study, it was not conducted in a hospital.
19 **Q.** No, I follow that, but the key messages from the study
20 we've got up on screen there, and in relation to
21 "Patient infections":
22 "Interventions in place over the course of the
23 pandemic have prevented up to 1.2 million patient
24 infections compared to a scenario where no interventions
25 were ever implemented."

1 And if people want to know what the interventions
2 were, I'm not going to suggest we call it up on screen
3 but there is a timeline of them at page 3 in the study.
4 It includes mask wearing for patients, mask wearing
5 being universal in hospitals, testing of all people on
6 admission, and I think, of course, vaccinations through
7 it. So there is a number of different ways that
8 interventions are looked at, but in short there that is
9 an endorsement, isn't it, for the interventions that we
10 came to live with at helping prevent transmission --
11 **A.** Absolutely. But recognising this was masking, not
12 FFP3s, just --
13 **Q.** Yes.
14 **A.** -- make this point, and that universal masking by
15 healthcare workers was extremely effective for
16 preventing healthcare worker to healthcare worker
17 transmission, again as fluid-resistant surgical masks,
18 helping us to try to understand it.
19 **LADY HALLETT:** The transcriber, I'm afraid, is missing
20 an awful lot of what you're saying.
21 **MS CAREY:** She's not the only one.
22 I'm sorry, it's my fault, Professor, because
23 I should tell you to slow down, and I know we've got
24 a lot to gather but these are important findings.
25 So clearly, there, there is interventions that have

1 prevented potentially up to 1.2 million patient
2 infections, compared to the scenario where there are no
3 interventions. All right?
4 It is:
5 "• Isolation of symptomatic [healthcare workers],
6 and masking by [healthcare workers] ..."
7 Brackets, any mask not FFP3, I understand that.
8 "... around patients (or universally) are important
9 strategies for preventing patient infections and when
10 used in combination ..."
11 With the other interventions I assume that means.
12 "... up to 88% of the total number of nosocomial
13 patient infections that occur when no interventions are
14 in place.
15 "• Masking only around patients prevent 56% of
16 infections even when [healthcare workers] do not
17 isolate ..."
18 Is this really a ringing endorsement for, in the
19 event of a pandemic, masks of some kind for both
20 patients and healthcare workers?
21 **A.** Absolutely. And, you know, also a patient/healthcare
22 worker isolation when they've got symptoms and lots of
23 other components, but this particularly highlights the
24 importance of any type of masking.
25 **Q.** And does that --

LADY HALLETT: So --
MS CAREY: I'm so sorry --
LADY HALLETT: -- said masking of patients and healthcare workers, but I can't see in these key messages where the masking of patients comes; it's just healthcare workers, isn't it?
A. So this study would have included, and I know did, included it from June, it would have looked at the data from the intervention where patient -- healthcare workers were all wearing masks but also potentially the intervention where patients were wearing masks as --
LADY HALLETT: But these messages are all about masking by healthcare workers I think, or have I misread them?
MS CAREY: I thought they included universal masking, which was patients and healthcare workers.
LADY HALLETT: By healthcare workers, universal masking by healthcare workers. I can't find masking of patients in these messages.
A. I would have to go back and look at the modelling study in detail to go through that and --
MS CAREY: Can I tell you why I think it is? Can we just call up page 3 in case this answers it quickly, and if it doesn't we'll revert to ...

Can we go to page 3:

"Timeline of interventions ..."

Obviously one of the first interventions was to reduce anyone going into the hospital in the first place then prevent visitors going in.

"[Healthcare workers] masking around all patients"

That's for the healthcare workers, obviously.

"[Healthcare workers] masking (universal)"

LADY HALLETT: So that's healthcare workers.
MS CAREY: Yes, still healthcare workers. But did they not bring in, I thought that patients were encouraged to wear --
A. Yes, the patients were encouraged --
Q. If they could tolerate it?
A. Exactly. So I think they probably didn't model it because it was so uncertain --
Q. All right.
A. -- and it would depend on how unwell the patient was, and if they required an oxygen mask they clearly couldn't wear a face mask.
Q. So let me rephrase my question: is this a ringing endorsement for the universal masking of healthcare workers, undoubtedly?
A. Yes, I believe that universal masking was a really important role in this pandemic.
Q. Okay. And we might need to look to see whether this includes the universal masking of patients who could

tolerate it.
A. Yes, I think that would have been more uncertain, so they --
Q. It was a poor question by me --
A. Yeah.
MS CAREY: I'm going to move on, please, to a different topic.

I know it's a bit early, my Lady, but would that be a convenient moment, because we're moving --
LADY HALLETT: Certainly I think I know somebody, from whom I am receiving messages, who would be really grateful. We really do -- I mean, it's important evidence you're giving, Professor, so I know how difficult it is to change your speech pattern, but if you could this afternoon, afterwards, when we come back.
THE WITNESS: I'll try my best.
MS CAREY: Thank you, my Lady.
LADY HALLETT: 20 past.
(3.02 pm)

(A short break)

(3.20 pm)
LADY HALLETT: Ms Carey, I have asked for the temperature to be turned down.
MS CAREY: Thank you very much.

Professor, can I turn to a different subject,

please, and the SIREN study. I'm at paragraph 189 in your statement, if it helps. Can you briefly summarise why it was set up, what was its aims and then we'll look at some of the results?
A. Thank you. So the SIREN study, of which I was the chief investigator, was set up in May 2020 to understand infection prevalence in healthcare workers by regular testing, because there was no asymptomatic testing happening routinely, to understand the risk of reinfection in healthcare workers who had previously been infected, and the reason for this was that they were a cohort of people that we could test regularly over time and, subsequently, when the vaccines came, to determine the effectiveness of vaccines in healthcare workers.
Q. Let's call up on screen, please, INQ000320603, and page 2, please. There we have the findings, and I would like your help, Professor, just putting them into a plain language, if we may. I think the first one was:

"In January 2021 the SIREN study published its first analysis of protection following SARS-CoV-2 ... Crucially the analysis showed that reinfection was possible and could occur, but that there was an over 80% reduction in infection among people who had previously contracted Covid-19 compared to those who had not."

1 Is this it, that 80% of people didn't get Covid at
2 all where they had previously had it?
3 **A.** So at this point in time --
4 **Q.** Yes.
5 **A.** -- in January 2021, so this was after looking -- we had
6 recruited people from May to the autumn, and we followed
7 people up, we understood their baseline immunity to
8 Covid by blood tests and then we did two-weekly testing
9 on them, so tests every other week by PCR, to determine
10 whether they could become infected either
11 asymptomatically or symptomatically, and we followed
12 them up over that period of time.
13 In January 2021, due to the infections that were
14 circulating widely, we were -- that was our first moment
15 that we were able to make an assessment of the level of
16 what happened if you were immune to SARS-CoV-2.
17 At that point, what it showed, that if you had
18 immunity defined by having a previous positive PCR test
19 or having antibodies in your blood, that you did not get
20 reinfected, and by "reinfected", I don't mean that you
21 didn't develop symptoms, you didn't develop a PCR
22 positive asymptomatically at all at that period of time.
23 **Q.** Am I right, then, if you had had it before, 80% of
24 people didn't get it again; is that the wrong way of
25 putting it?

1 **A.** No, if they had it before, so if they had had it any
2 time between February 2020 and December 2020, then they
3 did not get another infection episode in, by and large,
4 November, December, January 2021, because that's when
5 infections were circulating at high levels.
6 **Q.** "In spring 2021 when the Alpha variant was dominant in
7 the UK, the SIREN study published its first analysis of
8 the effectiveness of vaccines, focusing primarily on the
9 Pfizer vaccine. The analysis showed that short-term
10 vaccine effectiveness against infection 21 days after
11 the first dose was 70% in the study population of
12 healthcare workers and rose to 85%, 7 days after the
13 second dose ..."
14 So is that saying, effectively, that you're less
15 likely to get infected if you're vaccinated, especially
16 if you have had two doses?
17 **A.** Yes, it was saying that, even after one dose, only, if
18 you took the people who got the vaccine and the people
19 who did not, then the people who got the vaccine did not
20 get a subsequent infection over the period under
21 follow-up.
22 **Q.** February 2022, help us there what was the main finding
23 of SIREN in February 2022?
24 **A.** So, again, that looked at the short-term vaccine, which
25 was what we looked at first because we were looking at

1 this in real time. So vaccine was rolled out from
2 December 2020. So in April/May 2021 when we produced
3 our first analysis, we were only looking at the first
4 90 days after being delivered vaccine. In February
5 2022, we were looking at the longer duration after being
6 delivered vaccine, and what we could see is that people
7 who had been delivered vaccine at a longer period, so
8 more than six months at this point, had less protection
9 against immunity.
10 Can I also add that this was with the Omicron
11 variant, so the variants were changing, and we know that
12 Omicron evaded not only the natural immunity that we had
13 but also the protective immunity from vaccines.
14 **Q.** Thank you very much. All right, that can come down.
15 Can I ask you, please, about your paragraph 201.
16 You say this:
17 "Using an individual based mathematical model to
18 predict how large the burden of [I think this is
19 healthcare acquired infections] would have been if
20 vaccines had not been available from 8 December, it
21 concluded that the vaccine roll-out averted infection in
22 a large proportion of hospital healthcare workers in
23 England. Without vaccines second wave infections in the
24 patient-facing healthcare workers could have been
25 21.8%."

1 Is that essentially championing the cause of
2 vaccines in helping prevent infections within healthcare
3 workers?
4 **A.** So vaccines as a mitigation measure were part of the
5 mitigation measures we then had in play to reduce
6 infections in healthcare workers and the general
7 population.
8 **Q.** But looking at your paragraph 202, please, Professor,
9 I think you say there that the findings also highlighted
10 occupational risk factors that persisted in healthcare
11 workers, despite vaccine roll-out, and could you just
12 summarise, please, paragraph 202.
13 **A.** Yes. Are what we are highlighting in this analysis is
14 both -- what we do, first of all, is we look at one
15 thing compared to the other. The most important point
16 on that one element compared to the other, on the simple
17 analysis, were that healthcare assistants and bedside
18 therapists were those who had occupational risk factors
19 following vaccine roll-out, and that being of black or
20 Asian ethnicity had an increased risk of infection
21 during the second wave, compared to those of white
22 ethnicity.
23 But, after adjusting from the time since people were
24 vaccinated -- so not just looking at it in terms of
25 whether you were vaccinated or not but how long was it

1 since the vaccination, that the significant factor was
2 predominantly related to Asian ethnicity in this study.
3 **Q.** So can I just ask you about that answer: you say that
4 being of black or Asian ethnicity had an increased risk
5 of infection during the second wave, compared to those
6 of white ethnicity. Can you help at all as to why there
7 is that increased risk in the second wave?
8 **A.** Well, I mean, there is lots of work that went on to look
9 at disparities and particularly within ethnic groups.
10 I think that when -- and some of this is in the various
11 disparity reports that people will have read during the
12 course of this. And when we look at healthcare workers,
13 one aspect is on what they do as healthcare workers, but
14 other aspects are where they live, the amount of people
15 who live in their house, the other people they're mixing
16 with outside work, and you can't take all of those
17 outside factors into control.
18 So in some of the studies that we tried to do in
19 SIREN, which again were people answering survey
20 questions for us, we tried to look and see: did the
21 amount of people in the house contribute to it; did the
22 age of people in the house contribute to infection; and
23 there were lots of other factors that were colliding in
24 the risks of infection and where -- ethnicity was one of
25 those risks that we could see.

1 **Q.** I want to come on to disparities in just a moment but
2 just finishing the SIREN study, paragraph 204. I think
3 you said:
4 "The study found that both occupational and domestic
5 exposures were associated with increased risk of
6 infection, including increased household size and
7 frequent exposure. Regarding occupational factors, it
8 is likely that exposure to Covid differed by role,
9 healthcare assistant, compared to doctor."
10 Does that mean that the healthcare assistant was
11 more likely to get Covid than the doctor was?
12 **A.** Correct.
13 **Q.** Obviously, in a setting: inpatient wards with more risk
14 of infection if you worked there, than compared to
15 emergency departments.
16 Obviously then, including the time spent with
17 individual patients and activities involved.
18 You say it was not possible to unpick these
19 associations further but is any work being done to try
20 and work out why differing roles had an increased risk
21 of infections, different settings had increased risks of
22 infections, and take ICU out of it for a moment because
23 they're in a slightly different category, the people,
24 and those working in ICU?
25 **A.** Yeah, I mean, I think that -- I mean, we can speculate.

1 I think what we've tried to do in the SIREN study, all
2 the way along, is use the data that individuals gave us
3 as part of the study. They consented to give us this
4 information. We have also done qualitative work so
5 where we have done interviews with healthcare workers to
6 try and understand things better and it's always
7 difficult to disentangle the environment that they work
8 in, the environment that they socialise in and the
9 environment that they live in at home from all of the
10 factors because all of them interplay from each other.
11 So I don't think we will be able to simply say,
12 "Yes, this was it and that was not". And what we have
13 tried to do repeatedly is come up with highlighting that
14 an increased household size was important, increased
15 exposure to patients was important, increased --
16 differences in roles and one of the reasons why we
17 highlighted roles was we thought this might be about the
18 potential education factors that differing roles have,
19 but it's, again, very difficult to disentangle this.
20 What we try and do is use the study to provide the best
21 understanding that we can based on what we have.
22 **Q.** Can I ask you this, has any work been done in SIREN --
23 and it may be that's not the right study for it -- to
24 look at whether non-clinical workers have an increased
25 risk of contracting Covid-19 at work?

1 **A.** So this varied over time, actually, and the -- at some
2 parts of the studies, particularly in the first wave,
3 non-clinical workers and clinical workers had very
4 similar rates of infection, and we think that was
5 predominantly driven by healthcare worker to healthcare
6 worker exposures at that point.
7 At later points in time, that risk changed and what
8 we're highlighting in this particular study -- and again
9 we can share with you all of the various studies
10 published because we've repeatedly re-analysed -- at
11 this particular time there are lots of different factors
12 relating to prior exposure, vaccination, the types of
13 work they did.
14 But we can't disentangle the training they did or
15 how well they applied the infection control precautions
16 because that's not what you can do in a survey. You can
17 only do that if you observe people or if you do
18 detailed, qualitative interviews with a very small
19 number rather than the almost 50,000 people who
20 participated in this study.
21 **Q.** Okay, can I come on to the disparities and I want to ask
22 you, please, about PHE published, I think, a review of
23 disparities and risk outcomes in June 2020, so
24 relatively early on in the pandemic. It's at your
25 paragraph 439, please, and then I would like to overview

1 and I want to look at one aspect of the study itself.
2 The review found that the largest disparity was age,
3 so if you were 80 or over you were 70 more times likely
4 to die than those under 40. The risk of dying amongst
5 those with Covid-19 was higher in males than females,
6 higher in those living in more deprived areas than those
7 living in the least deprived, and higher in those in
8 black, Asian and minority ethnic groups than in white
9 ethnic groups.
10 Can I just pause you there. Will you correct me if
11 this is too simplistic but, if you were a healthcare
12 worker, who was a female, who was BAME, who lived in
13 a lower deprived area, do all of those things add up to
14 increased risks at each and every stage or is that
15 too --
16 **A.** Well, the female would have been lower risk.
17 **Q.** Oh, sorry, BAME, male, working in healthcare, from
18 a deprived area: does that all add risk, upon risk, upon
19 risk, is really what I'm asking you?
20 **A.** So it adds layers of risk, yes.
21 **Q.** Presumably, take one of those away, slightly less risk
22 each and every time you remove one of those factors?
23 **A.** Except a lot of them can't be removed.
24 **Q.** Quite. All right, so let's look, please, then at the
25 review itself and can I call up on screen, please,

1 INQ000399820. I'm going to page 5. I want to actually
2 just look at some geographic inequalities, which is not
3 something we've really looked at, Professor. Obviously,
4 this is just a study by Public Health England and
5 therefore concentrates on English data; is that right?
6 **A.** Correct.
7 **Q.** All right, okay. There we can see that geographical
8 inequalities:
9 "The regional pattern in diagnoses rates and death
10 rates in confirmed cases among males were similar.
11 London had the highest rates followed by the North West,
12 the North East and the West Midlands. The South West
13 had the lowest. For females the North East and the
14 North West had higher diagnosis rates than London, while
15 London had the highest death rate."
16 Then you can see there what is set out in relation
17 to local authorities. Obviously, the data tells you
18 what the position is but the question always becomes
19 then why. Is any work being done to work out why there
20 are these regional variations?
21 **A.** So, first of all, this is all people in the population,
22 so it's not just healthcare workers, and recognising
23 that healthcare workers were a very small proportion of
24 the total infections that were seen, though a very
25 important part.

1 The second thing I would say is that, especially in
2 this stage and if you look at over the pandemic, one of
3 the things was that waves of infection would sweep
4 through the community at different points, and we know
5 that London and the North West, particularly the North
6 West as links to Manchester and Liverpool as big urban
7 conurbations, really drove a lot of the early waves that
8 we saw. The North East, again predominantly at
9 Newcastle, and the West Midlands driving. You can see
10 that at each of these, the urban settings, where there
11 are large numbers of people, are particularly where we
12 saw large numbers of cases, especially in the first
13 wave, though that consideration then played out at
14 subsequent waves and at subsequent waves of infection,
15 where you would see a different regional variation all
16 of the time.
17 **Q.** So there may be reasons really to do with the kind of
18 concentration of people in an area, as an obvious reason
19 as to why there are these perhaps variations in the
20 South West, thinking about Cornwall and Devon, for
21 example. That might be an explanation for why there is
22 this variation?
23 **A.** So places that were rural, for example, often had lower
24 amounts of infection but then, once the infection got
25 into that community, it spread very rapidly and we saw

1 that particularly between the waves, where waves of
2 infection came into small areas, and we could see very
3 high clusters of infections in areas as it spread in the
4 community.
5 **Q.** Can I take that down, please, and I take it that you
6 would agree that we shouldn't read into that that people
7 in London got worse care than those did in the South
8 West, that's a far too simplistic analysis of the
9 geographical variations?
10 **A.** I think that there's far too much complexity to read
11 into geographical --
12 **Q.** Right. I say that just to make that clear, rather than
13 anything else.
14 **A.** Yeah.
15 **Q.** Obviously, I've concentrated there on the geographical
16 variations but the ethnic and disproportionate effect on
17 those in the BAME communities was a big part of that
18 review and can I ask, following that review, do you
19 think that there was action taken fast enough to address
20 the disproportionate impacts on ethnic minorities?
21 **A.** So I think I would put it into two components. So first
22 of all is that we, as a country, need to tackle the
23 impact of -- the health impacts on ethnic minorities,
24 not simply for the pandemic but this is there well
25 before the pandemic and has not been resolved after the

1 pandemic, and that requires culturally appropriate
2 messaging, involving black and minority ethnic groups
3 and -- into thinking about the messages that can be
4 delivered for their groups and populations, and in
5 thinking about the interventions that can work in those
6 populations.
7 I think it's important to note that, not just in
8 healthcare but in many other service industries --
9 taxis, shops in London -- that black and Asian minority
10 ethnic groups often couldn't, for example, work from
11 home in the same way as others, and I think that we need
12 to recognise the structural issues in our societies to
13 try and improve them in the future, not just for this
14 but for everything else to do with health and wellbeing.
15 **Q.** Now, the review obviously looked at geography, sex, age,
16 deprivation, ethnicity, occupation, I think, and
17 residence in a care home -- I'm not going to ask you
18 about that, that's another module -- but can I ask you
19 this: how was it determined which disparities would be
20 focused on in the review?
21 **A.** So my understanding is that the disparities that were
22 focused on were the ones that we had, one, data for --
23 **Q.** Right.
24 **A.** -- because that's important to be able to look at and --
25 though I would say that the data also got better after

1 the disparities review because of some of the
2 discussions that were happening around that time.
3 Secondly, that it was important to recognise that
4 the disparities were things that were included in the
5 public sector equality duty and where there was at least
6 some evidence from epidemiological studies that these
7 were important factors. By epidemiological studies,
8 I mean the data that we were looking at day in, day out
9 to try and understand who was being affected by this
10 pandemic.
11 **Q.** Do you know why disability was not mentioned in the
12 review?
13 **A.** So I would say that the reason why disability
14 particularly wasn't mentioned in the review is that
15 there was no data available easily to link disability
16 and the range of different disabilities with the results
17 on Covid that we've seen. Subsequent studies did try
18 and do that but, at this point in time, that was not
19 available, and it was a challenge even to do it in real
20 time, over the whole pandemic for other reasons.
21 **Q.** Different topic, may I ask you about Long Covid, please,
22 and PHE's role, as it was, in relation to planning for
23 and responding to the long-term consequences of Long
24 Covid.
25 I think is this right: there wasn't any kind of

1 public health communications plan in relation to Long
2 Covid; is that correct?
3 **A.** Yeah, so I think -- I mean, just to reflect, so Long
4 Covid was something that, first of all, was being
5 reported by individuals, I think particularly started to
6 be reported in May and June, as weeks had passed since
7 they had had their infection potentially in late
8 February and March and they were still not feeling
9 better. I think that, at the time, and I would say even
10 still, we don't understand enough about Long Covid to be
11 able to give the right messaging, and I know that the
12 NIHR, so the National Institute for Health Research, has
13 put a lot of funding to try and improve that.
14 From a public health point of view it is very
15 difficult to give a message if we don't know what we're
16 trying to do or reduce. I think what we were trying to
17 do was reduce infections in whatever way we could and by
18 reducing infections then we would therefore see less of
19 an impact by Long Covid.
20 Finally, I would say that vaccination, when we
21 looked at it, was clearly an important factor for
22 reducing Long Covid as well.
23 **Q.** May I ask you about death data, please. I think your
24 colleague, Dame Jenny Harries, contributed to parts of
25 your statement, or certainly parts of her Module 2

1 statement are in the Module 3 statement, and she
2 indicates there that, when considering the risk to the
3 UK, there were three triggers, one of which was
4 healthcare workers dying because that indicated a new
5 infection was severe and transmissible. Who and how
6 were deaths of healthcare workers monitored by PHE, if
7 at all?
8 **A.** So, again, first of all, there is no national registry
9 of deaths that is delivered to PHE. The Office for
10 National Statistics collects the death registrations,
11 which includes occupation, and so we were reliant on
12 information that was shared to us by the Office of
13 National Statistics once the data was available and, in
14 my recollection, they led on the reports for employment
15 and occupation-associated mortality and produced reports
16 regularly from April 2020.
17 **Q.** Do you think there should be better reporting of
18 healthcare worker deaths in the event of a future
19 pandemic?
20 **A.** Yes, I mean, I would always like better reporting,
21 I mean, you know, this is the challenge. I think this
22 comes down to how we talk to people about how we use
23 their data. So, for example, whether we can share more
24 readily, even outside of a pandemic the -- because if
25 you're trying to do it in a pandemic, then you're doing

1 it in -- if you like, in haste, so how we can share what
2 healthcare workers do, what their occupation is, and
3 then how are they getting sick or not getting sick over
4 the course of their healthcare experience.
5 I think that that would require healthcare workers
6 to consent to share that data and that would,
7 you know -- has challenges within it or would require
8 government to make a decision that that information was
9 going to be shared with certain bodies. I think that
10 there are ongoing debates about sharing information,
11 including from GP records data, for example, and it's
12 not easy, but clearly as an organisation who's trying to
13 use data to better understand problems, we would like
14 a greater discussion with the public and with healthcare
15 workers on how we do that.
16 **LADY HALLETT:** I'm not sure that's going to work, is it?
17 "Just in case you die, healthcare worker, please can we
18 have more data?"
19 **A.** I mean, I think the challenge is that so, for example,
20 in the SIREN study, people consent to share a lot of
21 information with us about their health records and
22 a consent for us to look at their health records but
23 that involves discussions and conversations, and I think
24 that the NHS, as an employer, has a conversation to have
25 with their healthcare workers about whether they would

1 be willing to do that to better understand the causes of
2 ill health in healthcare workers.
3 **MS CAREY:** Can I broaden the data to an area where there is
4 some data and ask you, please, about the estimates of
5 how many patients in hospital caught hospital-acquired
6 Covid-19.
7 Can we call up on screen, please, INQ000348633_0011.
8 My Lady, tomorrow Dr Warne will help deal with
9 hospital-acquired infections but there is just some data
10 I would like your help with, please, Professor.
11 I think, is this right, that UKHSA prepared a report
12 in June 2021 looking at where there was
13 hospital-acquired infection, how many people got it and
14 of those how many people died.
15 Now, there's a number of acronyms. Can you just
16 help us with "HOHA", please?
17 **A.** Hospital-onset hospital-acquired *(sic)*. My
18 understanding was that was day 14 or greater.
19 **Q.** So if you are testing positive and you have been in
20 hospital and it's day 15, the chances are you got it in
21 hospital. If you're testing in days less than 14, then
22 there's suspected, which is "hospital-onset suspected
23 hospital-acquired" -- or "healthcare-acquired"
24 infection, and it goes down, and the Cs deal with
25 community-acquired infections.

1 I just want to look at the hospital one, and we'll
2 just take the top "HOHA", because there there is
3 a degree of certainty that at least they were tested on
4 day 15 and therefore it was acquired in hospital. The
5 whole time period, is this from March 2020 to
6 April 2021, when the data was collected and produced
7 into this report; is that right?
8 **A.** Yes.
9 **Q.** All right. So between March 2020 and April 2021, is
10 this England only?
11 **A.** Yes.
12 **Q.** Okay. There were 29,950 hospital-acquired infections,
13 of which 9,854 of those people died; is that correct?
14 **A.** Yes.
15 **Q.** The proportion: so 9,854 is presumably 33% of the
16 29,950?
17 **A.** Correct.
18 **Q.** "Mean age", please, what is that telling us?
19 **A.** That's the average age of the people who died, so the
20 average age of the people who died in this category was
21 75 years of age.
22 **Q.** Then if it's wanted to, it's broken down into the first
23 and second wave. I won't go through all of this. What
24 was the purpose behind the production of this data?
25 **A.** So we looked at this data on an ongoing basis, we

1 reviewed it to understand what was happening, I think
2 that, what you can see, just to put some of the totality
3 in there, is that these are the infections that were
4 admitted to hospital --
5 **Q.** Yes.
6 **A.** -- and we were looking to see if that was changing over
7 time across it. This will also then have been used to
8 determine where the interventions should take place to
9 reduce hospital transmission. They will have been using
10 these in the modelling data that we talked about earlier
11 about healthcare workers. So they will use that to then
12 determine what intervention worked over time. So
13 they'll have summarised it here for ease, but they will
14 have produced this data by week and by month as well, so
15 that we can really understand a breakdown and then see
16 how things changed or shifted when interventions were
17 introduced.
18 **Q.** Can I ask, please, for page 2 of this document to be put
19 up on screen and, Professor, correct me if I understand
20 this graph incorrectly. The figure 1b spans March 2020,
21 you can see there the first wave and then the peak of
22 the second wave, just to help people orientate
23 themselves, so through to 2021. But is this right: it
24 shows us the proportion of patients in hospital who
25 acquired Covid in hospital?

1 **A.** Correct.
2 **Q.** Go to the peak of wave 2, I just want to make sure we
3 understand it, there were over 20,000 -- thank you very
4 much.
5 **A.** Can we have the --
6 **Q.** Can we have it back again, actually.
7 **A.** It's the 1a graph.
8 **Q.** We'll have to do it small. It's over 20,000 patients
9 are in hospital in, what, January 2021?
10 **A.** Yes, I believe it was about 25,000 at its peak.
11 **Q.** Yes, all right. Of those, the red indicates those who
12 acquired Covid in the community; is that right?
13 **A.** Correct.
14 **Q.** Then suspected that they acquired in the community is
15 the purple, and then up to a small -- we probably can't
16 see it very clearly -- a different way of working out
17 whether they're hospital acquired. But if you look at
18 the top blue, is that those that, based on the date of
19 testing, it is assumed that they acquired Covid in
20 hospital at that time?
21 **A.** Correct.
22 **Q.** That is -- I can't work it out, but it must be over --
23 **A.** I think it's about 3,000 for the hospital-acquired
24 hospital associated one because it's the very light blue
25 at the top. You can see that it's not quite half of the

1 section.
2 **Q.** So in wave 2, about 3,000 people acquired Covid in the
3 hospital?
4 **A.** In the worst week of wave 2.
5 **Q.** In the worst week, yes.
6 **A.** Yes. More than that over the whole period.
7 **Q.** Okay, thank you.
8 **A.** You might want to highlight that the nosocomial
9 proportion -- the two other facts -- was lower in the
10 wave 2b, which is what we're looking at, at that peak,
11 and -- compared to the 2a wave, and that --
12 **Q.** Where is the 2a wave?
13 **A.** The 2a wave was the one that came up and then went down
14 a little bit, so that when we had the partial closures
15 in November, in society, and then December was where we
16 had the Alpha variant come through. I think that's
17 important.
18 **Q.** Thank you very much, that can come down, thank you.
19 Final topic, please. I'd like to ask you, on behalf
20 of UKHSA, about lessons learned and recommendations.
21 Can you summarise what you think is the key lesson
22 learnt, and I know there will be lots, but give her
23 Ladyship, please, your key lesson from UKHSA's
24 perspective?
25 **A.** Well, I think -- I mean, can I take this from an IPC,

1 first of all, because we've had a lot of discussion on
2 IPC today and then I'll very happily go more widely on
3 some of the other components.
4 So on IPC, I think that the first thing is that
5 multidisciplinarity is important and we need to ensure
6 that there's a range of views feeding into any
7 discussions; that we need to have well-circulated and
8 agreed guidance prepared in advance of the next
9 pandemic, with a range of scenarios that we're
10 considering, so people understand the thinking, that of
11 course will be stressed and of course it will be thought
12 through at the time of the next pandemic.
13 I think, as I've said repeatedly, that there are
14 ways that we can improve ventilation to think about
15 respiratory viruses more generally and there are
16 political choices for ministers about how much money
17 they want to spend on that, either temporary or
18 permanent; that the evidence base for complex
19 interventions, of which infection control is a very
20 classic complex intervention, needs to be considered and
21 thought through, and we need to take opportunities
22 outside a pandemic period to develop that evidence,
23 rather than waiting for a pandemic.
24 The final bit which I will come to which is about
25 face masks and FFP3, so firstly I think that we need to

1 have a discussion and agreement about how much extra
2 value that we think FFP3s are, that if we think that
3 they're of extra value and we want to do that in
4 a future pandemic, that we have a cadre of staff
5 continually trained to be able to use them, knowing what
6 type of FFP3s they can wear and that those are in supply
7 and stock, and that -- we need to consider other
8 alternatives to using fit testing as a barrier that may
9 also protect people, and I know that people have talked
10 again about non-fit-tested FFP3 which would require
11 a legislative or regulatory change.
12 **Q.** I was just going to say, would that not involve the
13 health and safety --
14 **A.** It would require a legislative or regulatory change but
15 I think these are discussions that we should have
16 outside the heat of a pandemic and be ready and prepared
17 for the next one.
18 **Q.** Can I ask you this: putting aside any agreement or
19 disagreement about the protective effects of FRSM versus
20 FFP3, Professor Beggs certainly opined that a middle
21 ground, whether it be FFP2 or something else, should be
22 explored. What's UKHSA's stance on a potential middle
23 ground; do we need to look into that?
24 **A.** Yeah, well, first of all I would say that FFP2s need fit
25 testing too, so it's not that you can wear an FFP2 and

1 not get fit testing. I think many of us -- and I think
2 there's -- some of the emails that have been presented
3 during the course of this talked quite a lot to HSE and
4 others about whether we absolutely need to do fit
5 testing, would the filtration of a mask help. I think
6 we need to discuss that and be clear about it and what's
7 different about a normal situation and an emergency
8 situation, where changing from, you know -- on average,
9 I mean, I've used FFP3s to care for individuals with
10 highly complex infections for 30 years almost but that's
11 a very small proportion of the hospital and, if we want
12 to do this and we want to do this more generally, and
13 that is the decision and the consensus that that's the
14 place to do then we have to have the place ready for
15 that and it wasn't ready and it still isn't ready to fit
16 test everyone and to have a variety of masks available
17 for the range of faces that we thankfully have in our
18 NHS.
19 So I think it's -- and that's where I think I would
20 come down to operational evidence and an agreement about
21 the way forward in this as really important, and I think
22 that we see respiratory viruses every year, we see them
23 every winter in the NHS. Just because the pandemic's
24 over doesn't mean we cannot understand this better.
25 **MS CAREY:** My Lady, they're all my questions. I know there

1 are some core participant questions but there may be
2 some matters your Ladyship --
3 **LADY HALLETT:** Yes, there are, I'm afraid.
4 **Questions from THE CHAIR**
5 **LADY HALLETT:** I appreciate you saying we need a suite of
6 interventions but I'm going to have to take you back to
7 FFP3 masks, Professor. It's just to check that you did
8 say -- I've got from the [draft] transcript, you said
9 about FFP3 masks:
10 "The evidence is weak that FFP3 protected more than
11 fluid-resistant surgical masks."
12 Right?
13 **A.** Correct.
14 **LADY HALLETT:** And you are saying that?
15 **A.** Correct.
16 **LADY HALLETT:** As a layperson, I tried one of these on
17 yesterday, so I could find out what people were saying.
18 **A.** Yes.
19 **LADY HALLETT:** So that's the FFP3 --
20 **A.** One of them, yeah.
21 **LADY HALLETT:** -- and that's the fluid-resistant surgical
22 mask.
23 As a layperson, just putting that on, there seems to
24 be lots of gaps, it's quite flimsy but, putting that on,
25 I had to be shown how to do it, going back to the fit

1 testing, surely just looking at it, that offers so much
2 more protection; it must do, mustn't it?
3 **A.** But can I just explain one of the challenges that we
4 have is that, in hospitals, there was, and I'd have no
5 doubt, there was transmission from people who --
6 patients who had infection but I think, as you've seen
7 in some of the studies, that the most transmission was
8 from healthcare worker to healthcare worker, which would
9 mean they needed to wear those all the time and then
10 there was significant transmission --
11 **LADY HALLETT:** That's a different point. I'm sorry,
12 Professor, I'm going to have to interrupt, that's
13 a completely different point. It may be associated,
14 there may be disadvantages to wearing them all the time
15 and you may get the ulcers. Some may say getting
16 an ulcer isn't as bad as getting Covid but there are all
17 sorts of arguments. I just want to challenge that that
18 article **(indicated)**, basically, there's weak evidence to
19 say that the, apparently, much stronger-looking,
20 closer-fitting, has to be fit tested article, there is
21 weak evidence it offers better protection than that.
22 **A.** Correct.
23 **LADY HALLETT:** You're sticking to that?
24 **A.** I am. I'm a clinician and scientist and I can only go
25 with what the evidence has done, from looking at it in

1 hospitals, in healthcare facilities, and I think that --
2 you know, that when we do something, when we talk about
3 wearing something in -- rather than just wearing it for
4 five minutes or ten minutes and looking at it in that
5 way, we have to talk about how it's worn for a 12-hour
6 shift, how it's worn repeatedly, day after day, and
7 that's about operational interventions that are able to
8 be applied for many days, weeks and months, and that's
9 where -- they work really well in the lab, don't get me
10 wrong, the laboratory is really clear, but when you look
11 at them in practice --
12 **LADY HALLETT:** It's the way people wear them. In other
13 words, because they're uncomfortable people may take
14 them off?
15 **A.** There may be all of those things but that's what matters
16 when you try and do something in practice is: does what
17 happens in the laboratory actually work in practice, in
18 real life, in the scenario where you're managing it?
19 And that's the challenge that we have.
20 **LADY HALLETT:** Right. Another matter that a core
21 participant asked me to explore, you talked about
22 enabling practices, and I think what you meant was
23 a practice whereby, if I'm a healthcare worker, I can
24 choose the kind of mask that I want to wear.
25 I just wondered, and this core participant wondered,

1 how does that work in practice, you know, if I'm a ward
2 manager, or whatever they're called these days -- I'm
3 sure people have changed the titles, they always do --
4 how does that work, how is it organised so that, you
5 know, I might have one nurse saying "I want to wear
6 that", I might have a doctor saying, "I want to wear
7 that"; how do you arrange that if everybody is allowed
8 just to choose their own mask?
9 A. So we make those decisions every day in normal times, so
10 for example, if I'm working in a ward and I'm seeing
11 patients in the emergency department or on the ward,
12 before I go in and see an individual patient, I assess
13 whether I think there is a risk and what that risk is.
14 I have a variety of personal protective equipment,
15 from aprons and gloves to a range of masks available,
16 and that that is -- there's standard guidance that's
17 there, but you can always change what you are
18 considering wearing based on the risk assessment.
19 I think one of the things for me that really is
20 important, and I think we need to again highlight, is
21 that some people's either perceptions of risks or their
22 real risks for their underlying conditions that they may
23 have, or the fact that they are pregnant, might mean
24 that they want a higher level of protection at a certain
25 point in time to others, and we know that because right

1 now when we interview healthcare workers, their
2 perception of risk right now when they're seeing Covid
3 patients is very difficult -- different than it was, and
4 individuals right now make those risk-based decisions on
5 a day-to-day basis. What we need to do is determine how
6 we use the information that people have acquired in the
7 last few years in the best way possible to inform not
8 just a pandemic but management of patients with
9 infectious diseases in hospital every day.
10 LADY HALLETT: Thank you.
11 I think, Ms Sen Gupta, you have a few questions.
12 You're over there.
13 **Questions from MS SEN GUPTA KC**
14 MS SEN GUPTA: Thank you, my Lady.
15 Professor Hopkins, I represent the Frontline Migrant
16 Health Workers Group. Our clients' members include two
17 particular categories of worker. First, outsourced
18 non-clinical workers, such as cleaners, medical
19 couriers, porters, security guards and taxi drivers, who
20 were in precarious employment, including zero-hours
21 contracts, on low wages, and include ethnic minority and
22 migrant workers. And second, migrant clinical workers,
23 such as Filipino nurses, whose visas prevented recourse
24 to public funds and whose leave to remain in the UK was
25 contingent on their continued employment.

1 I'm going to provide some brief context by reference
2 to your witness statement before asking you a few
3 questions.
4 At page 57 you included a quotation from the
5 Environmental Modelling Group paper produced on
6 11 February 2021 as follows:
7 "There is a clear interplay between occupational
8 risk of SARS-CoV-2 transmission and socioeconomic
9 [inequalities], which reflects the amplifying effects
10 between the working environment, crowded housing, job
11 insecurity and poverty."
12 At paragraph 439 of your statement, and as just
13 referred to by Ms Carey, you note that the PHE report
14 published in August 2020 found a high risk of dying
15 among those living in the more deprived areas than those
16 living in the least deprived, and in black, Asian and
17 minority ethnic groups than in white ethnic groups.
18 Now, against that context, when PHE and UKHSA were
19 producing guidance during the pandemic, as described at
20 section 3 of your statement, what specific consideration
21 was given to the protection of outsourced non-clinical
22 workers?
23 A. Thank you. So I think that, firstly, when we were
24 providing guidance we were doing it for the public at
25 large, so -- as well as the individual in IPC guidance

1 for healthcare workers that's here. In developing our
2 guidance for the public, we looked particularly at the
3 public sector equality duties --
4 Q. I'm sorry to interrupt, we have very limited time,
5 I'm not asking you about the public, I'm asking you
6 specifically about outsourced non-clinical workers, and
7 specific consideration that was given to that group.
8 A. So I think I would say that the -- all of the workers
9 that worked for the NHS or in the NHS, if that's what
10 you're asking, were included in the guidance. There was
11 no group that were excluded.
12 Q. What about specific consideration being given to the
13 protection of migrant clinical workers?
14 A. So, again, that would have been included as part of the
15 public sector equality duty rather than specific groups.
16 Q. So neither of those groups were given specific
17 consideration; is that right?
18 A. I think they were included in general considerations.
19 Q. Thank you.
20 Is it right that the provision of PPE to outsourced
21 non-clinical workers was not specifically considered by
22 PHE, UKHSA?
23 A. So when the guidance was written, it included any staff
24 that were employed or delivered care or worked in the
25 NHS. It was not particularly for outsourced or

1 insourced. So if they provided a care pathway for the
2 NHS, then they were considered included in the guidance.
3 **LADY HALLETT:** Ms Sen Gupta, you asked permission to swap
4 a question, you have permission if you wish to do so.
5 **MS SEN GUPTA:** I'm very grateful, thank you, my Lady.
6 Professor Hopkins, was any specific consideration
7 given by PHE/UKHSA to destitution and deportation as
8 potential consequences of self-isolation for low-wage
9 outsourced workers and migrant workers?
10 **A.** So we discussed with the government to ensure that
11 people would be able to isolate, we discussed with the
12 government the ability to create self-isolation
13 payments, and we worked with the local authorities to
14 support individuals who needed to isolate.
15 **Q.** Thank you. In relation to a question about disparities
16 that CTI just asked you this afternoon, you used the
17 phrase "culturally appropriate messaging, involving
18 black and minority ethnic groups". You appeared to
19 suggest that it is for black and minority ethnic groups,
20 rather than the healthcare system, to change their
21 behaviour in order to reduce the risk of death.
22 What did you mean when you referred to "culturally
23 appropriate messaging, involving black and minority
24 ethnic groups"?
25 **A.** So I did not mean, if that's what is perceived, that

1 I thought that there was differing messaging or
2 messaging about changing their behaviour. I think what
3 I was recognising is that there are groups of
4 individuals who live in multigenerational households, in
5 different situations, and that therefore their risk in
6 those households was different, so just to clarify that.
7 In terms of messaging, one of the things that we do
8 as an organisation, and we did during the pandemic, is
9 something called co-creation, so where we work with
10 different groups and sectors for guidance to ensure that
11 the guidance is understood, that the guidance works for
12 them, that they can understand it and they can deliver
13 it, and that they provide feedback on the words that
14 we're using to ensure that the language, the messaging
15 is understood by very wide groups in the population.
16 **MS SEN GUPTA:** Thank you, my Lady.
17 **LADY HALLETT:** Thank you, Ms Sen Gupta, I'm very grateful.
18 Mr Thomas.
19 Mr Thomas is also over there.
20 **Questions from PROFESSOR THOMAS KC**
21 **PROFESSOR THOMAS:** Good afternoon, Professor Hopkins.
22 I hope I can be heard; yes?
23 **A.** Yes.
24 **Q.** I represent FEMHO, the Federation of Ethnic Minority
25 Healthcare Organisations, and just so you know, FEMHO is

1 particularly focused on the unequal impact that Covid
2 had on the black, Asian and minority ethnic healthcare
3 workers.
4 As you know, and have given evidence this afternoon,
5 these workers were disproportionately affected by the
6 pandemic, facing higher infection rates, higher
7 mortality rates, and greater challenges in accessing
8 appropriate protective equipment.
9 My first question, I've got a handful of questions
10 and I've got a short period of time to do it, so
11 I'll try to be focused. My first question is this: when
12 did you first become aware that there was an issue of
13 disproportionate infection and death amongst black,
14 Asian and minority ethnic healthcare workers and
15 patients?
16 **A.** So I think that was a gradually evolving situation from
17 stories that were being told to us and the NHS
18 throughout late March 2020 and into April 2020.
19 **Q.** Okay. Given the known disparities in the Covid-19
20 outcomes amongst these ethnic minority populations, help
21 me with this: what specific measures were taken to
22 address these disparities early in the pandemic
23 response?
24 **A.** So I think the first thing I would say is that one of
25 the reasons why we were worried about some of the

1 transmissions and the very sad deaths that we saw in
2 those first weeks were that we believed that people
3 needed to have more access to fluid-resistant surgical
4 masks to prevent transmission in healthcare settings,
5 which was the reason for the guidance in April 2020,
6 because of hearing about healthcare worker to healthcare
7 worker transmission, about hearing about clusters of
8 infections. So that was very much the step change.
9 That was unprecedented at the time that we would ask
10 everyone to wear a face mask to reduce the risk of
11 transmission.
12 Subsequently, the NHS, as the lead employer, worked
13 with some of the team members in Public Health England
14 to develop a risk assessment approach and to consider
15 the approaches that needed to happen at individual
16 organisations by the organisations who employed people.
17 **Q.** I'm going to come on to that in a moment. Okay,
18 thank you for that.
19 What, if any, were the lessons learned from
20 observing and addressing this disparity, and how did
21 these inform any adjustments or improvements in the
22 ongoing pandemic response?
23 **A.** Well, I think the pandemic response changed at all times
24 in many different ways. I think first of all talking
25 and being clear about it, releasing the disparities

1 report and being very open about the data was one of
2 PHE's central roles in this. Convening groups, talking
3 to community groups, talking to groups of people who
4 were affected, understanding how they were infected,
5 improving the information that was being provided.
6 And finally I think, in relation to vaccination,
7 very much working with community groups and
8 organisations to -- that had been affected by Covid-19
9 and -- throughout 2020 to ensure that vaccine was
10 available in different sites and centres in different
11 ways that they would be enabled to receive the vaccine
12 as soon as possible.
13 **Q.** Let me move on. I want to now turn to the public sector
14 equality duty and the health inequality assessment on
15 PPE. Okay?
16 So, as regards the public sector equality duty and
17 the health inequality assessments by Public Health
18 England and the UKHSA on PPE -- and for your information
19 you discussed this in your witness statement at
20 paragraph 376 -- the first question is this: can you
21 clarify what the health inequality assessment for PPE
22 guidance included beyond the June 18, 2020 guidance?
23 **A.** So the public sector equality duty looks at the elements
24 that we can look at for public -- age, gender,
25 sexuality, ethnicity, and equalities and disability.

1 Where those were assessed by the teams performing and
2 developing the guidance, they looked at the range that
3 they could do and they assessed whether there was
4 an inequality by the essence of the guidance or how that
5 could be addressed in different ways. And so the issues
6 were often that some elements of that could not be
7 addressed because there was no evidence, but where there
8 was evidence those were addressed by particular
9 statements in the guidance.
10 **Q.** Again, on the same page at -- sorry, same paragraph,
11 paragraph 378, you suggest that there was no unlawful
12 discrimination based on factors such as race and
13 ethnicity. Question: was there a specific health
14 inequalities impact assessment on race, ethnicity, and
15 if not, why wasn't this done, especially given the known
16 vulnerabilities of ethnic minority healthcare workers?
17 **A.** So race and ethnicity would be included in a standard
18 assessment, so would have been included in all of the
19 public sector equality duty assessments that were
20 carried out, rather than performing it separately.
21 **Q.** You mention at paragraph 378(b) and (c) that facial hair
22 for religious or cultural reasons impeded the
23 effectiveness of PPE. Question: do you think that just
24 merely providing guidance on suitable facial hair was
25 adequate, given how critical PPE fit is for those

1 workers? Couldn't more have been done to ensure that
2 they were properly protected?
3 **A.** So there was, in the guidance, also reference to the
4 respirators, but that required access to the
5 respirators. I think the importance about some of the
6 pictures that were there to help share with people what
7 sort of facial hair was able to be worn with traditional
8 FFP3s were there to assist people.
9 My understanding at the time was that individuals,
10 if they were not able to be fit tested for certain
11 roles, would then be supported to find alternative
12 respirators that could be used or alternative roles
13 where they would be able to deliver their clinical role
14 in a different role not requiring the particular mask
15 that they had tried on.
16 **Q.** Just help me, so let me just step in here, I mean to
17 say, when I say couldn't more have been done, could
18 I just suggest a few things and you can tell me whether
19 they were considered.
20 So, for instance, active outreach, proactive
21 communication with healthcare providers, training and
22 fit testing, employer accountability in issuing clear
23 guidance to employers about their legal duty to provide
24 suitable and adequate PPE for their staff, stockpiling
25 alternative PPE.

1 So when I say couldn't more have been done,
2 I'm talking about those sorts of measures. Would you
3 agree?
4 **A.** So I think fit testing was done, and -- for example,
5 fit testing was done and performed on a range of
6 different masks and a range of different respirators,
7 depending on what was available. Guidance was really
8 clear that there was an employer responsibility, and
9 this is not an employer responsibility just for the
10 pandemic, it's a responsibility that exists today and
11 a responsibility that existed beforehand.
12 And I do agree that when we're planning for
13 stockpiling, we need to plan for a range of masks and
14 a range of respirators, if that's what we wish to do,
15 that will fit a variety of different faces, including
16 a variety of different facial hair.
17 **Q.** I've nearly finished, just a couple more questions.
18 Let me come on to the Public Health England
19 disparity 2020 review. Question: do you accept the
20 evidence presented by the experts to this Inquiry,
21 that's Professor James Nazroo and Laia Bécares, that the
22 higher infection and mortality rates amongst black,
23 Asian and minority ethnic healthcare workers were
24 directly linked to their overrepresentation in high-risk
25 roles and greater exposure to Covid-19 patients?

1 **A.** So I think that's not just in healthcare but in many
2 other settings as well. I think that it's really
3 important that healthcare workers in the UK are
4 extremely diverse, come from many different countries to
5 work here, and we need to recognise all of those
6 different ethnicities and enable them to do their job
7 well and safely.
8 I think that it's also important to recognise that
9 there are many other occupations, particularly in some
10 urban centres, that are dominated by ethnic minorities
11 and recent migrants, and we need to ensure that we look
12 at that across the whole society.
13 **Q.** Well, I'm grateful for that response and, whilst
14 I accept what you say, Professor, this is my next
15 question: given the clear data that there was very early
16 on, as -- late March, as you've just indicated, do you
17 not agree that there was a delay in responding to these
18 findings? It's right, isn't it, that more should have
19 been done at an earlier stage to address the risks to
20 these communities? Can we agree on that?
21 **A.** I would say yes, we can agree that more should have been
22 done for lots of things, and should continue to be done.
23 **Q.** Well, I'm not talking about lots of things, I'm being
24 very specific, because we're here in this Inquiry
25 looking at healthcare.

1 **A.** Well, I think more could be done for healthcare workers
2 then, but I also think it's important that more can be
3 done on an ongoing basis to improve health and care
4 provision.
5 **Q.** What do you make of the criticisms, how do you respond
6 to the criticisms such as those made by Professor Khunti
7 that the Public Health England report failed to offer
8 clear actions or timeframes to address the greater risks
9 faced by ethnic minority communities? Can we agree on
10 this: this was a missed opportunity, wasn't it?
11 **A.** So I think that the report that we commissioned at
12 Public Health England was to provide a description of
13 these disparities. There were separate -- a working
14 report and a separate report that looked a lot more
15 about the engagement and the community engagement
16 exercise that took place, and a lot of work that went on
17 with organisations to improve and deliver actions
18 related to the disparities. The report that was
19 presented here is the report describing what those are,
20 to define the way forward.
21 **LADY HALLETT:** I'm afraid I'm going to have to ask you to
22 stop, I'm really sorry, Mr Thomas.
23 **PROFESSOR THOMAS:** I'm grateful, my Lady.
24 **LADY HALLETT:** Ms Gowman.
25 **Questions from MS GOWMAN**

1 **MS GOWMAN:** Professor, I ask questions on behalf of Covid
2 Bereaved Families for Justice Cymru, the Welsh bereaved.
3 You state at paragraph 93 of your statement on the
4 issue of testing that:
5 "A UK-wide approach was agreed [as] the most
6 effective way to manage epidemiological and response
7 arrangements to break the chains of transmission".
8 Just for some context, before I get to my questions,
9 we know that in fact in Wales and England there was
10 a divergence of approach in respect of the issue of
11 testing, particularly in relation to testing of
12 healthcare workers and patients during the pandemic.
13 I'll provide one specific example where this was
14 felt particularly acutely. In November 2020, the
15 UK Government introduced twice-weekly routine testing of
16 all healthcare workers in England. In contrast, the
17 Welsh Government did not introduce routine testing of
18 all healthcare workers until January 2021, with roll-out
19 in fact not happening until much later, closer to
20 March 2021.
21 So turning to my questions with your comment at
22 paragraph 93 firmly in mind, do you consider that
23 divergence between England and Wales on the approach to
24 the testing of healthcare workers negatively impacted on
25 the effectiveness of the UK-wide epidemiological and

1 response arrangements?
2 **A.** Thank you. So I think, first of all, as you know, as
3 we've said previously, health and public health are
4 devolved but we try to maintain consensus as much as
5 possible. We were very keen to roll it out in England
6 and had been for some time. I think that Wales made
7 a decision that they thought there were other
8 interventions they wished to do before this, but agreed
9 with the early evidence that we had that it was
10 providing an effective route to reduce transmission from
11 healthcare worker to healthcare worker.
12 I think that rapid diagnostic tests were new, there
13 was a lot of controversy about them, as somebody who was
14 very much involved in their roll-out and development and
15 evaluation, and actually it took time for people to
16 believe in them and that they were a useful
17 intervention.
18 And I think that some delays in rolling them out
19 were understandable because of the evidence that was
20 emerging, but we also had -- and I believe that the
21 faster roll-out of them will definitely have prevented
22 infections, though I would also recognise that people
23 with symptoms who were healthcare workers or otherwise
24 had widespread availability of PCR tests at that point,
25 and so a lot of detections would have been through those

1 methods.
2 Q. I think you've answered my second question in respect of
3 co-ordination as well, so I'll move straight on to my
4 final question on that topic.
5 Do you have a view on which of the two nations'
6 approaches to testing, particularly in relation to
7 asymptomatic healthcare workers, would have been most
8 effective in breaking the chains of transmission?
9 A. Well, I think the reason why we pushed so hard to
10 develop rapid antigen testing, to develop them and
11 evaluate them and then introduce them into practice, was
12 we recognised that asymptomatic infection was occurring
13 and asymptomatic transmission was occurring, and this
14 was a major intervention to reduce people who were
15 asymptomatic. About half the people at that point were
16 asymptomatic, and at least half of those people were
17 transmitting with asymptomatic infections, or that's
18 what we were seeing in the data, and therefore
19 I believed that rapid antigen tests -- and I still do --
20 had an effective role in reducing transmission. And,
21 therefore, if we had introduced them earlier, it would
22 have had a greater impact, delaying them may have
23 reduced the size of their impact, especially when we had
24 such widespread transmission in December 2020.
25 Q. So do I take it from that answer that the basic answer

1 is that you think that the English approach was better
2 than Wales?
3 A. I think that we may have disagreements in different
4 countries. My view is that the English approach to
5 testing widespread healthcare workers was the
6 appropriate approach for us at that time.
7 MS GOWMAN: At that time. Thank you, Professor.
8 Thank you.
9 LADY HALLETT: Thank you, Ms Gowman.
10 Ms Hannett, where are you? You're right over there.
11 **Questions from MS HANNETT KC**
12 MS HANNETT: Professor Hopkins, I act on behalf of the
13 Long Covid groups, and I have a number of questions
14 about data gathering and surveillance of Long Covid by
15 both Public Health England and UKHSA.
16 Can I deal first with PHE. Did PHE gather data on
17 Long Covid?
18 A. So we routinely did not gather data on Long Covid
19 because it was very difficult to determine. We utilised
20 two sources of the main data. One was the collection
21 from ONS that looked at the individuals who had
22 prolonged symptoms in the community, and the second was
23 the SIREN study in healthcare workers where we did
24 regular surveys to ask people how long their symptoms
25 had lasted.

1 Q. Could I just follow up on that, because in January 2021
2 Public Health England said in a note to the CMO that
3 they had recruited staff to support the development of
4 surveillance on post-acute Covid-19 syndromes; did that
5 not come to be implemented?
6 A. So that was part of the studies we were doing with ONS
7 or through the SIREN study in healthcare workers. We
8 did also try and recruit individuals but that actually
9 didn't work out so well as the majority of individuals
10 were already delivering -- or attending hospitals, and
11 the main role to understand Long Covid needed to be
12 clearly delineated in hospitals.
13 Q. Sorry, Professor, could I just clarify that. Are you
14 saying you tried to recruit individuals through the
15 SIREN study in healthcare workers to look specifically
16 at Long Covid, but that that didn't work out?
17 A. No, we only had survey data from them rather than
18 anything else.
19 Q. Right. Can I just ask, then, one further follow-up
20 question on that. Why is it, then, that Public Health
21 England didn't collect data on Long Covid even though it
22 collected data on Long Covid -- sorry, let me start that
23 question again.
24 Why didn't Public Health England collect data on
25 Covid -- Long Covid even though ONS was collecting it,

1 even though it collected Covid data when ONS was
2 collecting it? In other words, collection by ONS wasn't
3 a prohibition to the collection of data in respect of
4 Covid-19 itself?
5 A. No, but ONS study was at that point being funded by PHE
6 and UKHSA and very much involved those teams. It was
7 the largest study of its kind globally to look at
8 individuals and follow them over time, and so that
9 was -- and a very important part of what we do is trying
10 not to replicate it.
11 Secondly, the other major source of where we collect
12 data from is routine data that is collected at either
13 the primary care or the secondary care level and there
14 was not routine coding that we would be able to analyse
15 the data that was already being collected to understand
16 who had Long Covid in those settings, and there still
17 isn't standardised coding to allow us to understand
18 that.
19 Q. Can I just follow this, so in terms of UKHSA, does the
20 position remain the same in respect of the UKHSA
21 collection of Long Covid data, ie that it doesn't itself
22 collect data on Long Covid?
23 A. So it doesn't itself collect new data. What it's doing
24 is trying to ensure that any data that's available in
25 primary care records, in secondary care records, where

1 people have consented for their sharing of the data, or
2 from any studies, is brought together to understand the
3 impact of Long Covid, but actually the predominant data
4 collection for Long Covid is happening in the NHS, in
5 the NHS-funded clinics.
6 **Q.** Can I ask whether that's satisfactory from UKHSA's
7 perspective, given that it's not possible for you to
8 effectively understand the extent of the disease burden
9 without understanding how Long Covid is presenting in
10 the community?
11 **A.** So I think it's really important to understand that we
12 require clear definitions of what to survey, clear ways
13 of coding that data within the health system records in
14 order for us to perform surveillance. Those studies,
15 funded by the National Institute for Health Research,
16 are still ongoing, and it's those studies that will
17 allow us to provide estimates in the population rather
18 than needing to require to collect data from every
19 single individual.
20 **Q.** Professor Hopkins, can I just go back to the SIREN study
21 and can I ask whether the SIREN study looked at all at
22 the effects of Long Covid on healthcare workers?
23 **A.** Yes, it has, and we have a publication that will be
24 coming out shortly, which I'm very happy to share with
25 the Inquiry in due course, which is looking at the

1 proportions of staff that had symptoms of more than
2 12 weeks for a wide range of symptoms and at each of the
3 variants -- at each of the times of different variants
4 throughout the pandemic, and the time off work that
5 people have had or the amount of people that have
6 changed their job.
7 We've just finished the analysis and I'm very happy
8 to share that.
9 **Q.** Then my final set of questions, Professor Hopkins,
10 concerns future pandemic planning by UKHSA. Have plans
11 for monitoring and surveillance of any potential
12 long-term sequelae for a novel virus been incorporated
13 into future pandemic planning?
14 **A.** So, again, I would say that when we understand the
15 effects of the longer term consequences and how we can
16 measure those is considered, I think that again that
17 what we really need to do is understand what the size of
18 the study needs to be to understand the problem, like
19 the ONS study or like the studies that are now being
20 funded through NIHR.
21 UKHSA's role will be to ensure that all of the data
22 that's being collected by other studies is available, if
23 needed, to collect additional data but I think there are
24 a range of studies that would depend on the infection
25 and the consequences of the infection that would require

1 research funding in the first instance to provide
2 consent from individuals.
3 **Q.** So is the answer presently no?
4 **A.** So there is presently a research framework to collect
5 data and that research framework is funded by
6 government. UKHSA is not a research funder but we would
7 be contributing to that research framework to ensure
8 that the studies are available.
9 **Q.** So you agree that it's important that they should be in
10 due course?
11 **A.** It's important that they are studied so that we
12 understand them better.
13 **MS HANNETT:** I'm grateful.
14 Thank you, my Lady.
15 **LADY HALLETT:** Thank you, Ms Hannett.
16 Right, I think we have Ms Jones.
17 **Questions from MS JONES**
18 **MS JONES:** Thank you, my Lady.
19 My Lady, there might be two Ms Joneses. Who were
20 you expecting to hear from?
21 **MS CAREY:** It's the John's Campaign Ms Jones.
22 **LADY HALLETT:** I thought that went without saying but
23 anyway. Ms Jones?
24 **MS JONES:** Thank you, my Lady.
25 Professor Hopkins, I represent Care Rights UK, the

1 Patients Association and John's Campaign, all of whom
2 represent individuals drawing on health and social care
3 and their loved ones.
4 Our question for you today is about the PPE guidance
5 that was published in April 2020 and which you have
6 referred to in your evidence as introducing enhanced PPE
7 recommendations across different health and social care
8 settings.
9 When this guidance was formulated, did Public Health
10 England consider the needs of patients with particular
11 disabilities or additional needs and what, if any,
12 consideration was given to the potential detrimental
13 impact on those patients of healthcare staff being
14 required to wear certain forms of PPE?
15 **A.** Yes, we did discuss and consider it. At the time
16 there's the challenge of particularly communicating with
17 people who are older, people who are hard of hearing,
18 people who require lips to be able to read people, and
19 the balance at the time was that that was really
20 important and that we needed to continue to look and see
21 what alternative approaches would be available in the
22 future, but that the predominant reason to do it was to
23 reduce transmission of the virus and that this was
24 really important in those settings.
25 Over time, new masks became available with

1 a see-through component in it and those were also then
2 included as possibilities in -- for organisations to
3 consider.
4 **MS JONES:** Thank you, Professor Hopkins. That's my only
5 question.
6 **LADY HALLETT:** Thank you, Ms Jones.
7 **Further questions from THE CHAIR**
8 **LADY HALLETT:** Right, I've got a couple of questions the
9 Disability Charities Commission have asked me to put to
10 you and, given the time, I'm going to do it and I'm
11 going to do it quickly.
12 In June 2020, the ONS published its finding that
13 a disproportionately high number of disabled people were
14 dying of Covid-19 and Public Health England published
15 its updated review in August 2020. The question is: you
16 knew by then, because of the ONS study, that
17 a disproportionately high number of disabled people were
18 dying, why wasn't disability recorded as one of the
19 disparities?
20 **A.** As I said earlier, disability is not routinely recorded
21 in notes that we could see and required detailed
22 healthcare records and that was something that came
23 through and then was utilised for things like the QCovid
24 score later but was not available to us for routine
25 daily analysis of data.

1 **LADY HALLETT:** So it wasn't available at the time --
2 **A.** And it's still not available.
3 **LADY HALLETT:** Right. Should it be?
4 **A.** Well, again, it comes back to what data should be made
5 available and, personally, I think that, again, this
6 will require individuals to consent that this data is
7 made available and that we have a way of understanding
8 what the disabilities are. The best way to do that
9 would be through GP records made available to national
10 organisations but that's something that's under
11 discussion.
12 **LADY HALLETT:** Thank you very much. I'm sorry, now
13 I understand the confusion. I hadn't realised it. I've
14 got there. I may be being a bit slow at the end of the
15 day.
16 Thank you very much indeed for your help, Professor
17 Hopkins, I appreciate it's been a long day for you and
18 I'm sorry about the number of times we had to ask you to
19 speak more slowly but it's what happens, I'm afraid.
20 Thank you for your help and I shall sit again at
21 10.00 tomorrow.
22 **(The witness withdrew)**
23 **(4.38 pm)**
24 **(The hearing adjourned until 10.00 am**
25 **on Thursday, 19 September 2024)**

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