Monday, 10 July 2023

(10.30 am)

LADY HALLETT: Ms Blackwell.

MS BLACKWELL: Good morning, my Lady. May I please call Dr Claas Kirchhelle.

DR CLAAS KIRCHHELLE (sworn)

Questions from COUNSEL TO THE INQUIRY

MS BLACKWELL: Thank you, Dr Kirchhelle, for the assistance that you've so far given to the Inquiry. You have provided an expert report that we have at INQ000205178. Can you confirm, please, that that is your report and that it's true to the best of your knowledge and belief.

A. Yes, it is.

Q. Thank you very much. We can take that down.

During the course of your evidence this morning, if you require a break at any time, please just say so. Try and speak clearly and slowly and into the microphone so that the stenographer is able to prepare the transcript.

I'm going to begin by taking you through your qualifications and experience so far as they're relevant to this Inquiry.

You are currently a tenured assistant professor of the history of medicine at the University College Dublin. Prior to that you were a research associate at

the University of Oxford, and you describe yourself as being a historian of bugs and drugs, of laboratory infrastructures and the development, marketing and regulation of antibiotics and vaccines; is that right?

A. Yes.

Q. You are also an honorary fellow of the Oxford Vaccine Group, you have an MA in modern and medieval history from the University of Munich, an MA in social sciences from the University of Chicago, and you are a doctor of philosophy at the University College, University of Oxford.

You have a large number of published journal articles, edited volumes and book chapters, some of which we'll touch upon during the course of your evidence, and you are the recipient of a number of research and engagement and teaching awards, which are all listed in your CV.

You were instructed by the Inquiry to address the following matters: the history of public health bodies in England, Wales, Scotland and Northern Ireland; a description of the key EPRR functions and structures of those public health bodies, including public health laboratories, which we will feature very much during the course of your evidence; and the impact of the changes of public health structures on issues such as the

cohesion of the public health system, information sharing, the workforce, and on pandemic preparedness and resilience.

You make it clear within your report that you were assisted by others in its compilation, but can you confirm, please, Dr Kirchhelle, that the text and opinions stated in the report are yours.

A. Yes, I would, however, like to acknowledge the fact that peers have reviewed this, as of Professor Sally Sheard, Professor Virginia Berridge, Professor John Stewart and I've particularly drawn on help by Dr James Lancaster, and I would also really like to acknowledge the fact that I was allowed to draw on unpublished research and insights by Professor Allyson Pollock and Peter Roderick.

Q. Thank you.

Your report is in three parts, which correspond with the major shifts of public health policy that took place across all four nations. The first part covers 1939 to 2002, and is an overview of the post-war evolution of United Kingdom public health arrangements and infrastructures prior to the major health security oriented regulatory reconfigurations that took place following the 1990s BSE crisis and also the 2001 attacks on the World Trade Center.

Part 2 covers 2002 to 2010, and is subheaded "Centralisation and Fragmentation", covering the performance of the new integrated health protection bodies at the level of the UK and also the devolved nations, local health services and evolving pandemic preparedness amidst the 2003 and 2009 outbreaks of SARS CoV-1 and swine flu.

Part 3 covers 2010 to 2019 and is subheaded "Austerity and Localism", with a specific focus on the impacts of new doctrines of localism amidst austerity-related cuts to local public health budgets and the influence of new molecular technologies on laboratory infrastructures; is that right?

You know, Dr Kirchhelle, that Module 1 is focusing on a date range from 2009 to 2020, so why is it necessary, in your opinion, for us to go as far back as 1939?

A. So I think there are two reasons for this. The first reason is that the decisions made between 2009 and 2019 were heavily influenced by doctrines which were put in place prior to this and also by structural path dependencies within public health systems that had evolved over decades.

The second thing is that there's a huge diversity of different public health systems that have been put in

place historically in the UK, so I think you need to have this broad view, this high-level review of these things, in order to make informed decisions about how public health can move forward.

Q. Is it right, Dr Kirchhelle, that your own experience focuses on the history of public health in England and Wales, and so although your report includes the consideration of Scotland and Northern Ireland, you have drawn on published reports in order to include that information within your report?

A. Yes, that's true, I'm not an expert on Northern Ireland or Scotland for that matter. The report is a high level report, it summarises peer reviewed published historical evidence, and it also draws, where I can, on primary sources such as those released to me by the Inquiry.

Q. How much published material is available on the devolved nations compared to that of England or the United Kingdom as a whole?

A. Surprisingly little. If you think about the fact that various devolved arrangements have been in place for quite a while, there's a remarkable lack of comparative performance data, but there's also a remarkable lack of really holistic, historical overviews for most of the devolved nations, and then also particularly in relationship to England and Wales.

Q. Right, but you have done your best with the material that's been available to you?

A. Absolutely.

Q. We're grateful for that.

My Lady has heard already about differing types of laboratories, over various time periods.

I am going to ask you to begin by assisting us in setting out broad definitions of the various laboratories that were available to the various devolved nations over the course of time.

Starting with local laboratories, these are predominantly based in NHS hospitals, carrying out clinical microbiological testing to provide diagnoses for patients cared for as either hospital in-patients or outpatients, and they mostly provide a diagnostic service as well for local practitioners; is that right?

A. It's a bit more complicated than that. So the laboratories evolved substantially over the course of the 20th century, so whereas nowadays a diagnostic laboratory would definitely perform the functions that you have described, if you go back there's a broad institutional diversity of laboratories in the UK -- with, in Scotland, for example, university laboratories -- actually part of carrying out core public health functions, which would still be considered

local, in some cases.

Q. Right. About what public health laboratories?

A. So those get formalised a lot after -- actually during the Second World War, when Britain puts in place the Emergency Public Health Laboratory Service in preparation for major outbreaks that are predicted to result from aerial bombing and civilian displacement. So in preparation for the war, the UK designates a series of locations across the country, outside of London, where microbiology can be performed, it will be provided free of charge, to local authorities, and the idea there is to have local microbiological competence that is decentralised and flexible to react to problems as they emerge.

LADY HALLETT: Could you just -- you are speaking terribly quickly.

MS BLACKWELL: I'm so sorry.

LADY HALLETT: I do understand how difficult it is, and you're not the first person, don't worry, but we have to remember that -- maybe if you could pause after the answer, Ms Blackwell.

MS BLACKWELL: Yes, of course.

Medical officers of health, I was going to ask you about. When did they come into being and how did they connect with the Emergency Public Health Laboratory

Service that you've described?

A. The office of medical officers of health emerges in the 19th century and it is one of the first key offices of public health in the UK. The medical officer is in charge of infectious disease investigation and control. It's also increasingly important -- and usually it's a he -- in the form of reporting of diseases. The role evolves quite a bit. For a while they run their own hospitals, at the local level they integrate a variety of services, but after the Second World War they form part of a tripartite function of the new national health service, and this is a similar function across nearly all UK nations, where they function as the central port of call for public health at the local level and can draw on their -- what then becomes the public health laboratory service or the various other microbiological services.

Q. Indeed, did the Emergency Public Health Laboratory Service then become the Public Health Laboratory Service, the PHLS, which we see existing over a long period of time?

A. Yes. The success during the Second World War is so strong that something that is actually just meant as a stopgap emergency solution becomes permanent.

Q. Did it start off as an integrated network of

19 laboratories across England and Wales but by 1969 had the number of PHLS laboratories grown to 63?
A. Yes.
Q. Many of the new laboratories were located within local hospitals?
A. Yes.
Q. All right.

Now, I'd like to display, please, a figure that comes from your article called *Giants on Clay Feet* which is at INQ000207449. We can see that here.

If we go to page 17, and zoom in to figure 1, just to familiarise ourselves with these four charts, are the red dots representing local laboratories and the black dots representing regional laboratories?
A. Yes. The distinctions vary over time, but I think between 1946 and 1965 that's a very accurate description.
Q. Looking at figure A, we can see that at the north of England and Wales there are mainly local laboratories but in the south they are mainly regional laboratories, and we can see that there is a blue square around the Greater London area, which is blown up and depicted in figure B. So we can see that there were a number -- ten in number, I think -- of laboratories in the Greater London area.

Would you have described those as local or regional laboratories?
A. The London laboratories were technically not part of the Emergency Public Health Laboratory Service but of the Emergency Medical Service, however they did contribute to the overall microbiological intelligence gathering.
Q. All right.
A. So, again, over historical time periods of almost a century, the distinctions vary and blur a bit.
Q. Now, if we look at figure C, we can see that by 1946 there were a significantly larger number of both local and regional laboratories. And by 1965, an increase in local laboratories, but around about the same number, if not slightly fewer, of regional laboratories, now configurated in the north west and the sort of southern belt -- or the southern Midlands belt of England.

Is it right that there was no formal requirement to send samples or report disease outbreaks to the Public Health Laboratory Service?
A. That's correct. The idea behind this was very simple: this service was designed to slot into existing public health services without disrupting them, so the idea was you would provide free testing services, free epidemiological expertise, without stepping on anybody's administrative toes at the local level.

Q. By 1972 you tell us in your report that the successful integration of local public health and health services was unparalleled in Western Europe or North America?
A. There is no comparable public health laboratory network.
Q. All right, thank you. We can take that down now.

Moving to a slightly later period, in 1974, was there a major reorganisation of the NHS and local authority services, which led to the abolition of the role of medical officers of health?
A. Yes.
Q. Why were they abolished at that time?
A. There were concerns about the performance of medical officers of health, that the service had become overstretched. I believe there were 550 officers spread over 1,244 local authorities, so that led to concerns both about the overstretched service, and this was also a time when there was significant political desire to reform and make the NHS more efficient. And as a consequence also of the epidemiological shift which we're seeing, where people are no longer primarily dying of infectious diseases but of non-infectious diseases, there's also a relative de-emphasis on the infection control duties and -- that the MOH, you know, had done previously. So it's a constellation of different pressures. The effect at the end of the day is that

this integrating focal point of public health at the local level disappears and is very difficult to replace.
Q. In 1988, a report by the then Chief Medical Officer, Donald Acheson, led to further significant changes, didn't it? Each health authority was then to employ a consultant in communicable disease control, or a CCDC, who was accountable to the newly created office of Director of Public Health, and that's something that we recognise in the Inquiry because my Lady has heard evidence about that role before this morning.

The regional DPHs, or directors of public health, would co-ordinate health protection across the districts or their regions and report annually on the health of the population in the area that they served; is that right?
A. That's correct.
Q. Just pausing and remaining for a moment on the situation of laboratories, though, the 1970s had seen 11 of the Public Health Laboratory Service laboratories close, and by the early 1980s, competition for limited public health resources amidst a growing emphasis, as you've said, on non-communicable diseases led to cost-cutting reviews and posed what you describe as a threat to the whole system; is that right?
A. Yes.

Q. From the 1990s onwards, the Public Health Laboratory Service had sole management of the laboratories and charged health authorities and GPs for diagnostic tests; is that right?
A. That's correct.
Q. How did that formalised charging arrangement impact the relationship between the Public Health Laboratory Service and the NHS?
A. It significantly complicated the very effective yet quite informal arrangements of the post-war period. You have to imagine public health, especially at the local level, as a bricks and mortar infrastructure, where people knew where to go. It was clear that there was an anchor point within the PHLS. That local anchor point was integrated into a national network, and often there were informal economies of intelligence gathering. So, as a microbiologist, you would speak to your local clinician, you would know what was going on, you would also speak, prior to the abolition, to the MOH. So it was a very dynamic horizontally-integrated system that was still vertically connected upwards, especially after the Acheson reforms, with the ability to surge if there were outbreaks going forward.

The idea of the internal market, that's introduced in the 1990s, was that you would create efficiency in

the system by making the system perform according to market rules. The problem was, however, with the PHLS, that charging for every single service in many ways destroys these informal economies of exchange. It incentivises the NHS and other providers, perhaps, to go with private providers or it incentivises perhaps less testing and less reporting.

So the PHLS was struggling during this time.

Q. All right.

Moving forward a few years to the mid to late 1990s, the PHLS was divided into ten regional groups with devolved budgets, and that number of groups was reduced to eight by 2002, at which point the Welsh public health arrangements diverged significantly, didn't they, from those in England?
A. Yes, that's a result of a major re-ordering, actually more at the English level than at the Welsh level.
Q. Well, let's now deal with each of the four nations independently, please, starting with England, and the time period 2002 to 2010.

You tell us in your report that the Blair government made significant reports to health services and the public health infrastructure, and the ones that I want to focus on during this period are the establishment of the Health Protection Agency, the transfer of control of

the PHLS local public health laboratories to the NHS hospital trusts, and also the setting up of the primary care trusts.

You describe the establishment of the Health Protection Agency as a painful birth, and that staff described the integration at that time as challenging, which perhaps isn't surprising, given that it fused into a single entity 80 organisations in 140 locations, and 400 distinct IT applications with 40 to 50 websites.

It was estimated, was it not, that it would take up to five years to fully integrate all HPA services, and did that prove to be the case, Dr Kirchhelle?
A. So the painful birth is a quote from witnesses at the time, actually it's from the first executive of the HPA who describes it in those words. I'd like to take you back very quickly just into why the HPA was created in the first place.
Q. Yes, please.
A. This was an attempt to move and fundamentally reform public health reporting to a more upstream function of intelligence gathering and co-ordination. There had been long-standing complaints about parallel hierarchies and competition between the NHS and public health laboratory provision at the local level, and following the 9/11 attacks, but also following a request by the

UK's government, the then UK CMO Liam Donaldson reconceptualised health protection in a very American CDC-led style, where you would integrate and combine responsibilities for infection control, radioactive and chemical hazard control, into one big agency that could, in a kind of command and control system, gather the intelligence and swoop in and help, should there be problems at the local level.

Now, as you've already referred to, it's an organisational behemoth in contrast to the initial infection control infrastructures, and the painful nature of the birth also results from the fact that there are very strong distinct identities within these organisations which are all being integrated.

So what you have witnesses describing is an extreme territoriality of different departments vying for resources within the HPA, and at the same time you have, I think, just a significant organisational challenge. It was set up within a matter of months. There was not years of preparation for this set-up, for things to work. So it was running from 2003; whether the functions were perfect, I think the witnesses agree that there were significant issues.
Q. Right.

In terms of the transfer of the local public health

laboratories, let's just return, if we can, please, to your *Giants on Clay Feet* report and look at another set of figures showing, as we can see in the description at the bottom of this page, the extent of laboratory networks under the Public Health Laboratory Service in 1980, and then the HPA in 2010.

Now, what do we see happening in 1980? And take us through how that has transitioned by the time we get to 2010, please.

A. So in 1980 you already see a slightly slimmed down version of the post-war arrangement of public health in England and Wales. We're not talking about Scotland and Northern Ireland here.

Q. Yes.

A. It's a very networked infrastructure of public health laboratories, with regional centres that collate information and a very strong national reference system in Colindale in North London, which is now the headquarters also of UKHSA.

In 2010, what you see is the result of this attempt to make health protection upstream and integrated, so a complete handing away of the local infrastructure of public health laboratories to the NHS, the microbiology service which takes over the running of those local labs, and a very significant limitation of dedicated

public health laboratory capacity into these regional labs, and London actually has two of these specialist centres.

Q. Right. So what we see by 2010 is nine, only, what you would describe as regional laboratories? I know that there are only eight dots on the page, but you've said that there are two --

A. That's a feature of the mapping.

Q. All right.

How did that affect the service that was able to be provided?

A. The ideal of the service was again slimmed down and efficient. So you would have regional teams which would provide local PCTs, so primary care trusts, with advice. They would also be able to commission more detailed public health work from NHS laboratories. But the idea was that the expertise would be condensed in regional centres, which would also provide epidemiologists and epidemic intelligence to counter outbreaks or identify outbreaks.

London again, here, is the centre of most of the specialist laboratories at the time, with Colindale functioning as essentially the heart or the brain of the UK's system here. But you see here a new vision of public health, which is not unique to the UK, this is

something many other countries are doing at the time, but this is this idea of creating a kind of top-heavy, slimmed-down, rapid-response command and control architecture, that is quite different actually from the architecture of emergency that was predominant during the Second World War.

Q. Is there a difference between a specialist and reference laboratory and a public health laboratory?

A. I mean, both are within the public health service. A specialist laboratory will be able to perform, as the name says, specialist tests and highly also have higher security clearance for specific groups of pathogens.

Q. All right. You describe in your report that the dissolution of local PHLS structures was traumatic. Why do you describe it as such?

A. Again I quote, so this is the words of the contemporaries. A large part of the PHLS workforce was obviously located in these local laboratories; they had existed for decades, and had an extremely strong identity. And suddenly these laboratories were transferred to the NHS, a very different employment system, and the PHLS was against the will, essentially, of the board, fused with a much larger agency, and for members of the PHLS, if you look at the witness seminars of the time, it is described as traumatic and very

turbulent, with lots of confusion with -- between lots of different systems and also within the HPA.

Q. What about primary care trusts, their creation and the intention that they would improve or provide a health improvement role? How did they come about and how was that change received?

A. So, I can't -- I think -- I think talking through the history of the overall Blairite reforms of the NHS would be perhaps too big now, but the idea of the PCTs is to unify and to make health and public health more efficient at the local level by integrating various functions, including the health improvement function.

Interestingly, however, the proper officer, so, you know, what previously used to be the MOH, and then was the CCDC, that is now moved to the HPA. So the CCDC is employed by the HPA, with these regional teams, rather than being anchored at this local nexus within the PCTs, and -- I'm sure we'll talk about the pandemic responses -- it causes all manner of confusion where this function is located within the administrative system.

Q. So organisational change on a large scale. In terms of government support for the newly formed HPA, you describe in your report that over this period of time that was somewhat erratic because it had received

£116 million of funding from the Department of Health in 2013, that was its first year in existence, then that rose to £193 million -- I'm so sorry, not 2013; in 2003. Then that rose to £193 million following the 2009 swine flu outbreak, and then went back down to £142 million in the 2012/2013 budgetary year.

That differing rise and fall was also mirrored in staffing levels, wasn't it? So did that in itself cause a level of confusion?

A. I think this is a classic example of yo-yo funding for public health in and outside crises. So once the immediate perception of a crisis has passed, funding tends to go down. Within the HPA it's -- it's difficult to comment on whether the funding itself led to confusion. I think it certainly made it difficult to plan for resilience capability building, if there were these huge fluctuations in funding.

Q. Thank you.

I'd like to move now to the period of time that this Inquiry is concerned with, and it's really 2009 or 2010 up to the time that Covid hit.

You describe in your report that in 2012, in England, we saw the most complex political restructuring of health and public health services that had happened in decades, or perhaps ever. The primary care trusts

were abolished and public health competencies were transferred back to local authorities, as had been the case before their creation, and now we see that the HPA was replaced by what is described as a super-organisation, in the form of Public Health England.

What was the rationale for making these significant and complex changes?

A. So in the case of Public Health England, the rationale is to integrate health protection and health improvement functions. The English reforms actually come after similar reforms in the devolved administrations. So health improvement during this time is becoming very big in international health, and the UK is in line with the trends there.

At the local level, the idea here is, and this is quoting in many ways the reports of the time, is to avoid and overcome what is perceived to be a structurally inefficient structure of the PCTs, and also to empower local authorities to tackle poor health outcomes with their local knowledge. The assumption is local people know best what the local problems are, so if you devolve power to them they will be best able to spend money rationally to take care of this.

Q. Despite those intentions, was there, at first at least,

a blurred statutory overlap between local authority, Secretary of State and the Civil Contingencies Act duties, and I think you describe it in the following terms: what sounded complicated on paper proved complicated in practice?

A. That's true. I think I spent -- on this page I spent probably the most time per page to get my head around who was responsible for what, and I think the Inquiry has shown the famous spaghetti chart.

Q. Yes.

A. I think it's mirrored in that. So if you want me to explain this, I can. I would prefer to read the report itself so that I don't get it wrong, it's so complicated.

Q. All right, we'll turn to do that in a short while, but, by way of a very high-level summary, Public Health England combined previously distinct health organisations, health protection and promotion functions, brought all of those together, which involved a merging of 5,000 staff from 120 organisations?

A. Yes.

Q. Right. Although it absorbed many pre-existing structures, it also differed from its predecessors in key ways: firstly, as we've just mentioned, the combination of health protection and health promotion.

But didn't it also break with post 1950s English traditions of statutory non-departmental public health bodies, because Public Health England became effectively an executive body, as the Inquiry has already heard, within the Department of Health?

That in itself resulted in what you describe in your report as far greater political control over public health activities by its ministers, and also meant that the employees of Public Health England were effectively civil servants and subject to the Official Secrets Act?

A. Yes.

Q. Was that a cause for concern?

A. That was a significant cause of concern ahead of the dissolution of HPA but also after the creation of PHE. I know that Jenny Harries has also commented on the independence that she still perceives PHE had. What the historical investigation shows is that senior microbiologists, HPA officials, have consistent concerns about what this might do, in terms of Public Health Agency's ability to speak openly to power. Ahead of the transformation, the BMA surveys its members within the PHE establishment in 2014; they themselves say that it's more difficult to talk freely. And then, later on, local health authorities polled by Ipsos MORI say that they feel that PHE could do more to lobby for public

health protection to the Department of Health.

So there are numerous different points of evidence which I think paint a slightly more complicated than perhaps Duncan Selbie or Jenny Harries have said.

Q. Just touching upon Duncan Selbie, as you mention him, and the fact that he had, at the time that he took over as chief executive of Public Health England, no scientific or medical background.

He explained in his evidence to my Lady that despite that and the -- we've talked about the light-hearted way in which that was dealt with in *The Lancet* article -- despite that, he felt that he had sufficient experience in the roles that he had fulfilled prior to taking over the chief executive role so that his lack of medical and scientific knowledge did not create any difficulty.

Do you think that it is a problem, that the chief executive of Public Health England was neither qualified in science or medicine?

A. Let me phrase it this way: it's remarkable that for 70 years the UK decided to have a medically qualified and scientifically expert executive of the most important Public Health Agency, consistently. And it's also interesting that the choice for UKHSA seems to have gone in the same direction.

I admire Duncan Selbie's statement for its frankness

and, I think, honesty. I think that it is interesting to see how you would be able to communicate complex scientific information to ministers in meetings as the de facto head of the public health establishment. I have no doubt about the managerial expertise, but I do think that if you look at the statements of previous Public Health Laboratory Service directors and HPA directors, you will see that there was substantial effort that they also had to do to communicate the science effectively.

Q. The 2012 reforms, about which my Lady has heard, and the creation of Public Health England evoked mixed responses from the English public health community, as we've touched upon. When Dame Jenny Harries gave evidence, I took her through five issues which are also dealt with in your report, and I'm going to ask you about now, Dr Kirchhelle.

One, confusion over EPRR responsibilities.

Two, independence from government, which we've already touched upon.

Three, funding issues.

Four, capacity issues.

Five, fragmentation of the services.

So in terms of the first of these topics, confusion over EPRR responsibilities, Dame Jenny agreed that there

was some confusion over those responsibilities arising out of what she described as a complicated, overlapping or blurred state of statutory responsibilities, and although she agreed that it wasn't a perfect system before, there was a level of confusion when Public Health England was first created.

However, she said that whenever there's any level of structural change, there will be a bedding-in period during which there's confusion. Do you agree with that?

A. Of course. I think the salient question to ask is how long the confusion lasts for. And if we look at the preparedness exercises, if we look at all of the statements that we have from internal reviews of public health and they are cited in the report, you see that this confusion is remarkably persistent. So you would expect that after, let's say, seven years after the setting up of an agency the confusion would die down, and unfortunately I think in the documents you see that that is not necessarily the case.

Q. All right.

I'd like to turn to funding, please, and display your report at page 72, paragraph 108. Thank you. We can read through this together:

"Functioning of the new local and national English public health structures was compromised by austerity

politics. At the local level, the abolition of [primary care trusts] meant that overall public health performance was strongly dependent on local authority capabilities to commission and deliver effective services. Ministers had promised to ring-fence the public health budget for local authorities. However, an in-year cut of £200 million in 2015 was followed by further reductions over the next 5 years. According to the Local Government Association, this amounted to a real term reduction of the public health grant from over £3.5 billion in 2015-16 to just over £3 billion in 2020-21 ..."

That's a reduction of 14%.

"Other estimates by the Institute for Public Policy Research spoke of an even more dramatic reduction of £850 million in net expenditure between 2014/2015 and 2019/2020, with the poorest areas in England experiencing disproportionately high cuts of almost 15 percent. Resulting pressures on local public health were exacerbated by an overall 49 percent real term cut in central government funding for local authorities between 2010/11 and 2016/17 and a resulting practice of 'top slicing' whereby authorities reallocated ring-fenced public health budgets to other services broadly impacting health and wellbeing such as trading

standards or parks and green spaces. In 2010, *Healthy Lives, Healthy People* had promised to give 'local government the freedom, responsibility and funding to innovate and develop their own ways of improving public health in their area'. Freedom and responsibility had been granted -- but funding was often lacking."

Now, Dame Jenny, when she gave evidence, agreed that the ringfenced public health budget reduced over time due to austerity, and she said that she recognised some of the figures that appear in your report, but she went on to say that there are 152 top tier local authorities and a £200 million cut in the year. Well, that's about 1 million each across the various local authorities. Whilst she agreed that the directors of public health were under significant pressure, she added that the local authorities were actually very efficient in commissioning services and so could generate savings to mitigate the loss.

Do you agree with that interpretation?

A. I would disagree with parts of it. I think Duncan Selbie has put it eloquently, that a £1 million cut for a local authority is a significant cut, and can result in the closure of a crucial health centre or of other crucial services. We see this with the top slicing.

There's also a difference, in my opinion, between managing cuts efficiently and building resilience and building capacity for public health. So are we managing a decline or are we administering public health in terms of the goals of improving health outcomes?

Q. In terms of workforce capacity issues -- we can take that down, thank you -- Dame Jenny Harries told the Inquiry that lots of staff were lost in the move to Public Health England because in part at least there was a change in the hierarchy within the local authority roles; in other words, with some of the directors of public health roles, there was a feeling that they were reduced really in terms of their importance and so that led to a certain amount of loss of workforce capacity. In addition to that, particularly from the smaller local authorities, there was a reduction in staff. Is that something which you recognised during the change taking place?

A. Yes, but just to clarify that PHE would not be the DPH post, right, that would be the local authority now, I believe.

Q. Right.

A. So I think at both levels there is, as with any big organisational change, quite a significant turmoil. There are early retirements which result, again -- and

we see this every time a major reform occurs -- a loss of expertise, people go into early retirement, knowledge and competence is lost over time, and I believe at some point in the report I quote the figure that 17%, at some point, of local director of public health posts were vacant.

Q. Yes.

A. This is compensated over time, but if you think about this as a process that is less than a decade long before the pandemic hits, that is quite a lot of organisational turmoil at the local level, and also at the national level, to compensate for when you are also tasked with providing resilience.

Q. You also tell us in your report that by 2021, I appreciate we're moving forwards now, 69% of the service medical workforce were located in the newly established UKHSA, the Office for Health Improvement and Disparities, the OHID, and the NHS, and of non-clinical specialists, which include the majority of directors of public health and consultants, 90% were in local authorities and largely concerned with health promotion.

So that shift, in your view, inevitably compromised local level infection control capabilities; is that right?

A. It's an exacerbation of a longer-term trend that starts

earlier but I think does gather steam, and this is based on research for the Infected Blood Inquiry that Allyson Pollock and Peter Roderick and James Lancaster did.

Q. All right. Let's go back to your report at paragraph 110, please, which is at page 74, drawing these threads together. Thank you.

You say:

"Austerity and workforce pressures also impacted [Public Health England]. Ahead of the formation of the new agency, a 2012 strategy paper had warned of workforce attrition while simultaneously setting out an ambitious vision of maintaining and expanding surveillance capacities as well as of improving oversight and network integration. This vision was difficult to fulfil. Although regular polling of local authorities indicated that PHE's staff, expertise, data, and services were highly valued and that appreciation increased over time, PHE experienced cuts of core funding. In 2013/2014, PHE had received a non-ring-fenced revenue for operating expenses of £405 million. By 2018/2019, operating activities were priced at £395.8 million, which amounted to an over 9 percent budget fall since 2013/14 in real terms. Although allocation of funds for infectious disease

control rose during this period, the number of staff employed for the protection from infectious diseases fell from 2,397 to 2,093 ([a fall of] 12.7 percent) while those employed in environmental hazards protection and emergency preparedness fell from 517 to 476 ([which was a fall of] 7.9 percent)."

Dame Jenny told the Inquiry that almost all public sector organisations had budget decreases around this time, but of course the combined effect of that meant that if the local authority also had insufficient and the NHS had also dropped their numbers of staff, what happened was, in her view, when you met around the local resilience forum table you may not see the person you saw last week because they'd gone to another position. Did you recognise that in her evidence, and did you recognise that as a problem?

A. I agree with the evidence. You also see it in the tabletop exercises and the departmental reviews of PHE, where it's noted that the pondents(?), so the corresponding people in other administrations, are increasingly difficult to identify. So this is, I think, a systems-wide problem.

You can also refer to the evidence of Dame Sally Davies here, who says that it's obviously not just limited to public health but also to the numbers of

people employed in health services in general.

LADY HALLETT: Sorry, just before you go on, if we've finished with funding of PHE, do we need to consider paragraph 111 of the report?

MS BLACKWELL: Yes, I was going to go on to deal with that. It's a convenient moment to deal with that now.

Similar to PHA, efficiency drives and external funding played an important role in supplementing core budgets, because in 2013 to 2014 PHE gained an additional operational income of £180.3 million through research grants, commercial services, and contract income. By 2018 to 2019, this amount had risen to £240.4 million. That was a 24.2% increase on the 2013 to 2014 year, including inflation.

Can we just go a little further down, please. Thank you. In fact, let's pause there.

Is it important to recognise what's contained within paragraph 111, in looking at the whole picture of funding, both for the HPA and then later PHE.

A. I think it's a very important story. It starts already with PHLS, with the internal market and the focus of earning money, but under HPA it becomes much more pronounced. So there's a focus within HPA of winning external grants from funders like, for example, the Wellcome Trust or from the United Kingdom Government,

and also in terms of commercialising some of the services, so spinning out intellectual property, or offering contractual services.

Now, in the witness seminars, this is justified by saying it's a moral imperative to save taxpayer money via income generation from public competency, so to speak. The problem -- this is a well known problem in international health -- is that if you become too reliant on ringfenced short-term funding for specialist projects, it can come at the expense of core capabilities. So you might end up having a winner, so to speak, in your department which is endlessly generating money, and that winner then becomes favoured in terms of resource allocation by the department, and departments within PHE or HPA might get less support for the ongoing performance of routine health functions.

It also -- and this is again from very interesting witness seminars -- creates tensions within the public health organisations between departments which are seen to be flush with funding and people who consider themselves as providing core important services but might have less time and resources to devote to winning these external grants.

So there is more money, but it's often quite limited, it can fall off cliff edges, you can get

funding for a special project but then it just drops off, and it might distort management priorities towards incentivising income rather than necessarily guaranteeing core functions.

LADY HALLETT: But if one part of the organisation gets a grant and therefore has sufficient funds to do its work, why doesn't that mean that the money that the organisation would otherwise have had to put into that department not then move to the core capabilities department?

A. I think that's a very good question. I think you need to see it in the context of an overall decline of funding that is happening. So redistribution might happen, but over time it creates a distortion of priorities within the department to perhaps win funding from certain elements.

There is a telling quote from Sir Mark Walport, the director of public health, talking to I think one of the HPA senior executives where he says, "I'm a bit frustrated with HPA, we would like to fund your infectious diseases department but they never seem to have the capacity to even apply for the grants in the first place". So I think that would require more detailed economic analysis of HPA and how they redistributed funds. The anecdotal evidence we have

from the senior executives and also from the funders themselves suggests that infectious disease did not perform perhaps as well as radiation threats within HPA, and then within PHE that will require further research.

MS BLACKWELL: I'd like to ask you about surge capacity, because Dame Jenny Harries told the Inquiry that, in relation to microbiological testing of virus samples that we're talking about, HCIDs such as SARS, MERS or SARS-CoV-2, microbiological testing of virus samples require what she described as a containment level 4 laboratory. Which is the highest level, isn't it?

A. **(Witness nods)**

Q. And are only situated in two sites for Public Health England: Colindale and Porton Down.

She told the Inquiry that if we have an HCID or a pathogen X that we're uncertain about, they need to be managed in a way which means that they would almost certainly go to Porton Down, possibly Colindale, and have to be dealt with initially in those high containment facilities; is that right?

A. Yes.

Q. All right. So does that mean that at the time that Covid hit, there were only two laboratories that would have been able to initially handle the pathogen?

A. I'm not sure whether this is the total amount of P4

certified laboratories in the UK. Porton Down and Colindale have certainly historically been the places in the UK where these pathogens were handled, and you see this in the SARS contingency plan from 2003, they actually give you the sample numbers per day that can be handled in these facilities in the 2003 SARS plan, and that is clearly that Colindale would be the lead but Porton Down actually has a greater capacity for processing --

Q. Right.

Have you discovered through your research any concerns as to the capacity that Porton Down and Colindale provided in terms of the number of samples that they could effectively work through at any one time?

A. I'm uncertain about how you -- I can differentiate here now between P4 labs, P3 labs, et cetera. I can only tell you a vague guesstimate in terms of, for example, whole genome sequencing capabilities, which played a key role during the early part of the pandemic, and in 2016 a review of the Colindale's functions says they can do 600 samples per day in Colindale.

Q. Right. Can you explain to us, Dr Kirchhelle, how the initial analysis of a pathogen being dealt with at either Porton Down or Colindale would then flow out to

the other laboratories?

A. So the sample from Colindale flowing out -- so the sample would not flow out, right. It would be typed, it would be processed, but the epidemic intelligence that is gathered would flow out and, technically speaking, inform control attempts at the regional and local level.

Q. At what stage would PHE's involvement then pass over to the other local laboratories?

A. So even with the PHLS there was a point when testing would also have been handed over to the NHS.

Q. Yes.

A. This is part of the multi-phased plans which the UK has had since the 1990s, where you divide a pandemic into specific phases by number of cases and community infection, for example, and you would then, at a certain point, perhaps, hand over testing capabilities.

This approach becomes much more pronounced from 2009 onwards, with the rapid deployment of PCR, so molecular-based testing, during the swine flu pandemic. The HPA had been preparing for this. They had in 2006 established a Regional Microbiology Network and they also had good contacts to NHS virology labs which could get this gold standard diagnostic test and then perform this test themselves.

So you need to realise that there's a big difference

in the time periods that we're talking about. With molecular testing, if you have a PCR machine and you receive the kind of golden recipe, the validated recipe for testing from Colindale, you can technically scale up infinitively, if -- with the laboratories, if the laboratories are using this test.

HPA had recognised this capability from the mid-2000s onwards. They did it for swine flu. I think one of the big questions for Module 2 will be how the algorithm for outsourcing or, you know, expanding the testing range was devised for SARS-CoV-2.

Q. Right. The Inquiry has heard that there may be a criticism laid at the feet of Public Health England that there was little engagement with private testing laboratory facilities in the years running up to Covid-19 hitting. Is that a criticism that you have come across, and do you agree with it?

A. I know where the criticism is coming from, when it's in comparison to European neighbour states like Germany, which, for example, outsourced or incentivised private testing very early on in the pandemic. However, I think that in the UK case it's a slightly odd criticism, because the UK has a significant sequencing public capability within the NHS and it also has significant sequencing capabilities within the university sector, of

which PHE were naturally aware because they were working with all of these laboratories prior to the pandemic.

So, yes, obviously one could have developed contacts with private industry more, but also I think this is not so much a question of should PHE have automatically gone to the private sector and have mass scale-up with Lighthouse Labs. It's very interesting to see the NHS capabilities perhaps not being used as strongly as some observers would have wanted them to be used in 2020.

Q. So, in terms of surge capacity, given what you have said about PCR testing and the position where Public Health England was at the time that Covid struck, do you consider that there were any concerns or any valid concerns in terms of surge capacity within the public laboratory system?

A. Concerns about surge capacity are voiced in multiple preparedness exercises when it comes to the ability to surge beyond the initial hit of one or two HCID cases in the UK.

Q. Yes.

A. That is a perpetual challenge, I believe, for every emerging pathogens, when you move from the core elite capability of processing and public health handling towards a broader health systems response.

LADY HALLETT: Are you moving to a different topic,

Ms Blackwell?

MS BLACKWELL: I am, yes.

LADY HALLETT: It's been suggested that we break slightly earlier.

MS BLACKWELL: Certainly, that's a convenient moment.

LADY HALLETT: Very well, I'll return at quarter to.

MS BLACKWELL: Thank you.

(11.31 am)

(A short break)

(11.45 am)

LADY HALLETT: Ms Blackwell.

MS BLACKWELL: Thank you, my Lady.

Dr Kirchhelle, we're now going to move to look at the structural changes in Wales, Scotland and then Northern Ireland.

The Welsh public health arrangements, you say, diverged significantly from those in England during the period between 2002 and 2010. The national public health service for Wales was established in 2003, and then Public Health Wales in October of 2009, and Public Health Wales was tasked with managing health protection, epidemiological surveillance and microbiology services, and also health improvement, health promotion and child protection.

Is it right that Public Health Wales employed the

seven local health board directors of public health and their staff of public health experts?

A. Yes, I think so.

Q. There was an integrated network of public health laboratories as well as Communicable Disease Surveillance Centre in Cardiff, and they were maintained when Public Health Wales was created?

A. Yes, so just to confirm that PHLS in England, the reforms abolished the local level laboratories.

Q. Yes.

A. Wales decides to take over that system wholesale in 2002.

Q. So did they carry out public health as well as clinical diagnosis functions, those laboratories?

A. If they continued to function like the original PHLS, yes, they did. That is, however, for further research, I think.

Q. All right.

Well, let's have a look at INQ000107113, which is a report on *Civil Emergencies in Wales* by the Wales Audit Office. My Lady has already seen this during the evidence of Reg Kilpatrick last week.

Let's go to page 10 and have a look at paragraphs 17 and 18. Thank you.

"17. Too many emergency planning groups and unclear

accountabilities add inefficiency to the already complex resilience framework. The current resilience structure is similar to the structure in England, with local resilience forums based on police force boundaries and with each Category One responder having its own emergency planning capability. We consider that the current structure is leading to inefficiencies at a local level, unnecessary complexity and unclear accountabilities, and is an ineffective framework for resilience in Wales. We also agree with the Simpson Review, that there is an urgent need for a fundamental review of local authority emergency planning services.

"18. Complex reporting arrangements are leading to confusion about the roles and responsibilities of the numerous emergency planning groups and organisations. This complexity risks fragmentation of resilience activity with potential overlaps or gaps in the arrangements for resilience."

Now, in his evidence to the Inquiry, Dr Andrew Goodall said that he believed that they had addressed some of that complexity by the time of the pandemic hitting, but he agreed that there had been many examples of the duplication of activities happening within the health service and also filtering into the emergency planning groups. Is that something that you

recognise?
A. I think this is a challenge across the UK, where you've got the Civil Contingencies Act, you've got the NHS systems, you've got the public health systems, and in an emergency all of these need to work together, also with local responders. So there is an inherent risk of duplication and fragmentation. And it's evidenced, I mean, in both the tabletop exercises and the reviews of the 2003 SARS response and the 2009 swine flu responses, that this is one of the core problems.
Q. Right. Can we take that down, please, and replace it with INQ000089575, which is the 2014 communicable outbreak plan for Wales, and have a look at page 2, please, and what's said here in the preface:
"In recent years, there have been multiple plans in Wales for the investigation and control of communicable disease. All these have contained very similar guidance. Whilst it has been recognised that each individual plan was robust and fit for purpose, the presence of several plans for use in outbreaks has caused confusion as to which plan should be followed. Therefore, at the request of the Welsh Government, a multi-agency working group was convened in 2008 to draw the plans together into one generic template."
It goes on to say:

"This model plan ('The Wales Outbreak Plan') is the result of that work."
So, just pausing there, a difficulty or a problem had been identified in 2008 of there being a disparate level of plans to follow in relation to the investigation and control of communicable diseases. This was the result that was created in 2014.
Was this essentially a good idea?
A. I think that the identified concern is a correct one. If you have too many plans for too many different diseases, people forget about the plans. We've seen that with the difficulty of re-identifying the original 2003 SARS plan from the English government.
The Welsh plan seems to be in line with other model plans developed, for example, for Northern Ireland during this time, where the focus is on generic response capabilities that can then be mixed and matched.
Q. All right. An improvement, then, in your view?
A. I think bureaucratically yes. I would perhaps like to make a historical point here. I think the Inquiry naturally focuses on legal documents as the guidelines of responses. If you talk to public health experts, they will tell you that an extremely important component of that work is the informal ties connecting them with their corresponding parts in the health systems and also

in the national bureaucracies.
So what I'm trying to say is that it's good to see these plans evolving. I think that the people, the experts within the public health establishment were much better at abstracting from this than just following by rote a planned system down than perhaps these documents lead us to believe. I'm sure we'll talk about the influenza framework in a bit, but I think this is a consistent observation in the history of medicine, is that the informal ties, the informal networks, regular phone calls between heads of agencies, can do much to compensate for, at first glance, administrative fragmentation or narrow thinking on paper.
Q. All right, thank you.
In terms of funding, the Inquiry has heard from Dr Quentin Sandifer, who was the executive director of public health services and Public Health Wales between 2012 and 2020.
He told the Inquiry that in his view Public Health Wales was in no way held back by the funding made available to it by the Welsh Government.
He set out a series of figures, and his evidence was also complemented by the witness statement of Dr Tracey Cooper, who was Public Health Wales' chief executive from June of 2014.

She in her witness statement said that the service, Public Health Wales, had been strengthening and transforming its workforce model and capacity over the course of time, embracing and developing an approach to what she described in her statement as multidisciplinary practice, and again that there were little problems caused by any level or decreasing level of funding.
But she did highlight what she described as a fragile microbiology service that indeed needed an input of finance, and she described how that took place over the course of time that she has been chief executive of Public Health Wales.
Do you recognise that there was a fragility in terms of the microbiology laboratory capability, and that that has or was improved?
A. That's very difficult to say, because there are so few comparative reviews of the UK health systems. I think the evidence that's been submitted shows an interesting discrepancy between funding levels and perceived robustness. Again, I think this is subject to more research.
Q. All right.
Dr Sandifer told the Inquiry that there was a shortage of microbiologists caused by a number of factors, including the retirement of senior

microbiologists and difficulties encountered in Public Health Wales of recruiting more people into post.

Was that a particular problem identified and experienced in Wales, and is that something that was shared across the United Kingdom, and is that something which you recognise from your research?

A. I come back to the points I made earlier about the overall decline of intention for infectious disease threats from the '70s. In my report I cite a warning from 1980 that is nearly identical to the warnings we have in the 2010s about lack of competence for infectious disease control and microbiological capabilities. So this recruitment problem that is experienced by seemingly many health services across the UK is not unique to the UK, it's certainly also prevalent in northern American services, so I think this is part of a broader structural issue in terms of how educational programmes perhaps incentivise people to specialise in these areas or not.

Q. All right.

As far as you are aware from your research, did the lack of ability to recruit into these roles have any correlation between a lack of funding or was that not the problem?

A. I think that's very difficult to say in hindsight. If

you don't have enough people, and the funding is challenging, it's difficult to untangle these different factors.

Q. Did Wales have a problem with their laboratories not being fit for purpose?

A. Again, since this is a high-level review, I haven't looked explicitly at the grading of the Welsh microbiology laboratories. They did have a robust spatially distributed infrastructure at the handover point of the PHLS. How much investment was made in upgrading facilities, especially with regards to these massive technological transitions that happened between 2000 and 2020, again I think that is something that needs to be looked at in more depth.

Q. Well, one of the documents which you have been invited to look at is an application that Public Health Wales submitted for additional funding to the Welsh Government to strengthen its own specialist health protection services, particularly in microbiology.

Let's have a look, please, at some of the issues that arise and that are set out during the course of this paper. Thank you.

This is:

"1. A paper on the proposed model to strengthen the National Health Protection Service [and it] was

presented on 27 November 2018. It was noted that investments already made were positive first steps but the model developed required significant additional investment and the whole system approach to strengthen the National Health Protection Service required agreement with the health boards and other trusts. It was agreed that wider engagement with health boards and trusts should take place before proposals to the Minister were finalised."

"2. The Chief Medical Officer and the Chief Nursing Officer hosted a workshop on 17th May 2019 with key representatives from each health board and trust to discuss the proposed model. At the workshop there was general recognition of the challenges described and general endorsement of the proposals including staffing models presented. Although the financing of the known gaps in funding for the proposed model was not specifically addressed many delegates commented that they had been to like events in recent years without any progress being made."

So:

"3. A decision is now required whether to recommend to the Minister for Health that the strengthening of the National Health Protection Service is a Welsh Government priority and such this service should be prioritised for

investment each year up to 2022/23."

Now, if we move down to the summary of the challenges and just look at the next two paragraphs:

"4. The current microbiology infection services in Wales are fragile and are struggling to deliver on a day to day basis the prevention, early diagnosis and frontline support that professionals and the public require. As a result, avoidable admissions are adding to the pressure on hospitals and clinicians in many cases do not have access to the early diagnostics they require to guide early and effective treatment which in turn impacts on in-patient bed days.

"5. The current microbiology laboratory estate cannot exploit the opportunity that new testing technologies and robotics can provide. In addition to the lack of access to rapid testing, there are some specific workforce/skill capacity challenges, the current workforce needs to be reskilled and redeployed and the service is unable to recruit to key professional leadership roles."

Then if we just move to paragraph 10, please:

"Health security has become a greater public health threat, professionals are not confident that they could at all times provide an effective response to high consequence infections as there are points on the

patient care pathway that are single person dependent."

So it appears that at the time that this application was made, there were serious concerns about workforce capacity, about the state of the laboratories, and that there was a plea being made to the Welsh Government for further investment in these regards.

Do you recognise that that was a problem that had been caused by the way in which Public Health Wales was set up and the funding situation?

A. I think it's difficult to interpret this document, because there's clearly an overlap here between NHS diagnostic services and public health laboratory services, which can be distinct, do not have to be distinct.

Q. Should they be distinct?

A. That is a political decision at the end of the day, and solutions vary according to countries. They can be effective if they are well resourced, well financed and well staffed.

What I would like to say again, and this is -- it's important to understand the depth of the technological change that has taken place here. It's one thing to provide a classic microbiological service with perhaps limited PCR capabilities; whole genome sequencing requires a raft of expertise such as bioinformatic

technologies, input from academia that may have been easier to draw on in other parts of the UK, I'm thinking of the Cambridge/Oxford/London triangle, when it comes to Colindale developing capabilities with Sanger, as opposed to the devolved administrations in other parts of the UK.

So I think the historical point here is to recognise that microbiology requires resourcing, it requires staff, but that we are now in a different age of microbiology which might require different forms of expertise that aren't equally distributed across the UK.

Q. Are you able to comment on the capacity of Public Health Wales to look to the English laboratories, the United Kingdom-wide laboratories, as and when there might have been need to do so?

A. I think it's an inherent dilemma within the UK system that Colindale is "so good" with the reference services. I think for a long time laboratories in all devolved administrations have looked on Colindale to provide expert reference services, and I think that that can sometimes create capacity issues when perhaps more specialist microbiological analysis may be required within the devolved administrations themselves.

I know that the Inquiry has looked at HCID treatment capabilities in these different countries -- in the

different nations, and I think it's quite remarkable, and it speaks to the theme of the *Giants on Clay Feet* article, how strong the central capacity in the south of England has been built, but perhaps how little consideration has been given to building sustained capacity in other parts of the UK.

Q. What we see in this application for funding and the issues that it raises in terms of capacity, does that give you concern or should that give the Inquiry concern that, as of January 2020 when Covid hit, Public Health Wales and the Welsh system may not have had sufficient workforce capacity or laboratory capacity to deal with an HCID outbreak?

A. I think this document speaks to a consensus amongst experts who knew their field, and this was a very serious concern that was raised, so absolutely, the Inquiry should take this seriously.

Q. All right. Thank you, we can take that down, please.

Moving up to Scotland, by 1945 Scotland already had a long-standing tradition of independent public health legislation and independent health systems, did it not?

A. **(Witness nods)**

Q. Scotland decided not to join the Emergency Public Health Laboratory Service which was set up in 1939 in England, which Wales was also part of. I'd like to ask you to

what extent did the Scottish Government or public health bodies in Scotland have control over testing carried out at the University Hospitals where their laboratories were based?

A. I think we should not make the mistake of correlating current efficient management systems with the 1940s. These were high-powered university professors who part-time did a bit of microbiology and then also worked in teaching. So the degree of central control was perhaps more minimal than now.

The one key point I think always to make about the devolved administrations is that the population density is far lower and, as a consequence, if you have eight people who know each other and talk to each other regularly, it's far easier to have efficient co-ordination and you need less formalised management control structures in these situations, and Scotland has -- this is the historical consensus -- a long-standing tradition of this communitarian-based, consensus-based decision-making in these areas.

Q. All right.

Following devolution, did the years between 1999 and 2004 see the Scottish Government re-emphasise a collaborative approach to health service provision by abolishing the internal market and that collaborative

approach, and the need to tackle health inequalities was emphasised in official planning documents such as the 1999 White Paper *Towards a Healthier Scotland*?

A. Yes.

Q. All right. Did initial reforms see the merging of Scotland's 47 NHS trusts into 28 local healthcare co-operatives?

A. Yes.

Q. In 2005, was Health Protection Scotland formed to act as a centre of epidemic intelligence capable of rapidly reacting to major incidents whilst liaising with other United Kingdom and European public health hubs?

A. Yes. I think even the names for UK organisations are a clear clue that -- you know, how should I say? -- philosophical development of health protection is evolving along similar lines. So you've got HPA, HPS and then now you've got PHS, PHE, PHW. So there is a clear -- and, again, it speaks to the wider academic culture in which these agencies are based, that there's a clear line of thought that is leading to this evolution.

Q. Did Health Protection Scotland integrate microbiology and surveillance capabilities that had formerly been provided by the Scottish Centre for Infection and Environmental Health? I think you describe in your

report as, rather than creating a parallel public health system and employing its own health protection teams, Health Protection Scotland worked as a division within the NHS National Services Scotland organisation.

How did that differ, then, from the way in which matters were organised in England and Wales?

A. So, in Wales, NPHS creates a completely -- almost completely integrated organisation that uses, within also the NHS structure -- at first NPHS and then later, via PHW, employs people from the local level to the national level.

Q. All in one organisation?

A. In one, exactly.

Q. Right.

A. At least that's my understanding.

In the Scottish case it builds on these pre-existing traditions of having rather loose co-ordination via CD(S)U, and that tradition is perpetuated with HPS, which again co-ordinates. We aren't speaking about a huge population, we're speaking about a manageable smaller number of health boards, so the system you might choose for that might be different strategically, and in the Scottish case, again, because it is smaller, people know each other, so looser epidemic intelligence might do the job just as well. To give the historical context

of this, the reason Scotland has this arrangement at all is because in the 1960s they had outbreaks that they didn't realise they had because they had no integrated epidemiological function, so London told the Scottish authorities that they had typhoid and paratyphoid outbreaks. So this is why this focus on epidemiological integration is made but perhaps no streamlining of a coherent -- well, I shouldn't say "coherent", but fully integrated microbiological system.

Q. So it worked for Scotland because of the history which you've just set out but also the size of the population?

A. Yes.

Q. And the relationships that existed between those who were running the services?

A. Yes, and that is something that is specifically fostered by repeated Scottish administrations. Scotland is remarkable for health liaison committees from the '60s and '70s onwards that are designed to foster this collaborative spirit.

Q. Is it right that Public Health Scotland became a legal entity in December of 2019 and came into operation in April of 2020?

A. Yes.

Q. The Inquiry has heard about those timings, and the fact that it effectively brought together three legacy

bodies: the Health Protection Scotland, the Information Services Division, and the NHS Health Scotland agency.

In her evidence to the Inquiry, Dr Catherine Calderwood has spoken about funding of Public Health Scotland, and has said that there was a specific budget within the overall healthcare budget to fund pandemic and emergency preparedness within NHS Scotland and specifically public health.

But she said that a small proportion of the overall healthcare budget is used to fund public health, only a small proportion of that, and that there has long been criticism from those working in public health in Scotland that -- in prevention services, in resilience groups, towards the government funding bodies, and that their view is that public health has not received the funding required for optimal functioning and outcomes, and that that in itself has had a knock-on effect on the ability of those organisations to properly engage in pandemic planning.

Is that something that you recognise from your research?

A. I think it speaks to the overall problems within the UK system. So even within the NHS system you can have public health budgets being raided. This is something that, for example, in the case of the UK during the PCT

era of the New Labour government is repeatedly criticised by the Chief Medical Officer, Liam Donaldson, actually -- I'm quoting here -- saying public health budgets are being raided within the NHS to provide other more short-term priority services.

So I think the wider point here is to say that, regardless which organisational structure you choose to embed your public health system in, you need to protect the core budgets because clinical colleagues can take resources from public health and, in the case of the local authorities, if you don't fund sufficient public health services they will also, regardless of efficiency, be unable to deliver core functions.

Q. Over this course of time between 2002 up until the onset of Covid, does your research tell you that there were, as we've just discussed in terms of Wales, any workforce or laboratory difficulties or problems within Scotland?

A. Not that I know of, but that is a factor of, I think, the six weeks that I had to research the report. So if I had more time, perhaps I would be able to find something.

Q. All right.

I want to move now to look at Northern Ireland, and the evolution of health services in Northern Ireland, which in broad terms are parallelled by what was

happening elsewhere in the United Kingdom.

In 1953 there was the creation of Northern Ireland Central Public Health Laboratory, and that network expanded, and then, following the passage of the 1999 Northern Ireland Act, did Northern Ireland regain its competencies for structuring its health and public health services on its own?

A. I believe so, yes.

Q. All right. Is there a significant divergence from Wales and Scotland in Northern Ireland in terms of how the surveillance functions of the laboratories were set up?

A. Northern Ireland is very interesting, because in 1999 the decision is made to outsource or to contract the PHLS and then later the HPA to provide the epidemiological functions of Northern Ireland. So rather than directly creating its own completely homogeneous public health system, the key epidemic intelligence point is actually provided by the PHLS, and the PHLS representative is accountable both to the Northern Irish government and the CMO, but also to the PHLS. So this is a very unique contractual engagement, maybe the result of the smaller population size of Northern Ireland during this time. I haven't found any detailed justification of why this decision was made to outsource rather than build the capacity within

Northern Ireland.

Q. There were a number of health and social services boards created, and also local health and social trusts which were in charge of the laboratories; is that right?

A. Yes. These trusts, however, and these arrangements pre-dated the Good Friday Agreement.

Q. Yes. Did they carry on post the Good Friday Agreement?

A. Yes. Yes.

Q. Is that still the position in terms of the local trusts running the microbiological services?

A. No, so in 2009 Northern Ireland undergoes significant reforms, both for the public health system but also for its wider health and social care system. So you've now got a completely integrated -- and I hope I'm getting my terminology right -- Health and Social Care Board, which commissions services from health and social care trusts --

Q. Right.

A. The report contains the correct terminology here. But essentially what you have is a completely now integrated system of commissioning from trusts and also from local health authorities of microbiology services, but the trusts run most of the major microbiology labs, including the central one in Belfast which is run -- I think by the East Belfast trust, but the correct

detail is in the report.

Q. All right.

You tell us in the report that there was a review of Northern Ireland's public health functions in 2004 and that that review expressed concern about an over-reliance on English services and suggested replacing the HPA's CDSC Northern Ireland with a new regional Northern Irish health protection body, and is that what happened?

A. That is what eventually happened. In the case of Northern Ireland obviously the overarching political context is very important to understand. There were repeated breakdowns of power sharing, and so multiple reviews expressed slightly varying concerns and the actual time windows for political action were around 2009 for many of these reforms that then eventually took place.

Q. I want to bring us forwards now to 2015, when the then Minister for Health, Simon Hamilton, announced that in response to recommendation 1 of *The Right Time, The Right Place* report by Sir Liam Donaldson, that he would appoint an expert clinically-led panel to consider and lead an informed debate on the best configuration of health and social care services in Northern Ireland.

That board was led by Professor Rafael Bengoa,

a name that was mentioned during the evidence of Robin Swann to my Lady on Friday.

Now, the resultant Bengoa report covered the issues of inequalities, the ageing population, primary care and hospital services, and workforce as well, and the main recommendation of the report was that there should be a triple aim within health and social care in Northern Ireland to improve patient experience, to improve the health of the population, and to provide a better value in terms of funding and output.

That report in 2015 was then taken forwards, because in 2016 there was a further review that drew upon the Bengoa report of the Northern Ireland health system called *Systems, Not Structures: Changing Health and Social Care*. In your report, you say that in 2017, acting on the recommendations which followed on from the committee and then the report which was provided in 2016/2017, that Stormont then introduced a new ten-year health and wellbeing plan; is that right?

A. Yes.

Q. Was that plan implemented?

A. That's difficult to say because obviously it's a ten-year plan --

Q. Yes.

A. -- and there were problems with power sharing after

this, and my report ends in 2019, so I'd leave that to the experts of Module 2.

Q. Well, that's what I was getting at. Although the report had been presented in 2016/2017, we know that there was then a breakdown of the power-sharing agreement between 2017 and 2020, so are you able to in any way accurately predict which parts of the report were brought into force and whether the aims were in fact ever achieved?

A. Again, that's very difficult to say because, even with the best will of an administration, given the breakdown of power sharing, given the uncertainties of planning -- and I think you've also got another expert report on this -- that it's -- any ambitious reform could not have been completely implemented, given these circumstances. But again I guess I waive my right here as a historian to say that I focus more on the past and not on the current implementation.

Q. All right.

Having looked at the structure of public services and their history in all four nations, I want to turn now to talk about what you as a historian are able to comment upon in terms of the pandemic preparedness of the United Kingdom, and focus first of all on what you describe in your report as being the first major test of

the preparedness frameworks which occurred in 2003 when the global alert was issued for SARS in March of that year.

You say fortunately the UK experienced a small number of probable cases and no fatalities before the World Health Organisation announced that human-to-human transmission had been broken in late July of 2003.

But you do record that between March and July of that year, the Public Health Agency dealt with 368 reports of suspected cases, of which nine were classified as probable, and one eventually tested positive, following PCR confirmation.

You go on to say that the outbreak nonetheless revealed the significant strains that even a comparatively small outbreak could place on the UK's public health systems.

Can you expand upon that, please, and why you say that despite there being a relatively minor outbreak and only one confirmed case, that that led to obvious strains?

A. So the volume of testing that was suddenly required stressed the new arrangements. So we have to remember that, in the case of SARS, HPA was just in the process of being set up.

Q. Yes, in its infancy?

A. Yes, actually it's created right in the middle of the pandemic wave, so that might explain some of this. However, later assessments do reveal that the new PCTs may have had too little PPE, so personal protective equipment, stored to deal with prolonged surges, and later reviews also -- and this is an important thing -- revealed that there was a problem with regards to local access to epidemic intelligence that was relevant to the local level.

Q. What were those problems?

A. The problems were that the local level was reporting suspected clinical diagnosis of SARS up to HPA, but there was a problem of communicating this down effectively via the regional health protection teams to the relevant clinical authorities within the NHS.

We have to remember that SARS at this time was primarily a big challenge in nosocomial, so in hospital settings, and that PCTs and authorities within the NHS and also at the local authority level had a big problem with the fact that they did not have all of the information at their hands that they might have had earlier.

The second thing is obviously to remember that people barely knew the new structures of HPA at this time, so in testimonies of the time the microbiologists

recall that they spent a lot of time just phoning laboratories that had previously been PHLS to send samples and report samples up to the HPA, for example.

Q. So was there a lack of clarity in terms of which laboratories were performing which assessments and which roles?

A. Yes. That is one of the problems. That can, however, obviously be explained by the structural flux within --

Q. Yes.

A. -- which the system was. The more salient point I think was lack of access to relevant information. Another point that was identified was lack also of local epidemiological competence to act on this information now that HPA was more regional based, and obviously, for the Covid 2 outbreak, the lack of PPE stored within primary care trusts.

The final point that one later review revealed was a fear that, given the small number of staff working at HPA, there was a danger of burn-out of key personnel during prolonged surges.

Q. I just want to take a look at paragraph 83 of your report, which is at page 58, because you produce a quote from the PHLS's former head of virology, Philip Mortimer, and you can see that towards the bottom of the paragraph. Let's just pick it up, please, three

lines up from the bottom, and if we can -- thank you -- read through what you say here about Philip Mortimer's warning:

"Writing in 2003, the PHLS' former head of virology, Philip Mortimer, warned that over-reliance on centralised epidemic intelligence in the absence of sufficient local capacity for testing, contact tracing, and isolation beds could prove costly during future pandemics. What was needed was sustained investment ..."

Let's look at the quote itself, please. He says:

"... it should not be assumed that a resurgence of SARS is unlikely, or that a further outbreak would be controllable ... if there are weaknesses or deficiencies it should not be thought that they can or should be repaired by quick fixes each time an acute threat materialises. Such expenditures fail to build the infrastructure needed to maintain a comprehensive capacity for rapid and technologically appropriate response to new pathogens, and over time they distort facilities and so hinder the effective management of the laboratory."

In your article *Giants on Clay Feet* you describe what Philip Mortimer is expressing here as being prescient because of what we now know went on to happen

with Covid-19.

What notice was taken of these sorts of issues, not necessarily from Mr Mortimer himself, but from what you have seen, the concerns that you have said were expressed coming out of the SARS outbreak? Did it lead to any action within any of the areas about which concern is being expressed?

A. So the UK does develop a SARS plan that is published in -- well, not officially published, not publicly published -- late 2003 following the experience of the SARS pandemic, and that plan warns that there may be community transmission of a recurrence of SARS CoV-1, which is a distinct virus from SARS-CoV-2.

The plan has numerous recommendations for how authorities should deal with it. To my knowledge I have not seen any other plan that is building capacity to address the gaps --

Q. Yes.

A. -- identified in this plan.

I should say that Mortimer's warnings here are not isolated. These are warnings that surface from other people in the health system too, and --

Q. Can I just ask --

A. Yes.

Q. -- the health system within the United Kingdom or

worldwide?

A. In the United Kingdom primarily. There are, however, also concerns in other western health systems raised about the ability to provide sufficient surge capacity should an outbreak like SARS prove more sustained.

There's also initially a recognition that if you want to control SARS you need to act very fast and hit it very hard when it comes to, for example, improving infection control procedures within hospitals and resorting to things such as school closures. The 2003 plan actually mentions hospitality sector closures in response to it.

So these are significant learnings in many ways that are taken here. We will come to 2009 with the swine flu pandemic --

Q. Yes.

A. -- which is a different, obviously theoretical -- well, no, a real risk.

Q. All right. Certainly as of 2003, concerns expressed in the way in which we see here not only by Philip Mortimer but also by others within the United Kingdom and worldwide?

A. I believe the person who signs off on the 2003 SARS report is Peter Horby, so --

Q. Right.

A. -- that is somebody obviously who is quite senior within the UK public health --
Q. Yes, and has assisted the Inquiry.
A. Yes.
Q. Before we move to look at what we learnt from the 2009 swine flu outbreak, I just want to remind ourselves that, in terms of the chronology, in 2007 between SARS and swine flu there was Exercise Winter Willow, which was a large-scale pandemic tabletop exercise of 5,000 participants, and it highlighted potential -- what's described as response misalignment resulting from devolution, as well as the need to strengthen linkages between established local and regional resilience structures and their equivalents within the NHS.

So an indication, then, that there needed to be links strengthened within the various four nations.

Then to the 2009 swine flu pandemic. You say in your report that the official reviews painted an overall positive picture of the United Kingdom response, and that praises were centred around advanced procurement orders, the rapid development of the PCR diagnostic test by Colindale and various responses on the ground.

This Inquiry has heard much about the subsequent review that was commissioned and in relation to which Dame Deirdre Hine produced her report the following

year.

Now, in the main the report appears to be positive, but in your report, Dr Kirchhelle, you point to what you describe as difficulties, issues that were raised by independent observers, by historians, and by public workers in the field.

Do you suggest that the sentiments and decisions expressed by Dame Deirdre Hine being at odds with the expressions of concern that you have found, could be explained by the people and the positions of those people who were asked to provide information for the report?
A. I think there is a clear misalignment, despite this being a very good report overall of the swine flu pandemic, of what people at the national level say about the UK response as opposed to independent research which was conducted at the coalfront of the pandemic during the pandemic.
Q. What are those differences?
A. Key differences in the response are -- that emerge as a result of detailed interviews of frontline workers in 2009 are that there was much more pronounced misalignment and confusion about responsibilities at the local level than appears in the report. The report also says that there were confusions and that in future,

again, integration needs to be strengthened. But what especially Professor Virginia Berridge, of the London School of Hygiene and Tropical Medicine, conducted during this time shows that there were significant -- also -- tensions about responsibilities between NHS, HPA, and also confusion about what local resilience fora were supposed to perform. You know, so there was misalignment and confusion about roles. That is something that emerges quite clearly from these statements.

I think another thing that is mentioned that is interesting for the expert advice system was that figures within HPA who were interviewed by Professor Berridge, the reports could never be published, their publication was, according to Professor Berridge, stopped. Also noted that it was difficult sometimes for HPA in wider expert meetings such as SAGE to assert itself because they were often presenting a corporate view of expertise as opposed to more independent statements by other SAGE members.

Finally, HPA also perceived it to be difficult, and this is something that emerges also in the Hine review, to sometimes reconcile its own forecasts of pandemic severity with reasonable worst-case scenarios that were frequently mobilised by the CMO of the time,

Liam Donaldson, in warnings to the press, for example.
Q. All right.

You conclude in your report that whilst the 2009 epidemic ultimately proved less severe than feared and showcased the startling potential of molecular diagnostics and vaccine design, it also revealed that well known problems of local and national co-ordination and resourcing had not been resolved, and to that, from what you have just told us, you would add a lack of clarity in terms of the roles that people were expected to fill during the course of the outbreak and in order to react to it?
A. I think that's a consistent feature, yes.
Q. All right.
A. Just one thing I would like to add, though, is this was not just something that was unique to swine flu, this was also highlighted by further reviews of the public health systems. So --
Q. At the time?
A. Even before swine flu. So in 2007 the European Centers for Disease Control -- and again you will find the references in the report -- and I believe also Parliamentary committees were interested in these issues and highlighted the need to look further at local co-ordination.

Q. Following on from the Hine review, the Inquiry has heard much about the 2011 United Kingdom pandemic influenza strategy, with its learnings and emphasis on individual behaviour. One of the criticisms that my Lady has heard is about the comparative lack of consideration of non-medical countermeasures, and that perhaps more should have been said in the strategy about the aspects of social distancing or school closure or even lockdown, which we know does not appear within the strategy.

Has your work, Dr Kirchhelle, shown that in fact some of those non-medical countermeasures, as you describe them, had been raised in previous papers and the reaction to the 2003 SARS outbreak and the 2009 swine flu outbreak, and that they were very much on the radar even though they might not have been considered and certainly not considered in detail within the strategy?

A. The non-medical interventions are a core part of pandemic planning from the 1990s onwards. It's a core part of the 1997 UK multi-phase influenza plan.

In 2003, in the case of SARS, with the plan that is released we have many of the interventions that are later rolled out during the Covid 2 outbreak happening, so from -- and we also had during swine flu have school closure, we have border controls, we have -- with Ebola

later on too -- travel restrictions or travel caution, we have hospitality sectors being concerned.

What is, however, new obviously in 2019/2020 with Covid-19 is the scale of lockdowns, the scale of societal closure that is considered. I don't think that that was conceived of in the initial influenza plans, where the traditional emphasis of government has always been on business continuity, so minimising disruption to trade, minimising also disruption to the economy. That's a core part of pandemic planning essentially from the late 1970s onwards.

Q. I also want to ask you about another developing area of consideration in terms of pandemic planning, and it relates to behavioural science.

You say that within the United Kingdom the status of both epidemiological modelling and behavioural scientists in pandemic responses and in pandemic planning has received what you describe as a significant upgrade during the mid-2000s and ongoing from there.

I'd like to look, please, at a report which is called the MINDSPACE report -- it's at INQ000207450 -- by the Cabinet Office and Institute for Government, which underlined the advantages of using what they described as low cost, low pain ways of tackling problems.

Let's look, please, at page 4. This was a review that was prompted by Sir Gus O'Donnell, and we can see his signature there at the bottom, together with Sir Michael Bichard, and if we read into what the report was really set up to achieve:

"Influencing people's behaviour is nothing new to Government, which has often used tools such as legislation, regulation or taxation to achieve desired policy outcomes. But many of the biggest policy challenges we are now facing -- such as the increase in people with chronic health conditions -- will only be resolved if we are successful in persuading people to change their behaviour, their lifestyles or their existing habits. Fortunately, over the last decade, our understanding of influences on behaviour has increased significantly and this points the way to new approaches and new solutions.

"So whilst behavioural theory has already been deployed to good effect in some areas, it has much greater potential to help us. To realise that potential, we have to build our capacity and ensure that we have a sophisticated understanding of what does influence behaviour. This report is an important step in that direction because it shows how behavioural theory could help achieve better outcomes for citizens,

either by complementing more established policy tools, or by suggesting more innovative interventions. In doing so, it draws on the most recent academic evidence, as well as exploring the wide range of existing good work in applying behavioural theory across the public sector. Finally, it shows how these insights could be put to practical use."

So:

"This report tackles complex issues on which there are wide-ranging public views. We hope it will help stimulate debate amongst policy-makers and stakeholders and help us build our capability to use behaviour theory in an appropriate and effective way."

Thank you. We can take that down, please.

Now, you observe in your report, Dr Kirchhelle, citing this MINDSPACE report, that the authors of the 2011 strategy hoped that there would be more of a consideration of voluntary responsible behaviour, that effectively behavioural science was being identified not only by those involved in drafting the strategy but also, as we can see, those who were looking more widely at the health of the United Kingdom, and that it was becoming an important consideration in planning or attempting to plan as to how best to tackle something like a pandemic when it was next going to hit.

Is that reflected in your knowledge and research of what was going on about this time? So we're now talking ten years or so before the pandemic hit.

A. There's a marked increase in interest in behavioural theory from around 2000 onwards. This is not just in the UK, this is also at the WHO level where there is a consistent focus on non-medical interventions but also focusing on vaccine uptake in the population.

Now, it's a very interesting historical coincidence that this new emphasis that is placed on behavioural science, which primarily uses social cues to nudge people in the right direction -- there's also a nudge unit founded in the Cabinet Office during this time -- it coincides with the election of a government which emphasises individual responsibility and market-efficient responses. Behavioural science at this time is closely integrated with market psychology, and -- and I'll slow down.

Q. Sorry. Thank you.

A. -- and it's a core part also of the Hine review of 2009 that more use could be made of it.

The UK's advice gremia, they start taking up on this from around 2005 onwards and start using behavioural scientists to draft, for example, business as usual messages for the UK Government, so to say, "Continue to

go to work, the situation is under control".

What is interesting what is missing from the behavioural science advice, that is response or representation from social sciences disciplines, which are more structural, so which try and understand the structural determinants of behaviour versus individual psychological determinants of behaviour, and obviously from 2015 onwards a large part of the research on social priming that underlies these hopes for behaviourist interventions at the scientific level experiences a crisis, the so-called replication crisis, where some of the assumptions about effects that can be scaled up to a population size are not replicable in repeat experiments, so the scientific advice and the state of science changes quite significantly during this time.

Q. Right.

Does that mean that, in your opinion, enough emphasis was placed upon behavioural science in pandemic planning and in what we're going to look at briefly now, in the exercises that were performed?

A. I think clearly no, because the emphasis here is on assumptions of the behaviour in a universal individual, with not enough regard to cultural and structurally determined aspects of behaviour. So how would ethnic minorities respond to public health interventions --

Q. Sorry, I want to bring you on, please, to look at in particular the results from Exercise Cygnus, about which my Lady has heard much during the course of this Inquiry.

Just to set it into context, as we know, you've already mentioned the Ebola outbreak, which we know about, then there was the Exercise Alice exercise dealing with a MERS outbreak in 2016, and other such exercises, culminating in the large exercise of Cygnus, which my Lady has heard much about, and the report which came out of that exercise.

In your consideration of the report, you tell us that the exercise revealed significant pandemic vulnerabilities and that the final report warned that there is no overview of pandemic response plans and procedures and that the health system's restructuring across all devolved administrations meant that key organisations referred to in plans and the 2011 strategy no longer existed.

But it's the issue that you picked up about vulnerabilities and that in conjunction with behavioural science that I'm going to suggest might have been missing.

What do you say about the fact that vulnerabilities were capable of being identified during the course of

that exercise and flowing from it from 2016, but may not have found their way into the pandemic plans, and how that sits with what you've just described as a lack of consideration of behavioural science?

A. So there are multiple things to unpack here with vulnerabilities. Right? There are health vulnerabilities which the committee has already heard from -- the Inquiry -- from other experts.

Q. Yes.

A. I think that what's quite remarkable about the tabletop exercises is that they assume homogeneity of the UK population which is being managed in response to an exercise. There are always calls for more research on how populations would respond to triage, to mass burials, et cetera, but there is very little -- remarkably little -- consideration given to the fact that the UK has become a substantially more diverse population in this time, that people with different cultural backgrounds, different experiences, will have different responses and expectations of what health services deliver.

Now, this is not in the report, this is something that however should be looked into more. With Ebola, anthropologists proved crucial in optimising responses in response to burial practices, but it seems that

the UK was good at employing anthropologists for foreign responses. It would have been good to see more ethnographic and sociological studies of mixed responses within the UK population itself to restrictions, mask mandates, things like that.

Q. All right, thank you.

So drawing those threads together, the potential to have more consideration to behavioural science, the potential to have more consideration to various vulnerabilities including health inequalities in pandemic planning, and --

A. If I may -- I'm sorry, if I may just interrupt.

Q. Yes.

A. So it's not just the behavioural sciences, it's actually the social sciences, so that we have an acknowledgement of structural variation within the UK population feeding into plans which are supposed to protect the health of this population.

Q. All right, thank you for that.

If we look at paragraph 139 of your report, we can see your conclusions in this respect, and your comments on the tabletop exercises and the results of those exercises.

So it's page 90, paragraph 139 in your report, which is INQ000205178. Thank you.

You say:

"The described exercises foreshadowed many of the key challenges that would emerge during Covid-19. Recurrent warnings about the same vulnerabilities also underlined the difficulties UK planners faced in moving from tabletop exercises and influenza plans to creating and sustaining the real physical infrastructures, staffing levels, and regulatory alignment necessary for an effective pandemic response. Although pandemic preparedness remained a frequently voiced concern, actual UK infection control capacity building between 2010 and 2019 was undermined by budget cuts, regulatory heterogenity ..."

Can you explain to us what that is, please?

A. Multiple not homogeneous regulatory systems. So different --

Q. Diverse?

A. Diverse, yes, that's a good word.

Q. All right, thank you:

"... repeated health services shake-ups, workforce shortages, and rapidly expanding public health remits. Following the 2016 Brexit referendum, there was also concern about reduced European coordination and a loss of British influence on European public health bodies."

Thank you, we can take that down.

So all of the clues were there, some of them had been picked up and had formed part of the pandemic planning, but there were warnings and alerts which hadn't been given perhaps as much emphasis as they might.

When one takes into account the issues which you've also set out in terms of funding and workforce capacity, how do you say that the planning and the issues that were affecting the United Kingdom in the run-up to Covid-19 hitting created a difficulty?

A. So I think what we see in this period are obviously the warnings, we see the tabletop exercises, but we don't see a political -- consistent political ownership of the issues that are raised.

Pandemic preparedness is frequently voiced in public. There are lots of Hollywood movies, in popular culture it also has a high place, but at the political level there doesn't seem to be a consistent driver in terms of improvement of the capabilities.

This is caused by, I would say, budget pressures that are imposed, the need for efficiency, to manage reductions, and finally -- and you have heard multiple witnesses testify to this -- preparations for the real projected threat of the exit from the EU perhaps overshadowing resilience planning especially in the last

three years before the pandemic.

Q. You also refer in your conclusion there to the stark difference between considering an issue during a tabletop exercise and really being prepared for the reality when it hits. Do you think that the exercises about which this Inquiry has heard are effective, are worthwhile, could be improved, or is there always going to be a chasm between thinking about something within the clinical confines of a meeting room and the reality when it hits?

A. I think the truth of that is self-evident.

Q. Yes.

A. The exercises are important, they get people into contact who need to know each other. However, similar to the proverb about battle plans, the first thing that goes out of the window, within an hour, is the battle plan, and in that situation you need to have the resilience and the resources to pivot and adapt.

I remember statements from Mike Ryan from the WHO during the first month of the pandemic saying that you just need to -- failure is okay, you continue, you just need to continue adapting. And for that you need to have the resources and the resilience in place, and you need to have the trust and the knowledge about who is responsible for what between key actors.

Q. Right.

Before coming to your conclusions as you set them out in the report --

LADY HALLETT: Just before you do, can I ask roughly how long ...

MS BLACKWELL: I think I will be five minutes more, my Lady.

LADY HALLETT: Because then Mr Lavery has some questions too.

MS BLACKWELL: Right. I am happy to break now, if my Lady would prefer.

LADY HALLETT: I think probably -- unless it causes you any problems if we --

A. I would just make one final point, please, about -- if I may?

LADY HALLETT: No, whether or not we break now.

A. Yes, of course.

LADY HALLETT: You can be back this afternoon?

A. Yes, I can do that.

LADY HALLETT: Okay. We shall return at 1.50, please.

(12.55 pm)

(The short adjournment)

(1.50 pm)

LADY HALLETT: Ms Blackwell.

MS BLACKWELL: Thank you, my Lady.

Dr Kirchhelle, before we look at the conclusions

that you draw in your report, I'd just like to ask you about the Global Health Security Index, about which the Inquiry has already heard, and the United Kingdom's ranking in the category "Rapid response ... and mitigation of the spread of an epidemic".

Professor Mark Woolhouse has told the Inquiry that, in scoring considerably higher than any other nation, with the US coming in second in this category, there is a danger of a risk of complacency, that the government could reasonably claim that it was well prepared for a pandemic, citing that independent evaluation. Do you agree with that concern?

A. I think there's a risk involved there.

Q. Okay, but secondly, he went on to say that though the criteria used by the index seemed to be sensible, it proved a very poor indicator of outcomes in the face of an actual pandemic, not only for the UK and the US, but for other countries as well, and perhaps that indicates that we should not confuse preparedness and defined by the Index with vulnerability, and that the global health community needs to re-evaluate the relationship between the two.

He told the Inquiry that until that is done, it will be difficult for any government to make an objective assessment of either. Do you agree with that?

A. I think that's true, yes.

Q. Further, in his evidence, Professor Woolhouse told the Inquiry last week that the designer of the indices defended them on the grounds that they weren't intended to be predictive, and he then asked rhetorically: well, if they weren't, then what were they for?

Taking all of that into account, do you think that these types of international reviews are helpful or do they create the trap of complacency and fail to have any or any sufficient regard to vulnerabilities?

A. So I read the same article that Professor Woolhouse read, and I had the same thought with regards to the conclusion that the authors drew there.

So I think that international comparisons actually are incredibly important for public health preparedness. The question is what kind of comparisons we have. With the Global Health Security Index, it was a very specific form of evaluation that overemphasised technological preparedness, the capability to sequence and rapidly respond to outbreaks, but didn't accurately take into account the overall baseline capacities of health systems and public health systems in these countries.

There is also an issue here at the international level with experts being drawn primarily from English and American settings, going to the same public health

schools, and then perhaps evaluating quite a technologically -- according to quite a technologically-based paradigm health systems performance.

So what you see with the Global Health Security Index was a simplification of what preparedness consists of, and it's very much in keeping with this line of thought that I've described emerging from the 1990s onwards, this focus on upstream, top heavy epidemic intelligence, but it leaves out of the equation what happens when these centres of excellence are overwhelmed, when they fail.

So that was too reduced. Nonetheless, within the EU, when the UK was still a member, you had regular ECDC ratings of preparedness, and regular talking through of public health systems' performance. Those were useful and they taken on board by the UK Government, some of the ratings there.

So international comparisons matter but we shouldn't be overly focused that they actually paint a completely accurate picture.

Q. All right.

Now to your conclusions. You say in your report that the past offers no simple and timeless solutions for the future of public health across the

United Kingdom, but, having analysed eight decades of evolving infection control, you see that there are four central challenges going forwards.

First, declining attention.

Second, administrative misalignment.

Third, emergency priorities.

Fourth, what you describe as selective memory.

So just dealing with each of those individually, please.

First of all, declining attention. Is there a perceived problem that you have identified and you can now acknowledge as a problem going forwards that most UK citizens don't perceive infectious disease as a significant threat to life?

A. That is true.

Q. Right. Why is that a problem?

A. It's multifaceted. Most UK citizens within their family have lived memories of multiple pandemics, including here, by the way, also the HIV/AIDS pandemic, which spread in the 1980s, and yet over the years we have seen a consistent decline of societal attention for infectious disease threats.

There are multiple connected reasons for this. The overall reason is obviously that the primary cause of death in this country has increasingly shifted towards

non-communicable diseases. Parallelled with this, however, is a problem of investment and protecting the infrastructures that have allowed this decline to take place in the first place.

So the reason my report goes back to the 1930s is to showcase how these baseline infrastructures function. They run quite smoothly most of the time, when it comes to decreasing overall disease pressures on society. Ironically by functioning so smoothly attention for their maintenance declines, and this we can see with investment levels when it comes to protecting core capabilities such as local public health laboratories, local public health specialities, et cetera.

There is also, interlinked with this, the other issue of advocacy. So when we go, again, back to the beginning of this period, public health was very much focused on infectious disease control, but what we see now with public health is a very broad multidisciplinary family of approaches that focus on health improvement, prevention, et cetera, and infectious disease control, this core original capability, is no longer necessarily at the forefront of this thinking. We see it with the recruitment but we also see it with problems of advocacy within the public health community when it comes to protecting and prioritising infectious disease control.

To layer on to that, the final thing, if we then broaden the remit of the public health agencies that we task with protecting public health, more and more and more to cover more aspects, we will inevitably find that persistent lobbying for the protection of these baseline infrastructures will be drowned out by other issues over time.

So it's a multi -- it's a staggered problem in many ways, but what needs to be done is to increase a permanent advocacy for the maintenance of baseline capabilities that protect you when technology isn't available to curb an outbreak.

Q. By doing that, visibility will be maintained and possibly even increased?

A. Ideally, yes, but we shouldn't expect that societal memories of Covid-19 remain stable. History indicates otherwise. History indicates that forgetfulness will set in and that alternative priorities will come. So what you need is a persistent independent lobbying and protection of resources within government, and also within the profession.

Q. What about the central challenge that you describe as "administrative misalignment"?

A. One of the leading historians of medicine always describes global health as essentially local. Nothing

at the global level really matters if it can't be put into action locally effectively. So public health continuously has a challenge of aligning health systems' responses with public health surveillance and other local responses and integrating it nationally into a complete holistic picture and intelligence-led approach to public health.

What we've seen in the UK, already before devolution but accelerating after devolution, is an increasing -- I lack the word -- diverse set of administrative structures, at the local level and at the national levels in the devolved administrations.

This is complicated by the fact, in my opinion, that UKHSA is de facto an English public health administration, yet has obviously UK-wide remits. Other countries -- I'm German -- for example, have a federal system that is fully federal, where you have an administration that then navigates between individual state-led public health systems.

But in the UK this results in -- the fact that we have a kind of hybrid system results in very difficult alignment processes. We see the evidence of this in the tabletop exercises and also in the very telling Department of Health review from 2017, where it said that people within Public Health England didn't

necessarily know who even to call or when to call devolved administrations. And if I'd looked in the devolved administrations, I'm sure I might have found similar references with regards to who is responsible for what within Colindale.

Q. So ensuring a clarity as to role and responsibility would assist in terms of what you describe as administrative misalignment?

A. There is no optimal solution. All of the devolved administrations have experimented with different systems. We also see, historically, different systems in the UK. But I think what would help would be to avoid reformism, so to avoid changing everything up every ten years --

Q. And changing the name of structures and organisations?

A. Which is interesting, because it seems to happen after crises, which seems to draw artificial lines after things.

So there is a clear need to either stabilise arrangements and make them work better, or to have a more participant-led discussion about how to structure, UK-wide, things going forward.

I draw here on the selective memory because at the moment most of the memories that are always drawn on are English memories when it comes to restructuring public

health systems. So it needs to be, in my opinion, a more representative, a more diverse process, that is not just led from Westminster but has more active involvement of the devolved administrations.

Q. Well, drawing upon your movement into the selective memory challenge, as well as what you've just told the Inquiry in terms of the devolved administrations and the UK-wide memory needing to be captured, is it also your view that there needs to be a proper representative amount of memory coming from different layers of public health?

A. Memory capture has been a formal part of pandemic planning since the 1990s, and yet while reading these enormous amount of reports as a historian since this time, I've been repeatedly struck at how narrow some of the capturing has been. Often enough it's national institutions capturing memories that focus on national responsibilities that then results in new organisations being created or responsibilities shifted around between different ministries, but rarely have I seen memory capture exercises that actually have ample evidence from the local level.

I think this is something that relates to the key identified repeated weaknesses in the UK pandemic preparedness that comes out of the reports where local

perspectives and local alignment seems to be one of the most sticky issues when it comes to preparedness.

So ensuring a representative participatory form of memory capture that draws on the DPH, the infection control nurses, the specialists at the local level seems absolutely central, and to add to this capturing in great detail the experiences of the devolved administrations, and -- I think in the Inquiry this has come out repeatedly -- capturing data that is comparable across devolved administrations is absolutely key to ensuring a more robust base of evidence moving forward.

Q. Your final challenge going forwards you describe as emergency priorities. How can we best prepare ourselves for what might come next in terms of our emergency priorities?

A. I think there's a philosophical dilemma here, because if you prepare for one emergency in a range of multiple emergencies, devoting all of your resources towards these specific scenarios might actually end up weakening your core baseline capacity.

So what we see from the 1990s onwards is a shift towards this top heavy upstream mode of epidemic intelligence and preparedness -- this is not limited to the UK, it's also in other countries -- amidst a decline of the bread and butter public health capacity that you

need when the centre fails.

This is, I think, a core theme especially in the case of England that is quite prominent from around 2000 onwards, and we saw it playing out with Covid-19 but we saw the warnings earlier about the repeated capacity problems and the fact that global reviews of the UK systems focused on these centres of excellence but perhaps might neglect the baseline hinterlands capacity of preparedness that I referred to in the *Giants on Clay Feet* article.

Q. Yes.

Finally groupthink. The Inquiry has heard varying views on this and whether or not it existed and caused any difficulty in some of the scientific organisations and groups that were either permanently set up or stood up for an incident such as Covid-19.

As a historian, what is your view of groupthink and have you seen it present in some of the groups that you've looked into?

A. I think at the scientific level there is no evidence whatsoever of groupthink. There's such a diverse planning landscape, and we see it with the WHO in 2018 putting Disease X formally onto pandemic planning landscapes. We see it with the planning for all kinds of high-consequence infectious diseases. We see it with

the fact that the UK had a SARS plan, it had a MERS plan, there was planning across multiple pathogens. The fact that it still remained an influenza-based framework --

Q. Yes.

A. -- I agree here with Jenny Harries' assessment, is that influenza was the most realistic disease to plan for.

Q. Why was that?

A. We have the most robust data of pandemics based on influenza and they occur regularly. It's not just 1918, the UK had a pandemic in the 1950s, in the 1960s, there was a major scare in the 1970s, another major scare in the 1990s, and a major scare -- or an actual pandemic in 2009. So it's realistic to see influenza as the most likely respiratory pathogen that can occur and that can spread.

There were obviously failures to update the plan for new knowledge emerging around asymptomatic transmission and aerosolised transmission, but it doesn't mean that this amounts to groupthink. And I come back to the point I made earlier in my hearing, that a legal document is not necessarily representative of a very diverse ecosystem of thinking about pandemics. Again, we only need to look to popular culture, where actually there's a huge amount of pandemic scenarios already

embedded, with board games with multiple pathogens, and all of these things around.

So my point here is influenza is a realistic framework to base pandemic planning around, it's there regularly. Moving forward it might be useful to perhaps have more generic names and prepare more generically for airborne pathogens, but I don't subscribe historically to the argument that groupthink delayed preparedness. In 2019, December, we have the first phase one clinical trial of a MERS coronavirus vaccine, starting in Oxford and then in Saudi Arabia. This is physical evidence that groupthink was not present. The UK was preparing for multiple high-consequence infectious diseases with pandemic potential.

Q. But going forwards there needs to be a flex, doesn't there, there needs to be an ability to adapt whatever preparedness follows from this Inquiry and in the days forwards, there has to be an element of adaptability?

A. Yes. I mean, while writing the report I asked myself the one counterfactual question: would the UK have performed better had it been the classic influenza pandemic that hit the country in 2020? And I think there were serious doubts about the ability to handle that. The PPE levels had fallen precariously low. The resourcing at the local level was not there. The

communication pathways had not been addressed, et cetera.

So yes, we dealt with Covid-19 as a novel pathogen. Would the UK have performed so much better had it been a classic, still novel, influenza strain? I have my doubts.

MS BLACKWELL: Thank you very much, Dr Kirchhelle.

My Lady, you've provisionally provided permission for Covid Bereaved Families for Justice Northern Ireland to ask questions on a topic. May that now be done?

LADY HALLETT: Mr Lavery.

Questions from MR LAVERY KC

MR LAVERY: I think that's working now, my Lady.

LADY HALLETT: It is.

MR LAVERY: I think I'm jinxing the system.

Dr Kirchhelle, my name is Lavery, and I represent the Northern Ireland Covid-19 Bereaved Families for Justice, and as you're aware her Ladyship has permitted me to ask a couple of questions about your report and about your evidence.

The first question I want to ask you about is about Operation Cygnus, which you referred to in your report, and there's a section in that which is about the four nations' response and one of the lessons identified, lesson 4, says that:

"Meetings of the four health ministers and CMOs should be considered best practice and included as part of the response 'battle rhythm'."

And the report also notes that:

"... the Devolved Administrations reported that they felt that they had been left out from some key decisions taken during the exercise, such as the decisions around activating the Relenza stockpile."

Do you agree that the lack of formal involvement of the Northern Ireland Executive had a negative impact on the Executive's ability to prepare for the pandemic? First, in relation to that, the first part is about whether meetings between the four health ministers and CMOs of the four nations, formal meetings, should be considered.

A. I mean, it's always difficult to judge from an absence what the likely reaction would have been. It is remarkable that more formal meetings didn't necessarily take place. I believe the Inquiry has already heard evidence that representatives of the Welsh public -- and also of the Scottish public health system were on committees like NERVTAG more in the function of their expert qualifications rather than as a formal part of the process.

I think as a historian it struck me as remarkable

that there's no more formal representation of devolved administrations there. I can't comment on how that affected performance in Covid-19.

Q. Because in your evidence earlier you talked about the value of informal relationships, in particular within the devolved nations, and would you agree that if there were more formal structures there and contact that that might lead to informal relationships?

A. So the informal relationships are extremely important between the public health establishment, and in all of the oral history witness seminars that I've attended participants have stressed that that is extremely important to overcome administrative misalignment in crisis situations.

I have, however, no doubt that more formal discussions at the administrative level would also improve co-ordination between all four nations. The more one talks about common challenges the better the solutions will be that come out of them.

Q. Would you agree, then, that -- you complained about this being Westminster-led, the preparedness, that if there was such a formal arrangement that it might be less likely to be Westminster-led?

A. That is a decision for the UK populus to make, how they want to organise living together between the

four nations in the UK. I think that there is, historically speaking, a bias towards English experiences in the memory capture and that that memory capture has informed pandemic planning moving forwards, and I think that's all I can say there. I think it -- necessarily more diverse views will likely create more resilience within the system when it comes to thinking through how the same crisis can have different impacts in different territories of the UK.

Q. And that England might even learn from the devolved administrations? I think you said that there were some ambitious initiatives from Northern Ireland which foundered because of a lack of government there?

A. Northern Ireland is a very, I think, specific historical case, in terms of the overall political environment, in which health systems reforms have been attempted. I think that the UK almost provides a natural experiment for different forms of public health systems, with each devolved administration having slightly different approaches towards public health, and I think that the UK might profit from looking in more detail at how public health can work as an NHS-only operation or within the Northern Ireland context of an integrated health and social care system. Lessons can be learned from every case study.

I come back to the one point that is very important here, it's that learning lessons also requires comparable data, and that is a big problem.

Q. Well, in that context, the next question I wanted to ask you was: you noted at paragraph 138 of your report that there were very few exercises which were UK-wide in scope, so is that part of the impact of that, or what was the impact of that?

A. Again I wish I'd had more time for the report and for the archival investigation. The devolved administrations have lots of tabletop exercises themselves. Pathogens cross borders without thinking of them. So obviously any UK-wide health threat, even a small outbreak, will probably trigger some kind of wider UK response. So it seems logical, and I'm thinking here of Sir Oliver Letwin's evidence to the Inquiry, to formalise UK-wide preparedness planning going forward.

Q. Then also, well, at paragraph 139 you referred to:

"... the difficulties UK planners faced in moving from tabletop exercises ..."

Which you discussed earlier in your evidence:

"... and influenza plans to creating and sustaining the real physical infrastructures, staffing levels, and regulatory alignment necessary for an effective pandemic

response."

Does the fact that similar concerns about the UK's pandemic preparedness were repeatedly raised throughout the relevant period indicate that a stated commitment to pandemic preparedness was not reflected in the action taken by government in the public health sector during the relevant period?

A. I think there is a mismatch between public warnings about pandemics and structural permanent reforms that are put in place.

Q. You talked about the need to adapt but also about the need for resources. Was the position similar throughout the UK or did it vary across Northern Ireland, Scotland, Wales and England?

A. I'm not sure I follow the question.

Q. Well, your concerns about -- during the relevant period, that the pandemic preparedness was not reflected in action, tabletop exercises were not reflected in real physical infrastructure, staffing levels and regulatory alignment?

A. Yes, so I mean, again, as I said earlier, you know, it's one thing to have a tabletop exercise, it's another thing to have consistent policy implementation focus, either at the UK level or within the devolved administrations. Some devolved administrations clearly

pay more attention to this than others, and again we come back to the point about diversity and perhaps a lack of a whole UK-wide approach to these issues.

Q. Finally, then, Dr Kirchhelle, what was the impact of austerity policies on this? Ms Blackwell in your evidence earlier put to you the declining funding of public health, and I think you described it as a yo-yo effect, reacting to different situations. Was there an impact of austerity on these?

A. I'm very sure that austerity and, I think, the overwhelming body of evidence collected by this committee speaks to that -- or by the Inquiry speaks to it, that there was a negative impact on public health levels. The King's Fund has published data also measuring life expectancy changes during this time, changes in developments of life expectancy.

So I think there is quite a large body of evidence with which I would agree that austerity certainly didn't have positive impacts on pandemic preparedness. The yo-yo effect is an interesting one. Often after health emergencies you get high levels of very targeted but often very short-term funding for public health, and it comes back to the point about that this funding rarely builds what Philip Mortimer was already warning about in 2003, the long-term capacity in the system, because it

goes away after a while and it's often too selective to build this core baseline capacity.

Q. In your summary you say that in Northern Ireland there was, if you like, a double whammy impact of fiscal pressures and sustained and regular periods of breakdown of government, Stormont stalemate?

A. I draw here on the secondary literature, so this is both from the European Health Observatory but also from social scientists assessing it, to describe Northern Irish health policy in between the sitting of Stormont as managerial drift, and it's very difficult to prepare for the future as a public health agency if you're faced with significant political uncertainty, both about your own administrative arrangements within Northern Ireland and then, obviously, in the Northern Irish case specifically, also the pending exit of Britain from the EU, which in the annual reports also causes consternation.

Q. Together with fiscal pressures?

A. Together with fiscal pressures, yes.

MR LAVERY: Thank you, my Lady.

LADY HALLETT: Thank you, Mr Lavery.

MS BLACKWELL: My Lady, that concludes the evidence of Dr Kirchhelle.

LADY HALLETT: Thank you very much indeed for your help,

Dr Kirchhelle, you kept saying several times if you'd had more time to do more research, you've done a huge amount in the time you've had. Thank you very much.

THE WITNESS: Thank you very much.

(The witness withdrew)

MR KEITH: My Lady, the next witness is Professor Sir Michael McBride.

PROFESSOR SIR MICHAEL McBRIDE (sworn)

Questions from LEAD COUNSEL TO THE INQUIRY

MR KEITH: Good afternoon. Could you give the Inquiry your full name, please.

A. Yes, Michael Oliver McBride.

Q. Sir Michael, thank you for the provision of the two witness statements that you have given this Inquiry. They are INQ000187306, dated 12 May, and INQ000203352 dated 6 June. You've signed both of them and provided statements of truth.

Sir Michael, you are currently the Chief Medical Officer for Northern Ireland. You were appointed to that post in September of 2006. Before then, were you medical director at the Royal Group of Hospitals from August 2002?

A. That's correct.

Q. Have you also during that period been the chief executive of Belfast Health and Social Care Trust,

a position you held from December 2014 to February 2017?

A. Yes.

Q. So you were fulfilling that task whilst you were also Chief Medical Officer?

A. That's correct, yes.

Q. I'd like to start, please, if I may, with the position of the Chief Medical Officer for Northern Ireland and the Chief Medical Officer Group, in the general scheme of things, in Northern Ireland.

May we have, please, our organogram, INQ000204014 at page 14. You will see there, in the middle of the page, the "First Minister and Deputy First Minister, The Executive Office", and, towards the bottom of the page, the blue box, "Department of Health", bottom right-hand corner, "Chief Medical Officer Group" and "Chief Medical Officer".

It is obvious that the Chief Medical Officer is part of the Chief Medical Officer Group, which is part of the Department of Health. Could you please give us an overview of the Chief Medical Officer's functions as part of the Department of Health?

A. Yes. As Chief Medical Officer my main role is to provide independent advice to the permanent secretary, to the minister, on professional technical matters and on scientific matters, and I'm supported in that role by

a number of professional colleagues.

I also have responsibilities in heading up the Chief Medical Officers' Group for, particularly, Population Health Directorate, which you see in the box. Population Health Directorate is headed up by the director of population health, who reports through to the Deputy Chief Medical Officer and in turn through to myself.

The Population Health Directorate has responsibility for a number of policy areas which are of relevance to the Inquiry, namely health protection, including screening and vaccination, and also emergency preparedness and response in terms of relevant policy and guidance.

It also has responsibility for health improvement policy, so that would be in relation to departmental policy on alcohol and drugs, on suicide prevention, and a range of other pertinent areas -- you know, with respect to reducing health inequalities.

Q. That's quite a lot.

A. That's quite a lot.

Q. The CMO Group obviously, therefore, discharges functions beyond the individual functions of the Chief Medical Officer, so from what you've said it appears to be concerned with health protection policies, vaccination,

infectious disease prevention and control, and health improvement generally.

Where, within that structure, that's to say the CMO Group structure and the Population Health Directorate structure, does the specific issue of emergency planning in the health field come in?

A. Yeah. I should add, if I may, before answering that, that there are a number of other policy area directorates within CMO Group and that includes the pharmacy directorate, which is headed up by the Chief Pharmaceutical Officer and also --

Q. Chief Dental Officer?

A. Chief Dental Officer.

Q. And Quality, Safety and Improvement Directorate --

A. Indeed, indeed.

Q. All right.

A. The responsibility for the area that you mentioned resides within the Emergency Planning Branch within CMO Group.

Q. Do we have that in the blue box under Department of Health?

A. That is correct.

Q. Does the Emergency Planning Branch have day-to-day responsibility for that part of the Department of Health that's concerned with the budgets for pandemics and

civil contingency planning and preparedness, emergency planning, and that area?

A. It does. I mean, I can expand if that's helpful, but yes.

Q. The Emergency Planning Branch doesn't report, however, directly to you as the CMO, does it?

A. Ultimately it reports through to me, yes.

Q. Ultimately to you?

A. Yes.

Q. But does it report through, in fact, your deputy, the Deputy CMO?

A. It would report through the director of Population Health, and then in turn to the Deputy CMO and ultimately to me, so I would have overall responsibility.

Q. All right. So in truth you are two stages removed: the reporting goes through the director of population health, a Ms Redmond, and then, through her, to the Deputy CMO and then to you?

A. Correct.

Q. With the terrible travails of Covid behind you, is that a structure which worked, in your opinion, or would you say that the Emergency Planning Branch, given the importance of the matters which it addresses, should be closer connected to you, the CMO, in a more direct

reporting structure?

A. I think the span of that area of work within population health was too large, I think I would absolutely acknowledge that. Since that organisational structure there we have subsequently carried out a review within Chief Medical Officer Group, we have established a separate Health Protection Directorate, and also, again to use that acronym again, the -- a separate directorate for emergency preparedness, resilience and response, which is headed up by another director.

So we have, in essence, expanded those particular areas and reduced the responsibilities of the Director of Population Health accordingly. And appropriately, I would add.

Q. So to be clear about this, following Covid you in fact commissioned a review --

A. Yes.

Q. -- in 2021 as to whether or not the current structure of the CMO Group was appropriate, in terms of its ability to prepare for emergencies and addressing civil contingencies, and that review recommended a new directorate which is not a subdivision of the director of Population Health Directorate --

A. Correct.

Q. -- it is now its own directorate, the Emergency

Preparedness, Resilience and Response Directorate?
A. That is correct.
Q. So may we take it from that that it now has a greater prominence and importance in the general scheme of things structurally within the Department of Health?
A. It's certainly always had a prominence and importance. It certainly has now greater resource aligned to it, and I think that is -- you know, it's a distinction but, I mean, I think your point and the premise of your point is well made and I accept it.
Q. It's a change that you wouldn't have recommended and put into place unless it had intrinsic worth?
A. That's correct.
Q. Right.
In your statement you say that the CMO Group is the sponsor branch for the Public Health Agency in Northern Ireland. What does that mean? What is the sponsor branch?
A. Yes. The Department of Health has a number of what we refer to as arm's length bodies. Those arm's length bodies are established in statute, so the Public Health Agency is established in statute. There are a series of agreements in place in terms of objectives, business plans, priorities which are set on an annual basis, in agreement with the PHA, which are set against their

annual allocation in terms of their budget.
As the CMO Group and head of CMO Group, we meet with the PHA on a very regular basis through what are called sponsorship review meetings, so those are an opportunity from a fixed agenda for the PHA to raise issues that they have in relation to meeting their objectives, any resourcing pressures that they may be encountering, or areas where they require us to support them in engaging with other parts of the department, given that their responsibilities, particularly around health improvement, are cross-cutting and impact on a number of other policy areas within the department.
So those sponsorship review meetings meet -- occur very regularly, and then they also feed into the mid-year and end of year accountability review with the permanent secretary, which I also attend, along with the chief executive of the PHA, Public Health Agency, and the chair of the board of the Public Health Agency.
Q. All right. We are, of course, concerned with the responses of the various bodies and the planning done by them in the context of infectious disease outbreaks. In the Northern Irish Department of Health structure, which body is primarily responsible for operational response in the face of an infectious diseases outbreak?
I ask because we have in this structure, and we've

now heard, the Public Health Agency, but my Lady's heard evidence that in the civil contingencies part of the Northern Irish government, the CCG(NI), there is a hub, there is also an emergency operational centre within the Department of Health, all of which would be expected to carry out operational responses.
So where does the PHA's operational functions come in the general scheme of things?
A. The Public Health Agency will lead on the vast majority of outbreaks of infectious diseases. I mean, if I could give, for example, coming out of Covid we had a number of unfortunate occurrences where we saw higher than normal rates of infection. If you recall, we saw scarlet fever in young children occurring more frequently, and indeed in older people. We had an increase in a type of hepatitis, non-A, non-E hepatitis, again, which the PHA was leading the Northern Ireland response.
In both those cases the PHA was plugged in, as it were, to the wider UK response, so the UK Health Security Agency established an incident management team at a UK level, and then the Public Health Agency would manage the response at a Northern Ireland level but liaising with the UK Health Security Agency.
So in the day-to-day management of outbreaks,

whether that's food-borne, for instance, they would work with local councils in supporting the management of that outbreak, it would be the Public Health Agency. When it gets to a scale where it's beginning to impact at a population level, then it's at that point we make a decision within the department whether we continue to keep a monitoring brief or we need to lean in to support the PHA and the -- in the wider response.
Q. Which you'll then do by triggering the arrangements at a national level by virtue of the CCG(NI) Hub, by the operational centre within the Department of Health, where of course the emergencies are regarded as a -- as requiring that sort of national response?
A. Certainly at the extreme end, yes.
Q. Escalation?
A. But there is a sort of in between level where the Public Health Agency may determine, for instance, look, this outbreak is now impacting on the health service, and they may say to colleagues in what was the Health and Social Care Board, "We need the resources of the health service to support us in managing this outbreak". So a good example was Mpox recently, where the Health and Social Care Board had to come alongside the PHA to support the vaccination of those that were at significant risk.

At a further escalation, the PHA, the Public Health Agency, the Health and Social Care Board may decide to activate silver, and in that case we really at that stage would be thinking: look, this is perhaps something which is getting to the stage where it may be affecting the Northern Ireland population. Then we as a department would seek to support, provide strategic direction, provide advice and support. And if it really got to the level where it became a civil contingency emergency at that scale, then that's what you would see the triggering of the Northern Ireland Hub --

Q. The national arrangements?

A. The national civil contingency management arrangements, et cetera.

Q. All right.

In your witness statement, there are references to two other groups that I want to ask you about. The first is the Northern Ireland Pandemic Flu Oversight Group. This appears to be a group that was established by you in 2018 to lead on health and social care preparedness and response, and one of the areas that it was addressing was the promulgation of guidance for surge capacity and also triage work by healthcare settings.

It seems to have been established by the Emergency

Planning Branch, the body to which you referred a few moments ago, and it was chaired by the director of Population Health.

What was the need for that body? Why was it set up in 2018, shortly?

A. Well, in short, this was following on from Exercise Cygnus. It was identified at a UK level that there was a need for surge plans right across health and social care but with particular reference to secondary care and social care. There were five workstreams set up at a UK level in the summer of 2017. All of the devolved administrations were part of that work. To ensure that Northern Ireland played its full part in ensuring that we worked within that structure, we established a CCG -- sorry, Civil Contingencies Group, a pandemic flu group, which over -- to overlook those five workstreams. I'll not go into the detail of those, but --

Q. This pandemic flu oversight group?

A. Beneath that then sat the Northern Ireland Pandemic Flu Oversight Group, with a specific purpose of developing surge plans in relation to secondary care and social care. As you say, it was chaired by the director of Population Health.

Q. I'm going to take the liberty of suggesting a correction

in the nomenclature, was it the Pandemic Flu Northern Ireland subgroup?

A. Yes.

Q. Right.

That body, so the first one I mentioned, the Northern Ireland Pandemic Flu Oversight Group, was therefore formed to ensure that the workstreams, the recommendations, the learning from Exercise Cygnus were properly implemented, and it led to an additional group being formed called the Task and Finish Group, which I think you asked the Public Health Agency and the Health and Social Care Board to establish, and that was then put into place the following year in 2019; is that correct?

A. Yes. Could I take a moment maybe to clarify that, because -- in case we're confusing each other.

Q. Yes. Please.

A. So there was the Civil Contingencies Group, which was plugged into the Pandemic Flu Readiness Board, so that was overseeing all five workstreams, which the director of Population Health was also chairing, but the Department of Justice, TEO, were members of that.

Then beneath that was a health-specific group, which was the Northern Ireland Pandemic Flu Oversight Group, again chaired and established by the director of

Population Health, established in March, and you're quite right that beneath that again --

Q. Is that a subgroup?

A. Yes, that was a subgroup of the group I've just mentioned.

Q. Then there was a task and finish group as well?

A. We -- yes, that group, the oversight group, comprised the department, senior executive directors within the Public Health Agency and the Health and Social Care Board.

I wrote personally to the then chief executive of the board asking them to establish a Task and Finish Group --

Q. All right.

A. -- looking for the PHA to develop the said guidance.

Q. That was in 2019?

A. November 2018 was the date of my letter and the group was established in 2019.

Q. Yes. An important function of that Task and Finish Group was to review and update health and social care influenza pandemic surge guidance, but, as events transpired, Sir Michael, although a draft was drawn up, it was decided by officials in these relevant bodies that further work was required, but that work never came to pass because of, of course, the impact of the

preparations for a no-deal EU exit and then of course Covid itself.

So the majority of the work that was due to be done by that Task and Finish Group, despite its title, was never completed, and therefore one may suppose that the structure of having a Northern Ireland Pandemic Flu Oversight Group, then a subgroup, and then a Task and Finish Group, alongside all the other groups, largely failed, at least in relation to that particular purpose?

A. I think -- well, it's absolutely correct to say that that work wasn't finished, for the reasons that you've outlined, both at a UK and at a Northern Ireland level because resources were diverted to EU exit planning. The work was incidentally picked up again in January of 2020, but of course then events overtook us.

Q. Of course.

A. In the end, further work was carried out in February and we did have surge plans in place for the first wave of the pandemic. But, again, we'll be looking at that in later modules.

Q. Indeed.

A. I think it was -- I'm not certain that I would necessarily agree that it's a structural issue in terms of complexity of the structures. You know, I think it's actually all about function and structures matter less.

There are some structures that matter -- work better than others. We did, however, make significant progress in a number of areas: the preparation in the terms of the pandemic flu plan, there was significant progress made on that, but again it wasn't completed. I think it's fair to say --

Q. We will come back to the planning a little later.

A. Okay.

Q. Just remaining on the structures, the Inquiry is aware from your witness statement and other material that there were -- I don't know whether they are still in existence -- a number of other bodies: the Health Emergency Planning Forum, the Critical Threats Preparedness Steering Group, the Joint Emergency Planning Board, the Joint Emergency Planning Team. There may be an appearance here of an overcomplexity or duplication of function or perhaps, to put it more charitably, a rather diffuse structure.

Has the structural system in Northern Ireland relating to healthcare been the subject of any type of overall analysis or rationalisation since Covid?

A. Certainly there is ongoing work in relation to review of the emergency response plan. There has been reviews of the business continuity plans across the system in terms of the structural elements that you've described and how

they interrelate, no.

I have to say for those working in the system, who need to know how those structures work, we know how those structures work and how they interrelate, and I can explain, for instance, the various -- the Joint Emergency Planning Board, the Joint Emergency Planning Team and how it supports the board. But I suppose really I absolutely appreciate from those looking in from the outside, it's a reasonable question to say: is there a simpler way of doing this?

I think we structure the work in such a way that we get the work done, and we put around it organisational arrangements to ensure, in as far as we possibly can, notwithstanding that there are always other pressures, other demands and priorities, that we get the work done in as effective a way as we can.

Q. That's the point, isn't it? I mean, the overall worth of a system is surely not to be determined solely by whether or not its participants understand what they're doing, it must also be determined by the outcome and the output, and --

A. Correct.

Q. -- there are significant areas in which the work which was meant to be done by some of these committees, groups and entities didn't come to fruition?

A. I think in the specific examples that you've mentioned, yes, however there are other examples where significant work was progressed and did come to fruition, and that work is ongoing on a, you know, daily, weekly, monthly basis. So, on those specific elements that you've mentioned, yes, where there was significant progress made. In some areas more than others there were aspects which certainly were not completed.

Q. All right.

Turning to another major issue in Northern Ireland, the collapse in the power-sharing arrangements. It is obvious, Sir Michael, from the evidence of Mr Swann last week and from the material before the Inquiry that the lack of an Executive, particularly between 2017 and 2020, had an adverse effect on, to use Mr Swann's words, the preparedness of the health and social care system.

In terms of staffing, it led to inadequate staffing levels, because key decisions simply couldn't be taken by ministers in the absence of a power-sharing arrangement, and the loss of strategic political oversight led to, to use the words of the permanent secretary, stagnancy on the part of the civil service.

To what extent, from your vantage point as the CMO within the CMO Group, did the collapse in the

power-sharing Executive have an adverse impact?
A. Maybe could I answer that in maybe three parts. I think there's sort of general context which I think is relevant. I think there is absolutely no doubt that the absence of ministers did have a significant impact on our ability to initiate new policy, develop new policy. We were not in a position to develop any relevant legislation, either primary or secondary legislation. And given that all of the work on what's referred to as the "Programme for Government", which is the cross-cutting work approved by the Executive where government departments put to ministers an agreed programme of work for government, we missed out and lost out on that -- the benefits of that cross-government approach.

I think specifically in relation to health there is no doubt that the -- it has been a very challenging resourcing situation over the last decade, and particularly so in Northern Ireland over the last five years, compounded by a reliance on annual budgets. So we were making decisions in terms of trying to live within budget allocations --
Q. So just to pause there so that we may be clear about what you're saying, one of the consequences of the absence of ministerial oversight is there is nobody in

position who can say, "Well, you can be permitted to move outside your budgetary constraints, we can take a different decision here in relation to resourcing or staffing levels because you've made a persuasive case that there ought to be a change", so in essence you have to simply live within your means, and those means were determined, of course, before the collapse in the power-sharing arrangements?
A. Yes, I mean, at that time there was limited ability for permanent secretaries to make those sort of decisions that you've alluded to, and that was guided by relevant court rulings and the Executive Formation and ... Functions Act, so you didn't have that same ability to move resources around and align them to priority.

That certainly impacted on decisions within health where we had to make savings, and obviously there's limited opportunity to make savings in health, particularly where you have got inflationary pressures of 6% per year because of technology and ageing population and their needs, and we had in that -- the five years running up to 1920 something in the region of a 2.90% growth on baseline each year, leaving a gap of 3% every year on year for five years.
Q. Meaning a deficit in your --
A. Yes.

Q. -- resourcing every year, year-on-year?
A. You know, a gap between what we needed and what we had. So the resulting position was that we were having to make decisions which were not necessarily decisions that should be made but decisions that had to be made.
Q. In addition, the Inquiry's heard evidence that the keynote report by Professor Rafael Bengoa, the Basque Country minister, he led, I think, an expert panel --
A. That's correct.
Q. -- review in 2016 called *Systems, Not Structures: Changing Health and Social Care*, which was I think envisaged to provide a framework for a significant reform in the Northern Irish health and social care system, that report couldn't be put into place either?
A. That's partly true. We were fortunate in that that report had been published prior to the collapse of the Executive, and in October 2016 the then health minister approved the *Health and Wellbeing 2026: Delivering Together*, which in essence gave the political mandate and the direction of travel for the transformation of health and social care services in Northern Ireland.

So we had a mandate within health, and we took forward, within the limitations of that mandate, a number of areas of work. So we developed a mental health strategy, we developed a cancer strategy, we

published an elective care framework, we undertook a major review of unscheduled care services such as in accident & emergency departments, and that's now going through to the first phase of implementation --
Q. Just pausing there, I'm sorry, Sir Michael --
A. No, you're okay.
Q. -- there is obviously a gap between planning and having mandates and reviewing the position, and of course implementation, which will depend, necessarily, on resourcing, and you've agreed that, of course, during the hiatus there was no ministerial direction on resourcing?
A. I completely concur with that, and it was the point I was about to make, which is that we put together the building blocks, we did some very good work in terms of what we would need to do, but there were clearly elements of this that required ministerial decision, and those areas that required a ministerial decision we were not possible -- it was not possible for us to progress.

There was progress made, and I could give some examples, but I'm happy to expand if that would be helpful.
Q. The sum of that, Sir Michael, is that although progress was made and reviews and plans and guidance were drawn up, because, as you say, you had a mandate, overall

there was a negative impact from the collapse in the power-sharing agreement because of the lack of resources and the sheer inability to be able to implement both that report and the other reforms and resourcing changes which were deemed necessary; that was the sum outcome, if you like, of the absence of ministerial oversight?

A. I think it had an impact, I don't think there's any question of that. Had we had ministers, I think it's a reasonable question to ask whether we would have been able to take further all of that work any more quickly, because the work still needed to be done to inform ministerial decisions. But absolutely, we -- there were significant elements of it that we could not implement without a ministerial decision.

Q. May I ask you about the Department of Health department risk registers?

A. Yes.

Q. Is that a process in which the CMO plays a significant role?

A. I certainly sign off on it. It's developed by colleagues within CMO Group, the relevant policy areas, and certainly would be brought to my attention, and I would see the details of that, I would have an opportunity to ask any questions, seek any clarification, and ultimately, as the risk holder, would

approve that to be considered by the top management group and subsequently by the departmental board.

Q. May we have, please, INQ000185379, which is the 2018/2019 Department of Health department risk register.

This is page 24 of the version, Sir Michael, so that you can get your bearings in relation to it, and it shows a particular risk, row DR6, in the bottom left-hand corner:

"The health and social care sector may be unable to respond to the health and social care consequences of any emergency (including those for which the [Department of Health] is the lead government department) due to inadequate planning and preparedness which could impact on the health and wellbeing of the population."

Now, that, of course, doesn't reflect the reality, it is the identification of a potential risk.

If we go back up, please, to page 24, the rating given for the residual risk and the risk once it has been treated, that is to say once it has been mitigated or thought has been given to how the risk may be reduced by a response, the ratings are assessed to be high and medium, both for impact and likelihood in both cases, that's to say current and treated, and then a number of actions are identified: developing and reviewing strategic frameworks, developing a pan flu preparedness

by participating in the Pandemic Flu Readiness Board, leading the CCG(NI) subgroup, and -- over the page -- work in relation to the contribution to the UK Draft Pandemic Bill, the development of pan flu guidance for Northern Ireland incorporating primary, secondary and social care, delivering a work programme to include training, testing and exercising, and then -- at the bottom of the page -- management of health countermeasure stockpiles.

Can you recall, Sir Michael, to what extent the identification of that risk was debated within the CMOG or the Department of Health in 2018, particularly from August, which is when I think that was published or made available?

Was there a significant level of concern that that risk identified in the left-hand side of the page was required to be mitigated and, in essence, things had to be done on quite a number of fronts in order to make sure that the risk could be properly mitigated?

A. I mean, I can't recall the specific discussions at that time. What I would say is that, certainly going back as far as when I took up post in 2006, pandemic flu and the risks associated with it has always been on the departmental risk register.

The normal process whereby that would be assessed

would involve my receiving the assessment of the risk, as I said, have an opportunity to engage with the team, it would then being discussed on more than one occasion in its development by the top management group of the department, which includes the perm sec in respect of policy leads, including myself, and in due course would be approved. It would be considered then by the departmental board, who would have an opportunity to interrogate it, ask questions, ask for further work or assurance --

Q. Then it is brought together and finalised?

A. Then in due course it would be reviewed on a quarterly basis by the risk holder, ie me, by TMG, by the departmental board, and then by -- separate to that again, by the departmental audit risk and assurance committee, which basically provide assurances to the permanent secretary if there are any gaps in the risk register or in the controls within the risk register about which he should be concerned.

Q. So were you the risk owner for this risk, DR6?

A. Yes. These are all corporate risks, departmental risks, but the approach at that time was there had to be one nominated risk holder, and I was the nominated risk --

Q. Is that why your name appears in column 4 under SRO, for senior responsible officer?

A. That's correct, yes.
Q. Why is the column "Actions completed, completion date and owner" blank on this 2018 to 2019 risk register? For this risk. Not, I should say, for other risks, but for this risk.
A. Yeah, because what we have here is a template for completion, as opposed to a completed template.
Q. But there are other risks identified on this document, for which there are completed actions?
A. Yes, but the point is that this is a living document and it's updated on a quarterly basis, so that column to the extreme right, which is the action completed, would inform the column that you've highlighted in blue in terms of what progress had been made or why there had been no progress made in a particular area.
Q. So at the date of the making available of this variant of the risk register, this form of the risk register, there were no actions completed and therefore nobody could write into that column anything by way of actions completed, completion date or ownership?
A. No, I don't think that's a reasonable conclusion. I think that this -- I mean, there will be completed documents where these actions are completed, and I'm sure they can be provided to the Inquiry, for any particular date. So, as I say, it's a living document

and this is a template for completion.
Q. By January 2020 and the eve of Covid, and the making available of the subsequent risk register, presumably for 2019 to 2020, do you know whether or not those actions which are identified as being planned were completed?
A. Some were completed, others weren't. I mean, I can go through them if that would be helpful to you.
Q. Yes, that would be. Perhaps we can start with the pandemic flu preparedness programme?
A. Yes, that was completed. The emergency response plan was updated, signed off in January 2019 and published in February 2019.
Q. The pandemic flu guidance for primary, secondary and social care?
A. We've just alluded to that. That was progressed but not to completion. A draft had been received but it required further work.
Q. So it was not completed by January 2020?
A. That is correct, but -- progressed but not completed.
Q. The work programme for training, testing and exercising?
A. That was completed. The training was completed in June 2018 with a full exercise of the emergency operations centre in November 2018.
Q. So that was the setting up and the running of the Hub or

the departmental --
A. The departmental --
Q. -- emergency operational centre?
A. Correct.
Q. That was in the context, was it not, of Operation Yellowhammer?
A. It certainly would have been related to that, but again it was also related to preparation for pandemic flu. It so happened that Yellowhammer was going on in the background as well in terms of EU exit preparation.
Q. Was there specific testing of the operational arrangements, the emergency response arrangements, in the context of planning or emergency preparedness for infectious disease? Because I must suggest to you that although it's clear that the Hub was operating for Operation Yellowhammer and also the departmental emergency operational centre, it doesn't appear that they were operating for the purposes of readying the taskforce for pandemic planning.
A. I mean, the EOC operates generically irrespective of what the threat or hazard is. It isn't a specific response mechanism or co-ordination mechanism to a particular threat. In many respects --
Q. But -- I'm sorry, Sir Michael -- that action planned was to deliver a work programme to ensure clear

understanding of roles and responsibilities of key responders and familiarisation with key activities and processes in the context of planning and preparedness which could impact on the health and wellbeing of the population?
A. Yes.
Q. So rather different?
A. No, I think that's the point I'm making, is that the activity of the EOC is agnostic to whatever the threat is. Its role, function, its communications in and out to the department from the health service, the sharing of information across government, its support to myself, if it's activated, in chairing the strategic cell, is agnostic to whatever the threat is. So it's about the process of informing -- taking information in to inform strategic decisions by myself, if I was chairing gold, and sharing that strategic information out across other departments and back out to the health service.

So in many respects it's neutral in terms of what the particular threat is, so it provides a generic function.

LADY HALLETT: Mr Keith, is that a convenient moment?
MR KEITH: Yes, my Lady, it is.
LADY HALLETT: I shall return at 3.15.
(3.03 pm)

(A short break)

(3.15 pm)

MR KEITH: May we have back up, please, document INQ000185379, page 14, and a different risk this time, Sir Michael, DR1, that available financial resources are insufficient and are not deployed effectively to ensure that essential services are maintained.

The risk is identified both pre and post mitigation as high, which is why it's red. A number of actions are planned, with target dates and identification of ownership, and then, in relation to actions completed, completion date and owner, the essential position was this, wasn't it, that, as you identified in your witness statement, there was a shortfall, so resources were simply not enough to be able to meet the anticipated demands of the Department of Health?

A. Correct.

Q. In your witness statement you say that that's an acknowledged area of vulnerability for the department, and you also make the point that it was difficult then for the department to maintain readiness at a high level, in anticipation of future pandemics, and that it would be likely to remain so.

Can you just tell us, please, whether or not this position continued up to the time of the pandemic? This

is a 2018/2019 risk register. Was it the same position throughout the entirety of 2019 and into 2020?

A. Yes, and probably has deteriorated since that time.

Q. In your witness statement, you also refer to a report from the Department of Health Emergency Planning Branch and a lessons learned review. It's dated November 2021.

It's INQ000188797, page 9, please.

Right at the bottom of the page, "Training, validating and review":

"Despite training from Operation Yellowhammer during 2019, at the beginning of the response there were insufficient fully trained staff to cope with the volume of information or the pace of the pandemic."

So there wasn't just the resourcing issue, that had fed through to an absence or an insufficiency in the correct number of fully trained staff to be able to cope with the position as the department went into the pandemic?

A. Yes, there were probably two separate aspects to that.

We had 62 staff trained, but even that, given the demands of the pandemic, initially wasn't sufficient and we had to go out for more volunteers.

The second aspect that compounded it was the remote working. We were not set up for the level of remote working that was required and that was an added problem.

However, that was rapidly addressed.

So there is absolutely no doubt that there were very significant challenges during that period.

Q. So, in conclusion, whilst Operation Yellowhammer, the operation for dealing with the potential consequences of a no-deal EU exit, had some benefits in terms of interdepartmental training, training up members of staff who could be utilised to stand up for crisis management, benefits arising out of better developed supply chains, a better understanding of medicinal supplies and how to get medicine in the event of border problems, none of that could take away from the stark reality which was, in terms of resources and training and staff numbers, the Department of Health was in a pretty woeful position on the onset of the pandemic?

A. I wouldn't use the word "woeful", I think it was a very challenging position. I think the challenges of the pandemic were unprecedented. We had resource but we did not have the strength and depth that was required to mount what was an extremely sustained response to the pandemic.

Q. The lessons learned documentation shows there were insufficient staff numbers going into the pandemic --

A. Yeah.

Q. -- and there was a resource shortfall in the two years

leading up to it; that is correct, is it not?

A. I think it's a fair summary, in -- but I think this was a document that was written at the time with the experience of the first wave of the pandemic.

Q. So that we're absolutely clear, Sir Michael, that paperwork shows that the pre-existing position on the onset of the pandemic was a shortfall in resources and insufficient numbers of staff. It wasn't that the demands of the pandemic revealed that there wasn't enough resources to be able to deal with the pandemic that ensued, or that there weren't enough members of staff to be able to deal with the pandemic as it developed, it was that, objectively, the department was insufficiently resourced and insufficiently manned at the moment that the pandemic struck?

A. I think it is fair to say that there were very significant staffing problems, you know, I'm not -- I would agree with that. There was capacity, there was capability, there was training, but, as we began to respond to the pandemic, even that was insufficient to mount the response that was required.

Q. Of course, because the scale of the pandemic --

A. Yes.

Q. -- was outwith anybody's imagination?

A. Yes.

Q. All right.

Another topic, please, which is the Health and Social Care Influenza Pandemic Preparedness and Response Guidance 2013.

Is this the document which was produced largely in reliance upon the United Kingdom 2011 pandemic influenza strategy, which was itself based upon the learning and the outcome from the H1N1 swine flu and the report from Dame Deirdre Hine?

A. In part, yes. So there were three inputs to that document. The first, as you say, was the UK strategy itself; the second was the recommendations arising from Dame Deirdre Hine's review; and the third element was then a sort of lessons learned report that we did internally within the department, and those three elements contributed to that document, yes.

Q. We've noted that the document is very similar to the Welsh variant, that is to say the Wales Health and Social Care Influenza Pandemic Preparedness and Response Guidance. I'm not going to torment you by asking you which country prepared its guidance first, but one or both of the two countries must have had half an eye at least on the other one's guidance?

A. I think it would be normal practice. We worked very closely together across the UK in terms of developing

guidance and we will share documents with each other -- I mean, that I think is a strength -- and certainly we did share our document with colleagues in Wales. But, then again, we also benefit from colleagues in Wales and Scotland and England sharing their documents with us. So I think that's a strength which I hope continues.

Q. But all those strategies were all themselves aligned to the United Kingdom approach in 2011, about which my Lady has heard a great deal of evidence.

A. Yes.

Q. Does it follow, Sir Michael, that because of that close alignment, the 2013 guidance may be said to have suffered from the same strategic errors -- if that is what my Lady finds in due course -- as the 2011 document: the absence of detailed consideration of the variable and inherently unpredictable characteristics of a pandemic, a zoonotic pandemic outbreak, an absence of any debate about the consequences of differing levels of transmission, of incubation periods, of viral loads, or asymptomatic transmission and the like?

A. I mean, I think, you know, the 2011 document makes passing reference to the ability to adapt the UK pandemic plan. I think it's inevitably the case that, with the experience that we've now all lived through, that that document did not provide any effective basis

for responding to the Covid pandemic. But you're absolutely correct that our guidance was based on that and, you know -- as I've said in my evidence statement and has been said by others -- we absolutely do need a pandemic flu plan, but we also need something that is more generic, that is agile enough to be scaled up very quickly but then can be specific enough to be tailored to the particular pathogen, the particular virus or other agent, and then the particular control measures put in place depending on how it's transmitted.

Q. And indeed the risk assessment process at United Kingdom level, and also nationally now, reflects the broader range of scenarios which were absent from that original strategy; and it had no consideration, did it, of the need for mass diagnostic testing or mass contact tracing, or mandatory quarantines or self-isolation, or any of the countermeasures which may have been thought appropriate for a non-influenza catastrophic pandemic?

A. I think that's fair comment. I think it makes reference to contact tracing. However, I do not believe it was envisaged that contact tracing or indeed community testing would be taken to the scale that we did subsequently in the Covid-19 pandemic. So I would agree with that.

Q. Northern Ireland is of course in a unique position,

because it is a separate geographic entity from the United Kingdom, it shares a land border with another country. Why was that -- why were those specific characteristics of Northern Ireland not reflected in its own 2013 guidance? There is no consideration of what we may call the single island epidemiological issue. The strategy and the guidance was drafted very much as if Northern Ireland was the United Kingdom, but there are unique circumstances prevailing there.

A. Again, I suppose a high level point is that there's and always has been and remains very close co-operation on a north/south basis in relation to a whole raft of policy areas, and also --

Q. And we will come back to that, Sir Michael.

A. I think in relation to the question that you ask, there are probably two main reasons for that. One is an issue of scale, and the second is, if I might put it broadly, a constitutional issue.

In terms of scale, we benefit hugely from being integrated into the UK system in terms of pandemic preparedness at all levels, both in terms of preparedness, planning and in response. We are a very small department, a very small group of departments. We simply could not replicate the expertise that exists or indeed the scale of work that takes place within the

other jurisdictions, and we're dependent on that at all sorts of levels.

We're dependent on it from the point of view of scientific advice from SAGE and the various expert groups; we're dependent on it in relation to the risk assessments from the UK Health Security Agency and from the National Security Risk Assessment; and we're also dependent on it from the point of view of response, so in terms of the clinical countermeasures, management board, in terms of the procurement of PPE at a national level, the procurement of vaccines, antibiotics. And we benefit from it, as we discussed earlier, from all of the work that was taken forward, for instance, through the Pandemic Flu Readiness Board, in terms of the Pandemic Flu Bill.

So we could not, in our own right, replicate all that, and we are crucially interdependent on that work that occurs at a United Kingdom Government level.

Q. Why was it not open to the Department of Health to replicate that work, to take the advantage and the benefit of the scientific advice, the generic thinking, the guidance and the policies which had been no doubt carefully thought about in London and promulgated throughout the rest of the United Kingdom, and consider alongside that material the obvious fact that

Northern Ireland is part of an island --

A. Yeah.

Q. -- that no pandemic would respect a land border with the Republic of Ireland, and that there were obviously advantages in being part of an island and that proper sensible consideration of countermeasures would pay due regard to that feature, but that thinking is absolutely absent?

A. I think it probably comes on to my second point. I absolutely agree with you that -- the premise of your question, that pandemics know no borders. The constitutional reality is that we are part of the United Kingdom --

Q. Of course.

A. -- and in relation to, you know, reserved matters such as international travel, for instance, that was an important consideration in the pandemic, that is a matter which is reserved.

If one considers also then, as part of the response in terms of the funding, the procurement of vaccines, the funding of furlough, we are crucially dependent on the United Kingdom Government to provide that, and when the COBR is activated and the UK civil contingencies arrangements are activated, Northern Ireland is part of that.

So I think the question is probably not a technical issue for myself, rather a policy decision for ministers. As I've alluded to in my statement, I think there is real strengths and would be much merit in considering all of this at a UK and Ireland level. Indeed, one would extend that across to the common travel area. Because, again, pandemics don't respect borders and there is freedom of movement of people within the common travel areas; there should be.

So I did allude to exercises which test that, not just at the operational level, not at just the policy level, but also at the ministerial level.

Q. Let me put the question a different way, Sir Michael: it is obvious, and there's no significance in this feature --

A. No.

Q. -- it's well known that there are a number of sophisticated and significant cross-border entities which look at matters which cross the land border in the island of Ireland. You have given examples of bodies dealing with obesity prevention: the All-Ireland Food Poverty Network, the North South Alcohol Policy Advisory Group, the British-Irish Council workstream, there's work on suicide prevention cross-border, and there is -- as we've heard last week -- the Cross Border Emergency

Management Group.

So there's no surprise --

A. No.

Q. -- the existence of the Republic of Ireland and the southern part of the island of Ireland is an obvious feature.

So my question to you, though, is: given all that, why was there no consideration epidemiologically in that guidance -- in the 2011 guidance, to the strategies, the policy documents that followed, the 2013 guidance in the case of the Department of Health -- to the obvious feature that it is a single epidemiological island and that any sensible debate of countermeasures and the spread of a virus would have to take that into account?

A. Well, I think, if I may say so, I think it's broader than the single epidemiological unit that is the island of Ireland. It goes much further, and I think that involves the UK and the island of Ireland, and I think that's the point that I was making: that I think that is a policy matter for respective governments to consider. Although I'm well outwith my area of competence to speak on the responsibility of governments, but I do think that that is a matter for governments to consider those interfaces.

Now, there are mechanisms in relation to -- you

mentioned the British-Irish Council, et cetera -- there are mechanisms in place, at a very practical level, in terms of -- and answering the question about the common epidemiological approach -- at an operational level, at a Chief Medical Officer level, we did take common epidemiological approaches to the border counties where we often had hotspots one side of the border, the other side of the border, and we requested -- the Chief Medical Officer in the Republic of Ireland and myself requested the Public Health Agency and the Health Service Executive to work collectively along with local government, broadcast media, civil society, in addressing those hotspots.

So at a very practical --

Q. So once --

A. -- that works.

Q. Forgive me. Once the pandemic had started --

A. Yeah.

Q. -- you met weekly with your counterpart from the --

A. Yes.

Q. -- Republic of Ireland in order to address that obvious feature of your joint position on the island?

A. Sure.

Q. So that only highlights, though, the absence of any sort of debate or formalised or regular --

A. Sure.

Q. -- meetings to deal with pandemic preparedness in advance of --

A. But that wasn't --

Q. -- the pandemic?

A. I mean, the point I would make is we did exactly the same in 2009 during the H1N1 pandemic. So at that level there is very good and effective co-operation, always has been --

Q. At the operational level?

A. At the operational level, supported by respective Chief Medical Officers. I think the wider question in terms of: could we -- could the improvement at a United Kingdom Government/Irish Government level, you know, I think is a matter for others. Because there are policy decisions in that space, and a good example of that was the alignment or non-alignment of international travel restrictions at various points in time.

I mean, I think of relevance -- if I could give an example very briefly -- was discussion at the Executive with the First Ministers of Scotland, Wales and the Chancellor of the Duchy of Lancaster about a sort of five nation, two island approach, and I think that's the sort of space that we do need to think about

for the future and any future pandemic preparedness.

Q. All right.

Chief Scientific Advisers. In Northern Ireland there is no general Chief Scientific Adviser for the Northern Irish government, for the Executive, but there are two CSAs, are there not, one attached to the Executive Office and a second attached to your own department, the Department of Health?

Was it apparent prior to the pandemic that there was a lacuna in the system insofar as there was no general unattached Chief Scientific Adviser for the government?

A. Just to take it back a little bit, there are two Chief Scientific Advisers, one within the Department of Health, and the second one within the department --

Q. Oh, DAERA?

A. Yes.

Q. I'm sorry, yes, you're quite right.

A. The Department of Agriculture, Environment and Rural Affairs.

There is a second interim sort of chief government scientific adviser that has been appointed as an interim and, as you heard from Denis McMahon's evidence, there had been a number of attempts to appoint a substantive Government Chief Scientific Adviser, but that -- I mean, your -- the point is well made that there is not

a central government Chief Scientific Adviser. I think that is an inherent weakness.

Q. The CSA role was, at least pre-pandemic, part-time. It's obvious that very little advice was sought from Professor Young, who was the Chief Scientific Adviser for the Department of Health.

A. No, again, I did hear that in questions and evidence provided during Robin Swann's session. It is not accurate to state that the departmental -- Department of Health Chief Scientific Adviser did not provide advice to the department. He provided it on an ongoing basis, on a number of really important areas such as the Health and Social Care Research and Development Strategy, the Northern Ireland genomic strategy, the Northern Ireland Rare Diseases strategy, but that advice was provided to the Department of Health. I think --

Q. So may not have found its way to the Executive Office and to the attention of --

A. Yes, and I think that's the point that --

Q. -- ministers there?

A. -- Professor Young was making, that he had not been asked to provide advice directly to the Executive. It's just a statement of fact.

Q. So there is a plan for the future recruitment of a chief governmental or a governmental Chief Scientific Adviser.

Can you say to what extent those plans have developed?
A. I mean, that's been taken forward by the Executive Office, as I understand, so I couldn't really comment on the detail of that.
Q. All right.
Within the Department of Health, was there any contribution to the issue of pandemic preparedness on the part of the CSA within the Department of Health?
A. No, the contribution to pandemic preparedness, apart from myself, would've involved the two Deputy Chief Medical Officers, the senior medical officer for health protection, who would have provided specific scientific public health advice, and other colleagues within the Public Health Agency as necessary.
So the role of the departmental Chief Scientific Adviser was really in response mode, where with myself he would support me in providing scientific and public health advice to the health minister.
Q. And to what extent was the departmental CSA linked into the UK CSA network, or to the well known committees concerned with disease and emergency outbreaks, for example SAGE and SPI-B and NERVTAG and HAIRS and so on?
A. I mean, we benefit hugely from those expert committees, and our representation on them, in whatever capacity

there, as observers or as full members. I think, as Sir Chris Whitty mentioned in his evidence, a very salient point, which is there is a difference in rigour and co-ordination in slow time, ie not in an emergency as opposed to an emergency situation such as the pandemic. They worked extremely well during the pandemic. I think there needs to be a further look at and examination of how they are co-ordinated in other times.
Q. Professor Young was able to get the benefit of SAGE because of course he became a full-time attendee from March 2020 onwards.
A. Yes.
Q. Prior to that time, Northern Ireland had only observer status, did it not, on SAGE, and wouldn't necessarily be invited to attend?
A. Certainly I attended meetings in February of SAGE, a number of SAGE meetings. I think it's fair to say that there were many demands for a number of meetings over that period. It was often difficult to attend meetings and also, I think as you've heard from other witnesses, initially those were on conference calls and the sound quality was not good. And certainly throughout the pandemic, and particularly after the return of the Chief Scientific Adviser from a period of

absence due to ill health, the department was represented by either himself or his deputy, because we appointed a deputy for a period, at all of the SAGE -- well, certainly almost all of the SAGE meetings.
Q. But it's obvious, going forward, that in respect of any health emergency affecting Northern Ireland, there must be full participation by its officials on the relevant bodies including SAGE?
A. Yes, I mean -- and I think Sir Chris covered this as well -- I mean, the only person that is entitled to full-time membership is the chair and obviously it depends on the nature of the emergency. Certainly if it's a health emergency I think -- my belief is that there would be absolute requirement for us to be full members from the outset.
Q. Do you know what the position is in relation to the JCVI, the Joint Committee on Vaccinations and Immunisations, and also the Advisory Committee on Dangerous Pathogens: are they committees on which Northern Ireland has observer status or full participant status?
A. We have observer status on both of those committees. In relation to JCVI we, from 2015, we have both observer status and also an individual who is now a full member of JCVI and also able to attend subgroup meetings of

JCVI. So we are well represented on JCVI.
Q. You, in April of 2020, established the Strategic Intelligence Group, chaired by the CSA --
A. Correct.
Q. -- I presume, from your department, so the departmental CSA, and including members from a number of august universities and academic institutions and the PHA and also, I think, members of your own department as experts.
Why, if you were receiving sufficient scientific and technical advice from the UK bodies, was it necessary to set up the Strategic Intelligence Group?
A. I mean, it is good practice that the provision of scientific advice is open to scrutiny, and up until the establishment of the strategic intelligence group, the co-ordination of that advice to ministers was being provided by myself, with input from Professor Young and the two Deputy Chief Medical Officers. We felt that, without seeking to replicate or second-guess SAGE, we felt there would be much merit in a wider group of individuals considering not just the SAGE advice but other publications, other evidence emerging from other parts of the world, and actually to take that and apply it in the context of the trajectory of the pandemic in Northern Ireland.

So I have to say it was very useful. It applied, at one sort of degree of remove, challenge to us in terms of our thinking which then informed our advice to the health minister.

Q. What about forecasting and modelling? Was the system pre-pandemic adequate for the purposes of providing the Executive with sufficient information about modelling and forecasting in the event of a pandemic?

A. We certainly improved it. We did have full access to Northern Ireland-specific modelling from the subgroup of SPI-M, which is a subgroup of SAGE. That was specific to Northern Ireland but it wasn't as current and real-time as we wished, so I asked the Chief Scientific Adviser on his return to establish a Northern Ireland modelling group, which he did. That continued then to provide as close to real-time modelling and various scenarios as we possibly could, and in due course I directed the PHA to build that capacity and capability into their organisation, which has now happened. So we now have that capacity within the Public Health Agency.

Q. But you ordered the capacity to be set up --

A. Yes.

Q. -- under the guidance of the CSA and then latterly under the PHA --

A. Yeah.

Q. -- because the provision of information that you were receiving pre-pandemic, or at least on the outset of the pandemic, was not sufficient for your purposes?

A. I wouldn't go so far as to say that. What I would say is that it was sufficient but it wasn't as real-time as we would wish it to be. What is really important, as we've heard from previous witnesses, is that we take the data that we have, which was Northern Ireland-specific, and we ensure that is as close to real-time and projecting potential scenarios as we can to assist ministers in their decisions.

Q. All right.

Exercises, and the outcome of SARS. Following SARS, did the Department of Health carry out a one-day exercise called Exercise Goliath?

A. Yes. I struggled to remember this earlier when you mentioned it.

Q. It was before your time, I should say, Sir Michael.

A. Well before my time, but it does take me back in time, because it was 2003. However, I was -- and did take part in that exercise. I was then the medical director in the Royal Group of Hospitals Trust, as it was then, the predecessor of the Belfast Health and Social Care Trust, and did take part in that exercise.

Q. Now, its relevance is that within the lessons that were

identified following the exercise was this lesson: that operational contact tracing mechanisms with the potential for scaling up need to be developed at board and trust level. A further recommendation revolved around the fact that there appeared to be insufficient discussion heard on primary prevention to avoid spread of the assumed SARS coronavirus, and also that participants in that exercise had voiced concerns about contact tracing capacity. Indeed, in the questionnaires filed by the participants, almost every participant mentioned the absence of sufficient contact tracing capacity.

That was a long time before 2020, of course, but many of the aspects of the system or at least the inadequacy in terms of sufficient mass testing, mass contact tracing and the need to prevent spread at an early stage of the outbreak, can all be traced back to some of the concerns expressed following Exercise Goliath, and I wanted to know, therefore, what you knew of the extent to which those recommendations and concerns had been acted upon?

A. I'm, as I say, not in a position to answer that. I would assume that, as is normally the case, that those recommendations would have been progressed and taken forward to updates of the emergency response plan, which

I think was first developed in, from memory, in 2009. That is an assumption; I can't say that with absolute certainty.

Q. But it didn't provide for mass contact tracing or surge capacity --

A. Sure.

Q. -- on the level which was anticipated in the recommendations from Exercise Goliath?

A. No, and I think therein is the difference, because again this was, you know, looking at it, rightly or wrongly, through the lens of a high-consequences infectious disease with very limited potential to become a pandemic. So it wasn't looking at these requirements through: might we need this for a pandemic? It was looking at: are these needed now for this high-consequences infectious disease which has limited -- compared to coronavirus, SARS-CoV-2, has limited person-to-person risk of transmission except particularly in those who are in close contact, such as in the healthcare environment?

So I think that that, I suppose, leap of thinking and challenge in terms of thinking did not occur, I can only assume, in terms of whether these are capabilities that we may need to deploy in a scenario where we are dealing with a novel pandemic virus.

Q. And this comes back to the original strategic error, if you like, in the 2013 strategy?
A. I think that's a fair comment.
Q. What about Exercise Cygnus? Exercise Cygnus focused, for the purposes of Northern Ireland, on issues concerning communication with UK scientific experts, communication with the United Kingdom Government, and cross-border co-operation with the Republic of Ireland.
By the time of the pandemic, had all those issues or recommendations been implemented or were there still concerns, as the Department of Health saw it, by January 2020?
A. Well, certainly, as we covered earlier, there were a number of elements of work which informed the five workstreams under the Pandemic Flu Readiness Board, which -- some of which had been progressed further than others, but certainly not all completed.
In relation to Exercise Cygnus, we did provide input back to inform the lessons learned report that was produced at a UK level, but we also developed our own lessons learned report, and we identified ten key areas to be progressed. Of those, six were completed. There were two that we didn't complete and couldn't complete because it involved -- one of them, the recommendation 2, involved a review of the UK strategy

of 2011. Recommendation 5 involved a completion of the communications around pandemic flu. Now, we had submitted our updated action in April 2018, and there was one recommendation which we will never complete because it's about ongoing review and validation and updating.
Q. In relation to the health and social care system?
A. Yes. So we did make significant progress on the recommendations that we had identified, but there are a number of recommendations within Cygnus -- which I think has been already covered in the evidence of others -- that were not completed.
Q. Could we have INQ000188776, please. This is a report from November 2018 concerning the delivery of the Civil Contingencies Group Northern Ireland resilience programme progress report, it's called a progress report template.
You can see there by November 2018 it asserts that good progress has been made on a number of areas but there are, at the bottom of the page, a number of issues still requiring resolution, excess deaths, and then over the page, that is on track.
Do you know whether or not that particular recommendation, that particular issue of excess deaths was completed?

A. Could we just go back, sorry?
Q. Yes, of course.
A. What was on track, sorry?
Q. Excess deaths.
A. I think while I wasn't directly involved in that work -- as you say, the Department of Justice is leading on it -- I think significant progress was made. I'm not certain whether that was completed.
Q. Then "Sector resilience", in the middle of the page:
"The Executive Office is in the process of collating information for issue to departments to commission resilience assessments for their respective sectors."
What is sector resilience?
A. It refers to, in simple terms, the preparation for the non-health related consequences of a pandemic. So the impact across broader society, the impact on the economy, the impact on education, the impact on a range of other sectors. Again, that area of work and that co-ordination of work on the non-health pandemic consequences falls to TEO to progress.
Q. All right.
Then do we take it that the first bullet point, "Resilience in health and social care, the preparatory work to establish a group to draw up service-facing surge and triage guidance" was the work to which you

made reference at the beginning of your evidence --
A. That's correct.
Q. -- which, due to the demands of Operation Yellowhammer and then the onset of the pandemic, was never completed?
The risk register for the Department of Health at the time, to which we looked earlier, made plain that the health and social care sector might be unable to respond to the health and social care consequences of any emergency due to inadequate planning and preparedness.
So may we take it from that that there was a general awareness that important parts of the post-Cygnus recommendations, because of the demands of lack of resource and insufficient staff numbers, were not being brought to fruition?
A. I make a sort of distinction, if I might, and I hope this is clear. The purpose of a risk register is to ensure that the objectives of the department are met, and clearly the department has a responsibility to provide health and social care services in whatever circumstances.
So the purpose of the risk register is to delineate some of the critical risks. It's not to say there's a significant risk that's going to happen; it's saying "This is a risk that we need to be very mindful of, this

is a risk that we need to be prepared for, and we need to take a range of mitigating actions to prevent that from happening".

Those that fall to health in terms of -- which we've discussed earlier -- are some of those mitigations. They're not all of them, but they are some of the mitigations, because it's not an exhaustive list, it's some of the high level mitigations that went into the departmental risk register.

Q. But not all the mitigations were put into effect, for the reasons you've described?

A. Yes.

Q. So the risks of course continue to exist, because they were not all met by way of the mitigating measures, for the reasons you've described?

A. And the only other point I would make is that risk will always remain on the risk register, because this is a material risk that will continue to remain on the risk register, as it has done from 2008. It is a risk that we always need to be mindful of. So it's never resolved, it always needs to remain as a risk and, as I say, there's a need to update the actions that we will take to manage the risk.

Q. Quite. But, because it was a high level departmental risk register, the department at a high level was aware

of the risks of course and the absence, in part, of the proper mitigating steps being taken to mitigate the risks?

A. In part but, as I say, there are a range of other mitigations that are in place that are not necessarily reflected in the department's risk register but would be reflected in the risk register of other organisations who would be mounting the operational response. So this is a very high level departmental document.

Q. One of the other pieces of learning that came out of Exercise Cygnus was the need to collaborate on cross-border issues and "operate a joined-up strategy with the Republic of Ireland". We have debated already some of the bodies --

A. Sure.

Q. -- to which you personally were party. Did the system of cross-border collaboration improve after 2016 and the outcome of Cygnus, before 2020, or was it in a state of stasis?

A. I can only comment from my own experience and knowledge. You know, from taking up post in 2006, there has always been very effective working relationships between both departments, but that's not really the question.

As to whether or not the recommendations in respect of cross-government collaboration were progressed and

taken forward by the United Kingdom Government and they engaged with the Irish Government, I couldn't say.

Q. All right.

Inequalities and data disaggregation. In your witness statement you refer to the development of a vulnerable people protocol --

A. Yeah.

Q. -- to define vulnerable people, and I think it was your people that developed the protocol in order to try to identify persons who would need particular assistance, of course, in the event of a pandemic.

When was that protocol drawn up? It was pre-pandemic, was it not?

A. From memory, it was drawn up and completed in 2013 following a particularly severe episode of severe weather that Northern Ireland experienced at that time. So 2013, from recollection.

Q. Then was it subject to variation throughout and then operated, utilised at the time of the pandemic?

A. Yeah, I think it was updated in 2016. I mean, I don't know if you wanted me to expand on the approach taken or ...

Q. Well, I was going to ask you: was it a protocol that paid attention to the clinical needs of vulnerable persons, or was it a protocol that was able to identify

vulnerabilities ethically and socially as well?

A. It was more of a generic document. So the approach -- the initial thinking of this was that we could develop a list of lists, with the appropriate safeguard to data protection and personal information, of vulnerable people right across Northern Ireland. Obviously that wasn't possible.

So, as it was developed, it was agreed that we would develop an approach which was based on those known to Health and Social Care as vulnerable. Now, that can be for a variety of reasons, it doesn't necessarily relate to clinical vulnerability. There can be other reasons why people are socially vulnerable.

So those known to the health service, those known to utility services -- for instance, heat, light and power -- who would be on their lists as particularly vulnerable. Then we had a third category, which was the emerging vulnerable. Because obviously in any particular emergency situation there can be people who emerge, as the emergency progresses, who were not immediately obviously vulnerable at the outset.

So that was the approach that was taken.

Q. And who may not be known to the authorities and --

A. Who may not be known.

Q. -- and who may need to be discovered?

A. Yeah.
Q. And was that protocol of great practical utility in the face of the pandemic itself?
A. I don't believe it was of great practical utility, if I'm honest. I think the nature of the decisions that were made, the speed at which they were made, the fact that we were making decisions which were about saving lives, protecting the health service, meant that we had to make -- ministers had to make decisions based on the advice that we were providing, which didn't allow us the time to consider as fully as we, perhaps on reflection, could have; the impacts, the disproportionate impacts that some of those non-pharmaceutical interventions, the restrictions on people's lives were having on those who were most socioeconomically disadvantaged.
Q. Because of course those countermeasures, the decisions, were taken at a very high, generic level?
A. They were.
Q. They applied across the nation, and it was simply not possible to have regard to the particular characteristics which might have underpinned a more vulnerable-centric approach to social restrictions?
A. I mean, I would agree with that. I mean, we did, whenever we reviewed the restrictions -- which we did on a three to four-weekly cycle -- we did give

consideration to those who would be particularly adversely impacted, and there were certain mitigations that we put in place to try to address that. So we worked very closely, for instance, with the Department for Communities to try to provide the requisite financial support and other support to those who were vulnerable, those that were elderly, those who were living alone.

We worked -- we identified, for instance, that school --

LADY HALLETT: I think we're moving on to response now.
MR KEITH: Yes.
A. Oh, okay.
MR KEITH: I was going to let Sir Michael finish that particular answer.

Finally, one last area, Sir Michael.

Much of your two witness statements are devoted to the important issue of lessons and, in essence, summarising what you say, you appeared to say this: that research capacity was of enormous utility, it was a great strength in the United Kingdom, and you were able to take the benefit of it in Northern Ireland.

For the future, the best thing that could be done to ensure that we have the capacity, the generic skills to be able to meet the next pandemic is to keep that

research base in place, to make sure that we have the scientific wherewithal to be able to respond to the next pandemic, but also this crucially: the training of a core group of individuals with transferable skills who can then be used to -- to use the current nomenclature -- scale up to the next health emergency.

Is that the nub of it?

A. Yeah, there are a number of issues which we need to maintain capacity. I mean, the temptation is always, once an emergency is over, is to move on to the next set of challenges and the resourcing pressures are such that there's a high risk that that will happen. Our science base or research base served us extremely well. One area where we are deficient, as you've heard already, is around diagnostics, the ability to scale that up at speed.

In relation to your question, there is a need for all of government to see this as part of the day job. This isn't an add-on extra that those who are experts in emergency preparedness and planning response do. We will need those individuals, and continue to need those individuals, who have those highly specialist skills and experience and they need to be acknowledged, they need to be maintained. But we also need a set of generic skills right across government, in all government

departments, so that an effective response can be mounted and we can dial that capacity up and dial it down as the need arises. Because unfortunately we will not be able to maintain the level of response, responsiveness at the level that it currently is, but we will absolutely need to be able to scale that up at very short notice when the need arises.

MR KEITH: Thank you.

My Lady, you have granted permission for two broad areas of questions, I believe.

LADY HALLETT: I have.

Ms Campbell.

Questions from MS CAMPBELL KC

MS CAMPBELL: Sir Michael, my name is Brenda Campbell and, together with my colleagues here and in Belfast, we represent the Northern Ireland Covid Bereaved Families for Justice.

I have been granted permission to ask you questions across two broad topics, and I recognise from the outset that to some extent they have been covered, but I wonder if on behalf of the Northern Irish bereaved I might address some further issues in relation to them.

The first is in relation to funding for the Public Health Agency or, perhaps more broadly, public health services in Northern Ireland.

I don't know if you listened to the early stages of evidence that my Lady heard, but we heard from Professors Bambra and Marmot, are those names -- you're nodding --

A. Yes.

Q. -- so I'm assuming you tuned in to their evidence.

But in their report and in their evidence they told us that the UK fell from being ranked 26th globally in terms of life expectancy in 2010 to 36th globally by 2020, so one per year, if in fact it was not more rapid at different times.

They went on to say that life expectancy growth started to stall across the UK in 2011, something had changed in 2010 and 2011, and it coincided with a new government whose stated ambition was austerity. We heard some evidence in relation to that this morning from Dr Kirchhelle as well, and his reference to the King's Fund.

Now, you're nodding because no doubt those statistics are worryingly familiar to you in your role as the Chief Medical Officer, and indeed chief executive of the Belfast Health and Social Care Trust across that period.

When it comes to Northern Ireland, I wonder if we could put up, please, Dr Kirchhelle's expert report,

it's INQ000205178, and I'm hoping it's page 79, and paragraph 124 which deals specifically with Northern Ireland. So it's INQ000205178, and paragraph 124, please. There we go. Do you see it? It just goes across two pages, I think.

So, Dr Kirchhelle in his report notes that:

"Between 2010 and 2019, the provision of Northern Irish public health services was subject to numerous reviews whilst suffering from stagnating or reduced funding and political stasis. Following its creation, PHA's overall budget for health protection almost halved from £8.4 million in 2009/2010 ([which was] 15 percent of total programme funds) to £4.5 million in 2012/2013 (7 percent of total programme funds) before rising back to £7.7 million ([still only] 10.6 percent of total programme funds) in 2014/2015."

He observed that:

"Budgets during the second half of the 2010s remained relatively static with the [Public Health Agency] at times resorting to voluntary redundancies to save costs, which negatively impacted staff morale."

That chimes to some extent with the evidence that you were able to give us this morning, and should we understand that your evidence is that the situation has not improved since?

A. If anything, the situation has deteriorated since and --

Q. Yes.

A. -- I say, I don't recognise the detail of those figures in relation to health protection, but I'm happy to talk generally about the public health budget allocation.

Q. Well, that might be for a future module. But certainly where Dr Kirchhelle leaves off in 2019, the situation is that the Public Health Agency has suffered from real term reductions over a decade-long period, and what the bereaved families really are interested in is the impact of that on pandemic preparedness.

Did you hear the evidence last week from Mr Swann?

A. I did, yes.

Q. You did, and he told us -- and it was dealt with in some terms this morning and again in your evidence -- about the need for transitional funding to be available in Northern Ireland, not just so that the health service could keep going but so that very much needed reform could take place, and you agree with that evidence, I've no doubt, in relation to --

A. I do, yes.

Q. -- Mr Swann.

What he went on to say was that the impact of that or the consequences of that were, whilst there was readiness for some aspects of pandemic planning, the

aspects where we'd actually failed to invest and reform our health service had an adverse effect on how we responded as a Department of Health and as a society in regards to the additional supports that we had.

So although it was some readiness, essentially the health service was ill equipped to cope with the requirements of the pandemic.

Would you agree with that?

A. Plans and preparation are really important, but one of the most crucial aspects of the ability to respond to any emergency, particularly a sustained one or a pandemic, is the resilience of the health and social care system.

I think it is fair to -- say, and this is a personal and professional view -- that the health service in 2020 was not as resilient as it even was in 2009, with the H1N1 pandemic, and there are a number of reasons for that. We have alluded to some of them.

The lack of structural change, which was compounded by the resourcing situation and, as I said earlier, decisions that were made to live within budget allocation as opposed to decisions that should be made, and as a result that resulted in decisions that were short-term, and in the long-term counterstrategic and likely to cost more, particularly in relation to the

priority that needs to be afforded public health.
Q. Well, one practical consequence is that you've told us that, certainly as a significant part of your role in terms of planning, there was a recognition of a need for surge plans and for surge capacity within the health service and social care as well, and you'd agree with that?
A. Yes.
Q. That there was a Task and Finish Group that was to review and update an influenza pandemic surge guidance, although that wasn't quite completed?
LADY HALLETT: Ms Campbell, I'm sorry to interrupt, but you do seem to be straying somewhat from -- I think these are matters that Mr Keith has already covered.
MS CAMPBELL: In fact, my Lady, I hope I'm not straying too much, save to put it into the context of the evidence that we heard from Mr Swann last week.
If I may, it's in fact the last topic under this heading and it was only, if I look at the question in particular, it's about how the impact was mitigated --
LADY HALLETT: Okay.
MS CAMPBELL: -- with a focus on, and just to use the example of surge, given that it was both evidence from last week and evidence from today.
The surge capacity, we were told last week, in the

event of the pandemic, had to come from re-directing or standing down other services --
A. Yes.
Q. -- so what you give to Covid, you take from other areas. And my question to you is this: given the recognition of this as an issue, what did you do to ensure that the impact was mitigated and that there was or would be additional surge capacity?
A. I think my concerns about the resourcing position in relation to the health service in Northern Ireland are a matter of public record.
My concerns about the lack of structural change or the slowness with which structural change had been progressed are also a matter of public record. I certainly raised those concerns with -- within the department. There were difficult choices that needed to be made.
You've mentioned the PHA budget. Whilst they were not significant cuts per se in the public health budget they had to realise savings, so there were -- they had to absorb, for instance, you know, 6% additional costs in their admin budget.
Now, when you talk about admin in the Public Health Agency, that's professional staff who -- their salary costs are not insignificant, so it's not the same as

admin costs elsewhere. And similarly they had to absorb a reduction of some 4.3% in the years running up to the period in question in the programme budget. Now, the programme budget is the things that you do in relation to alcohol and drugs, other interventions to address health inequality.
I can't specifically comment on the -- this figure in relation to health protection. It seems odd that it goes down in one year and up in the next, but again Public Health Agency colleagues may be able to enlighten you on that.
In terms of surge, I think certainly as Chief Medical Officer I was leading at that point in time significant elements of the Bengoa work, so I was the senior responsible officer for the establishment of the day elective centres to reduce the burden on the health service and to have more people having their surgery on an in -- you know, day case basis. That was put to good effect during the surge because it meant that some of the red flags, et cetera, could continue and we weren't having as much of an impact on routine elective, although we did significantly impact on people waiting for routine elective surgery.
I could give other examples, but I am conscious of time.

So I did what I could in terms of helping shape, influence and provide leadership to that system change to ensure that, with the resources that we had, that we were restructuring the health service to ensure that it was as robust as it could be to address any intended pressures.
I have to say, however, that was largely to deal with the here and now. You know, in Northern Ireland the health service struggles on a day in, daily basis to deliver what it should be delivering, notwithstanding the additional pressures created by the pandemic and surge. And you're quite right, really what we had to do was turn off to a large extent all of that elective capacity, which had huge impacts right across the public, and people waiting excessive periods of time, even longer than they were before. The worst waiting times in the UK got even longer, people waiting in pain and distress, and we still are not in a position where we can recover that as quickly as we would wish.
MS CAMPBELL: Thank you.
MR KEITH: My Lady, I'm sorry to rise to my feet, I believe Ms Campbell may have had the ten minutes that it was agreed that she would have, and I'm very well aware that the Inquiry, for good practical reasons, can't sit past 4.15 today.

LADY HALLETT: Exactly.

What I'll do, Ms Campbell, may I suggest that I ask the question that I gave you permission to ask, just to finish off? Because we are under pressure, I'm afraid, for different reasons.

MS CAMPBELL: Yes, of course.

Questions from THE CHAIR

LADY HALLETT: Sir Michael, were pressures on the PHA exacerbated by uncertainty about regulatory arrangements amidst the UK's pending exit from the European Union, as described by other people including Baroness Foster, who's talked about the focus on Brexit, and Dr Kirchhelle this morning?

A. Sorry, could you repeat that?

LADY HALLETT: Were pressures on the PHA exacerbated by uncertainty about regulatory arrangements pending the exit from the European Union?

A. No immediate examples come to mind. There is no doubt, however, that their capacity was deflected, as everybody's was, in terms of trying to plan and prepare for EU exit; but I can't think of specific examples in response to that.

LADY HALLETT: Well, I think everybody's agreed there was an impact.

A. Oh, absolutely, without any question of a doubt.

LADY HALLETT: Thank you very much indeed.

MR KEITH: My Lady, that concludes the evidence for today.

LADY HALLETT: Thank you very much indeed, Sir Michael, thank you for your help.

THE WITNESS: Thank you.

LADY HALLETT: We may meet again in Belfast.

THE WITNESS: I think we may.

(The witness withdrew)

LADY HALLETT: 10 o'clock tomorrow, please.

(4.18 pm)

(The hearing adjourned until 10 am on Tuesday, 11 July 2023)

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