

# Science, Innovation and Technology Committee

## Oral evidence: Emerging diseases and learnings from covid-19, HC 506

Wednesday 24 January 2024

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Members present: Greg Clark (Chair); Dawn Butler; Tracey Crouch; Dr James Davies; Katherine Fletcher; Rebecca Long Bailey; Stephen Metcalfe; Carol Monaghan; Graham Stringer.

Questions 226 - 270

### Witnesses

Professor Dame Anna Dominiczak, Chief Scientist, Health Scotland; Professor Chris Molloy, CEO, Medicines Discovery Catapult; and Dr Robert Howes, Head of Discovery Sciences UK, Charles River Laboratories.



## Examination of witnesses

Witnesses: Professor Dame Anna Dominiczak, Professor Molloy and Dr Howes.

**Chair:** I am very pleased to welcome Professor Dame Anna Dominiczak, who is the Regius Professor of Medicine at the University of Glasgow and the Chief Scientist for Health in the Scottish Government. The focus of our discussions this morning, with Dame Anna and her colleagues, will be the Lighthouse laboratories, and in particular the Rosalind Franklin laboratory, which the Committee visited in Leamington Spa. Dame Anna was seconded to the Department of Health and Social Care to take on responsibility for all Lighthouse laboratories in March 2020, just as the pandemic was in full spate. She successfully led the Lighthouse laboratory in Glasgow and was director of the Rosalind Franklin laboratory.

I am pleased also to welcome Professor Chris Molloy, who is chief executive of the Medicines Discovery Catapult. During the pandemic he was the director of the UK Lighthouse labs network and chaired the industry-Government consortium that increased lateral flow manufacturing capacity 20-fold within the UK.

I am grateful to Dr Robert Howes, who is joining us virtually from the United States—Chicago, I think—where it is 4 am or thereabouts. It is 20 past 4 in the morning—particular thanks for either staying up late or getting up early; I do not know which it is.

Dr Howes was director at the Rosalind Franklin laboratory and previously led the Cambridge Lighthouse laboratory, which closed in April 2021, and is now head of Discovery Sciences UK at Charles River Laboratories.

I thank all three of you for joining us to help with our inquiry. Perhaps I could start with Dame Anna. What was the concept—the proposition—behind the Lighthouse laboratory programme, in the pandemic?

**Professor Dame Anna Dominiczak:** Thank you very much. Could I make one correction to the history? I came to lead the Lighthouse laboratories in the DHSC on 1 August, having succeeded Chris, who did it from March to August 2020.

**Chair:** I do apologise to you both.

**Professor Dame Anna Dominiczak:** But I was there at the beginning, building and developing the Glasgow laboratory. For me, March 2020 was an amazing time when colleagues from various walks of life came together. We have just heard that each group has a different motivation. That was not visible in March 2020, when the Lighthouse laboratories came together. You will remember they were then called pillar 2 laboratories, and academia, the NHS and industry came together, as did Government, across the board.

It was also important to me that the four UK nations worked together. The first three laboratories were in Milton Keynes, Manchester and



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Glasgow, so there was one in Scotland. Eventually, when they developed into 10 laboratories, there was one in each devolved nation.

The collaboration in March was absolutely incredible. I am using Glasgow as an example, but the same was true of colleagues in other laboratories. In one university, the University of Glasgow, 800 people volunteered to come and work. Most were PhD students and postdocs, with experience in laboratory work, which made everything easier. Companies that had already developed a test—in our case, Thermo Fisher—came to the site to help engineers to develop things. The Army and Navy transported essential pieces of equipment into the laboratories from universities, because, of course, pillar 2 was there to help the NHS. NHS colleagues provided quality control and the ability to use the test at scale, and to scale very quickly. Things scaled from nothing to thousands of tests in three weeks. It was absolutely incredible.

It is important to remember the colleagues who did it, who put in enormous effort. We have thanked them many times, but I want to thank them again. I have never seen that type of thing with everybody pulling together, with no differences, to deliver for the country.

Q226 **Chair:** Thank you very much indeed, Dame Anna. All three of you must be included in that. Your words are particularly significant given your illustrious career in medicine, as well as in research. That was the high point, and it is a very high point indeed.

Professor Molloy, my apologies: you were there from the very beginning. Remind us of those early days. Where did the initiative come from, and how was it initially formed? Perhaps you might tell us what you regard as the achievements.

**Professor Molloy:** Pillar 2, which was part of the DHSC plan for responding to the pandemic, asked me to establish a network of laboratories that would be able to do a single test at an industrial scale and quality across the nation, in a rapid style. We were there to augment the NHS and to work with the NHS, academia and industry—to use industrial-scale thinking, quality and action to provide that augmentation. That was the original purpose.

As we built and recreated spaces over the first three or four weeks—and that available space is a key recommendation as we go forward—we were building an industrial manufacturing operation across the UK to deliver those tests. I want to pay tribute, as I hope the Committee will, to the thousands of people who came in behind that programme. More than 6,000 people, with an average age of 25, produced over two years more than 150 million PCR tests; 98% of the nation's PCR tests were run through the Lighthouse, and that should not be a forgotten army.

What were some of the achievements? I have laid out some of them, in terms of the scale and pace. We got to over 1 million tests by May 2020, and we built and built from then. We were running 24/7 from around May



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through to the end of the pandemic. Those are the achievements. The legacy of those achievements was the UK's infrastructure, with the NHS, industry and academia genuinely working together with a single sense of purpose to deliver something extraordinary: the largest lab project in diagnostics in UK history.

Q227 **Chair:** Thank you very much indeed, Professor Molloy. I am sure that all members of the Committee would endorse your recognition of what you described as that army of volunteers who went to work to test the country at that critical time.

Anticipating some of our later questions, before I turn to Dawn Butler, you said that part of the achievement and the legacy was the ability of the different arms to work together. Was there intended to be a physical component to that—in other words, is it your view that it would be right to keep the physical testing capacity that was developed?

**Professor Molloy:** We built capacity as we went, and the Rosalind Franklin, which we will certainly come on to, was a big part of that capacity as we built it out, through those initial four labs, to 10; but, yes, although the lights of the Lighthouse network were turned off at the end of the pandemic, we need to leave the safety light on. We need that available space to move back into, should we need to fight the next war.

The next war does not necessarily look like the last one, but that available space was critical. We were creating spaces out of laboratories, open spaces and offices for that first four months or so of the pandemic, while running clinical tests and building a national supply chain of activity. So that available space was really important, and is part of what we need to lay down as a memory cell from this pandemic—but, also, we need those safety lights as we go on.

Q228 **Chair:** I guess the key question—we will hear in a few weeks from witnesses from the UK Health Security Agency—is whether, having done that, the muscle memory, as it were, of producing those labs is sufficient. In other words, could we do it again, but much more quickly, without needing standing capacity, or do we need to retain physical capacity because, with the best will in the world, it is not possible in the time available to do it much more quickly than last time?

**Professor Molloy:** Space is prime, here. The technologies that we will use to fight the next war may not look like the technologies we used to fight the last one; but the space that we would need to put them in and to take people to, so that we could effect the industrial process that we would again need, is paramount.

As for what that space is used for in the meantime, there are a number of potentials that would serve the nation and the diagnostics industry along the way. However, it is the available space to which we can move technologies, people and processing that is probably the most critical aspect.



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**Chair:** We will go into some detail on the particular case of the Rosalind Franklin laboratory, but, before we do that, Dawn Butler has some general questions about the Lighthouse network.

Q229 **Dawn Butler:** Thank you, Chair, and thank you to all three of you for the phenomenal work that you did.

Our purpose in gathering evidence and data is to try to establish what things we could do better or quicker when the next war comes. As you say, Professor Molloy, we have to keep the safety light on, but perhaps we also need to keep open the back or front door. I might not stretch that analogy any further.

There are lots of media reports around logistical challenges, technical problems and testing problems with the Lighthouse network. Obviously, there were going to be problems, but I want to know from all three of you whether what was reported in the media was correct.

**Professor Molloy:** I think that, in the absence of lots of information, there is speculation. During the Lighthouse programme, we spent most of our energy running PTR tests and growing that network. One of my learnings from it is that, at times, if we could have communicated more, there might have been less speculation and perhaps we would have had more informed discussion.

In the formation of an industrial process from a standing start, in that timescale and at that pace, it is important to recognise that you are learning as you go, but critically those industrial levels of quality control were paramount. In catching those issues as they arose and dealing with them, making sure we recognised that each sample counted, was important and was a message, and response to an individual remained vital all the way through. While it is accepted that as you grow an industry and manufacturing facility from nothing you will encounter problems, quality control is there to catch them and deal with them.

Q230 **Dawn Butler:** Dame Anna, what are the important things for the next war? What are the top three things in respect of which you say, "We need to make sure this is in place and that is in place"?

**Professor Dame Anna Dominiczak:** As my colleague said, there is huge pressure with demand exceeding capacity. What we eventually built was a laboratory-like factory, with a work flow we had never had before, doing one test but at huge volume. We do not know what Disease X will require, but it is likely that it will be an infective agent and that a similar need to do one or a very few tests at very high speed at volume with quality control will be necessary.

From everything I have seen and lived through, I believe that the ability to change from a relatively small laboratory doing lots of tests, which is what we do in the health service normally, to a few tests on a huge scale with more space will be necessary.

Q231 **Dawn Butler:** Space is at a premium. Dr Howes, what lessons were



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learned from the issues that were thrown up that we can take on board going forward? Thank you for joining us so early in the morning.

**Dr Howes:** It is a pleasure.

Many of the lessons have been alluded to. We were trying to grow capacity at the same time as deliver tests. That is a real challenge. We also have been focusing quite a lot on the facility and science. The people and logistics are really important.

One of the biggest challenges, which I think the Committee saw when it visited the Rosalind Franklin, was taking samples from the tubes in which they were shipped into the higher-throughput systems where we can then automate.

That was a challenge throughout the system, and a learning for the future would be: how can we make the collection and transport on the logistics side more compatible with the automation that occurs within the laboratory?

Q232 **Dawn Butler:** Is it fair to say that if the space is already there that would cut out a lot of the stress and worry, and you can focus on what really needs to be done?

**Dr Howes:** It would certainly solve one of those four factors for a future response. As we heard in the previous session, the 100-day response is all about speed, scale and access. To achieve that would solve one of the problems.

Q233 **Stephen Metcalfe:** A lot of what I wanted to ask around the testing regime that you set up and whether we are ready to do it again has already been covered. By the sound of it, you think we have taken some good steps to do it again; we could scale up testing. What else do we need to put in place so we can achieve what we did before, or preferably even faster?

**Professor Molloy:** When the network was being stood up I received huge amounts of inbound from industry, academia and so on asking how they could help. At the time, the answer was yes, almost independently of the question. That was great, but had I had the ability to know what industry had available it would have been so much easier for us to marshal that rather than learn it as we went. It would be important to have regular contact and to keep industry, academia as well as the NHS close in that triumvirate to make sure that on a regular basis everyone knows what would be needed if the whistle was blown and, therefore, who had what and where.

As Dame Anna said, we moved 400 pieces of capital equipment into the Lighthouses within a short number of days. All of that came from academia. I think the Committee would be amazed at the level of generosity, mobilisation and singularity of purpose. There were even messages of good will stuck to the back of fume hoods that we received



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on the back of trucks. It was quite unbelievable. That was great, but if we can do this in a more systematic way, with regular war rooms where we can ask, "What have you got?" so that if the call comes everybody knows, that will keep industry close and speed us up.

Q234 **Stephen Metcalfe:** Those war rooms are not happening at the moment. Who should convene them or take overall responsibility?

**Professor Molloy:** It is not really for me to say.

Q235 **Stephen Metcalfe:** It is.

**Professor Molloy:** It is not, really, because that is not my purview. You have to have clarity of leadership. That singularity of purpose was really important and being able to create it and maintain it helped pull everything together. I think that whoever is responsible for pandemic preparedness needs to make sure that they run the industry, academic and NHS war rooms regularly so it keeps the phone book up to date, if you like.

Q236 **Stephen Metcalfe:** And ready to build up that testing capacity.

**Professor Molloy:** Should that be required, and in the same way.

Q237 **Stephen Metcalfe:** I do not know whether Dame Anna or Dr Howes wants to add to any of that.

**Professor Dame Anna Dominiczak:** I agree. I use the term "triple helix"—academia, NHS and industry. It is really important to have this collaboration carried out in the first few months and throughout the response. It needs to be maintained, close and forward looking.

I think there are cabinet rooms. I presume you will hear later from colleagues from UKHSA. The work is progressing. I am aware of four-nation groups looking at research, development and innovation in pandemic preparedness. These groups do work, but closeness of the triple helix is absolutely essential for the future.

Q238 **Stephen Metcalfe:** Dr Howes, do you have a view?

**Dr Howes:** One of the features during the early stages of the pandemic response through the Lighthouse labs was the really high level of innovation. That was key to improving the speed and capacity of the testing being achieved.

Professor Molloy mentioned war rooms. It will be critical to make sure that innovation is caught so we do not have to innovate as we are trying to scale and deliver testing.

**Stephen Metcalfe:** That is very helpful.

Q239 **Chair:** Dame Anna, you described the vision of a triple helix. Is there a danger that the three parts defer to one another? Should there be someone or some body responsible for convening that, and, if so, who



should it be?

**Professor Dame Anna Dominiczak:** You are absolutely right. There must be leadership, as we heard from some of our international colleagues. I think it has to be the same nationally in the UK.

My understanding is that UKHSA has this role. I left UKHSA at the end of June 2022 to move to my current role in Scotland, but I am sure you will hear more about this from UKHSA. There must be a central place bringing all of this together.

Q240 **Chair:** Do you think UKHSA is the right place to convene it? Given that you are the chief scientist for health in Scottish Government, are you doing this differently in Scotland, and might you or some colleague in Scotland be the convener?

**Professor Dame Anna Dominiczak:** Scotland is smaller but very ambitious. We are thinking this way. There is local work, but we also work as four nations very proactively. A number of my colleagues interact regularly at the four-nation, UK level. As international colleagues said, it has to be global; it is probably very much UK and then global work together.

Q241 **Chair:** Is UKHSA the right agency within the UK Government to deal with this?

**Professor Dame Anna Dominiczak:** You are pushing this. We need UK-wide leadership and that is the agency currently doing it.

**Chair:** We might touch on this a bit more.

Q242 **Dr Davies:** It might be opportune to ask what I was going to put in relation to devolution. Does UKHSA have a formal remit to take a lead, or is it an informal set of agreements between the Governments of the UK? Is that your understanding?

**Professor Dame Anna Dominiczak:** I am probably the wrong person to answer. However, I know from my colleagues in public health that there is very close collaboration across the four nations. For example, in research and innovation, which is my area, we are all discussing the research and innovation part in preparedness that Rob talked about. This is the four-nations approach.

Q243 **Dr Davies:** That is very sensible. I recall that in the pandemic there was a borderless testing arrangement, but that happened only through necessity and was just what was in place going forward. It sounds like it is an informal, sensible co-operation.

**Professor Dame Anna Dominiczak:** I think the word my colleagues in public health in the four nations used was "co-production". It is more than informal; it is co-production, working together.

Q244 **Dr Davies:** I want to ask about the industrial-scale diagnostic capacity in the Lighthouse labs. If it had not been decommissioned to the extent it





has, what could it have been used for now in a productive way, whether in peacetime terms or looking towards the next pandemic?

**Professor Molloy:** Lighthouse had capacity for doing about 500,000 PCR tests a day. Obviously, PCR is a very specific technology. It does a small range of things and cannot do everything. It was never established to set up as broad an array of diagnostic tests as are run through NHS laboratories in hospitals, for example. The exact reason for creating that infrastructure was to take the load away from those so they could achieve a much broader spectrum of instant in-patient care that they need to do.

On the applications for PCR, you can circulate tumour DNA, and some of these other types of analyses would have been possible at enormous scale. Of course, you then have to set up another infrastructure around what you do when you get the results and so on and so forth, but the capacity was there to do those types of things at that pace. We were able to move blood and swab samples around the nation in a way that we had never been able to do before.

You look at the potential for mass testing and point the light at the place that you want to illuminate most. You choose to do that. It is an important choice and the nation has now proven that it can, if it wishes to.

Q245 **Dr Davies:** It sounds to me as if you cannot see a need for that space here and now, and that to have it functioning would be a luxury.

**Professor Molloy:** I do not think we should ever see diagnostics as a luxury, or ever perceive our health status as a luxury. What the pandemic taught us, through both rapid tests and lab tests, was the ability of diagnostics to make people responsible, in part for their own healthcare and that of others, so the more we can enable diagnostics in the home and high street the more we will know and the better we can act. That was what the covid pandemic did for the diagnostics industry, I hope. It certainly did in terms of the country's, nations' and citizens' understanding of diagnostics. The industry needs help.

Q246 **Dr Davies:** It has a lasting impact in that respect, but could that impact have been greater still? What measures could have enhanced the lasting impact of the pandemic in terms of diagnostics?

**Professor Molloy:** There are two areas. Rapid diagnostics offers a whole suite of home and high street diagnosis and the ability for people to take care of themselves and others more effectively without requiring a lab sample that goes through the post. You can put the diagnostic through the post. We taught an entire nation how to do that. You around the room can think of the opportunities—you do not need me to tell you them—whether it is around obesity, high cholesterol, hyperthyroidism or prostate cancer. The list goes on and on. Obviously, we understand that there are constraints. That is just a normal part of life and our



infrastructure, but the opportunity that this showed is enormous and we can grab it if we choose to.

Q247 **Tracey Crouch:** Dr Howes, what was the intended long-term plan for the Rosalind Franklin laboratory?

**Dr Howes:** Anna might be in a better position to answer this as she was involved from the very beginning. The primary point of the RFL was to meet the response for covid and then find a future use for the facility. That was clear from the outset, and the plan was to identify as we were going through the pandemic response what those future uses would be.

**Professor Dame Anna Dominiczak:** We started planning RFL in September/October 2020 when the wave was coming and demand exceeded Lighthouse's then capacity many times. The time people had to wait for results—the so-called turnover—was getting longer and longer. Therefore, what we were doing with such huge effort was less valuable because the subject must know early whether they are infectious.

In that situation, the main aim was absolutely, as Rob just said, to increase capacity and capability to do more, faster.

However, as we started building we had a number of discussions about legacy. In particular, we had two visits from the Infrastructure and Projects Authority. The first visit focused on capacity and building; the second visit was focused very much on legacy. The report is there. We had a very good assessment from IPA, but the legacy issue came up.

From then on—Rob joined us at about that time—the team met a number of colleagues in local NHS and academia. I presented that famous brown bag breakfast that you probably know was organised with Patrick Vallance. We talked to everybody. As Chris suggested, a number of very valuable ideas are documented. I think that when you visited we discussed some of this on our slides.

The democratisation of testing at home and on the high street could move us from treating very advanced disease to early diagnosis and prevention. That is why diagnostics are so important.

We had a long list of potential things. Chris recited some of them. There are more on the set of slides that we provided. Of course, this requires change to how diagnostics are implemented at scale. It requires value for money and proper business cases and big change. I would like to see preventive ways of addressing healthcare. This is not just the UK but international need. The demand of the ageing populations—obesity was mentioned—is such that it has to change. The question is when and how.

Q248 **Tracey Crouch:** In your minds, legacy plans were fundamentally integrated into the setting up and development of the site.

**Professor Dame Anna Dominiczak:** As I said, from early 2021. The very early stage was absolutely focused on delivering for the country in



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the lockdown wave—the alpha variant and the so-called Kent variant, and the impossibility of coping with demand.

Q249 **Tracey Crouch:** The local MP for the area said, “From the beginning, we were led to believe that the lab would be a long-term project that would bring 2,000 jobs to our town and that, post Covid, would be used as a general medical diagnostic testing centre.” Is that a fair reflection of external perceptions for alternative usage?

**Professor Dame Anna Dominiczak:** Yes.

Q250 **Tracey Crouch:** What was your reaction to hearing the news that the lab is up for sale on Rightmove?

**Professor Dame Anna Dominiczak:** In my academic life I built academic laboratories, institutes and buildings, and frequently raised funds for them. All of them currently serve academia, scientists and students as appropriate, mostly in Glasgow. Therefore, it was a feeling of perhaps missed opportunity and a worry that this great laboratory that was developed and automated with fantastic equipment and a work flow like a factory was not being used. It was a missed opportunity.

Q251 **Tracey Crouch:** I do not know whether the other witnesses have any views on that.

**Dr Howes:** I have been away from the Rosalind Franklin for almost a year. My first reaction was pride, reflecting on the achievement in building and running that facility to meet the pandemic response. Like Anna, my next reaction was one of sadness about a missed opportunity. I know that the team has been doing so much work about finding the right legacy for the site. That work is ongoing, but my main one was pride.

Q252 **Tracey Crouch:** The Committee is scratching its head slightly over one question. I wonder whether you might be able to help us. We are struggling to understand why the Government no longer see the RFL as an investment in the UK’s scientific capabilities for the future. I do not know whether any of you have any insight or understanding to help us understand why the lab is not seen as part of the wider infrastructure.

**Professor Molloy:** I do not have any insight for you. For me, the RFL was the safety light. It is really important that we have something active in that space, whether it be for diagnostics translation to maintain the legacy of that site and help the diagnostics industry develop the set of tools that we use in the next round every season for the new strains of disease that seem to be coming through, and, for example, to develop those reagents that we may put on the shelf but never use. If we needed to use them in the fast-twitch way you are talking about, those capabilities are needed in the nation, and it is important we have them somewhere. Wherever we have it, it should work effectively and enable us to step in and commandeer that site as we need it, if we need to prosecute the next war the way we did the last one. There are



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opportunities for that space and others at a time when lab space is in critical shortage across the UK right now.

Q253 **Chair:** Professor Molloy, you said that the Rosalind Franklin laboratory was the safety light. It has been closed, so are you saying that the safety light has been put out?

**Professor Molloy:** I am saying that the safety light was the space.

Q254 **Chair:** And that is up for sale.

**Professor Molloy:** It is still there at the moment.

Q255 **Chair:** I infer from that answer that you hope it can be rescued and retained.

**Professor Molloy:** I hope that something positive for the nation's scientific community can be done. That would enable that space to be used in the future should it be required. There are opportunities in diagnostics translation, which is part of a wider set of interventions around helping the diagnostics industry that supported us fantastically well through this pandemic. I think the industry itself needs a good round of applause for the way it came to the table and just said yes to almost everything asked of it. It still has to have some pull-through of what it did in its willingness to act.

Q256 **Carol Monaghan:** Professor Molloy, you have said a few things that have resonated. You talked first about the response from academia and those working in diagnostics. I think we would all echo the gratitude you have expressed today. Obviously, that was a massive undertaking.

You referred to the importance of fast twitch and having available space; you talked about pandemic preparedness. The pandemic was four years ago, and we are all becoming a bit hazy about the dates when things happened and how. I know a date for certain: 13 March 2020—over a week before we went into lockdown. On that day, which coincidentally happened to be a Friday—we do not do superstition on this Committee—I took the decision to close my constituency office in Glasgow and send home my staff. We were carrying computer equipment out of the office to establish home offices. During that process we had the radio on. There was a phone-in programme. People were phoning in to say, "My mother has these symptoms", or, "I have these symptoms. What do I do?" There were no testing facilities available at that point. Maybe we forget that it took a while to get testing up and running. At that point, we had nothing.

You have talked about available space and a safety light. I think the concern of all of us here is whether, without something like the RFL, we have the ability for that fast-twitch response, or will we have the same situation as we had on 13 March 2020 when there were no diagnostics available for the next pandemic?



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**Professor Molloy:** I remember that date very well because we sent all our staff home, and the following week we called them all back in to build the Lighthouse in Alderley, which they did willingly.

We do not know how we will fight the next pandemic; we do not know what the next pandemic will look like. We may make all the wrong decisions about setting up something that is precisely wrong for the war we have to fight next. However, as for the opportunity to mobilise earlier, because we learned as that wave was moving through at the back of 2019 and into 2020, maybe if that happened again we would start thinking about these things at an earlier stage and look to see how we can develop rapid tests that perhaps will work alongside the laboratory tests so that we know what we need to twitch for.

To use a sporting analogy, you need to do the first yard in the head; you have to know where you are going to move rather than just move. There is a set of considerations in this rather than just establishing something that may be absolutely precisely wrong for the need you put it to.

Space is paramount. The technologies that we will put into that space are not definable now, but they are capable of being mobilised. Early work on developing the reagents—the antibodies for the lateral flow test or the primers for the PCR test—is critical. You can put in those technologies, but if you do not have the reagents you are waiting.

There are some things we can do as we look at these waves of disease perhaps to make some of those reagents that would give us access to rapid tests much earlier. We do not have those 200-plus days that colleagues in the earlier session talked about. We could have those on the shelf. That does have risk. We might have to create something.

Q257 **Carol Monaghan:** Where's the shelf?

**Professor Molloy:** That is a very good point, but it is not testing at that point; it is creating the tools and putting them on the shelf at the risk that they may never be used. That should be okay; that should be part of being prepared.

Q258 **Carol Monaghan:** That is how we develop resilience; we have things that hopefully we do not have to use.

**Professor Molloy:** It is a cost; preparedness costs money. Having those reagents and supply chains, going back to my response about having industry close, would move us much faster. Access to those reagents and building a supply chain for them was a huge effort in itself above and beyond the supply chain of talent, space and all the rest of it.

That would be my recommendation before we start to lay down absolute production lines for something we are not sure we will use most effectively and then have to rip them up and lay them down again.

Q259 **Carol Monaghan:** Dame Anna, your frustration is clear when you speak



about RFL. What are the repercussions for UK diagnostics or the wider life sciences in the UK of the potential sale of the RFL?

**Professor Dame Anna Dominiczak:** This is a broader matter. I agree with what Chris said. To return to what the Chair said earlier, there is a pandemic preparedness group in Scotland, as you might know. In the discussions we have had to prepare for the next one we also talk to international advisers. There is a consensus, which you need, to use whatever facilities you want in peacetime, as it were, to be able to mobilise quickly. The same goes for whatever testing we might need. There is a need to think very carefully about what would be needed, and whether it would be needed.

Q260 **Carol Monaghan:** And who might be needed.

**Professor Dame Anna Dominiczak:** Absolutely, but diagnostics as a way in preventive medicine of doing things in peacetime is very important for the future and should be used now. That is the way we have to travel, because it is the way international medicine and public health are travelling.

The expression “precision public health” has been coined. That is early diagnostics of cancer, etc. Could we use our thinking about pandemic preparedness for better diagnostics now and the ability to turn it as needed into emergency situations? For me, it is interesting to see where the NHS is going and how it is transforming. I believe that is very important.

Q261 **Carol Monaghan:** I am not sure who is best placed to answer my final question. I am asking about the staff recruited particularly for the RFL, which we have been talking about, but also for the other lighthouse laboratories. Professor Molloy, you said that a lot of them came from academia: postdocs and postgraduates. I imagine they have just gone back to their studies and are continuing them. What about the RFL? We talked about the opportunity to upskill a whole generation of scientists in that area. Do you have any idea whether they have been redeployed?

**Professor Dame Anna Dominiczak:** There were more than 1,200 colleagues at various levels of seniority working in RFL at the height of this. There were many young people, some from academia, some from industry but some from local factories. A lot of upskilling was going on. I left before that happened, but I understand from colleagues that there was a lot of opportunity for colleagues to train how to interview, etc. Many are in very good positions. We know that in the life sciences industry across the UK, and outside, PhDs and postdocs returned to academia with unique training and experience. I understand there were facilities to train how to interview, etc., so the staff were looked after as best as possible. As Chris said, these thousands of people who at various stages were not only in RFL but all Lighthouse laboratories had a unique experience that set them up as unique diagnosticians for the future.

Q262 **Carol Monaghan:** I would think they are very valuable individuals.



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**Professor Dame Anna Dominiczak:** Yes.

**Professor Molloy:** To industry also. Likewise, at the Alderley Lighthouse 900 staff were trained. They may have started off in a fume cupboard; they may then have run a bench, then a lab, then a floor and then a shift. These folks went from being scientifically trained to now being industrially skilled and experienced in higher-value jobs across the whole nation.

Q263 **Carol Monaghan:** I would hope so. The point I am getting at is that a place like RFL in Leamington had 1,200 people at its height. Have all of them been redeployed using the skills they have developed, or are there some who say, "What do I do now?" That is a worry.

**Professor Dame Anna Dominiczak:** We cannot answer this question with numbers, but that was the messaging we received.

Q264 **Carol Monaghan:** Dr Howes, do you have any comments on that?

**Dr Howes:** I agree with what has been said. I have certainly seen many people being redeployed into scientific and technical roles across industry, academia and the public sector. It is almost a daily occurrence in my current position that I meet someone who has worked across the Lighthouse network. They are everywhere. It is a great network of people who are now part of the scientific community within the UK. Maybe not all of them are doing diagnostics in their day-to-day role, but they have that experience and that muscle memory so that it is an informal group of people whom we can possibly call on in the future who have that memory of how we worked during the covid pandemic response.

Q265 **Chair:** The UKHSA—and perhaps you would not mind giving some brief answers to this—will say that it has contracted with various NHS trusts to provide surge diagnostic capability. Do you have an assessment of that, Dame Anna? You are intimately familiar with the health service.

**Professor Dame Anna Dominiczak:** Two ex-Lighthouse laboratories, Brants Bridge and Plymouth, have been retained with an ability to quickly increase capacity. That is my understanding, and this is published. They were two laboratories that were part of Lighthouse 10, and they have retained some capacity very quickly to restart PCR if needed.

Q266 **Chair:** Do you have an instinct about whether that will be sufficient?

**Professor Dame Anna Dominiczak:** I left UKHSA a year and a half ago. This is a question for senior colleagues from UKHSA, but I am sure it has been calculated how that could be provided and how quickly. We talked about 100 days. That fast provision is important.

Q267 **Chair:** Let me put to you two pieces of evidence that we have received in this inquiry. The Pandemic Sciences Institute said: "Recent events have demonstrated very clearly that the UK remains unprepared. The UK was not prepared for the Mpox outbreak and remains unprepared for an avian influenza outbreak, with a lack of diagnostic, capabilities treatments and vaccines for both." What is your reaction to that evidence?



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**Professor Dame Anna Dominiczak:** If this is correct—and I do not know; that is not my current area of work—after everything that has been done during covid, that should not be the case. I do not have the relevant knowledge to answer this question.

Q268 **Chair:** The other piece of evidence comes from Applied Microbiology International, which said: “The dismantling of the large-scale capacity for PCR testing post pandemic means that lockdowns are more likely to be required again as it takes time to scale up and staff these testing facilities. Closing down these units,” including the RFL, we infer, “does not suggest that lessons have been learnt, nor that there is any longer-term plan for having this capacity available should another pandemic occur.”

**Professor Dame Anna Dominiczak:** Right. Those are very hard words. If the two laboratories that have retained some capacity could truly bring the necessary first three months, that 100 Days Response, this is not true, but, again, I am not close enough to it at the moment to answer this question.

Q269 **Chair:** That is the key assessment of whether the capacity it has contracted is sufficient in that surge sense. I do not know whether you, Professor Molloy, want to add anything.

**Professor Molloy:** No, I do not think I have the information to be able to do that.

Q270 **Chair:** Dr Howes?

**Dr Howes:** No. The only other thing to add is that we have been focusing on the initial 100 Days Response. There is also beyond the 100 days. Professor Molloy alluded earlier to the capacity of the Lighthouse lab at its peak—over 500,000 tests a day—and we certainly do not have that capability currently.

**Chair:** Thank you very much indeed. We are going to be interviewing some representatives of the UKHSA in a few weeks’ time. I thank Professor Molloy, Professor Dame Anna and Dr Howes for their evidence today. It has been extremely helpful and very informative, and we thank you once again for your sterling work during the pandemic.