

Health and Social Care Committee

Oral evidence: Digital transformation in the NHS, HC 223

Tuesday 14 March 2023

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Members present: Steve Brine (Chair); Paul Blomfield; Mrs Paulette Hamilton; Dr Caroline Johnson; Rachael Maskell; James Morris; Taiwo Owatemi.

Questions 112 - 157

Witnesses

I: Lord Markham CBE, Parliamentary Under-Secretary of State for Health and Social Care, Department of Health and Social Care; Dr Tim Ferris, National Director of Transformation, NHS England; and Kathy Hall, Director for Digital Transformation and Head of Joint DHSC/NHSE Digital Policy Unit, Department of Health and Social Care.



Examination of witnesses

Witnesses: Lord Markham, Dr Ferris and Kathy Hall.

Q112 **Chair:** Good morning. This is the Health and Social Care Select Committee. This is the final evidence session of our digital transformation in the NHS inquiry.

I will introduce our guests in a moment. In this session we are going to hear representatives from the Department of Health and Social Care and NHS England. This will be a chance for the Committee to get a sense as to how, and whether, digital transformation can be delivered without creating huge additional burdens for clinical staff in the NHS. It will be a chance to look at, and maybe touch on, the Committee's expert panel report on digitisation, which I am sure our guests will know, and, I guess, also the extent to which the Department and NHS England are able to prioritise and invest in digital transformation, particularly given such huge current pressures on the service.

As I said, this is our final session of the inquiry. We put out our terms of reference some time ago. They are very broad. They are all available online for those watching this session. We are talking about how the Government can communicate the benefits of digital approaches in healthcare; what progress has been made with legacy IT systems; and how IT platforms in NHS hospitals in England compare with those in, for instance, the United States.

During the course of the inquiry we have heard from the Nuffield Trust, the Professional Records Standards Body, NHS Digital, NHS England, the Cystic Fibrosis Trust, ORCHA, Diabetes UK, the King's Fund, the Royal College of Physicians, and Dr Ferris, whom we will introduce in a moment. We had an international perspective from the US when we visited Oregon and California in recent weeks.

Let's introduce our guests today. Lord Markham is Parliamentary Under-Secretary of State at the Department of Health and Social Care; Dr Tim Ferris is the national director of transformation at NHS England; and Kathy Hall is the director for digital transformation and head of the joint DHSC/NHSE digital policy unit—one of my favourite business card-it won't fit introductions.

Thank you very much for coming and joining us. Let's start with you, Lord Markham, if we may. In June 2022, the Government's plan for digital health and social care described digital transformation of health and social care as a "top priority" for the Department and for NHS England, stating that "the system's long-term sustainability depends on it." I think that is something with which we would certainly concur. At the top, what is different about this iteration of plans to digitally transform the NHS, as opposed to many previous attempts over many years?

Lord Markham: Thank you for the opportunity to come today. As probably all of you know, I am a bit of a new boy to all of this. I am a businessman by background, so be gentle with me, so to speak. In these



HOUSE OF COMMONS

formats I really appreciate constructive challenge. I always find that these are good sessions. Hopefully, I will say the same thing at the end.

What I am trying to bring to this approach are business skills. I am not talking about big changes to the strategy that the team has set out. What I have been keen to do is to operationalise it and define end outcomes, which I am sure we will come to later. I can bore you all, for instance, on the app side with my laminated card, talking about what we are going to be launching. What I am keen to do on that is to define the end state, and then have everyone work towards that. We all know that on these projects mission creep can be a killer, changing priorities and everything else like that. These things are progressive. We will be dropping more and more applications each month, but it is very clear that we want the end product to be what the user wants to see as part of that.

Basically, what I see are two sides to this. One is our whole interaction with the customer—the NHS app and the 30 million users, with the functionality we want about that. Again, I am sure you will have many more questions on the app, when I can go into that. What are the building bricks to set the foundation on the operational side? Fundamental to all of that, I think we all agree, is the data platform and making interoperability beyond that so that you can have data and make sure that you can share it in the right safe way across the system. You can leverage from that and really benefit from it all.

The whole point about the strategy is making sure that we have very clear outcomes. Dare I say it, we have tried to poach the best people operationally from the system. We have brought in people like Joe Harrison, who has been a real leader in NHS Milton Keynes, to head up on the app. We have user practitioners doing it, a combination of technical and clinical skills. My friend on the left is a perfect example of that.

Similarly, from Maidstone we have Miles Scott on the kind of flight control systems. It is trying to bring a practical edge to it all so that we get outcomes. That is what we want to be measured on.

Q113 **Chair:** For those watching, who will not have seen the laminated card that you held up, is that a public document—the thing you work to—or just your aide-mémoire?

Lord Markham: It is my aide-mémoire, which I will happily talk to.

Q114 **Chair:** In answer to “What’s different?” basically you have some very key deliverables on the road map as to what you want to do when with the NHS app, for instance.

Lord Markham: Exactly right.

Q115 **Chair:** How ambitious would you say that is?



HOUSE OF COMMONS

Lord Markham: Ultimately, massively. I think this will transform the whole way that we use our health. I am massively excited about it all. As ever, it is baby steps towards it. If you start to use it to navigate your whole way through the health service—say, you have certain symptoms and you want to use it to understand where you are best placed to go—is it best that you go to a GP and then you can make that appointment, or can you be dealt with by the pharmacy, at which point you can make an appointment with the pharmacy? That front-end navigation and being able to make your appointments and stopping the 8 am call in the morning will be good. Obviously, a lot of people will not be doing this straightaway, but the more we can free up that capacity, so that a lot of people are using it, the better.

You will own your own records, and when you get your results, you can start to research them. You will start to educate yourself more. I think this is a whole way of empowering us to take more control of our health and to do our own research into it all. Tim can probably give some fantastic examples of where this has happened in other countries. That is where I see this as being truly revolutionary.

Q116 **Chair:** Very ambitious is the answer.

Lord Markham: Very, yes.

Q117 **Chair:** The top-line stuff that you have said is brilliant, and we could not disagree with it, but to pick out one part of your sentence, you said you could make an appointment with a pharmacist. Of course, it would be extremely challenging right now to do that because it is not necessarily how the system works. Pharmacies are private businesses that work under contract. Maybe we will come to this with one of my colleagues later, but there is so much in the weeds that must drive you nuts, really.

Lord Markham: You are 100% right. To begin with, for instance, when people say, "Let's use pharmacists more," that is a great idea and why not? There is good capacity out there. We know that in Scotland they are doing a great job in learning more from that. I would unashamedly take things—

Q118 **Chair:** And they are clinicians.

Lord Markham: Exactly. That is great. I then ask the guy, "What do we think the pharmacists can handle?" It is like, "Oh well, we're working on that." Surely, we need to know that. Secondly, once we know that, how are we going to point people in the right direction? That navigation point to me is the key point, otherwise people will keep turning up to the GP, making the 8 am call or going to A&E because they do not feel that they can do it, whereas actually we know that pharmacies are a tremendously skilled resource. Unless we know what they can cover and we can point people towards them, whether it is through this or some sort of information campaign, we are never going to direct people to the right place.



HOUSE OF COMMONS

Q119 **Chair:** I have a final question for you, and then I want to ask Dr Ferris a question. With respect to digital being brought into NHS England, which obviously we talked to Dr Ferris about the last time he was here earlier in this inquiry, and given what you have said about how everything everywhere is connected, does that merger make sense to you?

Lord Markham: I think so. I say all of this at five or six months in, so I am not going to pretend to be some massive expert. I am just giving you impressions. All over the place, I see pockets. The problem on the digital side is that we had very good people doing some stuff in NHSX and other people over there doing some good stuff. This exercise is about bringing all that knowledge and experience into one place, having very clear objectives and leaders.

It drives me crazy when I have 20 people in a room talking about something. Who is leading it? We all know that you need leaders who are going to be accountable and will get it done. Again, this sounds very basic but those are the sorts of things we are trying to do now.

Q120 **Chair:** Dr Ferris, we talk about the NHS app, but the truth is that it is not an app in the traditional sense that you would download from the app store. It does not sit on an app platform. This is dangerous because I am so clearly and obviously not technical, but it is not an app in the traditional sense of the word, is it?

Dr Ferris: The word “app” is an abbreviation of “application”. Applications have a broad set of definitions and differences between technical speak and common parlance. I think you are using the word entirely appropriately as it is used in common parlance.

I think what you are getting at is the fact that the app, as it currently exists on your phone, is actually an internet portal. It is not actually present on your phone, your desktop computer, laptop or whatever it is. It is a portal. The fact that it is a portal means that, in some ways, it makes it easier to evolve, iterate and deliver services and data to it. It also has some important limitations. Primarily, those limitations are around the use of the native architecture of whatever device you are on to provide insight based on the data that it has access to. Actually, your device has no access to anything when it is within a portal. That is the fundamental difference.

Lord Markham: Can I give an example?. You have a doctor’s appointment. We know plenty of examples whereby, if it is a native app, it will pop up on your calendar and say that it’s in 30 minutes’ time. It will know where you are and say, “You’d better leave now,” because the traffic conditions are bad. Those are all the sorts of things we see when it is a native app. When it is a web-based thing, it is not integrated in the same way. A lot of the things that the team is doing are seeing how we can make sure it is more and more integrated into the fundamentals of both Google and Apple. Is that fair, Tim?



Dr Ferris: Absolutely.

Chair: Who knew that we would get into an app versus a portal conversation at such an early time in the morning. I feel that I am clear on that.

Q121 **Mrs Hamilton:** Good morning, all. I have a few questions. My first question is quite easy, I promise. It is around cost. The digital system is very expensive. How are you supporting smaller suppliers to enter the market?

Lord Markham: There are a couple of things. First, we have a number of grants. I was actually at an awards ceremony last week for AI innovators, which are small, start-up-type companies, where we gave them some seed funding to help them into this space. There are a number of places where we provide that sort of funding to get them off the ground.

However, there are other areas where, candidly—I speak from some experience of this—the NHS, probably understandably, is very focused on patient care. They are not always the most user-friendly, to put it diplomatically, or customer-friendly towards suppliers because that is not their focus.

On the one hand, we have the most fantastic environment for companies to come in. We have a national database that we are working towards. We will come on to that in terms of the federated data platform. As a research tool and a user base, countries would dream of it, but, in our accessibility to it, candidly we need to do a lot better. As I say, every time I go to different functions and talk to companies about some of my own experiences, everyone nods and says that it is really difficult. One of the things I want to make sure that we can do is build that kind of customer-facing side, in terms of the small and large businesses.

Q122 **Mrs Hamilton:** Would you say that, at this moment in time, there is a way for small business to enter that market quite easily? The cost is prohibitive. What are we doing to support small businesses to enter?

Lord Markham: As I say, there are two things that I think we are doing quite well and a third where we need to do a lot better. We have a good system of start-up grants and things like that, as I mentioned. Both the MHRA, which regulates a lot of the devices, and NICE are doing some quite good work now. They have a consulting side of their business. It has to be the other side of the Chinese wall, but a lot of small companies do not know where to start with the maze of the regulatory environment, how they get it approved and everything else. There is a very useful advisory side of their business, which is very separate from the regulatory side, showing those companies the ropes. “This is what you need to do; this is how you get your product together.” It is the process and everything else like that. They are starting to do that. They need to do more of it, but they understand that they have a key role not just to regulate but to encourage people into the system. That is the second thing that we are doing. I think we are making good progress on that.



The third thing is making sure that the NHS, as a commercial unit, providing customer service to these small or large companies, does a lot better.

Q123 **Mrs Hamilton:** I have a follow-on question. We went to America and looked at some really brilliant technology. How easily can some of that technology be transferred to the UK? It seemed seamless when we went out there. How easy is it for companies to transfer some of the brilliant work that they are doing in the UK at the moment, with our digital systems being—I am being polite—so behind?

Lord Markham: It depends where you are. Tim is the expert, so in a minute I will let him come in. We talk about innovation overseas, and there are plenty of great examples of innovation here as well. If you have not been as a Committee, I really recommend you going to Maidstone and seeing what I call their flight control systems. Basically, it is a whole tracking system; there is a control room, where they have analysts and controllers alongside clinicians. When a 999 call comes in, they find out what it is and it is up there right away. They get a diagnosis and say, “We think we are going to need a bed for them.” They have all their beds up on a screen and a coding according to when they think that bed is going to free up. Suddenly they start to realise, “Okay, we now need to move some of these people on because we know we have some incoming”—for want of a better word. They have a bed management system whereby, straightaway, they know when a bed is free. They get the people to clean it—

Q124 **Mrs Hamilton:** You are saying that we have pockets of excellent practice in the UK, but we just need to—

Lord Markham: I say all of this five months in, but I have found that the biggest misnomer about the national health service is the word “national”. It is pockets. Our challenge is often not the innovation—there are plenty of examples of innovation here, plus very good ones from the US and everywhere—but the adoption. It is taking that and making sure it is implemented through the system.

Q125 **Mrs Hamilton:** Do you want to come in, Dr Ferris?

Dr Ferris: Having been a practitioner for 30 years in the US, and using many of those systems, it is not all perfect there either. One of the major differences between the US and England, in the delivery of healthcare in the national health service, is, for example, shared care records, which are now ubiquitous in this country and allow clinicians to see what other clinicians are doing with their patients, even if they are in a different organisation.

Shared care records are not possible in the United States because of the organisational and legal boundaries around the delivery of care. They have a different framework that they are trying to work on. They are just starting it. It is called TEFCA and it is about national interoperability. They are just starting on that journey. There is a sense in which we are



ahead of them and I wanted to point that out. We should be proud of the fact that the shared care record programme is now, as of almost one year ago, fully rolled out. It is still better in some places than others, but it is increasingly connecting GP practices and secondary care, and increasingly social care as it becomes digitised.

I was up in Merseyside with an A&E doctor, who was ecstatic about the fact that he could see not only the key pieces of the GP record but the social care record for a patient who was in A&E. That opened up his options for how to manage the patient. His only option was not just to admit, because he had all that other information about the patient. That is the kind of thing. We are absolutely committed to making sure that we have the best possible and secure private data sharing for the people who need the information, at the moment they need it.

Q126 Mrs Hamilton: Thank you. My last question is around the skills gap. I am going to ask Kathy and then Lord Markham, if he wants to come back in.

The skills gap with NHS staff and social care is phenomenal when it comes to digital. They are just not where they need to be. We have heard this on and off throughout the inquiry. What sort of timescales would need to be in place to ensure that the current staff we have, at the speed we are travelling to get to our digital optimum, are fully skilled up and that we have a proper training programme in place so that future staff coming in will be adequately trained quite quickly?

Kathy Hall: There is probably a breakdown in different sorts of NHS staff. You will know that there are people we need to do digital data technology jobs, where there is quite a clear report for the NHS on working on getting better data for social care about the sorts of skills gaps in clinical informatics, information technology, and so on. Those predictions go out to 2030. That is about looking quite further forward.

Then there is how we look at skills gaps for clinical leaders. We have increasing numbers of—

Q127 Mrs Hamilton: Can we concentrate on social care? That would be helpful. We are a little bit further ahead with the NHS, but with social care the providers are private companies. We need them on board, but at the moment they are not fully on board and there is no system in place to get them there. You are right, there are different levels, but we are short on time. Steve will start to look at me funnily if I carry on.

Kathy Hall: With the work that is going on at the moment, as you have identified, we cannot do the same analysis of the skills gaps in social care. The first piece of work is to actually gather better data on what the current level of skills is and what is needed. That work is going on at the moment. On the timeline for the work, we are doing regional and local engagement at the moment on a workforce plan for health and social care. That is for both; that is important. This spring, we will do an interim report feeding back on all of that engagement and all of the knowledge



that has been gained. Research has been commissioned. In the autumn, we will publish the final report that will make the delivery plan and the recommendations for what needs to happen.

That is the timeline for the work that is happening. It is reporting to a national digital workforce board, which has social care and local authority representatives on it as well as the NHS. It is definitely looking at both.

Q128 **Mrs Hamilton:** Do you want to add anything, Lord Markham?

Lord Markham: You are spot on. You know from being on a ward how important it is to get people up to speed digitally. If it is hard in an NHS setting, moving that to the social care setting, where you have such fragmentation in the market, multiplies it by a number in degree of difficulty. I completely agree with you that in terms of analysis that is the key problem. We have some steps there in understanding first what situation we are facing and what is the level of digital maturity. In terms of what the right thing is to challenge us on next time around, or what I think is the hardest of all our challenges, I think you have hit the nail on the head.

Chair: Picking up on the workforce point, Taiwo Owatemi wants to come in.

Q129 **Taiwo Owatemi:** I want to focus on clinical staff and getting them involved in the development of technology. When we went to America, we visited Stanford Medical Centre. It was very clear to us that a lot of the nursing team and clinical team had an involvement in the technology the hospital was adapting. Counter that with the UK, where in each hospital there is variation in the involvement of the clinical team with the digital team. How do we ensure that we have consistency across all the hospitals in the UK? How do we also ensure that best practices are shared within the different clinical teams?

Lord Markham: Absolutely. I remember one of my first conversations with Amanda Pritchard. The primacy of the clinician/patient relationship is everything. If I am just looking at you and thinking, "What is the best for you?", I might be saying as a doctor, towards the end of the day, "Well, I am pretty happy with how you are doing, but I think I'll keep you in for one more night. You are fine, but just to be on the safe side." That would be me making a decision completely in isolation for you. What you really need is for me, as a clinician, to have an overview of the fact that that bed is needed because I know I am backed up through the system and I have some 999s coming in who are going to need it. That is where I was impressed with the Maidstone system.

The system itself is half of it. It is having clinicians involved, so you have controllers with the clinicians making decisions and then being able to give, in my example, the information to me on the frontline. I would know there was greater need for your bed, so I would have that risk-based assessment in my head, with more knowledge. It is uniting that



HOUSE OF COMMONS

information on the system with each of the clinicians, down to the frontline level so that they can make those decisions together.

Q130 Taiwo Owatemi: In Stanford, if a clinician has a particular technology or an app which they want to adapt into the clinical system, they know exactly how to speak to the technology team to get it inside the infrastructure. It is a very clear pathway. In the United Kingdom I would say that many doctors would not even know where to start looking for that team, even in their hospital. How do we improve the communication dialogue between those two departments?

Lord Markham: Tim, you did this at Mass General so you are probably best placed to answer, if that's okay.

Dr Ferris: It is a great example, Ms Owatemi. You chose, maybe, one of the top five organisations for digital transformation in the world. They are a north star and a system to be emulated. We should do everything we can to emulate that process. It might be useful to use the framework of what "good" looks like in the digital health and social care plan. That talks about the heuristic of "digitise, connect and transform." We have to have clinicians involved in all three of those steps.

You were specifically talking about the transformation stage, where you are literally building on top of a rich base, and a base that has been in place for about 20 years. It is important to remember that we have to do all three. Clinicians have to be involved in all three. They have to be involved in the design of the basic system, the workflow system. It is their workflow that is being transformed by that system, so they have to be fully engaged in designing it.

I will say, for my part, that in the go-live in Manchester that I was present for at 4 am a few months ago, the clinicians—especially clinician leaders—were very involved in the design and implementation of the system. This coming Friday, the Royal Marsden will adopt the system that you saw at GOSH. It is being extended. Their go-live date is 4 pm this coming Friday. I have talked to the clinicians there. The clinicians are very much involved in the design, working with clinicians at Great Ormond Street. That is at the digitised level.

At the connect level, the clinicians need to be engaged. They need to define the business processes that say, "What information do I need and when do I need it? Do I have access to that information? If I don't, what is the process by which we improve the systems so that I do have access to those systems?" Again, it is patchy. I have seen some areas where clinicians have excellent access to all the information they need, and other areas where they do not. Our most recent digital maturity assessment, which we just completed a few days ago, is highlighting that patchiness so that we can best target interventions.

Of course, there is the transformation aspect, which is fairly sophisticated and goes into the specific areas where clinicians can bring their ideas to



an innovation hub. I have visited at least six innovation hubs in this country. They are fantastic. There is one in Liverpool. There is one at Birmingham Children's Hospital. There is one in Herefordshire. We have pockets of that kind of process, whereby clinicians can get together with the technical people, brainstorm and then solve problems.

Kathy Hall: The chief clinical information officer and chief nursing information officer roles are really important and they are increasing. When we surveyed last year, over 80% of NHS organisations reported that they had a digital nurse leader. Those sorts of roles can be really influential in bringing together clinicians and the digital side. Continuing to support those and bringing them together as networks, which we do, is really important.

Taiwo Owatemi: Those are important, but they also need a skillset for them to do their role properly. I think in different organisations that is missing.

Q131 **Rachael Maskell:** I want to pick up that point and reflect on a few learnings from our field visit. The thing that struck me about Stanford was the fact that it was the digital engineers who were literally in the footsteps of clinicians, and problem solving as they were going along. That was very powerful. They were not segmented into specific leads, as has been highlighted. It was so integrated. A clinician was a clinician, and the digital expert was on their heels. That is what I would like to see.

I want to take that a little bit further. The tech world is moving so fast. It is exciting and there are huge opportunities and huge challenges. We had the privilege of looking at what is being done in the field of AI around sonography and the opportunities there. That is going to massively challenge the workforce when you think about the accuracy and the opportunity, and in fact the whole diagnostics field. How are we preparing not to be behind the curve but to be with the curve, as we move forward? Dr Ferris, can I point to you?

Dr Ferris: Sure, and I will ask my colleagues to come in. This is really important. It is the future, and the future is coming fast in some ways but, in other ways, not fast enough. Today, we still do not know all the uses that artificial intelligence, AI, will be put to in healthcare. Let me put a couple of categories on the table. We are pursuing all of these categories.

The first is that, in a fairly narrow sense, computers can read images really well. They can identify faces and all that stuff that we get at airports. The image-reading capabilities in AI are changing the way visual information is handled in healthcare. I will give a couple of examples. There are several clinics around the country, such as in Birmingham, where your dermatology appointment is not with a clinician; it is with a photographer. They are able to process much larger numbers of people. The dermatologist is in front of a computer seeing two to three times the number of people that they could see if it was them in person.



Here is the key thing. The AI is reading the images as a pre-read. The computer is not making decisions; I want to be very clear about that. The frequent terminology is computerised decision support, or CDS. If you use decision support, for example, it is highly accurate when saying that something is not dangerous. It is not nearly as accurate in saying, "This is some risk, and I am not sure what it is," or, "This is what it might be." In Birmingham, in 30% of all visits to dermatologists for lesions it is not an important medical problem. It is a concern to the patient, and the patient needs their concerns addressed, but the AI can immediately say, "Don't worry about this; it's not a concern." Think about the productivity gain and our wait list for getting to see dermatologists.

The same thing is happening across everything visual. Our radiation oncologists have to map out parts of the body that they need to irradiate for cancer. It turns out—not a big surprise—that a computer can do it much more quickly and much more accurately. The physician still examines what the computer produces, so the physician is taking accountability and responsibility. They told me there was an 80% shortening of the time it took them to plan a radiation therapy. That is an astounding increase in productivity. By the way, we are short on radiation oncologists. Of course, there is radiology and radiography and the increases there. I won't go into it; you get the picture. That is No. 1.

I will be quicker on No. 2. I'm sorry, I get excited about this stuff. No. 2 is searching data for opportunities for patients or clinicians. If the computer has access to all of your information—for example, if your data is on your phone—do you want to access a programme that sifts through your own data to identify opportunities to improve your health? For example, it is a small medical fact that there are many reasons why people have lost their spleen. People who do not have a spleen are at a much higher risk of having pneumococcal disease or an infection with pneumococcus and dying from that, so everyone without a spleen should have a pneumococcal vaccine. How do we know if everyone without a spleen has had a pneumococcal vaccine, and could your phone remind you or give you an alert? Yes, it could. Could computers search your records and tell your GP? Yes, it could. That is called computerised decision support. That kind of decision support is increasingly present.

I saw some great examples at Great Ormond Street in their decision support centre, which they have built around their EPR. It exists in multiple other places. Again, it is patchy. What we really want to do is make sure that we take those innovations and learning around computerised decision support and spread them.

Q132 **Rachael Maskell:** Thank you; the mind boggles. Lord Markham, I want to move to my second point, which is looking at the platforms we are building our system on. As we heard with the app, it often feels quite clunky when we look at the systems we are using. When you are accessing things like notes, that is fine. Notes are clunky and it is basically an archive. Perhaps in some ways even when booking



appointments, yes, we want it to move smoothly and you gave a really good example about how that could be more integrated, but, again, we are trying to put big national solutions in place as opposed to looking at the individual patient as our building block. How is the Department looking at how technology can move forward so that we build healthcare around the person as opposed to around the system?

Lord Markham: You are absolutely right. The key thing behind the platform we are building now is the word “federated”—a federated data platform—because it is built on the concept that the data controller is your GP or your trust. What is sacrosanct is that that data stays there and all your personal records and details about you stay there. At the same time, you can bring it to a national level, but only when it is anonymised.

We know that to get some of the benefits that you were talking about in terms of data trawling, diagnosis and starting to see patterns—the covid vaccine was a perfect example, where we wanted to see the efficacy and whether there were risk groups according to age, heart or whatever—we need the data to be brought to a national level, but it has to be anonymised. At the local level it is absolutely sacrosanct that it is there within those four walls.

The trick between the two in terms of the federated is to be able to apply the analyses and data trawls at this level, whether it is for the benefit of clinical research like the vaccines I mentioned, or whether it is for the benefit of your spleen in terms of your own piece, and then in that instance be able to message down, and it can be de-anonymised. As you know, there is a kind of serial code where you can reconnect them at GP level and get that information. Then I can get the information to Tim, in his example, saying, “Tim, you need that vaccine.” Absolutely fundamental to that is exactly what you say: the building block is the individual’s data and that it is safe. Unless we have public confidence that it is safe, we are going nowhere on this. Basically, it is taking that and being able to build across it all in a federated way.

Q133 **Rachael Maskell:** Thank you for that. I will throw my final question open to whoever wants to jump in. In our visit to Google and Apple, we were exposed to the power of wearables, to the point that this is now the focus of those businesses. That is where they see the future; driving healthcare through the individual.

Obviously, there are challenges around inequality. The thing I took away is that for the price of a bit of kit, which is pretty cheap in comparison, we could be saving not only loads of money but loads of lives as well. My dear friend Paulette certainly did a fantastic job in talking about the impact that it has had on her life. How can we ensure, first, that it is integrated, where information on personal monitoring can easily get back to the physician, and, secondly, that we roll it out to give people those opportunities and really transform health prevention and see people taking control and care of their own health?



HOUSE OF COMMONS

Lord Markham: I will start at the 100,000 foot level and then maybe let my colleagues come in on the detail. I said before about the national health service that—dare I say it—there is a question mark on the “national”. Maybe we are a national treatment service right now. What we really need to move into is health in terms of getting upstream on prevention. It is absolutely starting to understand the things that I can do to take control of my own health, which will be a massive part of that, in the same way that a lot of us are much better financial managers of our own information once we start to get our finances at our fingertips. You can multiply that by 100 for health. At the same time I want us to be a lot more scientific in helping you on that prevention journey. What are the things you can do? It is your 10,000 steps a day and making sure that you are doing things around your diet, or reminding you it is time for your cervical smear or your heart MOT.

You have talked to Sir Chris Whitty. I have to say that is one of the great things about this job. There are lots of challenging things, but spending time with him is one of the wonderful things. His biggest concern right now in terms of excess deaths is the 50 to 65-year-old demographic and cardiovascular disease. He said, “Look, you have had three years of these people not going to GP check-ups where, on top of everything else, they were having their blood checked, their finger pricking and statins.” We have missed that data on them, so we are not starting to get some of the early warning signs in terms of prevention. In that agenda, using data and information both to educate and to warn people is absolutely fundamental. It is exactly the words you said about how you get people to take control of their health. Tim, is there any detail you want to add?

Dr Ferris: The opportunities for technology to provide immediate feedback are very exciting. I have noticed how in my patients and in family members with diabetes they were able to dramatically improve their control of their diabetes by having a continuous monitor and seeing it continuously on their phone: “I didn’t know when I ate that that my sugar went up. Actually, I thought that was on the list of good things, but apparently not for me,” or, “Oh, I didn’t know I could eat this. I’m going to have more of that.”

The technology and the individual is a closed loop, but we still have some work to do. I mean “we” as in everyone on the planet. No country has figured this out. We need to get clarity on what in that kind of personal physiologic data needs to leave our own possession, and where it is stored and who controls it. There is no clarity anywhere on that. We have an opportunity to be world leaders in that area. We are talking to lots of tech companies, including the ones you visited. They are excited about the possibility because of our name—national health system. If we could work through the challenges, and they are non-trivial challenges, we have an opportunity that actually very few other countries have. They know it and we know it. We have some work to do.

Chair: We are jumping around a bit today because colleagues are



catching my eye and I am trying to keep it thematic. This is such a complex, but exciting, subject. I will come to James Morris in one second, but Taiwo wants to come in briefly on this point.

Q134 Taiwo Owatemi: I want to come in on FDPs. You are right that now the United Kingdom ecosystem is very exciting, but there are many challenges around data security. I want to quickly ask three key questions.

One is around the procurement process and how we ensure that the public is confident in that process and that their data is being well protected. Secondly, as the debate progresses in the round, how much access should one organisation have with regard to NHS data? Should the tendering process be focused on developing the infrastructure, and then the NHS will control the data but the organisations that developed the infrastructure would not have access to NHS patient data?

Can you help to clarify some of the concerns that patients have around the FDP platform? It has so much potential. You have given us various examples of how we can transform the NHS, help to reduce patient backlog and reduce A&E waiting times, as well as addressing workforce shortages. For FDP to be successful we need to have patient trust in the system, but we also need to be able to address some of the challenges. Are you able to clarify the three questions that I asked?

Lord Markham: Thank you. It is spot on. I see the big picture. We have two jobs. One is putting the data in a secure way that can be used for all the applications, but a way that people trust. That is around the federated data platform. The second is having a big base of users that we can reach through the app. To me, those are the two foundation building blocks where you have a massive database that all these companies start to leverage from, and a massive user group.

Where this will evolve, who knows? That is the really exciting thing. Effectively, when you put down those building blocks, who knows what will be built up on them? I can give a very basic example. I come from a TV/media background. When Sky was launched there were something like 15 channels. Today, there are hundreds of channels because you have all sorts of niches coming in and everything else like that.

The way that this will evolve and the number of applications that come on to it will be amazing, but none of it will work if you do not have the trust or the building blocks in place. That begins, first, with an open procurement process. Obviously, that is something which is ongoing at the moment. You need to come at this completely open-minded and see who is the best out there. The beauty of this is that there are people coming at it—I haven't seen any detail at all—from all sorts of different angles.

Q135 Taiwo Owatemi: Apologies for interrupting. I am just aware of the time and the fact that my colleagues have to come in. I am trying to clarify basically whether the organisation in a tender process will just have



HOUSE OF COMMONS

access to building the infrastructure. How much data access will they have to NHS patient data?

Lord Markham: What access we give to companies on top of that will be completely separate and will be decided on a case-by-case basis. The procurement is to build the building blocks, basically—the federated data platform.

Dr Ferris: To go one step deeper, the analogy is that Microsoft does not have access to the Word documents that you write on Microsoft software. They own the software that we are using. We own and control the data. When I say “we”, in the federated sense it is actually controlled by the data controllers who are local. Access to all of the data on any platform, whether it is a federated data platform or not, is according to the rules in our data safe haven document that was published with the merger of NHS. Very quickly, I want to make sure that everyone hears the components of that.

The data safe haven includes the National Data Guardian and the independent oversight committee on all access. Any time anyone accesses that information, there is a decision made by an independent oversight committee. There is complete transparency. Any organisation that gets access only gets access to stipulated parts. We publish documents on the web that say, “This company got this access to this data on this date.”

The last piece is the technical piece. It is now possible technically to make sure that any access to data is audited in excruciating detail so that there is no—I am sorry that I use this word—exfiltration of data. They are coming to the data and using the data according to the rules that the independent oversight committee put in place. They are not leaving with the data. They are leaving with their results, not with the data itself.

All of those are really important components of the data safe haven that we are absolutely committed to maintaining. Without doing that, we will not get the public trust, as you quite rightly point out.

Taiwo Owatemi: Thank you both for that. The reason I asked that question is around how the tendering process is going on and my concerns about Palantir and an organisation having access to patient data. Thank you for explaining how the process works.

Chair: That was a really important avenue to go down. You said it: safe haven and public trust. If we get that wrong, we lose traction.

Q136 **James Morris:** Dr Ferris, you made a claim earlier that you thought the UK was ahead of the US in relation to interoperability in the healthcare system. Is there evidence to support your claim beyond anecdote?

Dr Ferris: That is a great question. My first response is that I will need to get back to you on that. I am just trying to think how one would generate evidence. I practised for 30 years in the US. I am pretty familiar with it. I



HOUSE OF COMMONS

know that interoperability is the responsibility of the national co-ordinator of information technology. I know the national co-ordinator. His name is Micky Tripathi. About a year ago they published their plan for interoperability.

At a company level—I mean a vendor level—if you use certain vendor-based solutions, you can see your patient’s information at any site that also uses that same vendor anywhere else in the country. I have used that system. It is quite helpful, but it is not comprehensive. In addition, there are some states in the United States, and some other countries, that have data sharing. They are called health information networks, and they allow a clinician, using information about a patient’s identification, to ping a centralised repository that has knowledge of all the different places where there is storage of health information. They can then aggregate and bring back, with patient consent—

Q137 **James Morris:** We don’t have that in the UK, do we?

Dr Ferris: Our shared care record system is a different kind of system. We do not have that kind of system.

Q138 **James Morris:** We had earlier evidence from the King’s Fund. I wondered whether this summarised what you thought the position was in the UK. “We have organisations that are perhaps among the leaders globally, or can be considered in that category. We also have organisations that are barely digital at all. They do not even have electronic health records...There are people who are struggling in the healthcare system with wi-fi issues and webcams on their computers, whereas other places are charging ahead with AI.” Is that description from the King’s Fund where we are in the UK at the moment, would you say?

Dr Ferris: Yes.

Lord Markham: Yes.

Kathy Hall: What we sell in the strategy in the summer is how we go about levelling that up in the programme; for example, making sure that every trust has an electronic patient record in place is a key building block of that strategy.

Q139 **James Morris:** Would that be something that needed to be mandated—making sure that everybody has the electronic patient record? What is the process for making that happen?

Lord Markham: Yes.

Q140 **James Morris:** How would that mandation work?

Lord Markham: Again, I say this a few months in. I think we have seen a system whereby some leaders in a hospital have decided it is their priority and they have really gone ahead. They are like evangelists on digital, and there are fantastic examples of it. Others have other



HOUSE OF COMMONS

priorities, and they are not nearly as far. I think step one in all of that is the digital maturity assessment that has been carried out so that we can see those levels.

Step two is actually starting to say, where you can see the shortfalls, "This is the expectation." Just as I showed you my laminated card for the app, we have a similar one for hospitals saying, "Look, this is what we expect you to be able to basically deliver on." It does not always have to be a mandation of an absolute supplier, but it is a mandation of functionality: "This is the sort of functionality that we expect you to have digitally. These are some of the systems we can recommend to do it."

Again, there is the point about having the kind of digital leaders, the Miles Scotts of the world from Maidstone and the Joe Harrisons from Milton Keynes, being responsible for implementation. They have gone through it and done it, so they are much better placed to hold the hands of those trusts to help them do it. From that point of view, it is a far more muscular approach.

Q141 James Morris: Would the summary be that there are pockets in the UK where we may be a world leader, yet we are possibly way behind in the adoption and diffusion of those pockets, if that is not too abstract a way of putting it?

Lord Markham: Yes.

Dr Ferris: I think that is fair. The Health Foundation published a report about three years ago on the challenges of spread of innovation in the NHS. I commend that report. It is an excellent review of all of the reasons underlying the variability in spread and adoption.

Lord Markham: Obviously you, as MPs, all have relationships with your local hospitals. If that is something you could challenge them on as well, when you do your visits, and actually ask them those questions—"Where are you on these sorts of things?"—that would be really helpful from our point of view, so that they are getting the challenge from all sorts of different directions.

Q142 Paul Blomfield: I very much want to follow on from James's question. Dr Ferris, you talked about the report on the challenges of spread, which we should have a look at. You said that sets out all the variables. Could you briefly summarise for us what the key issues are there?

Dr Ferris: I will give it a shot, and then I will ask my colleague Kathy to come in. Some of the barriers are governmental processes that I am only passingly familiar with.

Q143 Paul Blomfield: What we are trying to get to is what the different issues are and what different bits of the system face in terms of some of the challenges.



Dr Ferris: The first thing that is important to understand on technology spending is that the majority of technology spend is in the budgets of the trust. Much more money is spent on technology because that is considered a local responsibility. Of the several billion pounds spent on technology, a majority is in the budgets of the trusts themselves. They have authority over those budgets and how they spend that money. That is one piece of it.

The additional moneys that come through DH to the NHS on technology for national programmes are above and beyond local spend. We try to create clarity and, oftentimes, will change course when we see, for example, that there are challenges with local spend. For example, we have recently taken up the challenge of topping up funding for the last 17 trusts that do not have an EPR because they had specific challenges around funding.

The challenges are different for different places. There is a funding piece, which is necessary but not sufficient. There are then competing priorities and changed bandwidth. That is a major issue. There are trusts facing different challenges that they have prioritised above their investments in technology, for example. There are also the actual procurement processes themselves—the business cases and approvals processes for technology spends. Keep in mind that purchase of an EPR for a trust is a major expense, in the tens of millions of pounds. Therefore, the approval processes for spending that kind of both revenue and capital are quite significant. Those stand as an additional barrier.

Let me pause there. The Health Foundation cites additional points, but those are some of the upstream processes that we have some degree of control over.

Kathy Hall: Some of the schemes we put in place are designed to help with this. To take AI, which we mentioned earlier, we had an AI programme in place which has been funding innovations either very early on or those that are quite late on. Once we start to build that evidence base, and work with the trusts that are implementing it, we can use that experience, and the tools that are successful, to help support others to implement them. There are things like information, governance and data-sharing agreements that need to be done each time. If one person has already done one that is really strong, we then use our networks and the support systems to spread that along.

A stroke tool that was funded by that programme is now widely adopted in stroke units. That programme, plus the stroke networks, was able to say, "This is how you can do it. We can provide this sort of support to roll it out." Similarly, some of the national use cases that will be developed alongside the federated data platform are designed in one place and then provide support to roll out others to overcome some of the barriers—for example, "This is how you do a streamlined procurement process. This is how you come up with a data-sharing agreement," and so on.



Dr Ferris: In the past year we have dramatically reduced the cycle time for business case approvals for EPRs, working with colleagues in DH and Treasury. I cannot remember the exact amount, but we have taken many months off the approvals process for a business case, because of the pent-up frustration with the fact that everyone agrees that every trust should have an electronic patient record, as an example of the processes that we need to streamline.

Q144 **Paul Blomfield:** That has taken us into the territory of my next question. Lord Markham, you talked about setting up expectations on trusts. I want to explore that a little bit more. Kathy and Dr Ferris began to illuminate it. What targeted support are you providing to trusts to live up to those expectations?

Lord Markham: It is absolutely the right question. We are at the stage of the process where we have just defined what we want each one to do. There are seven things, whether it is the flight control system at Maidstone I was talking about or the electronic patient records, or interoperability with the apps. There are seven things.

We have done an assessment as to where each one is against those seven. You have some that have five, six or seven of them, and you know there is not a lot more that they need to do. If you have already done five, you can be fairly certain that they have a high level of digital skills base, so they do not need a lot of help to get numbers six and seven up. There is much less support there as opposed to the ones who have zero or only one thing done, where it is a whole new system. Candidly, we do not have the answer yet on that approach because we have only just got them back. On those that are only in the foothills of it all, is there like a SWAT team? Sometimes the advantage is that you can almost leap a whole generation in things, so is there an opportunity to say, "Okay, we're going to provide a team who are going to leapfrog almost and do a lot of these"? The only challenge to that is that, often, the technology is the easy bit. The challenge, to the questions Paulette was asking earlier, is how you bring the clinicians and the staff on the same journey, from an additional skills point of view.

Kathy Hall: The digital maturity assessment sounds a bit like an assessment audit, but the point of it is that it is designed as a support process to help local areas understand where they are, what their key capabilities and gaps are, how they might fill them and then to work with them to do that.

Q145 **Paul Blomfield:** On local areas, how do integrated care systems play a role in this process, given that there is quite a lot of variability in digital maturity, from the evidence we have had, between ICSs?

Lord Markham: One of the seven is actually what I call the flight control system at the ICS level. If you manage to go down to Maidstone, then go on to east Kent where the ICS has a good flight control system which looks at the primary care end, the hospitals and the adult social care end.



HOUSE OF COMMONS

What you see there is them starting to have the whole system flow to be able to do it. What it shows very clearly, by the way, is that they do not have enough adult social care places in many examples, which we know is a lot of the challenge generally in the system. Step one is always seeing it, and then it hits you. Step one is knowing it and step two is then doing something about it. The key thing is them knowing it.

If, as we all believe, the ICSs are the level we want management of the local NHS systems to work from, so that they can put in the right investment and get upstream in primary care, as we were talking about earlier, so that people do not go to A&E to be seen by a doctor, or downstream in adult social care, we have to give the ICBs and ICSs the tools to do the job. Part of that is the information system, so that digitally they can start to see where the shortfalls are.

For instance, on 999 ambulance calls, if you see the patterns and they always go to social care homes as a full service, why are we sending two paramedics and an ambulance when you can send someone along with a car and a bit of equipment to do it that can probably be kept at the home. It is giving them the information so that they start to see the demand pockets. They can then commission the supply to best meet those. That is where you use these management systems to provide the information.

Q146 **Paul Blomfield:** Tim, I think you want to come in.

Dr Ferris: Your question about the ICSs is really important, as is Lord Markham's answer. We have not touched on ICSs and I want to make a quick comment about the importance of tech in transformation and the opportunity presented by this new thing called an ICS.

To your question about the barriers, one of the barriers is the complexity of what is called the install base. We have a big opportunity to simplify the install base. It is not uniform; there is not the same, digital install base across the country, but simplified at the ICS level, if there was one EPR across an ICS for example, all clinicians seeing that patient would immediately have 100% of the information by definition.

I am sorry to use this expression, but if the entire tech stack from the very bottom—all of the technical infrastructure—all the way up to the analytics infrastructure was organised at ICS level rather than trust level, we would be spending less money, we would be getting more value for our money, and we would be enabling the cool stuff to be built on top because the base would be much simpler than the current install base. All of those would be really advantageous for the citizens of this country as well as the people trying to deliver care to them, so I cannot stress enough the opportunity that ICSs present to us for expediting or enabling greater speed in the digitisation and transformation of the NHS.

Q147 **Paul Blomfield:** Much of your narrative until I asked that question was saying that you are focusing on trusts, not ICSs.



Dr Ferris: Which is why I wanted to come in at that point.

Lord Markham: You are absolutely right, and we have been talking about trusts on that basis. They are the level above. Again—I think questions were raised earlier—it is all too easy to focus on trusts and not talk enough about Paulette’s questions around social care as well. We know that so many of the problems in hospitals are the 13% of beds that are blocked, for want of a better word, and that impacts the whole flow through the system. It is absolutely right to talk about the bigger system.

Chair: Thank you. This is fascinating. It is reassuring, Dr Ferris, that you just referred to the cool stuff. It makes me feel less stupid. Dr Caroline Johnson has waited patiently, and she is next.

Q148 **Dr Johnson:** We are spending money on the NHS faster, and it is growing faster than GDP, which is ultimately an unsustainable thing. We have a huge covid backlog; we have long waits in A&E at peak times; and we have delays with people getting admitted to the ward.

We need to think about what the NHS is for. You have talked about collecting data and shuffling patients from place to place on flight decks, but the principle of the NHS is care, free at the point of use based on clinical need. People have talked about education, education, education, but we should talk about outcomes, outcomes, outcomes. What are you doing with this programme to make sure that you are not just doing what is easy or what looks nice, clever and whizzy or cool, but actually something that is going to make more patients better and live longer? How do you direct your funding towards that?

Lord Markham: It is some of the questions we were talking about earlier in terms of getting upstream and prevention. It is reminding people that it is time to have your cervical smear, your mid-life NHS MOT, your heart check-up or that if, from the data, you are one of the people without a spleen, you should have a jab. A lot of it is notifying them and giving them those reminders or to take their vaccine, but—

Q149 **Dr Johnson:** I am sorry to interrupt you, but that is very short term. How do we make sure that it actually makes a difference? People who have their spleen out need their pneumococcal vaccine. Okay, fine, but how do you measure the expensive little app you have put in or the expensive reminders? I get reminded at 11 o’clock every night that it is time to go to bed because my phone does that. It doesn’t make me go to bed at all. How do you make sure that it works and makes people better, as opposed to just being something a bit cool?

Lord Markham: How much money is spent on post? That is a very good cost saving straightaway.

Q150 **Dr Johnson:** How do you measure that it is a cost saving as opposed to assuming that it is? How do you measure your cost saving and your people’s lives saving so that you know which of these apps is going to make the most difference?



HOUSE OF COMMONS

Lord Markham: Ultimately, if we are serious about the five years' more life, which is one of the commitments—this is not a party political point at all; we would all agree with the premise of five years, 10 years or whatever—what it really lends itself to is data analysis. When you are at 50 you can look at a subset of 1,000 or 10,000 people and you can see what they are likely to die of. That is an actuarial thing.

You know that X% are going to die of heart disease and at what stage it is early, and by getting them on statins early or by measuring their blood pressure you can actually prevent that. You know that Y% of them are going to die of various forms of cancer. You can put in place a screening programme. This lends itself to analysis, where you can work out what people are likely to die of at age 50 and what the cohort is likely to die of in 10, 15 or 20 years, and what treatments we can start to give now to effectively get on to the agenda of prevention. To me, that is the real prize in using it and analysing it on a case-by-case basis.

At the end of the day, your health circumstances will be unique to you, but lend themselves to data whereby we can support you by suggesting screening programmes. You might absolutely ignore them, but we can only help by reminding you to do them. More importantly, this will start to give you the power—a point made earlier—to take control of your own health. Some people will decide to do that, and some people won't, but more and more people will. We all know that the more knowledge you get about your own situation, the better decisions you make. That is why it is in the combination of things that we can do in informing you and reminding you, but most importantly the education that you will receive from this, that you will start to make better decisions yourself.

Q151 **Dr Johnson:** We went to the States. We went to Stanford Medical Centre, as other members of the Committee have said. One of the things which was quite interesting was when we went to their emergency department, where we learnt that the wait to see a doctor—a computerised doctor; one looking at you through a screen rather than an individual person—is four or five hours. We learnt that the wait to go from A&E, or their emergency room as they call it, up to the ward can be 48 hours.

They seemed to be facing similar challenges, despite a lot of money in the system, to those faced in the United Kingdom. Their computerised, systems-led digital is very focused on how to save clinician time. The reason they are having the challenges we have is that they have the same workforce challenges that we have: not enough people. They are very focused on the data around how much time it saves.

One of the things they have looked at is time management analysis of nurses on the wards, and how often the bells are pressed for the nurses to come. They have worked out that the average nurse spends X amount of time going and turning the temperature down or moving someone's blankets to make them colder or warmer, closing the blinds and things like that. They have a button that allows them to call a volunteer, who is



HOUSE OF COMMONS

able to do those things for them and does not need any training for them. They have worked out precisely how much time that saves the nurses, and therefore how much more care those nurses can deliver.

What opportunities does your digital programme have for improving the workforce? To what extent do you actually measure it? My concern is this. I can see that these things might help, but when you have a whole load of things you can do, it makes sense to do the thing that makes the most difference first, particularly if it is not as expensive as something that you spend a lot of money on and makes little difference. How are you doing their level of analysis to make sure that you are doing something that makes an actual difference to patients, as opposed to looking pretty and cool?

Lord Markham: I will let Tim come in, in terms of his knowledge, in a minute. The thing that impressed me most about Maidstone is that they take a Team Sky cycling approach in terms of the 1% differences here and there. They realise that, from the moment a bed is empty, by calling in the cleaners to clean it and turn it around, they shave an hour off turn-around time of that bed. That might not sound much in terms of one occasion, but they saved 130 bed days over the course of a month.

At the same time, they realised their analysis showed that about three hours are lost on transport arrangements. Again, as soon as they were getting into the end zone when they were going to try to discharge a person, they made sure that they had transport lined up as well or, otherwise, that there was a seating area they could move them to so that they did not have to be in that bed.

I call it Team Sky in terms of cycling. There are 1% or 2% differences where technology can lead to. It is an automated booking system, so you are not relying on someone to ring up to try to arrange it. It automatically goes out. I think that is where they have used technology to really understand and make differences in small bits here and there which, across the system, add up to a lot. That is one really good example that I saw.

Dr Ferris: Please correct me if I misunderstand, but it seems to me that both of your questions are centred on value in healthcare, with value defined as outcomes in the numerator and costs in the denominator. You referred to both of those. Really, at the level of the whole system and at the level of every individual thing we do, we need to measure outcomes and costs. It is through that simplified analytic of what value is that we create our priorities, because the other thing you were asking is, how do we know? We do detailed economic analyses of the work that we are doing. For example, in that Maidstone project, they had done detailed economic analyses. We checked their homework to make sure before we started thinking about a national programme, and we validated it.

I have been quite impressed, frankly, with the rigour with which we approach anything we are doing at the national level and the extent to



which it meets the definition of value where we are measuring outcomes and cost, and determining the value that it is going to create. That is a standard part of business cases. More to the clinician heart of this is that we are making trade-offs. Everyone has limited resources. We want to do the most we can with the resources we have. We have to force priorities, and those priorities have to be based on really good information about outcomes and costs.

Q152 Dr Johnson: Thank you; that is very helpful. My other question is about inequalities. I asked both Google and Apple how many people they thought did not have a smartphone in the UK. That was not data they were able to provide to us. Do you have any information on what proportion of the UK adult population does not have, or have access to, a smartphone in the home?

Dr Ferris: I know that information exists. We would be happy to get that information back to you. I have seen estimates of it.

Lord Markham: This is from a previous life, so I will check and get you the right information. I think it is between 7% and 10% or something like that, but I will get you that. It is not just whether you have a smartphone or not. We are doing a lot of work with Apple and Google to make sure that, even if you have a smartphone, it is accessible. They are leaders in this field in the size of the digits on the screen and making it accessible to a lot of people.

Going back to your question right at the beginning, Steve, about whether it is a native app or on the web, a lot of the advantage of working closely with Google on an app or making it as native as possible is that you then get some of those accessibility benefits as well.

Q153 Dr Johnson: I represent a very rural constituency. Many people prefer to be cared for at home rather than in hospital. These things are well known. The virtual ward has been going for years, but it has become more prominent in the press over the last few months. That offers the opportunity for people to be monitored from home. It offers the opportunity for people to remain in their homes and have data sent to their doctors through the apps, but if you do not have wi-fi or broadband, it makes it very challenging. What work are you doing with DCMS to try to ensure that the areas—often rural areas with an older than average population—that really need it are getting the broadband needed to deliver the technological wizardries that you are imagining?

Lord Markham: There are a couple of things. First, in terms of virtual wards I was going to give that answer, funnily enough, about what the technology is that makes the big bangs. If you go round Watford, on COPD they expect 50% of patients to have to be readmitted within 90 days, whereas if you put them on the virtual ward with the iPad it goes down to 8%. Those are massive differences.



The honest answer on whether we have done that by saying, “Right, let’s get more broadband in the homes,” is that candidly we are at a stage earlier than that whereby we first need to get more devices out there, even to people who do have broadband in the home, to make sure we get the level of coverage. The stats on broadband in the home are 85% or 90%, before you then go after the 10% or 15% who don’t even have broadband. We need to make sure that we can at least cater for that 85% before we go for the more difficult stuff, dare I say it, in making sure that you have broadband in the homes for that 10% or 15%.

Q154 **Dr Johnson:** I guess that depends on your perspective and whether you represent a rural area or not.

Kathy Hall: We are in very regular contact with DCMS, though, on their work for all bits of what is needed for the NHS, for hospitals and GPs in the community. They are always very keen to learn where they might be able to help shape and direct the programme in order to help on health and care. We discuss it with them regularly.

Q155 **Dr Johnson:** My final question is about the balance between monopoly and innovation. There is enthusiasm to have the NHS app, and of course that makes good sense. When they came to talk to us, they were talking about how the NHS app was going to be able to do all sorts of things that I can normally do on a web-based application that downloads as an app from my own GP already. We know that often people close to a problem are very good at finding innovation to solve it in a way that a very large, well-funded organisation is not able to do.

When we talked to Apple in particular, we talked about the fact that they effectively provide a framework and lots of people contribute their innovative app to it. How do you envisage the NHS app working? How will you balance the need for a national and secure system that people trust with the ability for small enterprise innovation to still take place?

Lord Markham: That comes back again to the platform. Just like we talked about the federated platform that people can use and put applications on—obviously in a secure way—I see the app in a similar way. One of the six is in terms of some of the digital therapeutics. There is a lot that you can do now in the mental health space. The apps to do that are very good indeed.

Earlier, we talked about the AI in dermatology. You can start to get some of those apps in terms of skin cancer. They clearly have to pass the clinical test to be effective and to be able to be on the platform, but then I think it opens it up to all those sorts of applications, which could be very niche, but when you have a 30 million customer base to go after you can be niche but still solve quite a large universe. To me, that is the real beauty of it. We take the economies of scale—just like the Apple apps—but then give them an easy way that other small outfits can get on to the platform and get access to those 30 million customers.

Dr Johnson: Thank you very much.



Q156 **Chair:** I am going to conclude now. This is a cross-party Committee and we have taken a huge amount of evidence in our prevention inquiry. One common theme that runs through it is around health inequalities. Yesterday, I was cutting the ground with some colleagues on a new GP surgery in my constituency. I asked the GP partners there what was the one thing they would ask you in a session like this. They work closely with 17,000 people on their lists, some of them in a deprived area that they serve. They asked about digital exclusion.

If you have poor dietary health and maybe poor cardiovascular health, you probably have poor vaccine health and it would not be beyond reasonableness that you might have poor digital health as well. You are excluded in many ways. I wanted to get reassurance from you, as a positive note, to close what has been a very positive session, that constantly at the front of your mind is that not everybody gets the cool stuff and not everybody wears an Apple watch. We must always remember those people. Do you?

Lord Markham: This is where we talk about Apple all the time. As we know, Google and Android have a much wider user base in this. It is working with them as well, and really working with them on the accessibility. We know that the reason why we have 30 million users is that a lot of people were travelling on holiday, and they needed the covid app. I make no bones about it. That was a perfect example of getting it into 30 million people's homes, in all sorts of different walks of life. It is using those beachheads, for want of a better word—

Q157 **Chair:** You know that, but you are, I hope, grabbing the opportunity that that provided. I think you are right. The truth is that most people have the NHS app because it had the covid pass on it, but you have a potentially diminishing window to use that opportunity. Lots of digitally excluded people may well be in that opportunity window.

Lord Markham: Correct. It is then basic improvements to their life. I don't have to hang on the phone at 8 in the morning to try to get an appointment for myself or my child. Sometimes, yes, we can get excited by the whizzy stuff, and it is sexy, but it is the basic functionality of being able to make an appointment or to be told that my prescription is now ready for me in the pharmacy and that I can pick it up locally. Those basic utilities will overcome a lot of the barriers.

Chair: It has been a fascinating session and really interesting. We have gone into a lot of detail, but I hope we have kept it topical enough. Thank you so much for the work that you are doing. I know you will have lots of other things in your portfolio.

Kathy Hall, Dr Tim Ferris and Lord Markham, thank you very much for your time today.