Select Committee on Science and Technology

Corrected oral evidence: Life Sciences and the Industrial Strategy

Tuesday 7 November 2017

11.15 am

Watch the meeting

Members present: Lord Patel (The Chairman); Lord Borwick; Lord Fox; Lord Griffiths of Fforestfach; Lord Hunt of Chesterton; Lord Kakkar; Lord Mair; Lord Maxton; Baroness Morgan of Huyton; Baroness Neville-Jones; Lord Oxburgh; Lord Renfrew of Kaimsthorn, Lord Vallance of Tummel; Baroness Young of Old Scone.

Evidence Session No. 13 Heard in Public Questions 94 - 109

Witnesses

Ian Dodge, National Director for Strategy and Innovation, NHS England; Professor Keith McNeil, Chief Clinical Information Officer Health and Social Care, NHS England; Professor Mike Hannay, Managing Director of the East Midlands Academic Health Science Network (AHSN), NHS England.

USE OF THE TRANSCRIPT

Examination of Witnesses

Ian Dodge, Professor Keith McNeil and Professor Mike Hannay.

Q94 **The Chairman:** Good morning, gentlemen, and thank you for coming to assist us today with our inquiry. We are on live stream so please confine your conversation to us rather than between yourselves; otherwise it will get picked up. If you do not mind, please introduce yourselves and, if you want to make any opening statement, please do so. Otherwise we will move on to the questions.

Professor Hannay: Good morning. My name is Mike Hannay. I am managing director of the East Midlands Academic Health Science Network and chair of the national AHSN network. We were established in 2013 following the *Innovation, Health and Wealth* report in 2011. Our aim is, very simply, to speed up the pace and rate of adoption of innovation in the NHS to enable better patient outcomes, support better patient experiences, drive down the cost of care and, through those activities, create wealth for our nation.

Ian Dodge: Hello. My name is Ian Dodge. I am the national director for strategy and innovation in NHS England. It is fantastic to be here today to discuss life sciences with you.

The Chairman: Wait until the hour has gone.

Ian Dodge: I was listening to the previous session. I would also like to thank you for your forbearance in rearranging this particular evidence session, which I very much appreciate. I speak for the entire board of NHS England in saying that the future sustainability of the NHS depends in part on the strength of the life sciences sector. That is why our board spent two days in Manchester this autumn hosting the NHS expo. It is why we regularly discuss life sciences and innovation, including in our private deliberations, and why we are expanding our focus and capacity in this area. This is not just because of altruism. We see the NHS benefit in two ways: indirectly, a thriving NHS depends on a thriving economy; and, directly, where the life science sector joins forces with us to solve specific NHS priority problems.

Later this month, on 30 November, I am bringing to our NHS public board plans to up our game on research. We know we can do more. The specific actions we set out will be complemented by the actions contained in the forthcoming sector deal. In NHS England, we look forward to being a co-signatory to that deal. As you know, the UK starts from a position of strength in relation to research. We place well in the global rankings. Most countries would give their eye teeth for our UK infrastructure, the research councils, NIHR, industry and academic partners.

Our contention is that the biggest issue we face—you were touching on this in your earlier session—is not the lack of invention or even so much initial adoption. Instead, it is about how we can go faster on spread, whether it is digital products, devices, medicines or the redesign of complex pathways. That is what we are particularly focused on in NHS

England: what practically can be done more nationally and what more locally. It is complex. If it was easy, we would have fixed this years ago. The local perspective here is essential, and that is one of the reasons why I am delighted that Professor Mike Hannay can join us, to bring his perspective from running the East Midlands AHSN and being chair of the national network of AHSN leaders.

As a final introductory comment from me, this challenge around plagiarism and the relative paucity of plagiarism in the NHS is not just an issue afflicting life sciences; it is a wider challenge about how we accelerate NHS reform. The deliberations of this Committee will have a wider salience.

The Chairman: I wish I had said "very short".

Professor McNeil: Good morning. I am Keith McNeil, chief clinical information officer for health and care and head of IT for the NHS in England. What you have heard in the last session, and what you will hear here underpinning the life sciences strategy, is about data and information. That will be key to this and that is what my job is.

The Chairman: I will start with the first question. In much of the evidence—I emphasise the word "much"—when the question is asked about the NHS and its ability to adopt innovations or even be an engine for innovations, the responses we get are that the NHS is poor at it. In fact, occasionally, we get remarks such as, "The NHS is the weakest link", "The NHS ought to be the research engine for life sciences innovations" and, "The NHS is poor at adoption". What would be your role in implementation of the life sciences strategy, and how will that be measured?

Ian Dodge: In a nutshell, NHS England's job is to help create a more fertile environment for partnerships to unlock extra value for UK plc. The metrics there are jobs created, inward investment, contacts signed, export wins. We are discussing with the AHSN network how we reflect some of those metrics in the next licence of the AHSNs, then how those partnerships can support delivery of our triple aim: better health and wellbeing for citizens, better quality of care for patients, and better value for taxpayers.

The Chairman: You said you had a meeting for a couple of days. Did you discuss developing your own strategy for NHS England's role in assisting delivery of the life sciences industrial strategy?

Ian Dodge: Yes, we have spent time on individual components, such as genomics and artificial intelligence, helping—as we heard in the earlier session—with pathology and radiology, as well as what we do to boost our diffusion mechanisms, including but not limited to the AHSNs.

The Chairman: What is your response to the comments that the NHS is actually very poor at adoption?

Ian Dodge: We recognise it is a mixed picture. There are quite a few green shoots that were not fully in our evidence, if I may highlight a few of those. If you look at how, since our inception, we have been using our

monopsony power as commissioner of specialised services, in 2016-17, we are now routinely commissioning 33 new treatment types. If you look at sterotactic radiosurgery and radiotherapy for brain surgery, we are significantly expanding that.

The Chairman: Was this all in the submission you sent us?

Ian Dodge: Some of it was. Some of this was not in the material. I am flagging a number of areas: on hepatitis C, our ambitions around biosimilars; what we have been doing on the CDF, which is in the evidence you have received; the Quintiles pricing data; setting out the pace of getting initial regulatory approval for first sales and then post-market authorisation. There are a number of areas where the UK is not low and slow, but clearly we can and should be doing a lot more.

Professor Hannay: Can I add in some of the work that we have started to do around adoption and spread of innovation? The AHSNs were established nearly four years ago, and we are about to go through our relicensing process. We have done good work in terms of spreading a number of different innovations around the NHS. We have over 200 innovations that we have spread to 11,000 locations and benefited 6 million patients. But it is not enough. We recognise that the NHS is a very diverse organisation; we are not dealing with one organisation, and adoption and spread is a contact sport. We have to have people out and enabling the adoption and spread. The days of publishing a paper, people reading it on a Saturday morning, recognising the error of their 25 years of practice and implementing a new programme on Monday, if they ever existed, have gone. It is now a very complex process that needs real strategy and delivery to achieve adoption and spread.

Q95 **Lord Hunt of Chesterton:** You described the positive side of introduction, but presumably sometimes things go wrong. Do you also have a good process of evaluating and then stopping them? All organisations have a certain momentum, and I wondered if that works as well.

Professor Hannay: Absolutely, and that is a real strength of what we do. We see a number of innovations come through with great claims of having huge benefits for the system, improving clinical outcomes, delivering a better patient experience and driving down the cost of care. Often, that evidence has not been established in a real clinical setting. It has not been established on the front line. One of the great things we do as a network is to run demonstrator programmes that allow us to evaluate whether those innovations have the benefits that they claim and give us the courage to stop them.

The Chairman: Despite all this activity and the discussions that you have been having with NHS England, how come we hear reports about even innovations such as diagnostic tests being not available to 40% of patients, and I refer to BRCA; that we get poor outcomes compared to most other developed health services; that we get great variations in care; and that we do not get the implementations of what we regard as model methods of care pathways? Why do we get all those comments, or

do you not believe those comments?

Ian Dodge: No, undoubtedly, very significant unwarranted variation exists in the NHS, and that is one of the reasons why we have established the NHS RightCare programme. We are shining a light on unwarranted variation. This is drawn out of the work that Muir Gray started some years ago. We are using our regional infrastructure and working with our CCGs to highlight that across a whole variety of different treatment domains, and incentivising progress towards cutting that. On the provider side, NHS Improvement similarly runs a programme led by Professor Tim Briggs, called Getting It Right First Time, which is trying to do exactly the same thing. We also, in this country, benefit from the excellence of the NICE processes. Does this mean that there is more that can be done? Undoubtedly, yes.

Q96 **Lord Kakkar:** NHS England has clearly considered the life sciences strategy, and the implications for its success being broadly dependent on proper interaction and engagement with the NHS. What conclusions have you reached about the impediments, at the moment, that stand in the way of that success?

Ian Dodge: The life sciences strategy spent a lot of time in the beginning describing the opportunities around accelerating research. If I can deal first with that research question, we can do more to tackle the bureaucracy of research in the NHS. I see two particular facets to that, one of which is the challenge of excess treatment costs; the second, which was touched on in the last session, is around the bureaucracy with multisite trials. I am very happy to expand on either of those two. Then I think there is a bigger set of challenges around how we get spread happening at pace and scale.

Lord Kakkar: Just to come to the question of excess cost associated with research, that is something that has been recognised for some considerable time. What solution is available now that has not been previously?

Ian Dodge: You rightly highlight that excess treatment cost has been an ongoing source of friction. Again, if there was an easy solution we would have reached it some while ago. We undertook a review jointly with NIHR about two years ago, and published some revised advice on this. That has not worked, so Professor Chris Whitty and I have, since the summer, been leading a joint process. We commissioned some evidence through one of the policy research units in Sheffield to try to get some decent data from this area. We have a hypothesis that the solution is likely to revolve around disaggregating the issue of excess treatment costs into three buckets.

First, there is a question about very low costs, and whether the transaction costs are worth while. Is there a way to cut off the tail of those? Secondly, at the other end, there are a number of very high-cost trials, which to a large extent, although not wholly, fall within specialised commissioning. We could develop a faster and more direct way of connecting with the NHS England specialised commissioning team to

discuss the desirability of the trial and fast-tracking that. Thirdly, there is a complex array of excess treatment costs that lie in the middle.

In my view, expecting 209 small organisations, called CCGs, that have a variety of other jobs to be expert in navigating through excess treatment costs is probably an unrealistic goal. Chris and I are exploring whether there are different networked solutions, where NHS England plus NIHR can come together to provide better advice and consistency at a subregional level, and then across the country if that is done well.

Lord Kakkar: As we heard in the previous session, the catapults and other elements of the life sciences ecosystem are particularly sensitive to the ability of the NHS to deliver on the clinical research agenda and clinical trials. How far have those conversations gone, in the context of the life sciences strategy, with other partners and constituents in this discussion?

Ian Dodge: The other obvious area of simplification, which was alluded to by one of the catapults, is the challenge of multisite trials. NIHR has done an excellent job with the HRA of speeding up the time to first site going live with authorisation. The HRA has developed a standard research ethics process as well, and some common templates. However, there is a challenge, which I have heard repeatedly in the last few months since I picked up the life sciences brief in NHS England in July, around the challenge of sites with many different trusts, each going through their R&D committees and potentially negotiating different prices and contracts for what is essentially the same study. I am in discussion with a variety of colleagues about what we might do on that particular issue. I look forward, I hope, to saying more about that with our partners at our public board on 30 November.

Q97 **Lord Griffiths of Fforestfach:** I would like to go back to the question the Lord Chairman posed, because I do not really feel there has been an answer to it. When you speak, all of you who have spoken, you have a lot of credibility. Clearly you are on top of what you are doing, and that is terrific. On the other hand, we have had people coming here who have said that the NHS is really the weakest link.

One thing I have observed in business is that any chief executive is very concerned with reputational risk, and if you have a problem regarding the reputation of what you are doing, as a business or a bank, you have to divert attention to it. Almost every day, the NHS is in the press, especially the tabloid press, being criticised for this, that and the other. The chief executive has to deal with the Treasury over funding and all those things. To what extent do you think that the whole area of strategy and innovation is ultimately pushed to the side-lines because it is not central to the day-to-day, short-term, immediate problems they are facing? If you felt there was one thing you could do to make it absolutely central to the chief executive's thinking and decision-making, what would that be?

Ian Dodge: You have put your finger on a really critical challenge here. Those external constraints—running emergency departments; preparing

for winter; living within what will be our toughest funding settlement, with reduced per-patient real-time funding, in 2018-19; dealing with the challenge of increased delayed transfers of care, including to local authorities—are very big live issues, and Parliament demands our full attention on those. The challenge is about how we make sure that the innovation and life sciences world is not some oxbow lake over there, with the flow of NHS core business over here. It is about how we connect those two up. That means making sure that, when we are supporting industry, when we are investing in catapults, we are really clear about what the benefits will be to the NHS. I am really struck, in lots of trial data and evaluations of innovations, about the paucity of economic and financial data about the real-world effects.

The Chairman: Lord Griffiths particularly asked you what you see as the key things in implementing the life sciences strategy and the NHS playing an important role. I am surprised you did not say you need more money put towards getting innovations in the NHS.

Ian Dodge: The amount of funding for the NHS is a matter for government to work through. In a constrained financial environment, one of the smartest ways of getting faster uptake of innovations is if we can very clearly rank the different innovations in terms of their benefits, including the net financial benefits. In introducing myCOPD, basically a digital tool around pulmonary rehabilitation, when we can be clear what the cost benefits are to the NHS and we can provide the package of support around that, we can generate pull, not just from the clinicians but from finance directors. My contention is that, if we get far better data about what the benefits are going to be and can generate the pull, we can deliver a lot of innovation and change within our existing funding constraints.

Given there is a constrained environment, if the innovations are going to reduce cost, we potentially have an enhanced appetite from finance directors to drive them through. We have not yet made the connections as strongly as we can.

Q98 **Baroness Neville-Jones:** I feel like you are detecting from the Committee that we do not actually see what you think you are going to do about these challenges you have described. Professor Hannay, in your introductory statement, it seemed to me you implicitly acknowledged the fact that there needs to be much faster uptake of innovation, and that is part of your job. Then you said, subsequently, that there needs to be a real strategy. What is the real strategy going to be?

I am quite aware that there is a restrained economic environment, but we need to hear from you what you would be able to do if, in fact, you had the means at your disposal. This is a crucial area, and it may be that one of the solutions is that you need more money. Please, could you set out where you think you are going to go, in trying to tackle this really important issue, without which the life sciences strategy will not have anything like the value it should have to the country? The NHS is a key player in whether the life sciences strategy generates benefit, better

health and wealth in this country.

Professor Hannay: Your point is very well made. We need to make sure we get innovations into the system as quickly as we possibly can, not just for the UK economy, although that is important, but for the benefits of our patients.

Baroness Neville-Jones: How are you going to do it?

Professor Hannay: We have a number of initiatives. We are fortunate that the AHSNs are going to be relicensed, which will enable us to continue the work we have with the adoption and spread. We have introduced various incentives to the system, which are going to help expand the pull that is very important for innovation. The innovation and technology payment scheme identifies a number of innovations that are available effectively free of charge at the trust level and can be pulled into the system. That is very important. The accelerated access review is going to make a big difference, and I was very pleased about the recent announcement that is going to fund the innovation exchanges.

One of the important parts is creating the pull for the innovations. Just pushing any innovation into the NHS is not going to add value. We really need to add innovations that have the pull from the clinicians and the systems to drive down the cost of care and improve patient outcomes.

Baroness Neville-Jones: How is that pull going to be created when the NHS trusts, which in the end deliver these things to the patient, are struggling with their budgets? How do you actually get through that problem?

Professor Hannay: We have done a number of different programmes to bring together clinicians from across the different regions within the AHSNs to identify the problems they are struggling with at the moment, and bring together innovators from academia and industry to identify potential solutions to those problems. We co-produce with patients and carers new solutions that rely on proven innovations, and then look at how we can introduce those into the care system by running demonstrator programmes that say, "This is not blue sky innovation; these are innovations we can apply today and this us how you can do it".

To make those innovations spread, you have to have boots on the ground. You have to get people out there. I fundamentally think we do not invest enough in the adoption and spread of innovation. Have a look at private sector organisations and take a ratio of the most innovative companies in the world. Pick whichever one you like: 3M, Apple, IBM, Pfizer, AstraZeneca, GSK. Look at any of them. They all spend far more on adoption and spread, although they may call them other things, than they spend on research. We spend over £1 billion on research within the NHS. We do not spend a large fraction, only a small percentage, on adoption and spread.

The Chairman: That is why I made the comment. You spoke about the challenges of all the things, but you did not say, for us to get adoption in the trusts where the patients are treated, you would need more money. You did not say that.

Professor McNeil: You have hit right on the point here. As Mike says, it is a contact sport. NHS England, with all the best will in the world, does not look after patients and does not adopt any innovations; it is people on the ground.

The Chairman: But it makes policy decisions.

Professor McNeil: Yes, and it can support the adoption of innovations. There are policies that do just that, as Ian has outlined. What gets measured gets done, and at the moment, if you are a trust chief executive, if you are a clinical director, you are measured on your financial outcomes, your patient outcomes, your targets, et cetera. We need innovation to be adopted, because if it is not we will keep doing the same thing we are doing, day in, day out, and we will get the same results. We are struggling with it.

In a way, the whole thing about the NHS is that we have to adopt innovation so we can change the way we provide. Everybody recognises that. We have to incentivise it by making it as important as your financial outcomes and patient outcomes, because they are the patient outcomes of the future. The innovations we put in today determine the patient outcomes tomorrow. We have to find a way to do that. If you measure it and make it part of a KPI for a CEO and a hospital trust, it will happen.

Q99 **Lord Kakkar:** How far down the line are discussions with regard to introducing those KPIs, so that measurement can take place and can be reported back as part of performance of NHS organisations? Secondly, do you have any sense in your AHSN of the number of occasions that the lack of resource has been the reason why innovation has not been adopted? When you have done your bringing together of stakeholders, agreed the problem, co-designed and done all that very important work, on how many occasions has a lack of resource been the problem?

Baroness Morgan of Huyton: Can I add to that, rather than asking a separate question, because it will probably be quicker? To what extent is there a conversation taking place that, if KPIs are introduced, there has to be a level of resource that allows those KPIs to be delivered? We have certainly heard in earlier sessions about the pressure on clinicians. We all know about the level of pressure on clinicians currently, which means that, although they are committed theoretically, and, more than that, they understand the importance of what you are talking about, the reality of being part of delivering that is increasingly difficult.

Ian Dodge: First, I would point to STPs and the AHSN relicensing process. NHS England is developing a set of clear national KPIs around economic growth and NHS benefits, and a set of innovations that all the AHSNs working with us will have agreed are the best buys that they want to drive. We are tightening the relationship between the AHSNs and their local STPs—sustainability and transformation partnerships. There are 45 of those across the country at the moment, and they are driving the change programmes in the NHS. We will be looking to the AHSNs to act as the innovation agency supporting the STPs, where the STPs are driving and supporting that innovation because they can see the benefits to them

in relation to the individual programmes they are trying to drive, whether mental health, urgent and emergency care or primary care.

The Chairman: All that is happening, it seems to me, is devising more and more processes, so we can get the responsibility driven down to different groups and actually nobody takes the responsibility. Do you not run the risk that you are just doing words and more and more processes, and not tackling the issue that the NHS is poor at adoption and research?

Professor McNeil: The NHS is very, very good at research. It is very good at research. We have terrific clinical trials infrastructure across the country. We struggle with joining the whole process up. We need really good, high-quality information underpinning the life sciences, as I think I said in my introduction. The NHS's opportunity for UK plc is that health dataset that we have available to us. At the moment, we have mountains of data, but it is in bits and pieces all over. It is not structured; it is not standardised; it is not linked; it is not joined up. We are joining up and improving the quality of that data, so we can feed information back to make better decisions at every point of interaction. That is one thing we are absolutely doing.

Getting that data to people, so they can inform decisions around clinical trial outcomes, will inform the accelerated access review and enable much more rapid outcome assessments. At the moment, we do not have the data to do that, so we are stuck in laborious double-blind trials that go on for years and years. We are producing datasets that will enable us, through the life sciences strategy, to shorten the time to outcome of clinical trials.

The NHS is very good at clinical trials. When we get those people together we have a huge patient cohort, so we are going to look at regional and national levels. We are putting that all together and that will come out over the next 12 to 18 months. We will start to see that deliver on the ground, helping people do their research.

Q100 **Baroness Young of Old Scone:** I bear the scars of having tried to get the NHS to adopt the diabetes care pathway to save £1 billion for the NHS, but nobody was particularly interested. I just wonder whether there are any lessons from the past, in terms of these best buys—I am assuming those are the designated innovations—that we can learn from the few times when the NHS has taken a top-down directive approach. I am thinking about waiting list reduction, waiting times at A&E, two-week cancer care, 18-week treatment target. Are there any lessons from the few things that have been driven top-down towards getting faster innovation locally, or will it be a hugely painstaking effort requiring people to persuade local clinicians? Have we reached a point where, quite frankly, clinical freedom and the role of the CCGs are just getting in the way?

Professor Hannay: There will never be any substitute for hard work when it comes to adoption and spread. It is always going to be a challenge, and it needs to have a mixture of things. It needs to be top down, as well as bottom up. Over the past four years, we have learned

an awful lot, not just from the ones that have worked well but from those projects that have failed because of various issues that we have come across. There are some core things we need to have for any innovation to be spread and adopted more widely.

We have to have the content. We have to have the clinical and technical data to prove that the innovation works. We have to ensure that it works within the context that we are trying to deliver it. We need champions at every level within the organisation. Having the top-down NHS England or chief executive saying, "This is what thou shalt do", often is not enough. We need to have champions at every level down at the front line and at the chief executive's office.

We have recognised that co-production is a real accelerant of adoption and spread. Involving patients, carers, clinicians and financial folks in the whole programme is a really important part of getting those adoptions much more rapidly. By making sure that it is clear and simple, we can take out some of the seeming complexity in introducing innovations. We have a very hard-pressed workforce in the NHS, which is doing a fantastic job every day, under increasing pressure with an ageing population and financial constraints. We have to make sure it is clearer, simpler and easier to put in the adoptions than it is to do it the old way.

Baroness Young of Old Scone: We used to have teams of folk who rushed around helping local health economies to achieve change in the way they looked after patients, but we did away with all those because we ran out of money. What is the equivalent? What is the modern equivalent? What is the future version of that?

Professor Hannay: The AHSNs fulfil some of that role, specifically around the adoption and spread of innovation.

Ian Dodge: The STPs are intended as the core vehicle for supporting clinical change and pathway redesign in the NHS. There are two things we need to get right. The first is the clarity and packaging of the products and innovations, whether devices, drugs or pathway changes. Get the content right. Secondly, get the distribution mechanisms right. That involves continuing to support individual clinicians, working with organisations such as the Health Foundation and its Q fellows, supporting clinical entrepreneurs and innovation scouts, creating the fertile environment and then having technical support through the AHSNs, working with the STPs, as the boots on the ground to make the actual changes happen.

The Chairman: Can we have quick questions and quick answers, because there are lots of hands going up?

Q101 **Lord Fox:** I apologise for being late. I have heard lots of acronyms and layer upon layer of process. Mike Hannay talked about removing complexity. Ian Dodge talked about the need for clarity. Now is your chance. This report is your opportunity. From each of you, what one thing can the NHS stop doing and remove? You can take out one layer each. What is it?

Professor McNeil: For me, it is CCGs. Move to STPs. Get the system lined up with sensible constructs around regions, STPs and trusts.

The Chairman: You might get a reward for that.

Professor McNeil: I am leaving, so it does not matter.

The Chairman: That explains the clearness of your views. Maybe we should get more people here who are leaving.

Lord Fox: I think Professor Hannay is ready to jump with one.

Professor Hannay: For me, it would be incentivising innovation.

Lord Fox: That is not getting rid of something; that is adding something.

Baroness Morgan of Huyton: It is putting something in.

Professor Hannay: Yes.

Ian Dodge: There is a vast array of different initiatives, projects and programmes, particularly around the innovation space.

Lord Fox: That is exactly my impression.

Ian Dodge: We need to go through all those properly and have some design principles about how we simplify them. I do not want to mention, of the 50 or 100, which particular ones we should collapse into each other, but we need to go through a process of doing that. We need to do that jointly with our partners, over the coming months.

The Chairman: One gets the impression that, when you have these meetings to find a solution, all you do is create another layer of process. You end up with 50 different things, as you just mentioned, but you cannot think of one to remove.

Ian Dodge: A lot of these have been developed over the years, by multiple agencies. There is lots of very clear content that our board is driving and supporting. I mentioned the specialised services work that we are looking to drive. Take medicines optimisation. We have set really clear goals around uptake of new biosimilars. We are tracking the metrics of the few biosimilars that currently exist. We know what drugs are coming off stream. We said 90% of patients should be prescribed a best-value biosimilar within three months of it coming on the market. We said that, within a year, we should have 80% of existing patients switched to those.

My apologies if you have a misleading impression here, but we are dealing with specific content changes. How do we drive those? It is the same on hep C. How do we get the best deal and get the prices down, so we can afford to pay, within our £200 million of investment on hep C, for more patients to get treatment earlier, which is saving lots of lives at the moment.

Q102 **Lord Oxburgh:** Let us say that a new procedure, treatment or what have you has passed through the system and got ticks in all the boxes. Who makes the decision, in any particular trust, whether it is going to be applied? I am not clear from everything we have heard where that

decision is made.

Professor Hannay: You have nailed it on the head. It is in that individual trust.

Lord Oxburgh: If that particular individual trust is skint, it does not go through.

Professor Hannay: There is an element of prioritisation that has to be made. Not everything can be done at once. There is an element of prioritisation. We are dealing with clinical professionals as well, who need to make those evaluations.

Professor McNeil: To introduce a new treatment into a trust, it goes through the process of safety and quality control, making sure the evidence is there, et cetera. The chief executive will end up making a decision with the finance director as to whether it is affordable in the context. What is the return on investment over what period of time? What funding is going to come through? It is a complex juggle of where to do that. Generally, if you find a new treatment that will give better patient outcomes and save you money, it will be applied.

Lord Oxburgh: May there be a conflict between short-term objectives and long-term objectives?

Professor McNeil: Absolutely, because we do not often have enough money to invest to save.

Q103 **Baroness Morgan of Huyton:** If you have found that there is definitely a more effective approach, should you not be recommending that there is an incentive put into the system, properly, at the local trust level for the adoption of that? Otherwise, is it not always going to be piecemeal, according to the vagaries of the trust or the financial state of the trust?

Professor McNeil: There is a variation. You rarely get something like coronary stenting that comes along and everybody has to take it up because it is of such benefit to patients. Some of these are iterative over what you already do. Take robotic surgery for prostate. If you have very good open prostatectomy surgeons, you will get just as good an outcome as you would with a robot. For some trusts that are struggling getting the outcomes, the robot is a better example. There is no one size that fits all, by any means.

It has to be contextual. Coming back to Ian's point, the key here for us as a system is to look at variation in outcomes. We do not look at outcomes very well, because we do not have the data to look at outcomes. We look at inputs and outputs, but we do not look at outcomes. If we can get that variation, if we can keep pushing the bar up, that will make people look at how they do things differently. You will start to get the pathways around diabetes, around mental health, et cetera, coming in, so that we take that variation out. That is a real key opportunity.

The Chairman: We go back to quick questions and quick answers.

Q104 **Lord Hunt of Chesterton:** We have heard from our witnesses in terms

of the industry and money, but we have not had very much discussion about how all this relates to societal effects, societal policies and getting things such as the Sure Start programme to come together. Is that part of the responsibility, for example, of your network? Are the chief executives of these National Health Service trusts talking about the societal aspect that hugely affects their outcomes?

Ian Dodge: Yes, and a specific example Mike might illuminate is the work on child health in schools that he is backing.

Professor Hannay: We have been looking at the wider societal changes. One thing we have supported is an innovation that came out of Leicestershire, where a school nurse recognised that, with the reductions in school nurses within the system, it was very difficult for schoolchildren to contact school nurses. Quite often there are certain health aspects or certain things you do not want to discuss with your parent, but you are happy to talk about with a school nurse who is one step away. The IT team and the nurse looked at a system that allowed SMS text messages. There are examples, yes.

Baroness Neville-Jones: I realise this is not the direct responsibility of you as a team, but, having identified the difficulty that NHS trusts have, financially and managerially, in adopting some of these innovations, what would be your recommendation to cut through this problem? It seems to me that the accelerated access review will only really be worth while if it reaches the patient in the end. How would you go about it?

Professor McNeil: At a trust level, I have already alluded to the fact that I would make it a key performance indicator, as an outcome measure for chief executive performance.

Baroness Neville-Jones: You do not think there is a financial element. If a trust manager has a series of multiyear contracts and an annual budget, where is his resource to do this, quite apart from the fact that it might be a KPI?

Professor McNeil: You start to provoke the idea: "What are you going to do differently? What are you going to stop?" If you have an innovation and there is good evidence it will improve patient outcomes, you say to people, "We are going to put this in. What are you going to stop doing to free up the headroom to do that?" We are doing it within their headroom. There are lots of things that we can stop doing, if we have the thing to replace it with. That is the kind of outcome we need to start measuring.

Baroness Neville-Jones: Does that mean the managers need some help to take these rather difficult decisions? How would you go about it practically?

Professor McNeil: I can speak to how I do it as a chief executive. I would be doing that as a leadership thing at the chief executive level, bringing them all together and saying, "This is our ethos. Our ethos here is"—speaking from when I was at Cambridge—"as a tertiary academic teaching hospital. Our responsibility is to lead the system in terms of how we bring these to light and improve the outcomes of patients". Then I hand it on to people like Mike to spread across the AHSNs. It is creating a

culture within hospitals that goes away from the day to day and lifts them out of it. There is no problem whatsoever in engaging clinicians to embrace innovation, if you give them the headspace and the air cover to do it.

Ian Dodge: The challenge here is partly about getting the innovations that help with the cost savings, demonstrably, rather than things that are just cost additive. If we are trying to accelerate cost-additive things, it is not going to happen because there is not the budget. How do we make sure we have a clearer focus at the off that the kinds of innovation we are most interested in are the ones that improve quality but also save the NHS money, exactly as innovations in other sectors are doing?

Q105 **Lord Kakkar:** Do you think that the life sciences strategy recognises that essential tension and is constructed in such a way going forward that, if I have heard you correctly, the NHS will be best positioned to adopt innovation that can drive down, for want of a better description, the cost, while driving improved outcomes and better patient experience?

Ian Dodge: It is, only up to a point. If you look at the idea of top 25% uptake, the economists will show there is a big bill associated with getting to top 25% uptake, which the NHS could not afford at the moment. That is why the ABPI, during the general election campaign, said, "If we want to get that level of uptake, it would cost the NHS many, many billions more than its current budget".

The Chairman: There must be another side of the equation. If you are only adopting innovations that are beneficial to the patient, and that is what the NHS is supposed to be all about, it has gains on the other side. Again, we go back to Professor McNeil's comment: we focus too much on the money side, so we never address the bigger business.

Lord Fox: Somebody, I think Professor Hannay, talked about individual trusts working out the return on investment of introducing a new therapy. Does every trust have the same way of calculating return on investment? Does every trust use the same time period? If not, why not?

Professor Hannay: I do not think they use the same mechanism in terms of return on investment. We can help by looking at the economic benefit and providing a structured evaluation in that case.

Ian Dodge: Rather than doing it on an individual trust-by-trust or AHSN-by-AHSN basis, the smart way that we need to move towards is to have one evaluation that is done, including on the economic benefits.

Lord Fox: How do you know trusts will accept your calculation?

Ian Dodge: It is curated across the 15 AHSN networks with the national folk, published and peer reviewed, and it says, "If you do it like this, as we have shown in this geography, the method is reproducible and these are the benefits and costs". We do not do that systematically at the moment. We need to.

Q106 **The Chairman:** The question was about the accelerated access review, where the report has just come out. You probably have not had a

chance—neither have we—to analyse the report. One thing that comes out of it is that all these things have to be implemented, or will be implemented, but there is no more money. How are you going to do that?

Ian Dodge: We are a co-signatory to the AAR.

The Chairman: You are signed up to being able to do it without money.

Ian Dodge: We are signed up to what is in the report. We have developed this with the OLS. It is clear that the five or six products have to be value for money and affordable, and NHS England will be interested in the in-year affordability.

The Chairman: The report you are signed up to says that all the things in the report will be implemented, but there will be no extra money, and because you are signed up as NHS England you expect the trusts to deliver it, although they will not get any more money for it.

Baroness Neville-Jones: It seems to me that I just heard you say that only things that are affordable will actually be done.

Ian Dodge: That is correct.

Baroness Neville-Jones: That is rather a low ambition, is it not?

The Chairman: The report is not going to be implemented, because the only things that will be done are the ones that are affordable.

Ian Dodge: The principle of affordability was always within the AAR, and whether we achieve the faster uptake will depend critically on the commercial negotiations with suppliers. It will depend on the better prices and in-year affordability. The AAP, the partnership, will fast-track those commercial negotiations, and that will require additional flexibility on the part of suppliers and the NHS. We have seen some encouraging signs of that, for example through the workings of the revised cancer drugs fund.

Baroness Neville-Jones: I wonder what the definition of affordability is in this context. If you change a process, it should create headroom. How do you define your ceiling within this notion of affordability?

Ian Dodge: The report defines it as looking at a basket of different interventions and says that any additional costs incurred will need to be offset by savings that go beyond those savings that the NHS is already planning on, because by definition, if we are already planning to make some savings on some products, we cannot spend those twice.

The Chairman: All I can say is I do not think we should look forward to any of it being implemented, because already the trusts are reporting that they have serious financial constraints. Here we are talking about accelerated access and telling the patients that they will get the drugs and the treatments accelerated so that they can have it. Yet we say, "Only if we can afford it". You signed up to that.

Ian Dodge: We signed up to this. We believe that there is potential, which I think we are demonstrating now through the working of the cancer drugs fund. For example, by doing rolling procurement for hepatitis C treatment, we have ended up managing to secure better deals through the commercial medicines structure.

The Chairman: You are giving the example of hepatitis C, and yet you say, "So many patients will get it this year, and some more patients will get it next year. Some more patients will get it the year after, and if they are not dead they might get it in the fourth year". Is that correct? Not all hepatitis C patients are going to get the drug. We do not have a strategy like France to eliminate hepatitis C by giving this treatment to all carriers of hepatitis C.

Ian Dodge: You have raised a really critical question around hepatitis C. If you look at what we have been doing on direct-acting antivirals, we had 20,000 patients treated by August 2017.

The Chairman: How many patients do we have in total? Out of how many is that?

Ian Dodge: It will reach 28,000. We will end up with about one-third of the total cohort size we are going after. We have targeted particular cohorts in priority order, entirely in line with NICE guidance, as a result of which, because we have gone after this in a segmented way, we have reduced mortality by 10%. We have already reduced liver transplants for those with hepatitis C by 50%. We have an innovative payment method, which is a pay-per-cure. We are spending £200 million per year. We have created operational delivery networks to support this. We have an incentive through the specialised CQUIN. A recent EU review has suggested that we are among the leaders in the developed world in rolling this out, and our rollout is gathering further pace, unlike in some other countries where that is not true.

Q107 **Lord Oxburgh:** Professor McNeil has emphasised the importance of data. The NHS represents a phenomenal resource if it can be properly tapped, and probably one that is not paralleled anywhere in the world. What are the main obstacles to exploiting this resource? In this country, for example—and you have Australia to compare it with—are we particularly obsessed with privacy?

Professor McNeil: Your points are well made. I would not say we are obsessed with privacy. We have the right balance in saying that the protection of that data and privacy is really important, and we have to find ways round that. That is not stopping us doing anything at the moment. We need to get the conversation right, however, so it is a really important point.

Our biggest issues at the moment are that we have very widely varying capability in the digital space across the NHS estate, which is something we are addressing. Data, if it is locked away in paper records, is not going to do anybody any good. We have to digitise it and be able to flow it. We have to link it, join it and standardise it. It is going to take us a few years. From the Wachter review, in 2020 we are going to be a long way ahead, but it will be 2023 before we are really on top of this right across the system. There is a plan in place. You are absolutely right: we have a resource that is unparalleled in the world with this data. We have to get it in a form where it can be used and turned into the knowledge that people can make decisions with.

Lord Oxburgh: You are reasonably satisfied with the progress that is being made at the moment and the way forward.

Professor McNeil: Yes, we have a very clear road map forward. We would always like to do more, but yes.

Lord Vallance of Tummel: Presumably it is going to require investment. You talked about standardisation of data capture. That does not come for free. Presumably, you have to have some standardisation of applications as well. You can link platforms together, but none of this is cheap. In your plans, has the investment been evaluated and is it available?

Professor McNeil: We have £4.2 billion in the National Information Board 2020 programme, and to get us through to 2020 that is a considerable sum of money. That was brought together in 2014, and we now have new initiatives that we have to find some headroom for, so we are reprioritising some of those programmes. To show the power of what we can do and the return on investment, that is a sizeable amount of money that we can do an awful lot of good with across the system, and we are showing how we can benefit around that.

Lord Vallance of Tummel: The trusts do not have any say in this, presumably. If there is going to be standardisation of data capture, for example, across the NHS, the trusts are told to do it.

Professor McNeil: No, we have learned that lesson around co-creating with the people who are using it. There is a community of users who are looking at the data standards: for instance, what clinical coding standard are we going to use? We are agreeing that with the people who are going to use it. Then we use the national implementation as the way to get that spread out. We are working with the vendors and the user community, the provider community, to create those standards. For some of it, we have to. We have to get the sweet spot between what we do nationally and what we do locally, and it varies. But we are getting that balance right and getting people engaged in the whole process.

Baroness Young of Old Scone: One of our previous witnesses said that, although it would be great to join up across the whole NHS, you could get substantial benefits from much more regional and subregional groupings, in a shorter period of time and at less cost. What is your version of that?

Professor McNeil: That is exactly what the plan is to do: recognise what is happening on the ground already, aligning with the reconstruct around STPs and around regions, because regions overlap with patient flow dynamics. We know that there are about 15 regions, and interestingly 15 AHSNs, and our patient flow dynamics are such that most of the care to the population is provided within the region. It makes sense to get the flow of information right for those regions, and then join up the platforms. That is exactly what we are doing, and that is where all the evidence points us to. In fact, it overlaps and aligns with the life sciences industrial strategy as well. There is a nice coherence as to how it is all stacking together.

Lord Vallance of Tummel: Once we have got to the point where all the

data is nice, clean and available, then comes the question of access to it by the private sector for research purposes. Is that going to be easy to do? Should it be done for free or should this be a potential source of funds for the NHS?

Professor McNeil: In my opinion, it absolutely should not be free. It is an extremely valuable data resource, and we have to figure out commercially how we do that. What we are setting up means that that data will stay within the NHS and, if industry or private enterprises want to use it, they partner with the NHS to have access either through academia or through an AHSN, an AHSC or whatever. They explicitly come into that. That way, the NHS, through the trust that the public have in it, is able to make sure that that data is secure, cybersecure, and that the privacy and IG—information governance—rules are applied rigidly and robustly.

Lord Vallance of Tummel: Have you a feel for the general size of the commercial potential or the order of magnitude?

Professor McNeil: It is billions.

Lord Vallance of Tummel: It could be a substantial source of funds for the NHS.

Professor McNeil: It may be direct funding or there may be some other arrangement around value, but, yes, that is all to play for. That was alluded to in the life sciences industrial strategy. That is one of the big outcomes of that strategy.

Ian Dodge: If it cuts the cost of late-stage trials for pharma companies, clearly that affects their cost structure and potentially what the NHS would pay for medicines.

Lord Vallance of Tummel: I was thinking more of a direct payment, not the indirect stuff.

Ian Dodge: It could be either.

Q108 **The Chairman:** We discussed the clinical commissioners' role in this, and it is crucial. The clinical commissioners do not include in their contracts the cost of innovation or adoptions of innovations. The cash-strapped trusts are not going to be able to deliver it. Should there be tariff adjustments for trusts that are seen to be leaders in innovation, so they get the rewards?

Ian Dodge: The CCGs, on one level, are a disaggregated part of the Treasury. They have their share of the fixed resource that Parliament has allocated, so they do not have free marginal cash to spend on trusts. Within the STPs, they are working out the smartest way of spending the total resources for a geography, say Cornwall, between acute services, specialised services, primary care and mental health services. Increasingly, these systems are moving off-tariff to work out how they make those direct investments in a more planned way.

Are there ways to make further use of our purchasing muscle in specialised commissioning to drive consistency? Absolutely, we have

examples of that, and we will be doing more of that in a variety of different areas—for example mechanical thrombectomy, around stroke. In terms of the current payment mechanisms and incentives that we have, things such as CQUIN, we should explore those further for CCGs. CQUIN originally was the acronym: it stands for Commissioning for Quality and Innovation. It was introduced in 2008, following Lord Darzi's review. We have not had many metrics looking specifically at innovation within that, and that is something we can explore further.

A caution, though, is that by definition we will be selecting a limited number of things, and yet are trying to spread a huge number of innovations across the NHS.

The Chairman: The last question is from Baroness Morgan.

Q109 **Baroness Morgan of Huyton:** This is a question or a comment, in a sense. I think you tried to allude to this earlier. I completely understand where you are coming from in answering the questions we are putting to you, because you are dealing with the bucket that you have. In terms of our report, we are asking you to say, were we to recommend X, Y and Z, whether that would be helpful in the broader argument. If I am blunt, you are slightly missing the opportunity to do that, and it would be helpful. If certain things changed, what would they be? That would aid our opportunity to help with the recommendations

The Chairman: Let me convert that into a question. It is still the last question.

Baroness Morgan of Huyton: It is an embellished last question.

The Chairman: What would you like us to recommend that would help you to implement the life sciences strategy? I do not want a long spiel about it. You can write in, if you wish.

Ian Dodge: We could do with a stronger focus on the spread, and how we continue to back and invest in the infrastructure, the boots on the ground, to help make spread happen. The research stuff is really important, as are early adoption and spread.

The Chairman: Professor McNeil, as you are leaving, you might have a more robust suggestion.

Professor McNeil: What gets measured gets done. If we want innovation, spread of innovation and uptake to be done, measure it and hold people accountable for delivering it.

Professor Hannay: I absolutely agree with Keith and Ian. We have to incentivise it, we have to measure it and we have to invest heavily in it, because we do not invest enough in the adoption and spread of innovation in the NHS. If we do, we will improve patient outcomes and create real wealth for our economy.

The Chairman: That was the last question from Baroness Morgan, so thank you very much for coming and assisting. I know it has been a challenging session, but that is how we get our evidence. Thank you very much.