Keynote address: Simon Stevens, Chief Executive, NHS England

Future NHS Stage

Tuesday 12 September, 11.00-12.00

Speakers:

- **Simon Stevens**
- **Ethel Armstrong, NHS veteran who worked in the NHS on the day of its inception**
- **Dr Luke Kane, trainee GP in London and ship's doctor on the Channel 4 documentary - Mutiny**

Simon:

Thank you so much, it is always great to be at Expo, hanging out with the 'can-do' crowd! The reality is that despite all the pressures there is a lot to be incredibly proud of.

As that little opening video just reminded us, next year the NHS turns 70 and that leaflet that I was referring to [on a video playing prior to coming on stage], the leaflet that came through everybody's letterbox about this time 70 years ago reminds us that the National Health Service – our contract with the British people – is as intact and vibrant and important now as it was back then.

The offer that "The NHS will provide you with all medical, dental and nursing care", and "Anyone, rich or poor, man, woman or child can use it or any part of it. There are no insurance qualifications. There are no charges, except for a few special items. But it is not a charity. You are paying for it, mainly as tax-payers, and it will relieve your money worries in time of illness."

And at a time of great national debate, Brexit and all the rest of it, I think it behoves us all to not only remember that social contract which the nation committed to, but also to invigorate it as the NHS turns 70.

So I have invited a couple of people up to join us this morning, people who I think have got some interesting things to say. The first of whom, sitting on the left, is a lady called Ethel Armstrong. Ethel began work in the NHS in 1948, she has had an amazing life story and exemplifies many of the innovative changes that have happened in medical progress over that 70 years.

Sitting to Gavin's right is a young guy called Luke Kane, who is a GP trainee in south London, but who was also an NHS volunteer in the Ebola crisis in Sierra Leone, and for those of you with a nautical bent, also starred on the Channel 4 TV show Mutiny on the Bounty. And it is not the Mutiny on the Bounty, not the 3,500 mile journey in near starvation conditions that is what attracted him to general practice. It is nevertheless a commitment for the future, that I think between Ethel and Luke they will get us into a conversation that will remind us what the NHS is all about.

Obviously for the next three, four, five months, the top priority for every leader, every part of the NHS is ensuring that the NHS goes into winter in as strong a position as possible. We know we are going to have more hospital beds open, we know we are better prepared, but we also know that the pressures are going to be real. The signs from Australia and New Zealand, who are just coming out of their winter are that it has been a heavy flu season and many of the hospitals down there have struggled to cope, so we know that there is a great deal of work to be done over the next six, eight weeks, with our partners in local authorities as well, to put the NHS on the right footing for the winter ahead.

But that's, of course, not principally what we are here today to talk about. We're here to talk about how the NHS is constantly changing and constantly improving. And it is quite easy to get bogged down in the narrative of doom and gloom and to ignore all of the amazing changes in medicine and care that are fizzing right around us.

You get that sense of fizz as you wander round a hall like this. But I just want to remind us of many of the changes that are being driven into clinical practice, right now, as we speak, across the country.

I think you may have in front of you this little booklet describing some of the changes that, through our specialised services across the NHS, are now taking hold. Who would know from the national debate on the NHS that bionic eyes are now being offered on the NHS? Implants into retinas, cameras on glasses sending wireless signals to the nerves that control sight. A man from Lancashire, Keith Hayman, who was blind for 25 years, now with his bionic eye implanted here at Manchester Eye Hospital, is able to see again.

Who would know about the computers being installed now inside knee replacements, microprocessor-controlled, helping 500 or more people a year, likely to expand further.

Who would know about the hand transplants now being performed at Leeds Teaching Hospital? Mark Cahill from West Yorkshire for example, now able to drive a car, tie a shoe lace, hold his granddaughter, all available new on the NHS.

Brainstem implants for profoundly deaf children. Tooth in eye surgery to restore vision, that is a particularly remarkable one, osteo-odonto-keratoprosthesis if you prefer its fuller name. Tooth in eye, not foot in mouth. Sussex Eye Hospital in Brighton, using patient's own tooth root and bone to support an optical cylinder. And one of the early patients, a chap called Joseph, blind for 12 years after a furnace exploded, now able to see immediately the bandages came off.

World-leading advances in genetic technology, mitochondrial donation, NHS England funding £8 million over the next five years alongside the Wellcome Trust and others, to ensure that babies who are at risk of mitochondrial diseases, which can be terrible afflictions, blindness, heart and muscle problems, deafness, diabetes – those future babies' DNA is clear of those inherited conditions.

And more prosaic matters, problem falls. Here at Expo you may have come across two of the examples through the Test Beds where action is being taken to reduce the likelihood of older people having a fall – up to one in three people over 65 each year falling, costing the NHS £6 million a day. In Sheffield, the Kinesis QTUG device and in Care City in London, the GaitSmart technology - simple ways in which these problems can be addressed.

So I defy anybody who says that the NHS is stuck in the mud, or slow in its ways. Actually, the NHS is a hot bed of innovation. But clearly as we think over the next three-to-five years, we need to go further, faster and accelerate what that looks like. I just want to briefly touch on four areas where we are going to be putting our shoulders to the wheel and Jeremy Hunt this afternoon will talk about a fifth set of IT-related developments as well.

The first is around pharmaceuticals, and obviously at a time of Brexit we are having a debate about the future economic prospects of this country and I think there is clear recognition of the importance of the life sciences industry to the UK - employing 200,000 people, contributing significant revenue to the UK economy. The NHS has spent over £15 billion last year on medicines, net of the PPRS rebate. That actually now constitutes more than 14% of NHS England's total spending, rather than the 10% figure that it was just several years ago. But we know that the opportunities and the funding pressures are very substantial in medicines. So we are going to need a new PPRS agreement of course when the current one comes up for renewal, but over and above that we need to get smarter and more creative about the way we do our deals with the pharmaceutical industry.

Since taking over at NHS England responsibility for negotiating deals with the pharma sector earlier this year, I think we have begun to make good progress. The approach that has been taken across the country on the new categories of Hepatitis C treatments has already enabled us to treat more than 20,000 patients, cut the death rate by over 10% and reduce the need for transplants for Hepatitis C patients

by more than 50%. A pretty staggering achievement. Thanks to the approach we are taking to driving competition in that area we have been able to cut prices by 25%, saving over £50 million, which we are going to be able to use to reinvest in increasing the number patients by 25% over the course of the coming year.

We need to create head room in the medicines' budget and that is why we are currently consulting on changes to the guidelines for CCGs on prescribing low-value medicines in general practice.

And we need to get much more serious about exploiting the opportunity from the new biological medicines and, in particular, the biosimilars. For those of you working in this area, you will know that these are six of our ten largest medicine spend in hospitals and yet we have got highly variable usage of biosimilars across the country.

We have a real opportunity in Europe, relative to the US where Europe has been much quicker off the mark in getting the regulatory regime right for biosimilars and we in the NHS have got a big opportunity to really drive the uptake. And so, today, we are setting the aim that 90% of new patients will get the best value biological medicine within three months of the launch of a biosimilar, and 80% of existing patients where it is clinically appropriate will make that transition within 12 months. If we do that we will save up to £300 million over the next several years. £300 million available to reinvest in some of the new innovations that I have just been describing.

So, yes, new medicines are obviously an important part of the future, but that's by no means the whole story.

The second of the four areas we need to advance on are exploiting the unused comparative advantage that the NHS has with the anonymised clinical data at our disposal. And we have had a number of false starts and false dawns in this area.

But the report by Sir John Bell on the life sciences strategy, I think, sets out a compelling case for advancing in perhaps three, four or five parts of the country, 3 to 5 million population each, so-called digital innovation hubs where it would be possible to use those data to take time and cost out of the discovery process, as for example has been done here in Salford.

The Salford lung study, a world first, using phase 3 trial data drawn from electronic medical record systems for COPD and asthma, that is something that if we get right will be a huge win for the NHS as a whole and for UK plc.

So, today, NHS England is explicitly nailing its colours to the mast in backing those recommendations from John Bell's report and we will, by the end of the calendar year, set out the process we will be using with our partners at NHS Digital and elsewhere, to identify the three-to-five locations across the country that will go live with those digital innovation hubs.

We also, thirdly have a great opportunity to get smarter about the way we are using artificial intelligence and machine learning, with those datasets, to improve the quality of clinical care. This might seem rather hard to get your head around the notion, but I think a recent editorial in The Lancet put it very well when it described for example the big shifts we could see in the way radiology and pathology work.

When we talk with Ethel in a moment we will just be reminded of the kind of big shifts that have occurred over the course of the last 30 or 40 years, and there is absolutely no reason to think we will not see even bigger shifts if we actually give them a shove in areas such as the use of machine learning and AI in the NHS.

So the Lancet pointed out that over the course of a career a radiologist would probably read over 10 million images, a dermatologist might analyse 200,000 skin lesions and a pathologist will review nearly 100,000 specimens, whereas there is great potential to automate huge swathes of what is actually happening in radiology and to some extent pathology and dermatology.

We are seeing that with pulmonary embolisms and CT scans. We're seeing that with retinal scan analysis, we're seeing that with the work that is going on at Moorfields, the Royal Free, and other of our leading hospitals. So John Bell's report identified the faster application of AI in the NHS as one of the four big wins that we could potentially support. Without doubt you will see as we make the case for public investment and NHS investment in these areas, this is one NHS England will be backing that with our investment over the course of the next 12 months.

So yes, certainly medicine, yes data and yes AI, but for a lot of you here at Expo you are also interested in tech, med tech and particularly digitally enabled med tech. Here I think there are encouraging signs. Last January you will remember we launched the NHS Test Beds. We have seven sites across the country – a number of you are here representing them. 40 innovators, eight evaluation teams, five voluntary sector partners and we have got about 4,000 patients now enrolled in one way or another in those test bed sites, which are showing how you combine devices, the internet, changing ways of working by frontline health professionals, to produce really significant improvements in care outcomes.

We're aiming to get 4,000 patients up to 15,000 by the time we meet here next year at Expo. Given the successful work that the Test Beds have now embarked on, we are today announcing that we are going to extend their funding for another two years given that they really are a strong, investable proposition.

We also announced last year the Innovation and Technology Tariff, which came on-line this April. We have got over 25,000 patients now self-managing their COPD. We have got hundreds of hospitals using the angle episiotomy scissors that will help reduce injuries to women in labour. We have over 1,000 ventilator tubes that are helping to reduce ventilator related pneumonia that causes 3,000 to 6,000 deaths in hospitals each year, and we have nearly 3,000 devices that eliminate the risks of injecting fluids into an artery.

This was a very simple idea that the best innovations would get reimbursed directly to cut out the faff and transactional hassle of getting them into mainstream clinical practice. On the back of that we are extending this programme now not just to cover secondary care, but also to cover primary care and we have had over 230 applications for that, for the expanded programme, coming on-line in April. So my reading is that actually, not only is there a huge energy and hunger for innovation and change across the NHS in the way in which services are organised, but actually at the fundamental treatment level there is a lot, not only in train, but a lot in prospect.

And our job, as NHS England and our job as leaders in the NHS is to accelerate that so that we move the frontier of what modern medicine looks like, faster. As we do that, I don't think any of us underestimate the challenges that sometimes arise. This often means tackling very established ways of working. It means dealing with the well-discussed problem of “not invented here” and spread and sometimes there are genuine disputes and arguments about what constitutes the way forward.

But you know what, it was always like that. There has never been a time when it was automatically accepted that we should move in a particular direction, and even somebody was telling me yesterday the so-called lightbulb moment, Thomas Edison when he invented the lightbulb actually had a huge and long running bitter rivalry with George Westinghouse about whether or not alternating current should be brought on-line. In a way reminiscent of the discussions about our teenage kids and their mobile apps today, there was a huge social concern that if electrification took place with alternating current and electric lighting it would destroy the family, because families wouldn't huddle around gas lamps and fires and talk in congenial ways when night fell.

So we have always had the strange balance between the obvious need to get on with it and the concern about the consequences of so doing. That is the history of innovation in every walk of life.

For those of you who are here at Expo, looking to drive the next stage of the revolution, we say "strength to your elbow, you have our support, the future of the NHS depends on it".

Thank you very much.

Simon: OK, so, Ethel you have seen some innovative changes in your working life, you began as a radiographer working on cancer therapy, helped to establish the breast screening programme, worked in orthopaedics – tell us, what has been the biggest single changes that you have seen in the practice of health in the NHS over the 70 years?

Ethel: I have seen more changes than you can shake a stick at! The important ones are the ones which improve lives, the other ones we just forget about. But maternity services and knee replacements, hip replacements, cervical cytology, I'm in the era and was able from 1948 to work with the cream of the crop.

The pioneers for cervical cytology, when the treatment for womb cancer was radical surgery and then the treatment after that - there were no radiotherapy machines - the treatment after that was via radium needles or radon seeds. And one of the techniques was literally introducing radon seeds into the pituitary gland by hammering through the nasal bone at the top, and you would not want to see that procedure done. It may have extended a life by six months, it was pioneering treatment, but there was no other treatment for cancer patients.

I was also fortunate to work with the pioneer Sir John Chandley, Sir Harry Platt, Dr Dennis Ryder - who the first ones to do the hip transplant, replacement hips, and they used to fly in to this city to see Sir John Chandley. I knew him when he was just John Chandley, but I had the privilege of seeing him be knighted, and that now is standard procedure, but it wasn't literally available until about 1962.

Now, as Simon says, we're doing limb transplants and hand transplants, particularly on people with severe injuries and getting them back to use again. But your maternity services are one of the biggest, now when I look at the units now, and see small babies in special care units, the size of a bag of sugar, who will survive, but they wouldn't have survived before 1948. Because a delivery cost one and sixpence, and that was post-war when there was a baby-boom when the survivors came back from the war and it wasn't uncommon to find ten and 11 children and one in six bought bread and margarine for that family, but if they were born the next day, the 5th of July, it wouldn't have cost them anything.

The changes and advances have been tremendous, I have seen them all and privileged to have served 70 years continuous service between the NHS and the two charities that support the staff who work for the NHS and I'm here today to just tell you what it was like. Massive changes, and I will do anything to support our NHS and we must really get people to realise we take so many things now for granted, that were not taken for granted prior to 1948, so just remind everybody. [Applause].

Simon: Ethel you have had an extraordinary career. In that you changed your health profession, radiography to nursing, you changed the areas you worked in, cancer, orthopaedics, Public Health, how did you come to decide to make those shifts, you moved around the country in doing so. What was going through your mind when you made those decisions?

Ethel: It was, I had the opportunity - which very rarely people get. I really wanted to do dentistry or medicine, but my parents could not have afforded to keep me at university for six years, because there were no grants, so I did mine the hard way. I was married to a wonderful businessman who travelled from John O'Groats to Land's End, so I was able to cherry-pick the people I wanted to work with. That gave me the opportunity and I seized it with both hands.

So the CV goes on, I did oncology, I did clinical practice and I was at the sharp end. That's what it's about. But everybody from the most junior person in a department to

the most senior one, everybody contributes and we have to get this NHS, and the staff that it has, working back again as a team, getting back to make things better for the one person who is in your care. If I'm doing a round I often say to some of the patients, who do you think is the most important man in this Foundation Trust, and they look a bit puzzled and eventually I say it is you! You are the most important person at this minute in this hospital. Because you are in our care.

Simon: Great, thank you. 88 years and going strong, fire in the belly and I think everyone can see that. 33-years-old and going strong, Luke why did you choose general practice? You have already had a diverse set of experiences, more so than most GP trainees. What is on your mind?

Luke: I love being a GP, it is the most exciting branch of medicine I think there is. You can do so much, there is so much potential. In a morning you will see someone with depression, a psychotic chap who doesn't want to go and access services. You will see someone with abdominal pain, a sore knee, somebody that wants a sick note, you see everything, and so it keeps you on your toes, it keeps you learning, it keeps you meeting different people. I couldn't think of anything worse than being a liver surgeon where, you know, you see the same thing.

Simon: Any liver surgeons in the audience, time to declare (laughter).

Luke: It is the most innovative and exciting part of the NHS if you ask me, absolutely.

Simon: OK, well Gavin shall we see if people have questions.

Question: Good morning, just wondering whether the panel has any concerns about the recent data on life expectancy stalling and what the reason for that might be despite all these wonderful initiatives and I know Sir Michael Marmot has made comments on that, and where does the panel see that going and what can we do?

Simon: OK, in a sense, life expectancy stalling in the presence of Ethel Armstrong feels like a strange point to be making! But Michael has rightly raised and drawn attention to the issue. As it happens, our life expectancy improvements still appear to be better than say Germany and some of the "obvious" explanations around the economy and all the rest are not – as he said yesterday - I think in the Times – are not completely obvious what the answer might be. That said, I happen to have the numbers here in front of me – we have not met and this is not pre-planned! – but what has happened since 2010 is that life expectancy at birth for boys has gone up from 78.7 years to 79.5 years. For girls it has gone up from 82.6 years to 83.1 years.

So life expectancy is still rising, it is just not rising as fast as it has been at points in the past. Now I think there are a set of things that we still can do more of and Bruce Keogh is today talking about the importance of further gains in cardiovascular prevention, and there are improvements that we can make for treatment, particularly for people over the age of 65. And so, although we have seen huge gains, for example in stroke care over the last decade, the investments we're making now in what's called mechanical thrombectomy, through NHS England's specialised commissioning, that's going to be benefitting another 8,000 people a year by 2020, those are the investments we need to make to complement the further gains in prevention.

But I think fundamentally that Michael is right to draw attention to this and we should have a hard look at what is going on. But that shouldn't be mistaken for suggesting that life expectancy isn't continuing to increase, nor indeed that we still have further opportunity on prevention. Data published in the last few weeks show that 35% of dementias can be prevented for example. That will have a huge impact on not only the prospect of our parents and our families but also frankly on the sustainability of our social care funding system in the years ahead if we get that right.

Question: I wanted to ask a question regarding patient service users. I'm pleased to be here today and it is very professionally orientated but I wanted to ask the role of the patient and service users in the journey that you and the professions are

outlining for us. For many people I speak to we want to be part of the journey, we want to be part of what is involved, the last 18 months we have seen the framework but we would really like to see the patient direction of involvement of patients and users moved on and I wonder whether you and the panel could maybe comment on that concept?

Simon: Yes, I agree completely and I will come back, but why not give Luke and Ethel a chance to go first. Ethel, did you want to? The question was about the involvement of patients in the kind of innovations and changes that we were talking about this morning, how to kind of make sure that happens right?

Ethel: It is one of my pet things, we have got to communicate. We must communicate and ask patients, nine times out of ten whatever they are going to see a GP they can be advised about that, it really comes down to letting them decide what they would like to have done, and see if you can compromise. Communication doesn't matter where you are, if you don't communicate then you really are going backwards in times and it has to come from the top, right to every Trust, every GP, it is getting to know what is available and how you can access it and it isn't always pressing buttons to get it.

Luke: I think obviously the patients are the key of the NHS, the whole point is making a great system that's patient-centred. In my practice in Lewisham it is in quite a deprived area, we have a lot of problems getting people involved in the practice patient group, you know we don't have anyone that comes regularly. I think it is about doing something to empower patients to get involved and to help improve things, I'm not sure what that would be. In an area like mine where there is a lot of issues it can be a real challenge but it is definitely the most important thing.

Simon: So I would just add, I think the role that HealthWatch plays both nationally and locally is hugely important. We published at the end of March the "marching orders", if you like, for the NHS for the next couple of years, called 'Next Steps on the Five Year Forward View.' In framing the priorities, we explicitly paid attention to

the HealthWatch national surveys of local HealthWatch branches. The sorts of things that HealthWatch were telling all of us were important were making sure we make further progress on mental health, and we have got I think some really positive news on that.

We are today publishing the mental health dashboard for England that shows that last year, despite all of the financial pressures we did indeed meet what's called the mental health investment standard. In other words we made sure that investment in mental health services overall went up faster than investment in the NHS in the round. We have seen the creation of new community eating disorder services, meaning faster access for children and young people. That came out of the HealthWatch survey, similarly the ability to have easier access to GPs, so I think HealthWatch has got a key role to play.

We had a discussion yesterday at the NHS England AGM about what you are describing. There is an enormous amount to be said frankly in terms of our social prescribing, in terms of our giving individuals more control over the way services are arranged for them and their families, which is part of how the learning disability programme is helping unlock some old institutional models of care in many parts of the country. So there is a power shift as well that is needed.

Question: Good morning, I'm Anne and I'm from the states, the Patient Centre Primary Care Collaborative. Just on the notion of life expectancy, in the states we are seeing a decline amongst white men and women and that's due to the opiate epidemic and rising inequalities, something very much to watch for your system. I'm curious, we are very focused on how do we enhance the value of our healthcare spend. We are facing a lot of downward pressure, as all health systems are across the world, what do you see as the role of primary care in helping to enhance the value of your spend?

Luke: It is a big question. I'm very much about GPs not just being the gatekeepers to secondary care, but being empowered clinicians themselves to solve problems

and get things done. So I don't just want that patient to come to see me for an onward referral, I want to be able to treat, diagnose and manage that patient within my primary care building, within the service. I think a lot can be done to, for example, increase access to direct scans or get secondary opinions without the patient being seen in the hospital. So I think there is a lot that can be done to empower GPs to make changes that would help.

Simon: So if you go back to 1948, obviously the GP is the foundation of the NHS, and was hardwired into the system. There are tremendous strengths that come with that, it is partly how we have such a fair and cost effective and rational health system. But there are also some design problems, in terms of the very clearly demarcated division of labour that existed between what GPs do and what's happening in hospitals, including outpatient services, so partly what we are trying to do is get fuzzier boundaries there.

I think many people would be surprised to know that we spend as much on hospital outpatients as we do on general practice. I think people would be surprised to hear that the cost of two A&E visits is more than the cost of a year's worth of GP care. And yet we have let relative investment in primary care erode over the course of the last decade. That is why we are decisively putting our thumb on the scales to reverse that trend.

It is why it is not just about more GPs, it is about expanding the multidisciplinary team, that is why we are making direct investments in clinical pharmacists and mental health therapists, and it is also about redesigning work at the individual practice and groups of practices, particularly now a lot of places are wanting to organise on the basis of a 30-50,000 population hub. We want to keep the best of British general practice but change the things that GPs and patients can see need to change. And the great strength of British general practice frankly has been it is not 'one size fits all', it is plural, but also highly adaptive. I think we are in a period where we will see a lot of evolution and adaptation in what general practice looks like.

Question: I'm Adam, a Research Fellow at King's College London. So you mention Sir John Bell's report and the huge potential of AI in the NHS. He also mentions in the same report a warning of safeguarding access to the datasets, which he boils down to – 'taxpayer pays for NHS, NHS delivers services free at the point of care, patients generate dataset, datasets train proprietary algorithms and then the proprietary algorithms are sold by companies for profit'. A simplified model. But is this an appropriate model of industrial, social and digital enterprise, and, if it isn't, what kinds of efforts are we making or should we be making to act on those warnings that Sir John mentions?

Simon: He had a suggested answer to that sort of chain as you describe it, and that is that the NHS needs to set out our stall in terms of the IP that is generated off the back of those kind of innovations. And that's what we are going to do, NHS Digital is helping lead the charge on that, together with the research bodies, but there is a win-win here. If the shutters come down then we won't actually generate the benefits that are going to be, I think, a ubiquitous part of what modern medicine looks like over the course of the next decade and it is one of our potential comparative advantages, given we have much richer and longitudinal population datasets. In the US a recent report suggested, for example, that up to a fifth of GP practices, office practices still don't have electronic medical records. So we have an opportunity to create a real win here for the patients in this country.

Question: I work at the South London Maudsley Trust, it is laudable your support for the Five Year Forward View for mental health. The question was really to think about the workforce and how to support, to make sure that we can actually fulfil the Five Year Forward View. One of the other aspects, it is not obviously just the experts within mental health themselves, but how do we skill up the rest of the staff, the workforce in the NHS and social care. And would you back mental health competency framework across the piece, for example, the skills for health competency framework, the Department of Health funded, might be one option.

Simon: I think you raise an important point which is that we're trying to do at least two things here, we're trying to ensure that people with physical health problems, who might not be showing up in the specialised mental health services have their mental health needs looked after. And that's going to mean that obviously a lot of that is sitting in primary care, it is also going to mean the work of midwives, it is going to mean the work for patients with diabetes and the role that the physical health services play in thinking about so-called co-morbidity.

The flip side is frankly those people using specialist mental health services also need their physical healthcare better attended to. If you look at the 15-20-year life expectancy difference for people with severe and enduring mental health problems, a significant part of that is actually their unaddressed physical health needs. It is one of the great inequalities. So I think the point you make it right but it cuts both ways. We need people who aren't specialists in mental health to pay more attention and know more about how to help people with mental health needs and vice versa.

Gavin: Thank you all very much.