[Speech: Health technology can help spot serious illness and prevent it](#)

It's great to be in a room full of fellow tech enthusiasts. Not least because I imagine most of you will have downloaded the Matt Hancock app?

Some of you? Anyone? Well, it's currently rated 3.5 out of 5 on the App Store and if you need any convincing, just listen to the top-rated review:

> Due to low storage I had to delete my Facebook app, Twitter app, photos app, camera and phone to make room for this. Worth it! It's the only app I'll ever need from now on.
>
> From hearing about what Matt Hancock thinks about the OAP utility bill allowance, to hearing about what Matt Hancock thinks about the OAP free bus fare allowance, this really does satisfy my needs for constant global information as a millennial in the Digital Information Age. Delete your phone, get this app instead. You won't regret it!

It's great to have a satisfied customer. So, you're welcome, 'The Gruesome Twosome'. Although, I'm not sure the app's sarcasm filter is working quite as it should.

So, yes, hello, I'm Matt Hancock the app IRL (in real life). And yes, I know my love of tech is sometimes a source of amusement, but let me tell you why I believe in the power of tech – and here I want to borrow from the great Steve Jobs.

Steve said, and this was in 1994, long before Apple changed the world:

> It's not a faith in technology. It's faith in people. Technology is nothing. What's important is that you have a faith in people, that they're basically good and smart, and if you give them tools, they'll do wonderful things with them.

A faith in people. A belief that, given the power, people want to make their lives better and make other people's lives better too.

I share Steve's optimism. Because, throughout history, almost every technological leap has made people's lives better:

From the printing press, to the electric light, to the internet. From the discovery of penicillin, to x-ray machines, to keyhole surgery. We're better off and healthier because of technological progress. Because someone had faith and a vision.

That's why I believe in tech, because I believe in people. And I'm optimistic that with the right tools in the NHS we can improve people's lives by improving people's health.

So today I want to talk to you about 3 things:

- personalisation
- predictive prevention
- personal responsibility

That's a lot of 'Ps' so let me take each in turn.

First: personalisation.

The digital revolution of the past couple of decades has unleashed our imaginations and our creativity like never before, ushered in much, and often profound, cultural and social change. From how we work, to how we shop, to how we date.

If there is any one overriding theme of the digital revolution it's increased choice. You don't walk into a record shop to buy a top-40 single. You click a button to listen to any record ever made.

But all that choice can be overwhelming. And in the past few years we've seen a move to increasingly personalised services from the likes of Amazon to Netflix to Apple to many others. Suggestions based on our past behaviour, but not limited to what we've already done, as algorithms have become more intelligent.

Now, there are legitimate concerns about privacy and the sharing of data, and it is absolutely right that government should ensure there is adequate and sensible legislation in place, and that laws are followed.

But I'm a firm believer in looking at what people actually do, rather than what they say they do. And if you look at people's everyday behaviour, they like personalisation. They use personalised services.

Over a third of Amazon purchases are recommendations. Around 80% of what Netflix viewers watch are recommendations made by algorithms.

And I'm sure Doug (Beck, Apple VP) would be able to share some similarly impressive data from Apple on the popularity of personalisation.

People are choosing personalised services to help them narrow down and make the best choice. They're opting in because personalisation offers more tailored, more targeted services.

And in a hyper-connected, digital world with limitless choice, with endless opportunities, people still want to feel like individuals. They don't want to feel like they're part of the crowd. They want to be treated as individuals.

That's why I believe, if you scratch the surface, most millennials share my political outlook of liberal conservatism — even if they don't know it yet.

So how does personalisation relate to health? Well, we know that more than 80% of 16 to 24-year-olds would prefer to access the health service through an app.

But personalised healthcare is more than just meeting people's expectations of increased choice — as important as that is. It's what's best for them. It's giving people better outcomes.

In the 20th century, when the NHS was born, it made sense to view the population as one homogeneous mass when designing health programmes because the margin of victory was so great.

Even with a one-size-fits-all approach, you were going to see improvement. And we have seen huge improvements because of the efforts of our hugely talented and dedicated NHS staff. Heart disease is down, strokes are down, people are living longer and healthier lives.

But if we look to the future, that approach isn't going to work because the margins are becoming smaller, the challenges are changing.

So the focus of the system has to move from treating single acute illnesses to care for multiple chronic conditions and promoting the health of the whole individual. The 21st century NHS must try and prevent people from becoming patients in the first place.

To get the best possible return on the record £20.5 billion a year we're putting into the NHS, we must change the focus to prevention and empower people to take more care of their own health. Because all the evidence proves that prevention is better than cure.

So let me turn to predictive prevention because this is where the possibilities offered by tech get really exciting.

We know that genetics and lifestyle choices make up around a half of what determines an individual's likelihood of good health.

Right now, in Cambridge, we're on the cusp of sequencing the 100,000th genome, on our way to a target of 5 million genomes.

What this means is we will be able to predict who is vulnerable to which disease and how we can prevent it, or best design a drug or a treatment to give them the best possible chance of recovery. Cutting-edge healthtech in our NHS.

And we must stay at the forefront of this and other emerging technologies like digital medicines because their potential is so huge.

In the US, the FDA has approved the first ever digital pill. Fit with a tiny sensor, smaller than a grain of sand, it uses a smartphone app to transmit to the doctor when the pill has passed through the patient's system.

A nice extra? No. Because the pill is used to treat schizophrenia and bipolar disorder, so being certain a patient has taken their medication is absolutely

vital.

Now, Andy Thompson of Proteus Digital Health, one of the firms behind the pill, forecasts that by 2030 patients will be diagnosed at home using medical sensors built into their mobile phones.

Doctors will be able to use digital devices and medicines, wearables and AI to predict, prevent and treat people with precision. Specific and accurate not general and variable – that's the medicine of the future.

And it's not far off in the future. It's here and now. Thousands of patients have already used digital medicines. Within the next decade most drugs will be smart drugs. So we must get ready. We must make sure the NHS is ready for the healthtech revolution.

That's why we're developing new digital approaches to prevention programmes. We're looking at how we can improve NHS health checks, using patient-generated real-time data to spot early signs of stroke, heart disease, diabetes, kidney disease and dementia, and create personalised, targeted interventions to treat people and help them change behaviours to cut risk factors.

Public Health England is looking at how we can use referrals through social media and incentives delivered through digital platforms to promote physical activity and help people quit smoking and lower alcohol consumption.

So that could mean personalised incentives such as free gym and swimming pool access, cinema tickets or discount vouchers for healthy food.

And the Good Thinking mental health project in London is analysing social media usage and search history to identify people who may be at risk of, or are already suffering from anxiety, depression and low-level mental health conditions. That way they can be helped through digital apps, online cognitive behavioural therapy, or face-to-face and we can prevent their condition becoming more serious.

These are just some of the new and emerging ideas on predictive prevention that we're looking at in the NHS.

And I welcome the insights from the RAND study on how we can promote better behaviours. I am open to any idea, from anyone, and will look anywhere for what works. What's best for the NHS is what's best for patients.

And we have to be honest: we don't have all the solutions within the NHS. So we have to be open to working with others and open to change because, ultimately, predictive prevention is a conscious decision not to stand still.

The public's expectations of public health services have increased as technology has advanced.

More than half the British public have searched online for health information from diet and nutrition, to exercise and fitness, to concerns about an illness or an injury, and how to treat it.

Now, we all know about the perils of Dr Google and how a stubbed toe can be misdiagnosed as a terminal condition, but what it shows is that people are increasingly taking an active interest in their health and fitness.

People want to take greater personal responsibility for their health. And they must take greater personal responsibility for their health. Because at the heart of our NHS there's a social contract, which is the third and final thing I want to talk about.

Think of it as the terms and conditions that few of us ever read. We know they're important. We know we agree, but what do they actually say?

The social contract that underpins the NHS is this:

We, the citizens, have a right to the healthcare we need, when we need it, free at the point of use.

But, we have a responsibility to pay our taxes to fund it, and to use the health service carefully, with consideration for others, and to comply with medical advice to look after ourselves.

Rights are important. But equally important are responsibilities. And we all have a personal responsibility to ensure the NHS is there for future generations.

So, I will protect your rights and work with the NHS to build a better and more sustainable health and social care system. Government has guaranteed your rights and is putting the single, largest cash injection into the NHS ever to build a better and more sustainable health and social care system.

But the final component, the most important part, is the public.

Only by every citizen taking personal responsibility for managing their own health, by making full use of the predictive prevention and personalised health services we're introducing, can we build a better and more sustainable health and social care system.

One that's at the forefront of new technology. One that can rise to the challenges of an ageing society. And one that's there for our children and our grandchildren.

In short, an NHS that's fit for the future.

And we achieve that not by penalising people, but by empowering people. By giving them the right tools and trusting them to make the right decisions.

Not Big Brother and more nanny state, but an equal partner with a shared stake.

Rights and responsibilities go hand in hand with having faith in people. A faith to do what's best for them, what's best for others, and what's best for our NHS.