Better tech: not a ‘nice to have’ but vital to have for the NHS

Everyone here is passionate about the power of technology to make life better for patients and staff in healthcare.

And I think everyone here agrees with me that better technology should be a strategic priority for the NHS.

But we know not everyone feels the same.

So today I want to set out the future for technology in the NHS and why the techno-pessimists are wrong.

Because for any organisation to be the best it possibly can be, rejecting the best possible technology is a mistake.

So let me start by addressing the cynics, the people who think my obsession with tech is a load of old blockchain.

Now these tech-sceptics, they generally fall into 2 categories.

First, the St Augustines. The people who say ‘Lord, let’s fix the tech in the NHS, but just not yet’.

According to this group there are always more pressing priorities. More hospitals to build. More staff to recruit.

According to them, tech is a luxury item, a midlife-crisis Ferrari that we don’t need and can’t afford.

Today I want to send a clear message.

Those who say better tech is not a priority for the NHS, those who think we should only invest in our short-term operational needs, never in long-term progress, those who want us to spend every last penny of the extra £33.9 billion a year on more people and more buildings.

I say that is wrong.

Now of course more people and more buildings are important and we’re doing both.

But we know this argument is wrong and we’ve heard it before.

We heard it in the 70s when some people said that researching IVF was a waste of public money because of overpopulation.

We heard it in 1948 when, with a country in ruins, and years of rationing still ahead, some people said setting up the NHS wasn’t a priority.

So when people say that better technology is a ‘nice to have’ that costs too much, I say wrong again.

Better technology is vital to have and embracing it is the only way to make the NHS sustainable over the long term.

If you’re not convinced, then visit any hospital that lacks an electronic patient record system.

An EPR records, in digital form, who all your patients are, what’s wrong with them and how they’re being treated.

Not having one is like being John Lewis and doing your accounts on paper.

Yet astonishingly, that’s how some parts of the NHS are still trying to function.

Come with me to one of these trusts and tally up the sheer amount of time staff spend chasing paper records, copying the same bit of information from one system to another, running round the ward trying to figure out whose patient hit the alert button, waiting for the lift just so they can go down and call a patient up to the consulting room.

I’ve seen it myself.

I was on a night shift a few months ago when an alarm went off because a patient was going into arrest.

About 20 people, including the most senior doctors in the hospital, rushed into the room.

Then they had to wait for 3 minutes until someone had found the patient’s records and wheeled in a trolley with all the files.

Then a consultant had to stand on a chair in the corner of the room, reading out the patient record and struggling with the handwriting.

Now the good news is that thanks to the brilliant work of the staff, that patient survived. But the risk was enormous.

This is no way to run a health service in the 21st century and it is unforgivable because it doesn’t have to be this way.

And it’s not just the burden on clinicians.

Look at the danger to patients because the information about their care is stored in dozens of different systems that can’t talk to each other.

In 2018 alone there were 792 wrong-blood-in-tube incidents across the NHS, mainly caused by mislabelling errors.

And then let’s look at when it goes right.

Come with me to one of the most digitally advanced hospitals in the country,

like Milton Keynes or Imperial or Chase Farm in Enfield.

Where a digital screen calls patients up to their appointments.

Where staff can access the whole patient record, from wherever they are in the building.

Where the blood tests are labelled with barcodes.

Where the nurses only get buzzed by the patients under their care, thanks to a call system designed by the nurses themselves.

Where they don't have a problem with staff retention because people are fighting to get in.

Spend any time in a trust like those, then come back and tell me that we have to choose between better tech and investing in people, or better tech and saving money, or better tech and patient safety.

Those choices are false choices, they're not choices the frontline want us to make, and they're choices we should emphatically reject.

That's my response to the first group of techno-sceptics, the St Augustines. Now take the second.

This second group makes a more nuanced argument.

This group says 'Ok. We get it. Tech matters. But let's not run before we can walk.'

This group says 'let's fix the basics first, and then, only then, invest in the cutting-edge stuff like genomics and AI.'

I'm sure you've heard this argument too.

I have a lot of respect for this second group's point of view.

Not least because there is so much to do to fix those basics.

Let's face it, if you're a GP and your desktop takes 17 minutes to boot up, if you're a medical secretary and you've spent all morning printing referrals off one system just so you can scan them into another, if you're a surgeon and you're running around trying to track down a patient record because someone saw it in the operating room and someone else saw it in recovery, if you're a kidney specialist and you can't access a patient's blood tests in real-time because that data is held on a GP's system that you can't see…

I could go on and on and on.

If you work in the NHS, in any part of the service, far too often old, out-of-date 20th century technology gets in the way of your ability to do your job.

So I completely get why some people think now is not the time to be talking

genomics, automation and AI.

But I respectfully disagree.

Because that’s a bit like saying that we shouldn’t explore space when we’ve got climate change to deal with on earth.

Which sounds attractive until you consider that much of our knowledge about climate change is beamed down from satellites.

The point is that sometimes the cutting edge can help us solve those bread-and-butter problems and move us to a new generation of solutions.

You might even say the cutting edge is the breadknife.

Here’s two examples from the NHS. And there are many more.

First, two thirds of all the patient data held by hospital trusts is generated and held in disorganised form, as freeform electronic documents or scanned letters or pdfs.

Or worse still as historic paper documents held off-site in a giant warehouse. Or, for GP practices, in the back room of the surgery.

They’re called Lloyd George files. The name says it all.

I admire David Lloyd George, but he was in office a century ago.

Every time people hear Lloyd George, I want them to think of an admirable leader of the past, not a way to store data in the present.

Most trusts desperately want to move their past and current health records into a modern, structured, electronic form, so they can easily look things up, track trends and spot patterns in the data.

But this means teams of NHS administrators and clinicians constantly having to pore through all these documents, manually translating human-readable text into machine readable, clinical code.

It’s a meticulous, time-consuming and expensive process.

It means highly trained NHS staff are stuck in some basement office, sometimes duplicating each other’s work, when they could be out treating patients.

It doesn’t have to be like this.

At King’s, a brilliant team led by Dr James Teo and Professor Richard Dobson have built a natural language processing tool called Cogstack.

The Cogstack AI can perform manual coding and data collection tasks in a tenth of the time that it takes a human analyst.

Technologies like these have potential to save millions in the cost of coding

and analysing data.

There’s huge medical research potential in getting this right too.

It’s a clear example of the latest AI helping us fix the basics, because once you’ve coded up and digitised your patient records, you can start to solve fundamental problems, like how to share those records across different parts of the NHS.

You’re also freeing up staff time and capacity to do more of what people came into healthcare to do: looking after others and solving problems.

Don’t like that example? Here’s another.

Blood platelets only last for 7 days.

Forecasting how much of the different blood types a hospital needs onsite at any given time is an enormously complex task, with lots of waste across the supply chain.

That’s waste of blood freely given by a fellow citizen.

NHS Blood & Transplant are working with a company called Kortical to design an AI-powered supply and demand model for every hospital in England.

It takes account of things like weather and bank holidays and demand variation at trust level to optimise the supply chain.

It’s cutting-edge tech supporting an age-old logistical challenge.

It’s why ‘fix the basics’ or ‘forge ahead’ is another false choice for the NHS.

This is the same NHS that developed IVF, pioneered hip replacement surgery and proved the link between smoking and cancer, all while caring for millions of patients.

So yes, we’re going to fix the digital plumbing, we’re going to replace fax with email, we’re going to fix staff login, we’re going to ditch the filing cabinets and move patient records onto the cloud…

Most important of all, we’re going to create a modern, secure, interoperable data infrastructure, so patient records can be accessed from wherever you are in the system, including by us patients.

But it’s not just fixing the plumbing.

We’re also delivering an AI Lab for the NHS, we’re sequencing a million genomes and we’re commissioning proton beam therapy.

So these are the principles that guide our approach:

To stay true to its founding ideals our NHS must embrace the future.

And we can’t afford to choose between fixing the plumbing and reaching for the stars.

We can and must do both.

Now I want to talk about what that means in practical policy terms.

In terms of structures, scalability and leadership.

Structures

Let’s take structures first.

We need a system that makes it easier to get things done.

Because it doesn’t matter if you’re a GP surgery trying to put an iPad-based check-in system on your reception desk, or an innovator trying to make email and not letters the default mode of communication between patients and staff – everyone agrees it takes too long to change anything in NHS technology.

It’s not that you can’t deliver great tech in the NHS – you can. We’ve all seen examples.

It’s that you have to be unbelievably tenacious, persistent and extraordinarily dogged to get stuff done, and too often you feel like you’re wading through treacle.

At least part of the problem has been down to the structures of the central NHS.

That is why I launched NHSX last summer.

To bring strategy, leadership and technical expertise to what is probably the world’s biggest and definitely the world’s most exciting public sector digital transformation project.

NHSX have spent their first 6 months building the organisation – staffing up, researching the problems we want them to solve, above all listening to users and asking ‘what is the user need?’

They’ve also found the time to agree an NHS standard for dose syntax, make NHS content easier to search, and run groundbreaking discoveries on screening and mental health.

NHSX’s job, critically as part of both the Department and part of the NHS, is to provide the policy, the leadership and the single front door.

It’s the guiding mind on the digital transformation of health and care.

That means articulating the vision, defining the strategy and deciding priorities, including on spending.

It also involves commissioning work from NHS Digital and also directly from

others.

Our vision for NHS data architecture is to make it more like the back end of the internet – open, interoperable, easily upgradeable.

And NHSX sets the standards to make that happen and sets the policy for services that are delivered across the NHS.

NHS Digital in turn serves NHSX, and NHS Digital does amazing work, 24/7, to deliver one of the most complex and sensitive technology systems in the world.

NHS BSA is also an increasingly data-driven organisation, delivering services across the NHS.

And together, NHS Digital and NHS BSA are the digital train tracks on which NHS technology runs.

Scalability

That's how we're overhauling our tech policy machine.

And with that structure in place, one big thing I want them all to do is start tackling the issue of scalability.

Because too many good ideas in the NHS never make it past the pilot stage.

We've all seen this.

NHS Improvement estimate that it takes 17 years on average for a new product or device to go from successful clinical trial to mainstream adoption.

17 years. That is far. Too. Long.

We need a culture that rewards and incentivises adoption as well as invention.

So we're taking what we've learnt from the successful Global Digital Exemplar programme and giving more trusts the chance to apply these lessons, with our new Digital Aspirants programme.

And we're working across the whole health and care system to bust bureaucracy and modernise the rules that prevent the use of 21st century technology.

Let me just say a bit about this bureaucracy busting, because it's important.

Institutions like NICE, the MHRA, the GMC, the NMC, the Royal Colleges, local authorities and the CQC – they all play a critical role, and I'm setting them the task of ensuring their rules, processes and ways of working are up to date.

It's about adapting to new technology but that's just part of it – it's about busting bureaucracy across the board, and I want to hear from anyone who's

experienced it.

We want to bust the bureaucracy and we can only do it by listening to those burdened by bureaucracy right now.

And by the way, that goes for data collection too – one of my personal bugbears – which is currently far too burdensome.

Useful data is best collected in real time, from the management systems that are used locally to run the services we're trying to measure.

It's better for the service and it leads to better data and less bureaucracy.

That same focus on faster adoption underpins our approach to the AI Lab.

Make no mistake, AI in the NHS is not some distant prospect like nanobot surgeons or 3D-printed organs.

It's already happening right now.

UCLH has used AI to predict and prevent the risk of missed appointments.

The East Midlands Radiology Consortium are trialling AI to read mammograms.

Dartford & Gravesham are looking at an AI-assisted pathway for same-day chest X-ray triage.

Our AI Lab will have a 'skunkworks unit' to build and rapidly test cutting-edge prototypes.

But the real focus will be on finding and boosting existing technologies with serious scale-up potential – AI tools coming to a trust near you.

And today I can announce the next stage in the Lab's development.

Over the next 3 years the Lab will support a £140 million AI Award, designed to speed up testing and adoption of the most promising tools.

It will cover all stages of the product cycle, from proof of concept, to real-world testing, to initial adoption in the NHS.

The call for applications will run twice a year through open competition.

It will be run through the AAC and this first call will focus on screening, diagnosis, clinical decision support and system efficiency.

The AI Lab is a crucial tool in NHSX's armoury for putting the world's best technology in the hands of NHS clinicians and managers, all so we can bring the NHS into the 21st century.

Leadership

And third and finally, I want to touch on leadership.

One of the lessons I've learnt over the last 18 months as Secretary of State is that leadership is at the heart of getting this right.

Yes, that means our tech leadership – the CCIOs and CIOs and their teams. I want to see a digital and tech leader on every board, there's no excuse.

We need to turn that community of gifted enthusiasts into a recognised and respected profession – feeling part of a wider movement, knowing that around you, there are others who share your passion to improve things.

It means a change in culture so the doctor who leads her trust's adoption of technology gets as much kudos as the doctor who leads her medical department.

And when I talk about leadership I don't just mean people with the word 'information' on their name badge.

Every CEO needs to be comfortable and competent in leading digital transformation, every board needs to know what questions to ask, how to hold their CEO to account, every medical director and chief nurse needs to know how technology is going to transform what their teams do and lead that adoption.

If everyone leaves it to the IT department, it will fail.

If everyone owns it, if it's clinically led, if the board and the CEO and the top team all have skin in the game, then, and only then, has it a chance of success.

So I've directed NHSX to ensure that our Digital Ready Workforce Programme is seriously stepped up in scope and ambition.

We need to give our people, our leaders and future leaders, our clinicians and our non-clinicians, the tools, confidence and understanding they need.

Because in the end, this whole agenda is not about the technology, it's about people.

It's why the best kind of tech is the technology you barely notice because it just works.

It's the tech that gets you away from the screen and lets you make eye contact with other people, with the patient in front of you.

It's the kind of tech that helps humanise a difficult and demanding environment, by freeing you up to do more of the work you love.

Giving clinicians back the gift of time and allowing them to care.

That's what we're aiming for, it's what clinicians are crying out for, it's what patients expect and it's what will bring the NHS into the 21st century, and together, we're going to make it happen.