

Health

How coronavirus reshaped the NHS

Under the strain of the pandemic, the NHS has been forced to embrace technology

By **MATT BURGESS**

5:00 AM



Credit **Getty Images / NEIL HALL / Contributor**

During the evening of April 14, Sonia Patel issued a call for help. The busy London NHS Trust where she was responsible for data and technology had recently declared a critical incident and one of its hospitals was running out of beds for the most severe coronavirus patients. Hospital chiefs scrambled to create more space and introduced measures, such as stopping routine operations, to stem the emergency situation. The steps may have saved lives but caused knock-on effects for the day-to-day operation of the London North West University NHS Trust, which has the second

loved ones.

“We couldn’t find the right solution based on some of the existing technologies,” she says. Turning to social media with the plea for assistance she asked if any companies could build something new. “Time is precious,” she tweeted just before 8pm. “DM me”.

Within 48 hours, Made Tech, a firm that works with government bodies to improve their tech systems, [had built a prototype](#) virtual visits system for free and had it approved for tests. It is a simple piece of software: a web app lets hospital staff enter the details of a patient’s family or friends and sends an SMS to them with a time for a virtual visit to take place. Staff can book recurring calls and the system is designed to be low effort for them.

“The whole point of this is to enable ward staff to schedule calls on behalf of patients who might not be able to do that,” Morton says. During beta trials in 66 hospital wards, new mothers who have been separated from their children due to coronavirus transmission risks have interacted with their babies. Hospital chaplaincies have also been looking at how they can help people pray and deliver last rights.

“We had some distraught nurses at one point, there were some patients at the end of life and they couldn’t connect with their loved ones in the early days,” Patel says. “For them to be gifted with that technology actually made a real difference.”

Her request to quickly build and deploy new technology was unusual for healthcare, but coronavirus is unprecedented. The slow and imperfect systems that once ruled the NHS have completely broken down during the pandemic, allowing for sweeping changes from doctors’ surgeries to hospital wards. But this isn’t necessarily a good thing.

During the pandemic technology has overhauled how the NHS interacts with those who are at every level – and much of it involves pre-existing systems being adopted for the first time. Health secretary Matt Hancock has said parts of the NHS should consider themselves “digital first”. Doctors in large hospitals and small GP surgeries alike have had to embrace remote working and face-to-face appointments are virtually extinct.

Underpinning these radical reforms are companies profiting from the NHS by quickly scaling their platforms and installing new services with very little public accountability. The NHS has struck deals with Google, Microsoft and Palantir for data analysis but at a GP level very little is known about the number of deals some firms have made. Tech procurement exploded after government officials declared [normal purchasing rules do not apply](#) during the health crisis and in some cases contracts can be awarded without any competition.

software were only revealed following Freedom of Information requests but the terms of many other deals remain a mystery. “Sadly, we don’t know nearly as much as we should about all NHS procurement, not just when it comes to technology,” says Nick Davies, a programme director at the Institute for Government think tank. “We know less about NHS procurement than we do about contracting by other parts of government.”

Data from procurement analysts Spend Network shows NHS trusts, responsible for some hospitals and ambulance services, have spent £52 million on new technology contracts since the start of 2020. But this is just the tip of the iceberg. Much of these are routine purchases, but other deals include systems unlikely to have been bought before the pandemic. One trust paid £150,000 for cameras to be installed in rooms to allow patients to be monitored; another £38,000 to IT consultants helping install new IT equipment for the pandemic. At lower levels of the NHS, spending is even less clear. GP practices are able to spend their own money on systems and have more choice over the technology they use.

Many of the changes introduced are likely to have long term implications on how the NHS operates and may change the health service forever. Ian Makgill, founder of Spend Network says some of the central contracts issued are “questionable” but real change is happening within localised parts of the NHS. “If there is a single lesson learned is that small companies, innovators can actually make big impacts despite their scale.”



For GPs the change has been stark. The old way of working doesn't exist anymore, says Abbie Brooks, a GP partner at the Priory Medical Group, England's seventh largest GP practice with almost 60,000 registered patients. Before coronavirus a typical day for an NHS doctor was rigid. Each morning they would be faced with approximately 13 15-minute slots where patients would visit their offices with ailments. This would be followed by home visits and urgent care. And then paperwork. "General practice comes with a lot of admin," she explains. Prescription requests need completing, letters need to be filed and X-rays processed.

On March 24, the same day the UK's lockdown started, the practice started a "locked" doors policy. People cannot turn up at any of the group's nine sites and request to be seen by a doctor. Only those invited to the surgery, with ID or documents proving they have an appointment, are allowed to enter. "We had a two week lag where patients didn't want to come and see us so we just cracked on and did all of that admin," Brooks says. The practice is now ahead of where it would normally be. Blood forms can be completed in seconds; it's quick to sign cremation approvals using Adobe software, Brooks says. "From a work life balance point of view, I would say that we're much better off," she says.

But the biggest change for GPs is how they interact with patients. Many doctors are now working at home for the first time, following encouragement from the NHS and unions, something that for many was unthinkable. The shift to remote working saw the NHS in England send 9,522 laptops to doctors, and an extra 13,000 are currently on order. Now doctors at Priory hold up to 16 telephone appointments, lasting ten minutes each every morning, and see a few select patients that need to be physically examined in the afternoon. "They're in and out of the building very quickly," Brooks says.

The technology, although relatively basic, is now in place for appointments to be handled without the need for the patient and doctor to be in the same room. It is as simple as online messaging – conducted through a phone, tablet, or laptop. "Being able to send and receive a text message response has transformed so much," Yasmin Razak, a GP principal at West London practice Goldborne Medical. Razak says more power needs to be handed to practices to move quickly when they need to. "We're very much told you can do this and you can't do this," she says. "That limits creativity and innovation, full stop. When Covid hit, we were told, 'do what you need to do and seek forgiveness after'."

On April 27, Tara Donnelly, the chief digital officer at NHSX, the health service's tech development arm, wrote that 99 per cent of GP practices had [introduced video consultation tools](#) and new ways to communicate with patients. NHSX did not make anyone available to interview for this article.

sent a [commercial tender](#) to 66 companies that already sell tech to the health service. Only those included could bid to win work. The firms had 48-hours to bid for the rights to provide text messaging, video consultations, and triage, according to a report by *Pulse*. Eleven companies were given the initial green light by the NHS, which is paying for the services to be used by GPs, through its [Dynamic Purchase Service Framework](#).

These companies have seen massive expansion. AccuRx, a London-based startup with £9 million in venture capital funding, is at the heart of many GP surgeries. It allows doctors to send patients text messages and send images – during the pandemic it introduced video consultations – and is deliberately simple to use. “There’s plenty of hype in healthtech, but staff just want usable software that works,” says co-founder Jacob Haddad. By making its tech free of charge – for now – it’s in more than 6,000 NHS GP practices. GPs are using it for 20,000 video consultations a day and sending 250,000 messages to patients a day, Haddad says.

“Most of the information you get that makes you make a decision as a GP is based on the history not on the physical examination,” says Murray Ellender, a practicing GP and co-founder of eConsult. His firm lets patients send their symptoms to their usual GP electronically and through messaging. Before coronavirus started, he says, eConsult was being used in 1,200 practices. It’s now in more than 3,000 – he says at the peak of its growth 1,400 practices were added within seven weeks. “We’ve taken a process that used to take us four weeks, mainly because of the training, to 24 hours,” Ellender explains.

Within hospitals, outpatient appointments have also gone digital. By the start of May, more than 79,000 consultations took place on Attend Anywhere, a video service provided to staff centrally by the NHS – hitting 6,000 per day in some weeks. But the NHS’s tech adoption hasn’t just been video. Doctors still need to see patients they can’t diagnose remotely, even if increased face-to-face contact boosts the coronavirus risk to both parties. “I think there’s that fear that’s keeping patients away from coming to us,” Razak says. GPs are concerned that missed diagnoses and the number of cases needing hospital care [will grow](#).

Razak is using a remote examination kit called MedicSpot, which her surgery adopted after she discovered an old leaflet while self-isolating at home. The kit, which includes a giant screen and webcam, also has “self service” medical devices attached to it. A doctor can watch a patient take their own temperature, blood pressure, use a stethoscope to check their heart and lungs and use a close-up camera to examine their ears and throat. Razak says it’s the closest thing to conducting a real appointment with patients.

The GPs that spoke to WIRED believe the NHS has leapt forward in terms of its technological capability. However, one of the longest lasting impacts for GP practices may be how they handle patients attending surgeries. Early on in the pandemic NHS officials advised doctors to move towards [“total triage”](#), where all

need would have priority to see their GP.

“We’re trying to provide some kind of consistency about appointments because it does seem that if you ring before 8am or 9am you just get lucky and you get an appointment,” Brooks says. At the time of writing, her practice is on the verge of adopting a new triage system after looking at what’s available on the tech market. She says the option they picked is around £100,000 a year cheaper than one of its competitors.



Credit **Getty Images / Andrew Redington / Staff**

Coronavirus could change how patients within the NHS will be treated forever. While doctors say face-to-face appointments will naturally return when it becomes safe to do so, many working within the healthcare system have changed their mindset. Overwhelmingly, 88 per cent of UK GPs want to keep offering remote consultations to patients in the future, according to a survey by the British Medical Association (BMA).

For many, the crisis has had a silver lining. “We’ve benefitted from some relaxation in bureaucratic processes and regulation; and we’ve successfully managed patients in a different way, using remote consultations and reconfiguring our practices,” Krishna Kasaraneni, a member of the BMA’s GP

Umang Patel agrees. The clinical director of healthtech firm Babylon – who leaves the room to respond to two pager requests in the hospital where he is working during a Zoom call – says the NHS has moved forward during the pandemic. “I think we’ve taken a five year leap forward,” he says. “I think we will take a two year leap back,” he says. He believes some ways of working won’t outlive the pandemic and need refinement.

NHS leaders will have to grapple with the risk of adopting new technology at speed for marginalised groups and people requiring certain types of healthcare. Those without technology can be excluded from healthcare and the chair of the Royal College of General Practitioners has warned patients with mental health conditions may find it harder to talk to GPs using video. “This will make it more difficult for GPs to diagnose and manage patients’ mental health problems during the pandemic,” Martin Marshall told the [Health Service Journal](#).

It’s unclear how difficult or costly it will be to adopt this technology in the long term – and there’s the thorny issue of what will happen to patient data. The BMA’s GP survey found that 50 per cent of doctors had been limited by “internet speed/bandwidth, hardware and software, and IT infrastructure” issues as they moved to remote consultations.

GPs question who will pay for the new technology if central NHS support ends after the pandemic and there is a chance some could be locked into using newly adopted systems for years. Power could be consolidated to a small number of companies. “The NHS has a challenge because the aggregation of all those contracts are of course a lot of money,” says Albert Sanchez-Graells, a professor specialising in public procurement and law at the University of Bristol.

During the pandemic, Babylon, which has proven controversial for how its video consultations have [reshaped NHS GP funding](#), has increased its work with hospitals. The tech unicorn struck deals with two midlands NHS trusts (University Hospitals Birmingham NHS Foundation Trust and The Royal Wolverhampton NHS Trust) to help flag patients who may have Covid-19. Thousands of people have used the system. “None of us really know about Covid, so clearly, we can’t codify all of the answers and put them into an AI chat bot,” Patel says. Instead the company’s symptom checker asked patients about their symptoms. When the questions were too complex to answer, people were connected to humans, employed by Babylon, who could handle their queries. “We connect you up to a person who can then help you in a more specific way,” Patel says.

The symptom checker can report people’s symptoms to the trusts when they may need to attend hospital. However, the rapid rollout of the system within Wolverhampton has made it difficult to integrate Babylon’s technology and that of the hospital. (Pre-existing work with Birmingham made the process more straight-forward). “Each hospital has a different system so we try where we can to

that their appointment details have been received.

“Ideally you want it to be as useful to as many NHS organisations as possible, without them having to do any form of customisation or change their processes where you can,” he says. “I’m not too worried about extra administrative burden from a provider perspective, because we know we can fix that.”

Ultimately, the NHS needs to increase its transparency around the deals it makes with private companies and the way it operates to inspire trust from patients, says Phil Booth of patient group MedConfidential. “If they’re going to retrieve the sort of trust they need to get through the next several months, to the point where we get a vaccine, they’re going to have to become more transparent,” he says. “You’ve got to see how the data about you has been used, and the way you get people to trust things is not some sort of arbitrary disconnect, or politicians just saying something”.

Since the virtual visit system was rolled out at the London North West University NHS Trust, Patel has joined NHSX as chief information officer. She thinks the NHS should be more creative in the way it engages with tech companies in the future. The “traditional structural processes” should stay in place but there are also other ways to create and drive innovation, she says. “I don’t know if we would ever be able to see that level of change across the nation ever again at that scale and at that pace.”

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