Healthcare People podcast, brought to you by NHS Professionals

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Workforce technology: why the future is personal

Hello, I'm Jamie Garnett from NHS Professionals, and welcome to Healthcare People. This is the podcast where we talk about everything healthcare workforce: the challenges, the opportunities, and the future. In this series, we'll discuss the workforce pressure points for NHS trusts and integrated care systems, and look at where positive change is possible.

In this episode, I'll be talking to Dave Callow, Chief Information Officer at NHS Professionals. We'll be discussing issues around workforce technology, including ways to reduce staff effort and improve efficiency, the growth of personalized technology in healthcare, and the value of looking outside the NHS to develop tech-based solutions that improve outcomes for both staff and patients.

Welcome and CIO responsibilities

JG: *Dave hello, welcome to Healthcare People, it's excellent to see you here today in Harpenden, Hertfordshire, where we're recording.*

DC: Hello, and thank you for having me, it's good to be here. It's nice to have a chat and have a moment to stop and think in our everyday life, isn't it?

JG: *Absolutely, things are busy, aren't they? And it's good just to actually talk about some of the issues that you're facing, and that you're working with clients and the NHS to solve, to take a step back from them and have a more general conversation about that, isn't it?*

DC: It is, it's always good to take that moment, because in the hurly burly of the day job, you can easily miss the opportunities that are just lying around the corner, it's good to take a moment, thank you.

JG: *Just very briefly, you're Chief Information Officer, could you just tell us briefly what your main responsibilities are? What do you do all day, if that's not an insulting question?*

DC: I'm responsible for [NHS Professionals'] products team, for the IT team, for the data team and the insights team. In simple terms, the techie geeky stuff that people who don't get out much and have no vitamin D in their system tend to look after. It's the things that we all rely on every day, be it a system to log you on, know who you are, know where you should be, help you write a letter, all the way through to pay you properly, everything along that side…and ultimately trying to deliver the business value that technology brings, not for its own sake.

JG: *And it's not just about how the NHS Professionals internal technology ecosystem works, it's about how effective we are with the NHS partners we work with?*

DC: Absolutely, and if you think about it, what we're trying to achieve is getting the right person with the right skills at the right place at the right moment. Anything that gets in the way of that, anything that delays that, gives a patient a less successful outcome…ultimately, the systems are there to facilitate that, to help that, and not to hinder it. One of the challenges with technology is always managing to remember that the system is trying to support a business outcome, it is not a thing unto itself. And as a technologist, we can

become very excited about the tech, you're really interested about the tech. But we must never lose sight of the fact that it's there to provide a service.

Workforce technology overview and progress in 2023

JG: It's interesting, you've just talked a bit about the blockers. And you've used that word before about the kind of blocks that, for example, NHS trusts might face in delivering smooth and efficient and effective patient care. We'll come back to the idea of blockers and how technology may help or hinder those. Just for now, though, I wondered if you could just give us a quick bit of context, because healthcare technology is obviously a huge area, of course. And today, we're just going to focus on resourcing and workforce technology, the people-based technology really, rather than the clinical side of things, which is, for example, the electronic patient record, medical hardware, medical software. We're not actually going to go there, we're going to stick to technology that is designed for workforce issues. Just to set the scene, could you give us an example of workforce technology that's in use at the moment? Just try and make that real for us?

DC: Of course. It starts I suppose with the really simple question of what do I need? The first tech you're going to come across in the people space is going to be rostering technology. Who do I need? What skills do I need? When do I need it? Where do I need it? And those simple questions are helped greatly by rostering services and rostering systems that allow us to plan in advance predefined patterns for what is actually quite a flexible environment. I mean, if you think about our colleagues in the clinical setting, you don't know how many patients are going to walk in through A&E necessarily at any point…therefore the roster has to build in flexibility. And it has to build in knowledge and understanding. But ultimately, it will help you get that right people at the right time, but also at the right cost, because it would be very easy to over resource, but that would then stop resources elsewhere. That's the first technology you're going to see is demand management.

Then the other technology you're going to come across very quickly, is that technology that affects you as an individual - HR systems, who you are, where you are, what skills you've got, ultimately down to your payslip, and that's the bit that you'll have a very intimate relationship with, because it's the thing that you're….you'll change your address, you'll go into the HR system, you're going to a new training course, you're going to see that in your skills, part of your training records, you need your statutory training, all of those things are interacting with the HR system. What we have to do is act like a jigsaw piece that sits into that big puzzle that locks together to ultimately give you a user journey that joins together. And that's one of those challenges which I'm sure we'll come on to later, is making sure these things actually talk to each other.

JG: In terms of any particular priorities in workforce technology in 2023, what would they be?

I think they start with the first priorities for the community, which we serve. If you look at the move for NHS from a trust as an independent unit into an ICS, as an integrated care system, we're going to start talking about a need to be very aware of employee mobility; whether that be an employee passport for taking your records with you, or whether that be access to work. Ultimately, that's one of the key priorities when we start talking about that, we talk about collaborative banking, we talk about collaborative working, the fact that you might drive past two trusts on the way to get to work - well, could you work at those two trusts? Could you take your skill there? The fact that 'trust A' will have to go out to a higher cost market, be it agency or something similar, but 'trust B' has an excess of that skill.

The whole point of the ICS is to allow people to work without barrier and that's a key criteria for all of us. From a technology viewpoint, the only way you can enable that is in trusted

technology, that you can carry your token, your passport, your validity item from one trust to another and be accepted as valid, or both. That's working with our colleagues in NHS England and in the wider the DHSC family, that's how that's going to work. The ICSs are a key part of that, I think are always a key driver of that, shall we say.

JG: Yes, because that's obviously one of the aspects of integration is the workforce integration and being able to actually make the best use of the available workforce across a bigger area, rather than workforce that are somehow tied to institutions, tied to one place?

DC: Yes, absolutely. The other thing we've got to do is recognize that we're not walking into a greenfield site here. There are trusts that have their own systems. You could take the view of, oh, we'll just make everything the same, we'll have a common data model, we'll have a common systems map and all the rest of it, and that would be absolutely ideal. But how realistic is that? Because a trust has got a lot going on. I mean, it's got a lot of things to manage, and therefore asking it to completely change its rostering system, completely change its bank system, completely change its agency cascade is not practical in the short term. Actually, if we can help them interoperate, help them talk to each other, translate between each other where the same job is described differently in two different locations, we're taking away that pain and making it…you get the outcome of workers being able to work anywhere, without having to go through a major technology programme to enable that. Because we need it now, we don't need it in six to 12 months' time, or longer. Our job is to is to live in the world as it is, not as we might want it to be and help it work with what's already there.

JG: It's a quite pragmatic.

DC: Very.

JG: Okay, and just in terms of the progress on implementing workforce technology in the NHS, what's that generally in your view been like, in the last few years? Where are we in 2023? What progress has been made perhaps in the last five years?

DC: I think…we had the pandemic, right, and I'm sure we all spotted that it was quite busy at the time. That's definitely slowed a few things down. It has actually coincidentally sped a few other things up. But that means the best-laid plans are possibly behind where we would have ideally liked them to be, like the passport for example. But the need for it is so clear, because during the pandemic we had to move staff around and what we have found in the pandemic is co-operation across multiple institutions has got much, much clearer and much, much simpler because people are working to a common goal. There's a bit of a mixed bag. I think in some cases, the technology had to take second place to the here and now. And that's right, it should do. But what we do know is more about the problem. We now know more about what the solutions are, what we need them to be. As we now pick up the reins again and start to speed back up with our transformation programmes across various institutions, we have actually a much better chance at landing what is needed, because of learning in what was a very stressful environment.

JG: In a strange way, although it was absolutely the wrong way to learn, no-one would want to learn this way…did it offer us a glimpse of a new way of doing things and lead us to a place of innovation?

DC: [It was] a big dark cloud that had a very small silver lining on it, yes. That's not to celebrate the pandemic as a good thing, no. However, there were good things that can be learned from it…and I think it all opened the minds to what the art of possible could be, whether that be telemedicine, whether that be co-operation. There was much more hunger

for change, actually, and hunger for new, because we had to, and I think because we had to, we did, and when we did, it wasn't as scary as we thought it might be.

JG: We kind of proved something to ourselves.

DC: Yes, and healthcare is not the only industry that has done this. I saw in an industry where I used to work before, which is an insurance industry, a group of very conservative individuals who would not want to use technology in their day job, having to use technology, and then realizing they actually quite liked it.

JG: Fascinating that, and I think I think a very obvious example of that is suddenly lots of meetings or conversations and interactions taking place online. And that wasn't really mainstream at all before the pandemic, but I remember there was this kind of big thing saying, well, how do we do this, and then suddenly we're now…we don't even think about it.

DC: Absolutely, and geography has become less of a factor because we can do remote meetings, because we can do remote services. If you think about how much time in an average day was lost by travelling from place to place, or from going to a meeting, be that even if that's time within your own institution, walking from one room to another. If you're able to have that quick, sharp conversation in which you can get to the conclusion you need to quickly with the right group of people without moving a foot, you're just saving time and effort. We have to balance that with the need for a conversation and the 'water cooler' moments. And actually, when I listen to my fellow CIOs in other institutions, that's our balancing act now - the hybrid meeting, where's the value of being in the office versus not being in the office? I think we're learning to be flexible, but actually we're learning to be driven by the people who consume the service.

JG: And that is a critical issue in healthcare, isn't it? Because obviously, there is a world of difference potentially, in theory, between having a virtual consultation with a doctor or a nurse, or another healthcare professional, and being in the same room with them, and all those non-verbal dynamics, all sorts of things like that. I think it's a really difficult question to work out, in what circumstances are virtual consultations and treatment and diagnosis appropriate? And in what circumstances does that patient or that person rather, need to be in a room with a clinician and the value of that?

DC: I agree, and I think that the good thing about clinicians is they are incredibly flexible and capable individuals. What that gives you is the ability to actually have a very quick reaction to meet a clinician to get an informed opinion, which will probably lead on to a physical consultation where required, but divert the ones that are not

JG: So it's like a form of triage, to a certain extent?

DC: It's like an enhanced triage – it's better than filling in a form trying to tell people what your symptoms are, but not as good as sitting in front of somebody showing them in some cases…I got put on antibiotics because I had an ear infection, very simply because I phoned them up described it and they went 'you need antibiotics', and it was done. That actually was quite advantageous. I didn't necessarily need to sit in front of them, it was obvious what the problem was and it was relatively minor. Anything more significant then you're going to want a face-to-face interaction, but your face-to-face interaction will be more valuable, if that makes sense, because you've done the triage, you've had that initial consultation, you're meeting the right person to have the right conversation.

How workforce technology can 'unblock' systems and reduce effort

JG: You've already hinted at the idea of technology being an enabler and helping to remove blocks…this idea of block, I wanted to come on to that a bit more about this idea of effort, because the NHS is obviously a very busy, very challenging environment. And we really started to understand that in the last two to three years, and we are very unfortunately seeing fairly high rates of burnout and exhaustion and fatigue in the workforce. Staff have to work incredibly hard and they've worked extremely hard in the last two to three years and continue to do so as demand continues to rise. Managing the effort level of staff, making sure they're doing only the jobs that are appropriate for them to do and they're not having to do all sorts of other things that might waste their time and waste their energy - that kind of thing within that climate is so key. I'm interested to know what role does workforce technology having reducing effort in your view?

DC: I look at it as things that don't add to the patient outcome. If you look at administrative tasks - find a shift, book a shift, timesheet a shift or get paid for a shift - they are necessities to enable people to find work and be paid appropriately. But the harder they are, the more difficult they are, the more they become a massive factor in the day job. If, for example, somebody was working an eight-hour shift, and if you added up all the time they did to search out that shift and book the shift, and let's say that added an hour, and then by the time they finished the shift, they had to do their timesheet, and let's say that added another half an hour or hour, or something like that. If we said there was two hours [and] if you added all the little five-minute tasks up together across the admin of that, every fourth shift is a shift…those two hours' worth of admin is the equivalent of actually working a full eight-hour shift. If we can make those [hours] down to minutes, or even non-existent, where we make the systems come and tell you, rather than you go hunt for it, then that's going to add to one of two things: it's either going to improve quality of life to reduce burnout, because I'm spending less time doing admin for work, even sitting at home on my mobile phone; or it's going to increase patient face time, because I'm going to spend more of that extra time in front of a patient and a lot of clinicians spend an awful lot of time in front of patients because that's what they joined this industry to do. We're giving choice. Everything I can do to take away admin is a good thing to do.

JG: So that's on an individual level. If we can scale that up to how a trust might see that and the benefits, or the challenges for a trust, if you multiply all those pieces of wasted time and effort - what kind of impact does that have on a trust and the operational efficiency of the trust, and effectiveness?

DC: I think it's huge. It is a bit of a game of inches, but I think it's huge, because if you can get one extra shift per month out of everybody who's working because you gave them their time back, or if those people are happy to work a different pattern because it suits their life, and therefore they're available more often - ultimately, you're going to remove the deficit. If we look at the…higher cost things like agency workers versus bank workers, again, you're going to actually make the budget go further. You've got more people available to do the work in the most cost-effective way possible. When you add all that up, the sheer volume, I mean, in NHSP we do 3.2 million shift hours on average per month. Just think about how many hours of admin that are wrapped around that that we could try and reduce. Because it is just big volumes. The more you move the needle a little bit, cumulatively it will make a huge difference to both finances, backlogs, patient outcomes; all of those things will improve because, quite simply, you've got more people available to you without having to go into training and international recruitment and domestic recruitment, which all have their place as well.

DC: I think it comes down to availability of skills and availability of staff. The key thing is having a pool of staff who can fulfill their shift needs and making sure those shifts don't go unfulfilled. That's probably the biggest thing and therefore, what that drives into is, at the moment if you look at your average shift worker, as I say, they go hunt, right? They have to log on and they'll see a number of shift and have to hunt through the shifts, they find the shift that they like, they book the shift, they work the shift. If we turn that on its head, and if I look outside this industry into hospitality or if I look into retail, and I think about this in a retail context, you don't go to Amazon and hunt, right? Not that often. It comes to you and starts to look at the patterns of behaviours and things that you're interested in and says, hey, would you like this? Or is this of interest? If we can get some of that really, pretty commoditized technology in play, and we can actually help people by bringing things to their attention that are of interest, but making sure the choice stays with them as to whether to take that or not, or whether even to allow that or not, then I think we'll have a happier and a more empowered workforce, because we start to treat them more like customers, and less like employees, and we value their time.

The other thing I think we do, and we're looking at is, treat the person as a human, rather than treat them as a role. Actually, when somebody is working, they may be working in one role at that point in time, but they may have other hats that they wear. They may be somebody who approves timesheets, they may be somebody who books resources, as well as somebody who provide services. If someone is kind enough to give us their time to log on to our systems, let's tell them everything they're interested in so we maximize the use of that time without wasting their time having to log on to four or five different systems. In an analogy, imagine if you walked into a department store, but you had to go through a different door for every department, and every now and then we moved the doors around just to make it exciting. Generally, you don't walk into a department store and get held away from every department. You see what is there and you can access it. Well, we should do the same.

Workforce mobility and passporting

JG: If I'm hearing right, you're definitely hinting at this idea of personalised technology, which we'll come on to in a minute actually. Before we do I just wanted to ask you, what do you think the opportunities are currently to remove the barriers and blocks, particularly around rostering and things like that? And you've referred to the mobility of the workforce; I'm thinking there of passporting, could you say a bit more about that and, potentially, I wonder if AI is part of that as well?

DC: Yes, I think it's a layer cake, a little piece of everything. Absolutely I think that there are a great deal of opportunities here to help the ICS fulfill their brief, which is to collaborate work as a collective unit. That really is going to come down in no small part to understanding the pool of resources they have access to and maximizing the use of that pool of resources. The technology, be it passporting, which is effectively recognizing that the NHS has employed you, you've done your statutory training, you've done your mandatory training, you've done your background checking, you've done all that. Don't treat you as if we've never met you…carry that information with the person, rather than carrying it with the trust, means that…that's why using the term passport as you do with the passport and you walk

into any country, it's recognized as a respected document. That will make a huge difference for mobility and accessibility. Vision of rostering is really important, understanding what shifts could be available in what locations? Because it's a classic of, if I'd known that, I'd have helped.

JG: So where are we with those, Dave? In terms of are they achievable in the next two to three years? Can you just give us a quick summary of the progress on things like passporting and visibility of rosters?

DC: I think that is very much achievable, actually. And when I look at the work that's going on in the wider systems at the moment, we've got really good illustrations of that in play right now. The biggest opportunity we've got is that space that is an ICS, where it will have one single set of standards, one memorandum of understanding, one way of accepting that trust A and trust B are doing the same level of vetting. I think we're at a crossroads where we can either take advantage of this opportunity or let it slip through our fingers. It would be a crying shame to let it slip through our fingers because ultimately, if you look at the experience of a frontline worker, they're getting to do the statutory and mandatory training consistently many times over. They're getting re-vetted and revalidated, which is not only disruptive to their life, but is also actually quite expensive. That alone will make a huge difference.

Personalised and hyper-personalised technology: definitions

JG: Okay, let's come back to a bit more about this personalised idea, because that has been a major feature of technology. I think most people recognize the increasing personalization of technology, that piece of AI on your phone kind of knowing what you had for lunch yesterday, and how much sleep you've had, what your heart rate is, and all that kind of thing. And it's safe to say it's quite a controversial area, but it's a very rich area - there are enormous challenges and enormous opportunities with it. So we're seeing much more of it appearing in everyday life, so could you for the sake of argument describe what you mean by personalised and hyper-personalised technology?

DC: Hyper-personalised, or as you say personalised, technology is about giving you what you want to see and need to see, based on a combination of factors: past behaviour, things you're interested in that other people are interested in, that link to other things…people who are interested in, I don't know, the Civil War from the 1600s, might also be interested in history in general; that kind of linking to give you an experience that is much more relatable to what you're interested and what you want to achieve. That's personalization. Hyper personalization is really down to the individual, so taking the context of a workforce, if for example you metronomically work every Wednesday night, then I should talk to you about shifts that are on Wednesday night, but I shouldn't talk to you about shifts that are on Thursday morning, because there is no point. Equally, if you may tell me that I want to work on Wednesday nights, but actually your work your patterns are Tuesday nights and Thursday nights, then actually, I can learn that and come back and say, well, we're seeing this pattern, has something changed? Would you be more interested in this kind of thing?

It's a conversation. I think where people get scared is when they think it's not a conversation, it's become [AI] is now leading rather than following. That's the bit that makes people fearful of AI, when AI is now telling me what I should do or think or be, rather than listening to me and tuning to my needs. That's the bit that we have to be conscious of as technologists. But ultimately, it's about using the data in an appropriate and valuable way but always comes back to the simple thing of choice: give people choice. If you want to just see everything, then that's fine, we can make that happen. If you want to see a curated list, we can make

that happen, let's talk about it. Let's enable the human to be a human, and not be an automaton.

JG: The idea of that choice, if you say for the sake of argument, right, personalised technology increases the sense of choice for, for example, individual workers, healthcare workers, what benefit could that bring to their patients? And what benefits could that bring on a bigger scale to trusts and ICSs across a system, if you increase the choice at that individual level?

DC: I think it does two things. Firstly, if, for example, you were prepared to work 20 hours a week of flexible shifts, but you only ever see 10 hours a week's worth of shifts that you can do, we are losing something you're already prepared to do, and you are losing the income that relates to it. It allows you to maximize what you're prepared to offer, as in how many hours you're prepared to work, because we're offering you things that are of interest. It also means that you're taking shifts or work that are shifts at work you really want to do, rather than you need to do. Just because you can doesn't mean you should. If there are people who are being offered shifts that are nearly what they want, but not actually what they want, well is that nourishing their soul, is that helping them grow their career, is that helping them improve their lot? I think that will ultimately allow us to curate, and support the decisions that they want to make, and how they want to work and where they want to work. The patient therefore gets somebody who is doing what they want to do, is happier in what they want to do, is engaged in what they want to do, and is working to the levels they want to work. I think the patient outcomes will be significantly improved in that way.

The final component, the final piece of the jigsaw for trusts is the more of that that we've got, the more automated that is, the less we either have to employ people to try and figure it out, or we [don't] run with either less resources than we need, or actually more expensive resources to get what we need. I think it becomes a virtuous circle. But everybody's got to win a bit. I don't think there's a case of one group win because someone else loses. This has got to be a win-win situation and I think that's what we're trying to achieve here is using technology to make it easier to make the right decisions.

JG: Yes, and I think if you if you start to make that process more efficient, and more, I guess another word I was thinking of is friendly, the idea of friendly tech, it's easy to work with, it's kind of pleasant, I feel kind of okay when I do it, you're quite right: if you focus on that at an individual level, you're increasing the healthcare professional's sense of engagement with their work, positivity, and there's clear, very clear evidence that that leads to better, safer outcomes for patients doesn't it. You can see how the ripple effects of that go right up to organizational and then system level as well.

DC: Yes, because it because it's all built on its own foundations, isn't it? You've got to you've got to make sure that we're looking after everybody who's working in frontline services, because that will make all the other services significantly better. And as you say it's cumulative. I think it definitely builds to that top level of the whole system.

Challenges of personalised technology

JG: Are there any particular challenges that we've got right now around personalised technology that the NHS has got to overcome?

DC: I think the challenges are not unique to the NHS, but they are exacerbated by sheer size and scale, and those are things like we don't describe the same thing the same everywhere, be it a band 8 nurse in one location will be described as band 8 general nursing, or whatever the case may be. Somewhere else it might be general nursing band 8. Well, as far as

systems are concerned, they're two different things. What we've got to do, therefore, is build a translation engine, a Babel Fish…because, as I said earlier, in an ideal world, you'd make them all common, but we're not starting from zero. We need to be able to allow this ability to interoperate, and recognize that what is in place A is the same as in place B, just described differently. That's probably one of our biggest challenges right now, because that's what leads to mobility.

JG: I'm going to show my ignorance here. It makes me think of, if you're doing search engine optimization, and you're typing different spellings of common words, because people will not spell things in the same way. Is that the same sort of idea?

DC: Kind of, but it's not misspelling, it's just done differently. It's more like having it in French, German, English and Italian.

JG: It's variability, isn't it? It's building variability into that.

DC: Exactly, and recognizing that these items here are basically intrinsically the same as these items here. That in itself would lead you to actually say, well, we are now able to offer skills that are interoperable because the skills for job A are very similar to job B, even though job B looks and is described very differently.

What the NHS can learn from other industries

JG: What I'd quite like to do is to go on to other industries, and look at what the NHS has already learned but also what it what it could learn from other industries, because I think some people would argue that the NHS can be quite insular. But there are many examples of the NHS looking outside its walls for inspiration. Two examples, in my mind, are surgery; they've adopted some safety practices from the airline industry, which I know you Dave will be very interested in. Dave trained to be a pilot when he was 15, a light aircraft pilot, so that's a very nice piece of synergy there. And the other one in my mind is the so-called lean model of management, which was originally developed by Toyota in the automotive industry. What, if anything, in your view - you've mentioned a department store already in the conversation - but what can the NHS learn from other industries when it comes to using workforce tech more effectively?

DC: I think that there's some real synergies across two industries that immediately popped into my brain. Hospitality, right? Hospitality has flexible workers, whether that be a chef or sous chef, or waiter or waitress, or whatever role it is. You have a lot of flexible workers, a group of people who self-serve, self-book, turn up, do work, get paid, go home. There is a synergy of…back to our visibility; if I want to work in one of those roles, where am I going to be working? When am I going to be working? How am I going to book those shifts? Hospitality has to do this all the time, and we can learn from them and we can also provide knowledge back to them, it's a symbiotic relationship.

The other area I think, [which] is really fascinating to me, is retail in general. Retail has a customer service ethic that is right down in their toe tips. I did some work not too long ago with John Lewis, actually on the insurance side. But John Lewis is a customer service organization to its boots. I mean, it thinks about the customer at every level. I know Tesco do the same, to the point where they've even got pictures of customers in the boardroom. Because in a retail environment, your customer literally walks out the door, they go to the shop next door, if they don't get what they want. If we start bringing some of that ethos into recognizing that in the flexible workspace, if you like, we are selling shifts, they are buying

them with their time. I know the money goes the other way round, but somebody's giving us their time, as it is a retail experience that we should treat with customer service at its heart.

JG: This is very interesting, you talked about, for example, John Lewis and Tesco, I loved that phrase you use, which was they've got customers in their boots, in their toe tips?...Of course, the NHS has that with patients, but I think sometimes it doesn't come out like that does it? Everyone working in the health service is utterly dedicated and committed to their patients, but the system needs to, and the technology particularly needs to enable them to actually make that vision, make that commitment, that personal commitment, a reality, doesn't it? And if you've got lots of blocks in the way, then all those people, they're going to be frustrated and they're not going to be able to deliver the care that they want, are they?

DC: Exactly, and anything that gets in between a clinician and the patient is arguably in the way. I mean, my daughter's training to be a paramedic, she's not chosen to go and train to be a paramedic because she likes paperwork. She's chosen to be a paramedic because she likes helping people and she likes assisting people in medical distress. Paperwork is essential, but it's not the reason we do the job, and therefore anything we can do to make that simpler will give you more time to do the job that people actually want to do. I think - back to that customer service thing - yes, absolutely and rightly, patients are at the core of everything we do; we now need to give the workers and [our bank] members the same experience as well. We've got to remember they are humans, they are people and they need looking after too. That's the bit where as a technologist I've spent my time, is thinking about my customers, the consumers of my system, in [those] terms.

Concerns about AI and AI's role in healthcare

JG: It's fascinating, and I think you've talked about this idea of people and humans here, and I'd like to just finish on that actually, because we are running out of time. I was at a conference recently, a healthcare conference, and the subject of AI came up and perhaps inevitably, there was some anxiety expressed that AI would replace what someone described as the human touch in healthcare. Just briefly, what are your thoughts on that idea of the human touch? And particularly, how confident are you that humans and technology can work together in harmony, so that both…staff and patients ultimately benefit?

DC: The first thing I think with AI…is we are more scared of them than they're capable of. Computers are dumb. I mean, I say this, as a technologist, they're not the sharpest tool in the box, because you can get them to format their own hard drive and kiss goodbye to themselves. They aren't clever in innate terms, not yet anyway. They're clever in how they can view data and help us see patterns within it. They're clever in how they can bring things to the top of a pile. And yes, there is some innate intelligence we're now building in with things like ChatGPT and stuff like that, that is able to interact within a rule set, or within a learned ruleset.

I once spent some time up at Cambridge University with one of the professors of visual analytics there, and he told a story about breast cancer diagnosis. When you train bots, what you do is you put in known start points or known endpoints, and the bots find a pattern. They were putting in scans for breast cancer at the front and at the back that were known to be cancerous, and getting the bots to find the cancer as it were, to find the pattern. They were brilliant, I mean, they were amazingly good diagnostically - until they realized when they started to move out of the original dataset, that what [the bots] were doing was reading the name of the hospital at the top right-hand corner of the scan, because that was the one thing that was in common with all the cancer sets. They ignored the picture completely, and

actually just looked at the name of the hospital because that, as far as [the bot] was concerned, was a pattern.

They are genuinely stupid, we have to teach them not to be dumb, right? So first of all, don't be scared. Secondly, the human factor, I think, is the very essence of what we do this for. The AI and all of the component parts may help guide us, but ultimately we're making the final call. Therefore, what we're doing is lifting to the top the right information and the right ideas for us to be able to review, and decide or dispose of. I think that's not going to change because I think we are way cleverer than the tech will ever be, or at least in my lifetime. Ultimately, I think we are the deciding factor. Humans work with humans and particularly in a medical setting, it is all about that personal interaction. If that's down a Teams call versus being physically in a room, there are pros and cons, but ultimately it's still human-to human interaction. I think, therefore, we shouldn't be scared of AI because we are in charge of what we're trying to do with it. We aren't a victim of it.

JG: Dave, it was really fascinating talking to you today, thank you very much.

DC: Thank you.

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