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Prescription for success:

The drive for more personalised care in the Digital Age

Without realising it we already place our trust in technology to carry out all sorts of crucial tasks in the medical world.

It's enough to drive any tearful, sleep-deprived new mother to fling her smartphone across the room in frustration. The new NHS Breastfeeding Friend chatbot on Facebook Messenger is supposed to provide support at any time of the day or night to make breastfeeding a better experience, according to Public Health England. The idea is that the bot can answer questions and alleviate anxieties that typically come up in the early days of breastfeeding, with the aim of lowering the proportion of mothers who start out breastfeeding but abandon it due to lack of support.

Unfortunately no sooner had the chatbot been launched, it ran into a barrage of criticism. The trouble, claimed critics, was that the bot's artificial intelligence was not very 'intelligent' and was unable to help. Asked how to tell when a baby is hungry, the hapless bot conceded, "I didn't quite get that, I'm just a bot after all. I'm afraid I'm not the best with long phrases or single words but I can understand phrases like 'baby getting enough milk'." A Public Health England spokesman defended the new service, arguing that nearly 80 per cent of users are finding the information they want and that the chatbot would intuitively develop over time.

> **The healthcare industry is exploring a whole range of different types of digital tech, but in order to be successful they must focus on the user.**

The majority of us are living longer but more unhealthy lives

Whilst it is probably unfair to judge the success of such an initiative so soon after its launch, it highlights several important issues over the use of new types of digital technology in the healthcare industry, which is linked to an even bigger problem: Namely, the way medicine and healthcare are currently delivered is unsustainable.

Simply put, the majority of us are living longer but more unhealthy lives. Rates of obesity, heart disease, Type 2 diabetes and dementia are rocketing, sending healthcare costs spiralling and putting our creaking healthcare system under intolerable pressure.

Earlier this year, hospitals across England struggled to cope with unprecedented levels of demand which left thousands of casualty patients waiting for hours on trolleys. In January many hospitals and ambulance services declared critical incidents, even though most operations had been stopped for the previous month.

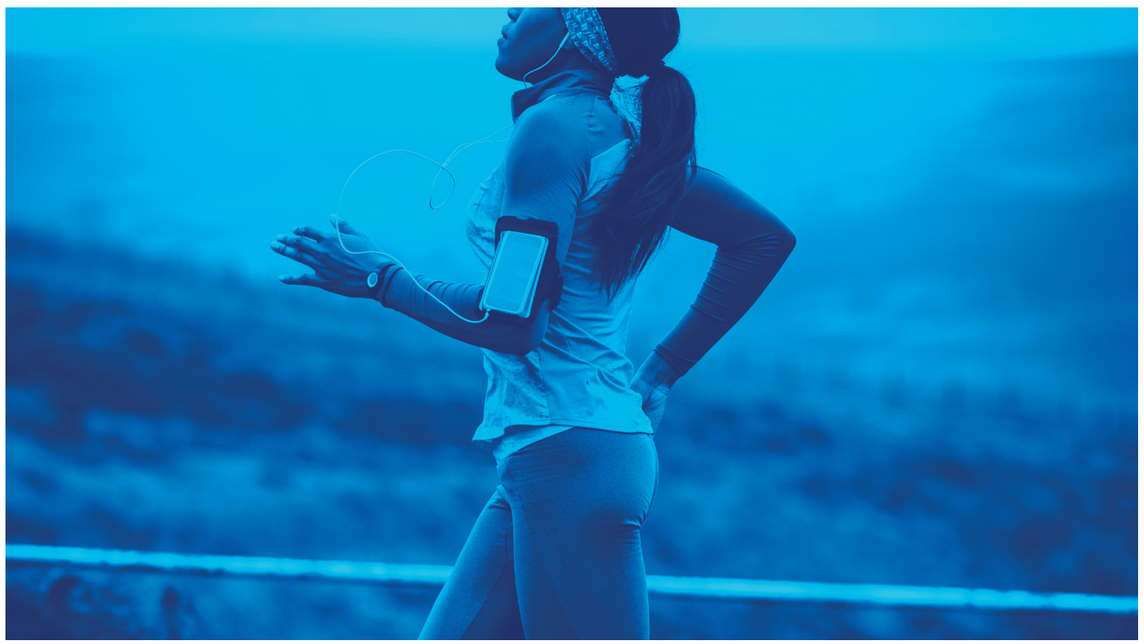
As a result, radical plans to shake up the NHS and drastically underfunded council-run social care are centred around changing the patient-doctor relationship by limiting “face-to-face” interactions. Some of the proposals include increased use of health apps, remote monitoring devices and “virtual appointments” to bridge the colossal £22billion funding gap over the next five years.

All over the country necessity is driving innovation. NHS doctors and Essex University researchers are working with a private company to build a “virtual GP” app to deliver instant advice. The project, which will be piloted in East Anglia, has secured funding from the government agency Innovate UK, and it is hoped that it will save the health service millions of pounds. It is intended to help with minor ailments such as colds, flu and stomach bugs which can easily be treated at home but account for almost a fifth of GP appointments, costing £2 billion a year.

Under another scheme, 1.2million NHS patients across north London are currently being given access to a free app which again means they will consult with a chatbot rather than a human being. When patients dial 111 they are prompted to try the app. Instead of describing their ailments over the phone, users type in the symptoms via a series of texts leaving the app to decide how urgent the situation is and recommend the right help. Patients could either be told to make an appointment with their GP or referred to Accident & Emergency if an urgent problem is detected. It is one of several online tools which will be tested in coming months at a local level before being rolled out nationwide.

It’s all part of a drive to modernise and digitise the NHS with GP appointments and prescriptions being booked online - in the same way we can book a cab, do our grocery shopping online or order a takeaway. The key difference is of course, that when it comes to our health, the stakes are so much higher than if the chicken Jalfrezi takeaway we ordered turns out to be a Korma instead.

All over the country necessity is driving innovation.



The response to the 111 scheme which has been developed by medical start-up firm Babylon Health, has so far been predictably negative. Patient groups have branded the prospect of having to type in your symptoms and wait for a result both “frightening” and “ridiculous” and have asked whether lives will be put at risk if either the patient or the app gets it wrong.

The British Medical Association claimed the system could add to the pressures on hospitals, rather than reduce them. “Owing to the lack of input from a trained professional, this simplistic system could, like NHS 111, result in more people being sent to overstretched GP or A&E services who don’t actually need treatment- or conversely, serious conditions being missed,” argued Dr Chaand Nagpaul, chairman of the BMA’s GP committee.

It’s a fair point but given that the scheme is only being offered on a trial basis to patients who find it more convenient to get the kind of instant response offered by an app, rather than going through a checklist with a non-medically-trained call handler, some of the criticism it has received so far seemed to verge on hysterical.

In any case, the much-maligned 111 telephone hotline it is intended to replace hasn’t exactly been a roaring success either. Since its launch in 2013, the NHS non-emergency helpline has been hit by a string of scandals including the death of one-year-old William Mead after a call handler failed to spot that he was seriously ill with sepsis. An official inquiry found that the boy could have been saved if the call handler had realised the gravity of his illness.

Nevertheless, the introduction of the Babylon pilot scheme does raise the important issue of public trust in digital health technology. Isn’t it an even greater leap of faith to ask patients to trust an algorithm over a medically-trained human being when it comes to diagnosing illnesses? Ali Parsa, the founder of Babylon Health, argues not, and has some evidence to prove it. Last June, at an in-house “live challenge”, Babylon’s private AI service was pitted against a senior A&E nurse and an Oxford educated junior doctor. University College London professor Irwin Nazareth compared the results and according to him, “check a symptom” was consistently faster and more accurate in triaging patients than its human rivals. It scored 92 per cent accuracy compared to the doctor’s 82 per cent and the nurse’s 77 per cent.

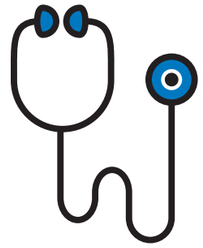
“Isn’t it an even greater leap of faith to ask patients to trust an algorithm over a medically-trained human being when it comes to diagnosing illnesses?”

Info

“Check a Symptom” found to be more accurate than human rivals in a live challenge

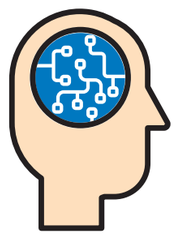
Senior A&E Nurse

77%



Oxford Educated Doctor

82%

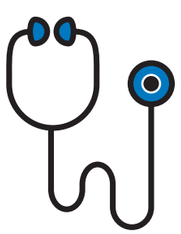


Babylon AI

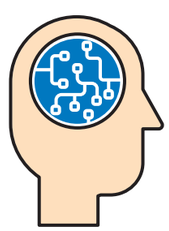
92%

Info

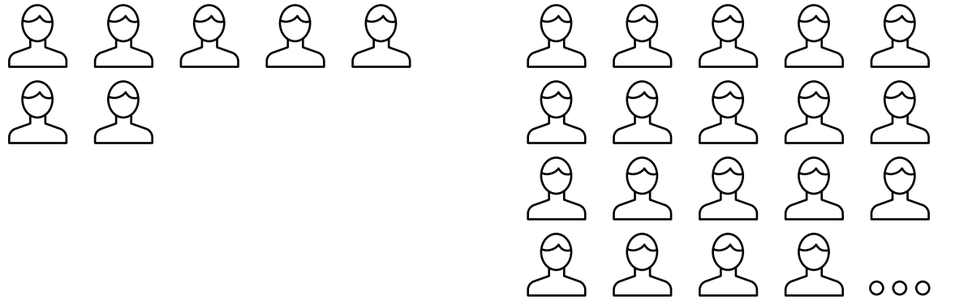
Machines found to outperform the speed of consultations completed by human medics



GP
Doctor



AI Driven
Technology



Although the Babylon experiment may not have been the most scientific of evaluations - the point still stands. “I’d trust a machine over a human any day of the week- and I already do,” says Parsa who points out that machines don’t get worked up or get angry as humans inevitably do. Even highly-trained and competent medical professionals are not infallible. They are human beings, like any other, who make mistakes either because they are tired, overworked or stressed.

It’s also important to remember that AI-driven technology learns every time it makes a diagnosis. A doctor might do 7,000 consultations but a machine can do thousands of times more than that. The speed at which it learns and everything it sees, increases. The makers believe that as soon as next year, apps will be able to diagnose illnesses without any human involvement and even more accurately than specialists who cannot keep up with medical literature at anywhere near the speed that an algorithm can.

Without realising it we already place our trust in technology to carry out all sorts of crucial tasks in the medical world, from scalpel-wielding robotic surgeons to machines that can remotely monitor patients in intensive care wards. When this type of technology works as it is supposed to do, we take it for granted, barely giving it a second thought. But it is often only the negative experiences and the instances where it fails us spectacularly, that we actually remember.

As with any innovation, it takes time for people to get used to new ideas and new ways of doing things and any enforced change is usually met with an initial period of resistance. But a crucial, and often overlooked, factor in persuading patients to accept new types of technology is their experience of actually using it.

The best technological innovations either solve an existing problem or persuade us through an enjoyable user-experience, to change our behaviour. The advantages of being able to book all of your medical appointments online, manage pharmacy prescriptions and have them delivered to your workplace, self-diagnose and treat minor illnesses or access your NHS medical records on one platform, without having to spend precious time on the phone dealing with a nosy or unhelpful receptionist, are obvious.

This kind of innovation is most likely to appeal to tech-savvy, time-pressed 18-40 year olds who are used to their services being streamlined and on-demand anyway.

Even if only that age-group were to adopt this kind of technology, it would go a long way to alleviating pressure on overworked frontline services and free up medical staff to spend more time treating the elderly and very young - groups which traditionally place the heaviest burden on health services anyway.

If trying to do something as simple as book a GP appointment online or order a repeat prescription leads to a long and complicated user journey- that actually would have been quicker to carry out on the phone after all - then it is not fit for purpose and will struggle to gain public acceptance. It can take just one bad experience to deter patients from ever using an online service again - if they still have an alternative.

The same lesson applies when it comes to persuading us to change our behaviour. To further reduce pressure on our healthcare system, we're all being encouraged to stay in good health by forming good lifestyle habits such as exercising regularly, eating more healthily and giving up smoking, as prevention is always cheaper than treatment.

You only have to look at the huge popularity of wearable activity trackers and fitness apps to see how successful they can be at influencing our lifestyles. The basic premise here is that games or apps which are designed to be entertaining, enjoyable and easy to use and provide an emotionally rewarding experience will keep players coming back for more.

But getting the formula exactly right, in order to ensure those lifestyle changes stick around permanently, has proved to be something of a challenge. Of the millions of activity trackers purchased every year, around a third end will up lying at the back of the drawer unused within six months.

Again, focusing on keeping the user engaged and interested is the key to getting them to stick with it and this is where designers have to stay one step ahead. Apps such as Pact by GymPact cleverly use financial rewards or incentives to keep motivation levels high. The app requires users to set a personal goal to eat healthily and exercise several times each week. They also choose an amount of cash they are willing to lose if they don't follow through on their promise. Those who faithfully exercise earn money that is paid by those who don't keep their "pact," creating a system where some users are paying others. Whilst they may not seem like obvious bedfellows, health chiefs could actually learn a lot from successful gaming apps, with their understanding of the importance of being user focused and emphasis on meaningful rewards and the element of competition.

Ultimately, like with a drug, there needs to be a rigorous test process for any new technology or product launch, to measure the effectiveness of the product and to ensure it doesn't impact human lives in a negative, or even fatal way.

To meet the healthcare demand of a growing and ageing population, pursuing innovative new technologies is the right thing to do. But only by keeping the patient's experience at the forefront of change can digital tech ever hope to gain their trust and acceptance.

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We're on a mission to meaningfully impact the way people experience the world.

Rhys Little
Director, Despark UK

"Despark are passionate about creating human-first digital products. From our work in the health and well-being sector, over many years we've learnt that good products value user's privacy, time and ultimately, focus on usefulness. To define this utility, we work with companies of all sizes to understand the problems they face, create ideas to solve them and then test those ideas in the real world, with real people."

Learn more about our perspective and to attend our upcoming Ignyte events:

perspective.despark.com

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