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Future of Healthcare

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Accelerating Healthcare

TOP 3 DIGITAL TRENDS FOR 2021

The healthcare industry is facing a major moment in history. The industry is growing, with global healthcare spending expected to rise at a CAGR of 5 per cent in 2019 - 2023. And innovation in the industry is rapidly accelerating, largely due to the pandemic our world is currently facing. This, coupled with what Deloitte points out as several key factors -- an ageing population, rising prevalence of chronic diseases, infrastructure advancements, evolving care models, higher labour costs due to workforce shortages and the expansion of healthcare systems in developing markets -- means the healthcare industry is at a critical juncture.

Like other industries, the healthcare industry is evolving, and part of that is embracing the shift to digital technology to better serve the changing needs of today's patients. While some countries have made more significant progress than others in digitising the healthcare experience, the pandemic has brought forth a major wave of disruption that is showing no signs of slowing down.

Though these are unprecedented and uncertain times for the industry, they will forever change the way care is provided, and hopefully for the better.

How did we get here?

While COVID-19 was the catalyst for a huge amount of change and disruption in healthcare, it's important to look at how we got to this point even before this virus changed the world.

First, consumers today are more empowered than ever when it comes to the way they engage with businesses of all kinds, including healthcare providers.

> We've shifted our shopping, travelling and socialising habits online, and we've come to expect our interactions with healthcare providers to provide this same level of convenience, transparency and personalisation.

According to McKinsey, people are open to the use of technology in healthcare and even expect that it should be modern and convenient, consistent with their experiences in other industries.

But, while that expectation is there, the execution has been lacking or inconsistent. Many consumers prior to the pandemic were reluctant to interact with their healthcare providers online due to concerns about the privacy of their data, or they simply were not offered the opportunity to do so because their healthcare providers did not support it.

Privacy concerns continue to be a major issue, even well into a pandemic that has shifted most of our interactions online. 70% of healthcare consumers are concerned about data privacy and commercial tracking associated with their online activities, behaviours, location and interests. Now, the need for location and health data to track the spread of the virus has made this issue even more complicated. But, in some countries like South Korea, Germany and Singapore, aggressive contact tracing has helped to identify and isolate infections early, which has kept their per-capita mortality rates among some of the lowest in the world.

Additionally, while 85% of health executives acknowledge that technology has become an inextricable part of the human experience, the industry has been slower to address the cultural shift needed in order to fully embrace digital technologies.

"The barriers to a digital transformation in healthcare are often decidedly non-technological" according to Harold F. Wolf, president and CEO of the Healthcare Information and Management Systems Society (HIMSS). A change of culture, organisational structures and governance are needed to best support the adoption of digital technology. While some countries have managed to adopt digital solutions at scale, many others were much earlier in their digital health journeys before the pandemic hit. Now, a transformation that would have taken years has been forced to move forward in a matter of months, bringing with it a much-needed culture shift.

Digital is essential to doing business in the healthcare industry today. Technologies have proven essential in fighting the pandemic and in providing patient care, whether it is hospitals in China using AI to read CT scans of lungs, reducing the burden on hospitals and enabling earlier intervention. Or hospitals in the United States using AI to guide and triage individuals with COVID-19 symptoms, helping to prevent them from needing to go to a hospital for care.

> Machine learning, advanced analytics, AI, automation and the cloud are making it easier to improve the quality of patient care, and that will only push forward as we move into 2021 and beyond.

"In Ireland, the Health Service Executive (HSE) commissioned a COVID Tracker mobile app to help speed up contact tracing"

Three Future trends

The healthcare industry will continue its digital transformation in the months and years ahead, with a number of advancements and trends set to have an impact on patients. The following are a few key examples.

01

Telemedicine & mobile healthcare experiences become the standard

Mobile devices fundamentally changed our society a long time ago, but now that change is impacting healthcare on a global scale. Doctors and patients around the world are taking more advantage of telemedicine in light of the pandemic. In the U.S., telehealth interactions could push to 1 billion by the end of 2020. In Asia, more people have been turning to Doctor Anywhere's telemedicine services and opting for video consultations with locally-registered doctors and medication delivered to their doorstep.

Mobile touchpoints on every smartphone in the world are key to containing the pandemic and enabling exposure notifications, digitally augmented contact tracing, case management, epidemiological information collection and citizen communication. More importantly, our devices are keeping us in touch with our doctors during a time when frequent office visits are just not realistic.

The future of digital public health will include a wide range of mobile apps, sensors and technologies that will be used to prevent new pandemics and deliver public health interventions for a wide range of issues while protecting the privacy of individuals.

One example is the PathCheck Foundation, a group spun out of Massachusetts Institute of Technology (MIT) in March 2020 to build digital solutions to contain COVID-19 and revitalise the economy. The company has introduced apps that can track the movement of individuals via their phones and send notifications to those who have come near a patient with the virus. The PathCheck apps use location data via a smartphone's GPS to support digital exposure notification. The PathCheck exposure notification solution is built with the Google Apple Exposure Notification API, released in the Spring of 2020 to help healthcare companies build applications that allow people who have tested positive for COVID-19 to input their

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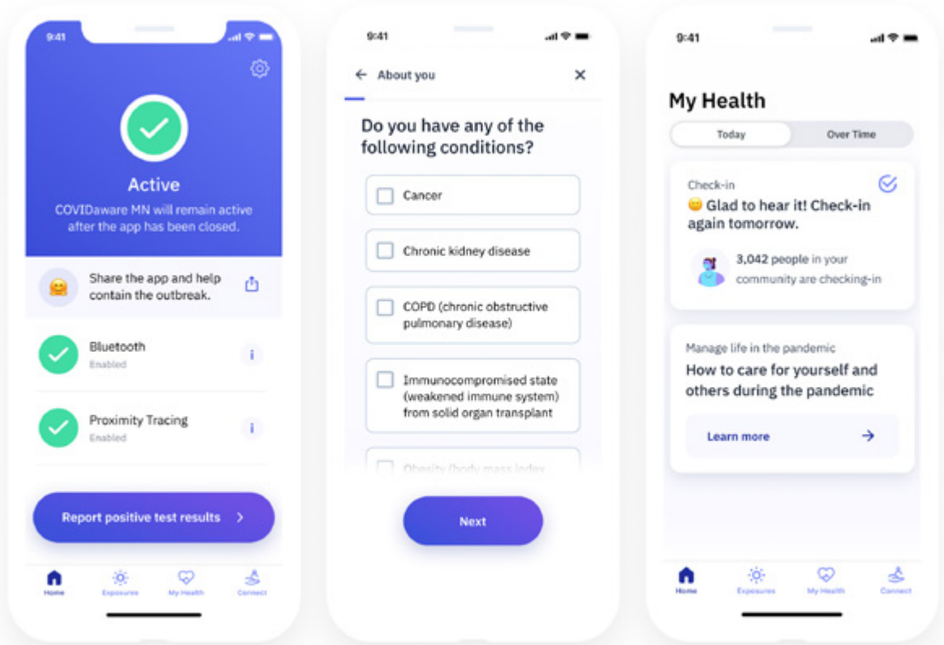

diagnosis. Using Bluetooth technology, the system will notify people with whom the person has been in contact, warning them of possible exposure.

The European Commission also published an EU toolbox to support the use of mobile apps for contact tracing and warning, while aligning with data protection regulations in Europe. These solutions enable communities to work together to slow the spread of viruses. Additionally, in Ireland, the Health Service Executive (HSE) commissioned a COVID Tracker mobile app to help speed up contact tracing. As Ireland's public health service provider, the HSE coordinates resources and efforts across eleven regions.

These types of digital, mobile-based response solutions will become the new public health infrastructure for governments and public health authorities around the world as we all grow more focused on the health of our overall communities and not just individuals.

This of course goes well beyond fighting a pandemic. These services and digital experiences will become even more important in helping to even the playing field when it comes to healthcare.

> People in underserved populations or locations will be able to better access high-quality healthcare, hospitals will be able to reduce readmission rates through ongoing virtual support and real-time monitoring of patients outside the office, and specialists will be able to provide more personalised care to a larger number of people.

02

Using data and technology to drive advancements in patient care

The healthcare industry has seen a massive increase in the volume and variety of health data in the past few years, as the rise of Internet of Things (IoT), digital and cloud technologies and tech-savvy patients have all contributed to the growth. Back in 2018, IDC predicted a 36% CAGR between 2018-2025 when it comes to healthcare data. It's reasonable to assume those numbers will increase even more in light of the pandemic.

Healthcare data encompasses data generated by health-related systems and devices, including:

- Electronic medical records
- Genomic sequencing, pharmaceutical research and treatment development/testing
- Medical device and biometric data (including wearable devices, smartphone apps and equipment tracking sensors)
- Payer records, public records, risk assessments, service

While an increase in data is hugely beneficial in advancing the healthcare experience and discovering new therapies and treatments for diseases, it has created challenges for companies in the industry trying to manage and make sense of all of that data.

> In the years ahead, more healthcare and biotech companies will lean on digital technologies to help them manage their data and ultimately advance patient care.

Foundation Medicine is a good example to look at. The company is a world-renowned molecular insights company that focuses on genomic research. This entails figuring out how genomic abnormalities affect cancer. The company had a mountain of data at its disposal but no tools for researchers and pharmaceutical companies to make sense of it quickly.

The company worked with Dept to build out custom software to allow researchers to efficiently query the company's wealth of data, as well as allow medical professionals to input clinical outcomes in order to track not just genomic abnormalities, but also how specific target therapies affected those abnormalities.

Additionally, Goldfinch Bio is focused on discovering and developing precision therapies for patients with kidney disease. The company has been collecting samples from affected patients, sequencing them, and enrolling them into a Kidney Genome Atlas™ (KGA) to try to build a data set large enough that the company can use statistical methods to identify potential drug targets with genetic evidence. Goldfinch Bio relied on custom software to automate the processing of large scale genomic data and to create efficient data visualisations for their researchers to do better work, faster.

These are just a few examples of how we can begin to move the needle of driving efficiency with data and improving healthcare for patients. Digital solutions like these can help strike a balance between efficiency and quality of care.

> The ability to process and analyse fast-growing amounts of healthcare data will be crucial to fighting future pandemics and to developing therapies and treatments for patients of all kinds in the future.

03

Widespread process change and technology adoption will create a more resilient, flexible industry

It's easy to look just at the patient experience when it comes to thinking about the future of healthcare. But it's equally important to look at the underlying processes and technologies that are driving the evolution of patient care and innovative new treatments. As Aashima Gupta, director of global healthcare solutions at Google Cloud notes, "The IT systems and solutions driving these rapid healthcare evolutions not only help address urgent, ongoing needs, but also establish a foundation for long-lasting improvements, particularly those that lead to systems capable of resilience in the face of future disruptions."

> The healthcare industry was able to respond so quickly to the challenges of the pandemic thanks in large part to the new technologies and processes that it had been slowly rolling out for several years.

And, because those technologies are digital-first, open and scalable, they were able to be deployed quickly for new use cases.

This is also due in part to the role that governments began to play in supporting digital transformation in healthcare systems. Australia developed the National Digital Health Strategy and set up My Health Record as an opt-out medical record for all Australians. England established NHS Digital and NHSX to transform NHS and social care. And the Danish government announced investment into an app-based platform known as the World-Class Digital Service (WCDS) that can be used to access all publicly held data on Danish citizens.

The agility of modern technology will help the industry make use of existing systems and services in new ways going forward. Google, for example, provides a chatbot that healthcare providers can integrate into their own systems. The chatbot can start the conversation with a patient and collect relevant information before handing them off to a live video connection with a healthcare professional. Also, providers can launch Google Meet, the company's video conferencing solution, from within an electronic health record, giving doctors access to, and the ability to modify, important records in real-time.

Google is just one example of how technology companies are helping create a future of digital, integrated healthcare systems built on modern technologies that provide a humanised, personalised experience for patients and help providers drive efficiency and quality of care.

Challenges & opportunities are ahead

There has been considerable progress in digital transformation in healthcare in 2020. There is no question that will continue into 2021 and beyond, as the world continues to fight a pandemic and patients continue to be active participants in their healthcare. In fact, research shows that effective communication between doctors and patients is linked to better health outcomes, more appropriate medical decisions and higher patient satisfaction. This effective communication would not be possible without the rise of digital technologies in the healthcare industry.

In the midst of this progress, there are challenges that will remain, as with any industry undergoing such a major transformation -- costs, complexity, evolving needs and scenarios, and ongoing privacy issues. But, it's clear that we've turned a corner in the healthcare industry to a future that looks to focus on prevention, innovation and access for all citizens.

For more information, or if you have any questions, please contact HQ's Healthcare Industry experts

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