Hi Everyone!

Welcome to another monthly update from the USA. Before we get started on this month's blog, there's an interesting update on last month's chat on contact tracing software - Johns Hopkins University has recently released a report highlighting the ethical, legal, policy, and governance considerations for the technology as it is developed and introduced. This month, we're taking a dive into the long-deserved boost that telehealth is experiencing as a result of COVID-19 restrictions.

Telehealth, telemedicine and telecare are terms frequently used interchangeably to describe the provision of patient care without the in-person presence of a member of the healthcare team. The interaction can be as simple as a phone call, or as complex as encrypted video messaging embedded into the EMR (electronic medical record), supplemented with Internet of Things monitoring devices. Most telehealth simply uses the technology and devices that patients already have in their homes- namely smartphones and webcams. For years proponents have highlighted the benefits of convenient, direct-to-patient, on-demand services at low cost, but before COVID-19 the concept never reached critical mass. Multiple barriers stood in the way, including poor reimbursement rates, technophobia, fear of over-use for minor symptoms and worries that human compassion and social cues would disappear alongside the loss of the traditional physical examination. Patients reported good satisfaction with telehealth experiences, but even the most technologically capable hospitals saw, at best, a tiny proportion of patients each day via telehealth. Companies such as Call9, funded to the tune of millions of pounds, were forced to give up, citing a world that wasn't ready to evolve with the times.

All this changed when COVID-19 hit us. Precautions to prevent disease spread forced the abrupt closure of elective and non-urgent healthcare services, and mandated the quarantine of anyone showing symptoms, or who had been a close contact of a case. PPE to deliver care was severely limited and hospital visitors were banned, in some cases even for patients who were dying. Emergency departments emptied of non-COVID cases as patients stayed away through fear of infection, rather than seek the urgent care they needed. Suddenly all patients, not just the most socially or geographically disadvantaged, could not easily access care. So, the world turned to look for other options, and telehealth was a ready-made solution.

The ability of telehealth to provide a digital shelter for both healthcare workers and patients, all without a need to use valuable PPE resources, was recognized early in the pandemic at the highest levels in the USA. In March, Congress passed the $2.2 trillion Coronavirus Aid, Relief, and Economic Security (CARES) Act, with $200 million earmarked for healthcare providers to develop their telehealth capabilities. The bill relaxed the previous legal requirement for clinicians to be in the same state as their patient and expanded the coverage of Medicare-the state-subsidised health insurance program for Americans over the age of 65- to cover telehealth visits at the same tariff as in-person appointments. Previously only 20% of states required this level of payment parity. A further and more controversial emergency ruling relaxed privacy and security rules, allowing the use of platforms such as Skype, Whatsapp, Zoom and Facetime for patient encounters. Services now have room to rapidly expand, as existing solutions have been found to fit the new challenges. Vulnerable patients don't have to sit in waiting rooms near sources of potential infection. Quarantined staff who are otherwise well can cover telehealth services, freeing up their colleagues to provide in-person care. Hospital patients isolated with COVID-19 can talk to staff via a wipe-clean video screen, rather than a face covered after the time-consuming task of donning PPE. Those on programmes for opioid dependence can get their treatment without the daily disruptive inconvenience of travelling to a treatment centre. Patients can see and talk to their families. Specialists can provide virtual consultations from other hospitals, including the ingenious electronic intensive care programs, where overwhelmed healthcare staff can be supported by nursing and medical colleagues in distant parts of the country through virtual monitoring of up to 100 patients in multiple hospitals. Babylon Health in the UK registered 140000 new patients in the first month of the pandemic and their worldwide digital consultation count now numbers over 2.5 million.
A report by McKinsey & Company predicts that the US telehealth market value will soon top $250 billion, providing 35% of home health services, 24% of primary care and outpatient appointments and 20% of emergency department visits. Over 1 billion virtual visits are expected by the end of 2020. One US hospital alone has seen 4345% growth in non-urgent virtual visits, conducting 144 940 appointment in only six weeks. Medicare reports 1.3 million members using telehealth per week. This popularity has not gone unnoticed by the stock market- the price of shares in Teladoc, one of the leading telehealth companies, has risen 30%, rivalling the recent growth of Zoom.

One criticism of the telehealth system is the loss of the physical examination and the ability to use specialist diagnostic and monitoring equipment. The smartwatch on my wrist is now able to record my heart rate and rhythm and monitor my oxygen levels, although this update has been slow to roll out to the general public. Many body-worn sensors are in development, including systems that may surpass the technology available to the average in-hospital team. Although my dreams of a Star Trek tricorder haven’t quite been realized as yet, there are many technologies that use smartphones and AI to direct the patient or a carer to apply devices to themselves. One area that is ripe for work is a universally accepted at-home foetal monitoring solution. Cost is clearly a factor for many of these devices and patients cannot be expected to possess specialist equipment in their homes, but perhaps one day diagnostic devices for patient use will be delivered by drone to the patient’s location in the same way that New York City has starting mailing out condoms and test kits for sexually transmitted infections to its residents. The ResAppDx-US phone app can diagnose over 70% of respiratory disease simply by listening to a cough and also the work so far hasn’t met with FDA approval, it demonstrates the future potential of diagnostic tools that don’t require specialist equipment or traditional physical examination. Technology cannot yet currently remove the need for physical examination or replace the entire healthcare team, but the progress towards this possibility is exciting to behold.

Even the currently available systems can make ongoing improvements to the user experience. Virtual health should be a seamless journey, but the ongoing struggles with EMR time burden and interoperability extend to telehealth. Telehealth consultation appointment slots can easily be consumed by technological and connectivity issues, and this is why currently full tariff payment where consultations have to bail out to the traditional phone call is so important. There are reports that some rural bandwidth is not only too poor to allow video calling, but cannot even support the uploading of radiological investigations for remote specialist review. The supply chain disruptions that caused the shortage of PPE also extend to many electronic items needed for telehealth, such as webcams, speakers and laptops.

At the early stages of this new golden age of telehealth, our biggest concern must be to ensure that access to these services is equitable. Some of the very people at greatest risk of harm from COVID-19, such as the elderly, ethnic minorities with limited English proficiency, those with significant disabilities and those living in poverty, are also those least likely to own a computer or smartphone and to have basic digital literacy. This has been exacerbated by the financial climate- here in the USA around half of low-income families say that they’re concerned about affording to pay their broadband and mobile phone bills. Those living in rural areas, who would traditionally drive for as many as 6 hours to see a doctor, also experience limited online connectivity. Although many “boomers” have rapidly embraced the technology they have been stereotyped to resist, currently only around 70% possess a smartphone or access the internet. Altogether, around 1 in 4 Americans currently may not have the technology or digital literacy skills to use telehealth services and in the UK 1 in 3 adults never use a computer to go online. The very people who would ideally be protected from COVID-19 by the benefits of telehealth are the ones most likely to be asked to attend in-person healthcare appointments.

At the moment we are asking many questions about what the future looks like and if we will ever go back to “normal” life. Social distancing is likely to be with us for many months to come and this will necessitate the refinement and continued delivery of telehealth solutions. In the longer term, just as many workers have found that they might enjoy permanently working from home, so many patients and even staff may decide that they don’t want to negotiate the painful parking and long waiting-room times of the in-hospital system. Some emergency measures, such as the relaxation of privacy and security requirements, will necessarily be revoked, but as Seema Verma, the head of the Centers for Medicare and Medicaid Services recently said, “the genie’s out of the bottle on this one”. Our patients have experienced the convenience of telehealth and almost 90% are satisfied with the experience. This will lead to considerable pressure on commissioning groups to accommodate telehealth as a routine solution for care. It is up to us as innovators and patient proponents to deliver the best possible experience and to collect sufficient data on the safety, quality, benefits and cost of telehealth to bring to stakeholders all the way up to national level.

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