



TELEMEDICINE IN SINGAPORE

A USEFUL ADJUNCT IN A PANDEMIC

Text by Dr Jipson Quah, Editorial Board Member

With the COVID-19 pandemic in full rage, telemedicine (TM) has been pushed to the forefront as patients and doctors faced tight circuit breaker movement restrictions, heightened screening measures and increased testing. More patients were willing to consult their doctors over video calls instead of in person, in a bid to prevent unnecessary crowding in waiting rooms. More doctors, including specialists, have also adopted digital platforms to assist in patient consultations, while reducing face-to-face contact. With improvements in technology and security, the applications of TM are gradually but certainly broadening. COVID-19 has inadvertently spurred the digital transformation that is taking place in our medical field.

Working with professional bodies

In order to address the sudden but necessary growth of TM during this period, the SMA, Academy of Medicine, Singapore, College of Family Physicians Singapore, Enterprise SG and the Ministry of Health (MOH) held a hugely successful webinar with close to 1,800 participants over Zoom on 13 June 2020, with the aim of discussing current practices, recommendations and future blueprints (read more at <https://bit.ly/5207-Event>). Chaired by SMA Council Member Adj Prof Tan Sze Wee, the webinar also included addresses by Director of Medical Services (DMS) A/Prof Kenneth Mak and Group Director of the MOH Health Regulation Group Adj A/Prof Raymond Chua.

DMS A/Prof Mak addressed the disruption COVID-19 has had on Singapore and commented that “though in-person care remains the best way to treat patients, TM can act as a valuable adjunct, especially in this era of safe distancing.” In Adj Prof Tan’s introduction to TM, he also noted that it is “inevitable” for TM to be incorporated into local clinical practice, in view of the increase in adoption internationally.

In line with these developments in medical practice, more than 2,500

doctors have completed the LEAP Regulatory Sandbox and Telemedicine Training since it was launched in March 2020 to better understand how to deliver telemedicine under MOH guidelines, especially during this COVID-19 period.

Telemedicine for chronic conditions

Video consultations for acute conditions have long been the battleground for the private TM platforms, catering mainly to simple acute conditions such as gastroenteritis, headaches, etc. In Singapore alone, we now have more than 20 TM providers, forming a fierce and intense battleground. These providers are owned by doctors, medical groups and insurance companies. Recently, we have also observed banks coming onboard with their own health applications, offering low-cost telemedicine consultations.

As COVID-19 ravaged the world, we saw a greater adoption of TM especially for chronic conditions. In early April, the Community Health Assist Scheme and MediSave allowed for inclusion of video consultations for seven chronic conditions, such as diabetes, hypertension, hyperlipidaemia and mental health conditions. This allowed patients with stable conditions to teleconsult for their chronic medications and still be able to tap on national subsidies during the circuit breaker.

In the hospitals, we are also witnessing similarly definitive moves towards TM deliveries. The Alexandra Hospital vCare programme, targeted at patients with complex chronic medical conditions, started with a pilot trial of five patients in February 2020 but saw more than 100 patients by the end of June. Patients felt the need to be receptive to TM solutions as visiting the hospital was not an option that many considered.

Another example is the Singapore National Eye Centre (SNEC), which has adopted TM solutions for stable glaucoma patients. This became a necessity at the SNEC when face-to-

face consultations were limited to urgent cases. These solutions afforded continued care for the patients who might have lacked specialist monitoring otherwise.

SNEC has aims to offer video consultations to 500 stable glaucoma patients by the end of 2020, with a target of 3,600 by next year. This will eventually form about 20 percent of the 15,000 stable glaucoma patient base at SNEC. However, these patients will still require routine tests, such as visual field examinations and eye imaging, to be done at the SNEC and future satellite clinics. TM follow-ups are possible, accompanied by delivery of medications, thus saving patients multiple visits.

Tele-rehabilitation has also taken on a bigger role in therapy services offered at Khoo Teck Puat Hospital and Tan Tock Seng Hospital as patients continue their therapy sessions in geriatric occupational therapy, speech therapy and physiotherapy. Though some aspects of therapy services are not optimised due to the lack of physical interaction, it is still an important alternative for patients to remain committed to their therapy.

In a similar vein, the Division of Rheumatology at National University Hospital has also embarked on a TM programme which aims to deliver holistic multidisciplinary care to their gout patients. Regular telecommunication with the patients, assisted by nurses and pharmacists, has translated to better care of chronic gout, and greater patient and staff satisfaction.

Integrating telemedicine remotely

Several local TM providers in Singapore have started to integrate remote health monitoring devices with their platforms. Japanese medical device maker Omron envisions doctors using health data collected from these devices to make diagnoses remotely, leading to prevention or earlier treatment of disease. With remote

monitoring of blood pressure, ECG, oxygen saturation and blood glucose at home, results can be wirelessly transferred onto the application for a doctor's review. This goes a long way in ensuring close monitoring and patient compliance.

Another excellent form of community TM, which has proven to be successful is the myResponder app. It works by notifying members of the public – also known as community first responders (CFRs) – of cardiac arrest and fire cases within 400 m of their location. The app will also highlight nearby automated external defibrillators (AEDs) that may be available to CFRs, and provide guided advisories in the mitigation of minor fires. CFRs can then proceed to the stated location and assist by performing CPR or applying an AED to revive the patient. This has made the difference between life and death for some fortunate individuals.

Challenges and obstacles

While the advantages of TM have been widely touted, there have also been many among the medical fraternity who express hesitation to adopt TM, due to the strict standards of maintaining the ethical code. Many find it difficult to assess patients' status or complaints without physical interaction, and they fear missing crucial signs and symptoms. A case of appendicitis or rupturing aortic aneurysm will be extremely difficult to diagnose if the patient is a poor historian or if connectivity is suboptimal. What appears to be a simple case of urinary tract infection may turn out to be a complicated recurrent case associated with drug-resistant bacteria, at the risk of deterioration into septic shock.

Convenience is one of the greatest advantages of TM, but can prove to be a double-edged sword. As the number of patients grows, the amount of digital consultations and data would increase exponentially and may impact the physicians' ability to properly attend to

each patient. With each patient, the risk of missing a difficult diagnosis and of litigation increases. If one is swamped with too many virtual consultations, with no breaks in between, it may be difficult to devote personalised care and attention to the patient. Another key issue that SMA has identified is the medico-legal responsibility and indemnity of doctors who choose to diagnose and treat patients through TM. Expanding into TM, which inherently has greater risk, will incur higher and ever-growing practising insurance premiums.

Medical record keeping has also been a huge challenge as doctors would be obliged to store records in the form of photos, videos or voice recordings which require large amounts of storage. Besides having to keep medical records appropriately, the service would also have to abide by the appropriate advertising and quality assurance guidelines.

Multiple forms of TM delivery have also emerged, apart from the traditional mobile platforms. We now have web browser and clinic management system TM platforms which are starting to come into fashion. There are several websites linked to healthcare institutions and clinics which facilitate phone and video consultations and are easily accessible. With the large myriad of TM solutions available, the greatest challenge is regulation and standardisation for the benefit of doctors and patients alike.

Adapting to a pandemic

Dr Alex Wong pointed out in the January 2019 edition of *SMA News* that "there is precious little literature to support the use of telemedicine in an acute setting within an urban environment, and certainly not in Singapore where there is literally a GP practice on every street corner..."¹ This has changed dramatically with the presence of COVID-19, and TM has evolved into a crucial tool, one to be used with great care and caution.

Dr Kenneth Lyen also commented: "Telemedicine is rapidly increasing its foothold on all aspects of medical practice and education. We have no choice but to embrace it... The evolution of medicine obligates us to use telemedicine and technology with intelligence and wisdom."²

This unprecedented COVID-19 era has forcefully accelerated the adoption of TM services, across large healthcare institutions and clinics. Through webinars and education programmes, SMA hopes to provide professional guidance to doctors and all healthcare professionals, and aid in developing standards to ensure that TM is adopted safely and judiciously with the highest standards of patient care. ♦

References

1. Wong A. *The Electronic MC*. *SMA News* 2019; 51(1): 16-7.
2. Lyen K. *Telemedicine: Benefits and Drawbacks*. *SMA News* 2019; 51(1): 5-7.

Dr Quah is a GP and pathology clinical officer in private practice. He is also a member of the SMA Telemedicine Workgroup. He enjoys music-making, fitness activities and editorial work in his spare time.

