Challenges facing Telemedicine

by Dr Wong Tien Hua, FCFP(S), Council member, Editorial Board Team C

According to the 2015 MOH National Telemedicine Guidelines, "Telemedicine" refers to the systematic provision of healthcare services over physically separate environments via Information and Communications Technology. Telemedicine can be categorised into 4 domains of which the concept of Tele-treatment is of the most interest to healthcare providers. **Tele-treatment** refers to interactions between healthcare professionals and patients for direct clinical care e.g. triage, history, examination, diagnosis and treatment (including robotic surgery) from a remote location.

Telemedicine has been the hot topic in recent months with news reports of medical apps that connect patients with doctors, allowing online consultations using smart phones. The media has interviewed more than a handful of technology startups that aim to develop apps that facilitate telemedicine and challenge the traditional model of a doctor's consultation.

The traditional, or perhaps the widely practiced, model of care today is one in which the patient visits the healthcare practitioner in a bricks-and-mortar institution. A simple illustration will be the patient who goes to his nearby GP clinic to visit the doctor when he is unwell.

It may sound like stating the obvious but there are some characteristics of this process that can be gleaned, which is often taken for granted.

- The patient has to physically attend in person
- A **face to face** consultation occurs within the clinic
- The **identity** of the patient can be verified, and the doctor has reasonable certainty that the patient in front of him is the patient being treated.
- The doctor is able to personally **observe** the patient, perform a **physical examination**, communicate with the patient and come up with a shared management plan
- Any **treatment** or procedure is conducted within the clinic premises, or referred to another healthcare institution if specialist skills are required.
- It is quite clear that the doctor in attendance has agreed to see the patient and to take on the responsibility of managing that patient. A **duty of care** that is therefore established. This means that if the patient is unhappy or suffers medical negligence, he or she is able to identify who was the doctor in charge.
- The **medical records** are generated in the clinic and stored in the clinic
- The healthcare institution is easily identifiable, and is **regulated** by the relevant laws that apply to the healthcare institution, including being subject to audits and inspections by the Ministry of Health. As such, any patient who walks into a clinic or medical facility in Singapore can reasonably expect a high standard of care and safety from harm.
- And finally, there is an established system of **payment** for the services of the doctor. Whether it is paying a fee for service, or through third party insurance, the patient acknowledges the services that he or she has received.

With the advent of information and communications technology, Telemedicine is now set to revolutionize the model of care as we know it. Medical encounters will no longer be confined within a healthcare institution, as patients are freed from the need to physically visit a clinic or a hospital. They may not even be required to leave their own homes. Physical distance will therefore no longer separate a patient from his healthcare provider.

This concept is not new. It has been around since the invention of the telephone by Alexander Graham Bell in 1876. We have of course come a long way since, from voice communication to the ability to transmit digital data from one person to another.

Now with the power of information technology, a patient can have access to any number of healthcare professionals anywhere in the world. The advent of the **smartphone** took this healthcare revolution another quantum leap, when the "doctor", having "moved" from his office to the desktop, jumped into everyone's pockets. Medical information is now available 24/7, and telemedicine means that a doctors' consultation can also be available 24/7.

I recently saw a funny cartoon of a sign in a doctor's office, which read: "For those patients who has already self-diagnosed themselves on Google and are here for a second opinion, please check yahoo.com".

If the current model of face-to-face consultation with a doctor defines the standard of care, then telemedicine should not be treated differently and be allowed to fall below such standards. I think we can all agree that the overriding principal is that of **patient safety**.

Let us refer back to the beginning of the article where I had listed the characteristics of the traditional model of medicine. From here we can then derive some of the challenges facing telemedicine that needs to be addressed. I think some of these will eventually be overcome with the help of technology if we give it enough time.

1. Since there is no face to face consultation with the doctor, the **identity** of the patient is not obvious and has to be verified, how can the doctor be reassured that the patient on his screen is the patient being treated?

2. Telemedicine is a trade-off between **convenience** and good clinical care.
   a. The doctor will not be able to perform a **physical examination**,
   b. Certain aspects of **communication** with the patient such as non verbal cues will be left out.
   c. Telemedicine allows distances to be bridged and patients in remote locations to have access. For example in a mountain camp, on an aircraft, or on the international space station. However, in the context of Singapore where there is easy access to medical care both in distance and in time, how much advantage does telemedicine really provide?

3. A **duty of care** is harder to establish - Does the physician and the patient need to establish a doctor patient relationship? How can this be done in telemedicine?

4. The medical records are generated electronically and stored in the cloud. Issues of **confidentiality**, data sharing and **privacy** will have to be strictly observed. In light of recent cases of security breach and data hacking, how safe is such information from falling into the wrong hands?

5. **Regulating** telemedicine in the absence of brick and mortar premises may not be straightforward. Do local laws cover non-healthcare companies? How can one assure quality and safety for services provided in another jurisdiction?

6. And finally how does the healthcare professional charge for the services? Someone will need to pay for the development costs for the technology and use of third party apps. Current practices of paying for consultations may have to be changed to give credit to the work and advice that is transmitted electronically.

It is with these factors in mind that the College of Family Physicians Singapore (CFPS) and the Singapore Medical Association (SMA) issued a joint advisory on "Participation in Telemedicine" on 26 January 2018. It echoed the challenges facing Telemedicine at this current moment and stated that:

"… we are of the opinion that the current telemedicine technology is unable to replace a face-to-face consultation, which typically includes a physical examination, except for the most minor of conditions. For example, it is not possible for a doctor practising telemedicine to assess a patient with asthma or exclude red flags in a patient with gastroenteritis. Therefore, doctors who sign on to businesses offering telemedicine need to be aware that their clinical decisions must always be justifiable and defensible."

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(continued from Page 24: "To tube or not to tube (feed)")

4. The patient's situation is such that no discomfort or pain will be experienced by discontinuing the intervention.

He went on to say "… ANH should be evaluated in light of the principle of proportionality, i.e. the assessment of the ratio of burdens to benefits for the patient. We support the view that if a patient has formulated an advanced directive which specifically mentions omission of ANH in a condition of advanced dementia, such a directive should be honoured."

Coming back to the question of whether to nasogastric tube or not to tube Mrs F, we must weight all factors. Whether Mrs F had her advanced care plans made, and whether she had pre-specified that she wanted or objected to such a tube being placed. We next have to consider medical indications for this, and then address family's concerns, before coming to a decision together. This article is not meant to be prescriptive as the case scenarios will vary not just from patient to patient, but also in the various settings of Family Medicine. So in the end, the answer is, "it depends".

References

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