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Editorial

Telehealth in contemporary orthopaedic nursing

Potential benefits of telehealth

Ideally, the motivation for all healthcare professionals and providers is to strive to continually provide care that is effective, efficient and best suited to meet the needs of the population being served. This is also true for orthopaedic nurses globally. While we aim to continually refine our individual practice and deliver high levels of care, we are somewhat limited as individuals, within the scope of our influence, in how we can improve systems and deliver care to certain patient populations at a broad level. One of these restrictions that most orthopaedic nurses endure is physical location and distance as most orthopaedic nurses provide care in one physical setting or location and for patients to benefit from those services they must physically attend that location and interact with the healthcare professional. At some point in their care journey, orthopaedic patients (especially those with acute injuries) are likely to need to attend a physical location to access care, this may be a one-off experience in hospital or may require repeated longer-term episodes of care for follow-up and further interventions. Worse still, is that patients may be required to also attend several different physical locations to access services from a variety of healthcare providers: orthopaedic surgeon, physiotherapist, radiography or specialist orthopaedic nurses. This can be physically and emotionally demanding for patients, costly, time consuming and challenging, especially for patients with mobility difficulties. While physically co-locating healthcare staff and services makes sense in terms of efficiency and function of service, it does mean that patients are required to physically travel to that location to access care and services. For certain groups of patients, and for those in certain locations, this can become problematic, challenging and downright difficult. Orthopaedic patients are often hindered by limited mobility and pain, so physically attending services can be challenging and costly, and patients may need to rely on family members or other government transport services to assist in this travel. Distance may also be a challenge, and in the case of larger countries (like Australia) with low population densities, this can involve travel of many hundreds, if not thousands of kilometres to access appropriate healthcare services and professionals.

Recently, the concept of telehealth has been considered by governments and healthcare providers around the world as a means of addressing some of these challenges. While there are variations in the terminology used, the basic concept is; where appropriate, to use information and communication technologies (ICT) to provide care, assessment, diagnosis and preventative care from a distance (Australian Government, 2015). In other words, this is a concept where, instead of the patient and the healthcare professional needing to be in the same physical location, they can meet virtually online and communicate and be assessed in real time while in different physical locations. There are multiple ICT systems available today that allow high quality and realistic transmission of real time video and sound that can facilitate effective communication to provide assessment and treatment where appropriate. The patient may be many hundreds of kilometres away, but the healthcare professional is able to interact with the person, ask questions, consider and assess mobility, range of joint motion, assess wounds and view radiographic images, all in real time.

History of telehealth

It is reasonable to believe that the use of remote healthcare is a relatively new concept, but its roots can be found in practices beginning over 150 years ago. Houston, Stredler-Brown and Alverson (2012) identify that, even though there is some disagreement about exact timeframes, the provision of distance healthcare and communication of heath related information had its beginnings in the 18th Century. Information was passed from place to place using various methods such telegraph, or even reflective mirrors, across great distances; obviously this only allowed the transmission of very basic information and was very slow compared to contemporary methods. As technology developed, over time the immediacy and quality of that communicated information improved significantly, yo a point today, that allows a highly realistic, remote experience including high quality video image and sound that creates an experience similar to the real thing. Lowery (2018) identifies that this type of technology can reduce costs in some situations and divert/reduce demand on some face-to -ace (f2f) services as well as improve access for individuals with limited resources from low socioeconomic backgrounds.

Use of this practice can allow healthcare professionals to provide care and assessment of patients in a timely manner, over great distances, at a more affordable rate (reduces costs associated with travel) and can improve accessibility to specialist care for those who would usually not have access. An early example of this was in the speciality of burns care in Australia. For a long time, patients who experienced a burns injury in the rural setting had their burn injury assessed by specialist nurses and doctors via an online system that then allowed that injury to be assessed and for them to receive the most appropriate care with better outcomes (Wood, 2009).

Orthopaedic nursing: A practical example

In orthopaedic nursing, this may be providing patients with access to specialist orthopaedic medical or nursing staff without the need to travel great distances. An example in my past practice, at the Royal Adelaide Hospital in South Australia, was the use of an electronic system of following-up patients from rural settings post-discharge that began over a decade ago. Patients with certain types of injuries and treatments, suitable to be reviewed in this manner, had their post-

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fixation radiographs completed at their rural location and these images were accessed electronically at the acute metropolitan hospital for review. This allowed their x-rays to be reviewed by an orthopaedic specialist, but did not require the patient to travel to the city; often saving them significant time and money as well as reducing the cost for the government, as patients did not then need to claim for costs associated with travel and accommodation services. The patients were also reviewed by their local doctor to assess other elements of their care not observable on the radiographs and they were advised of any follow-up care required after reviewing the films. Prior to the implementation of this system some patients had needed to return to the hospital via costly government subsidised aircraft transport (via stretcher), due to their limited mobility and inability to travel via road for long distances. Some of these patients lived up to 1000kms away. This system saved significant costs and resources associated with aircraft transport as well as freeing up those transport services for other patients and emergencies. It also allowed other, more mobile, patients not to have to return to the metropolitan area for a quick review, saving them time, effort, pain, costs associated with travel and accommodation in the city. This system has been adopted, in various forms, by other acute care settings now. But as with any change in practice, it is vital that the associated benefits from that change does not disadvantage patients or cause more problems than they solve. This is a key consideration when considering any change in care delivery systems.

Potential disadvantages

There are potential disadvantages to the use of telehealth systems that can limit the effectiveness and value of any such system. Restricting input of information from the patient to only sight and sound (especially only two-dimensional sight via video) has potential to impact the healthcare professional's ability to assess the patient effectively. Effective f2f assessment by the healthcare professional often requires information from a variety of sources and clinicans will rely on the use of a combination of senses and other data to make an informed decision regarding the patient condition and needs. Seeing the patient in person, being able to touch and feel their affected joints or limbs is a significant part of how we assess and plan care for our patients, although the development of some types of technology are gradually improving the ability to interact on a deeper level remotely (Greenwald et al., 2018). For the use of telehealth, there is also a requirement for access to the appropriate physical and information technology/equipment required by these systems, as well as adequate internet speeds to support the transmission of data. Although the creation of remote centres (often at rural hospitals, clinics or community settings) that house these technologies and equipment can improve the use of these services rather than rely on each individual patient having the specific equipment, knowledge of use and access at their residence. Acceptance and change in practice (on both the healthcare professional as well as the patient's behalf) is also an important consideration (Shigekawa et al., 2018; Greenwald et al., 2018).

Achieving success

As with any significant change in practice and delivery of healthcare services, it is vital that it is considered, planned and implemented in the most appropriate manner.

Ellimoottil et al. (2018, p. 1955) identify several considerations in this process outlined below:

To successfully engage senior leaders in new telehealth initiatives, it is essential to align proposals with the strategic goals of the institution and use patient stories to highlight the benefits of telehealth. To manage the demand for telehealth offerings from patients and various clinical departments, teams should develop a framework for deciding what's most important. To improve adoption by staff and adopt telehealth workflows, teams should nurture telehealth champions at each staff level and incentivise them with career development opportunities and rewards. And finally, health systems should develop telehealth-specific outcome measures and repeatedly use them to motivate improvement.

In other words, to ensure that the system is successful and appropriate, it is essential that there be adequate planning, that any new work pattern or system of telehealth is responsive to the needs of the patient population and is suitable and achievable for healthcare professionals. It should also be patient-centred while making the benefits obvious for staff, otherwise they are less likely to engage and, most importantly, that it is adequately resourced. Any new work-flow or change in systems is far more likely to fail if the staff involved do not see the value of the change or if they perceive that they need to do additional work on top of their current workload with additional support.

Acceptance by patients is also an important consideration here. Any non f2f interactions may be viewed by some as less valuable and they may feel like they are missing out on ‘proper’ care somehow. It is important to allow for this belief by some patients, but we may be surprised by the willingness of patients to engage, especially when they appreciate the other benefits it affords them such as less travel and costs. Greenwald et al. (2018) identified that with the introduction of a telemedicine program, based in an emergency department, they had expected older patients to be sceptical of the program and engage less, but in fact it was well received by older patients and the satisfaction scores were as high as for younger patients.

A contemporary review of the literature regarding telehealth identified that it is difficult to draw broad conclusions regarding the effectiveness of telehealth but identified that in many areas, for the most appropriate situation, patient populations and purposes, telehealth appeared to be generally equivalent to f2f care, but warned that this is not the answer for all settings nor all care situations and that many factors should be considered in determining the appropriateness of telehealth. (Shigekawa et al., 2018). For the most appropriate type of patients, in the most appropriate circumstances we should consider the use of these types of systems and technology to improve access, improve patients experience and potentially save resources where suitable.

The challenge

My challenge to you, as an orthopaedic nurse, is to consider your practice, consider your setting, consider your patients’ needs/challenges and consider the patient populations to whom you provide care. Are there situations where telehealth could improve the patient experience, reduce demand, reduce pressure on patients or improve access? It does not necessarily need to be related to significant distances, however: improving access or reducing the need to attend f2f sessions has significant benefits in metropolitan settings for certain patient groups like older people, following hip fracture who have limited capacity for mobility and transport. So designing systems and delivering care in an innovative manner that provides patients with as good care as f2f options, while reducing the challenges of navigating contemporary healthcare delivery systems will likely have benefits for all involved.

References

Australian Government, 2015. Telehealth', the Department of Health. Accessed 9th January. http://www.health.gov.au/internet/main/publishing.nsf/Content/e-health-telehealth.

Ellimoottil, Chad, Lawrence, An, Moyer, Meagan, Sossong, Sarah, Judd, E., Hollander, 2018. 'Challenges and opportunities faced by large health systems implementing telehealth. Health Aff. 37, 1955–1959.

Greenwald, Peter, Stern, Michael Ethan, Clark, Sunday, Sharma, Rahul, 2018. Older adults and technology: in telehealth, they may not be who you think they are. In: 1-N.PAG. Springer Nature.

Houston, K. Todd, Stredler-Brown, Arlene, Alverson, Dale C., 2012. More than 150 Years

in the making: the evolution of telepractice for hearing, speech, and language services. Volta. Rev. 112, 195–205.
Lowery, Curtis, 2018. Telehealth: a new frontier in ob/gyn. Contemp. Ob/Gyn 63, 11–35.
Shigekawa, Erin, Fix, Margaret, Corbett, Garen, Roby, Dylan H., Coffman, Janet, 2018. The current state of telehealth evidence: a rapid review. Health Aff. 37, 1975–1982.
Wood, Fiona, 2009. Burn injury model of care. In: Injury & Trauma Health Network. Government of Western Australia.

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