Chapter 6
Professional Practices for Digital Healthcare

Sisira Edirippulige
Centre for Online Health, The University of Queensland, Australia

Buddhika Senanayake
https://orcid.org/0000-0002-2278-2889
Centre for Online Health, The University of Queensland, Australia

ABSTRACT

Digital health is quickly becoming an integral part of healthcare services. Research evidence suggests that digital health can benefit stakeholders involved in healthcare including patients and care providers. As digital health continues to integrate into routine healthcare, practitioners may require new knowledge, skills, and competencies to make the best use of it and to be able to communicate with an increasingly digitally enabled consumer. While much effort has been made to systematic education and training relating to digital health, which is an important aspect in developing the digital health workforce, it is important that governments and health systems consider digital health education and training as an important element in the process of implementing digital health within health services. Digital health education must be given its due recognition and support so that the future heath workforce has an opportunity to develop required knowledge and skills relating to digital health.

INTRODUCTION

Digital health is growing. The intentions of digital health include providing *administrative advantage* (e.g. to improve efficiency, and reduce costs through digitisation); *clinical advantage* (e.g. electronic prescribing to improve patient safety, electronic health records (EHR) to facilitate sharing amongst practitioners); to *overcome impediments* to service delivery (e.g. remote consultation, or remote-access to medical imaging); and to *help patients to self-manage* their health (e.g. apps for monitoring chronic conditions, or sharing information amongst providers using a personally-controlled EHR) (Sandhu, 2020; Greenes & Shortliffe, 1990).

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There is a strong rationale for seeking alternative methods for delivering healthcare using innovative technologies (Hadeel & Sandhu, 2021; Sandhu, 2020; Venkatesh & Davis, 2000; & Davis, 1989). Traditional business models and infrastructure of healthcare organisations are ill-equipped to sufficiently adapt to, or finance, the global health trends of aging populations, declining birth rates, increasing non-communicable chronic disease, poverty, migration and increasing rates of infectious disease. These factors all impose significant logistical and financial hardships for those striving to provide ubiquitous effective and ethical healthcare. The digital transformation of healthcare with information communication technology provides one avenue to better enable patient centred care. Although digital health is growing rapidly in the healthcare industry the education and training component plays a critical role to uplift the future uptake of digital innovation. This chapter explores the current evidence regarding education and training for digital health and discovers the potentials to strengthen digital health in the field of learning and training.

While digital health is not new, advances in technology, in particular, the availability of mobile devices and ubiquitous connectivity, means that services are no longer physically limited to a health facility, or limited only to clinicians (McConalogue, Davis, & Connolly, 2019). Modern healthcare systems increasingly comprise digital hospitals providing services to digital health-consumers. Many governments and health systems have made attempts to introduce telehealth services, a few of which have become large and well-integrated, such as the Ontario Telemedicine Network in Canada (Edirippulige & Armfield, 2017) and Veteran's Affairs Telehealth in the USA (Kampmeijer, Pavlova, Tambor, Golinowska, & Groot, 2016). The interest in telehealth to improve healthcare services is global. A number of European countries have implemented various telehealth projects; and some countries have conducted large research studies to establish an evidence base (Dattakumar, Gray, Henderson, Maeder, & Chenery, 2012; Marschang, 2014). Global organisations such as the World Health Organisation (WHO) have been promoting telehealth, particularly in low and middle income countries in Asia, Africa, and Latin as a new way to address critical health challenges (Gray, Dattakumar, Maeder, Butler-Henderson, & Chenery, 2014; Smith, 2011).

Some governments have made important policy changes to encourage and incentivise the use of digital health. For example, the Australian federal government introduced reimbursement for certain video-based consultations involving general practitioners, specialists, Aboriginal health workers, nurse practitioners and midwives (Bryant, 2014). In the USA, forty-six states, and Washington DC provide reimbursement for some video-based consultations under their Medicaid programs which supports the healthcare costs of those on low incomes and those living with certain disabilities (Lannan, 2015).

Alongside the increase in the use of telehealth, a flourishing industry of medical, technology and clinical service businesses has grown. The size of the market is difficult to reliably estimate. One group of analysts have suggested that it could be as large as USD $43.4 billion by 2019 (Cope, 2011) while another group were more conservative in their estimate of USD $36.3 billion by 2020 (Gill, 2014).

As digital health continues to integrate into routine healthcare, practitioners may require new knowledge, skills, and competencies to make the best use of it and to be able to communicate with an increasingly digitally-enabled consumer. Almost thirty years ago in 1990, Greenes *et al.* foresaw this need: '*horizontal integration of eHealth into healthcare practices requires the integration of eHealth into medical education*' (Greenes & Shortliffe, 1990). Meanwhile, the lack of education and training (E&T) has been highlighted as an impediment for health professionals to use digital health (Sandhu 2020; Edirippulige & Armfield, 2017; Kampmeijer et al., 2016). While universities may be a logical place to provide digital health E&T, a study involving thirty Australian universities in 2012 (largely by