Technology and inclusivity

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Introduction

In the current Health and Social Care system, the NHS has identified it needs to make better use of both information and technology, if it is to meet the demands of an aging population with increasingly expensive treatment requirements (NHS England, 2017). This comment piece explores the issue of inclusivity relating to technology enhanced care (TEC) and technology enhanced learning (TEL). Themes such as digital literacy, autonomy, competence and confidence will be considered. The cultural and organisational context relating to this wide scale change will also be highlighted.

Resilience

In order to meet the needs of all service users and learners, service providers have a duty to make TEC and TEL accessible in digital and physical spaces alike (Equality Act, 2010). Using these technologies to enhance care or learning has added value, as the digital skills gained can be transferred to other areas of the individuals' life and helps build confidence and digital resilience.
Investing in the development of resilience and a digitally resilient workforce is essential. Many technologies will have a limited shelf life and the ability to adapt to new devices, products and services is a desirable quality for patients, carers, learners and staff. Supporting patients to develop digital resilience should pay dividends as their care provision alters over time.

Flexible and person centred

The financial burden of attending appointments can be significant for many patients and carers. Costs can be overt, such as paying for public transport, petrol or parking. They also include the personal cost of the time to attend,

with some individuals having to spend an entire day just getting to and from appointments. Some patient conditions result in physical difficulties in getting to appointments. Less overt issues include the discomfort or even distress of travelling in bad weather, alone or in the dark. Use of technologies to support treatment or education at a distance may ease some pressures for patients and may positively impact on attendance figures, patient satisfaction, widening participation and accessibility.

Developments such as being able to interrogate Cardiac Implantable Devices using telephone systems has been a revelation to patients who previously had to travel long distances to regional specialist centres for this service. When appointments are required in person, the use of technology can promote better attendance e.g. text message reminders can help capture service user experience via online evaluations.

Computational linguistics brings together the expertise of linguists and computer scientists. At the user end of the process we see this resulting in technologies that provide a speech recognition and speech synthesis function. Voice recognition technology has become mainstream in recent years. Google's Echo, Amazon's Alexa and Apple's Siri have all contributed to the everyday use of this technology. Devices will respond to a large spectrum of voice interactions; "when is my next hospital appointment" is a simple action for the device, by searching the users calendar and vocalising the results. "When is the next bus to the hospital" requires a deeper level of analysis; finding the users location (using the GPS function) and finding the hospitals location (using public data on the internet). This data is then taken to a bus timetabling website where the result can be vocalised back to the user. The whole process will be almost instantaneous.

Using technology such as video conferencing to facilitate consultation between patients and healthcare professionals is frequently discussed. Geographic displacement, travel barriers and improving compliance with chronic disease management are common reasons for exploring this technology. It was identified by Greenhalgh et al (2016) that there is a risk with this technology that clinical assessment and decision making is harder and there are technology barriers and novel considerations in relation to confidentiality of the consultation. In a literature review by Armfield et al (2015) 27 studies were review, mostly using Skype. All studies except one, found Skype to be a positive, beneficial tool in patient care.

Opportunities to innovate and improve services

Cooper (2015) encourages involvement of Nurses in both the design and evaluation of technology. Following this is a need for Nurses to share their innovative and improved TEC and practice. Leaders will do well to include and empower their teams in the development of new TEC. The Royal College of Nursing (2017) recognises the need to digitally modernise the workforce and identifies technological improvements as a key component in this transformation, with Health Education England and the Royal College of Nursing (2017) promoting nursing as being at the forefront of new roles and models of care in a digital society.

In order to promote the inclusion of all Health and Social Care staff in ongoing development, professional associations will have a significant supportive role to play.

Communities of practice and social connectivity

The use of Social Media (SoMe) to develop communities of practice within Health and Social Care is well documented and the growth of groups such as 'We Nurses' provides support and a voice for many otherwise isolated practitioners. Likewise, the use of technology to connect patients ranging from informal support groups, charitable organisations and events is increasingly growing. Examples such as monitored SoMe use to support Cardiac Rehabilitation patients (Meigh, 2017) highlighted a number of benefits; Patients providing peer support resulted in a reduced the burden on GP services. This could be a significant driver where services are under pressure. Likewise, a study by Delello and McWhorter (2015) found that older adults benefitted from greater social connectivity when they were provided with an iPad and training.

Resistance to change

The idea that nothing remains still is not a new one. Circa 501 BC the Greek philosopher Heraclitus was wrangling with this very concept. Here in the 21st Century, the NHS and Health and Social are in general continue to change and evolve at an extraordinary pace. Digital literacy development requires a range of approaches to change, which both respond to and help shape organisational culture. Culture is complex, but is essentially about 'the way we do things around here' (Jisc, 2017). Lack of research relating to new technologies may reduce buy-in from clinicians who base their decisions on evidence. Gathering

data and evidence relating to digital innovation therefore will be helpful therefore in engaging with colleagues.

In 2014 plans were published committing the UK government and NHS to use information and technology and make sure patient records are digital and interoperable by 2020. The context of this digital transformation however takes place in the wider United Kingdom (UK), where there are concerns of an emerging digital divide. This, unsurprisingly, translates into the overall state of digital literacy levels in the UK general and health and social care workforces.

Although access to new technology will no doubt impact on service development, it is rarely the technology in itself that impacts on change. More likely it is the human and organisational associated behaviours that will determine whether change will be successful (Cooper, 2015).

Infrastructure

In light of the current austerity conditions, the uncertainties introduced by 'Brexit', and the somewhat demoralised NHS workforce, a push to digitise the secondary care sector rapidly carries a high risk of failure. (Wachter report 2016). Effective leadership will therefore be required at a macro and micro level to support all those involved in this digital transformation.

To support digital innovation, suitable support and organisational infrastructure needs to be considered. An example of this is the issue of social connectivity; Patients in remote or rural areas may benefit from digital connection to their health provider, however the access to fast reliable internet is often problematic in these areas. Wider socio-economic issues relating to access to technology in the population (particularly older adults) needs to be considered when setting up services in order to provide inclusive services. Availability of accessible and suitable devices, software, hardware, networks, support staff, educational packages may also be pivotal in uptake of new technologies. Safety and governance relating to digital services will be required to reassure users that data and analytics meet quality requirements and standards.

Time needs to be factored in to develop competency in TEC and TEL. This may be a challenge in some areas, however new digital practices may result in time efficiencies. In any contemporary organisation, saving time will be appealing. Taking the time to share innovative practice is also in the best interests of Health and Social Care services. The same is true of working in collaboration

with others to ensure services are joined up. The 'Connected Health Cities' project is an example of the collaborative work that is developing in the UK.

Conclusion

The digital transformation of health and social care services is a significant change in culture. Inclusivity is core to this process and effective leadership at all levels must ensure that no one is left behind. The paradigm shift towards Technology Enhanced Care (TEC) and Technology Enhanced Learning (TEL) brings with it huge opportunities to innovate and improve services.

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