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Mobile technology: streamlining practice and improving care

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ABSTRACT

The use of mobile phones in care delivery has the potential to improve the way in which care is delivered. When implemented effectively, mobile technologies can empower patients and enhance communication between patients and their health-care providers. When barriers are recognised and addressed, mobile technologies can change working lives, facilitating rapid access to information and supporting efficiency in practice.

Rapid advances in information technology have led to significant changes in our current health-care systems and practice. Patients have widespread access to mobile technology and IT, which has undoubtedly changed the way in which people access health information and experience the provision of care. Community nurses are faced with a concomitant drive to embrace methods of supporting complex care and managing workloads more efficiently. Lessons learned from a series of community mobile technology pilots in England have led to an increased national focus on the use of technology to support patient care.

In January 2012, the Queen's Nursing Institute (QNI) released 'Smart New World', a comprehensive document that outlined the possibilities for the use of technology to help patients in the home, documenting work undertaken in a range of small-scale projects which were part of the Fund for Innovation Programme using technology to improve services (QNI, 2012). In October 2012, the Department of Health in England made £100m available to support mobile technology for nurses and midwives working in both acute and community settings.The recent District Nurses Service Model advocates innovation and recognises that enhancing care delivery closer to home and improving health outcomes requires technology to support more effective working,

support care delivery and support the need for 'joined up care across professions and agencies' (DH, 2013).

Health care in the community is recognised as an ideal setting in which to adopt mobile technologies. For patients, mobile technologies can make their care more 'effective, convenient and personalised' (QNI, 2012).Technology can increase the frequency and speed of communication with the health-care provider at times when the patient and professional cannot be together, providing reassurance to patients. Technology can empower patients with a sense of control over their own care, thereby promoting self-management and independence. Numerous examples have been published of the successful use of mobile technologies in the community management of many conditions such as cancer, heart disease, asthma and diabetes (Blake, 2008a). Mobile phones have been employed in health promotion activities, and in the management of chronic disease (Blake, 2008b), to assist in the provision of ongoing support, medication management, health education and monitoring As an example, Chau et al (2012) demonstrate the feasibility of using mobile technologies in the care of older people who have moderate or severe chronic obstructive pulmonary disease. These patients were provided with a telecare device kit that patients used to monitor their oxygen saturation, pulse rate and respiration rate, then to transmit the data to an online network platform. This allowed the community nurses to monitor changes in physiological parameters and take immediate action to address the patients' needs. A high level of satisfaction from the older aged patients and their nurses was recorded (Chau et al, 2012).

For health-care practitioners, particularly those working across wide geographical regions, mobile technology can mean greater efficiency, which may result in increased time for quality face-to-face care. Mobile devices for frontline staff, such as tablets or laptops, provide timely access to resources and provide scope for accessing patients' GP records using clinical applications with remote connectivity or a wireless connection. Mobile technology provides immediate access to emails, the internet and calendars for viewing work schedules and patient appointments. This allows for receipt of information and prioritised workload without returning to the work base; for community nurses this can greatly improve the efficiency of communication and sharing of information, thereby reducing unnecessary or duplicated administration. Travel time can be reduced and those costs associated with unnecessary travel could be reinvested into further patient-facing contact time These savings can be significant; in Kirklees, a telehealth project was implemented where community nurses were given laptops to save them returning to their base for information, and £500 000 was saved in travel costs (Hall, 2011).

There are many examples of good practice and satisfaction with mobile technologies, not least those evident in the QNI case studies (2012), which highlight the range of ways in which technology can have a positive impact on care. Opportunities are diverse and include emails, texts, telephone advice, electronic records, web-based information and

discussion boards, online appointment booking, virtual wards and services, remote monitoring and advice, and 'hub and spoke' services or consultations using video-teleconferencing. Nurses have described having access to handheld personal digital assistants (PDAs) and tablet computers as influential to the way in which they use information resources (Doran et al, 2012). Benefits have been demonstrated by Kiel and Resick (2013) who report the development of a virtual nurses' station using Blackboard technology to provide an area for nurses to exchange information, access necessary resources and print patient health-care information. District nurses (DNs) in Sweden have used an electronic messaging program via computers and mobile phones with an Internet connection to enable the exchange of messages between DNs and people with serious chronic illnesses living at home (Nilsson et al, 2010).

Technology, when implemented well, has the potential to revolutionalise the way in which care is delivered, but the attitudes of health-care staff towards new technologies will play an important role in how readily they are accepted and how effectively they are used in practice (Ward et al, 2008). Barriers and facilitators to the adoption of technologies into work environments and everyday activities require further research, although likely influences are factors in building capacity, confidence and trust in the technology, and in developing competence (Courtney- Pratt et al, 2012). A mistrust in technology and fear of a high workload associated with understanding and using innovative methods may have previously dissuaded front- line staff in primary care from embracing technology (Mannan et al, 2006). As many of the barriers that precluded the use of technologies are removed, health-care professionals now demonstrate an improved understanding of technologies and positive attitudes towards integrating technology into their practice based on an appreciation that there are distinct benefits to patient care (Garrett and Klein, 2008). The integration of technology into practice calls for an increase in IT and technology skills among the community nursing workforce, with education and training likely to be a critical factor in fostering the use of IT systems (Ward et al, 2008), encouraging familiarity, having faith in patients' desire or ability to adapt and allaying concerns about privacy and security. Efforts must be made to highlight the potential for streamlined working practice with observable benefits to the individual and the organisation and subsequent improvements in patient satisfaction and care. Community nursing demands a high level of clinical and interpersonal skills and, as such, practitioners should view mobile technologies as enablers of patient care, but not a replacement for it.

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