**PROS AND CONS OF USING APPS IN CLINICAL PRACTICE**

Smartphones have the potential to enhance care but, say Sally Moore and colleagues, healthcare apps are not regulated, making it hard for nurse managers to be certain that those available are accurate, reliable and safe.

**Abstract**

There is a lack of research on the use of smartphone apps among nurses in the UK, but the number of healthcare-related apps is increasing and it is likely that nurses will want to include them in practice. It will, therefore, be necessary to assess their effectiveness, appropriateness and efficacy to ensure they enhance patient care. This article looks at the literature on the subject and suggests some issues managers should consider before allowing the use of apps in their clinical areas. It also invites readers to take part in a survey on the use of apps in nursing.

**Keywords**

Smartphones, apps, healthcare apps, nursing apps

**Correspondence**

sally.moore@bthft.nhs.uk

Sally Moore is a patient safety research nurse

John Anderson is a clinical safety fellow

Susanne Cox is a senior patient safety research nurse

All at Bradford Institute for Health Research

**Date of acceptance**

August 30 2012

**Author guidelines**

www.nursingmanagement.co.uk

SMARTPHONES ARE mobile phones with features that enable them to interact with computerised systems, send emails and access the web. Over the past five years, the use of smartphones has increased dramatically, and sales of new versions often outstrip sales of previous versions within a matter of weeks (Ofcom 2011).

The use of smartphones and discrete downloadable applications, or ‘apps’, is now part of everyday life for many people, including healthcare professionals. Part of the appeal of smartphones is that each new version is faster, more powerful and more versatile than previous ones.

In the UK, the medical profession seems to be a widespread adopter of such technologies and doctors commonly purchase apps from branded ‘app stores’ to use in their daily working lives (Visser and Bouman 2012). The nursing profession, however, appears to be more cautious.

There is limited information on the extent of app use in healthcare settings, and on how often different groups of professionals use smartphones and healthcare apps (Devices 4 Ltd (d4) 2010, Franko and Tirrell 2011). Most evidence comes from the US where, in a digital survey of all Accreditation Council for Graduate Medical Education training programmes, more than 85 per cent of respondents said they use smartphones, and the most commonly used apps are drug guides (79 per cent) (Franko and Tirrell 2011).

In the UK, d4 (2010) received responses from 474 healthcare professionals, 18 per cent of whom said they used smartphones to run work-related software. There is ongoing debate, therefore, about whether personal smartphones represent an untapped information technology (IT) resource with the potential to improve communications, standards and patient safety, or whether the untested nature of this technology in the healthcare environment renders it unsafe (Visserand and Bouman 2012).

**Current practice**

A review of the literature yields little in the way of information about nurses’ use of healthcare apps in the workplace. The evidence that exists is limited and principally concerned with nurses in the US who use drug handbooks and dose calculators in clinical practice, something that is actively encouraged by some employers and universities (Innocent 2010, University of Phoenix 2011).

There is evidence of corporate use of mobile technology in the form of hand-held tablet computers in some UK trusts, such as University Hospitals Birmingham NHS Foundation Trust (Carlisle 2012) and York NHS Foundation Trust (2011), to support drug administration recording, vital-signs monitoring,
Issues that should be considered when deciding on the routine provision of health services and highlight some of the key examples of the use of apps and mobile technology.

---

**Box 1**  Examples of healthcare apps and mobile technology in clinical practice

**Example 1: possible problems in using healthcare apps**
A woman in labour asks to discuss pain relief with her midwife. Her first language and that of her birth partner is Czech and their English is insufficient to discuss pain relief options in detail.

The Obstetric Anaesthetists Association (2012) has produced an app that provides written advice about all forms of anaesthesia and obstetric procedures in 37 languages. The trust has not produced patient information leaflets in Czech.

Should the midwife use this resource? Is the source trusted? How can the midwife verify that the advice is valid? Is the translation correct? Does it reflect current best practice? Do the details of the advice agree with local protocols when it comes to specific treatments or procedures?

**Example 2: beneficial effects of bedside information technology**
Electronically-held patient information makes it easy for senior staff to monitor and improve quality and safety outcomes using mobile technology. Within 18 months of implementation of hand-held bedside patient records, staff at University Hospitals Birmingham NHS Foundation Trust had reduced the proportion of antibiotic doses that staff failed to administer as prescribed from 10 per cent to 3 per cent (Carlisle 2012).

---

**Box 2**  Issues for senior nurses to consider

**Safe, reliable accurate apps**
- Have they been approved for use and, if so, by whom?
- Are they easy to use correctly?
- Can they be considered a medical device and, if so, are they regulated by the Medicines and Healthcare products Regulatory Agency?
- Are they current and how are they updated?
- Are they accurate and do they reflect local organisational policies and guidelines?
- Can they be withdrawn easily, if necessary?
- What processes are required to implement the use of apps in the unit?

**Infection control**
- Should there be a mobile technology device at the end of each bed?
- How should the use of personal smartphones be managed to minimise the risk of infection?

**Information at the bedside**
- Could the use of healthcare apps at the bedside release time for nurses to focus on direct patient care?
- Could access to patient information at the bedside support nurses in clinical decision making and improve patient involvement in the decision making process?
- How would access to real-time data at the bedside improve patient care?

**Patient experience**
- Will mobile technology form a barrier to meaningful communication between nurses and patients?
- Will care be more focused because information is available at the bedside?
- Will care be more responsive to patients’ needs?
- Will patients perceive that smartphones are being used for non-work related communication?

---

Pros and cons

The use of smartphones is encouraged and supported by universities to link to teaching and learning materials (University of Bradford 2012), so the use of apps by nurses in clinical areas is likely to become more prevalent. Since September 2011, it has been possible to purchase the Royal Marsden Hospital Manual of Clinical Nursing Procedures (Royal Marsden NHS Foundation Trust 2011) for iPhones and iPads.

Meanwhile, the National Institute for Health and Clinical Excellence (NICE) (2012) launched two apps this year: a NICE British National Formulary app and a NICE guidance app. The former is free to NHS staff who have a valid NHS Athens account. This suggests the message to clinical staff from NICE is that it is acceptable to use smartphones in clinical areas.

Several articles in the medical literature have reviewed the use of apps (Young and Bloor 2009, Ninan 2012), while the quantity of apps available, scale of their use and types of medical applications have been subject to a cross-disciplinary medical IT literature review (Mosa et al 2012).

Some articles point to the potential pitfalls of medical apps (Visser and Bouman 2012). For example, at present, most apps are developed by commercial companies, whose aim is to profit from the data they collect.
from their sale, and the safety of these apps is sometimes unproven.

Many apps that support healthcare calculations or clinical decisions issue disclaimers. For example, St Helens and Knowsley Teaching Hospitals NHS Trust (2010) states clearly that it accepts no responsibility for how or where its burns calculator app is used, or for any harm that might occur from its use.

Disturbingly, a rheumatology calculator app developed by Pfizer was found by the company to be inaccurate (Pfizer Ltd 2011), which led the Medicines and Healthcare products Regulatory Agency to circulate a field safety notice warning of potential errors.

There is increasing recognition that healthcare apps might require regulation. The US Food and Drug Administration (FDA) has proposed guidance on when apps start to become medical devices and therefore require medical device certification (US FDA 2011).

Other concerns centre on deskillng clinical staff, who could become over-reliant on apps and find they cannot calculate drug doses, body mass indices or early warning scores without a smartphone. Another fear is that using smartphones at the bedside could be received unfavourably by patients and colleagues, or have detrimental effects on nurse-patient interactions.

Conversely, the use of apps at work could highlight deficiencies in resources, such as guidance or patient information. Having an awareness of which groups of clinical staff are using which apps could reveal shortcomings in resources or help organisations to develop their resources. Alternatively, organisational scrutiny could be required to determine whether use of certain apps is acceptable and appropriate.

Take part in a survey

The quality and safety research group at Bradford Institute for Health Research has closely followed the development of apps as tools in the healthcare environment.

The group is aware of their potential to reduce avoidable harm, as well as the possible risks of insufficiently tested apps. Given the established and growing data on the use of healthcare smartphone apps among the medical profession, the group is aware that there is limited information about their use among nursing professionals and is keen to explore this further.

If you are interested in taking part in an online survey exploring the use of smartphones and healthcare apps among nurses, midwives and doctors, go to www.surveymonkey.com/s/WWFY6MG

Everyone who completes the survey will have his or her name entered in a prize draw for £100 worth of shopping vouchers.

Box 1 provides examples of the use of apps and mobile technology in healthcare settings and highlights some of the key issues that should be considered when deciding whether or not to permit the use of apps in clinical areas.

Summary and recommendations

Senior nurses thinking of introducing smartphone apps in their workplace should consider whether they are safe, who owns the mobile devices and apps, and how their use at the bedside can affect infection control and the patient experience (Box 2).

Smartphone healthcare apps present problems and opportunities. Their use among UK nurses is likely to increase and may provide a rich source of clinical support and information. However, apps will also need scrutiny from the organisations in which they are used. Validation and safety checks may be required before allowing the use of some apps to screen out those that are unsafe. On the other hand, overly restrictive policies can limit the benefits.

References


Obstetric Anaesthetists’ Association (2012) Information for Mothers - With Translations in up to 37 Languages. www.caa-anaes.ac.uk (Last accessed: September 12 2012.)


Royal College of Nursing (2012) RCN Guidance: Nursing Staff Using Personal Mobile Phones for Work Purposes. tinyurl.com/cvsclf6m (Last accessed: September 13 2012.)


