

According to the latest figures, 51% of UK adults own smartphones and 29% are in possession of a tablet computer (Ofcom). With some 40,000 health-related apps available across mobile platforms, some commentators (notably investors and IT entrepreneurs) believe that we are witnessing a paradigm shift in the way healthcare is delivered. But how much substance is there behind the hype when it comes to occupational health? Are we really seeing a transformation of OH services that revolutionises the way clinicians, insurers and employees interact? Or is it more of a slow-burning change that affects only a few discrete, peripheral areas?

What is mobile health?

It is important to define what we mean by mobile health (or mHealth). In its most general form, mHealth describes the practice of medicine and healthcare that is supported by mobile devices such as phones and tablets. According to Deloitte's 2014 mHealth report, 70% of health apps target consumers, while the remainder are developed for health professionals facilitating activities that fall broadly into five categories of activity:

›SMS: at the most basic end, there is the use of texting by healthcare teams to remind patients of appointments and other clinical activity. This is now a common practice for most appointment-led businesses.

›Patient visits: next there is the use of mobile technology to support healthcare professionals such as GPs and district nurses out on visits so that they can access and update patients' notes in real time, which improves efficiency and frees up time for a greater number of consultations.

›Self-monitoring: this includes apps and devices used to monitor the user's health status. Examples include gadgets acquired by those who want to protect their health. The gadgets come in a variety of forms, including the Fitbit or Jawbone which record indicators such as steps, calories and sleep, and sync with a smartphone so progress can be tracked. Patients with long-term conditions such as respiratory disorders can be asked to regularly report symptoms via mobile devices that are checked centrally against algorithms so crises can be averted.

›Face to face: this describes the ability for healthcare professionals to hold face-to-face consultations with patients over the internet using platforms such as Skype and WebEx.

›Linking condition to the healthcare system: it is this category that is taxing regulators the most because, in some instances, the device performs the role of a traditional piece of medical kit that needs to be tested for reliability and validity. The data collected is loaded to a centralised system for monitoring and investigation. For example, people who are worried about glaucoma can wear a contact lens with an embedded chip

Around 10 years ago some people were suspicious of mobile phones because they thought they might be linked to brain cancer. Now, many people are looking at how such devices can improve their health. There is a certain irony in this development, say **Mike Tyler and Dr Bridget Juniper.**



Mobile health monitors

that continuously measures eye pressure and transmits data wirelessly to a smartphone. Or someone with a heart condition can take an ECG with their smartphone and share the information instantly.

Practical application of mHealth

A good example of mHealth in face-to-face activities is in the oil and gas sector, where there is a requirement to deliver care to employees based offshore. Capita's energy medical services division is an early adopter. Medical director Dr Stuart Scott explains: "Using mHealth has helped us to reduce the number of medical appointments at our Aberdeen clinic. Rather than requiring clients to get to Aberdeen for a check-up when they are on leave we can now take the doctor to them."

Capita deploys offshore medics on rigs who are supported by onshore doctors that are on call 24/7. All health screens and surveillance can be conducted offshore under the supervision of a doctor. Likewise, emergencies can be assessed via live video between the rig and the mainland clinic with the option of linking in specialists at Aberdeen Royal Infirmary, if required.

"This has been a game changer for our clients. None of them want to go back to the traditional methods," says Scott.

Capita has not carried out a formal evaluation but, anecdotally, it believes there have been cost savings. "We think that the footfall to our clinics will be significantly reduced over the next five years," Scott observes. "This kind of approach also means that we can cut back on the number of people who have to be medevac'd to the mainland and therefore avoid all the costly logistics that this involves."

Self-monitoring activity

Other ways in which OH is affected by mHealth seem to be more confined to self-monitoring activity.

Duradiamond Healthcare is currently piloting its virtual wellness suite, a cloud-based system that members can use via their phones and tablets that prompts suggestions to improve health status based on the data the member taps in. Jamie Pugh, business development director at Duradiamond, anticipates large costs savings to clients who opt for this over traditional health and wellness programmes. "We estimate that the costs to run this across a workforce for a year will be the equivalent to delivering one short-term, face-to-face intervention," he says.

Along similar lines, Nuffield Health has launched a digitally advanced healthcare assessment. Its Healthscore app tracks lifestyle behaviours, providing users with a dynamic score depending on data entered into their mobile devices. Between assessments, a medical professional will review the user's progress and interact with him or her to keep them on track via an e-health platform.

According to Nuffield's wellbeing medical director, Davina Deniszczyc, the new service will sustain people's motivation to improve their wellness levels. "Health as-

sessments need to be engaging and relevant on an individual level in order to affect real long-lasting change, and therefore we want people to be able to monitor their health and wellbeing anytime, anywhere," she says.

To this end, in the US there has been a significant increase of the use of digital devices to increase participation through "gamification". This is the sharing of an individual's engagement/performance in a beneficial intervention through social media, which prompts others to want to be part of the group and stretch their own performance in the short term and maintain engagement and persistency over the longer term. This latter point is one of the major problems with traditional interventions – how do you encourage participants to stick with it?

Cost impact

While champions of mHealth claim that it will deliver widespread savings, the jury seems to be out. Some cynics even suggest it will drive up costs because waiting rooms will be bursting by the worried well who get an anomalous reading on their smartphone app and beat a hasty path to the doctor.

Mark Stubbings, a partner of the Portdown Group Practice of GPs, which has 34,000 patients, has had a mixed experience. "The ability to hold diagnoses over the internet does hold great potential for primary care but the technology is nascent," he says, "however, those patients who self-monitor their health obsessively can be a nuisance as there is the propensity to clog up our clinics with non-existent health issues. Patient education on how to use these devices is key."

A systematic review of studies to evaluate the impact of mHealth on long-term conditions by The King's Fund (2012) shows that the majority of studies were limited to the monitoring of diabetes and health failure/stroke. Overall, the evidence paints a mixed but promising picture for service utilisation, clinical effectiveness, cost effectiveness, outcomes and user experience. Other evidence to show cost benefits for mHealth is scant, although Deloitte (2014) believes it does hold potential to improve value for money and facilitate a new way of interacting and providing healthcare.

So do these developments sound the death knell for conventional OH services? It appears not. Mobile health is here to stay and it will have a role to play in healthcare provision but, based on current activity, it will be a gradual evolution rather than a revolution. OH and private medical insurance providers are testing digitised health assessments and suchlike but there is still little industry impetus in the UK. There is clearly an opportunity to embrace these new approaches but without the evidence, big players such as Bupa are watching developments with interest rather than initiating them. Do not expect anything radical in the next five years.

■ Mike Tyler is a partner at Lockton (and leads the UK employee benefits division). Dr Bridget Juniper is a consultant on health and wellbeing.