

EDITORIALS

Telecare for an ageing population?

One of the challenges of population ageing is the need for health and social care related to an increased prevalence of (often multiple) long-term conditions and associated functional disability. To meet these needs, the health and social care sectors need to find new ways of delivering quality care with improved outcomes and reduced costs. In other business sectors such as retailing and banking, the challenges of increasing efficiency and improving productivity are being met with spectacular success through the use of new and emerging technologies (though some down sides are also evident). Great importance is becoming attached to the evaluation of the use of information and communications technologies to facilitate the provision of health and/or social care in new and potentially more cost-effective ways. The concepts of 'telehealth' and 'telecare' are entering the lexicon.

Telehealth includes remote patient monitoring in which sensors and electronic questionnaires are used to monitor vital health signs and symptoms remotely (usually in the person's home) and transmit data to an appropriately trained person who can make decisions about potential interventions, without the patient needing to attend a clinic. The effect of telehealth interventions may, therefore, be expected to be seen in supporting patients to manage their own conditions in their own home and in reduced dependence on traditional primary or secondary care outpatient services, elective and non-elective hospital admissions [1].

Telecare, on the other hand, generally refers to the use of personal and environmental sensors in the home [1] with the aim of enabling people to remain safe and maintaining independence, avoiding institutionalisation and reducing isolation [2, 3].

Basic telecare, in the form of the pendant alarm and similar devices, has been around for several decades and is thought to be used by over a million people in the UK [4]. Newer additions to telecare include such things as falls, epilepsy and enuresis sensors, security monitoring and environmental monitors such as temperature, carbon monoxide and smoke detectors. These technologies enhance the physical and practical home environment in similar ways to other, low technology, low level social interventions such as support for cleaning and shopping, home maintenance etc. The effect of telecare monitoring may therefore be expected to be seen in the maintenance (or enhancement) of the quality of life and wellbeing, independence in the

home and participation and engagement in society. It is therefore hoped that the use of these technologies will influence the use of social care services including, for example, reduced the use of home care, and reduced numbers of transfers to residential and nursing home care.

This is big business. In England and Wales the UK government has placed substantial emphasis (and funding) on the development, diffusion and adoption of telehealth and telecare technologies [5] (for example, through the Preventative Technology Grant [6]), which is a current priority, identified as a 'high impact innovation for health and wealth' [7]. The current NHS operating framework states that commissioners of health and social care should 'spread the benefits of innovations such as telehealth and telecare as part of their on-going transformation of NHS services' [8].

In England, in December 2011 the Department of Health published the headline findings of a trial of telehealth and telecare technologies which was conducted in a number of so-called 'whole system demonstrator' sites. More detailed results and discussion of the nuances in these results were subsequently published [9, 10]. This programme of system redesign included one of the largest telehealth and telecare trials ever conducted. The findings of the telehealth trial conducted in 3,200 individuals with health care needs related to COPD, Heart Failure and Diabetes showed a modest, but statistically significant (and unexplained) absolute reduction in mortality, fewer emergency admissions in the intervention group alongside a (also unexplained) rise in emergency admissions in the control group.

In the same sites, a parallel trial of telecare in people with social care needs has been conducted [11]. In this cluster randomised controlled trial, 2,600 people in 217 practices in the 'whole system demonstrator' sites were randomised (by practice) to receive either usual care, or care enhanced by the use of home-based telecare technologies. The trial is a welcome and important addition to the evaluative literature on social interventions in general, and telecare in particular. Recent systematic reviews have suggested that there is very little [12] or no [13] evidence for the effectiveness of telecare on individual or systems outcomes. This trial adds considerably to the evidence base, and it is as notable for what it does not show as for what it does.

The question asked by the researchers was ‘does telecare reduce the proportion of people admitted to hospital’. The answer turns out to be somewhere between ‘probably not much’ and ‘possibly a little’. Nearly half of each group experienced a hospital admission during the period of observation and the difference between the intervention group and control of 4.8% was observed, which was not statistically significant. The trial was set up to detect a rather more substantial difference of 17.5%, and so it turns out that a difference of up to 13% could have been missed. None of the other measures appeared to be affected by the interventions, including contacts with primary care practitioners, admission to permanent residential or nursing home care and associated costs.

The trial was well designed [14], but not without its limitations. The telecare interventions were a basket of interventions, from which combinations were chosen to apply to each individual—meaning that the specific intervention was different between different subjects, potentially masking the usefulness of high impact, but infrequently used interventions. There was a rather small rate of transfer to institutional care, which means that though large, the trial was too small to detect anything but a massive effect on this outcome. This begs the question why was the transfer rate so low—were the right subjects being targeted with the interventions, or were high-risk individuals being excluded? Other questions to ask about the trial include whether a different primary outcome (such as wellbeing or participation) might be more informative. The authors will be reporting separately on effects on the quality of life and views of service users and carers for a subsample of participants.

Interpreting the evidence emerging from the Whole Systems Demonstrators is not straightforward. The Department of Health has been criticised for an overly positive interpretation of the telehealth results [15], now being used to support a national expansion in the use of telehealth and telecare under the 3 million lives initiative [1]. We believe on the basis of the research evidence so far that a cautious approach is warranted. The research reported in this issue does not provide evidence supporting the proposition that telecare has a significant impact on hospital admissions or length of stay. Of course it does not rule out there being benefits which were not measured using this research design and outcomes.

This research should give us pause for thought about current practices in the provision of telecare. There is, at present, simply too little high-quality research to allow firm and generalised conclusions to be drawn. Using technology to support solutions to the care challenges presented by population ageing, however, remains an important, promising and emerging area of research. We need to be opening the telecare black box and asking questions (including in further research studies) about what works for whom, in what way and in what circumstances.

Conflicts of interest

None declared.

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