



### Telehealth for health and social care

A randomised controlled trial in Scotland finds that telehealth has no effect on hospital admissions in patients with chronic obstructive pulmonary disease and is associated with a high number of contacts with healthcare teams.

**Overview:** The term '[telecare](#)' covers a range of devices that allow 24-hour monitoring of people with health or social care needs. The devices monitor for changes in the person or their environment, and warn the person or a central control centre of any unusual changes. Examples of telecare devices include personal alarms, fall detectors and temperature extremes sensors. Telehealth devices remotely monitor people's vital signs – such as blood pressure or blood glucose – and report the data to a healthcare professional.

In 2006 the Department of Health set up the [Whole System Demonstrator programme](#) to test the clinical effectiveness and cost effectiveness of telecare and telehealth. The programme is studying 6191 patients with chronic obstructive pulmonary disease (COPD), diabetes or heart failure in general practices in 3 regions of England: Cornwall, Kent and Newham (London). Findings to date indicate that telehealth is associated with lower mortality and emergency admission rates than usual care ([March 2013 issue of Eyes on Evidence](#)), but may not be cost effective ([Henderson et al. 2013](#)).

The Department of Health recently launched the '[3millionlives](#)' campaign to work with industry, the NHS, social care and professional partners to promote widespread adoption of telehealth and telecare. It is estimated that at least 3 million people with long-term conditions, social care needs or both could benefit from using telehealth and telecare.

**New evidence:** In their randomised controlled trial in Scotland, [Pinnock et al. \(2013\)](#) assigned patients with COPD to telehealth (n=128) or self-monitoring (n=128). People in the telehealth group were provided with a touch screen to record daily symptoms and treatment use, and their oxygen saturation was monitored using linked instruments. Both groups received similar care from existing clinical services.

During 1 year of follow-up, the likelihood of hospital admission for COPD exacerbation was similar in the telehealth group and in the self-monitoring group (adjusted hazard ratio=0.98, 95% confidence interval 0.66 to 1.44). In addition, telehealth patients had a similar number of hospital admissions as self-monitoring patients (1.2 admissions per person, standard deviation [SD] 1.9, versus 1.1 admissions per person, SD 1.6, p=0.59). The intervention made no significant difference to health-related quality of life in the telehealth group, but was associated with a high number of contacts with the healthcare teams (both in response to alerts from telehealth monitoring and in contacts not related to alerts).

The authors concluded that telehealth was not effective in reducing admissions among people with COPD, and suggested that the beneficial effect of telehealth reported in previous trials could be due



to enhancement of the underpinning clinical service rather than the telehealth programme itself. However, they cautioned that the confidence interval for hospital admission in their study was wide. As such, they could not rule out the possibility of a clinically meaningful effect of telehealth that was smaller than their study was powered to detect.

**Commentary:** “If you had asked GPs 20 years ago whether they would consider telephone triage of their patients, they would invariably have said no. Yet today this is regular practice in most GP surgeries. With the rise in the number of people with 1 or more chronic conditions, telehealth may one day become accepted practice in primary care. The only questions are when, how and with what level of clinical trial evidence to support its introduction.

“The trial of telemonitoring for managing people with COPD carried out by Pinnock et al. (2013) adds to the evidence that first-generation telehealth technology grafted onto existing clinical services has no positive effect on patient outcomes. This is not entirely surprising: first-generation telehealth systems such as the one used in this Scottish trial rely on dedicated equipment. These devices require patients to make measurements using technology normally used in the hospital or the GP surgery, without any help or support to record accurate readings or interpret the data. Next-generation telehealth, if it is to be fully integrated into people’s lives and allow them to maintain health and wellbeing, will require modern digital platforms with easy-to-use software, including support for self-management.” – **Professor Lionel Tarassenko, Chair of Electrical Engineering, Institute of Biomedical Engineering, University of Oxford**

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