Telehealth can exploit modern technology to allow patients to manage their conditions at home, reducing the need for primary care and hospital visits.

**Effect of telehealth on acute and emergency care**

Telehealth uses a range of technologies to help people with health problems live more independently at home. Examples include equipment for people to self-measure blood pressure or blood–glucose levels, which can reduce primary care and unplanned hospital visits. Measurements are then electronically transmitted to a health professional.

Telehealth is a new development and may not be available on the NHS in all parts of the UK. However, one of the key ambitions of the Department of Health (2012) is the widespread use of modern technology to make health and care services more convenient, more accessible and more efficient.

To evaluate the benefits and effectiveness of telehealth and telecare services, the Whole System Demonstrator programme was established, including a large-scale randomised controlled trial involving more than 6,000 people across three sites in England (Cornwall, Kent and Newham), with the aim of providing a fully evaluated evidence base for telehealth and telecare. It focused on three conditions—diabetes, chronic obstructive pulmonary disease and coronary heart disease.

**New evidence**

The first of five analyses to be published from the Department of Health-commisioned Whole System Demonstrator programme assessed the impact of telehealth on hospital use by patients with long-term conditions (diabetes, COPD or heart failure) between May 2008 and November 2009 (Steventon et al, 2012). Patients were randomly split into two groups:

- **An intervention group of 1,570 people,** who were given devices and taught how to monitor their condition at home and transmit the data to health professionals; and
- **A control group of 1,584 people,** who received usual care, excluding telehealth.

Patients can measure blood–glucose levels at home and send the results to clinicians.

The results showed that 43% of people in the intervention group were admitted to hospital during the study period compared with 48% of patients in the control group. Of the intervention group, 5% died compared with 8% of controls.

There were also statistically significant differences in the mean number of emergency hospital admissions per head (0.54 for patients in the intervention group compared with 0.68 for those in the control group) and the mean hospital stay per head (4.87 days for patients in the intervention group compared with 5.68 days for those in the control group).

Other measures of hospital use (elective admissions, outpatient attendances and emergency department visits) were not significantly different between the groups, nor were the differences in notional hospital costs.

The researchers concluded the lower mortality observed in the intervention group is an important motivator to invest in telehealth interventions. They added it would be important for local practitioners to assess whether telehealth gave greater benefits to particular patient groups.

Further analyses from the Whole System Demonstrator programme should enable wider discussion about how telehealth affects quality of life and cost-effectiveness, as well as the patient, professional and organisation factors related to implementation.

**Adapted from** Eyes on Evidence (March 2013), a bulletin produced by the National Institute for Health and Care Excellence (tinyurl.com/EyesEvidence). Reproduced with permission.

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**References**


**BOX 1. COMMENTARY**

While the use of telehealth is associated with lower mortality and emergency admission rates, as found in this trial, it should be noted that the chosen telehealth devices and monitoring systems varied and its analysis was restricted to comparative use of inpatient, outpatient and emergency-department hospital use and mortality.

Where selection bias is concerned, the blinding of recruiters could not be guaranteed. The one-year follow-up might raise a question of its adequacy to measure the impact of this sort of intervention. None the less, the main message from this study is how the need for emergency hospital care can be avoided by using telehealth. As the researchers indicated, “the mechanism for this is not yet clear; further analyses will be required to provide a better understanding”.

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