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## Cochrane systematic review

## Telemonitoring or structured telephone support for people with chronic heart failure reduces CHF-related hospital admissions; telemonitoring also reduces all-cause mortality

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Commentary on: **Inglis SC**, Clark RA, McAlister FA, *et al*. Structured telephone support or telemonitoring programmes for patients with chronic heart failure. *Cochrane Database Syst Rev* 2010;**8**:CD007228.

### Disease management for patients with heart failure

Chronic heart failure is common. Management is complex, and patients require regular professional monitoring and follow-up as well as support for self-care. There is good evidence for disease-management programmes through home or clinic visits,<sup>1</sup> and such programmes are recommended in international guidelines.<sup>2</sup> However, heart failure predominately affects the older people, and their limited mobility and lack of social support may make hospital clinic attendance problematic. Home visits may bridge this gap but are costly in terms of travel time for the health professional thus limiting the case load that a specialist heart failure nurse can take on. This has led to an interest in remote patient monitoring and the need to establish its benefit more clearly.<sup>3</sup>

### The evidence for remote patient monitoring

Inglis and colleagues provide such evidence through reporting the results of a rigorously conducted meta-analysis of remote patient monitoring through telephone support or telemonitoring. They combined the results from 25 published studies and over 8000 patients to report a statistically significant reduction in mortality with telemonitoring (RR 0.66,  $p < 0.0001$ ) and a non-significant trend to a reduction in mortality with telephone support (RR 0.88,  $p = 0.08$ ). They also report benefit in terms of hospital readmission, albeit with less impressive effect sizes.

### The purpose of remote monitoring

The review set out to test the primary outcome of the effect of remote monitoring on all-cause mortality. Secondary outcomes included length of hospital stay and health-related quality of life. However, the analysis of

such outcomes was limited as fewer studies have reported on them, despite being potentially more meaningful patient-centred outcome measures.

Remote patient monitoring may also provide patient benefit through a reduction in outpatient or primary care visits. It may lead to a greater number of patients being optimised on target doses of heart failure medication and may prompt patients to take their medications and so assist adherence with complex medication regimes. These outcomes are less easily tested in a randomised study design but would provide useful information to guide health service developments.

### Who is best suited to remote monitoring?

Consistent with much of the evidence for the management of heart failure, many studies only recruited patients with left ventricular systolic dysfunction. Such patients are on average at least ten years younger than the general heart failure population. As more older patients are likely to have heart failure with preserved left ventricular function,<sup>4</sup> this review largely relates to a subsection of the heart failure patient population.

In addition, the review provides evidence for the effectiveness of remote monitoring in a motivated population of patients who have agreed to participate in randomised trials. A variety of reasons are likely to explain why patients adopt healthcare technology, and future studies should address such issues as well as exploring why patients may not embrace technology.

### Implications for clinical practice

The review by Inglis and colleagues has demonstrated that remote monitoring can provide patient benefit. As such it should be offered alongside home and clinic visits

so that the different approaches can be matched to the clinical circumstances and needs of the patient. However, remote monitoring changes the traditional organisation of healthcare, and the speed with which it is adopted may be influenced by the way in which it 'fits' within existing organisational structures and professional practices and by the attitudes of professionals and patients.

Competing interests None.

#### References

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