

Is telemedicine an effective and accepted means of improving the provision of palliative care to rural Scotland? A systematic literature review

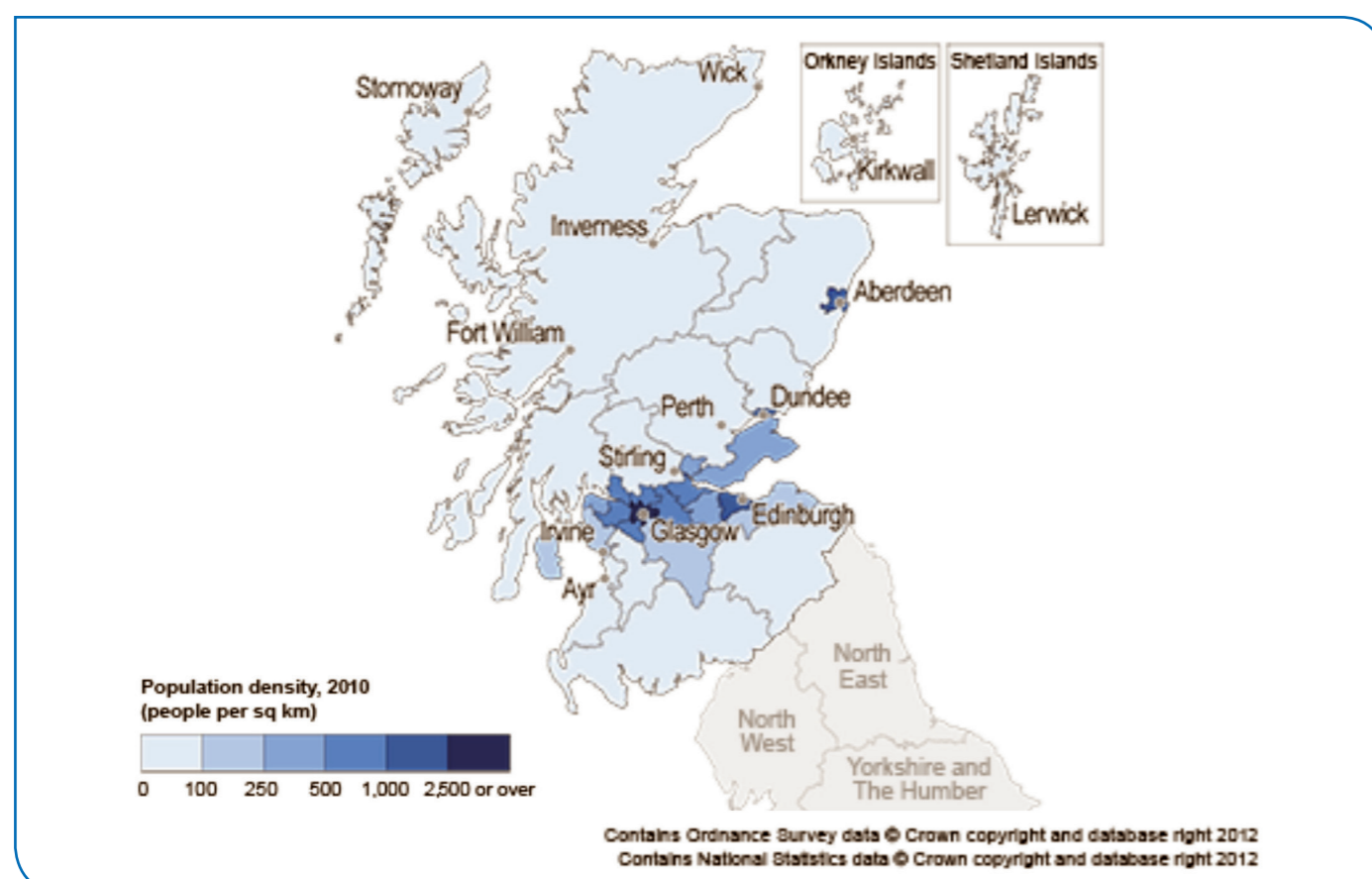
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Introduction

Disparities have been found in palliative care delivery across urban and rural populations, including Scotland, which has 18% of its population dispersed across 94% of the country's landmass¹ (Figure 1). Barriers include poor user accessibility, limited capacity of staff to reach these individuals and limited specialist training for rural primary healthcare providers². Telemedicine may provide a solution.

Figure 1: Scotland – population density.



BOX 1: Telemedicine: The use of advanced telecommunication technologies to exchange health information and provide health care services across geographical, time, social and cultural barriers³.

Aims

- 1) To identify the use of telemedicine interventions within palliative care in rural settings
- 2) To assess their effectiveness, and
- 3) To identify provider and user acceptability of these interventions, in order to inform and guide palliative care service development in rural areas in Scotland.

Method

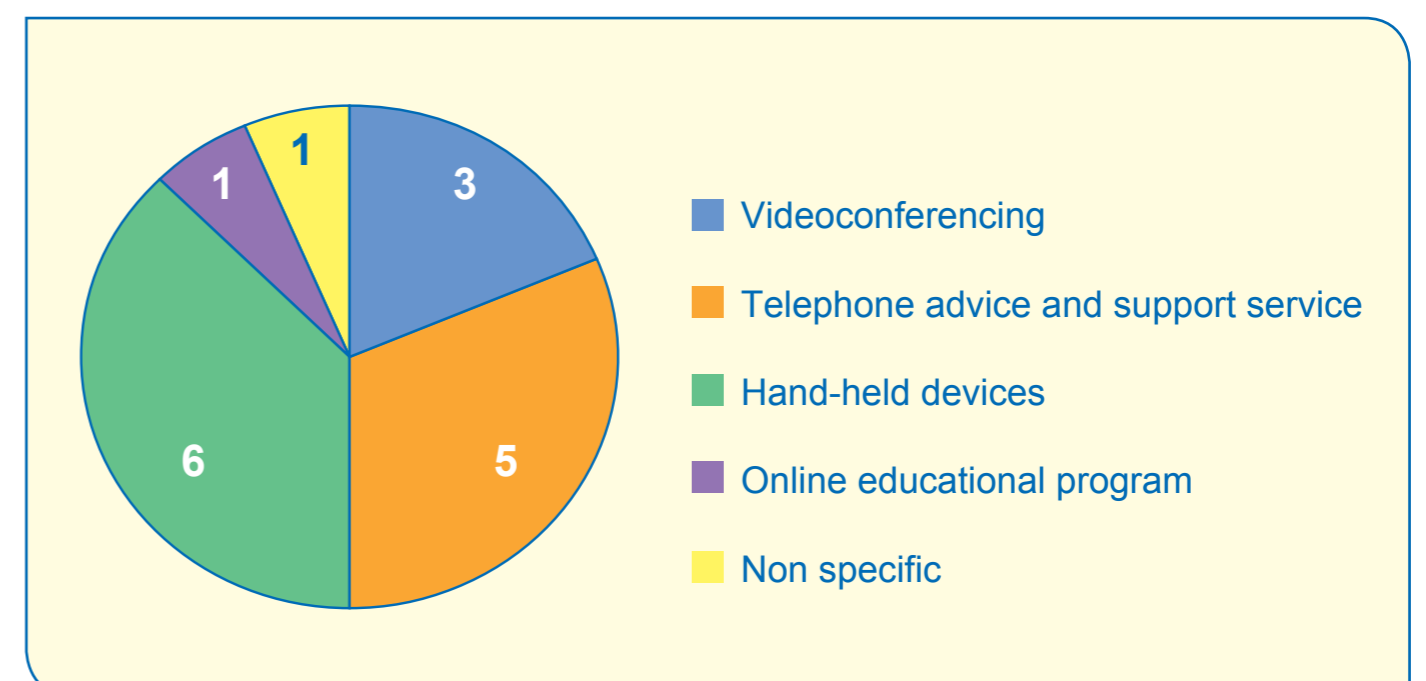
A systematic review of the literature was undertaken. In March 2014 four databases were searched for relevant articles. Sixteen papers were included in the final review.

Results

Use of Telemedicine Interventions

A variety of applications have been used (Figure 2), particularly out-of-hours specialist telephone services providing advice and reassurance for both professionals and patients. Videoconferencing has enabled networking, consultations and MDT meetings, facilitating the presence and participation of family caregivers, and along with online educational programs, have provided means of education. Handheld devices have also enabled rural patients to monitor symptoms and access emergency advice from home, whilst enabling staff to provide consultations.

Figure 2: Frequency of interventions used in studies reviewed (N = 16).



The Effectiveness of Telemedicine Interventions

Telemedicine in general has been found to:

- Improve communication.
- Make more effective use of time and resources.
- Improve accessibility.
- Encourage patients involvement in their care.
- Empower staff and patients.
- Reduce costs, travel time and psychological burden of travelling.
- Provide support and reduce isolation.
- Assess and meet educational needs.

Acceptability of Telemedicine Interventions

Great enthusiasm was reported throughout and interventions were perceived to be helpful, useful and convenient, ultimately enabling patients to stay at home. Usability and quality of interventions were found to be important factors.

Telemedicine in Rural Scotland

In a qualitative assessment of users' perceptions, there was a greater perceived need for, and value in, telemedicine across rural areas in comparison to the central belt. With this greater perceived need, there has been greater investment into national and local policy leading to higher telemedicine activity in these rural areas. However, there needs to be rigorous evaluation of these findings.

Conclusions

Telemedicine appears to be an effective and acceptable method of augmenting palliative care delivery to rural settings. However, there is a lack of evidence to support its use besides users' subjective perceptions, and few studies have formally assessed their clinical effectiveness and cost-effectiveness. Future research needs to move from qualitative and descriptive studies to well-designed interventions of specific telemedicine applications and their implementation for palliative care in rural areas.

