The use and benefits of teleoncology


CRD summary
This review concluded that there were possibilities for developing services using internet-, telephone- and video-based applications for adult cancer patients and their families in rural areas. This was a generally well-conducted review, but the reliability of the conclusions will be limited by the methodological quality of the included studies. In addition, the studies were not specifically aimed at rural populations.

Authors' objectives
To evaluate the clinical and cost effectiveness of teleoncology applications for adult cancer patients and their families.

Searching
PubMed, EMBASE, PsycINFO, CINAHL, BIOSIS Previews, Web of Science, AETMIS (Agence d'évaluation des technologies et des modes d'intervention en santé), AHRQ (Agency for Healthcare Research and Quality), AHFMR HTA unit (Health Technology Assessment unit at the Alberta Heritage Foundation for Medical Research), BCOHTA (British Columbia Office of Health Technology Assessment), CCOHTA (Canadian Coordinating Office for Health Technology Assessment), CHEPA (Centre for Health Economics and Policy Analysis), Inspec, Centre for Health Economics Research and Evaluation, DARE, NHS EED, HTA database, The Cochrane Library, Google Scholar, Health Data Management, Health Management Technology, Institute for Clinical Evaluative Sciences, Institute of Health Economics, National Cancer Institute, National Guideline Clearing House, Oncology net guide, The Technology Assessment Unit of the McGill University Health Centre, Telemedicine Information Exchange and a number of relevant journals were used to identify English language studies. Search terms and dates were reported.

Study selection
Any quantitative clinical study with 10 participants or more, qualitative studies of any size or economic studies that evaluated the benefit of teleoncology applications specifically for adult cancer sufferers and their families regardless of the type of cancer or stage of the patient within the process (screening through to palliative care) was eligible for inclusion. Applications designed for smoking cessation, healthcare professional education, genetic counselling, study recruitment, website evaluation or usage, measuring healthcare provider's satisfaction or to assess the feasibility of technology were excluded. Included studies evaluated internet-, telephone- or video-based interventions. Most of the included studies were of psychosocial and supportive care. Studies of prevention, screening, diagnosis and treatment and palliative care were also retrieved.

Two independent reviewers selected studies. Disagreements were resolved by discussion.

Assessment of study quality
Quantitative studies were scored on adequacy of patient selection, description of interventions, specification and analysis, patient disposal and outcomes reported. An additional score was given according to the study design. Qualitative studies were assessed in relation to the research question and design, sampling, data collection and analysis, and results. Two independent reviewers performed the quality assessment. Disagreements were resolved by discussion.

Data extraction
The authors stated neither how data were extracted for the review nor how many reviewers performed the data extraction.

Methods of synthesis
The studies were combined in a narrative synthesis. Differences between studies were discussed in the text and study details tabulated.

Results of the review
The review included 32 quantitative, eight qualitative and two mixed-method clinical studies, eight economic studies and two satisfaction studies.

Of the 40 single-method clinical studies, 15 were randomised controlled trials (RCTs), six were prospective controlled, one was retrospective controlled and 10 uncontrolled, three were case studies, three phenomenology, one ethnography and one grounded theory. The interventions evaluated were internet- or web-based (17 studies), telephone-based (22 studies) or video-based (three studies). Of the 42 clinical studies, 18 were considered good quality (four with some uncertainty).

Overall, 26 clinical studies reported benefits of teleoncology: 15 in psychosocial and supportive care; seven in diagnosis and treatment; two in palliative care; and one each in prevention and screening. Eight reported no benefits: five in psychosocial and supportive care; two in prevention; and one in screening. The benefit was unclear for the remaining eight studies: six in psychosocial and supportive care; and one each in diagnosis/treatment and palliative care.

Cost information
Of the eight economic studies, six were of video-based interventions and one telephone-based and one internet- or web-based intervention. These studies showed mixed results, with some indications of cost advantages through technology in specific situations.

Authors' conclusions
The literature suggested some useful possibilities for developing new services using internet- or web-based, telephone-based and video-based applications for cancer patients in rural areas.

CRD commentary
The review addressed a clear question, with well-defined inclusion criteria. The search was extensive, but only English-language studies were included, so there was a risk of language bias. Study selection and validity assessment were conducted in duplicate, but it was unclear whether the same measures were taken to reduce errors during data extraction. The studies were combined in a narrative synthesis, which seemed appropriate given the clinical heterogeneity between the studies. Most of the included studies were of fair to poor quality. The included studies were not specifically targeted to populations in rural areas, although the main conclusion was related to this population. This was generally a well-conducted review, but the reliability of the conclusions will be limited by the methodological quality of the included studies.

Implications of the review for practice and research
Practice: The authors did not state implications for practice.

Research: The authors stated that there was a requirement for the validation of any web-based, telephone-based or video-based applications in suitable local studies.

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Record Status
This is a critical abstract of a systematic review that meets the criteria for inclusion on DARE. Each critical abstract contains a brief summary of the review methods, results and conclusions followed by a detailed critical assessment on the reliability of the review and the conclusions drawn.