

Video-conferencing: under-used by rural general practitioners

ANSKE ROBINSON

Anske Robinson is a research assistant and PhD candidate at the Monash University School of Rural Health.

Abstract

The objective was to investigate the use of and value General Practitioners place on video-conferencing as a tool in providing rural health care. The participants were 8 rural general practitioners in rural Victoria towns. I found that six out of the eight GPs did not value video-conferencing as a tool to assist with patient care, and the other two GPs were interested in the technology only for certain aspects of support with patient consultations and continuing education. I conclude that there needs to be a review of whether video-conferencing equipment should continue to be implemented in the same way that it has been so far in Victoria, and of the cost-effectiveness of providing video-conferencing facilities in rural health services. In particular, there needs to be a review of whether more training and support for rural general practitioners is needed to increase the uptake of video-conferencing. Alternatively, analysis can be undertaken of the intrinsic value of using video-conferencing as an interactive tool for obtaining specialist support for patient care or undertaking continuing education via video-conferencing, and the program discontinued if it is found to be unwarranted.

Background

Access to 'good' health services is one of the biggest concerns for rural people in Australia, and rural general practitioners are key providers with their multiple roles of 'healer, carer, counsellor and friend' (Humphreys et al, 1997). Telehealth, and in particular video-conferencing, is perceived as a means of assisting rural general practitioners with providing support and care for their patients through enabling access to specialists and support services. It is also perceived as a means of overcoming some of the problems of geographical isolation through the provision of continuing medical education. General practitioners in rural areas in Australia are being encouraged to make use of the technology by computer enthusiasts in the medical profession, and by the Australian federal government (O'Connor et al, 2000; Richards et al, 1999).

Many pilot studies and trials have been carried out over the last ten years into the feasibility and effectiveness of using video-conferencing, often referred to under the banner of telemedicine, or telehealth. Within the literature, both the terms telehealth and telemedicine are used, with telehealth becoming preferred as a more inclusive and less medically focused term than telemedicine (Hornsby et al, 2000). One of the earliest definitions of telemedicine was 'telecommunications that connect a patient and a health care provider through live, two-way audio, two-way video transmission across distances that permit effective diagnosis, treatment and other health care activities' (Preston et al, 1992). Now, telemedicine or telehealth is more broadly defined as 'the use of information and advanced technologies for the effective delivery of health care at a distance' (O'Connor et al, 2000).

In Australia in 1996 there were 49 active Telemedicine Projects being tested that focussed on the use of video-conferencing to overcome problems of medical access and isolation (Togno et al, 1996). Projects such as these, and others in Australia and overseas (O'Connor et al, 2000; Sen Gupta et al, 1998; Wootton, 1996), provided outcomes that indicated video-conferencing can be an effective solution to problems of access to medical services for rural people. As a result, committees and organisations have been formed to oversee its development both in Australia and overseas.

While much has been written about the costs and effectiveness of video-conferencing for patient consultations and continuing education, I am not aware of studies on the perceptions rural general practitioners have of the value and usefulness of video-conferencing in supporting patient care in Australia. A study in Missouri (Campbell et al, 2001) found that rural GPs rarely participated in video-conferencing consultations between patients and specialists in a university's tertiary care centre. Interviews revealed concerns about the intrusion of larger centres into the care provided by the rural doctors (physicians and specialists were not delineated), and the reliability of the video-conferencing information. However, information provided from the study broadly covered telemedicine technology and provided little information on whether e-mail, Internet resources, video-conferencing or other areas of telehealth were the main concern of the physicians.

In light of the developments in the provision of telehealth, including video-conferencing, the growing availability of information technology in rural practices and health services, and the pressure on rural general practitioners to expand their use of information technology, a study was conducted in Victoria, Australia, into how information technology might change rural medical practice. Included in the investigation was whether information technology might assist in maintaining or improving rural health care services by rural GPs.

The perceptions of the eight rural GPs on the benefits and capacity of video-conferencing to improve rural health care were part of the investigation, and are the focus of this paper.

Methods

Eight interviews were conducted with rural GPs. Interviewees were selected randomly from rural towns both east and west of Melbourne in Victoria. Overall, sixteen practices that used information technology within their surgeries were invited to be interviewed. Seven agreed, and nine declined. In one practice two GPs were interviewed. Reasons for declining included participation in the study did not contribute to Continuing Medical Education points or involve payment, and the workload of the GPs was high. A gender balance was attempted, which resulted in one female participant to the east of Melbourne and one to the west, to give a ratio of one in four which corresponds with the proportion of one in four female GPs practising in rural areas identified in the BEACH report (Britt et al, 2001).

Rurality of those interviewed, according to the classification used in RRMA (Department of Primary Industries and Energy, 1994), places them in the 'other rural' category, apart from a larger town which RRMA categorises as a 'small rural centre'. The towns ranged between 89km and 518km from Melbourne with populations of 18,993 for the largest town, and ranging from 9,790 to less than 4,000 for the remaining six (Health Services Profiles for Victorian Rural Regions, 2001).

Interviews were conducted in person using semi-structured questionnaires, in which a basic set of questions was asked. Replies were followed up to provide more in-depth information. The wording that framed the question about video-conferencing was:

Do you use video-conferencing? How does it work for you? Issues of concern?

The interviews were taped and transcribed for analysis.

Results

The interviews revealed that video-conferencing was an under-used resource. One of the eight GPs had not used it at all, and all of the other seven had used it and had access to it through a health service within the town. The video-conferencing had been tried for participating in professional meetings, patient consultations, and continuing education. However, only two felt that it was a useful resource and continued to make use of it.

Professional meetings

Three of the GPs had participated in video-conferencing in order to participate in meetings with colleagues, but only one of the three commented positively, stating that he felt video-conferencing was useful and reduced the inconvenience of travel.

Patient consultations

Overall, despite video-conferencing facilities being available in the nearby health service facilities, the GPs showed little interest. Only one of the GPs found video-conferencing useful for some consultations. This GP had used it for specialist support for patient consultations, and diagnostic support for x-rays. It was mentioned in particular that it was good to have the specialist support when working in an isolated location and concerns arose about a patient's treatment and diagnosis. One other GP felt that the concept of using video-conferencing for support for patient care was good, but the need for advance planning and organization made the technology difficult to use, and was the main reason that it remained unused most of the time. For this GP, much of medical practice time was spent dealing with acute issues that left little time for anything else. The lack of interest in the use of the video-conferencing for patient care by the other GPs was also related to the time and organization needed to set it up, but some of the GPs mentioned a preference for the immediacy of the support available through using the telephone. One GP in particular, focusing on psychiatry, was very concerned about the ability to pick up the nuances and subtleties that are given in the consultations.

Continuing education

Only two of the GPs had used video-conferencing for continuing education. One spoke of using video-conferencing for teaching purposes, but did not provide further information. The other had attended a satellite broadcast only once, but felt that it was not useful and did not attend again.

Discussion

Overall, of these eight GPs, seven had good knowledge of video-conferencing and were aware of its uses and capabilities, and only one appeared to have had no experience of it at all. However, there was little interest in increasing their use of it. In these circumstances, there should be some consideration of the needs of rural general practitioners in Victoria and Australia for video-conferencing facilities. Issues to be considered include the support and training needs, the intrinsic value of the technology, and the cost-effectiveness of its use.

Information technology training and support

One of the major issues raised by all the GPs was the need for support in terms of education and training in the use of information technology. All had difficulty in accessing information technology support in their rural towns. Half the GPs were able to fill this need through staff that had developed a good level of information technology knowledge and or their Divisions of General Practice. If the implementation of video-conferencing is to continue, this issue needs to be addressed. Those GPs who had good support and advice available were much more competent and interested users of the technologies.

The Federal Government in collaboration with the General Practice Computing Group funded a number of General Practice Information Management and Technology Projects in 2000-01, but much more training and support is needed. In supporting the rural GPs the agencies that have been implementing the use of video-conferencing in health care facilities may need to consider the processes in place to support their implementation.

Intrinsic value of video-conferencing

The intrinsic value of using video-conferencing as a resource for assisting rural GPs to undertake patient care needs to be questioned. The aim of a video-conferencing consultation is to imitate the benefits of a face-to-face consultation and to provide the immediacy of interaction that a conventional GP patient consultation provides. However, many of the cases for which those GPs in favour of the technology thought it useful do not require face-to-face consultation between the specialist and patients. X-rays are taken by the GP and store and forward technology enables the specialist to view the x-rays at their own location and make a diagnosis. No face-to-face interaction is required between the specialist and patient. The specialist as a support resource for the GP is the important factor in making the diagnosis, and after viewing the x-ray this specialist support can be provided through the telephone in a much cheaper and simpler process than video-conferencing. As several of the GPs indicated, they prefer to obtain the further support from specialists via the telephone. Telephone support can be much more immediate and convenient, and is much less time-consuming than setting up a video-conference.

Cost effectiveness of video-conferencing

Although the costs of implementing video-conferencing have fallen over the last ten years, equipping all regional health services is expensive. Four years ago the cost of the equipment was \$70,000. Currently the cost of equipping a health service with a video-conferencing facility is approximately \$15,000 plus connection costs, and annual rental of approximately \$1,000 per 128kbps for an Integrated Systems Digital Network line. There are also on-going line costs of \$40-\$70 per month, plus communication charges based on usage time and distance. The Federal Government meets the cost of the equipment, while the health service meets the line rental and usage costs. When these amounts are multiplied as the infrastructure is extended to facilities in health services in rural towns across Australia, and upgraded as the technology develops, the cost becomes significant. If such video-conferencing systems around Australia remain for the most part idle, there is a need for a review of the cost-effectiveness of this technology. Rural areas are in desperate need of resources, both human and capital, and it may be that the funding currently directed towards their implementation and use is better spent elsewhere.

This study of eight rural general practitioners in Victoria revealed that video-conferencing is not valued as a resource to assist with patient care. The interviews raised issues relating to the lack of interest of the GPs. As a result consideration needs to be given as to its value in rural health care, and how best to ensure that video-conferencing is used effectively where it is implemented. Issues that were not raised by the GPs and may also need to be considered when further investigating the use of video-conferencing for rural health care are the lack of availability of the Medicare Benefits Schedule for video-conferencing consultations, and medico-legal issues. A well-used high quality video-conferencing system could be of great value in rural health care in supporting GPs to improve access to patient care in rural areas.

Acknowledgements

Thank you to Dr Simon Cooper from Monash University, Department of Humanities, Communications and Social Science, for guidance and support in conducting this study.

References

- Britt H, Miller GC & Valenti L 2001, *'It's different in the bush': A comparison of general practice activity in metropolitan and rural areas of Victoria 1998-2000*. AIHW Cat. No. GEP 6. Canberra: Australian Institute of Health and Welfare (General Practice Series No. 6).
- Campbell JD, Harris KD & Hodge R 2001, 'Introducing telemedicine technology to rural physicians and settings,' *Journal of Family Practice*, vol 50 no 5, pp 419-424.
- Department of Primary Industries and Energy & Department of Human Services and Health 1994, *Rural, Remote and Metropolitan Area Classification 1991 Census Edition*. Canberra: Australian Government Publishing Service.
- Health Service Profiles for Victorian Rural Regions - Echidna 2001*, [Cited 25/9/2001] URL: <http://www.med.monash.edu.au/mrh/resources/echidna/index.html>
- Hornsby D & Fitzpatrick L 2000, 'Telehealth: not just talking heads,' in *Infront Outback, 5th Biennial Australian Rural and Remote Health Scientific Conference* - 24-26 February (pp 189-194), Toowoomba, Qld: Cunningham Centre.
- Humphreys JS, Mathews-Cowey S & Weinand HC 1997, 'Factors in accessibility of general practice in rural Australia,' *MJA*, vol 166 no 11, pp 577-580.
- O'Connor D, Peterson C & Whitfield J 2000, 'Telehealth: what does it offer for public health care?' *Australian Family Physician*, vol 29 no 5, pp 403-404.
- Preston J, Brown FW & Hartley B 1992, 'Using telemedicine to improve health care in distant areas,' *Hospital & Community Psychiatry*, vol 43 no 1, pp 25-32.
- Richards B, Bolton P, Veale B & Quinlan F 1999, *Information technology in general practice*. Canberra: Commonwealth Department of Health and Aged Care.

Sen Gupta TK, Wallace DA, Clark SL & Bannan G 1998, 'Video-conferencing: practical advice on implementation,' *Australian Journal of Rural Health*, vol 6 no 1, pp 2-4.

Togno J, Ash A & Mitchell J 1996, 'Australian Telemedicine: Gearing up down under,' *Telemedicine Today*, Nov/Dec, pp. 42-43.

Wootton R 1996, 'Telemedicine: a cautious welcome,' *BMJ*, vol 313 no 7069, pp 1375-1377.