

Introduction

D. Lynne Madden^{A,B} and Carlie-Jane Naylor^A

^APublic Health Training and Development Branch,
NSW Department of Health

^BAustralasian Faculty of Public Health Medicine,
Royal Australasian College of Physicians

Population health workers already use various communication techniques in their work. However, there are opportunities for increased application of these techniques for the delivery of population health functions. The NSW Telehealth Network provides access to an extensive network of facilities across NSW. The changes in 2005 to the organisation of NSW Health, with fewer, larger area health services, create an additional incentive for developing the capacity of the population health workforce to use this network to link geographically dispersed workers.

The three studies presented in this supplement of the *NSW Public Health Bulletin* were undertaken in 2004–2005 to explore the use of communication technology in population health work. The studies were informed by a review of the literature, both for the application of communication technology to the delivery of education and training and for population health work. The studies are:

1. *Use of communication technology by a sample of public health professionals in NSW* – a survey of the current use of communication techniques by population health workers.
2. *Pilot of using a web and teleconference for the delivery of an Epi Info training session to public health units in New South Wales, 2005* – in which the delivery of a learning session to multiple sites using a combination of communication techniques is described.
3. *The re-evaluation of the use of videoconferencing to deliver Bug Breakfast, December 2004* – which examines changes made to improve the quality of the videoconferencing learning environment following an earlier evaluation in 2002.

This introduction briefly summarises the findings of each study and presents the overall lessons that emerged.

Survey of current use

This study provided a snapshot of the current use of six communication techniques by a small sample of the population health workforce in NSW.

All 12 participants used teleconferencing and most had used videoconferencing. Only a few had used the other modalities that were enquired after: web bulletin boards, web conferencing, media streaming and satellite television. Continuing professional development activities, conducting meetings and collaboration were common uses.

Enabling factors that helped participants to engage with these techniques were: ease of access to facilities, assistance to organise and set up the technology, situations where use of a technique provided efficient and effective use of time, and where the technique suited the purpose. Barriers to use were: difficulty accessing the equipment, difficulty setting up and operating the equipment and the perceived cost.

These findings provide an insight into how these techniques are being used across a broad range of population health practices. The techniques provide equity of access to training opportunities and reduce the time spent travelling to meetings. With the amalgamation of area health services, half the participants felt that it was likely that they would spend more time travelling for work. Although participants indicated that these techniques should not be used to the exclusion of face-to-face participation in events, they agreed that they provide options when this is not feasible.

Using a combination of web conferencing and teleconferencing to deliver training

This study evaluated the utility of web conferencing supported by a teleconference to deliver a learning session in Epi Info 3.3. While both the efficacy of the Epi Info training and the medium of delivery were evaluated, the report focuses on the evaluation of the communication techniques used for delivery.

The trainers were based at the NSW Department of Health in North Sydney and the session was delivered via web conference and teleconference to three public health units. This combination of techniques allowed for active conversation and voice instruction as participants shared the computer that was connected to the web conference.

Participants liked receiving training at their worksite and not needing to travel. They liked training that included completing practical exercises with their colleagues. They did not like the technical difficulties experienced, such as the poor sound quality through the teleconference and the disconnections of the web conference.

Although training activities can be delivered using these techniques, the technical difficulties need to be clarified and addressed to ensure that participants receive a good quality experience. The combination of web and teleconferencing provides a different interactive learning environment than through videoconferencing alone; however, the session must be tailored for delivery through these media.

Evaluating the use of videoconferencing to deliver Bug Breakfast

Since 1999, Bug Breakfast has been delivered to rural and remote audiences through videoconferencing. In 2002, the delivery was evaluated to determine the quality of the learning environment at both the 'live' site and the 'remote' sites. The findings highlighted consistent problems with the quality of the sound and picture for the remote audience, and at North Sydney the growing audience could no longer be comfortably accommodated. A series of recommendations to improve the delivery were made and these were systematically implemented. In 2004, the delivery was re-evaluated to assess the effect of the changes.

The evaluation demonstrated that the quality of the learning environments in which Bug Breakfast is delivered each month had improved. The facilities at North Sydney were considered satisfactory by almost the entire live audience. The quality of the picture and sound had improved for the remote audiences.

The public health workforce in NSW value access to Bug Breakfast and in particular the 'live' delivery, which provides access to experts. Determined efforts to improve the quality of delivery has seen Bug Breakfast established as a model of delivery.

Lessons learnt

Here we present some of the lessons that emerged from the findings across the studies, in particular for the provision of continuing professional development activities and linking of population health networks. The studies demonstrate the potential to expand the role of communication techniques to support the delivery of population health functions, and population health workers were enthusiastic to explore these opportunities.

Current patterns of use

Teleconferencing and videoconferencing are both commonly used. Teleconferencing in particular has been integrated into practice. However, the results of applying teleconferencing to deliver a learning session found that the quality of the reception can be poor. Further, people observed that there are skills required to interact constructively through the teleconference medium and that these are not generally applied.

There is an extensive network of videoconferencing facilities available through the NSW Telehealth Network, but

many feel daunted by this technique. We found that people will use it when they can 'turn up and turn on'. They remain unsure how it can be applied effectively to their practice. However, they like it because, unlike teleconferencing, it provides a personal connection through a visual link.

The challenge is to assist the workforce to be efficient and effective users of teleconferencing and videoconferencing. Consideration should be given to the development of resources that would help ensure high quality interactions. For example, in response to interest from other groups in using the Bug Breakfast model to deliver training, the Division of Population Health has developed a *Bug Breakfast Delivery Manual*.^{1,2}

The other communication techniques explored in these studies were not commonly used.

Using communication technology to deliver learning sessions

Bug Breakfast has been delivered through videoconferencing for 9 years, demonstrating that it is possible to deliver regular professional development activities through this medium. Despite this experience, delivery is never fail-safe and, even with streamlined processes, it takes time and resources to provide a high quality session. Other forms of technology are now used to support the delivery of Bug Breakfast. For example, the Bug Breakfast website allows online registration of participating sites and access to the PowerPoint presentations; and the Bug Breakfast email account is a simple communication channel for participants who have enquiries.

Web conferencing, as a means of delivering training, seems to be particularly appropriate for training that is best received at the worksite. There are, however, information technology infrastructure issues that need to be explored before recommending the widespread use of web conferencing.

For a good quality episode of training through these media, significant preparation is required – more than for face-to-face delivery. The delivery of live sessions of training through videoconferencing requires the presenters to understand the limitations of the medium and to adapt their style of delivery.³ Similarly, when using web conferencing, the trainer is required to think very clearly about how they want participants to learn.

Expanding the application of communication technology

These studies have focused on the application of communication technologies to support workforce learning, develop workplace-based communities of learning and to maintain practice networks. There are, however, many

other potential applications including the implementation of policy, rapid disaster response and ensuring coordinated responses to events. The Morey Review of the Public Health Network in 2006 recognised that the network would rely increasingly on technology for communication and the risks posed if either the level of engagement or access to the technology was impaired (S. Morey, Review of the Public Health Network, 2006, unpublished data). The studies showed that the capacity of the population health workforce to engage with communication technology resources has been restricted by their knowledge of these and how and when they are best applied.

Conclusion

The potential for information and communication technologies to contribute to health is great.⁴ These three studies provide an evidence base for a communication strategy for the population health workforce in NSW. Clarifying the areas of population health work that are best supported by communication technology and the infrastructure required may encourage the integration of these forms of technology into practice. A strategy could also consider ways to link the population health workforce more closely with the ongoing information technology developments of NSW Health.

Summary

- There is opportunity for greater application of communication techniques to population health practice, in particular for workplace learning.
- To encourage uptake of these techniques they must be easy to use and free of technical disruptions.
- A communication technology strategy could facilitate the systematic uptake of these techniques by the population health workforce.
- Population health should be closely affiliated with the developments in information technology and telehealth to identify opportunities for application to practice.

References

1. Naylor C-J, Madden DL, Oong DJ. Use of communication technology among public health professionals in New South Wales, Australia. *N S W Public Health Bull* 2007; 18(1-2): 13-6.
2. Simpson D, Madden DL, Naylor CJ. Bug Breakfast Delivery Manual. Sydney: NSW Department of Health; 2007.
3. Birden H, Page S. Teaching by videoconferencing: a commentary on best practice for rural education in health professions. *Rural Remote Health* 2005; 5: 356.
4. Duckett SJ. Health workforce design for the 21st century. *Australian Health Review* 2005; 29(2): 201.