Distance learning in the public health workplace

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Abstract

The Master of Applied Epidemiology (MAE) Program implemented in Canberra to produce public health practitioners with specified competencies in the control of communicable diseases. Twenty one of the 24 months of training is distance learning defined as, 'where the learner is physically remote from the training institution'. During this time the trainees are in supervised employment in Public Health centres across the country. Here they learn directly from first hand experiences in the work place. They return to Canberra for short, intensive periods of interactive sessions with their peers and supervisors. Lessons learnt from conducting this program are discussed in this article. They include: all trainees are not suited to this form of training; the quality of support from the field supervisors is highly variable and their role in modelling crucial to the trainees performance; demands on the academic staff is high; and the frequency of contact between trainee and academic supervisor varies considerably. To date this program has made major contributions by enhancing communicable disease surveillance and control but it demands intensive resources to sustain, quality training, and support. This model of distance learning can be adapted in the Pacific both for graduate degree courses and also for continuing education for all levels of health professionals.

Introduction

The program for distance learning in the public health workplace in Australia was designed to meet specific needs. It aimed to produce a cadre of public health practitioners with knowledge, skills, and competencies in the surveillance and control of communicable diseases.

In 1987, the inaugural meeting of the Australian Epidemiological Association had described Australia's disease control activities as "fragmented, inadequate and poorly coordinated", and in need of reform. In 1991, Australia implemented a range of strategies to enhance the surveillance and control of communicable diseases. Central to these strategies was the inception of the Master of Applied Epidemiology (MAE) Program at the National Centre for Epidemiology and Population Health (NCEPH), Australian National University, Canberra. In the program, 21 of the 24-month training is conducted through distance learning. This is defined as learning where the learner is physically remote from the training institution.

The model for distance learning

The conventional model for graduate training in epidemiology and public health is based on coursework in university classrooms over a one or two year period, and may or may not incorporate fieldwork. The outcome for the student is the Master of Public Health (MPH) qualification.

Field-based training is an alternative model for training in epidemiology and public health. Field epidemiology is defined as the application of epidemiology in the workplace, and often calls for responses to unexpected public health problems. They may require immediate responses for which the epidemiologist may have to travel to solve the problem in the field. Training is based on the principle of 'learning-by-doing', and exemplifies the Chinese proverb: "I hear and I forget, I see and I remember, I do and I understand". Hence, the actual public health workplace itself becomes the trainee's classroom – the preferred context for learning the applications of epidemiology to public health.

This form of training has been adapted to meet public health training needs in many countries around the world, and has been labelled as the Field Epidemiology Training Program (FETP). The educational objectives of the program are competency-based, and trainees complete the major tasks over the two-year period, as shown in figure 1. The program was modelled on the highly successful Epidemiology Intelligence Service of the Centers for Disease Control in the USA.

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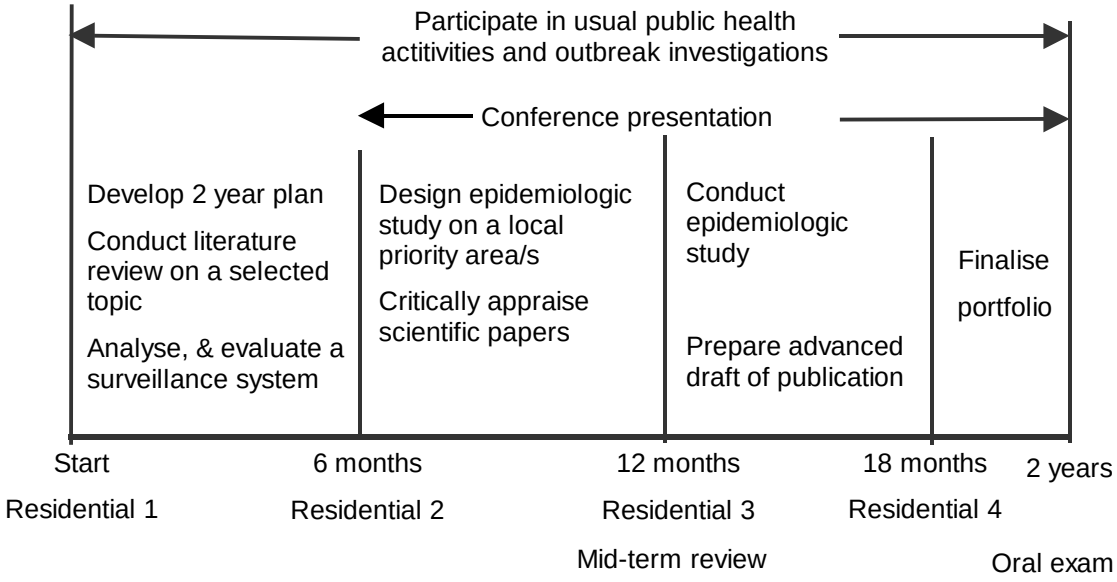
Figure 1 Major tasks for the two year program



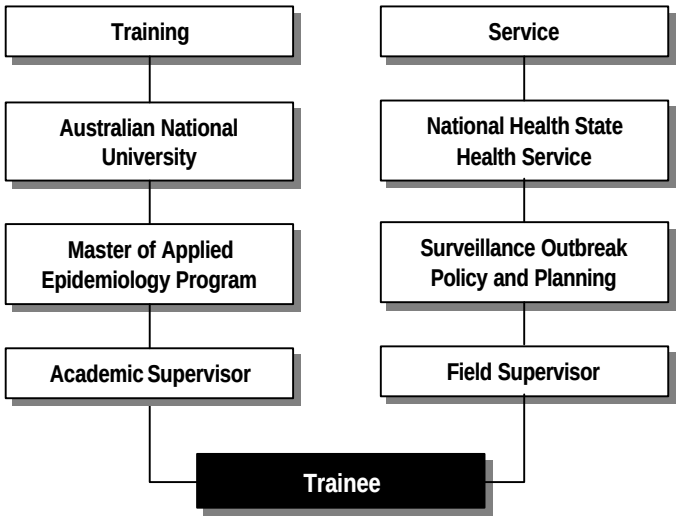
Linking training with service

In the Australian program, the training institution is based at the Australian National University in Canberra. Trainees are based in 7 to 8 State and Territory or major regional public health units across the country. Here, they learn from first hand public health experiences in day to day demands, and through the longer term challenges for the surveillance and control of communicable diseases. The program has been modified to address a wider range of contemporary public health problems in Australia. It was originally developed in close collaboration with the heads of the communicable disease units in the states and territories and at the national level, to ensure relevance to their program needs.

Each trainee has an academic supervisor based at NCEPH, and a local supervisor (or preceptor), who has usually been head of the communicable diseases section of the State/Territory or at the national level (figure 2). While they learn and improve their skills and competencies, trainees also contribute directly to the local public health activities. They learn about pragmatism and the art and science of balancing public health demands with the need for scholarly and scientific rigor.

Before trainees are selected into the program, potential placement sites around Australia are invited to submit a

Fig. 2. Linking training with service



description of the facilities and training opportunities they will provide for trainees. Although only 7 trainees can be accepted into the program each year, requests are received from up to 15 potential placement sites. This diversity in opportunities motivates placements to offer competitive facilities, opportunities and supervisory support. Trainees' qualifications, experiences and aspirations are then matched with what placements offer.

Trainees start the course with a four-week residential period, and return to Canberra at six monthly intervals for two to four week periods of seminars and workshops. Here, they 'charge-up' with new skills, and are given the opportunity and support to reflect and build on their field experiences through interactive sessions with peers and academic supervisors.

Over the first 6 months, teleconferences are scheduled at fortnightly intervals for the first 3 months and monthly thereafter. These teleconferences involve the trainee and both the local and academic supervisor. The objective is to support and assess the trainee's immediate plans and to continually evaluate ongoing projects. The academic supervisor makes at least one field visit per year to assess progress and to meet local supervisor and other support staff within the public health unit.

Unscheduled contact between trainee and academic supervisor varies from daily telephone contact during outbreak investigations, to email communications.

Collective problem-solving

Lessons-from-the field are virtual 'classes' prepared by trainees, and conducted by teleconference every month. Each trainee takes a turn to prepare an appropriate problem encountered at work, and emails it to colleagues. The latter return individually written answers, and these are debated on the day of the teleconference. Examples include the assessment and definition of a public health problem, such as estimating the incidence of hepatitis C from surveillance data, or resolving methodological difficulties in designing a study protocol. This form of problem-solving is also conducted face-to-face during the residential periods in Canberra.

Assessments

A formal written appraisal of performance against the educational objectives is conducted by the local and academic supervisors together with the trainee half-way through the course. This is to ensure that the support system is meeting the needs of the trainee, and also challenging the trainee's full-potential. Appropriate corrections for the level of training and support are then made and monitored.

At the end of the two-year program, the trainee submits a bound volume, which serves as a portfolio and scientific record of public health activities. In this manner, the trainee is expected to demonstrate mastery of the applications of epidemiology, and the capability for independent activity, responsibility and professionalism in the field. The oral examination is based on this portfolio. The work has to be done to a specified academic standard for a masters level qualification. Successful candidates are awarded the Master of Applied Epidemiology (MAE) qualification. In Australia, the MAE is considered to have similar, but more practical value than the MPH.

Outcomes

By 1997, a total of 52 students enrolled in the program. The median age at entry was 34 years (range 28-49 years). Medical graduates (including specialist physicians and paediatricians) and nurses accounted for 60% and 13% of all trainees respectively. Other trainees included veterinarians, microbiologists, and environmental health officers. At the time of enrolment, 12 trainees already had qualifications in public health (Graduate Diploma or Master in Public Health) and eight had a Doctorate in Philosophy (PhD).

While the program has met its major objectives in Australia, we continue to learn and adapt it to improve efficiencies, effectiveness and to refine educational objectives.

Lessons we have learnt

All trainees are not suited to this form of training; we are still experimenting with discriminatory criteria for selecting candidates who would be suited to distance learning.

The quality of the support from field supervisors is highly variable, and the role modelling and fieldwork opportunities they provide are crucial to the trainee's performance.

Trainees need continuous and highly structured support from the training institution and the workplace.

The demands on the academic staff are high; one staff member usually supervises 3 to 6 trainees, and has to balance this with the competing demands of an academic career.

Conclusion

The distance learning program has made major contributions by enhancing communicable disease surveillance and control in Australia. But it demands intensive resources to sustain quality training and support.

References

Available from the author on request. •