

Public health job vacancies — who wants what, where?

Arie Rotem, John C Dewdney, Nadine A Mallock and Tanya R Jochelson

Abstract

This paper presents a snapshot of job vacancies in the public health workforce labour market. The analysis is based on 404 advertised public health jobs appearing in the press, and on-line job alerts over a 2-month period in mid 2003. The analysis reveals who was seeking employees, what formal qualifications and competencies were required, what salary and other conditions of employment were offered and where the vacant jobs were located. The study demonstrates the heterogeneity of the public health workforce, which limits definition of clear practice boundaries and complicates workforce planning. The findings further demonstrate the benefit of reviewing both the demand and the supply side of the labour market, and point to the value of repeated surveys of advertised jobs as part of an ongoing public health workforce monitoring and planning process.

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MOST OF THE PUBLISHED STUDIES of health workforce training, planning activities and health labour market analysis are concerned with relatively well defined and identifiable categories of health service personnel such as doctors, nurses and dental practitioners.^{1–5} Rotem et al reviewed the education and training of the public health workforce in Australia.^{6,7} As part of this exercise, the authors faced the challenge of delineating the boundaries of the public health workforce. They defined the public health workforce as including:

Arie Rotem, PhD, FAIM, Professor
John C Dewdney, MD, SM, DPH, Visiting Fellow
Nadine A Mallock, BHI, MHI(DipInfoMed), Research Officer
Tanya R Jochelson, BSW (Hons) MPH, Research Officer

School of Public Health and Community Medicine, Faculty of Medicine, University of New South Wales, Sydney, NSW.

Correspondence: Professor Arie Rotem, School of Public Health and Community Medicine, Faculty of Medicine, University of New South Wales, Sydney, NSW 2052.
a.rotem@unsw.edu.au

What is known about the topic?

The public health workforce tends to be heterogeneous, which makes workforce planning difficult.

What does this study add?

During the study period in 2003, the largest group of public health job vacancies consisted of posts with substantial management responsibilities, followed by health promotion/health education officers, environmental health officers and community development officers, but with much lower frequency.

What are the implications for practice?

Further development of methods for monitoring the demand within the public health labour market is required. The findings of this study suggest a need to review the role, structure and content of formal education programs and, given the large number of management positions, to consider the appropriate place and format for the development of management skills.

People who are involved in protecting [promoting and/or restoring] the collective health of whole or specific populations (as distinct from activities directed to the care of individuals)⁶ (page 5).

Using this definition the researchers found a workforce composed of personnel from a wide range of professional/occupational backgrounds, mostly performing one major function but generally also involved in a number of other roles. They noted that each function required the exercise of some specific expertise, which was not always associated with the primary occupational designation or training of the staff employed. The Rotem et al study⁶ provided useful information regarding the training of and current activities being performed by the public health workforce and pointed to some deficiencies in training programs. It did not, however, directly address the question of how well the training met the specific requirements of employers.

Since this 1995 study, a number of attempts have been made to identify competencies necessary for the performance of rather broadly defined public health functions in Australia (see, for instance, Houghton et al⁸ and the Ontario Health Association report⁹). Although these efforts provided some assistance to designers of training programs,¹⁰ they did not provide a full indication of what employers were seeking. A review of projection methods for estimating demand for the public health workforce commissioned by the National Public Health Partnership (NPHP) identified similar difficulties.¹¹ The consultants attributed the definitional and classification difficulties associated with the public health workforce to the wide variety of occupational groups engaged in public health; the lack of clear boundaries between these professional categories; the absence of professional credentialing requirements; and the lack of formal public health training for most of the people working in this area. The consultants also noted the wide range of organisations contributing to public health services and the complexity and diversity in the range of initiatives covered by public health.¹¹

Previous studies of the public health workforce conducted in Australia and the United States have relied on surveys of students and graduates,^{6,12} surveys of employers,^{6,12} review of departmental personnel records¹³ and interviews with panels of experts.⁶ The present study attempts to record the labour market more accurately through study of the recruitment of personnel in the public health workforce. The paper presents a snapshot of the health workforce labour market, by examining a sample of advertised public health job vacancies in order to identify what employers were seeking.

The visit to the market

The study is based on a review of 508 public health job vacancy advertisements appearing in leading newspapers representing all states and territories of Australia, and the Public Health Association on-line job alerts during June and July 2003. The job vacancies identified focused primarily on public health practitioners who were

engaged in activities related to the protection (promoting and/or restoring) of the collective health of whole or specific populations (as distinct from activities directed to the care of individuals)⁶ (page 5). Job vacancies related to management and support services and academic positions in public health education and research for public health programs and services were also included. These vacancies were for people engaged in policy, planning, financial management, information technology and general management as well as coordination of public health programs and services. Job vacancies which focused primarily on clinical roles and care of individuals were outside the working definition of the public health workforce used in the study and were therefore not included.

The scanning process

Two researchers scanned hard copies of the employment sections of the main national and state newspapers covering the nominated study period. They identified job titles that matched the definition and photocopied them for further analysis. The researchers included a number of jobs that did not fully comply with the defined boundaries for further review by the entire team. Most of these jobs were excluded as they were primarily focused on clinical responsibilities.

Employers were asked to provide a detailed job description of the positions being advertised. Those who did not respond within 2 weeks were followed up by phone. This process was very time consuming but increased the response rate substantially. Of the 508 advertisements gathered, 430 detailed job descriptions were received, a response rate of 84.65%. There was no particular pattern observed among the 78 non-responders with regard to the type of employer (such as government, NGOs, etc.) and/or geographic location of posts (states and territories). The main reasons given for not participating in the study included concern about confidentiality, and established policy by some agencies not to release such information. Of the 430 job descriptions received, we dis-

carded duplicates as well as positions that on closer reading appeared to be either outside or only marginally related to the defined boundaries. The remaining 404 job descriptions were then included in the content analysis.

The study relied on the major national and state newspapers and not regional newspapers as it was felt that state papers would capture the bulk of advertised positions. Government departments and most other organisations advertise mainly in state papers and advertisements appearing in regional papers were likely to also be advertised in the major state papers. Retrieval of regional newspapers was not expected to yield sufficient added information to justify the additional cost and effort. The Public Health Association notification of jobs by email was also included and it was found that many of these jobs were also advertised in the newspapers.

A sample of Australian health journals, including the *Medical Journal of Australia*, the *Journal of Paediatrics and Child Health* and *Australian Family Physician* were scanned. These journals advertised primarily clinical rather than public health-related positions and were therefore not included. It was observed that health sector vacancies advertised in professional journals were likely to also appear in the major national and state newspapers. The two main public health-related journals, the *Australian and New Zealand Journal of Public Health* and the *Health Promotion Journal of Australia* do not contain job advertisements.

The classification/coding system

The first 100 job descriptions received were used to develop a classification and categorising system for the content analysis using grounded theory.¹⁴ The categories used for classifying the public health core functions were adopted from the National Public Health Partnership.¹⁵

The coding system was tested with 50 additional job descriptions and, following minor modifications, was used to classify the entire sample. In reporting the findings, a number of categories which proved to be very small were aggregated.

The first section of this classification system focuses on the description of the post: employer; location and setting of workplace; job title; discipline/domain of activity; role/responsibilities of the position; specific duties listed; as well as administrative details including employing organisation, salary and other terms of employment. The second part of the coding key relates to the position requirements in terms of formal qualifications, previous work experience, competencies/skills/knowledge and other required or desirable attributes such as drivers licence or willingness to travel.

The classification process

Each of these classifications had subcategories developed from the initial sample analysis, but this list of subcategories was expanded if large subclusters did not fit. The job descriptions were coded by one of the authors using this classification system. A template sheet listing the classification was attached to each of the job descriptions. Some items such as public health domains, role/responsibilities, duties, competencies, qualifications and other attributes could be assigned more than once to a particular job. A job could have included a number of public health domains, for example, working in the field of drug and alcohol, health promotion and mental health. Allowing jobs to be assigned to more than one category provided additional information about the mix of roles and required competencies.

Most of the job descriptions contained complete, sufficient and straightforward information that allowed easy extraction of the details according to the classification system. The only exception was salary information. Due to confidentiality associated with this area we did not make further inquiry from employers concerning missing information. When one researcher was in doubt about how to classify specific job items, a second researcher was consulted. This second researcher also cross-checked the entire sample for the categories of the job titles, domains, roles and employers. These categories were deemed to be the most critical to the study's purpose. In addition, the second researcher

reviewed a random sample of 30% for overall accuracy of all categories. This additional checking led to identification of few items that required further review. However, due to the very low level of disagreement among the classifiers, it was not deemed necessary to review the entire dataset.

The data were analysed using SPSS (version 12.0 for Windows; John Wiley and Sons Ltd). The following sections discuss the major findings.

Relation of titles, domains/ disciplines, roles and responsibilities of job vacancies to core functions of public health

A wide range of job titles was identified, including managers, community development officers, public health nurses and statisticians. The largest group included 150 advertisements, and the smallest had only one. As shown in Box 1, the largest group of vacancies consisted of posts with substantial management responsibilities. Directors/managers of services (10.1%) and managers/coordinators/officers of programs and projects (37.4%) together accounted for almost half the total number of vacancies in our sample. The titles of the jobs within this group generally carried a rider indicating the particular domain or activity in which the appointee would work, for example, Program Officer — Aged Care. The range of program and project activity is indicated to some degree by the diversity of domains and disciplines reported in the following section. Job titles were allocated to one or other of these two large groups on the basis of a hierarchical distinction between “service”, “program” and “project”. It is noteworthy that the average advertised mid-point annual salary for jobs in the service group was \$75 000, while the average for jobs in the program and project group was \$59 000.

The next three groups in terms of size were health promotion/health education officers (8.2%), environmental health officers (6.4%) and community development officers (6.2%). No other group accounted for more than 6% of the 404 vacancies. Although epidemiology and statis-

tics feature prominently in formal public health training programs, the numbers of advertised positions seeking an epidemiologist or statistician were very small — three jobs (0.7%) and one job (0.2%), respectively.

As shown in Box 1, some job titles are indicative of the public health domain or discipline to which they relate, for example environmental health and health promotion officers. Other job titles are less informative and require careful reading of the detailed job description to discover the aspect of public health.

The advertised vacancies spanned more than 40 distinct public health domains or disciplines,

I Job titles from 404 public health job vacancies advertised during June–July 2003

| Job title | Percentage of jobs |
|---|---------------------------|
| Program/project officer, coordinator, manager | 37.4% |
| Director/manager of service/s | 10.1% |
| Health promotion/health education officer | 8.2% |
| Environmental health officer | 6.4% |
| Community development worker | 6.2% |
| Planning officer | 5.7% |
| Research/evaluation coordinator | 5.2% |
| Lecturer/academic | 3.5% |
| Quality improvement officer/manager | 3.2% |
| Information officer/manager | 2.5% |
| Indigenous health officer | 2.2% |
| OHS officer/manager | 1.7% |
| Public health physician/medical officer/registrar | 1.7% |
| Public health nurse | 1.7% |
| Data analyst/manager | 1.0% |
| Administrative officer/executive assistant | 0.7% |
| Epidemiologist | 0.7% |
| Health service planner/strategic planner | 0.7% |
| Other | 0.7% |
| Statistician | 0.2% |

with job descriptions coded to more than one discipline where necessary. Box 2 depicts the top ten domains. Management of public health services, programs and projects was the most frequently cited domain, appearing in 268 (66.3%) job descriptions. Only two other domains were mentioned in relation to more than 10% of the sample — health promotion (12.1%), and indigenous health (11.1%).

To further determine the nature of the advertised jobs, we classified them into the nine clusters of core public health functions as identified in the NPHP Delphi study.¹⁵ To these core areas, which are essentially “population service” functions, we added “teaching public health personnel” as a tenth area. 29.9% of jobs advertised were considered to be within the management and capacity building group, 24.1% in the health promotion and 21.8% in the disease prevention and control group. About 17% of jobs were considered to relate to assessment, analysis and communication of population health needs and community expectations, 13.1% to improvement of the health status of indigenous and other vulnerable people, and 10.0% to ensuring environmental health and safety. Strengthening communities and building social capital was seen to be related to 6.8% of the 404 advertised jobs, teaching health personnel to 6.0%, and promoting, developing and supporting healthy growth and development through all life stages related to 5.2%.

Employers' selection criteria — qualifications and relevant work experience

For one in four of the 404 job descriptions (19.6%) the qualifications specified were simply “relevant qualifications or experience”; there was a more detailed specification of qualifications in most of the job descriptions. In at least one in four job descriptions, two or more formal qualifications were requested as required and/or desirable.

Reflecting the wide range of domains represented in the job vacancies there was considerable variety of qualifications among the job descriptions. The most frequently mentioned for-

2 Top ten public health domains/ disciplines from 404 public health job vacancies advertised during June–July 2003

| Public health domain/discipline | Percentage of jobs |
|--|---------------------------|
| Management of public health service/ program/project | 66.3% |
| Health promotion | 12.1% |
| Indigenous health | 11.1% |
| Primary health care | 9.7% |
| Mental health | 8.4% |
| Environmental health | 7.4% |
| Health and health service research | 7.4% |
| Violence and sexual assault | 7.4% |
| Drug and alcohol abuse/control | 6.4% |
| Community development | 6.2% |

mal qualification (18.8% of job descriptions) was an undergraduate degree in health. In some job descriptions this was expanded to health studies or health science. Qualifications for which a postgraduate degree was required or desired included a Master of Public Health (7.7% of job descriptions), Health (6.2%) and Doctoral degree (2.0%). In the majority of jobs (77.9%) undergraduate qualifications were sought, and in 21.6% of jobs a postgraduate qualification was needed.

None of the other qualifications mentioned in job descriptions such as allied health sciences, education, environmental health, and epidemiology were identified in 5% or more of job descriptions. In addition to the tertiary level qualifications, completion of some type of post-basic or short training course was required in one in four job descriptions. Professional registration was required in 22.7% of the job descriptions. Box 3 shows the qualifications sought.

Eight out of ten job descriptions (79.0%) specifically mentioned the need for relevant work experience, but with no further specification of the necessary duration of that experience. Periods of 1 to 5 years experience were required in 7.9%

of descriptions, and for the remaining 13.1% there was no mention of relevant work experience being either required or desirable.

Competencies, skills and specific experience

Required and/or desirable competencies and skills were mentioned in all job descriptions. Personal generic capabilities, such as conceptual, analytic, oral and written communication skills, were identified as required in 93.6% of the job descriptions. Interpersonal activity capabilities, such as the ability to interact effectively with a broad range of people, to work as a member of a multidisciplinary team, and to have negotiating and influencing skills, were mentioned as required in more than 74.5% of job descriptions. Service/program/project management capabilities were nominated as required or desirable in 66.6%, and computing skills and applications in 59.4% of job descriptions.

The only other constellations of competencies, skills and knowledge to reach the 40% level, were from the category of knowledge/understanding/commitment to workplace policies and practice (48.0%) and generic public health knowledge, mentioned in 41.1% of advertisements.

Employers, place and conditions of employment

About 73% of the vacancies advertised were posts within government agencies and 11.1% in non-government organisations (NGOs). Almost 9% were in tertiary education institutions. Other employers offered the remaining 6.6% of positions.

Box 4 shows that 98.5% of the vacancies were for employment in Australia. Overseas locations included New Zealand, New Caledonia, Samoa and Cambodia. Within Australia, the majority of public health jobs were found in New South Wales and the smallest number in Tasmania.

The tenure of employment offered was either permanent or not stated in 62.4% of the job descriptions. A fixed term contract was offered in 25.7% and 10.4% were seeking a temporary

3 Qualifications sought in 404 public health job vacancies advertised during June–July 2003

| Qualification | Percentage of jobs |
|---|--------------------|
| Relevant qualification or experience | 19.6% |
| Doctoral degree | 2.0% |
| Master of Public Health degree | 7.7% |
| Postgraduate "health" degree | 6.2% |
| Health service management degree | 3.5% |
| Epidemiology degree/diploma | 2.2% |
| Statistics degree | 2.0% |
| Subtotal | 21.6% |
| Undergraduate "health" degree | 18.8% |
| Nursing degree or RN qualification | 13.9% |
| Social science/behavioural science degree | 11.6% |
| Business or management degree | 6.7% |
| Environmental health degree | 5.7% |
| Medical degree | 4.7% |
| Social work degree | 4.2% |
| Health promotion degree | 3.2% |
| Education degree | 2.7% |
| Science degree | 2.2% |
| Allied health practitioner degree | 2.0% |
| Health information/MRA degree | 1.0% |
| OHS degree | 0.7% |
| Pharmacy degree | 0.5% |
| Subtotal | 77.9% |
| Post-basic or short-course certificate | 21.0% |
| Professional registration | 22.8% |
| Other qualifications | 11.9% |

appointment. The other six posts were for maternity leave locums. Ten per cent of the jobs were for part-time employment and 88.1% were for either full-time employment or were not specified. Of the remaining five job descriptions, three were seeking casual employees and two stated that the employment pattern was negotiable.

Salary information was given in 267 job descriptions. Full-time equivalent salaries were

calculated for the part-time positions, and for those where a salary range was stated, the mid-point of that range was calculated. The minimum annual salary offered was \$27 688, and the maximum \$113 325, with the median being \$56 600 per annum. Fifty-two job descriptions gave details of a salary package, with the minimum value of these being \$78 901 and the maximum \$209 667. The median value was \$76 500 per annum.

What this study tells us

This study presents a reasonable snapshot of the mid 2003 job market for public health personnel. It shows the wide diversity of jobs, employers, locations, salaries, and conditions of employment offered, as well as the formal qualifications, experience and other attributes of the workers being sought. The study demonstrates the heterogeneity of the public health workforce, and the limitations of attempts to either formulate boundaries or formulate medium- to long-term plans for the public health workforce as a whole.

The approach selected for this study has a number of advantages and limitations. It can be argued that the selected approach describes what actually happens in the labour force market, and is probably the most accurate representation of the kind of positions that employers are seeking to fill, the type of people they are seeking to recruit and the resources they are willing to allocate to secure the services of such employees. In comparison, surveys of employers' opinions about the demand for and the desired competencies of the public health workforce often generate wish lists that are not necessarily backed up by institutional resources. In-depth case studies of the functions and competencies of workers in particular locations are very useful, but they do not provide a wide perspective of the demand for workforce across the entire system. The analysis of advertised vacancies, on the other hand, provides a broad picture of the labour force at relatively low cost and reasonable accuracy. The use of snapshots in establishing trends for work-

4 Location of job vacancies for 404 public health job vacancies advertised during June–July 2003

| Location | Percentage of jobs |
|------------------------------|--------------------|
| NSW | 38.6% |
| Victoria | 19.6% |
| Queensland | 9.9% |
| South Australia | 8.4% |
| Western Australia | 7.9% |
| Australian Capital Territory | 5.9% |
| Northern Territory | 4.7% |
| Tasmania | 3.5% |
| Overseas | 1.5% |

force planning requires repeated measures over time. Hence the use of any one snapshot is limited in providing an overall representation of the demand. We note that the definitional and classification difficulties associated with the selected approach are common to all methods of public health workforce planning.

Although epidemiology and biostatistics are widely regarded as *sine qua non* among trainers of public health personnel, and epidemiologists are sometimes regarded as the quintessence of public health professionals, they receive relatively little specific mention in the job descriptions. Since the two disciplines are now represented in virtually all tertiary level public health training programs it may be that employers assume at least sufficient familiarity with them among potential applications for the advertised jobs.

Management of public health services, programs and projects was the most frequently cited domain, appearing in 268 (66.3%) job descriptions. Further analysis of this group suggests that these jobs entailed a major management/coordination role in support of public health programs and services. However, only 10.2% of these jobs required a formal management or business qualification. Hence, a project manager in health promotion, for example, was not necessarily required to have formal management qualifications. Experience with or knowledge of service/program/project management was nominated as

required or desirable in 66.6% of the jobs. This suggests that management experience was sought rather than formal business management qualifications.

Limitations

Some of the limitations of this study are associated with definition, sampling and coding. Deciding whether some jobs were really public health jobs was difficult on some occasions. Discussion also arose in relation to some jobs with multiple responsibilities, only some of which were obviously public health functions and others not.

It is recognised that sampling of public health vacancies over a longer period of time would have yielded a more accurate representation. The present study however, was commissioned by the NPHP to pilot the methodology and inform policy within a short time frame.

Like any snapshot, this study does not have the fine detail one would expect from an expensive studio portrait because of the difficulty in clearly defining the limits of the public health workforce. It is not complete because we don't know about jobs which are filled by grace and favour, through word-of-mouth advertising or other informal means of recruiting.

Job vacancies arise when an existing post is vacated permanently or temporarily, and when a position is newly created. In the first instance, the employer may wish to replace the outgoing staff member with no change to the post description or to the specification of the employee being sought. Alternatively, the employer may take the opportunity to revise one or both of those components of the job description. In the case of a newly created post, the employer may wish to duplicate the characteristics and employee specifications of an existing post, to change one or both of these, or to write a completely new job description. We do not know which of all these alternatives apply to our 404 job descriptions, and so we are not able to say anything about changes in the size, composition or activities of the public health workforce

as a whole. Nor are we able to comment about trends in the labour market — although repeating this type of study at intervals might yield some important information about trends.

Recommendations for future public health workforce studies

This study has focused on the demand side of the public health labour market. To provide a more detailed account of the recruitment process it is necessary to also review the supply of the public health workforce to ascertain the availability of appropriate personnel. This additional analysis would be of particular interest to employers and trainers, as well as current and prospective public health agency employees. In particular, it would be helpful to identify difficulties that may have been encountered in making appointments relating to particular categories of staff, geographical areas, health settings and specific qualifications or competencies. It would be useful to interview a range of employers who provided job descriptions to explore the responses they received to their advertisements.

We strongly recommend that this study be repeated at regular intervals at different times of the year to gain the most benefit from this approach. This would help to identify variations in recruitment over time, and may assist in understanding the factors that produce these changes. Such information may be used to further explore current difficulties in recruitment that may lead to imbalances and/or shortages associated with particular categories of staff, geographical areas, health and/or community settings and/or specified competencies.

The range of knowledge and skills requested by way of basic qualifications and detailed prescriptions for particular advertised posts justifies a review of the role, structure and content of undergraduate-level degree training programs. There is also a need to consider the appropriate place and format for the development of generic management and effective interpersonal working skills, and also the provision of short training courses to upskill or retrain people to be able

to take up places in newly created and expanding service programs.

This study points to the immediate and real staffing requirements of public health services and it is difficult to think of any other speedy and relatively inexpensive way of assessing those requirements. This snapshot approach coupled with supply-side studies (analysing responses to job advertisements and employers' decisions regarding those responses) could yield useful information for medium- and longer-term workforce planning.

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Competing interests

None identified.

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