STRATEGY FOR POPULATION HEALTH SURVEILLANCE IN NEW SOUTH WALES

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This article reports on the NSW Health Department's discussion paper, Strategy for Population Health Surveillance in New South Wales.

Population health surveillance is the ongoing systematic collection, assembly, analysis and interpretation of population health data and the communication of the information derived from these data to stimulate response to emerging health problems and for use in the planning, implementation, and evaluation of health services and programs[1]. The potential domain of health surveillance is vast (Table 1).

The NSW Health Department's strategy for population health surveillance concentrates on population health status and risks to health. The strategy paper describes the context for population health surveillance in NSW and its current status. Further, it outlines priorities for improving population health surveillance in NSW, identifies areas where development is required, and sets out some recommended next steps.

Initially, the paper was the result of consultation within the Public Health Division. It was then circulated for comments to interested individuals and groups throughout NSW, including Area Health Service chief executive officers, Public Health Unit directors, health promotion coordinators, health planners, interested individuals in universities and non-government organisations, and relevant NSW Health Department staff. The strategy paper was revised accordingly.

MAIN ELEMENTS OF THE POPULATION HEALTH SURVEILLANCE STRATEGY

Ensuring better health for the people of NSW, enabling equity of access to a comprehensive range of services and improving the quality of service are the three principal goals of the NSW Health Department. Population health surveillance is a key element of the Department's role in monitoring and evaluating our progress towards these goals.

Several recent developments have created new demands for information about population health in NSW. First, local Area Health Services in NSW are increasingly focusing attention on population health as they assume responsibility for the health of geographically defined populations, rather than the provision of services in their locality. Therefore, surveillance information is increasingly required at the Area Health Service as well as Statewide level. Second, we have a pressing need to measure progress in national health improvement priority areas (cerebrovascular disease, cancer, injury, mental health and diabetes)[3] and the additional NSW priority area of asthma. Contractual obligations for health improvement specified in the first rounds of Area Health Service performance agreements centre on these priority areas. While we need to maintain and strengthen the traditional areas of surveillance (such as communicable diseases), we must now ensure we also have comprehensive systems to cope with these new information requirements.

Population health surveillance in NSW relies on many data collections planned and conducted independently and generally not aggregated or presented together. Specific surveillance objectives, lacking for most key areas, need to be developed. The document identifies surveillance gaps and deficiencies in data sets used for surveillance, and discusses ways in which surveillance needs might be ranked in priority. It also explores our requirement to develop capacity to respond to emerging issues, and our need to develop surveillance methods (Table 2), improve the dissemination of surveillance information, and evaluate surveillance efforts.

The report makes 14 recommendations. These are listed in Table 3. Some of these recommendations are being

Continued on page 32 ▶

TABLE 1

POTENTIAL DOMAIN OF HEALTH SURVEILLANCE (MODIFIED FROM *KEY ISSUES IN PUBLIC HEALTH SURVEILLANCE FOR THE 1990s*[2])

Population health surveillance			
Population structure and dynamics	**Health status**	**Risks to health**	**Health systems**
A. Size and growth 1. Fertility and mortality 2. "Momentum" of population growth **B. Structure** 1. Sex ratio 2. Population aging 3. Ethnicity **C. Spatial distribution and mobility** 1. Urbanisation 2. Migration **D. Family structure**	**A. Positive health** 1. Quality of life and wellbeing 2. Growth and development 3. Non-morbid processes (e.g., pregnancy, aging) **B. Health losses** 1. Disease 2. Impairment, disability and handicap 3. Death **C. Equity of health status**	**A. Biological** 1. Genetic 2. Physiological 3. Infectious agents **B. Environmental** 1. Physical environment 2. Social and economic environment **C. Behavioural** 1. Risk behaviours 2. Knowledge, attitudes, beliefs, skills	**A. Health services** 1. Accessibility 2. Utilisation 3. Quality 4. Efficiency 5. Equity of access **B. Health care resources** 1. Human 2. Technological 3. Financial **C. Health policies,** including policies in other government departments (e.g., Road Transport Authority, Department of School Education)

Population health surveillance

► *Continued from page 31*

implemented; strategies to implement others are being incorporated into the NSW Health Department's business plans for 1998-99. We will publish a progress report on the strategy in 12 months.

Copies of the strategy paper are available from Dr Louisa Jorm, Director, Epidemiology and Surveillance Branch, NSW Health Department, Locked Mail Bag 961, North Sydney, NSW, 2059. E-mail: ljorm@doh.health.nsw.gov.au. It can also be downloaded from the NSW Health Internet site (www.health.nsw.gov.au/public-health/epi/popsurv.htm).

1. Thacker SB, Berkelman RL. Public health surveillance in the United States. *Epidemiol Rev* 1988; 10:164-90.
2. Sepulveda J, Lopez-Cervantes M, Frenk J, Gomez de Leon J, Lezana-Fernanndez MA, Santos-Burgoa C. Key issues in public health surveillance for the 1990s. *MMWR* 1992; 41 Suppl: 61-76.
3. Better Health Outcomes for Australians. National Goals, Targets and Strategies for Better Health Outcomes into the Next Century, CDHS & H, Canberra, AGPS, 1994.
4. Public Health Division. The Health of the People of NSW – Report of the Chief Health Officer. Sydney: NSW Health Department, 1996.

TABLE 2

PRIORITIES FOR DEVELOPMENT OF POPULATION HEALTH SURVEILLANCE METHODS IN NSW

Methodologic areas
■ Definition and measurement of disease burden (e.g. disability-adjusted life years [DALYS])
■ Assessment of the accuracy, completeness and timeliness of surveillance data
■ Analysis of incomplete or missing data (e.g. imputation methods)
■ Evaluation of spatial-temporal clusters (e.g. scan statistic)
■ Evaluation and prediction of trends (e.g. time series modelling, projections)
■ Evaluation of small-area data (e.g. use of empirical Bayesian approaches)
■ Graphical display of surveillance data, including mapping
■ Refinement of techniques to detect systematic variation in rates and other measures
■ Maximising the use of record linkage techniques

TABLE 3

RECOMMENDATIONS FOR IMPROVING POPULATION HEALTH SURVEILLANCE IN NSW

1. The following overall objective for population health surveillance in NSW should be adopted:
   To ensure that we have appropriate, timely and valid population health information to monitor health status and respond to health problems and to support planning, implementation and evaluation of health services and programs in NSW.
2. The Epidemiology and Surveillance Branch should coordinate the development of surveillance objectives for specified key surveillance areas.
3. Initial priority should be given to addressing information gaps that relate to national and State health improvement priority areas.
4. The Epidemiology and Surveillance Branch should review objective methods for assessing future surveillance priorities, including use of aetiologic fractions to quantify the burden associated with health risk factors.
5. The NSW Health Department should support the development and implementation of the Coronial Information System in NSW and should negotiate on-line access to this data for surveillance purposes. In the interim, development of the New Children's Hospital Department of Surgical Research's injury death monitoring system for this purpose should be investigated.
6. The Epidemiology and Surveillance Branch should review the use of sentinel events and networks of sentinel providers for surveillance of unexpected trends in severe illness, as part of the current Acute Care Surveillance Project.
7. Public Health Training and Development Branch should consider workforce needs to support population health surveillance, including planning the evolution of the Public Health Officer training program.
8. The Epidemiology and Surveillance Branch and the Public Health Network should jointly develop a research program to address the priorities for surveillance methods listed in Table 2.
9. The Epidemiology and Surveillance Branch and other stakeholders should regularly evaluate the utility of the *NSW Public Health Bulletin* and the *Report of the Chief Health Officer*[4] and other information networks for delivery of population health surveillance information, by survey of their users.
10. The Centre for Research and Development should establish dialogue with editors of relevant peer-reviewed journals about conditions for publication of reports of surveillance information that do not prevent timely dissemination through other mechanisms.
11. The Epidemiology and Surveillance Branch should continue to consolidate and develop the Health Outcomes Information Statistical Toolkit (HOIST) system, with particular emphasis on tools for automated reporting and user interfaces to simplify analysis. HOIST development and modifications should take into account feedback from regular evaluations and consultation with HOIST users and potential users.
12. The Epidemiology and Surveillance Branch should review the training needs of HOIST users and arrange formal training sessions, coordinated through the Public Health Network's Research and Epidemiology special interest group.
13. The Epidemiology and Surveillance Branch should review the strategy for population health surveillance in NSW every three years.
14. The Epidemiology and Surveillance Branch should coordinate regular evaluation of those surveillance systems for which the Public Health Division is responsible. It should also provide feedback and recommendations on issues concerning other surveillance systems outside the Public Health Division.