STATE HEALTH AND DIVISIONS OF GENERAL PRACTICE: A STATE PERSPECTIVE

The following is the edited text of a speech given by John Wyn Owen CB, Director-General, NSW Health Department, at the National Forum of Divisions of General Practice in Melbourne on August 11, 1995.

INTRODUCTION

would like to discuss the cooperation that has been developing between General Practice and NSW Health. I would like to leave you with three key messages:

1 | Area structures, such as those in NSW, which focus on providing health care to defined populations, provide the foundation for the integration of local community and hospital service planning and delivery.

2 | The level of debate about the role of primary health care and general practice and its integration with the health system needs to be raised. In NSW we are providing the opportunities and structures to achieve this.

3 | NSW Health is supporting the development of integrated service models, and research into and evaluation of the effectiveness of these models, to improve health care.

THE FUTURE

The Council of Australian Governments

You will all know the Commonwealth and States are working together to achieve structural change in the health sector to accord with the perspective of patients, regardless of the level of government which actually delivers services or has the ultimate responsibility. In the words of Dr Stephen Duckett, Secretary of the Commonwealth Department of Human Services and Health, *"State and Commonwealth public servants can put aside, for the time being at least, their old territorial ways in the interest of designing new approaches to inter-governmental relations"*.

In January 1995 the Council of Australian Governments issued, for public consultation, a paper entitled *Health and Community Services: Meeting People's Needs Better*. This paper describes three broad streams of care for restructuring the organisation, planning, funding and delivery of services:

■ | *General care.* This stream covers simple care needs or support needs, where the individual maintains choice of provider.

■ | *Acute care.* This provides for more intensive health care needs delivered on an episodic basis, mostly through acute hospitals.

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■   *Coordinated care.* This covers situations where consumers have complex and multiple health and community care needs.

Central to the proposed reforms is the organisation of services around the needs of individuals or patients – with provision of care *not* influenced by the vagaries of funding mechanisms, clinical specialty rivalries or departmental boundaries. The reforms seek to remove some of the anxiety about cost shifting or duplication of services.

NSW health goals

The main goals of NSW Health – improving health, increasing people's equity of access to health services and improving the quality of care and service – align well with the proposed national restructure and relate closely to the main goal of general practice: to provide a high-quality health service to community members.

The Department sees the future with general practitioners playing a key role in providing and coordinating clinical, preventive and continuing care services extending from the hospital through the community to the home. Interactive communication systems will link general practice surgeries, specialist diagnostic and treatment services, community health care facilities, and hospital emergency departments across the State, and provide clinicians with access to databases of patient information and standard diagnostic and treatment protocols.

These developments will be a boon for rural GPs and will often save country people from having to visit specialists in a major centre. Shared care between GPs and hospitals or specialists will be much easier. GPs will develop more skills in the detection and treatment of mental illness. They will be supported by community-based mental health teams with expertise in crisis intervention, access to short-stay acute psychiatric inpatient facilities in general hospitals and access to supported residential accommodation. GPs will play a greater role in coordinating other services such as drug and alcohol counselling. They will be key players in "hospital in the home" initiatives involving sophisticated services in people's homes, such as dialysis, chemotherapy, pre-operative assessment and post-operative care, and investigations for undiagnosed illness. GPs will provide more clinical preventive services in their surgeries and from community bases such as multi-purpose service centres.

THE CHALLENGES

Is this what the future should look like? How can we better provide opportunities to develop a shared sense of direction for our health system where primary health care is a central component? How do we better develop structures, standards, policies, monitoring and evaluation systems and funding mechanisms for the primary health care of the future? How do we make things happen in a more strategic manner to move towards these future scenarios?

1 | Area structures, such as those in NSW, which focus on providing health care to defined populations, provide the foundation for the integration of local community and hospital service planning and delivery.

The NSW scene

Area structures which focus on providing health care to defined populations provide the best foundation for the integration of local community and hospital service planning and delivery.

In NSW we have some 6,000 practising GPs with 36 Divisions of General Practice. Most of the Divisions are incorporated bodies. One Division (that in Central Sydney) is part of the Area Health Service structure. This arrangement has interesting consequences. A senior medical academic in Central Sydney recently commented that, for the first time, he had heard professors of medicine and surgery insist that the professor of general practice be involved on a major Area Health Service planning committee.

The Central Sydney Division collaborates with the Area management in the planning and development of hospital and community-based services, with clinicians, and with units responsible for community health, public health, health promotion and mental health. The Division has a vibrant research agenda and is involved in projects ranging from immunisation and diabetes to randomised clinical trials of drug therapies. Staff also participate in undergraduate medical training at the University of Sydney. Management, clinical specialty groups, community health groups and general practitioners are pleased with the collaboration between units and the focus on the outcomes of health services for individuals and the population of Central Sydney.

2 | The level of debate about the role of primary health care and general practice and its integration with the health system needs to be raised. In NSW we are providing the opportunities and structures to achieve this.

Statewide and local initiatives

Structures and processes in NSW aim to support Statewide and local collaboration and to stimulate debate and research on better ways to integrate care around the individual and community.

Divisions of General Practice and academic departments of general practice are linked through a network of units located in the community and in teaching and smaller hospitals.

The Department has established a Centre for Clinical Policy and Practice within the Public Health Division. Its purpose is to develop standards and evidence-based practice models for improving clinical practice and to work with clinicians to monitor the quality of services. We have also established a Centre for Disease Prevention and Health Promotion – to develop best practice for prevention and health promotion; a Centre for Mental Health – to expand and improve our mental health services; and a Centre for Research and Development – to develop a strategic approach to research support, balancing support for basic and

applied research, and strengthening clinical and public health practice.

General practitioners serve on all our key clinical advisory groups. These include the NSW Medical Board (which is responsible for medical registration), the Medical Services Committee (legislation review), Medicine and Management (industrial issues), the Standing Committee of College Chairmen (professional development, standards and specialist training), the Rural Doctors Resource Network (rural health issues), and the Postgraduate Medical Council (training of junior doctors). We are establishing a liaison committee between GPs and NSW Health to encourage general practice input into Departmental planning and policy development. This is in part a response to the 1994 NSW General Practice Task Force Report.

The Department supports the Rural Doctors Resource Network to encourage medical practitioners to work in the country, and stay in the country. In addition to supporting the development of rural Divisions of General Practice, the network promotes training and improved clinical communications.

GPs have been involved in the planning and development of four rural multi-purpose service centres and 13 that are on the drawing board. GPs have also been on advisory groups that have helped us develop our community health, aged and youth care policies.

General practice groups are working with us on a number of service development projects. These include projects aiming to:

- improve discharge planning for patients;
- develop shared care models of management for depression in the elderly;
- develop evidence-based guidelines for the management of fractured neck of femur;
- utilise registers for the management of diabetic patients;
- utilise immunisation registers; and
- provide health services for the homeless and unemployed.

Aboriginal health
Aboriginal health remains our greatest challenge. But we have some successes – for example, two successful projects initiated by a Division of General Practice in collaboration with Bourke and Brewarrina Aboriginal Medical Services. These projects have sought to provide broad-based health screening for Aboriginal people in Western NSW, with a particular focus on diabetes. Working with the local Aboriginal Medical Services, the local Division of General Practice was able to promote the importance of diabetes screening and transfer skills to Aboriginal health workers.

3 | **NSW Health is supporting the development of integrated service models, and research into and evaluation of the effectiveness of these models, to improve health care.**

Diabetes prototype
Perhaps one of the best examples of collaboration between the Department and Divisions of General

Practice can be seen in our Diabetes Outcomes Project. Diabetes was chosen as a prototype for the implementation of initiatives to produce health improvement.

Diabetes is a highly appropriate model because it typifies the problems associated with many chronic health conditions in the community.

- It is common and costly. Diabetes in its various forms affects 3-4 per cent of the Australian population, up to 10 per cent of older people and possibly 20 per cent or more of some Aboriginal communities.
- We estimate that up to 50 new cases of blindness are attributable to diabetes in NSW each year, and some 775 parts of lower limb are amputated because of diabetes.
- There are real opportunities for health improvement with diabetes because there is strong evidence that the complications of diabetes can be prevented or reduced. With better organised services, we estimate that 32 cases of blindness and at least 340 amputations could be prevented in NSW each year.
- Like many other chronic conditions, diabetes care involves numerous types of services in the full range of health care settings. People with diabetes encounter a very wide range of health professionals. Diabetes services operate within a variety of funding and administrative systems – private, Commonwealth-funded via Medicare, and State Health-funded via Areas and Districts.

A multi-disciplinary approach to diabetes care is well established in many centres, and over the past couple of decades the emphasis has shifted from inpatient to ambulatory care. However, relationships among the components of diabetes care in our loosely networked health care system are not always clear.

But with a more integrated care system we are confident we can do better for people with diabetes. The focus of our diabetes project has thus been on the development of an integrated diabetes care system. The work has involved wide consultation with health professionals. It has been done collaboratively with an expert panel comprising consumers and representatives of the spectrum of health professionals connected with diabetes care. We have given special emphasis to consultation with Divisions of General Practice throughout the State.

There is now clear agreement that we need to focus on three things to make a substantial difference to the outcomes for people with diabetes:

- First, we must ensure that everyone with diabetes receives education about the condition – education for self-care, education about when to seek professional care, and education about preventing or minimising complications.

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- Second, we must ensure that everyone with diabetes has good metabolic control, through appropriate care, and education for self-care and self-monitoring.
- Third, we must ensure that everyone with diabetes has regular clinical monitoring for signs of complications, and appropriate treatment of complications.

To achieve these three things we have evolved an implementation plan for integrating Area and District Health Service-based diabetes care with care given by GPs and other medical and non-medical private practitioners. This will involve identifying what is spent on diabetes at the local level and giving local groups responsibility for deciding how to use those funds for the provision of services, for communication and for monitoring the results.

The Commonwealth has indicated very strong interest in working with us on a series of implementation pilots, and we have called for expressions of interest from Area and District Health Services, jointly with Divisions of General Practice and others, in running the large-scale pilots. Pilot implementation will begin shortly.

Lessons from diabetes, and strategies for CV disease, cancer, mental health and injury

To date the diabetes prototype has taught us two important lessons. The first is that early and wide consultation is vital to build partnerships between professional, consumer and management groups. The second is that the implementation plan must focus on clearcut, measurable targets and have clearly defined objectives. With diabetes these relate to education, metabolic control and clinical screening for complications.

These lessons are now being applied to cardiovascular disease, cancer, mental health and injury in NSW. Discrete problem areas which require attention and which offer opportunities for improving health have been identified, and the strategic planning process is being applied to determine the action that will exploit these opportunities. The strategies will be published later this year.

Research and development

A 1994 report produced by the US Congress Office of Technology Assessment, entitled *Identifying Health Technologies That Work,* begins by saying:

"The justification for most medical practices used in the United States today rests on the experience and expertise of clinicians and patients rather than on objective evidence that these practices can measurably improve people's health."

The report makes a highly influential contribution to the worldwide move towards evidence-based health practice. This move is placing a renewed emphasis on research and development to provide evidence on what works and what does not work in health care – and what works best.

I would like to extend this beyond health care. Health policy must be evidence-based as well.

We have just finalised a discussion paper on R&D in the NSW health system*. It outlines policy initiatives which aim to align our investment in R&D with health priorities, promote the role of R&D in generating innovation and promote the implementation of research-based knowledge in health care and health policy. This will include developing better ways of linking outcomes to what GPs do, and the development of monitoring systems so GPs have better information on what works and what doesn't.

CONCLUSION

The relationships we are building with GPs in NSW are just a part of the partnership culture we are developing with all the major stakeholders in Health in NSW: health professionals, medical schools, other government departments and community groups.

Having said that, we recognise that the Divisions of General Practice present an opportunity to establish a health system which offers continuity of care and quality service to all patients and communities. And I think the health professionals win as well, because the Divisions help to create a working environment which is more satisfying for GPs and for all health care workers.

Cooperation is enabling very productive relationships to develop between the Divisions and individual Area and District Health Services, which I am sure will result in more efficient, more effective health services and genuine health gain.

I hope I have convinced you that our health system can be improved – through integrating the planning, development and delivery of population-based health services with Divisions of General Practice; through providing opportunities for debate on integrating primary health care and general practice with the health system; and through supporting the development of the best health care through R&D and training.

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* A survey of the discussion paper appears on pages 91-92 of this issue of the *Public Health Bulletin.*

RESEARCH AND DEVELOPMENT IN THE NSW HEALTH SYSTEM

Michael Frommer
Director, Research & Development
NSW Health Department

A discussion paper introducing the NSW Health Department's first Research and Development (R&D) Strategy has recently been distributed. This article outlines the main contents of the paper.

The aims of the strategy are to:

- ensure that the State's investment in R&D over the next 3-7 years generates innovation and is directed toward filling gaps in the knowledge needed to solve present and foreseeable problems in health and health services;
- ensure that research-based knowledge is applied in health practice and the development of health policy; and
- build a strong relationship between health R&D and industry, recognising that the commercial development of research provides opportunities both for economic advancement and the implementation of research-based knowledge.

The strategy deals with the full range of R&D in the NSW health system, extending beyond programs directly funded by the NSW Health Department. It encompasses biomedical, clinical, epidemiological and operational research, as well as research on the social determinants of health. Its coverage includes priority setting, funding, initiatives to facilitate R&D, the communication of research-based knowledge, links among research organisations, links between research organisations and industry, monitoring of the outputs and outcomes of R&D, education and R&D workforce needs.

To fulfil its aims, the proposed strategy has a short-term and a long-term component.

SHORT-TERM COMPONENT

The short-term component will be implemented from 1995-96 and its impact will extend over five years. It begins the process of aligning research with health priorities and provides a consistent policy framework for R&D. Its main elements comprise an integrated approach to:

- the establishment of Statewide R&D policies and the development of R&D policies in Area and District Health Services;
- the funding of research over the period 1996-2000;
- the training and career development of the R&D workforce;
- the promotion of research so that practitioners and the public know more about research and its importance to health;
- the promotion of links among research organisations;
- helping research organisations and industry to work together to further the application of research results and realisation of the commercial potential of research;
- sponsoring a more streamlined process for the ethical approval of research; and

- monitoring the output and outcomes of research and the extent to which they contribute to the resolution of key health issues.

Implementation of this component of the strategy involves:

- priority-setting processes;
- Statewide and Area- and District-based funding programs;
- accountability mechanisms;
- provision of support for specific initiatives to facilitate R&D; and
- training programs.

LONG-TERM COMPONENT

The long-term component will also be implemented from 1995-96, but its impact should extend to 2010. Its premise is that R&D is an investment in the future. Strategic investment in R&D over the next 3-7 years will not only yield health gains, but also contribute significantly to economic development. However, because many developmental processes take up to 15 years, a careful assessment of our future needs to 2010 is crucial so our investment in R&D has a better chance of meeting these needs.

The centrepiece of the long-term component is a foresight process designed to assess the needs of the health system and thus to determine the direction and priorities for R&D in the first decade of the 21st century. The foresight process will be planned in 1995-96 and undertaken in 1996-97. After wide consultation, the results of the foresight analysis will be incorporated in R&D planning in 1997-98 and in programs from 1998-99, as the cycle of funding envisaged in the short-term component comes to an end.

RECOMMENDATIONS

The strategy incorporates 33 recommendations which are given in the text and also listed at the end of the paper. These recommendations:

- emphasise the importance of a commitment to both the long-term and the short-term components;
- propose the establishment of a Research and Development Advisory Committee to advise the NSW Health Department on R&D policy, opportunities and evaluation;
- list principles for a Statewide R&D policy;
- identify initial research priority areas (cardiovascular disease, cancer, injury, mental health and diabetes), suggest consideration of additional priority areas and propose a commitment of R&D resources to underpin implementation of Statewide and local plans for improving health outcomes and achieving goals and targets in agreed priority areas;
- focus Departmental research funding on infrastructure support for major Statewide health and medical research organisations, and establish a competitive basis for the allocation of infrastructure funds;

LETTER TO THE EDITOR

James Harrison, Jerry Moller, John Dolinis
Australian Institute of Health & Welfare National
Injury Surveillance Unit

Suicide mortality in NSW: geographic variations

Stewart et al raise issues of methodology, the significance of which extends well beyond the instance of suicide mortality[1]. The recent emergence of an approach to managing public health in Australia (at both State and national levels) through defining, setting and monitoring quantitative targets carries implicit technical challenges, for which most public health practitioners are ill-prepared.

A key challenge is to provide advice that enables policy-makers and other users of the information to make good comparisons of values of indicators, over time and between places. Frequently the indicators are derived from complete counts of deaths or hospital separations (and hence have no sampling error) and are expressed as population-based rates. The methods for analysing these data properly are not trivial and are not (in our experience) given much attention in the training that public health practitioners receive in epidemiology and biostatistics.

The article by Stewart et al is at the forefront of attempts to meet this challenge and can also help to describe it. We note that they have calculated confidence intervals on the basis of an assumption that the underlying distribution is a Poisson distribution. An assumption normally required for valid use of this distribution is that the data do not have marked trends. We have not seen time series of suicide for the areas studied and we do not know whether they show marked trends. The point we wish to make applies in any case: questions may arise in the course of routine analysis of these routine data which few public health practitioners have been trained to solve. For example, how much trend would constitute a violation of the Poisson assumption, would such a violation materially affect the findings and what alternative method might be more appropriate?

Selection of an appropriate distributional assumption is a problem that arises in other ways. For example, at the geographic level of analysis used by Stewart et al (Health Areas and Districts in NSW), the Poisson distribution may be the most appropriate in a study of suicide. Is it also the most appropriate in a study at State or national level, where case numbers are larger? On another tack, suicide cases are sometimes found to cluster in time and place. Should the negative binomial distribution be assumed?

Selection of an appropriate distribution is only one aspect of the task. Stewart et al raise the issue of analysing change where case numbers (and sometimes also populations) are small. How might one go about evaluating the impact of a suicide prevention program directed at a population such as that of the Far West Health District?

Most textbooks of biostatistics do not address such questions directly (the best we have seen is the latest in the Statistical Methods in Cancer Research series, only recently published in English[2]). As practitioners, we seem to deal with them in one of three ways. We seek advice from a biostatistician (if we have access to one), we "have a go"

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■ propose that Area and District Health Services develop local R&D policies and channel funding to support infrastructure for local groups which attract peer-reviewed grant funding;

■ relate R&D funding to accountability requirements under the NSW Health Department's new program reporting structure;

■ emphasise the importance of effective reporting and communication of research results, to promote the dissemination and application of research-based knowledge and facilitate the monitoring of research outputs and outcomes;

■ seek to foster effective working relationships among different types of research organisations in different localities throughout the State;

■ propose a commitment to R&D investment in improving
  – health system planning,
  – the organisation of health services, and
  – clinical, public health and managerial decision-making,
  with a particular emphasis on health informatics;

■ identify specific initiatives to facilitate R&D, including support for institutional ethics committees;

■ support the development of an R&D workforce, with emphasis on career opportunities in the biomedical sciences and training in health economics, public health and applied epidemiology, clinical epidemiology and health informatics; and

■ propose approaches to monitoring the effectiveness of health and medical research in NSW.

HEALTH INDUSTRY DEVELOPMENT

Parallel to this strategy, the NSW Health Industry Forum is evolving a plan for health industry development. Issues papers emanating from the Forum expand on points raised in this paper, especially the commercial development of research.

NEXT STEPS

This discussion paper is being circulated for comment. When comments have been received a workshop will be convened to discuss options and make recommendations on the NSW Health Department's R&D policy. A final paper will be issued. It will incorporate these recommendations and the Department's response and will set a firm agenda for the implementation of policies and plans.

Copies of the discussion paper can be obtained from Amanda Lees, R&D Policy Branch, Centre for Research & Development, NSW Health Department (telephone 02 391-9204).

(based sometimes on limited knowledge), or we avoid the issue by limiting analysis to simple inspection of data. Of these, only the first option is satisfactory and it depends on a limited and expensive resource. Moreover, advice seems to vary.

Given the emerging significance of quantitative targets for public health practice, we suggest that a more systematic approach should be taken to the problem. One approach would be to fund one or more statisticians to prepare a paper or short handbook, designed for use by practitioners who have some relevant training (say, at Master of Public Health level), presenting methods and worked examples of the analytic tasks commonly involved in monitoring targets. This would not replace the need for proper biostatistical advice concerning special studies and unusual circumstances. It would be intended as an aid to the increasingly routine tasks imposed by the move towards target-based public health practice. We would welcome other views on this.

1. Stewart G, Chipps J, Sayer G. Suicide mortality in NSW: geographic variations. *NSW Public Health Bulletin* 1995; 6(6):49-52.
2. Esteve J, Benhamou E, Raymond L. Statistical methods in cancer research volume IV: Descriptive Epidemiology (IARC Publications; 128) Lyon: IARC, 1994 (ISBN 92 832 2128 1).

ON THE ACHIEVEMENT OF REAL TARGETS: REPLY TO HARRISON ET AL

Gavin Stewart, Jennifer Chipps, Geoffrey Sayer

We welcome the opportunity to expand on some of the issues mentioned in our article, and on others raised by the letter from Dr Harrison and his colleagues. The main purpose of our paper was to **illustrate** something that can be **proven** quite easily by a calculation: that the estimate of the rate of a rare event in a small population is not at all precise, that suicide is a rare event and that District Health Services in NSW have small populations. The problem is that calculations of this kind are not very helpful to those with the responsibility for addressing health problems as important as suicide. We felt it would be valuable to present **a conventional** analysis of geographic variation in suicide rates and indicate the problems that arise.

The many challenges in defining and monitoring progress towards quantitative targets are often not appreciated. For example, the introduction of the Commonwealth publication on the national goals and targets, Better Health Outcomes for Australians[1], contains a very good discussion of the general issues, but includes some unsatisfactory definitions. The term "descriptive target" is used to refer to targets for which "... *there are not adequate trend data, nor sufficient understanding of the potential impact of interventions to state with any certainty that the targets are attainable*".

The introduction also states that "... *targets are a method of assessing progress towards desired health outcomes. They should not be seen as 'magic' numbers that must be precisely achieved by the year 2000*".

It would indeed be very hard to make an absolute commitment to reducing the youth suicide rate by 15 per cent over a 10-year period, especially if progress were monitored and there were sanctions for failing to stay on

track towards the target. One would be very worried by the lack of proven interventions. All sorts of difficult and expensive things would need to be set in train, quantified and costed. There is no "magic" in numbers one must achieve precisely. The magical thinking lies in supposing that one can have the benefits of numerical targets without solving the problems of taking them seriously. Those were the sorts of issues we wished to illustrate.

The technical concerns about the effect of assuming independent Poisson variates in pooling data over time are quite correct, if one assumes that apparent trends within strata are real. If so, the resulting distribution would have a larger variance than we assumed, our confidence intervals would be wider than we estimated on the assumption of independence and some of the "detectable" differences might become "undetectable". The boundary between "detectable" and "undetectable" differences would also change if we had adopted a different but statistically simpler decision rule – for example, insisting on 99 per cent confidence for *any* "detected" difference across all comparisons.

We agree that it would be valuable to have a handbook covering techniques that are going to be commonly needed in dealing with the setting of realistic goals and targets, and monitoring change. Although we are less in agreement that it should be written only by statisticians, we strongly recommend the first two chapters of Data Analysis and Regression: A Second Course in Statistics by Mosteller and Tukey[2]. Their definition of "indicator" includes any "summary" of data, including a graphical one, and needs to satisfy only two criteria:

- "It must differ from an anecdote by allowing each of the observations to contribute to it. (Anecdotes usually involve one or a few observations).
- It must be expressed in such a way that at least some of those who are interested in the subject can think about its interpretation."

It is from this perspective that we approach the task of presenting "good enough" rather than technically innovative analyses. To fit a complex regression model to the within-strata trends over time (which exist, at least for males, in some age groups) and formally model the data simply to draw the same conclusion would not have been warranted. Where possible changes over time are of substantive interest, as in our latest report on suicide in mental health clients[3], we have used the SAS procedure GENMOD to test appropriate models.

Our general approach, following Mosteller and Tukey but emphasising the second criterion, is to present the most straightforward analysis and leave the technical apparatus as much as possible in the background. It is not the technical accuracy of a single analysis, but rather the convergence of the conclusions from a variety of possibly accurate analyses, which is important. Conclusions should be robust over a range of reasonable guesses about the true nature of the data, which is rarely – if ever – determinable from the actual data. The existence of an apparent trend over time is not, in and of itself, evidence that the rate of suicide in one year is correlated with the rate of suicide in

News and comment

another. Thus pooling (which simply forms a weighted sum of Poisson variates) is one of the possibly legitimate analyses, and our results are entirely accurate under the assumption that the 14-year pooled rate within a stratum is the weighted sum of independent Poisson variates[4].

No doubt it would be possible to model the 14-year suicide data in more complex and technically preferable ways. However, the overall conclusion remains robust against any likely violation of the assumptions of our analysis. Suicide rates **cannot** be used as indicators to monitor the short-term achievements of local programs. That alone is a useful result, because it relieves a great deal of concern in the minds of those who feel responsible for taking action but have an intuitive feeling for the uncertainty of the local suicide rate as an indicator of achievement in small populations, where one or two cases can make an enormous difference to the observed rate[5]. To quote the conclusion of an excellent paper on small area analyses[6]: *"In the absence of a prior hypothesis, small area analysis of epidemiological data for periods of less than 10 years will almost always give misleading results for all but the most common diseases."* The recommendation in that paper was for case-control studies, and that was one of the specific issues we addressed in our follow-up article on clinical audit of suicides[7].

In reality, the only acceptable suicide rate is zero and any other observed number must represent some degree of failure. The existing approach to target achievement reminds one of primitive ballistics. We choose the target, pour in some funding, light the enthusiasm and trust that all will be well. That is simply not good enough, or, if it is, then epidemiologists have little role to play in the process. If we are to learn from the United States experience[8,9], we should make a strong distinction between **real** targets versus wishes, and in the former case we should quantify the attributable benefit of programs, and fund them and evaluate them, on an ongoing basis. We should avoid "descriptive targets", or targets that need not be precisely achieved, and the processes that tend to flow from aiming at such vague things.

To say that one does not know how to achieve a desirable change is the first step in acquiring knowledge. It generates the right kind of activity – either to invest in finding out if others know things that we do not, or in conducting investigations ourselves, to bridge the gap between where we are and where we want to be, even if neither of those things can be quantified very well, as in the case of many aspects of mental illness and the precursors of suicide. It means that evaluation must be a major part of any program which **is** funded and not just whatever is easiest to evaluate, or most conventional. The evaluation must focus on the provable connection between the program and some outcome closer to the desired end-state.

This means that epidemiologists will have to acquire program evaluation skills and learn about psychosocial research, as well as improving their analyses of mortality data. A handbook would be useful, but it would need to cover more than statistical methods.

The Mental Health Epidemiology Group (MHEG)[10] has been in operation for only a few months. Most mental health data in NSW have never been analysed, even in a conventional way, and each new analysis presents unexpected pitfalls. In these circumstances we prefer to stay on the safe ground of conventional analyses so that any curious aspects of the data will not be confounded with analytical novelty. We appreciate the comments on our first paper on suicide mortality. We would be delighted, however, if others would carry the methodological work forward.

1. Better health outcomes for Australians: national goals, targets and strategies for better health outcomes into the next century. Commonwealth of Australia, 1994.
2. Mosteller F, Tukey JW. Data analysis and regression: a second course in statistics. Reading, Massachusetts: Addison-Wesley, 1977.
3. Chipps J, Stewart G, Sayer G. Suicide mortality in NSW: clients of mental health services. *NSW Public Health Bulletin* 1995; 6(8):75-81 (in press).
4. Dobson AJ, Kuulsmaa K, Eberle E, Scherer J. Confidence intervals for weighted sums of Poisson parameters. *Statistics in Medicine* 1991; 10:457-462. (We thank Dr Tim Churches for this and the following reference.)
5. Stevenson JM, Olson D. Methods for analysing county-level mortality rates. *Statistics in Medicine* 1993; 12:393-401.
6. Hole DJ, Lamont DW. Problems in the interpretation of small area analysis of epidemiological data: the case of cancer incidence in the West of Scotland. *J Epidemiology and Community Health* 1992; 46:305-310. (We thank Dr Peter Sainsbury for providing this reference.)
7. Chipps J, Stewart G, Sayer G. Suicide mortality in NSW: an introduction to clinical audits. *NSW Public Health Bulletin* 1995; 6(7):68-70.
8. National Center for Health Statistics. *Health, United States, 1994.* Hyattsville, Maryland: Public Health Service, 1995.
9. In our previous paper we reported that in 1980 the US set a youth suicide target of 11/100,000 for 1990, against a baseline of 12.4/100,000 in 1978, and at the mid-point in 1985 the rate had actually increased to 12.9/100,000. We have since obtained more recent data. The rates per 100,000 people aged 15-24 were 12.9, 13.0, 13.2, 13.1 and 13.0 in the years 1988-1992 respectively. Perhaps they would have been much higher but for the target being set. But clearly, there was no magic in the number chosen by the United States in 1980 and it was not "precisely" achieved in 1990.
10. Membership of MHEG is open to people with a professional interest and expertise in mental health epidemiology who are willing to contribute to the planning and production of a series of publications and reports on important mental health topics. The policy of MHEG is joint publication by the group as a whole in which authors are listed in order of their contribution to the particular report. The contact address for MHEG on matters concerning this report is: Mental Health Epidemiology Group, Centre for Research & Development, Public Health Division, NSW Health Department, Locked Bag 961, PO North Sydney 2059 (Fax: 391-9232, Internet e-mail gstew@gwsm.doh.health.nsw.gov.au).

INFECTIOUS DISEASES

FIGURE 1

SELECTED INFECTIOUS DISEASES
JULY NOTIFICATIONS 1995 COMPARED WITH HISTORICAL DATA
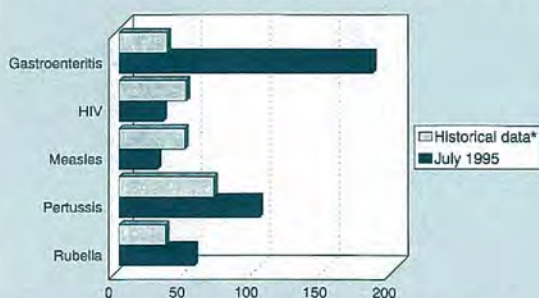
* Historical data: the average number of notifications diagnosed in the same month in the previous three years.

TABLE 1

INFECTIOUS DISEASE NOTIFICATIONS FOR NSW, 1995
BY SELECTED MONTH OF ONSET
RECEIVED BY AUGUST 31, 1995

Condition	May	Jun	Jul	Aug	Total
Adverse event after immunisation	4	4	3	1	12
AIDS	32	28	12	3	75
Arboviral infection	80	24	12	9	125
Brucellosis	1	–	–	–	1
Cholera	–	–	1	–	1
Foodborne illness (NOS)	6	9	12	4	31
Gastroenteritis (instit)	37	12	184	147	380
Gonorrhoea infection	42	32	12	11	97
H. influenzae meningitis	–	2	2	–	4
H. influenzae septicaemia	1	–	–	1	2
Hepatitis A – acute viral	51	32	16	9	108
Hepatitis B – acute viral	5	5	3	–	13
Hepatitis B – chronic/carrier	55	47	26	13	141
Hepatitis B – unspecified	411	369	235	103	1,118
Hepatitis C – acute viral	13	7	4	1	25
Hepatitis C – unspecified	817	689	441	172	2,119
Hepatitis D – unspecified	1	2	–	–	3
Hepatitis, acute viral (NOS)	–	–	1	–	1
HIV infection	47	32	32	27	138
Hydatid disease	–	5	1	–	6
Legionnaires' disease	7	6	5	2	20
Leptospirosis	–	–	1	–	1
Malaria	17	1	3	1	22
Measles	62	42	28	36	168
Meningococcal infection (NOS)	1	–	–	–	1
Meningococcal meningitis	4	12	10	6	32
Meningococcal septicaemia	1	3	2	3	9
Mumps	1	2	2	1	6
Mycobacterial atypical	25	13	–	–	38
Mycobacterial infection (NOS)	18	15	10	3	46
Mycobacterial tuberculosis	29	21	14	11	75
Pertussis	145	122	102	49	408
Q fever	15	18	15	5	53
Rubella	49	35	55	58	197
Salmonella (NOS)	104	48	61	22	235
Syphilis infection	93	60	62	24	239
Tuberculosis – non-active	7	11	5	5	28
Typhoid and paratyphoid	1	–	1	–	2

NOTIFICATION TRENDS

Figure 1 shows that there were relatively high levels of notifications in July 1995 for gastroenteritis, pertussis and rubella.

The pattern of gastroenteritis notifications was discussed in the August issue of the *NSW Public Health Bulletin*. Notifications have continued at a high level, with 147 in August, all from the Northern Sydney, Western Sydney and Wentworth Areas. In addition, the Hunter Area Public Health Unit advised that several diagnoses of Norwalk virus were made from an outbreak in a hospital ward.

Rubella and pertussis notifications are discussed below.

Table 1 shows that notifications of meningococcal meningitis have increased in recent months, with four cases in May 1995, 12 in June, 10 in July and six in August. The cases were sporadic and the notifications came from almost all Public Health Units (PHUs). This reflects a typical seasonal pattern of meningococcal disease, with higher levels in spring and late winter.

Measles notifications in July 1995 were below the historical average (Figure 1). However, Table 2 shows that cumulative notifications have been higher for 1995 than for the same period in 1994. Measles notifications peak each year during spring and therefore notifications for the year until August reflect only the period of low activity. Measles notifications so far this year have been a mixture of sporadic cases and small local outbreaks.

INCREASE IN RUBELLA NOTIFICATIONS

Several PHUs have reported high rubella notification rates in recent months. The highest notification rate was from the North Coast (PHU), with 22.6/100,000 so far this year, followed by Hunter Area PHU with 11.8/100,000. The overall Statewide rate was 5.4/100,000. Rubella notifications usually peak in late spring in NSW. Figure 2 shows that notifications for August this year were the second highest recorded for the month of August since laboratory notification began late in 1991. So far this year 332 cases have been notified, compared with 232 for the whole of 1994.

Rubella is a mild febrile viral disease with a diffuse rash sometimes resembling that of measles or scarlet fever. It is highly infectious, and is transmitted by nasopharyngeal secretions, either via droplets or direct contact. Children usually present few or no constitutional symptoms but adults may have a low-grade fever, headache, tiredness, nasal discharge and conjunctivitis. Up to half of infections occur without a rash.

Rubella is notifiable by laboratories, but not doctors or hospitals. School principals and directors of child care centres are required to inform their local PHU if they become aware of cases in their institutions. As the clinical symptoms are non-specific, laboratory confirmation is required for a notification. Since a laboratory test would be requested only in a minority of cases of rubella, only a small proportion of cases is notified.
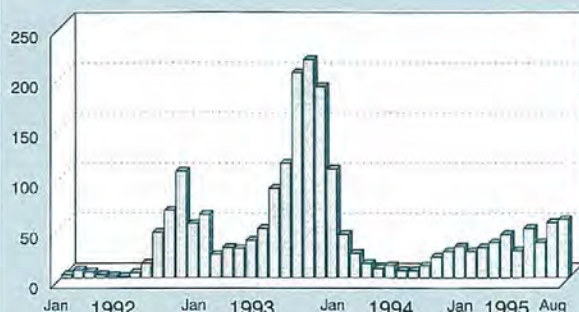
FIGURE 2

RUBELLA NOTIFICATIONS
NSW 1992-1995

TABLE 2

SUMMARY OF NSW INFECTIOUS DISEASE NOTIFICATIONS
AUGUST 1995

Condition	Number of cases notified			
	Period		Cumulative	
	August 1994	August 1995	August 1994	August 1995
Adverse reaction	4	1	29	21
AIDS	47	1	362	185
Arboviral infection	5	9	355	475
Brucellosis	2	–	2	1
Cholera	–	–	–	1
Diphtheria	–	–	–	–
Foodborne illness (NOS)	4	4	139	293
Gastroenteritis (instit.)	39	147	200	430
Gonorrhoea	33	11	251	241
H influenzae epiglottitis	–	–	18	3
H influenzae B – meningitis	2	–	12	7
H influenzae B – septicaemia	1	1	10	5
H influenzae infection (NOS)	–	–	8	2
Hepatitis A	44	9	375	333
Hepatitis B	415	116	2,976	2,954
Hepatitis C	909	173	6,119	5,092
Hepatitis D	–	–	14	11
Hepatitis, acute viral (NOS)	–	–	2	1
HIV infection	37	27	303	320
Hydatid disease	2	–	12	10
Legionnaires' disease	4	2	50	56
Leprosy	1	–	3	1
Leptospirosis	2	–	13	4
Listeriosis	1	–	5	7
Malaria	17	1	145	80
Measles	40	36	387	424
Meningococcal meningitis	18	6	54	46
Meningococcal septicaemia	7	3	25	16
Meningococcal infection (NOS)	2	–	10	10
Mumps	1	1	4	8
Mycobacterial tuberculosis	27	11	283	211
Mycobacterial – atypical	39	–	349	217
Mycobacterial infection (NOS)	6	3	26	67
Pertussis	128	49	981	700
Plague	–	–	–	–
Poliomyelitis	–	–	–	–
Q fever	15	5	182	119
Rubella	12	58	128	332
Salmonella infection (NOS)	62	22	762	804
Syphilis	114	24	735	547
Tetanus	–	–	2	–
Typhoid and paratyphoid	3	–	25	29
Typhus	–	–	–	–
Viral haemorrhagic fevers	–	–	–	–
Yellow fever	–	–	–	–

Infectious diseases

Rubella is important because of its ability to produce congenital abnormalities if a pregnant woman is infected at less than 20 weeks gestation. Congenital rubella syndrome may include foetal death, malformations of major organ systems, deafness or mental retardation. Twelve cases of congenital rubella syndrome were reported in Australia in 1994.

The emphasis is therefore on the prevention of congenital rubella. Initially this focused on immunisation of adolescent females with measles-mumps-rubella (MMR) vaccine, through the schoolgirl rubella program. In 1989 a further recommendation for immunisation of all children at 12 months of age was implemented, and from 1995 the schoolgirl immunisation program was extended to include adolescent males. Most cases occur in the unimmunised, notably adolescent and adult males, and children 6-10 years of age. Seventy-four per cent (247) of the 332 notifications received so far in 1995 referred to adolescent or adult males, and 13 per cent (42) to women of child-bearing age.

The pool of unimmunised people has been reduced every year since the introduction of the new immunisation recommendations in 1989 and 1995 mentioned above. This should lead to a progressive reduction in the magnitude of epidemics. The NSW Health Department and several PHUs have recently produced media releases recommending that:

■ women who are intending to become pregnant should have their level of immunity checked;

■ pregnant women should avoid contact with suspected cases of rubella and seek medical advice if contact occurs;

■ people known or suspected of having rubella should avoid school and work, and especially avoid contact with pregnant women, for at least four days after the onset of rash; and

■ parents should ensure that their children are immunised with MMR at 12 months of age and again in early adolescence, as recommended by the National Health and Medical Research Council.

PERTUSSIS (WHOOPING COUGH) IN ADULTS

The pertussis notification rate was higher than average for the month of July (Figure 1). The North Coast PHU reported the highest notification rate for the period January 1 to August 31, 1995 (48 cases per 100,000, compared with the Statewide rate of 11/100,000). Forty per cent of 1995 notifications were of people aged 20 years or more, and two of the notifications were of people aged >75 years. Vaccine efficacy wanes over a few years, so immunised adolescents and adults provide a significant reservoir for pertussis. Pertussis in adults often takes the form of a mild atypical respiratory illness and is therefore often diagnosed late, after other tests have been negative in the face of persisting symptoms. Erythromycin prophylaxis is effective only if given within three weeks of exposure, therefore late diagnosis severely limits the effectiveness of public health follow-up. Doctors are encouraged to consider a diagnosis of pertussis in adults with a persistent cough and to report cases to their local PHU.
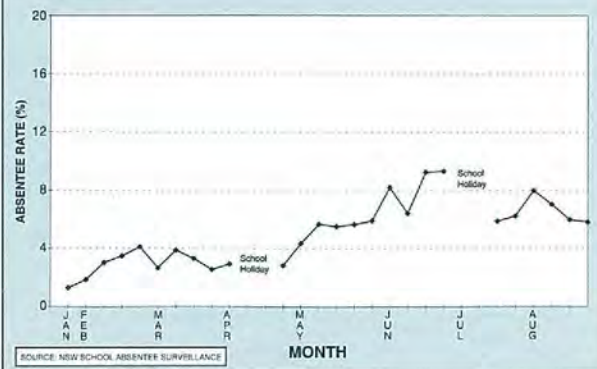
FIGURE 3

INFLUENZA-LIKE ILLNESS IN NSW 1994 AND 1995

FIGURE 4

SCHOOL ABSENTEE SURVEILLANCE 1995 IN NSW
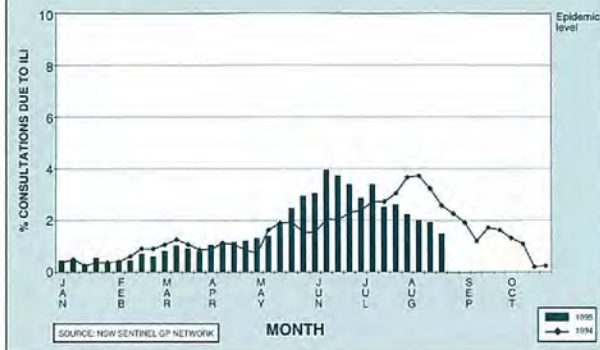
INFLUENZA SURVEILLANCE

Influenza-like illness (ILI) activity in August 1995 was lower than during the peaks in June and July (Figure 3). Laboratory reports of influenza A and B persisted at a low level.

The ILI consultation rate reported by NSW General Practitioner Sentinel Network for the fourth week of August was 1.5 per cent. This included data from about 75 doctors and 10,000 consultations a week. The weekly rates decreased from mid- July. ILI rates peaked earlier in 1995 than in 1994. In 1995 the peak rate was 3.9 per cent in the second week of June, while in 1994 it was 3.7 per cent in the second week of August.

Figure 4 shows the school absenteeism rate for the last week of August was relatively low (5.8 per cent). The rate remained stable during August. Reports were received by five PHUs, covering 14 schools with 11,500 pupils.

For August 1995, 30 influenza A and 24 influenza B notifications were made by the serology departments of The Prince of Wales and Westmead hospitals. Virology reports received from the Institute of Clinical Pathology at Westmead, Prince of Wales Hospital, Royal Alexandra Hospital for Children and Liverpool Hospital totalled 4 isolates of influenza A, 14 of influenza B, 111 of respiratory

syncytial virus, 7 of parainfluenza 3, 17 of rhinovirus and 3 of adenovirus. The number of both serology and virology reports was much lower than those for July 1995.

Two PHUs have recently released reports on influenza immunisation.

■ A retrospective study of influenza vaccine uptake conducted in 37 nursing homes in Hunter area showed that in 1994, 78 per cent of nursing home residents and 7 per cent of nursing staff had been immunised for influenza. Residents' and nursing staff's opposition to immunisation was the most likely barriers to influenza uptake (M. Rae, personal communication).

■ Based on sentinel general practice data, the Illawarra PHU reported that 80 per cent of influenza immunisations in 1994 were given to people aged >65 years and others at high risk. Less than 4 per cent of ILI consultations occurred in this group[1].

1. Lovegrove D. Sentinel reporting on influenza-like illness in the Illawarra, New South Wales. *Communicable Diseases Intelligence* 1995; 19(17):420-2.

TABLE 3

INFECTIOUS DISEASE CUMULATIVE NOTIFICATIONS FOR NSW, 1995
RECEIVED BY AUGUST 31, 1995

Condition	CCA	CSA	CW	ESA	HUN	ILL	NC	ND	NSA	SE	SSA	SW	SWS	WEN	WNS	WSA	U/K	Total
AIDS	2	42	–	62	7	1	16	–	24	–	10	–	6	6	–	9	–	185
Arboviral infection	6	4	–	7	10	24	188	42	5	151	3	12	1	2	18	2	–	475
Brucellosis	1	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	1
Cholera	–	–	–	1	–	–	–	–	–	–	–	–	–	–	–	–	–	1
Gonorrhoea infection	2	41	6	95	3	9	14	6	12	5	13	–	14	3	9	9	–	241
Hepatitis B – acute viral	–	3	1	9	–	–	3	2	–	1	1	–	3	–	8	4	–	35
Hepatitis B – chronic/carrier	15	–	11	171	–	–	6	10	3	–	10	–	–	6	7	75	–	314
Hepatitis B – unspecified	18	269	8	43	57	60	45	8	369	18	361	14	963	13	5	354	–	2,605
Hepatitis C – acute viral	1	–	1	5	–	–	–	–	–	1	–	–	–	2	33	1	–	44
Hepatitis C – unspecified	138	495	219	784	293	303	554	130	377	152	308	150	588	93	15	448	–	5,048
Hepatitis D – unspecified	–	–	–	1	–	–	4	1	1	–	1	–	3	–	–	–	–	11
Hepatitis, acute viral (NOS)	–	–	–	1	–	–	–	–	–	–	–	–	–	–	–	–	–	1
HIV infection	7	54	1	116	10	8	6	–	15	–	15	2	17	6	–	15	6	320
Hydatid disease	–	–	1	1	–	–	1	–	1	–	–	2	3	–	–	1	–	10
Legionnaires' disease	1	2	–	5	9	5	1	2	8	–	–	–	3	2	1	17	–	56
Leprosy	–	1	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	1
Leptospirosis	–	–	–	–	1	–	1	2	–	–	–	–	–	–	–	–	–	4
Malaria	3	5	–	7	8	4	8	1	20	1	3	3	4	3	–	10	–	80
Meningococcal infection (NOS)	1	–	–	1	1	–	2	–	–	–	2	1	1	–	1	–	–	10
Meningococcal meningitis	5	1	4	3	8	3	3	2	6	2	2	–	4	1	–	2	–	46
Meningococcal septicaemia	–	3	–	–	5	–	1	1	2	–	1	–	2	1	–	–	–	16
Mycobacterial atypical	7	28	–	51	12	6	10	6	28	1	18	3	27	5	6	8	–	217
Mycobacterial infection (NOS)	3	5	–	–	7	–	4	–	9	–	4	–	26	2	–	7	–	67
Mycobacterial tuberculosis	3	21	2	13	5	4	3	2	26	1	24	3	51	2	3	48	–	211
Q fever	–	1	7	–	9	2	36	27	–	–	–	1	1	–	34	1	–	119
Syphilis infection	5	54	9	105	12	10	52	29	24	5	36	3	86	9	74	34	–	547

TABLE 4

VACCINE PREVENTABLE AND RELATED CONDITIONS, CUMULATIVE NOTIFICATIONS FOR NSW, 1995
BY PUBLIC HEALTH UNIT, RECEIVED BY AUGUST 31, 1995

Condition	CCA	CSA	CW	ESA	HUN	ILL	NC	ND	NSA	SE	SSA	SW	SWS	WEN	WNS	WSA	Total
Adverse event after immunisation	–	–	–	–	1	–	3	2	–	2	2	5	–	4	–	2	21
H. influenzae epiglottitis	–	–	–	1	–	–	1	–	–	–	1	–	–	–	–	–	3
H. influenzae infection (NOS)	1	–	–	–	–	–	1	–	–	–	–	–	–	–	–	–	2
H. influenzae meningitis	–	1	–	–	–	–	3	–	–	–	–	–	1	–	–	2	7
H. influenzae septicaemia	–	–	–	–	1	–	–	–	1	–	1	–	1	–	–	1	5
Measles	13	23	10	53	40	53	32	38	12	5	32	9	29	37	–	38	424
Mumps	–	–	–	1	–	2	2	–	1	–	–	–	–	–	–	2	8
Pertussis	22	18	9	21	33	54	204	8	63	17	30	35	43	63	11	69	700
Rubella	2	7	1	23	62	2	95	25	51	–	15	3	16	6	1	23	332

TABLE 5

FOODBORNE INFECTIOUS DISEASE CUMULATIVE NOTIFICATIONS FOR 1995
BY PUBLIC HEALTH UNIT, RECEIVED BY AUGUST 31, 1995

Condition	CCA	CSA	CW	ESA	HUN	ILL	NC	ND	NSA	SE	SSA	SW	SWS	WEN	WN	WSA	Total
Foodborne illness (NOS)	16	9	–	–	162	–	3	1	4	–	1	8	49	–	20	20	293
Gastroenteritis (instit)	–	33	–	–	18	–	45	–	109	1	–	–	–	174	2	48	430
Hepatitis A – acute viral	8	51	32	89	15	7	18	–	31	–	22	10	25	3	3	19	333
Listeriosis	–	1	1	1	–	–	–	1	1	1	–	–	–	–	–	1	7
Salmonella (NOS)	18	41	15	56	59	39	92	53	89	32	71	21	67	37	29	85	804
Typhoid and paratyphoid	–	1	–	8	–	–	3	–	3	–	5	–	4	1	–	4	29
Vibrio infection (non cholera)	–	–	–	1	–	–	–	–	–	–	–	–	–	–	–	–	1

Abbreviations used in this Bulletin:
CSA Central Sydney Health Area, SSA Southern Sydney Health Area, ESA Eastern Sydney Health Area, SWS South Western Sydney Health Area, WSA Western Sydney Health Area, WEN Wentworth Health Area, NSA Northern Sydney Health Area, CCA Central Coast Health Area, ILL Illawarra Health Area, HUN Hunter Health Area, NC North Coast Public Health Unit, ND Northern District Public Health Unit, WN Western New South Wales Public Health Unit, CW Central West Public Health Unit, SW South West Public Health Unit, SE South East Public Health Unit, OTH Interstate/Overseas, U/K Unknown, NOS Not Otherwise Stated.

Please note that the data contained in this Bulletin are provisional and subject to change because of late reports or changes in case classification. Data are tabulated where possible by area of residence and by the disease onset date and not simply the date of notification or receipt of such notification.