



INCREASING PHYSICAL ACTIVITY PARTICIPATION IN LOCAL COMMUNITIES

GUEST EDITORIAL

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In the last issue of the *Public Health Bulletin*, two articles provided background information about physical activity in NSW – its health benefits, participation rates and strategic initiatives to increase population physical activity levels in NSW.

The following three short reports are case studies showing how initiatives at a local level can influence individual physical activity behaviour and improve local environments. The common theme is the importance of forging partnerships between the health sector and other sectors.

The Illawarra project, through partnerships, maximised opportunities for inexpensive publicity promoting physical activity – an important use of social marketing in public health. Intersectoral work in Central Sydney over the past year and a half has resulted in strong working relationships and a mutual understanding of the capacities of collaborating organisations. The work in Western NSW shows that exchange of information between the health sector and local government officers, particularly engineers and town planners, can result in the development of a resource beneficial to the objectives of both.

These separate pieces of work demonstrate that successful intersectoral collaboration can occur at a local level as well as at a Statewide level. They also reflect three important areas of physical activity promotion:

- increasing the motivation of individuals to be physically active;
- increasing knowledge of local opportunities for physical activity; and
- changing the physical environment.

The next issue of the *Bulletin* will contain articles which focus on research and evaluation initiatives in physical activity promotion.

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Infectious Diseases

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SEARCHING FOR COMMON GROUND IN A LOCAL MEDIA CAMPAIGN

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The NSW Health Department implements the ICAC guidelines on sponsorship. These guidelines must be considered before any partnership is formed with external organisations, and the appropriate approvals must be obtained. The NSW Health Department's Health Public Affairs Branch is able to provide advice on this process.

This article describes how a local physical activity campaign, the National Heart Foundation Illawarra Physical Activity Project (located at the Illawarra Health Promotion Unit), was able to build a valuable relationship with local businesses and expand the resources available for producing a mass media campaign.

COMMUNICATING HEALTH MESSAGES TO THE PUBLIC

Communicating health messages is an essential part of health promotion. Mass media alone may not be effective in changing health behaviour^{1,2} but mass media and social marketing strategies are well accepted as ways of creating community awareness of a health issue and setting the agenda to make behaviour change possible.

Few local health promotion projects have budgets which allow investment in awareness raising through paid placements in the media. This makes them reliant on unpaid publicity through community service announcements and press releases. One of the major strategic aims of the Illawarra Physical Activity Project has been to raise community awareness of the importance of moderate physical activity.

The project had a budget allocated to awareness raising through the media, but could not afford to produce a new campaign. For this reason, previous advertisements produced by interstate campaigns were reviewed, with the intention of producing new soundtracks and using the small media budget to buy air time. This approach was not pursued, primarily because the available advertisements were unsuitable for the population targeted by the project. In addition to the cost of producing new advertisements, the available media budget would have had to be at least doubled to cover the cost of paid media placements.

SEEKING SHARED SOLUTIONS

A local health fund and two television stations were approached to support a National Heart Foundation advertising campaign. While the television stations were willing to use our material as a community service announcement, they were not interested in offering more unless paid advertising was also purchased. The level of free support was clearly related to the size of advertising expenditure.

At a personal meeting, a representative of the health fund showed some interest in a collaborative media campaign. One of the television stations also expressed interest. A sponsorship proposal outlining our financial commitment and the expected campaign exposure was prepared and sent to the health fund. As the television station's support was unknown until we had a confirmed budget, it was impossible to provide the kind of specific information the health fund required to confirm its sponsorship. The health

fund also sought publicity, and for this reason was heavily involved in the development of the content of the piece that was to go to air (the "creative").

BALANCING ORGANISATIONAL NEEDS IN DEVELOPING THE ADVERTISEMENTS

One of the major hurdles we faced was that, even if we were successful in obtaining the health fund's sponsorship, we would still have only a small budget to be stretched over a two-year period. We needed an advertising agency that was prepared to develop and produce the piece on a small and uncertain budget. As the first question any advertising agency asks is the size of the budget, we were an unappealing prospect for most agencies.

Tenders were called, and three small companies expressed some guarded interest. Two of the companies produced cartoons ("concept storyboards") which were market-tested with groups of blue-collar workers. The concept which elicited the most favourable responses was selected, and altered according to the test groups' comments. Feedback from the market testing, community surveys and focus groups indicated that the piece should:

- be fun and not nag (using humour to promote the message);
- address some of the barriers to exercise;
- convey the idea of accumulating moderate physical activity; and
- clearly explain the heart disease risk reduction benefits of moderate activity.

All this had to be done in 20 seconds, as sponsor recognition advertising would fill the remaining 10 seconds.

The slogan for the campaign became "no ifs no buts". This slogan is now used in all promotional materials and publicity. The theme of the campaign was modelling walking behaviour for the whole family, while addressing typical excuses for not walking for exercise.

Representatives from the health fund and the television station were invited to all creative meetings, and had input into the final advertisement. They did not attend every meeting, but this open relationship was important in involving them as partners in the campaign rather than simply sponsors. After viewing the final storyboards and receiving a report on the market testing, the health fund agreed to fund the campaign on a dollar-for-dollar basis. Once this was confirmed, the television station agreed to provide a generous number of free advertising spots in addition to running the piece regularly as a community service announcement. From an initial \$15,000 total budget, the campaign now had a value of about \$70,000.

'WHAT'S IN IT FOR US?'

The health fund was interested in this media relationship for a number of reasons. It was seeking an association with the National Heart Foundation, which reflected an involvement with a community-based, preventive health project. The local flavour and the association with a positive, good-health message was important. The collaboration was also a productive business arrangement for the health fund, which received about three times the exposure it would have received by simply buying television time directly.

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COUNCILS, COMMITMENT, OPPORTUNITY AND RELATIONSHIPS: HOW THEY COMBINE TO PROMOTE PHYSICAL ACTIVITY

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This article describes a project to provide information to support members of a local community in increasing their level of physical activity. It provides an example of the need to work intersectorally to achieve health promotion goals¹, a need which is particularly strong in the promotion of physical activity, where some aspects of the development of supportive environments are outside the scope of the health sector².

In 1995 the Central Sydney Area Health Service Health Promotion Unit invited local interested parties (including representatives of local government, the local Division of General Practice, the National Heart Foundation and the local office of the Department of Sport and Recreation) to inaugurate a physical activity intersectoral working party. The Health Promotion Unit followed up the initial meeting by visiting each member of the working party to establish whether the most appropriate representative had attended the meeting and to investigate the core business of the group or organisation. At this stage we indicated our willingness to work on physical activity projects undertaken by the representatives' own organisations.

The members' enthusiasm and commitment to the working party has been maintained by establishing good informal relationships, and by working individually with members of the group to assist them with their own projects.

THE DRUMMOYNE WALKING MAPS PROJECT

One of the substantial projects undertaken by the working party was to develop maps promoting walking paths in the Drummoyne area. This project was carried out in partnership with Drummoyne Council. It was our good relationship with the council that enabled us to initiate this project, and our collaboration with the council's community services worker helped to foster the relationship. The partnership with Drummoyne Council was

strengthened by the fact that the maps would appear to the public as a council product.

Once we had established good working relationships, the success of the project rested on the commitment of the council to undertake its share of the work. A council worker mapped the distance of each walk, contributed to the design of the maps and drafted briefing notes for the mayor for the public launch. She also engaged her manager in the process so he was supportive of the project. His organisational position helped with crucial decisions, such as the council's decision to provide funding.

A local shopping centre sponsored the printing of the maps, provided a venue for the launch of the maps and helped to secure some local media coverage, in return for the use of its logo.

Working with Drummoyne Council on the walking maps project acted as a stimulus to promote local facilities and also helped to heighten the council's awareness of the importance of environments in the promotion of physical activity. Following the success of this project, we are working with a number of councils on a range of physical activity projects.

CONCLUSIONS

In our experience, the three key factors for successful intersectoral action are:

- relationships
- commitment
- opportunity

Working intersectorally has resulted in strong organisational relationships which will greatly enhance the promotion of physical activity in Central Sydney.

1. Harris E, Wise M, Hawe P, Finlay P, Nutbeam D. Working together: intersectoral action for health. Canberra: AGPS, 1995.
2. Bauman A, Bellew B, Booth M, Hahn A, Stoker L, Thomas M. Towards best practice for the promotion of physical activity in the Areas of NSW. NSW Health Department, Centre for Disease Prevention and Health Promotion, 1996.

A local media campaign

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The local Illawarra television station also seeks opportunities for involvement in local community-based activities, as well as being interested in paid advertising.

CONCLUSION

It can be an advantage to operate at a local level in attempting to form collaborative relationships with the commercial sector. Many regional commercial organisations position themselves as local businesses, and for this reason seek associations with projects that are clearly community-based. Associations with important, positive, "feel-good", preventive health campaigns reflect positively on the sponsoring organisation at the local level.

However, this in itself is not generally enough for businesses in competitive market environments. The fact that we had some money to put towards the campaign was extremely important, because it indicated the level and

intent of our commitment. Since the Illawarra Physical Activity Project became a paying advertiser, the television station has been extremely helpful in covering other project stories, and is receptive to press releases from our project office. The value-added nature of the relationship was extremely important in ensuring it could be sustained.

Another advantage of working at a regional level is that it makes possible the development of personal relationships with commercial sector decision-makers. This is extremely important in helping to mesh health and commercial sector objectives, and allows far greater involvement by the commercial sector. Although the commercial media may not choose to be highly involved in a practical way, such a relationship greatly enhances the sense of being partners in a positive process.

1. Redman S, Spencer E, Sanson-Fisher R. The role of mass media in changing health-related behaviour: a critical appraisal of two models. *Health Promotion International* 1990; 5:85-100.
2. Owen N, Bauman A, Booth M, Oldenburg B, Magnus P. Serial mass media campaigns to promote physical activity: reinforcing or redundant? *American Journal of Public Health* 1995; 85:244-248.

CREATING SUPPORTIVE ENVIRONMENTS FOR PHYSICAL ACTIVITY

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The NSW Health Department's Sun Exposure and Physical Activity Policy Unit has commissioned four case studies as part of Project StART (Strategic Audit Resource and Toolkit). For one of these the Macquarie Area Health Service was commissioned to analyse the factors that affect the adequacy of footpaths, walkways and cycleways – referred to collectively as “paths” in the rest of this article – and to develop a simple checklist to audit them.

RATIONALE

Because physical inactivity is common in NSW (in 1994, 49 per cent of the population failed to attain adequate physical activity and 12 per cent were sedentary according to NSW Health Department definitions¹), it makes sense for a physical activity program to target the entire population.

Healthy activities which can be included in daily life are likely to be activities that also fulfil other functions. For example, walking to work has a transport function. The ideal physical environment would, therefore, be one that made it easier, safer and more enjoyable to be physically active as part of everyday life¹.

Recent research documents environmental barriers to participating in physical activity, such as fears for personal safety and problems with footpaths^{2,3}. To facilitate walking and cycling as legitimate forms of transport, it is important to have adequate paths, and also secure bike lockups, showers at work and frequent public transport.

METHODS

Local governments are in charge of planning, regulating and constructing both paths and open space, and therefore the case study commenced by consulting councils' footpath and bike strategies, and visiting a number of sites. This highlighted vast differences in the quality of paths.

The next step was to examine guidelines and standards for paths. These standards have been written from engineering and town planning perspectives and are best

Project StART Compendium

No resource kit exists to support the process of providing physical environments which encourage active lifestyles. Project StART included the development of a compendium of information and ideas for action by any member of the community.

The compendium, titled *Creating Supportive Environments for Physical Activity: A toolkit for those who want to modify the physical environment to promote physical activity in their communities*, includes case studies such as the Macquarie project on paths and will be useful to health workers, council workers, school teachers and residents.

Publication is anticipated by September 1997.

To request a copy, write to Bill Bellew at bbell@doh.health.nsw.gov.au or at the NSW Health Department, Locked Mail Bag 961, North Sydney

understood if read in partnership with planning experts, who can be found in councils and in the Roads and Traffic Authority. A town planning consultant was engaged to facilitate this process and to help us develop tools that non-experts could use to assess paths. The resulting documents included:

- a **checklist**, including directions for assessing paths and references to relevant technical information;
- technical documents to be used by engineers; and
- a sample **development control plan** for adoption by local governments.

1. Bauman A, Bellew B, Booth M, Hahn A, Stoker I, Thomas M. *Towards best practice for the promotion of physical activity in the Areas of NSW*. December 1996. NSW Health Department, Centre for Disease Prevention and Health Promotion.
2. Craythorn E. *Inactivity and the Environment Report, Dubbo and Wellington*. August 1993. Orana and Far West Region Health Promotion Unit, Report Number 18.
3. Wright C, MacDougall C, Atkinson R, Booth B. *Exercise in daily life: Supportive Environments*. October 1996. Report of a National Heart Foundation Research Project funded by the Commonwealth Department of Health and Family Services.

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The editor of the *NSW Public Health Bulletin* is Dr Michael Frommer, Director, Centre for Research and Development, NSW Health Department. Dr Lynne Madden is production manager.

The *Bulletin* aims to provide its readers with population health data and information to motivate effective public health action. Articles, news and comments should be 1,000 words or less in length and include a summary of the key points to be made in the first paragraph. References should be set out using the Vancouver style, the full text of which can be found in *British Medical Journal* 1988; 296:401-5.

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A NSW PUBLIC HEALTH LABORATORY NETWORK

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This article outlines a proposal to establish a Public Health Laboratory Network (PHLN) in NSW, designed to meet requirements for high quality public health laboratory services and laboratory expertise by building on existing services and facilities. The proposed PHLN, with the State's network of Public Health Units and the NSW Health Department's AIDS/Infectious Diseases and Environmental Health, Food and Nutrition Branches, will provide an integrated public health service for the surveillance and control of infectious diseases, and the capacity to monitor the safety of food and water and the risk of harm from exposure to toxic substances in the environment.

The PHLN will comprise a network of public health laboratories formally designated to provide specified services. Individual laboratories will represent foci of Statewide expertise in specific public health areas, while in combination the network will give NSW a comprehensive public health laboratory service.

THE CURRENT SITUATION

Public health laboratory services in NSW are provided through a variety of arrangements.

- Many public and private clinical laboratories in NSW are involved in public health surveillance through the requirement to notify certain infectious diseases under the Public Health Act 1991. Most of these notifications arise from clinical diagnostic testing for individual patient management.
- Some laboratories also contribute to public health through the analysis of food, water and environmental samples as well as human samples, both for research and in the investigation of disease outbreaks.
- An informal ad hoc network of specialist laboratories, managed by a number of different Area Health Services, provides expertise in specific public health fields.
- Specialist university, research and private laboratories also provide expertise in specific public health fields.

Although these arrangements have worked satisfactorily to date, the requirements of a modern, responsive and efficient public health service dictate a more formal and explicit structure.

Recent developments in the NSW Health system favour such a structure. Responsibility for the Division of Analytical Laboratories has been devolved from the NSW Health Department to the Western Sydney Area Health Service, and the microbiology and virology laboratories of the Institute of Clinical Pathology and Medical Research at Westmead Hospital have been integrated. Thus several significant Statewide public health functions have come together within the Western Sydney Area. The creation of the South Eastern Area Laboratory Service and the rationalisation of pathology services within other Areas are also likely to lead to new opportunities for laboratories to acquire or expand Statewide roles in certain fields of expertise.

TABLE 1

ROLES OF DESIGNATED PUBLIC HEALTH LABORATORIES

- Capacity to respond to Statewide public health requirements, including outbreak investigations, in conjunction with the NSW Health Department.
- Policy development (e.g. as a result of changing patterns of antibiotic resistance).
- Education (e.g. the development and updating of testing algorithms for general practitioners and public health practitioners).
- Providing a Statewide and/or national reference laboratory function.
- Coordinating the NSW contribution to State, national and international laboratory networks to facilitate the collation and analysis of epidemiological data.
- Analysis and reporting of Statewide data in conjunction with the NSW Health Department.
- Providing advice on changes in technology and opportunities for improved efficiency in the laboratory contribution to public health investigations.
- Training and advice (e.g. in the identification of malarial parasites, vectors for arboviral infection).
- Quality assurance (coordinating Statewide response to State, national and international programs).
- In conjunction with other laboratories and the Department the development of benchmarks and best practice for public health laboratory surveillance and investigation.
- Developing case definitions and standardised reporting formats for notifiable conditions.
- Ensuring the availability of techniques for low volume requests in a way which avoids duplication by offering the service on site or making sure any request can be appropriately referred.
- Receipt of isolates and samples for confirmatory testing, typing, or archiving (either as a voluntary role or as a required public health responsibility).
- Providing a consultancy service to Public Health Units and the NSW Health Department.
- Initiating public health research in conjunction with the Department, Public Health Units and other agencies.
- Conducting and/or coordinating seroprevalence and other surveys in response to Statewide public health priorities determined by the Department.
- Providing specialist input into the Public Health Laboratory Advisory Committee.

THE CONCEPT OF DESIGNATED LABORATORIES

The intent of the PHLN is to identify **designated laboratories** for the Department, public health practitioners and external agencies. Designated laboratories may provide generic or specialist services. Through the PHLN there will be a known point of contact for the laboratory services needed to support any Statewide public health contingency, including routine and planned public health action, the investigation of outbreaks, and the response to emergencies and disasters which pose a threat to public health. The PHLN does not seek to provide a neat bureaucratic framework, but rather a mechanism for facilitating communication between laboratories, clinicians, public health practitioners and managers.

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Public Health Laboratory Network

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The concept of designation implies neither pre-eminence nor an exclusive role in testing. In some instances (e.g. testing for malaria), laboratories will have exclusive roles. In other instances a laboratory is selected to have a coordinating role and to provide advocacy and support for other laboratories which will continue to provide confirmatory and/or reference functions and contributions to research.

Table 1 lists generic functions for designated laboratories. Some designated laboratories will take on all these functions, while others will fulfil only some generic functions. The functions to be undertaken by each designated laboratory will be negotiated between the NSW Health Department and the Area Health Service managing the laboratory, and will clearly be influenced by available expertise and resources.

Three approaches may be taken to the designation of laboratories for specialist public health functions.

■ First, laboratories may be designated for a **single disease or organism**. This approach is likely to be used for uncommon but important conditions.

Examples are:

- malaria, where the laboratory has a specific public health role;
- *Legionella* infection, where responsibility must be clear-cut in the event of an outbreak; and
- tuberculosis, which has specific public health implications, with the laboratory role in monitoring antibiotic resistance being of crucial importance.

■ Second, laboratories may be designated for a **group of diseases or organisms**. This may be more helpful for public health practice than designation for a single disease or organism. Vaccine-preventable diseases (diphtheria, *Haemophilus influenzae*, measles, mumps, pertussis, *Pneumococcus*, rubella and varicella) have been grouped because designated laboratories may have particular roles, e.g. in coordinating prevalence surveys to monitor the effectiveness of immunisation programs.

■ Designating a laboratory for a **specific public health function** is the third approach which has been used. Water quality and food safety are examples of such functions.

In some instances a designated laboratory's roles will include collating results of tests routinely carried out in most laboratories (e.g. diagnosis of *Neisseria* infection). For others the designated laboratory will be one of a small number approved for confirmatory testing (e.g. for HIV infection). In a few instances the designated laboratory may have a State or national reference function, and the laboratory may then be widely accepted as the sole focus of public health expertise (e.g. medical entomology and water quality assessment).

SELECTION OF DESIGNATED LABORATORIES

For most laboratories the selection has been based on existing roles and generally accepted views about the current focus of expertise. However, because not all

TABLE 2

| DESIGNATED PUBLIC HEALTH LABORATORY (TO DECEMBER 1997) Condition/s | Designated laboratory (abbreviations are given below) |
|--|---|
| Arboviral diseases ¹ | ICPMR |
| Chemicals in the environment ² | DAL/ICPMR |
| Enteric diseases ³ | ICPMR/DAL |
| Food safety ⁴ | DAL/ICPMR |
| Hepatitis | Not determined |
| Influenza | SEALS |
| HIV/AIDS | St Vincent's/SEALS |
| Legionella | ICPMR/DAL |
| Medical entomology (other than arboviral diseases) | ICPMR |
| Malaria (and parasitic diseases other than giardiasis and cryptosporidium) | ICPMR |
| Neisseria ⁵ | SEALS/SWAPS |
| Quarantinable and other rare, exotic, or imported conditions ⁶ | ICPMR |
| Vaccine preventable diseases ⁷ | SEALS/ICPMR |
| STDs ⁸ | ICPMR |
| Tuberculosis and other mycobacteria | ICPMR |
| Water quality | DAL/ICPMR |
| Zoonotic diseases ⁹ | ICPMR |

DAL = Division of Analytical Laboratories; ICPMR = Institute of Clinical Pathology & Medical Research, Westmead Hospital; St Vincent's = St Vincent's Hospital, Darlinghurst; SEALS = South East Area Laboratory Service; SWAPS = South West Area Pathology Service.

1. Including Dengue, Ross River Fever, Barmah Forest Disease, Murray Valley Encephalitis, other Alpha, Bunya and Flaviviruses, Exotic and VHF viruses.

2. Including pesticides, trace metals.

3. Including viral (rotavirus), bacterial (*Campylobacter*, salmonella, shigella, yersinia, cholera, e coli...) Parasital (cryptosporidium).

4. Including listeriosis, botulism.

5. Including gonorrhoea, meningococcal disease.

6. Including cholera, plague, rabies, typhus, viral haemorrhagic fevers, yellow fever, equine morbilliform virus.

7. Including diphtheria, haemophilus influenzae, measles, mumps, pneumococcus, poliomyelitis rubella, varicella.

8. Including chancroid, chlamydia trachomatis, donovanosis, herpes, syphilis.

9. Including brucellosis, hydatid disease, leptospirosis, Q fever.

interested parties could be consulted in the development of the PHLN, it has been suggested that designation of laboratories should apply for 12 months only in the first instance. This permits the rationale for selection to be challenged before designation is offered for five years.

Table 2 lists designated public health laboratories and recommended sites for the initial 12-month period (to the end of December 1997).

COORDINATION OF THE PHLN

It is envisaged that the PHLN will become part of the wider NSW Public Health Network; specifically, that it will have close links with the NSW Health Department and Area Health Services through the Public Health Units.

The Department (through the Chief Health Officer) is responsible for public health policy and for ensuring

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TRENDS

Reports of **arbovirus** infections (mainly **Ross River virus** infections from Greater Murray Area, Western NSW, and increasingly the Hunter, and a handful of **Barmah Forest** virus infections from the Mid North Coast [Table 3]) remain above the historical average (Figure 1). The huge increase in reported **hepatitis A** cases in February is a legacy of Wallis Lake oysters (see the *Bulletin*, Jan-Feb 1997). Reports of **pertussis**, while still above expectations for this time of year, declined in February after a steady increase in the previous 12 months (Figure 1).

INFLUENZA

With winter approaching, the ugly spectre of influenza will raise its head soon. So start immunising people at risk for complications now.

Influenza is an acute respiratory infection characterised by fever, headache, myalgia, prostration, coryza, sore throat and cough. The virus is transmitted by respiratory droplets and may be shed up to 24 hours before onset of illness. Adults are infectious for 3-5 days after onset and children for up to 7 days¹². The incubation period is usually 1-5 days. Most people recover after 2-7 days, but in people ≥ 65 years or with pre-existing medical conditions, serious complications including pneumonia and death may follow.

Epidemics

In the past 400 years, local and widespread epidemics and worldwide pandemics have been reported. In 1918-19, 21 million flu deaths were reported worldwide. Community attack rates generally range between 10 per cent and 30 per cent during epidemics, even higher in confined environments such as nursing homes and boarding schools².

Viral types

The virus type is determined by the antigenic properties of the nucleoprotein. Subtypes of influenza A are classified according to surface glycoproteins. H refers to the haemagglutinin and N to the neuraminidase components. Frequent mutations of viral genes result in emergence of variants that are described by geographic site, the culture number and the year of isolation. Pandemics of type A occur irregularly and result from the emergence of completely new subtypes (antigenic shift), while annual epidemics of types A or B result from minor antigenic changes (antigenic drift). Type C has been associated with sporadic cases and minor localised outbreaks.

Surveillance

Surveillance of influenza-like illness (ILI) in NSW begins in April each year, through GP sentinel network, school absentee rates and lab virology and serology reports².

Flu vaccine

Influenza vaccine is reviewed annually so that changes in the composition can be made to counter antigenic shifts and drifts in the circulating viruses. The Australian Influenza Vaccine Committee recommended the following antigens for the 1997 vaccine⁴:

- H₁N₁ A/Texas/36/91 (H₁N₁)-like strain
- H₃N₂ A/Wuhan/359/95 (H₃N₂)-like strain
- B/Beijing/184/93-like strain.

Immunisation confers about 70 per cent protection against infection for about one year³, and annual vaccination with

current vaccine is required to provide continuing protection. A single dose of vaccine is sufficient for most people. Little or no improvement in antibody responses occurs when a second dose is given to adults during the same season. However, two doses ≥ 4 weeks apart are recommended for people with impaired immune function.

The vaccine should be refrigerated at 2-8°C, and administered by deep subcutaneous or intramuscular injection. The vaccine is not recommended in pregnancy (because of the risk of febrile reactions), for people with anaphylactic hypersensitivity to eggs or people with acute febrile illnesses.

Australia 1996

In NSW and other parts of Australia in 1996⁷ an increase in influenza A (H₃N₂) was recorded, peaking in July. There was little influenza B activity reported. In NSW the consultation rate of influenza like illness among patients of sentinel GP practices peaked at 2.5 per cent, well below epidemic levels.

Northern hemisphere, 1997

During the 1996-97 northern hemisphere season, many countries reported moderate to severe influenza epidemics. Activity peaked in Western Europe and North America in December 1996 or January 1997, and began in central and eastern Europe in mid-January⁶.

Who should be vaccinated?

NHMRC has revised its recommendations for influenza vaccination to maximise protection of high-risk people. Vaccination is recommended for people who, because of age or underlying medical conditions, are at increased risk for complications of influenza. In addition, staff caring for people at risk (e.g. in a nursing home) should consider vaccination to minimise spread to these people.

Target groups for influenza vaccinations⁸:

Routinely vaccinate:

- Individuals ≥ 65 years old
- Aboriginal and Torres Strait Islander adults ≥ 50 years old
- Adults with chronic debilitating diseases (especially chronic cardiac, pulmonary, renal and metabolic disorders)
- Children with cyanotic congenital heart disease
- Adults and children receiving immunosuppressive therapy
- Residents nursing homes and other chronic care facilities.

Consider vaccinating:

- Staff caring for immunocompromised patients
- Staff of nursing homes and other chronic care facilities.

Because antibody levels begin to decline within a few months of vaccination, at-risk people should be immunised in autumn just before the flu season begins. However, opportunities to vaccinate people having infrequent or irregular contacts with health care providers should be maximised by immunising high risk people when vaccine for the influenza season becomes available.

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Infectious diseases

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Vaccination is generally not recommended for people outside these risk groups, because they are not at increased risk of serious complications.

(Adapted from: Southern Sydney Public Health Unit. Public Health Update 1995; 2:5.)

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US CASE OF HUMAN RABIES FROM A DOG BITE IN NEPAL

Earlier this year, the United States Centers for Disease Control and Prevention reported the case of a 32-year-old American woman who died on August 20, 1996 from an illness characterised by rapid neurologic deterioration. Rabies had been clinically suspected on August 14, and was confirmed on August 17. Here is a summary of the investigation that implicated a dog in Kathmandu, Nepal, as the probable source of exposure.

Case history

The patient initially sought care at a hospital emergency department (ED) in New Hampshire on August 12 for a two-day history of paraesthesias and pain radiating up her left arm from the site of a healed bite. She reported being bitten by a dog on her left hand on June 7 while in Kathmandu, but did not receive rabies post-exposure prophylaxis (PEP) for the bite. Physical examination was normal, and left cervical radiculopathy was diagnosed. Anti-inflammatory and analgesic drugs were prescribed and she was discharged.

On August 14 the patient returned to the ED with complaints of progressive difficulty breathing, throat spasms, nausea and vomiting, and reported severe pharyngeal spasms when she drank fluids or showered. Physical findings included an oral temperature of 36.3°C, pulse rate of 64 beats a minute, respiratory rate of 26 breaths a minute and blood pressure of 106/60mmHg. The patient was alert, oriented and in no acute distress. She had a normal sensory examination; however, painful spasms of the bulbar musculature of the lower face and throat were noted when she brought a cup to her mouth or when air was blown in her face. Routine laboratory evaluation, an electrocardiogram and radiographs of the chest and lateral neck were normal. On the basis of history and symptoms, clinical rabies was suspected and the patient was transferred to a hospital in Massachusetts for further

evaluation and treatment. On admission, a computerised tomography scan of her head was normal. Cerebrospinal fluid evaluation was normal except for a white blood cell count of 42 cells/L, with a differential of 12 per cent neutrophils, 56 per cent lymphocytes, and 32 per cent monocytes. The patient was initially treated with rabies immunoglobulin (RIG) and human diploid cell vaccine (HDCV) in the standard post-exposure regimen¹.

Over the subsequent 12 hours the patient developed increasing agitation, anisocoria (unequal pupils), salivation and worsening facial and pharyngeal spasms. She received experimental treatment with high-dose intravenous and intrathecal RIG; however, her condition continued to deteriorate. On August 15, a full-thickness nuchal skin biopsy and saliva sample were obtained and sent to CDC for rabies diagnosis. Both tested positive for rabies virus on August 17 by a nested polymerase chain reaction (PCR) procedure. Patient serum collected on August 16 also was antibody positive, containing a virus-neutralising titre of 1:9 by the rapid fluorescent focus inhibition test. Nucleotide sequence analysis of the PCR product conducted at CDC on August 18 implicated a variant of rabies virus associated with dogs from the Indian subcontinent. On August 20 neurologic evaluation of the patient revealed no brainstem or cortical function, and life support was discontinued. Because rabies was suspected on admission, appropriate precautions were observed and no employee at the Massachusetts hospital required PEP.

The patient had been travelling for six months in New Zealand, Australia, Thailand and Nepal. She was bitten on the left hand while petting a stray dog on June 7 while in Kathmandu. The wound was immediately washed with peroxide and rubbing alcohol. The dog was observed for about 45 minutes and appeared normal, and no rabies testing was performed on the animal. The patient was reportedly unable to obtain PEP in Kathmandu or Bangkok, Thailand, and was advised to go to Sydney, Australia, for definitive medical care. On June 12, she was examined at a hospital in Sydney and was told that RIG and rabies vaccine were not immediately available and to return the following day for treatment. Because the patient had reportedly received conflicting information from other sources regarding her risk for rabies and the benefit of PEP after the delay between exposure and treatment, she elected not to return to the hospital for treatment.

The patient returned to the United States around June 30. While visiting relatives on August 3, salivary contact (i.e. kissing and sharing of utensils and drink glasses) was reported with five people. One other contact, a travelling companion, also reported salivary contact. All six people were administered PEP. The patient developed her first symptoms on August 10. An investigation was initiated to determine other close contacts to the patient on or after July 31. Other than the six contacts previously noted, a doctor in New Hampshire who initially examined the patient in the ED also received PEP.

Comment

Two cases of human rabies were reported in Australia in 1987 and 1990, linked to overseas exposures in India² and South East Asia³. In the United States, of 30 cases reported since 1980, 14 (47 per cent) have been associated with exposure to dogs; 12 of the 14 were presumed to have been acquired outside the United States.

Although the incubation period for rabies is usually 1-3 months, longer incubation periods have been reported¹. Prevention of disease after exposure is effective only if PEP is administered before the onset of clinical disease. Although treatment should be initiated as soon as possible, the stage of the incubation period during which infection becomes intractable is unknown. Therefore, PEP is recommended for administration any time before the onset of symptoms, regardless of the time elapsed since exposure. RIG still may be administered for up to one week after the rabies vaccine series has been initiated. However, administration of RIG more than one week after initiation of the vaccine series is not recommended because antibodies to the virus already will have been induced by the vaccine.

The Australian connection

In this case, had the patient elected to receive PEP in Sydney, a delay of about five days would have occurred. There have been no reported failures of PEP in association with the correct implementation of the treatment regimen in the United States¹, where the median interval between exposure and administration of PEP is about five days. *This report highlights the importance of taking a careful exposure history when evaluating people who may have come into contact with potentially rabid animals overseas.* Where such an exposure is identified, rapid administration of RIG and rabies vaccine is essential.

To arrange PEP, or where there is any doubt about its need, clinicians should seek advice from their local Public Health Unit. With the discovery of a new rabies-like lyssavirus in flying foxes and insectivorous bats in Australia and the identification of a human fatality associated with this virus in 1996⁸, use of PEP in NSW has increased dramatically in recent months.

Travellers at risk

The risk for rabies for international travellers is greatest in areas where canine rabies is still highly endemic, including many parts of Africa, Asia and Central and South America. Two countries where the patient in this report had extended

stays – Nepal and Thailand – are considered to be areas where dog rabies is highly endemic. Pre-exposure vaccination with HDCV or rabies vaccine adsorbed should be considered for people living in or visiting (for greater than 30 days) areas where rabies is endemic and appropriate PEP may not be readily obtained.

Pre-exposure vaccination does not eliminate the need for additional therapy after an exposure but does simplify the post-exposure regimen by eliminating the need for RIG and decreasing the number of required vaccine doses⁶. Because rabies virus may be present in the saliva of infected animals 3-4 days before onset of clinical symptoms⁷, people who are bitten or scratched by any animal should thoroughly wash all wounds with soap and water and immediately seek medical consultation to evaluate the need for PEP^{1,2}. Where there is a delay between a high-risk exposure and presentation for treatment, PEP should be administered regardless of the delay.

(Adapted from: CDC. Human Rabies – New Hampshire. *MMWR* 1997; 46:??-?.)

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2. CDC. Human rabies – Florida, 1996. *MMWR* 1996; 45:719-20,727.
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5. Fraser GC, Hooper PT, Lunt RA et al. Encephalitis caused by a lyssavirus in fruit bats in Australia. *Emerging Infectious Diseases* 1996; 2:327-31.
6. CDC. Health information for international travel, 1994. Atlanta: US Department of Health and Human Services, Public Health Service, 1994: 125-8.
7. Vaughn JB Jr, Gerhardt P, Newell KW. Excretion of street rabies virus in the saliva of dogs. *JAMA* 1965; 193:363-8.
8. Faoagali JL, De Buse P, Strutton GM, Samaratinga H. A Case of Rabies. *Med J Aust* 1988; 149:702-707.
9. Grattan-Smith PJ, O'Regan WJ, Ellis PSJ, O'Flaherty SJ, McIntyre PB, Barnes CJ. A second Australian case, with a long incubation period. *Med J Aust* 1992; 156:651-654.

Public Health Laboratory Network

► *Continued from page 26*

compliance with the Public Health Act 1991 and other legislation designed to prevent illness and protect the health of the population. It is appropriate for the agenda and priorities for the network of designated public health laboratories to be determined by the Chief Health Officer.

The agenda and priorities could then be incorporated in service agreements between the Department and Area Health Services responsible for managing designated laboratories.

To assist the Chief Health Officer with the development and maintenance of the PHLN it is proposed that a Public Health Laboratory Advisory Committee be formed, with membership including balanced input from the Department, the Area Health Services, laboratories (both public and private) and Public Health Units.

THE FUTURE

It will be important for the PHLN to be reviewed constantly, taking into account rapidly changing technologies, new threats to public health, and changing priorities. This will require a willingness to terminate services no longer required, as well as a preparedness to enhance existing services and develop new services.

FIGURE 1

REPORTS OF SELECTED INFECTIOUS DISEASES, NSW, 12 MONTHS TO JANUARY 1997
BY MONTH OF ONSET (WITH HISTORICAL COMPARISON)

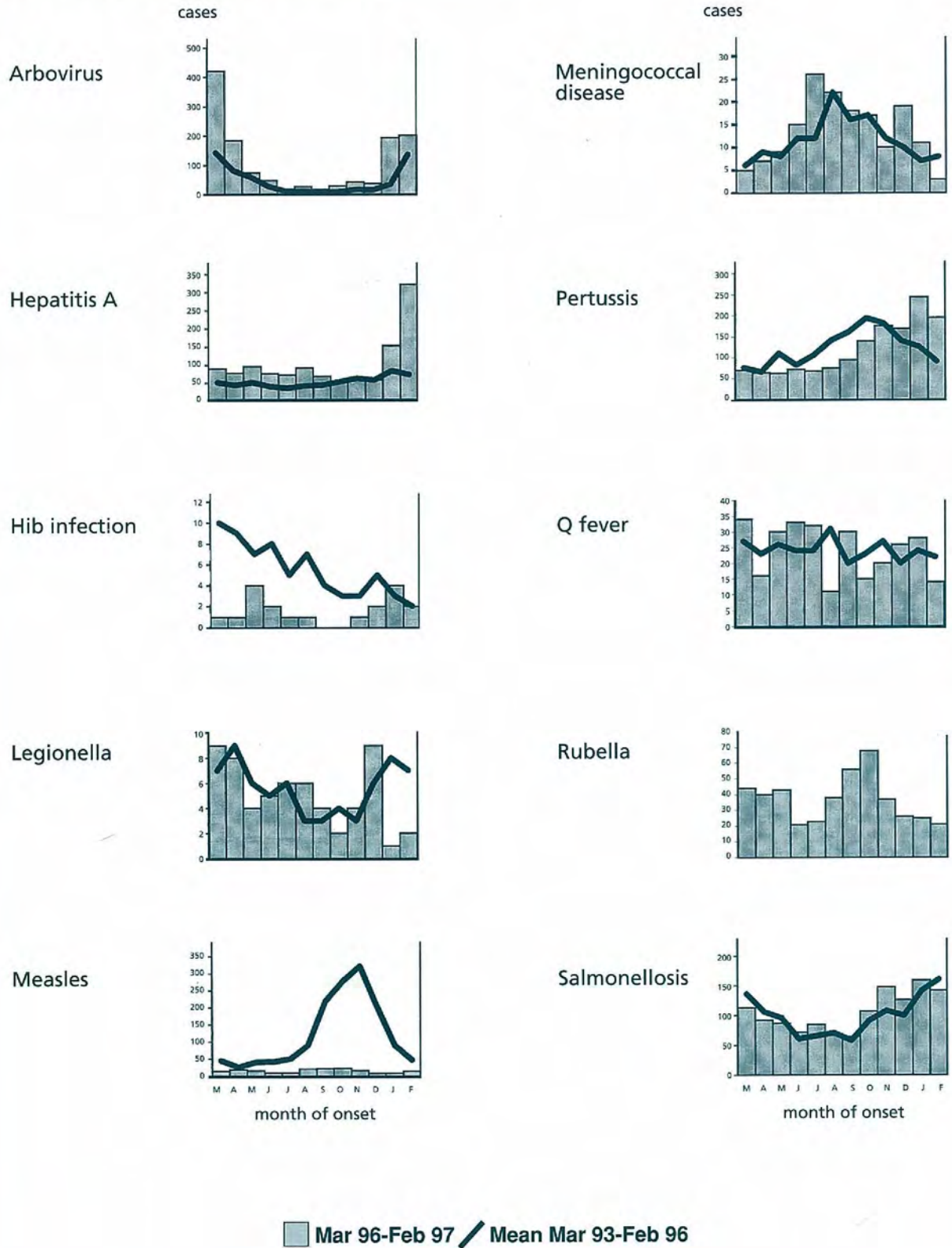


TABLE 3

INFECTIOUS DISEASE NOTIFICATIONS FOR NSW RECEIVED IN MARCH 1997, BY AREA HEALTH SERVICES

| Condition | Area Health Service | | | | | | | | | | | | | | | | | Period | |
|---|---|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|----|-----------------|-----------------|
| | CSA | NSA | WSA | WEN | SWS | CCA | HUN | ILL | SES | NRA | MNC | NEA | MAC | MWA | FWA | GMA | SA | Total for Mar** | Total to date** |
| | Blood-borne and sexually transmitted | | | | | | | | | | | | | | | | | | |
| AIDS | 1 | 1 | 1 | 1 | - | - | 1 | 2 | 4 | - | - | 1 | - | - | - | - | - | 12 | 115 |
| HIV infection* | - | 2 | - | - | - | - | 2 | 1 | 4 | - | - | - | - | - | - | - | - | 26 | 110 |
| Hepatitis B - acute viral* | 1 | - | 2 | 1 | - | - | - | 1 | 1 | - | 1 | 1 | - | - | - | - | - | 8 | 14 |
| Hepatitis B - other* | 58 | 33 | 46 | 6 | 84 | 4 | 5 | 8 | 57 | 2 | 1 | 6 | 1 | 1 | - | 1 | 3 | 251 | 958 |
| Hepatitis C - acute viral* | - | - | - | - | - | - | - | 1 | - | - | - | - | - | - | - | - | - | 1 | 1 |
| Hepatitis C - other* | 86 | 45 | 98 | 34 | 77 | 31 | 45 | 30 | 122 | 53 | 20 | 9 | 4 | 5 | 3 | 14 | 17 | 694 | 2,208 |
| Hepatitis D - unspecified* | - | - | - | - | - | - | - | - | - | 1 | - | - | - | - | - | - | - | 1 | 3 |
| Hepatitis E | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | 0 | 4 |
| Hepatitis, acute viral (NOS) | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| Gonorrhoea* | 7 | 1 | 1 | - | 2 | - | - | 1 | 11 | 3 | - | 1 | 1 | - | - | 1 | - | 29 | 124 |
| Syphilis | 12 | 2 | 6 | 1 | 10 | - | - | 1 | 15 | 2 | - | 3 | 4 | - | - | 1 | - | 57 | 147 |
| Vector-borne | | | | | | | | | | | | | | | | | | | |
| Arboviral infection* | 2 | 2 | 1 | 2 | 3 | - | 12 | 4 | 3 | 6 | 23 | 8 | 20 | 4 | 19 | 61 | 5 | 175 | 530 |
| Malaria* | - | 2 | 3 | - | - | 1 | - | 1 | 3 | - | - | - | - | - | - | - | - | 10 | 40 |
| Zoonoses | | | | | | | | | | | | | | | | | | | |
| Brucellosis* | - | - | - | - | - | - | - | - | - | - | 1 | - | - | - | - | - | - | 1 | 2 |
| Leptospirosis* | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | 5 |
| Q fever* | - | - | - | - | - | - | 1 | - | - | 1 | 5 | 2 | 2 | - | - | 1 | 1 | 13 | 62 |
| Respiratory/other | | | | | | | | | | | | | | | | | | | |
| Legionnaires' disease | - | - | - | 1 | - | - | - | - | - | - | - | - | - | - | - | - | - | 1 | 11 |
| Meningococcal (invasive) infection | 1 | - | - | 2 | 1 | - | 1 | - | - | - | - | - | - | - | - | - | - | 5 | 20 |
| Leprosy | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | 1 |
| Mycobacterial tuberculosis | 2 | 5 | 2 | - | 5 | - | - | - | 3 | - | - | - | - | - | - | - | - | 17 | 72 |
| Mycobacteria other than TB | 11 | 4 | 8 | - | 1 | - | 6 | - | 1 | - | 5 | - | - | - | - | 2 | - | 38 | 97 |
| Vaccine-preventable | | | | | | | | | | | | | | | | | | | |
| Adverse event after immunisation | - | - | 2 | - | - | - | 1 | - | - | - | - | - | - | - | - | 1 | - | 4 | 11 |
| <i>H. influenzae</i> B (invasive) infection | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | 1 | 1 | 7 |
| Measles | 1 | 2 | 1 | - | 1 | 4 | 2 | 1 | 2 | - | - | - | - | - | - | - | 1 | 15 | 36 |
| Mumps* | - | - | 1 | - | - | - | - | - | - | - | - | - | - | 7 | - | - | - | 8 | 14 |
| Pertussis | 12 | 29 | 23 | 14 | 28 | 4 | 29 | 8 | 24 | - | 7 | 9 | 9 | 2 | 2 | 3 | 3 | 206 | 645 |
| Rubella* | - | 1 | - | - | 3 | - | 3 | - | 3 | - | - | 2 | 1 | - | - | 1 | - | 14 | 51 |
| Tetanus | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | 1 |
| Faecal-oral | | | | | | | | | | | | | | | | | | | |
| Cholera* | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | 1 |
| Foodborne illness (NOS) | - | - | - | - | - | 1 | - | - | 7 | - | - | - | - | - | - | - | - | 8 | 33 |
| Gastroenteritis (instit) | - | - | - | - | - | - | 16 | - | - | - | - | - | - | 1 | - | - | - | 17 | 173 |
| Hepatitis A | 7 | 15 | 13 | 1 | 5 | 5 | 8 | 2 | 10 | 3 | 7 | 7 | 5 | 2 | 2 | 2 | - | 94 | 568 |
| Listeriosis* | - | - | 2 | - | - | - | - | 1 | 1 | - | - | - | - | - | - | - | - | 4 | 9 |
| Salmonellosis (NOS)* | 14 | 29 | 12 | 5 | 8 | 10 | 20 | 6 | 26 | 27 | 6 | 12 | 2 | 1 | 2 | 5 | 4 | 189 | 486 |
| Typhoid and paratyphoid* | - | - | - | - | 1 | - | - | - | 1 | - | - | - | - | - | - | - | - | 2 | 6 |

* lab-confirmed cases only

** includes cases with unknown postcode

Abbreviations used in this Bulletin:

CSA Central Sydney Health Area, SES South 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, NRA Northern Rivers Health Area, MNC Mid North Coast Health Area, NEA New England Health Area, MAC Macquarie Health Area, MWA Mid West Health Area, FWA Far West Health Area, GMA Greater Murray Health Area, SA Southern Health Area, 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.