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# BENEFITS OF GENERAL PRACTICE SENTINEL SURVEILLANCE NETWORKS

General practice-based sentinel surveillance networks have been established in a number of Area Health Services and Regions with the primary aim of monitoring the occurrence of infectious diseases such as influenza. The establishment of sentinel networks may provide additional benefits to the Public Health Units (PHUs), general practitioners (GPs) and the communities they serve. These include the development of working relationships between GPs and public health professionals, increased awareness of local public health issues and the possibility of involving the networks in other general practice-based public health activities. The purpose of this article is to outline our experiences in setting up a general practice sentinel surveillance network in Central and Southern Sydney Health Areas, and to describe a method of data analysis we have found useful in this context.

The sentinel surveillance network in Central and Southern Sydney is run as a collaborative venture by the Division of Family Medicine, University of Sydney, and the PHU. The Areas have a population of about one million and a total of 900 GPs, 20 of whom take part in the network. The network was established in July 1991. Recruitment has been by direct approach to GPs and by open invitation through an Areas *GP Bulletin* which is published monthly. The latter has been more effective in recruiting GPs who remain in the network long term. The GPs are distributed proportionally by population between Health Areas and evenly within Areas, and an effort has been made to recruit GPs with a variety of age-sex practice profiles. They were recruited from extended-hours medical centres as well as traditional practices.

Participants assist in the selection of conditions to be monitored and help in defining the diagnostic criteria. Regular reporting is encouraged by the use of 'user friendly' reporting instruments and by enlisting the cooperation of the GPs' receptionists. The importance of rigorous application of the diagnostic criteria is stressed.

Five conditions are collected at any time. The first two (influenza and measles) remain unchanged and the last three conditions have changed from time to time in response to members' interests (these are currently acute asthma, diarrhoea and vomiting, and vestibular neuronitis).

The age and sex of patients satisfying case definitions are recorded on a simple form. In addition, members record the occurrence of any other conditions which they believe may be of interest, and report these in the comments section of the recording form. Completed forms are forwarded by post or facsimile at the end of each recording week.

Feedback of results to the GPs is provided through weekly telephone reports (which are recorded by the practice receptionists on specially-designed forms) and through the monthly *GP Bulletin* which is

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## GP sentinel surveillance networks

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distributed to all GPs in the Areas. The coordinators receive feedback from the GPs through regular meetings over drinks or dinner. A data manager spends about eight hours a week collating the data, producing the monthly newsletter and giving weekly verbal reports to the GPs.

Participating GPs also indicate their total number of patient encounters in the recording week. The average metropolitan GP sees about 120 patients a week so the data are presented as the number of new presentations for the condition per 100 patient encounters, allowing GPs readily to relate the results to their own practices. It must be remembered that the number of patient encounters only approximates the population base of the practice (as some GPs see their patients more frequently) and that precise age profiles of practice attenders are rarely available. A further factor is that the rate for a given condition is not only proportional to the prevalence of the condition in the population but also inversely proportional to the prevalence of other conditions leading to GP attendances. For example a decreased rate of falls in the elderly may be detected in winter, but this may reflect a rise in the number of attendances for upper respiratory tract infection (which will increase the number of encounters a week). Figure 1 shows the total number of encounters per week and the influenza rate per 100 encounters. Peak rates of influenza often correspond to troughs in total encounters.

Not all GPs report every week for reasons including illness or holidays. Variations in rates may also result from different GPs reporting in any given week, differing application of criteria and differing practice profiles and styles. Particular care should be taken in interpreting data around school holidays as GPs with children (who often have a higher proportion of young patients) are likely to be away.

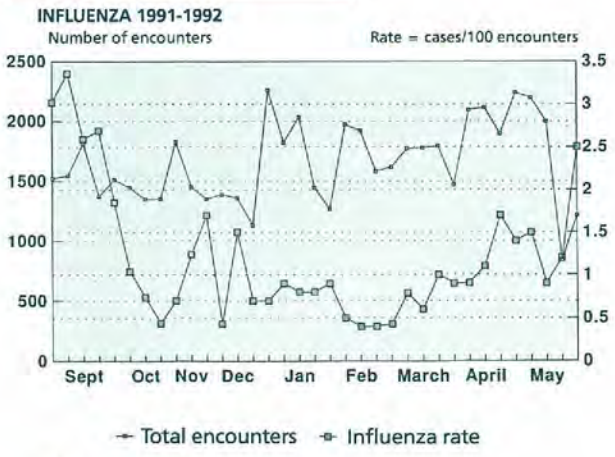
These variations can be partly overcome by application of data smoothing techniques. Smoothing reduces 'noise' in the data by combining adjacent data points. One way of smoothing sentinel practice data is to combine the week of interest with half the rate of the preceding and following weeks and dividing by two, i.e. a weighted moving average.

$$\text{rate week n} = \frac{\text{rate (week n}-1)/2 + \text{rate week n} + \text{rate (week n}+1)/2}{2}$$

This equation has the advantage that rates can be calculated relatively soon after data collection and the timing of an outbreak is not greatly altered, but dependence between data points is increased — a factor that must be considered in statistical analyses. Figure 2 shows the smoothed influenza rate and smoothed total number of encounters. Smoothing may be particularly appropriate for visual comparison of data collected over different years.

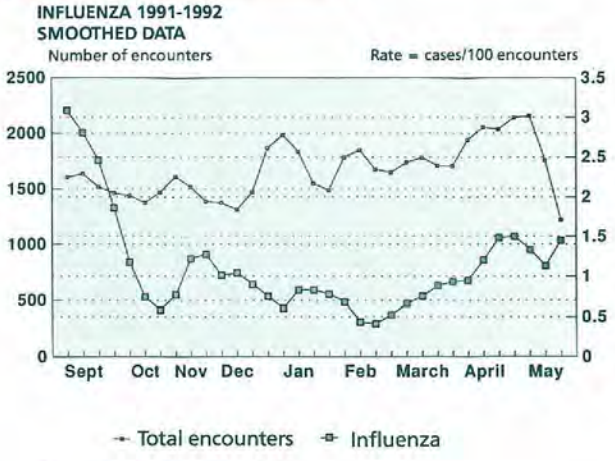
Sentinel surveillance based in general practice has the potential to monitor a range of acute conditions, not just infectious diseases. Its advantage is in the immediacy with which the beginning of an epidemic is indicated and this in turn can lead to early intervention. Short-term monitoring of chronic diseases is also possible with slightly more complex protocols. Possible future uses of sentinel networks could include relating rates for acute asthma to air pollution levels, monitoring the effectiveness of health promotion programs (e.g. falls prevention in the elderly) or assessing the effectiveness of general practice-based preventive care activities.

**FIGURE 1**




Central and Southern Sydney

**FIGURE 2**




Central and Southern Sydney

The authors would like to acknowledge the assistance of the GP members of the General Practice Sentinel Network of Central and Southern Sydney, Alice Bhasale, Maria Angelis and Lorraine Winchester.

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# PUBLIC HEALTH APPROACHES TO IMPROVED ROAD SAFETY

Local Public Health Units (PHUs) can have a role in applying the strategies of the "new public health" to help improve road safety in their areas.

In NSW motor vehicle fatalities are the single most common cause of death in males and females until the middle decades of life[1], while serious injury reduction has rightly been identified as a health priority at both national[2] and State[3] levels.

Attempts at road injury reduction have tended to follow traditional approaches including engineering solutions (better roads, safer cars) and enforcement (speed limits, compulsory seat belt wearing and random breath testing).

These approaches have undoubtedly been successful. Total road deaths in NSW have fallen from a peak of 1,400 in the late 1970s to fewer than 800 on the most recent figures, at a time when the number of registered vehicles and total kilometres travelled have been steadily rising[4]. However, it has been suggested that the potential for improvement using traditional approaches is now decreasing, and that new strategies will be required if the gains are to be maintained[5].

The approaches proposed in the Ottawa Charter on Health Promotion[6] are well accepted in public health circles, and principles such as 'healthy public policy', 'intersectoral collaboration' and 'community participation' have become popular terms among exponents.

## ROAD SAFETY 2000 AND BEYOND

In an interesting example of concept transference across sectors, the Road Safety Bureau of the NSW Roads and Traffic Authority (RTA) has obviously been influenced by such approaches. In its recently published Road Safety 2000 — the Strategic Plan for Road Safety in NSW 1990s and Beyond[7], it proposes four key strategies:

- involving the whole community in road safety (i.e. community participation);
- making road safety a major priority in all transport and land use decisions (i.e. 'safe' public policy);
- continuing to educate all road users, to improve roads and traffic systems, and vehicle safety systems, emergency response times and the treatment of casualties (i.e. maintenance of successful traditional approaches); and
- coordinating the efforts of organisations working in public health, transport and related fields (i.e. 'intersectoral working').

To give a local focus to these initiatives the RTA has sponsored a number of community-based road safety support groups around NSW. The Illawarra Road Safety Group (IRSG) is one of these. It was established two years ago and comprises representatives of the RTA, Police Department, Department of School Education, Catholic Education Office, NRMA, University of Wollongong, Consumers Transport Council, Healthy Cities Illawarra and the Illawarra Public Health Unit.

The benefits of such intersectoral working have been demonstrated in a recent successful campaign involving the media and local schools, focusing on high non-seat belt wearing rates among primary school children. Following this essentially 'top down' approach there was an improvement in rear seat belt wearing among the target group from less than 35 per cent to more than 90 per cent[8].

However, in order to involve the whole community in road safety issues, and to determine their perceived priorities, a more 'bottom up' approach was necessary and the group organised a one-day hotline: Road Safety — Have Your Say. ABC, commercial radio and the printed media carried stories, news items and a limited amount of paid advertising supporting the initiative. Five incoming telephone lines were staffed by members of the participating organisations and more than 280 calls were taken, covering 400 individual road safety issues. The offer of one year's free vehicle registration from the RTA for the best road safety idea may have acted as an incentive to this high participation rate.

More than two-thirds of the calls related to specific local hazards and black spots, while the remainder concentrated on more general ideas for improving road safety.

The IRSG decided to award two prizes — one for the best general idea (portable 'rumble strips' to give motorists physical warning of temporary hazards such as road crashes, or road works) and one for a specific local problem (a solution to a particularly hazardous merge on a fog-prone section of road near the end of the Southern Freeway).

From the phone-in, several concerns such as the proper use of roundabouts, and pedestrian safety, were identified as future areas for collaborative action by the IRSG.

## CONCLUSIONS

For many health issues, responsibility is shared between a number of other organisations and instrumentalities, while identification, participation and support by the local community is essential if longer-term results are sought.

Community consultation and needs analysis are recognised in the health promotion literature as an essential component of enlisting this support[9].

Taking a joint role in the recent road safety phone-in is believed to have had a range of advantages for the Illawarra Public Health Unit:

- it has raised the profile of the Unit and promoted links with the media;
- it has strengthened working relationships with other government and non-government organisations; and
- the community response has identified a number of areas where future collaborative work is likely to bring results in terms of improved road safety.

Such an approach is commended to other Public Health Units as a way of putting into practice the concepts of the Ottawa Charter and of ensuring the broad-based support essential to improved road safety[10].

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# HEPATITIS B PROGRAM FOR ABORIGINAL CHILDREN

## INTRODUCTION

The NSW Aboriginal Health Resource Committee initiated a program to immunise Aboriginal children against hepatitis B virus (HBV) infection. The program was conducted in the South West Health Region (SWR) between July 1990 and June 1991, and formed part of a national program to control hepatitis B, a major cause of ill-health facing Aboriginal communities[1].

The program offered free hepatitis B immunisation to Aboriginal children aged from 0 to 12 years. Aboriginal Health Workers (AHWs), Aboriginal Health Nurses (AHNs), local Aboriginal communities, Community Health and Early Childhood Nurses (ECNs) combined to conduct the program.

## METHODS

Before the program began, the staff involved consulted with representatives from Aboriginal land councils, community centres, community health centres and schools and sought their assistance in the provision of facilities and the communication of information to the Aboriginal community.

In Wagga Wagga and Albury AHWs visited schools and pre-schools attended by Aboriginal children, and with the permission of school principals identified eligible children and issued consent forms and information leaflets. Those children returning signed consent forms were included in the immunisation program. When the children attended the immunisation clinic at the school, some younger siblings were brought by parents and they were immunised also. In smaller communities eligible children were identified by the AHW, through the schools and also through contact with the local Aboriginal communities and community groups. The local ECN, the Regional AHN or the local AHW was responsible for the organisation of the program. Venues for immunisation clinics varied from schools to neighbourhood centres and other community facilities.

A three-dose immunisation schedule was used in the program which has been evaluated in terms of:

- the percentage of children commencing the immunisation course who completed it, i.e. received the full three doses (the completion rate); and
- the estimated coverage of the eligible population in the South West Region.

The completion rate was calculated as follows:

$$\text{Completion rate (Percentage)} = \frac{\text{number completing course}}{\text{number commencing course}} \times 100$$

Data were derived from the immunisation register held by the Regional Hepatitis B Coordinator. For a number of locations, age details were unavailable and for one community no immunisation data were available. The number of eligible Aboriginal children was estimated using Australian Bureau of Statistics (ABS) data from the 1986 census. For this analysis the age groups 0-4 years and 5-12 years have been used. Although it was not possible to calculate population coverage accurately, based on the 1986 census figures an approximate coverage rate was determined.

## RESULTS

In total 852 children began immunisation courses and 656 received three doses, giving an overall completion rate of 77 per cent (with a range in different locations from 50-100 per cent, see Table 1). Five centres (Wagga Wagga, Albury, Griffith, Dareton and Narrandera) accounted for 70 per cent of all children starting the program. In the western part of the Region (Dareton, Wentworth and Buronga) the completion rate was only 65 per cent. Almost 25 per cent of children commencing the program were from these three communities. The completion rate in Griffith was lower than the other large centres (Wagga Wagga and Albury). In general, completion rates in centres with a smaller Aboriginal population (such as Brungle, Cootamundra and Hay) were high (Table 1).

While data on the age groups of children immunised under the program were not available for all centres, available data indicated the program identified a higher proportion of school-aged children (5-12 years) than pre-schoolers (0-4 years). ABS data suggest pre-schoolers make up about 40 per cent of the Aboriginal children in the SWR in the 0-12 age group. Of the children in this program whose ages were known, fewer than 20 per cent were pre-schoolers. (Children identified and immunised under the high-risk neonate program are not included here.) There is also evidence that the completion rate was lower for the younger age group (75 per cent compared to 85 per cent, see Table 1).

Population estimates based on ABS data indicate that for the Region as a whole, a large proportion of the eligible children may not have been included in the program. Of an estimated 1,441 children eligible, 59 per cent were identified by the program and 46 per cent fully immunised. In addition 196 infants were identified under the high-risk neonate program between October 1987 and December 1990, with 119 being fully immunised. Including these figures raises the proportion of eligible children identified to 73 per cent, and the coverage rate with three doses to 54 per cent.

## DISCUSSION

It is encouraging that 77 per cent of children who began immunisation under the program completed the course. However there was a poor completion rate in some communities with relatively large numbers of Aboriginal children, particularly in the western part of the Region. Despite the fairly high completion rate overall, a significant concern is the disparity between the numbers of children identified and estimates of the eligible population based on ABS census data for the Region. It is possible that large numbers of eligible children were not immunised under this program.

The results suggest that a larger proportion of children aged five years and over (i.e school age) were identified in the program, and that this age group had a higher completion rate. It was easier to locate, enrol and immunise students at school. Children aged under five

**TABLE 1**

**HEPATITIS B IMMUNISATION/COURSES COMMENCED AND COMPLETED BY AGE AND LOCATION**

| Location | 0-4 years | | 5-12 years | | Total | |
|---|---|---|---|---|---|---|
| | Commenced | Completed % | Commenced | Completed % | Commenced | Completed % |
| Wagga Wagga | 16 | 15 (94) | 104 | 87 (84) | 120 | 102 (85) |
| Albury | 25 | 14 (56) | 96 | 80 (83) | 121 | 94 (78) |
| Leeton | # | # | # | # | 37 | 34 (95) |
| Junee | 3 | 3 (100) | # | # | 3 | 3 (100) |
| Balranald | 7 | 3 (43) | 23 | 18 (78) | 30 | 21 (70) |
| Hillston | 0 | 0 | 6 | 6 (100) | 6 | 6 (100) |
| Temora | 3 | 1 (100) | 3 | 2 (67) | 6 | 3 (50) |
| Wamba Wamba | 3 | 3 (100) | 10 | 7 (70) | 13 | 10 (77) |
| Brungle | 2 | 2 (100) | 12 | 12 (100) | 14 | 14 (100) |
| Cootamundra | 2 | 2 (100) | 7 | 7 (100) | 9 | 9 (100) |
| Tumut | 7 | 7 (100) | 13 | 11 (85) | 20 | 18 (96) |
| Dareton | # | # | # | # | 126 | 78 (62) |
| Wentworth | # | # | # | # | 46 | 34 (74) |
| Buronga | # | # | # | # | 37 | 23 (62) |
| Narrandera | # | # | # | # | 112 | 92 (82) |
| Darlington Pt | 2 | 2 (100) | 9 | 9 (100) | 11 | 11 (100) |
| Hay | 3 | 3 (100) | 17 | 17 (100) | 20 | 20 (100) |
| Griffith | # | # | # | # | 121 | 84 (69) |
| Deniliquin | # | # | # | # | # | # |
| Total (of available data) | 73 | 55 (75) | 299 | 253 (85) | 852 | 657 (77) |

# Data not available

years were harder to identify, and it was sometimes difficult to arrange for immunisation. Although 196 infants were identified in the high-risk neonate program, and 119 fully immunised, we suspect many pre-school children were not identified or immunised in either program. It is likely that a proportion of the school-age children immunised had already been infected with HBV[2,3] and therefore gained no benefit from immunisation. Since infants and young children are at the highest risk of acquiring the infection and becoming chronic carriers[4], they should be the main targets of any immunisation campaign.

Possible explanations for the failure to identify eligible children and the poor completion rates in some areas include inadequate promotion of the program in the target communities, limited resources, regional and local organisational problems and the transient nature of some Aboriginal populations. Promotion was an issue particularly in the larger communities, and many parents of pre-schoolers may not have been aware of the availability of immunisation and its importance. Since the SWR is an area in which resettlement of Aboriginal people was undertaken, some communities are composed of people from different areas and tribal groups who may not necessarily interact and it was often difficult to gain access to everyone to promote hepatitis B immunisation.

The program identified that many Aboriginal people were aware of the problem of hepatitis B and that the disease could be prevented by immunisation. However the importance of children receiving immunisation was not clearly understood and there was concern over why the vaccine was not made available to teenagers and adults. Although only Aboriginal children were being immunised at school, the issue of discrimination did not arise. Good cooperation was achieved between the Aboriginal communities and Community Health staff involved in the program and important links were formed which may facilitate future preventative health initiatives.

In conclusion, it appears the program failed to identify and immunise many eligible children in the Region. Overall a reasonable to good coverage of those children commencing the course was achieved, although completion rates were low in some communities. Our experience indicates that good organisation and a well-prepared program promotion are vital to ensure that children who need immunisation are identified, and that they complete the course.

This evaluation was conducted on the basis of immunisation coverage, but another important measure of the success of an immunisation program is the protective efficacy of the vaccine. Further evaluation of vaccine immunogenicity and efficacy in target groups in Australia is important to determine overall program success.

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## TIMELINESS AND COMPLETENESS OF REPORTING

The following table lists the number of weekly reports made to the Epidemiology and Health Services Evaluation Branch in the past two months, i.e. from Epiweek 37 to Epiweek 44.

**TABLE 2**

**NUMBER OF WEEKLY REPORTS MADE TO EPIDEMIOLOGY BRANCH: SEPTEMBER-OCTOBER 1992**

| Public Health Unit | Number | Status |
|---|---|---|
| Central/Southern Sydney | 8 | Complete |
| Eastern Sydney | 8 | Complete |
| South Western Sydney | 6 | Complete |
| Western Sector | 8 | Complete |
| Northern Sydney | 8 | Complete |
| Central Coast | 6 | Incomplete |
| Illawarra | 8 | Complete |
| Hunter | 8 | Complete |
| North Coast | 5 | Incomplete |
| New England | 8 | Complete |
| Orana and Far West | 7 | Complete |
| Central West | 6 | Complete |
| South West | 8 | Complete |
| South East | 8 | Complete |

**TABLE 3**

**PERCENTAGE OF DOCTOR NOTIFICATIONS WITH INCOMPLETE INFORMATION BY VARIABLE AND PUBLIC HEALTH UNIT, SEPTEMBER-OCTOBER 1992**

| Public Health Unit | Age | Sex | Aboriginality |
|---|---|---|---|
| Central Sydney | complete | complete | 28 |
| Southern Sydney | complete | 1 | 28 |
| Eastern Sydney | 9 | 1 | 85 |
| South Western Sydney | 2 | 10 | 58 |
| Western Sydney | complete | 3 | 12 |
| Wentworth | complete | 3 | complete |
| Northern Sydney | 6 | complete | 100 |
| Central Coast | complete | complete | 50 |
| Illawarra | complete | complete | 92 |
| Hunter | 1 | 3 | 99 |
| North Coast | complete | 3 | 26 |
| New England | 1 | 3 | 28 |
| Orana and Far West | 9 | complete | 50 |
| Central West | complete | complete | 17 |
| South West | complete | complete | complete |
| South East | complete | 3 | 32 |

## VACCINE PREVENTABLE DISEASES

### Rubella

Seven cases of rubella were notified for October. Ninety-seven cases of rubella have been notified in 1992 — an increase of 131 per cent over the number of notifications received in 1991. Fifty-one per cent of notifications were for males. The mean age was 20 years.

The *Communicable Diseases Intelligence* reported widespread rubella activity, especially in northern Victoria.

### Measles

Clusters of measles were notified from four Areas/Regions within the State:

- South Western Sydney
- Southern Sydney
- Orana and Far West
- Western Sydney

Three hundred and forty-seven notifications have been received for measles in 1992. Only 18 per cent of cases have occurred in children under the age of one. The high proportion of cases in older children and adults is consistent with the results of the Australian Bureau of Statistics (ABS) 1989-90 Health Survey report on immunisation rates in NSW. Only 85 per cent of 0-6 year-old children were adequately immunised against measles.

The National Health and Medical Research Council (NHMRC) has called for increased compliance with the existing immunisation schedule as the primary strategy to control measles in Australia. A secondary strategy is the replacement of the existing schoolgirl rubella-only immunisation with measles-mumps-rubella immunisation for all boys and girls. It is expected that this will be implemented in NSW by 1994.

### Pertussis

Six cases of pertussis were notified for October.

One hundred and nine cases of pertussis have been notified for 1992. This is a 173 per cent increase over 1991. Eighty-two per cent of 1992 cases occurred in children over the age of six months.

Pertussis immunisation rates continue to lag behind those of all other vaccines. The ABS Immunisation Survey reported that only 70 per cent of NSW children were fully immunised against pertussis, with an additional 19 per cent being partly immunised.

Parents and health carers are urged to review the immunisation status of all children aged four years and under. Where pertussis immunisation is incomplete, and there are no contraindications, immunisation is recommended.

Assistance is available from the NHMRC *Immunisation Procedures, 4th Edition* and from Public Health Units.

## OTHER NOTIFIABLE DISEASES

### Legionnaires' Disease

Eighty-one notifications have been received for Legionnaires' disease for 1992. This is a 224 per cent increase over the 1991 notification number.

Sixty-three notifications (78 per cent) were for *L. pneumophila*, nine (11 per cent) for *L. longbeachii* and two (2 per cent) for *L. micdadei*. No organism was noted for seven (9 per cent) of notifications.

Twenty notifications (25 per cent) were for females and 61 (75 per cent) were for males.

### Vibrio parahaemolyticus

*V. parahaemolyticus* is associated with seawater or products contacting seawater. Shellfish grown in seawater naturally accumulate the organism but other marine animals may be affected as are foods contacting seafood or seawater. Cross-contamination between seafood or seawater and food is also possible. The maximum documented incubation period for *V. parahaemolyticus* food poisoning is 96 hours.

While *V. parahaemolyticus* is not associated with faecal pollution it has been regularly isolated from NSW oysters harvested from and depurated on many different estuaries throughout the year. Seventy-four per cent (35 samples) and 69 per cent (105 samples) of purified oyster samples examined in April 1989 and May 1990 respectively were found to be positive for the organism. Efficient purification, while reducing vibrio levels in oysters, does not always completely eliminate them.

*V. parahaemolyticus* food poisoning commonly presents as an intestinal disorder characterised predominantly by watery diarrhoea and abdominal cramps. Mortality is very rare. The infective dose is commonly considered to be greater than $10^6$ cells per gram, however researchers have suggested that an infective dose for *Vibrio vulnificus*, an organism of the same group of bacteria, can be as low as one cell/g for immuno-compromised people.

Purification procedures in NSW were changed in 1990 to reduce the likely impact of vibrio levels in purified oysters. These changes included restrictions on harvesting from and purifying with turbid water, operating the plant on a recirculating water basis, and labelling requirements stating proper storage temperatures. The Food Standards Code has been vigorously enforced throughout the State with respect to temperature controls on the transport, storage, processing and sale of oysters and the microbiological standards to be observed.

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## PERTUSSIS — SOUTH EASTERN REGION

Four related cases of pertussis (two adults, two infants) have been reported from the South Eastern Region. It is thought that three of these cases acquired the disease nosocomially. Contact between cases occurred before the index case was diagnosed.

### Case details

Case 1: The index case was a five-month-old child hospitalised with a provisional diagnosis of bronchiolitis. The child was nursed in a general paediatric ward for three days before being clinically diagnosed as having pertussis and commencing antibiotic therapy. The child was unimmunised.

Case 2: A two-month-old child nursed in the same hospital ward, discharged 24 hours before diagnosis of the index case. This child was subsequently readmitted with pertussis 16 days later, and required transfer to an intensive care facility. Pertussis was confirmed by pernasal culture. The child had not yet been immunised.

Case 3: The 32-year-old mother of Case 2 who had been in contact with the index case during her child's admission. She developed symptoms 24 hours after the onset of her child's symptoms. Antibiotic prophylaxis had been started before the onset of her cough. No confirmatory pathology was taken. She had been fully immunised as a child.

Case 4: A 45-year-old registered nurse who had cared for the index case for one shift developed symptoms of pertussis 16 days post contact. A pernasal swab taken before the start of antibiotic therapy proved to be negative. She had not been immunised for pertussis as a child.

### Public Health Action

Contact tracing for all cases yielded more than 60 people requiring antibiotic prophylaxis. This included 52 newborn infants who were nursed in the hospital maternity unit where the infected nursing staff member had worked until the onset of symptoms following contact with the index case.

All contacts were started on antibiotic therapy within 48 hours of case notification. No further cases of pertussis have been identified, despite initiation of active surveillance through local medical practitioners.

### Discussion

Pertussis has a high morbidity in children, particularly neonates. The two infant cases in this cluster required extensive hospital stays (55 days total including 18 days intensive care).

The Australian Bureau of Statistics 1989-90 National Health Survey reported a pertussis immunisation rate for children less than six years of age in NSW of 89 per cent.

This cluster of cases demonstrated the risk and consequences of this infection within susceptible populations. The risk of adults developing pertussis following contact with a case is high. This outbreak also highlighted the difficulty in preventing nosocomial transmission of pre-diagnosed pertussis infection. Hospital infection control practice should include consideration of the immunisation status of paediatric inpatients as well as the application of appropriate respiratory precautions, particularly within general ward areas. The allocation of nursing and other patient care staff should also take into account the potential for cross-infection to unimmunised paediatric patients.

This cluster had the potential to be significantly larger due to the high numbers of unimmunised neonatal contacts. The importance of timely reporting, contact tracing and administration of chemoprophylaxis is stressed.

*Greg Sam, South East Region Public Health Unit*

## INVESTIGATION OF A PARALYTIC ILLNESS — SOUTH WEST REGION

### Case details

On Monday, October 26 the South West Region Public Health Unit (SWR PHU) was told an 11-month-old boy from Wagga Wagga had been admitted to Camperdown Children's Hospital with symptoms of an illness similar to poliomyelitis.

The mother had previously attended a general practitioner because she was concerned that the child's leg was "floppy"; the GP elicited some sensory impairment in the leg. He referred the boy to a paediatrician in Wagga Wagga who arranged for the child to be admitted to the Children's Hospital. On admission the child was noted to have had flaccid paralysis of one leg.

Due to the possibility of poliomyelitis, laboratory investigation included stool virology. Specimens were sent to the Institute of Clinical Pathology and Medical Research (ICPMR) at Westmead Hospital.

As positive identification of polio virus can take three weeks, the PHU undertook a staged approach to the potential public health problems.

### Public Health Action

The child's home was visited by the Senior Environmental Health Officer who found evidence of a recent discharge from the sewer access hole in the rear of a neighbour's property. This discharge had occurred at a time of heavy rainfall about two weeks earlier. At that time stormwater and sewerage had inundated the back yard of this property and surrounding properties. The area had dried out at the time of inspection and no environmental samples could be obtained.

The child had had no other access to untreated river, creek or dam water. The water supply in Wagga Wagga is filtered and chlorinated.

The immunisation status of the child was uncertain. The mother stated that he had had one dose of Sabin vaccine two to three months earlier, but the GP had no record of the immunisation. Four other children in the family were

Continued on page 128 ►

## TABLE 4

NOTIFICATIONS FOR INFECTIOUS DISEASES
BY HEALTH AREA AND REGION
OCTOBER 1992

| DISEASE NAME | CSA | SSA | ESA | SWS | WSA | WEN | NSA | CCA | ILL | HUN | NCR | NER | OFR | CWR | SWR | SER | OTH/UK | TOTAL |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Arboviral infection | – | – | – | – | – | – | – | – | 1 | 2 | – | – | – | – | 1 | – | – | 4 |
| Foodborne illness (NOS) | – | – | – | – | 3 | 4 | – | – | – | – | – | – | 1 | – | – | – | – | 8 |
| Gastroenteritis (instit) | 7 | – | – | – | 1 | – | – | – | – | 4 | – | – | – | – | – | – | – | 12 |
| Gonorrhoea infection | 3 | 2 | 5 | 1 | – | – | 1 | – | – | 1 | – | – | 1 | – | – | – | – | 14 |
| H. Influenzae epiglottitis | – | – | – | – | – | – | 1 | – | – | – | – | – | – | – | – | 1 | – | 2 |
| H. Influenzae infection (NOS) | – | 1 | – | – | – | – | – | – | – | – | – | – | – | – | – | – | – | 1 |
| H. Influenzae meningitis | – | – | 1 | – | 1 | – | – | – | – | 1 | – | – | – | 3 | 1 | 2 | – | 9 |
| Hepatitis A — acute viral | 1 | 1 | – | – | 4 | 1 | 1 | – | 2 | 2 | 10 | 3 | 4 | 2 | 1 | – | – | 32 |
| Hepatitis B — acute viral | – | – | – | 1 | – | – | 1 | – | – | – | 1 | – | – | – | – | – | – | 3 |
| Hepatitis B — unspecified | 11 | 10 | – | 49 | 15 | 2 | 20 | 1 | 2 | 3 | 1 | 1 | – | – | – | – | – | 115 |
| Hepatitis C — unspecified | 16 | 3 | 4 | 9 | 18 | 1 | 12 | 3 | 5 | 40 | 20 | 1 | – | 2 | 1 | 3 | – | 138 |
| Hepatitis D — unspecified | – | – | – | – | – | 1 | – | – | – | – | – | – | – | – | – | – | – | 1 |
| Hepatitis, acute viral (NOS) | – | – | – | – | 2 | – | – | – | – | – | – | – | – | – | – | – | – | 2 |
| HIV infection | 2 | – | 11 | 1 | – | 1 | – | – | – | – | 2 | – | – | – | – | – | 6 | 23 |
| Legionnaires' disease | 2 | – | – | – | – | – | – | – | – | – | – | – | – | – | – | – | – | 2 |
| Listeriosis | – | – | – | 1 | – | – | – | – | – | 1 | – | – | – | – | – | – | – | 2 |
| Malaria | – | – | – | – | – | – | – | – | 1 | – | – | – | – | – | – | – | – | 1 |
| Measles | – | 2 | – | 13 | 7 | 1 | – | – | 3 | 15 | 2 | 1 | – | – | – | 2 | – | 46 |
| Meningococcal infection (NOS) | – | – | – | – | – | – | – | – | – | – | – | – | 1 | – | – | – | – | 1 |
| Meningococcal meningitis | – | 2 | – | 3 | – | – | 1 | – | – | – | – | – | – | 1 | – | 2 | – | 9 |
| Mycobacterial infection (NOS) | 1 | – | 1 | – | – | – | – | – | – | – | – | – | – | – | – | – | – | 2 |
| Mycobacterial tuberculosis | 1 | – | – | 3 | 1 | – | 2 | – | 1 | – | 2 | – | – | – | – | – | – | 10 |
| Pertussis | – | – | – | – | – | – | 1 | – | – | 2 | 1 | – | – | – | – | 3 | – | 7 |
| Q fever | – | – | – | – | – | 1 | – | – | – | – | 5 | – | 1 | – | – | – | – | 7 |
| Rubella | – | – | – | – | – | – | 2 | – | – | 9 | 1 | 8 | – | – | – | 1 | – | 21 |
| Salmonella (NOS) | 1 | 1 | 2 | – | – | – | 5 | 1 | – | 3 | 1 | 1 | – | – | 1 | – | – | 16 |
| Salmonella typhimurium | – | – | – | – | 2 | 1 | – | – | – | – | – | – | – | – | – | – | – | 3 |
| Syphilis infection | – | 1 | 1 | 5 | 1 | – | – | – | – | 1 | 7 | 3 | 1 | – | – | – | – | 20 |

## *Infectious diseases*

► *Continued from page 127*

appropriately immunised but the parents were unsure of their own immunisation status. Stool specimens for virus culture and blood specimens for serology were obtained from the family members and sent to ICPMR.

Neighbours on each side and family contacts were interviewed, and immunisation details and stool specimens for virus culture collected. A neighbour's child had received the most recent dose of Sabin vaccine. This child had attended a GP in Wagga on August 3. The batch number of the vaccine used was unknown although an examination of stock at the Base Hospital pharmacy indicated it could have been from two lots held at that time. The supply of vaccine from the pharmacy with these batch numbers was stopped and vaccine from a recently produced batch was released while the laboratory results were awaited. Consideration was given to the logistics of obtaining, storing and distributing a large consignment of Sabin vaccine should the need for a mass immunisation campaign arise, and a media release was prepared for use in this eventuality.

By October 30 the laboratory indicated that the isolate was unlikely to be polio virus and that it resembled another enterovirus, most likely an ECHO virus. The source of this virus remains undetermined.

### Discussion

While this was not a case of poliomyelitis it has served to highlight some of the issues which would need to be considered in the event of a case or cases. There has not been an indigenous case of polio in NSW since 1970 and the last outbreak occurred in 1961-62 — resulting in 26 deaths. A survey of kindergarten children in the SWR indicated that 90 to 95 per cent are appropriately immunised with Sabin vaccine. It is reported that in the United States paralytic polio with vaccine strains occurs once in every 2.6 million doses administered.

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## TABLE 5

SUMMARY OF NSW INFECTIOUS DISEASE NOTIFICATIONS
OCTOBER 1992

| Condition | Number of cases notified Period | | Cumulative | |
|---|---|---|---|---|
| | Oct. 1991 | Oct. 1992 | Oct. 1991 | Oct. 1992 |
| Adverse reaction | N/A | – | N/A | 30 |
| AIDS | 37 | 6 | 282 | 122 |
| Arboviral infection | 7 | 4 | 467 | 296 |
| Brucellosis | – | – | 2 | 1 |
| Cholera | – | – | – | – |
| Diphtheria | – | – | – | – |
| Foodborne illness (NOS) | 187 | 8 | 2581 | 210 |
| Gastroenteritis (instit.) | – | 12 | 45 | 364 |
| Gonorrhoea | 45 | 14 | 346 | 377 |
| H influenzae epiglottitis | 4 | 2 | 18 | 38 |
| H influenzae B — meningitis | 18 | 9 | 55 | 89 |
| H influenzae B — septicaemia | 2 | – | 10 | 20 |
| H influenzae infection (NOS) | 11 | 1 | 110 | 29 |
| Hepatitis A | 189 | 32 | 857 | 806 |
| Hepatitis B | 130 | 118 | 1120 | 2564 |
| Hepatitis C | 135 | 138 | 489 | 3238 |
| Hepatitis D | N/A | 1 | N/A | 6 |
| Hepatitis, acute viral (NOS) | 1 | 2 | 237 | 15 |
| HIV infection* | 63 | 23 | 640 | 581 |
| Hydatid disease | – | – | 7 | 4 |
| Legionnaires' disease | 1 | 2 | 25 | 81 |
| Leprosy | – | – | – | 5 |
| Leptospirosis | – | – | 29 | 15 |
| Listeriosis | – | 2 | – | 13 |
| Malaria | 10 | 1 | 173 | 102 |
| Measles | 43 | 46 | 304 | 347 |
| Meningococcal meningitis | 6 | 9 | 42 | 66 |
| Meningococcal septicaemia | – | – | 12 | 11 |
| Meningococcal infection (NOS) | 4 | 1 | 37 | 11 |
| Mumps | N/A | – | N/A | 19 |
| Mycobacterial tuberculosis | 48 | 10 | 281 | 313 |
| Mycobacterial — atypical | 9 | – | 96 | 232 |
| Mycobacterial infection (NOS) | 19 | 2 | 148 | 38 |
| Pertussis | 6 | 7 | 40 | 109 |
| Plague | – | – | – | – |
| Poliomyelitis | – | – | – | – |
| Q fever | 12 | 7 | 163 | 151 |
| Rubella | 7 | 21 | 42 | 97 |
| Salmonella infection (NOS) | 83 | 16 | 1083 | 460 |
| Syphilis | 56 | 20 | 514 | 710 |
| Tetanus | 1 | – | 4 | 2 |
| Typhoid and paratyphoid | 4 | – | 50 | 23 |
| Typhus | – | – | – | – |
| Viral haemorrhagic fevers | – | – | – | – |
| Yellow fever | – | – | – | – |

*Data to September only

## TABLE 6

**NOTIFICATIONS FOR INFECTIOUS DISEASES BY HEALTH AREA AND REGION CUMULATIVE TO OCTOBER 1992**

| DISEASE NAME | CSA | SSA | ESA | SWS | WSA | WEN | NSA | CCA | ILL | HUN | NCR | NER | OFR | CWR | SWR | SER | OTH/UK | TOTAL |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| AIDS infection | 21 | 2 | 9 | 4 | 11 | 5 | 32 | 5 | 3 | 2 | 12 | 4 | 1 | 3 | 5 | 3 | – | 122 |
| Arboviral infection | 1 | 2 | – | – | 7 | 6 | 6 | 7 | 8 | 23 | 111 | 30 | 58 | 10 | 27 | – | – | 296 |
| Ross river | 1 | 2 | – | – | 6 | 6 | 6 | 6 | 8 | 23 | 110 | 30 | 58 | 10 | 25 | – | – | 291 |
| Other alphaviruses | – | – | – | – | – | – | – | – | – | – | 1 | – | – | – | 2 | – | – | 3 |
| Foodborne illness (NOS) | 7 | 2 | 31 | 10 | 53 | 19 | – | 30 | 4 | 7 | 5 | 4 | 34 | 1 | 1 | 2 | – | 210 |
| Gastroenteritis (instit.) | 25 | 1 | 9 | 28 | 7 | 1 | 1 | – | 1 | 94 | 2 | 93 | 5 | – | – | 97 | – | 364 |
| Gonorrhoea infection | 66 | 24 | 136 | 22 | 24 | 1 | 20 | 3 | 3 | 10 | 18 | 11 | 14 | 12 | 7 | 6 | – | 377 |
| H. Influenzae epiglottitis | – | 3 | 1 | 3 | 6 | 3 | 3 | – | 2 | 5 | 3 | 5 | – | – | 1 | 3 | – | 38 |
| H. Influenzae infection (NOS) | 3 | 2 | 2 | 1 | 2 | – | 1 | 4 | 1 | 2 | – | 2 | 1 | 2 | 2 | 4 | – | 29 |
| H. Influenzae meningitis | 3 | 4 | 4 | 5 | 6 | 6 | 17 | 4 | 7 | 7 | 5 | 5 | 2 | 4 | 4 | 6 | – | 89 |
| H. Influenzae septicaemia | – | 1 | 1 | 4 | 2 | – | 3 | – | – | 5 | 1 | – | – | 2 | 1 | – | – | 20 |
| Hepatitis A — acute viral | 85 | 32 | 110 | 30 | 46 | 8 | 85 | 6 | 24 | 29 | 112 | 125 | 78 | 12 | 12 | 11 | 1 | 786 |
| Hepatitis B — acute viral | 5 | 4 | 30 | 6 | 5 | 5 | 5 | 3 | 6 | 1 | 10 | 4 | 20 | 2 | 3 | 2 | – | 111 |
| Hepatitis B — unspecified | 352 | 344 | 19 | 724 | 362 | 31 | 285 | 28 | 18 | 107 | 52 | 43 | 29 | 17 | 13 | 27 | 2 | 2453 |
| Hepatitis C — acute viral | 1 | 1 | 4 | – | 8 | 1 | 3 | 1 | 3 | – | 8 | 6 | 4 | 3 | – | 2 | – | 45 |
| Hepatitis C — unspecified | 472 | 149 | 347 | 225 | 273 | 57 | 236 | 339 | 74 | 386 | 472 | 52 | 11 | 49 | 20 | 30 | 1 | 3191 |
| Hepatitis D — unspecified | – | – | 1 | – | – | 1 | – | 1 | – | 1 | 2 | – | – | – | – | – | – | 6 |
| Hepatitis, acute viral (NOS) | – | – | 1 | 2 | 4 | – | – | 1 | – | – | – | 1 | 3 | 2 | 1 | – | – | 15 |
| HIV infection | 53 | 20 | 172 | 11 | 26 | 8 | 34 | 4 | 3 | 22 | 17 | – | 3 | – | 1 | 5 | 202 | 581 |
| Legionnaires' disease | 5 | 2 | 2 | 36 | 16 | 2 | 4 | 7 | 2 | 2 | 2 | – | – | – | – | 1 | – | 81 |
| Malaria | 10 | 7 | 8 | 4 | 14 | – | 21 | 2 | 8 | 4 | 8 | 7 | 1 | 1 | 4 | 3 | – | 102 |
| Meningococcal infection (NOS) | – | – | 2 | – | – | – | 1 | – | 1 | 1 | – | 2 | 2 | 2 | – | – | – | 11 |
| Meningococcal meningitis | 4 | 7 | – | 5 | 6 | 3 | 1 | 6 | 5 | 6 | 7 | 5 | 1 | 7 | – | 3 | – | 66 |
| Meningococcal septicaemia | 1 | 1 | 2 | 3 | – | 2 | – | – | – | 1 | – | – | 1 | – | – | – | – | 11 |
| Mycobacterial atypical | 45 | 20 | 42 | 20 | 26 | 4 | 31 | 1 | 10 | 20 | 3 | 3 | 2 | – | 3 | 2 | – | 232 |
| Mycobacterial infection (NOS) | 8 | 2 | 4 | 1 | 5 | 2 | 4 | – | 5 | 4 | – | 1 | – | – | 1 | – | 1 | 38 |
| Mycobacterial tuberculosis | 39 | 28 | 28 | 68 | 40 | 6 | 47 | 9 | 10 | 6 | 11 | 5 | – | 3 | 7 | 6 | – | 313 |
| Q fever | – | – | – | – | 6 | 3 | – | 1 | 1 | 7 | 61 | 25 | 31 | 10 | 4 | 2 | – | 151 |
| Salmonella (NOS) | 20 | 33 | 35 | 46 | 39 | 28 | 76 | 13 | 8 | 24 | 45 | 24 | 21 | 19 | 13 | 16 | – | 460 |
| Salmonella bovis morbificans | 1 | 3 | 1 | – | 2 | 1 | 2 | – | – | – | 1 | 1 | – | – | – | – | – | 12 |
| Salmonella typhimurium | 8 | 19 | 2 | 24 | 31 | 18 | 21 | 8 | 7 | 20 | 2 | 3 | 6 | – | 5 | – | – | 174 |
| Syphilis infection | 116 | 38 | 124 | 50 | 37 | 8 | 38 | 1 | 8 | 13 | 100 | 38 | 108 | 16 | 12 | 2 | 1 | 710 |
| Typhoid and paratyphoid | 4 | 1 | 6 | 1 | 3 | – | 5 | – | 1 | – | – | – | – | – | 2 | – | – | 23 |

## TABLE 7

**OTHER INFECTIOUS DISEASE NOTIFICATIONS BY MONTH OF ONSET CUMULATIVE TO OCTOBER 1992**

| CONDITION | JAN | FEB | MAR | APR | MAY | JUN | JUL | AUG | SEP | OCT | TOTAL |
|---|---|---|---|---|---|---|---|---|---|---|---|
| AIDS infection | 22 | 12 | 13 | 16 | 20 | 13 | 10 | 10 | 6 | – | 122 |
| Arboviral infection | 14 | 40 | 89 | 78 | 39 | 11 | 11 | 7 | 3 | 4 | 296 |
| Ross river | 14 | 41 | 86 | 77 | 39 | 10 | 11 | 7 | 3 | 4 | 291 |
| Other alphaviruses | – | – | 2 | – | – | 1 | – | – | – | – | 3 |
| Foodborne illness (NOS) | 55 | 28 | 27 | 20 | 15 | 7 | 13 | 18 | 19 | 8 | 210 |
| Gastroenteritis (instit.) | 88 | 7 | 17 | 9 | 36 | 22 | 41 | 128 | 4 | 12 | 364 |
| Gonorrhoea infection | 31 | 22 | 49 | 38 | 49 | 30 | 54 | 41 | 49 | 14 | 377 |
| H. Influenzae epiglottitis | 4 | 1 | 3 | 2 | 4 | 10 | 4 | 4 | 4 | 2 | 38 |
| H. Influenzae infection (NOS) | 5 | 2 | 1 | 2 | 2 | 4 | 5 | 6 | 1 | 1 | 29 |
| H. Influenzae meningitis | 5 | 9 | 10 | 5 | 11 | 13 | 7 | 12 | 8 | 9 | 89 |
| H. Influenzae septicaemia | 1 | 1 | 3 | 3 | 3 | 2 | 5 | – | 2 | – | 20 |
| Hepatitis A — acute viral | 114 | 98 | 121 | 98 | 89 | 82 | 65 | 63 | 44 | 32 | 806 |
| Hepatitis B — acute viral | 10 | 12 | 17 | 22 | 18 | 9 | 5 | 5 | 10 | 3 | 111 |
| Hepatitis B — unspecified | 279 | 179 | 274 | 253 | 246 | 306 | 285 | 282 | 234 | 115 | 2453 |
| Hepatitis C — acute viral | 14 | 7 | 3 | 5 | 6 | 2 | 4 | 1 | 3 | – | 45 |
| Hepatitis C — unspecified | 236 | 256 | 315 | 253 | 450 | 394 | 423 | 407 | 321 | 138 | 3193 |
| Hepatitis D — unspecified | 1 | – | – | 1 | 3 | – | – | – | – | 1 | 6 |
| Hepatitis, acute viral (NOS) | – | 3 | 1 | 4 | 2 | 1 | 1 | – | 1 | 2 | 15 |
| HIV infection | 95 | 74 | 69 | 71 | 78 | 56 | 62 | 52 | 24 | – | 581 |
| Legionnaires' disease | 1 | 9 | 3 | 42 | 8 | 5 | 8 | 2 | 1 | 2 | 81 |
| Malaria | 12 | 5 | 16 | 9 | 14 | 17 | 13 | 8 | 7 | 1 | 102 |
| Meningococcal infection (NOS) | 2 | 2 | – | – | – | – | 2 | 3 | 1 | 1 | 11 |
| Meningococcal meningitis | – | 3 | 2 | 8 | 2 | 6 | 14 | 13 | 9 | 9 | 66 |
| Meningococcal septicaemia | 1 | – | – | – | – | 2 | 2 | 3 | 3 | – | 11 |
| Mycobacterial atypical | 33 | 32 | 48 | 25 | 29 | 28 | 21 | 8 | 7 | – | 232 |
| Mycobacterial infection (NOS) | 7 | 5 | 6 | 2 | 4 | 6 | – | 3 | 3 | 2 | 38 |
| Mycobacterial tuberculosis | 75 | 33 | 35 | 39 | 28 | 38 | 16 | 23 | 15 | 10 | 313 |
| Q fever | 13 | 12 | 11 | 13 | 9 | 22 | 21 | 27 | 16 | 7 | 151 |
| Salmonella (NOS) | 99 | 59 | 58 | 52 | 41 | 33 | 37 | 41 | 24 | 16 | 460 |
| Salmonella bovis morbificans | 1 | 1 | 1 | 2 | 3 | 1 | – | 2 | 1 | – | 12 |
| Salmonella typhimurium | 20 | 21 | 51 | 23 | 23 | 7 | 9 | 10 | 7 | 3 | 174 |
| Syphilis infection | 54 | 85 | 70 | 83 | 88 | 92 | 90 | 77 | 51 | 20 | 710 |
| Typhoid and paratyphoid | 6 | 4 | 2 | – | 3 | 2 | 3 | 2 | 1 | – | 23 |

*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, NCR North Coast Health Region, NER New England Health Region, OFR Orana & Far West Health Region, CWR Central West Health Region, SWR South West Health Region, SER South East Health Region, 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.

## TABLE 8

**NOTIFICATIONS FOR VACCINE PREVENTABLE DISEASES BY MONTH OF ONSET CUMULATIVE 1992**

| DISEASE NAME | MONTH JAN | FEB | MAR | APR | MAY | JUN | JUL | AUG | SEP | OCT | TOTAL |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Measles | 48 | 31 | 35 | 22 | 41 | 28 | 21 | 23 | 52 | 46 | 347 |
| Mumps | 3 | 5 | 2 | – | 3 | 2 | 1 | 1 | 2 | – | 19 |
| Pertussis | 5 | 15 | 25 | 7 | 6 | 9 | 12 | 9 | 14 | 7 | 109 |
| Rubella | 6 | 7 | 7 | 4 | 1 | 1 | 5 | 14 | 31 | 21 | 97 |
| Tetanus | 1 | – | – | – | – | – | – | – | 1 | – | 2 |
| Adverse event after immunisation | 4 | 8 | 3 | 1 | 5 | 3 | – | 4 | 2 | – | 30 |

## TABLE 9

**NOTIFICATIONS FOR VACCINE PREVENTABLE DISEASES BY HEALTH AREA AND REGION CUMULATIVE 1992**

| DISEASE NAME | PUBLIC HEALTH UNIT CSA | SSA | ESA | SWS | WSA | WEN | NSA | CCA | ILL | HUN | NCR | NER | OFR | CWR | SWR | SER | TOTAL |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Measles | 33 | 14 | 7 | 49 | 33 | 9 | 21 | 6 | 13 | 87 | 20 | 23 | 12 | 5 | 4 | 11 | 347 |
| Mumps | – | – | 3 | 2 | 3 | – | 1 | – | 2 | 4 | 1 | – | – | – | 2 | 1 | 19 |
| Pertussis | 4 | 9 | 4 | 10 | 9 | 7 | 13 | 6 | 3 | 9 | 27 | 2 | – | – | 1 | 5 | 109 |
| Rubella | 2 | 3 | 6 | 7 | 10 | 5 | 18 | 3 | 2 | 15 | 8 | 11 | 2 | 1 | 1 | 3 | 97 |
| Tetanus | – | – | – | 1 | – | – | – | – | – | – | – | – | – | – | – | 1 | 2 |
| Adverse event after immunisation | 3 | 3 | – | – | 2 | – | – | 1 | – | 1 | 5 | 7 | – | 1 | 2 | 5 | 30 |

## TABLE 10

**RARELY NOTIFIED DISEASES BY HEALTH AREA AND REGION CUMULATIVE 1992**

| DISEASE NAME | PUBLIC HEALTH UNIT CSA | SSA | ESA | SWS | WSA | WEN | NSA | CCA | ILL | HUN | NCR | NER | OFR | CWR | SWR | SER | TOTAL |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Brucellosis | – | – | – | 1 | – | – | – | – | – | – | – | – | – | – | – | – | 1 |
| Hydatid disease | – | – | – | – | – | – | – | – | – | – | 1 | 2 | – | 1 | – | – | 4 |
| Leprosy | – | – | – | 1 | 1 | 1 | – | – | – | – | – | 1 | – | – | 1 | – | 5 |
| Leptospirosis | – | 1 | – | – | – | 1 | – | – | – | – | 6 | 2 | – | 5 | – | – | 15 |
| Listeriosis | – | 2 | – | 1 | – | 2 | 4 | 1 | – | 1 | 1 | – | – | 1 | – | – | 13 |

## TABLE 11

**NOTIFICATIONS OF NON-NOTIFIABLE SEXUALLY TRANSMITTED INFECTIONS FROM SEXUAL HEALTH CLINICS JANUARY-OCTOBER 1992**

[1] 1/1/92-31/8/92
[2] 1/1/92-31/8/92
[3] 1/1/92-31/8/92
[4] 1/3/92-31/10/92
[5] 1/5/92-30/9/92
[6] 1/1/92-30/6/92
[7] 1/3/92-30/9/92
[8] 1/7/92-31/10/92
[9] 14/5/92-30/9/92
[10] 1/7/92-31/10/92
[11] No SHC in the Region
[12] No SHC in the Region
[13] No SHC in the Region

| AHS Infection | CSA | SSA[1] | ESA[2] | SWS | WSA[3] + WEN | NSA[4] | CCA[5] | ILL[6] | HUN[7] | NCR[8] | NER[9] | OFR[10] | CWR[11] | SWR[12] | SER[13] |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| *Chlamydia trachomatis* | – | 8 | 157 | – | 40 | 5 | 3 | 13 | 40 | 1 | 6 | 7 | – | – | |
| Donovanosis | – | – | – | – | – | – | – | – | – | – | – | – | – | – | |
| Genital herpes | – | 12 | 406 | – | 44 | 13 | 4 | 27 | 50 | – | 6 | 11 | – | – | |
| Genital warts | – | 105 | 907 | – | 220 | 54 | 6 | 150 | 159 | 17 | 20 | 8 | – | – | |
| Non-specific urethritis | – | 9 | 577 | – | 244 | 23 | 1 | 53 | 68 | 4 | 7 | 3 | – | – | |
| *Lymphoma granuloma* | – | – | – | – | – | – | – | – | – | – | – | – | – | – | |

# A&E DEPARTMENTS

The 1991 Public Health Act considerably reduced the number of doctor notifiable conditions in NSW and there has subsequently been a measurable increase in rates of reporting[1]. Hospital Accident and Emergency (A&E) departments however pose a particular problem. Medical staff working in A&E departments are frequently Resident Medical Officers on short-term rotational attachments. It might be predicted that there would be fewer notifications from them than from more experienced practitioners.

This is of some concern since almost one-third of A&E department attendances are "comparable to a population which would present to general practice"[2]. The high volume turnover of acute conditions being seen makes it likely that these will include a number of notifiable conditions.

A six-month prospective survey was therefore conducted between April and September 1992 in the six Illawarra hospitals with 24-hour A&E Departments.

## FINDINGS

- Before the start of the survey none of the six participating A&E departments had made any notifications.
- Inquiries to the Director/Medical Officer-in-Charge of these departments showed that none held any notification forms, despite supplies having been sent to the Chief Executive Officer/Medical Superintendent of all participating hospitals.
- Few doctors working in A&E departments were aware of the revised list of notifiable conditions, or of the necessity to notify them. During the study period only one notification was made from an A&E department. A subsequent audit of A&E department day books (April-July 1991) showed at least 15 cases which should have been notified. Given the difficulties of obtaining accurate information from A&E day books, this is almost certainly an underestimate.

## CONCLUSIONS

Although these 15 cases represent only 0.002 per cent of all A&E cases seen during this period, at least three cases (one of measles and two related cases of gastroenteritis) may have required some public health action. It is concluded that hospital A&E departments may constitute a possible weak link in Statewide notifiable disease surveillance. All Public Health Units (PHUs) should try to define current practice at hospitals within their Area or Region.

Several NSW hospitals are installing computer systems in their A&E departments to record details of patient registration and diagnosis. This offers a possible solution to the problem of missed notifications. In the system which has been installed in the six Illawarra hospitals, all notifiable disease diagnoses are "flagged". If one of the diseases is entered in the diagnosis field, a "prompt" will advise that this is a notifiable condition and that the PHU should be contacted by phone, or a completed notification form should be despatched. A weekly print-out can also be sent to the PHU by way of a back-up mechanism, and this will be subject to periodic audit.

*David Jeffs, Director*
*Desolie Lovegrove, Public Health Nurse*
*Illawarra Public Health Unit*

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1. Anon. Timeliness and Completeness of Reporting. *NSW Public Health Bulletin* 1992; 3.8.90 ISSN 1034 7674.
2. National Health Strategy. A Study of Hospital Outpatient and Emergency Department Services .44 Background Paper 10, Canberra 1992 ISSN 1038 02722.

# NEWS AND COMMENT

## PUBLICATION ANNOUNCEMENT

The *Register of health data collections* second edition October 1992 is available now for $30. The Register comprehensively documents data collections administered by the NSW Department of Health Central Administration, including data content, source of data, access and availability of data and reports produced. It is a valuable resource on health related data in NSW and should increase awareness of the range and content of Department of Health data holdings.

Send your request with a cheque or money order payable to the NSW Health Department to: Mrs Judy Milton, Information Centre, NSW Health Department, LMB 961, North Sydney 2059. Phone: (02) 391 9084, fax: (02) 391 9070.

## ERRATUM

NSW Public Health Bulletin
Vol 3 No 9, September 1992
Maternal screening for Down's Syndrome

There was a minor error in Table 6. The following is a corrected version of the table:

**TABLE 6**

**EXPECTED NUMBER OF DOWN'S SYNDROME CASES DETECTED AND MISSED, AND EXPECTED TOTAL NUMBER OF AMNIOCENTESES AND FETUSES LOST FOR VARIOUS POPULATION-BASED MATERNAL SCREENING PROGRAMS, FOR AN AMNIOCENTESIS UPTAKE RATE OF 50 PER CENT (a)**

| Screening program (b) | Number of Down's pregnancies detected | | Number of Down's pregnancies missed | | Number of amniocenteses | Number of fetuses lost (c) |
|---|---|---|---|---|---|---|
| | No. | % | No. | % | | |
| 1 | 18 | **14** | 107 | **86** | 2,293 | 11 |
| 2 | 24 | **19** | 101 | **81** | 4,642 | 23 |
| 3 | 38 | **30** | 87 | **70** | 2,228 | 11 |
| 4 | 42 | **34** | 83 | **66** | 4,363 | 22 |
| 5 | 44 | **35** | 81 | **65** | 6,405 | 32 |

(a) These figures are based on the maternal age distribution for NSW births, January-June 1990
(b) Screening programs as follows:
1 Maternal age ≥ 37 years
2 Maternal age ≥ 35 years
3 Triple test screening (incorporating age) only
4 Maternal age ≥ 37 years plus triple test screening of remainder with triple test cut-off of 1:250
5 Maternal age ≥ 35 years plus triple test screening of remainder with triple test cut-off of 1:250
(c) Expected number of fetuses lost is estimated at 0.5 per cent of total amniocenteses

## MYCOBACTERIAL REFERENCE LABORATORY REPORT — 1991

During 1991 the Mycobacterial Reference Laboratory at the Institute of Clinical Pathology and Medical Research (ICPMR) at Westmead Hospital performed antibiotic susceptibilities using the Resistance Ratio method.

A total of 248 *M. tuberculosis* isolates was tested in 1991. Two hundred and twenty-seven (91 per cent) were fully susceptible to Rifampicin, Isoniazid and Ethambutol. Twenty-one isolates were resistant to a first-line drug. Multiple drug resistance to Isoniazid and Rifampicin occurred in four (1.6 per cent) of isolates tested in 1991.

These results are identical to those for NSW *M. tuberculosis* isolates in 1988.

(A more detailed report has been submitted to the *Communicable Diseases Intelligence.*)

*Tom Gottlieb, William Chiew and Lyn Gilbert, Mycobacterial Reference Laboratory (ICPMR)*

# PUBLIC HEALTH ABSTRACTS

Professor James S. Lawson, Professor and Head of the School of Health Services Management at the University of NSW, has prepared the following public health items from the literature.

## AIDS MINUS HIV

Laurence and colleagues have reported that five people from the New York City area have presented with clinical evidence of immunodeficiency but no evidence of human immunodeficiency virus (HIV). Other scientists at major HIV centres in Europe and America have described similar patients. This development raises a number of questions. Does a new virus causing a syndrome similar to HIV infection exist? Why are all these cases from disparate locations appearing now?

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Laurence J, Siegal FP, Schattner E et al. Acquired immunodeficiency without evidence of infection with human immunodeficiency virus types 1 and 2. *Lancet* 1992; 340:273-274. Editorial: AIDS minus HIV. *Lancet* 1992; 340:280.

## ASPIRIN IN ISCHAEMIC HEART DISEASE

In the past decade it has been shown that platelet aggregation and the formation of thrombi are important in the development of ischaemic heart disease. As a result, aspirin is being widely used both for patients with ischaemic heart disease and subjects without clinically apparent disease. Willard and colleagues have reviewed the evidence in support of aspirin for patients with ischaemic heart disease and have made the following conclusions:

- Among patients with ischaemic heart disease, the use of low-dose aspirin is recommended.
- Among patients without clinically apparent ischaemic heart disease, the haemorrhagic complications associated with routine aspirin use may outweigh its benefit unless the subjects have risk factors for atherosclerotic cardiovascular disease.

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Willard JE, Lange RA and Hillis LD. The use of aspirin in ischemic heart disease. *New Engl J Med* 1992; 327:3:175-181.

## CONTAMINATION OF OBSTETRIC STAFF

Midwives and obstetricians often come into contact with human body fluids that are known means of transmitting several diseases including hepatitis B and HIV. A British experience has shown that some contamination with body fluids occurred in more than one-third of midwives and obstetricians. Of particular concern was that 23 per cent of the staff had broken skin and 35 per cent were not wearing gloves. It was concluded that practices aimed at preventing contamination are inadequate.

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Kabukoba JJ and Young P. Midwifery and body fluid contamination. *Br Med J* 1992; 305:226.

## HEPATITIS C VIRUS IN SYDNEY BLOOD DONORS

Hepatitis C virus has recently been identified. Blood containing hepatitis C is highly infectious. A survey of first-time Sydney blood donors has shown the incidence to be 1 per cent among donors. Hepatitis C antibodies can be detected by a screening test and accordingly blood donations carrying the virus hepatitis C can be readily identified and discarded.

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Archer GT, Buring ML, Clark B, Ismay S et al. Prevalence of hepatitis C virus antibodies in Sydney blood donors. *Med J Aust* 1992; 157:225-227.

## ANTENATAL CARE BY MIDWIVES

A Westmead Hospital study has shown that when midwives, instead of medical practitioners, conducted antenatal clinics for low-risk obstetric patients there was a 28 to 68 per cent salary cost saving, with an improvement in quality of care as measured by appreciation for the continuity of care and information given at the clinic. The experience gained high patient acceptance.

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Giles W, Collins J, Ong F and MacDonald R. Antenatal care of low-risk obstetric patients by midwives. *Med J Aust* 1992; 157:158-161.

## TYPHOID VACCINATION OF DUBIOUS VALUE

Typhoid fever is perceived as being sufficiently serious to travellers for there to be three different types of vaccine available. But in reality typhoid is a rare disease in travellers. For example, only 6.1 cases per million American travellers were experienced in the early 1980s. There was a higher incidence for travellers to the Indian sub-continent and parts of South America (about 150 cases per million travellers). Despite these marginal risks of infection, millions of travellers continue to be vaccinated. There are significant side-effects of vaccination, including local and more rarely general reactions to the injection. Accordingly it is recommended that before embarking on the vaccination ritual, travellers and their health care providers should consider carefully the necessity of these vaccinations.

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Editorial: Typhoid vaccination: weighing the options. *Lancet* 1992; 340:341-342.

## PSYCHOACTIVE DRUGS IN GERIATRIC PATIENTS

There is a high level of use of psychoactive drugs among elderly residents of nursing homes. The use of such drugs continues to be a source of concern because they have substantial adverse side-effects in the elderly. In an American study, active education programs targeted to physicians, nurses and aides have been shown to reduce the use of psychoactive drugs without adversely affecting the overall behaviour and level of functioning of the residents.

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Avorn J, Soumerai SB, Everitt DE et al. A randomised trial of a program to reduce the use of psychoactive drugs in nursing homes. *New Engl J Med* 1992; 327:168-173.