



## PUBLIC COMMUNICATION DURING AN OUTBREAK OF INFECTIOUS DISEASE

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### PART ONE: DEALING WITH THE MASS MEDIA

**A** serious outbreak of infectious disease is a matter of concern for public health and medical services but it is also a public crisis. Few members of the community will be directly affected by the outbreak but anxiety about it has the potential to affect every family. The successful management of outbreaks of infectious disease has three distinct elements:

- the standard public health strategies known to limit the spread of infection;
- the medical measures to assist those already infected or likely to be infected; and
- the public communication strategies required to manage the crisis.

For most outbreaks the public health and medical measures are straightforward and well documented in standard texts such as Benenson<sup>1</sup>; their successful implementation depends chiefly on the availability of human and material resources. However, the third group of measures is often mismanaged because health personnel have limited experience in public communication and crisis management. Many health care workers do not recognise that communication strategies are not just a public relations exercise to protect the reputation of health authorities; in some cases failure to communicate properly with the public will result in breakdown of public health control of the outbreak and will sometimes lead to panic and disaster.

These remarks do not apply to all outbreaks of infectious disease. Many potentially serious outbreaks can be handled without making a single public statement. However, what must be done in every case is to consider the possible public implications of the outbreak, notably the spread of information, rumours and paranoia that may accompany it. The strategies required may be as simple as a visit by a doctor or nurse to a school, or telephone calls to concerned relatives. But in some cases the failure to prepare a media release for emergency use will lead to alarm and hysteria because of ill-informed television, radio or press reporting.

For the public, a significant outbreak of infectious disease is a crisis similar in importance to a spill of oil from a tanker, the potential failure of a bank, or the arrival of a cyclone. Management of the crisis in each of these examples is surprisingly similar — a combination of specialist strategies to combat the actual problem and management of public communication to limit the damage which could be caused by public alarm and hysteria. Health workers called on to respond to outbreaks would do well to study crisis management in non-health areas, noting the success or failure of the strategies.

### THE MASS MEDIA — PUPPET, ASSASSIN, OR JUST DOING A JOB?

The mass media is not mysterious and reporters are not enemies. The machinery for public communication is complex and has its own rules and standards that

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## Public communication during an outbreak of infectious disease

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should not be ignored. Just as a public health officer would deal carefully with the complex hierarchy of a large teaching hospital in a case of infectious disease, so the mass media must be handled — with care, intelligence and confidence.

In most cases, what is required is an understanding of the goals and nature of the media in relation to one's own aims and resources. Most media people are just doing their job and paranoia will prevent you dealing rationally with them.

### DEALING WITH THE MEDIA IN A HEALTH CRISIS

#### 1 Understanding what reporters and news editors want

Reporters and editors rarely want what you want. You want to minimise the spread of infectious disease; they want a good story or a lead item on the television news. In general a "good story" needs drama, a face, and facts.

To interest the media in what you say, you have to provide some element of drama (you have a serious outbreak to report; this year's statistics are better than last year's etc). Be wary of providing too much drama when you do not want or need to (this may result in unwelcome headlines like "Official says measles epidemic is worst for 10 years").

The easiest way for the media to create drama is to identify or create controversy. Controversy may be unavoidable but it is often created carelessly by apparent disagreement between public spokespeople. Contradiction provides the cheapest form of controversy. For example, if you say 20 people are ill with an infection and local officials say the number is closer to 50 because they have more up-to-date information, the newspaper can run a headline saying "Health officials argue on size of epidemic". It is best to have only one spokesperson and to plan what you will say in advance.

A reporter must identify a particular person as providing the information, not just a "Health Department spokesperson". It does not really matter which face, as long as the person can allay public fears and appears trustworthy.

While the reporters may be satisfied with a statement by an official, the face the media really wants is that of a person affected by the situation — the sick child or distraught parent. It may be advantageous to help provide this human interest angle (such as publicising the comments by a parent of a child with whooping cough when you are trying to encourage immunisation).

Reporters need detailed facts. They need to know how many people were infected, their ages, the area in which they lived, how sick they are and how many have been admitted to hospital. The media spokesperson should anticipate these questions and be prepared with answers. If the information is not available the reporters should be told why. It is useful to be prepared with historical information on the subject (what was it like last year; when was the worst outbreak of this kind; what about other States) since good reporters will try to put the current problem in perspective. A well-organised supply of facts helps reporters who may have little knowledge of the subject. It is often valuable to provide information sheets with definitions of difficult or confusing terms. If there is a need to broadcast specific information on

how to deal with the epidemic, a list in point form will often be reproduced in full by the media who want to be seen as providing a service to the public.

When you are giving information about cases in an outbreak, use the utmost caution in what you reveal. If you give the suburb and age of a child who later dies, it is simple for a reporter to get the name and address from the death notices. Use words like "child" or "adult" instead of giving an age and do not reveal even the sex or postcode unless you are sure it is in the public health interest to do so.

#### 2 Be prepared

Write what needs to be said in the form of a media release, which should contain the key facts, comments from the official spokesperson, and advice to the public on what to do. A good media release can be used as a handy supplement for a media conference or interview. A reporter can write the required story by quoting from a media release. In writing a media release, you should decide exactly what information is needed to allay public fears.

The second form of preparation is rehearsal. Some of this will happen incidentally every time you answer a public or health professional inquiry on the subject. Try to be available for these telephone inquiries; they will give you many easy opportunities to rehearse and also give you a clear picture of the main public concerns. In addition, reporters will often ask whether there have been many phone inquiries and what concerns have been expressed. Keep a log so you can answer the question specifically. You can also rehearse with media liaison officers from your department. You will quickly discover your weaknesses, and learn whether to use a formal, friendly, concerned or forceful style.

The last form of preparation is your appearance. Your clothes and appearance should be neat and unobtrusive. The aim is to appear appropriate for the subject matter and to wear clothes that will not distract the audience. If you customarily wear casual clothes to work, keep a set of more formal clothing on hand for emergency use.

#### 3 Be first with the bad news

In times of crisis it is usually best to step in and grab the agenda rather than wait for reporters and the public to find out something bad has happened. If your department or unit has done or not done something for which it will be blamed by the public, it is better to acknowledge this and get it out of the way than let outrage grow. This "outrage factor" gets larger every day information is hidden.

Another point about early release of news is that you can control the manner, time and place. You can put out a carefully worded media release and hold a media conference with your most experienced spokesperson. You must not appear to hide from questioning, because people want to know someone is in charge of the situation, even if all is obviously not well. Members of the public also want someone to be seen to be accountable. They pay for the public health expertise and they expect value.

*Part One of this discussion has concentrated on dealing with the media. Part Two, in a forthcoming issue of the Public Health Bulletin, will deal with the planning and coordination of a public communication program to deal with an outbreak of infectious disease.*

1. Benenson AS (ed). Control of Communicable Diseases in Man, 15th edition, American Public Health Association, Washington, 1990.

# COMPILATION OF A GENERAL PRACTITIONER DATABASE

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## SYNOPSIS

General practitioners provide a substantial proportion of health care to the community but often practise in isolation. A database of local general practitioners (GPs) may be used to improve patient care and enhance the recognition of the role of the GP by facilitating communication between GPs and other health professionals. Development and utilisation of a database listing all GPs in a Health Service Area with a population of 330,000 is described.

Data from medical provider files, pharmaceutical industry and local general practitioner association membership lists, lists of GPs attending seminars and the business telephone directory were combined and each GP identified was contacted and asked to provide information including gender, billing methods, practice hours and languages spoken.

The number of GPs in active practice and their response rates to individual questions were determined. The utilisation of the database is reported.

Combination of the five data sources yielded 651 possible GPs; 415 were found to be in active practice. GPs were willing to provide practice information; the response rate to each question was more than 90 per cent.

Compilation of a local database of general practitioners is relatively easy and inexpensive. Such a database is well utilised as a means of communication between GPs and other health professionals. Should a representative range of areas compile such databases this information could be combined to provide an accurate sampling frame for research.

## INTRODUCTION

About half the medical services used by the population are provided by general practitioners<sup>1</sup> yet there have been few attempts to integrate GP services with those provided directly by State and Federal governments. It has been suggested that GPs are becoming increasingly isolated from other health professionals<sup>2</sup>.

A recent analysis of available listings of GPs has found there is no single listing of GPs which is accurate or readily available<sup>3</sup>. The authors discussed how an accurate listing was necessary for general practice research but did not consider how such a database could enhance patient care.

The Central Sydney Health Service has collected data on all GPs actively practising in the Area. The database was derived to:

- facilitate communication between Health Service staff and local GPs and between the GPs;
- allow referral of hospital patients without a family doctor to appropriate GPs; and
- provide a sampling frame for research projects involving local GPs.

In this report the methods of database compilation are described and the use of the database over a six-month

FIGURE 1

FORMATTED OUTPUT FROM DATABASE

<b>Dr Peter SMITH (Male)</b>					
<b>39 SURGERY AVE</b>					
<b>CHIPPENDALE NSW 2008</b>					
<b>(02) 555 5551 (W) (02) 555 3321 (A.H.)</b>					
<b>Practice Hours</b>	<b>Start</b>	<b>Finish</b>	<b>Start</b>	<b>Finish</b>	<b>Bulk Billing</b> All Patients Pensioners & Card Holders only  No Patients
Mon	8:00am	12:30pm	4:00pm	8:00pm	
Tue					
Wed	8:00am	12:30pm	4:00pm	8:00pm	
Thu					
Fri	8:00am	12:30pm	4:00pm	8:00pm	
Sat					
Sun			4:00pm	8:pm	
<b>Languages</b>		<b>SPANISH</b>	<b>ITALIAN</b>		
Public Health Unit for Central and Southern Sydney					

period is discussed.

The database was compiled in the following way:

1. Data from five sources were pooled. The sources were the Medical Provider File, a pharmaceutical industry list, the membership list of the Central Sydney GP Association, attendance lists from the Royal Prince Alfred Hospital seminar program and the business telephone directory.

2. A questionnaire was sent to each address identified from the five sources. Practice information was sought and the general practitioners were asked whether they wished to receive referrals from the Health Service.

3. Non-responders were telephoned when a number was available. Where no listing was found in the business or private telephone directories, the nearest general practice was contacted and the receptionist questioned about the existence of nearby GPs.

Data were collected from the questionnaire or, in the case of doctors who did not respond to the written approach, by telephone.

A 'user friendly' program for IBM-compatible microcomputers was written using Clipper to allow data entry and report generation by clerical staff. Less than one hour of staff training is required. Data are stored in dBASE format and may be manipulated in a variety of ways using dBASE or may be written to a range of formats.

The software allows automatic generation of address labels and also formatted output suitable for photographic reproduction. An example of one entry is shown in Figure 1. Three such entries are produced on each A4 page. The entries are sorted alphabetically on the doctor's last name. For purposes of patient referral two indexes are provided: one based on language spoken by the doctor and the other based on the suburb of practice. Copies of the software are available from the authors at minimal cost.

Pooling of the data sources gave a total of 651 possible general practitioners. A total of 224 doctors responded to the mailed questionnaire; 210 indicated they were prepared to accept referrals from the Area Health Service and 22 provided practice information but did not want patients referred. The remaining 427 names were investigated and 191 GPs in active practice were identified, giving a total of 415 GPs in 281 practices.

The availability of a comprehensive database has been

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# GASTROENTERITIS RELATED TO FOOD AND/OR BEACH BATHING

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## NOTIFICATION

On November 14, 1991 a general practitioner notified the Eastern Sydney Area Public Health Unit of seven cases of gastroenteritis among eight-year-old children who had attended a private birthday party. Some of the children had also attended a school picnic the next day. The mother hosting the party was keen to find the cause of illness and had kept any portions remaining from the foods served at the party. A list of guests and their telephone numbers were provided.

## PRELIMINARY INVESTIGATION

The remaining food samples, including avocado dip, hommos dip, taramosalata dip, frankfurts and dried apricots, were collected and delivered to the Food Microbiology section of the Division of Analytical Laboratories. Bacteriological examination of foods consisted of standard plate count and quantitation of faecal coliforms, E coli and salmonellas.

A telephone questionnaire was given to parents of the children at the party. The questionnaire sought demographic information and asked about foods which had been eaten at the party, and presence and onset of any symptoms of enteric illness. It became apparent that some of the children had also attended a school picnic at Parsley Bay (a Sydney Harbour recreational area) the day after the birthday party. The picnic had been organised for Year 3 pupils of a local primary school, and their families. Activities at the picnic included swimming in Parsley Bay.

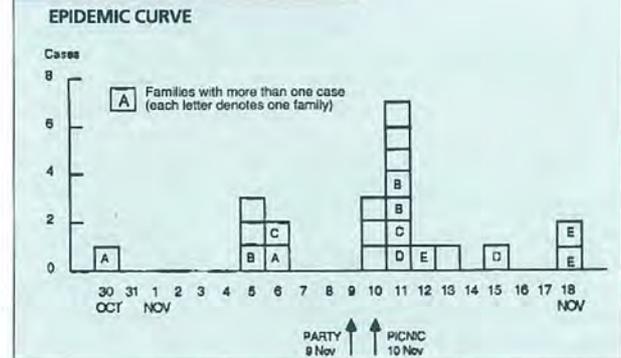
Cases were defined as persons who had experienced at least one of the symptoms of nausea, vomiting or diarrhoea, with onset during the period November 10-18, 1991 (the day after the party until no further cases were reported).

## SECOND-STAGE INVESTIGATION

During the initial investigation it became apparent that a similar illness was reported by classmates of the index cases in the fortnight before the party. This raised the possibility that the cases first reported were caused by clustering of an infection already circulating before the party took place. A second questionnaire was administered to those children (and their parents and siblings) in the school class who had not already been interviewed.

The study population comprised the children who attended the private birthday party or who were in the class for whom the picnic had been organised, their parents and siblings. Cases and controls were taken from this population and compared for presence at the party and at the picnic. Separate case-control analyses were performed among individuals who attended the party to determine whether consumption of a specific food was a risk factor for illness,

FIGURE 2



and among those at the picnic to determine if swimming with immersion of the face or the consumption of a specific food was a risk factor. Odds ratios and tests for differences in proportion were calculated using EpiInfo software.

The Water Board was approached to determine whether any information existed on microbial pollution of harbour waters at the picnic site.

## RESULTS

### Food analysis

The frankfurts showed evidence of early spoilage, while the avocado and hommos dips showed low-level contamination with faecal organisms, consistent with use and duration of storage after opening.

### Case description

Fifteen persons fulfilled the case definition with onset after the party, and a further six had onset of illness in the 11 days before the party. Of the 21 persons reporting a compatible illness, there were nine females and 12 males. Six cases were in adults and 15 in children, eight of whom were in the Year 3 class under study. Nausea was reported most commonly (17 cases), followed by diarrhoea (13), abdominal discomfort (13), vomiting (12), headache (11) and fever (10). The illness lasted between eight and 48 hours. In no case was a stool sample collected, so a microbiological diagnosis was not available.

### Incubation period analysis

When the 21 persons with enteric symptoms with onset from October 30 to November 18 were examined, it was possible to identify households in which secondary cases occurred four to seven days after a previous household case (see Figure 2). This illness, which affected 12 persons from six households, was classified as the 'long-incubation' illness, and presumably was propagated by person-to-person spread. Seven cases, with onset of illness after the party, were not associated with secondary family cases and were classified as 'short-incubation' cases. Although the patterns of symptoms were similar, diarrhoea was more frequent in the 'long-incubation' (11 of 14) than in the 'short-incubation' illness (two of seven, two-tailed Fisher exact test  $P=0.055$ ).

### Case-control studies

Questionnaires were available for 70 individuals - 39 children and 31 adults. In the case-control analyses, two

case definitions were tested, both applying to onset dates from November 10-18. The first definition was of all illness occurring irrespective of incubation period, of which there were 15 cases. The second, more restrictive, definition excluded 'long-incubation' illnesses, and left seven cases.

When an association between illness and party attendance was examined the odds ratios suggested that presence at the party was a significant exposure factor for illness. When all 15 cases were considered the odds ratio was calculated as 6.7 (95% C.I. 1.6-29.4), and rose to 14.7 (95% C.I. 1.9-138) when the case definition was restricted to the seven 'short-incubation' cases.

Two adults and 14 children attended the birthday party – eight cases and eight controls. Consumption of frankfurts, taramosalata dip, hommos dip, avocado dip, doughnuts, whipped cream or birthday cake were not significantly associated with illness using either case definition.

Odds ratios for picnic attendance were not significant using either case definition, and no common foods were eaten at the picnic. But among the 30 persons who attended the picnic, eight of 18 who swam reported illness, while none of 12 who did not swim reported illness. Thus, swimming in Parsley Bay was significantly associated with illness (two-tailed Fisher exact test,  $P=0.01$ ).

#### Recreational waters analysis

Although it is not carried out routinely, the Water Board agreed to perform bacteriological examination on Parsley Bay water. Tests on samples collected in mid-January showed significant contamination of bathing waters with faecal coliforms and faecal streptococci from stormwater discharges. The high faecal bacterial counts found at this time were most likely explained by sewage pollution of the stormwater system after heavy rains. However, no rainfall was recorded in the three days before the picnic in November. Thus stormwater-related faecal contamination of bathing waters at Parsley Bay was unlikely to have occurred at the time of the picnic.

#### DISCUSSION

The investigation was initially confined to the families of children who had attended the birthday party on November 9, 1991. However, two complicating factors rapidly became apparent: many of the children had also attended a class picnic the next day; and similar illnesses had occurred in contacts several days before either event. At this point the study population was expanded to include children in the picnic class (whether or not they attended the picnic) and their household contacts. Analysis of data suggests there were two separate illnesses, which could be distinguished by incubation period and by symptomatology. Diarrhoea was more commonly reported in the 'long-incubation' illness than in the other cases. The association between party attendance and illness was strengthened when cases of 'long-incubation' illness were removed from the analysis. This finding supports the hypothesis that the 'long-incubation' illness, spread by person-to-person transmission, was distinct from the other cases which may have had an incubation period as short as 12-48 hours and

may have been truly related to an exposure at the birthday party or picnic.

The clinical features of a brief self-limiting illness, with vomiting more marked than diarrhoea, reports of fever and headache, and an onset 12-48 hours after exposure were strongly suggestive of infection with calicivirus, Norwalk virus or a related small round virus<sup>1</sup>. Laboratory confirmation of these infections is difficult to obtain, as diarrhoeal stool specimens are required and symptoms have usually resolved by the time an investigation is initiated. As well, there are no public laboratory facilities in NSW for virological examination of foodstuffs.

Case-control methods were used to examine causal factors for illness. Attendance at the party was found to be a risk factor for illness, suggesting the source may have been either a highly infectious person at the party or a contaminated food. None of the subjects interviewed admitted to gastrointestinal symptoms on the day of the party. However, transmission from individuals before the onset of symptoms has been shown to occur in rotavirus infection<sup>2</sup> and has been suggested for Norwalk virus infection<sup>3</sup>. The number of persons attending was too small to implicate a single foodstuff as the vehicle for foodborne illness. Bacteriological analysis of avocado and hommos dips suggested some degree of contamination with human faecal organisms, but it was not possible to determine if this occurred during processing, as a result of use by the party guests or due to delay in transport to the laboratory. If contamination with faecal bacteria was a marker for contamination with human enteric viruses, then this may provide an explanation for the outbreak.

Swimming at the picnic, not presence at the picnic, was found to be a second significant risk factor for illness. Although a clear association between the presence of human enteric viruses in recreational waters and illness has not yet been proven<sup>4</sup>, it may be hypothesised that the bathing waters were contaminated with one of the small round viruses, which are known to remain viable in seawater (G Grohmann, personal communication). Unfortunately, it was not possible to arrange virological analysis of the water, although this facility may in future be provided by the Water Board (G Grohmann, personal communication). In the absence of heavy rainfall it was not possible to explain faecal pollution of the stormwater system by sewage overflows, although illegal cross-connections between sewerage and stormwater piping would have the same effect. However, enteric viruses are able to survive in marine sediments for many months and may be disturbed and recirculated into the bathing waters<sup>5</sup>. These mechanisms cannot be ruled out as a cause of faecal microbial pollution of the beach waters.

#### CONCLUSION

A cluster of cases of mild gastroenteritis was reported due to concern about a possible foodborne source of illness. Cases occurred after, and may have been related to attendance at, a private birthday party, swimming at a class picnic or both.

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## Gastroenteritis

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These events took place on two consecutive days of one weekend. Clinical features of the illness were suggestive of infection with calicivirus or a related virus. However, no clinical specimens were obtained for pathological confirmation and it was not possible to test food or water samples for the presence of pathogenic viruses.

Although the outbreak described in this report was a relatively minor one, the investigation of a much larger outbreak is likely to be hampered by the same difficulties. A mechanism to give the NSW public health network rapid access to laboratory services for virological examination of water and foodstuffs is needed to aid the investigation of future outbreaks.

### ACKNOWLEDGMENT

*We are grateful to Dr Alan Stark, University of NSW, for statistical advice and helpful comments on the manuscript.*

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The editor is Dr George Rubin, Director, Epidemiology and Health Services Evaluation Branch, NSW Health Department.

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Design — Health Public Affairs Unit, NSW Health Department. Suggestions for improving the content and format of the Bulletin are most welcome.

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## General practice database

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widely publicised and the database has been used for a range of purposes. These include:

- Production of a document listing doctors willing to receive referrals from the Area Health Service.
- When a district hospital Accident and Emergency Department was closed, the database was used to provide residents with a listing of GPs in their area.
- The Area Health Service sends a monthly newsletter to all GPs. An average of four Area Health Service departments or community service groups and two GPs a month request information be included with the newsletter.
- The Public Health Unit produces a bulletin to inform GPs of infectious disease outbreaks, including reports from the local general practice sentinel surveillance network.
- At the start of an outbreak of hepatitis A the PHU used the database to contact all GPs in the Area. They received information within 72 hours.
- The database has been used as a sampling frame for several research studies.
- Community health and health promotion professionals have used the database to contact GPs serving particular ethnic groups or geographical areas.
- A profile of general practice in Central Sydney has been produced to assist in planning the provision of services in the Area.

### DISCUSSION

A comprehensive database of GPs has a wide range of uses at a local level, many of which may enhance the health of the community by allowing timely and locally appropriate information to be disseminated to practitioners.

The frequent requests for information to be sent to GPs indicate a desire, on the part of Area Health Service staff and community groups, to liaise with family doctors in order that available services be used most efficiently. This communication is not just one way, as the newsletter is also circulated to more than 400 salaried and visiting medical staff in the Area and to each clinical department at RPAH, thus increasing awareness of the activities of local GPs.

Compilation of a database at a local level is not particularly time-consuming or expensive. The estimated cost of compiling the database for Central Sydney (which has a population of 330,000), excluding the cost of software development but including all data collection costs and salaries, was \$4,000.

### ACKNOWLEDGMENTS

*The authors would like to acknowledge Marina Helsdingen, Sumi Nair, Sarda Borusch and Lorraine Winchester who assisted with data collection and data management. The GP Liaison Committee of Royal Prince Alfred Hospital has provided invaluable advice and support.*

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# PUBLIC HEALTH ABSTRACTS

**P**rofessor 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.

## ASPIRIN HELPS REDUCE HEART DISEASE FATALITIES

In the prevention of cardiovascular events, aspirin has been shown to be beneficial in several trials. A Swedish trial with 2,035 patients demonstrated a 34 per cent reduction in myocardial infarction and sudden death after the taking of aspirin plus sotalol.

Juul-Moller S, Edvardsson N, Jahnmatz B, Rosen A et al. Double-blind trial of aspirin in primary prevention of myocardial infarction in patients with stable chronic angina pectoris. *Lancet* 1993; 340:1421-1425.

## MEASURING LOW BONE DENSITY AT THE HIP

Prospective studies have shown that women with low bone density in the forearm or foot are at increased risk of hip fracture. An American study of more than 9,000 women has clearly demonstrated there is a substantial advantage in measuring the bone density of the neck of the femur as it is a much better predictor than other measurements. The measurements can be done reasonably easily and at reasonable cost. It is argued that efforts to prevent hip fractures should focus on women who have measured low hip bone density.

Cummings SR, Black DM, Nevitt MC, Browner W et al. Bone density at various sites for prediction of hip fractures. *Lancet* 1993; 341:72-75.

## AUSTRALIAN EXPERIENCES WITH HEPATITIS B VACCINATION

The desirability of vaccinating high-risk individuals against hepatitis B virus is obvious. Before the advent of immunisation against hepatitis B virus, health care workers who had frequent contact with blood products had 5 to 10 times more risk of contracting the disease than the general population. A Melbourne group has determined that intradermal hepatitis B vaccination is a practical and inexpensive means of providing protection against hepatitis B in healthy young adults.

Thompson SC, Darlington R, Tallent D, Robins-Browne R et al. Effectiveness of low-dose intradermal hepatitis B vaccination. *Med J Aust* 1993; 158:372-375.

## ETHNIC DIFFERENCES IN THE INCIDENCE OF SUDDEN INFANT DEATH SYNDROME

Sudden infant death syndrome is the most important cause of death in Australian and United Kingdom children aged between 1 and 12 months. The most appealing hypothesis at present has been developed by McKenna who argues that human infants are likely to experience problems in the regulation of their breathing because their immaturity coincides with a period of change that is specific to humans — that of the development of language. Thus development of crying and of developing speech requires sophisticated learned control of breathing. To this, McKenna adds the major change in Western industrial societies of placing infants to sleep on their own. Thus Western infants sleeping alone lose the external stimulation that may stabilise breathing.

These hypotheses are strongly supported by observations that the sudden infant death syndrome is rare in Hong Kong, Africa and Asia as compared to the United Kingdom,

Ireland and Australia. A recent UK study has also confirmed the much lower incidence of deaths in the UK among infants of Bangladesh, as compared to UK ethnicity. The Bangladeshi infants sleep close to their mothers and others, both day and night, in complete contrast to the English parents.

Gantley M, Davies DP and Murcott A. Sudden infant death syndrome: links with infant care practices. *Br Med J* 1993; 306:16-20.

## PUBLIC HEALTH LESSONS FROM VICTORIA

Coordinated legislation and voluntary action has been shown in Victoria to have a substantial impact on public behaviour. John Powles and Sandra Gifford have demonstrated that the introduction and enforcement of drink-driving laws and speed limits, backed up by education programs, have produced a large reduction in deaths from traffic crashes in the past decade. Similarly, they have shown that tobacco smoking has been reduced probably as a consequence of bans on advertising supplemented by the replacement of tobacco sponsorship of sports and the arts from special tobacco sales taxes.

Powles JW and Gifford S. Health of nations: lessons from Victoria, Australia. *Br Med J* 1993; 306:125-127.

## CERVICAL CANCER — THE HUMAN PAPILLOMA VIRUS AND TOBACCO SMOKING

It has been established that cervical infection with the human papilloma virus is important in the causation of cervical cancer. In addition, it has long been known that tobacco smoking is a risk factor for cervical cancer. A new study of 180 women which controls for variables such as sexual behaviour and age has indicated there is an association between tobacco smoking and cervical cancer. The reason for this association is speculative. Smoking might produce a local immunological defect which may facilitate the infection and persistence of the human papilloma virus.

Burger MPM, Hollema H, Gouw ASH, Pieters WJLM and Quint WGV. Cigarette smoking and human papilloma virus in patients with reported cervical cytological abnormality. *Br Med J* 1993; 306:749-752.

## SAVING THE FORESKIN

Knowledge about human foreskins in boys is necessarily limited because of the historical widespread practice of circumcision. A review of the limited knowledge based on studies in the UK has shown that the medical indications for circumcision are as low as 1 to 2 per cent of all boys. In this context it is important to indicate that it is normal for only 4 per cent of infants at birth to have fully retractile prepuces. By the age of 5 this rises to about 90 per cent of boys until by the age of 17 only 1 per cent remain non-retractile. This basic knowledge about what is normal is important in campaigns to save the foreskin.

Gordon A and Collin J. Save the normal foreskin. *Br Med J* 1993; 306:1-2.

## A VACCINE FOR MALARIA?

Malaria is one of the leading causes of disease and death in large parts of the world. A vaccine has been developed and shown to be protective for about 50 per cent of those at risk in a major study in Colombia. This study has been treated

Continued on page 84 ▶

# INFECTIOUS DISEASES

## MEASLES

During the first half of 1993 all Area Health Services and Regions except South Eastern Region, representing 97 per cent of the NSW population, received notifications for measles.

The annual notification rate for the State is 8.7 per 100,000 population. Orana and Far West Region received notifications at a rate of 47.1 per 100,000 population.

Measles notifications peaked in epiweeks 6 to 10 and again in epiweeks 17 and 18.

Only 11 of 276 notifications (4 per cent) were laboratory confirmed. The ages of these notifications ranged from 11 months to 21 years (mean age of 7.6 years). Nine of the

eleven notifications (82 per cent) were for individuals older than the recommended age of immunisation (12 months).

## WHOOPIING COUGH

In the first half of 1993 all Area Health Services and Regions except South Eastern Region, representing 97 per cent of the NSW population, received notifications for whooping cough.

The spring/summer epidemic of 1992/93 continued through to mid-February, with lower levels of transmission through to the end of May.

The annual notification rate for the State is 6.7 per 100,000 population. Central West Region received notifications at a rate of 20.2 per 100,000 population. Northern Sydney Area received notifications at a rate of 10.9 per 100,000 population.

A total of 139 cases (69 per cent) occurred in individuals aged over five years, indicating the morbidity of this disease in older children and adults, and the reservoir of disease in these age groups.

## GERMAN MEASLES (RUBELLA)

By June 30 all Area Health Services and Regions except Orana and Far West, representing 98 per cent of the NSW population, had received notifications for rubella.

Notifications for rubella have continued to decrease since the first four weeks of the year. Forty-eight per cent of the year's notifications were for January.

The notification rate for the State for 1993 is 4.5 per 100,000 population. The notification rate for females between 15-44 years of age is 4.6 per 100,000.

## ADVERSE EVENT FOLLOWING IMMUNISATION

Notification rates for this condition are half those received for 1992. The rate of notification for this condition is calculated on a denominator of the birth cohort divided by two, multiplied by five (the number of immunisation services recommended in the two years of life).

The notification rate for Adverse Event Following Immunisation was 5.5 per 100,000 immunisation services per year.

## TUBERCULOSIS

The apparent decrease in the number of notifications for tuberculosis in 1993 is due to delayed notification and data entry. These two aspects of tuberculosis surveillance have received particular attention. Improvements in reporting are expected in the coming months.

The Hunter Area Health Service has received notifications at a rate of 3.7 per 100,000 population.

## LEGIONNAIRES' DISEASE

A total of 37 notifications for Legionnaires' disease has been received for 1993, for a rate of 1.3 notifications per 100,000 population. This compares with a rate of 2.4 notifications per 100,000 population for the same period in 1992.

Four notifications were received for each of epiweeks 9, 13 and 15.

*L. pneumophila* was identified in 24 of 30 notifications (80 per cent), *L. longbeachii* in five (17 per cent) and *L. micdadeii* in one (3 per cent).

TABLE 1

SUMMARY OF NSW INFECTIOUS DISEASE NOTIFICATIONS  
JUNE 1993

Condition	Number of cases notified			
	Period		Cumulative	
	June 1992	June 1993	June 1992	June 1993
Adverse reaction	3	-	24	12
AIDS	27	6	179	117
Arboviral infection	12	8	294	549
Brucellosis	1	-	1	3
Cholera	-	-	-	-
Diphtheria	-	-	-	-
Foodborne illness (NOS)	4	11	131	80
Gastroenteritis (instit.)	20	17	172	103
Gonorrhoea	33	18	124	173
H influenzae epiglottitis	10	1	24	20
H influenzae B - meningitis	13	1	53	30
H influenzae B - septicaemia	2	-	14	13
H influenzae infection (NOS)	3	-	15	6
Hepatitis A	87	24	609	306
Hepatitis B	321	93	1651	1501
Hepatitis C	405	179	1995	2195
Hepatitis D	-	1	5	4
Hepatitis, acute viral (NOS)	1	1	11	4
HIV infection	49	31	399	269
Hydatid disease	1	1	5	1
Legionnaires' disease	4	-	72	37
Leprosy	-	-	4	-
Leptospirosis	1	-	15	9
Listeriosis	1	-	8	5
Malaria	17	23	81	125
Measles	31	33	217	276
Meningococcal meningitis	6	4	21	21
Meningococcal septicaemia	1	1	4	13
Meningococcal infection (NOS)	-	1	4	6
Mumps	2	-	16	-
Mycobacterial tuberculosis	49	6	276	88
Mycobacterial - atypical	36	2	212	99
Mycobacterial infection (NOS)	3	3	26	32
Pertussis	9	8	72	201
Plague	-	-	-	-
Poliomyelitis	-	-	-	-
Q fever	27	11	92	155
Rubella	1	3	29	136
Salmonella infection (NOS)	44	20	524	488
Syphilis	100	11	498	283
Tetanus	-	-	1	3
Typhoid and paratyphoid	2	-	17	12
Typhus	-	-	-	-
Viral haemorrhagic fevers	-	-	-	-
Yellow fever	-	-	-	-

### THE HARRY WINDSOR MEDICAL RESEARCH GRANTS AND POSTGRADUATE SCHOLARSHIPS

The Community Health and Anti-Tuberculosis Association (CHATA) offers medical research grants and postgraduate scholarships to support research into tuberculosis, respiratory disease (particularly community aspects) and community health (not necessarily restricted to respiratory disease). The closing date for grants beginning January 1, 1994 is August 30, 1993. Further details can be obtained from CHATA, 169 Albion St, Surry Hills NSW 2010.

### NOTIFICATIONS OF NON-NOTIFIABLE SEXUALLY TRANSMITTED DISEASES JANUARY-JUNE 1993

In recent years NSW has been developing a comprehensive network of public sexual health services as part of its State HIV/AIDS strategy. The Central Western, South Western and South Eastern Regions will be opening sexual health services during 1993. This sentinel network, complemented by data from laboratories and GP sentinel practice networks, has the potential to provide useful insights into the pattern of non-notifiable STDs in NSW.

Figures in Table 3 to a large extent represent variations attributable to differing service levels in each Area and Region. Streamlined reporting systems and new services should provide more useful data in future. The following observations can be made from the table:

- NSW enjoys good control of the non-notifiable bacterial STDs, including donovanosis, lymphogranuloma venereum and (not presented here) chancroid. Because donovanosis is endemic in remote parts of Australia, as the rural sexual health services are further developed, it is possible that some cases will appear in future reports.
- Only a limited proportion (less than 15 per cent) of male cases of nongonococcal urethritis (NGU) is attributable to *Chlamydia trachomatis* infection. Most cases of NGU are of obscure aetiology.
- Clinical genital warts and genital herpes are the most common symptomatic viral STDs.

TABLE 2

#### INFECTIOUS DISEASE NOTIFICATIONS MARCH 1993 TO MAY 1993 BY MONTH OF ONSET

Condition	Month			
	Mar	Apr	May	Total
Adverse event after immunisation	3	5	1	9
AIDS	29	11	14	54
Arboviral infection	161	55	24	240
Brucellosis	—	1	1	2
Foodborne illness (NOS)	21	18	18	57
Gastroenteritis (instit.)	3	—	47	50
Gonorrhoea	44	40	24	108
H influenzae epiglottitis	4	4	6	14
H influenzae meningitis	7	9	4	20
H influenzae septicaemia	4	3	3	10
H influenzae infection (NOS)	3	—	—	3
Hepatitis A – acute viral	48	46	63	157
Hepatitis B – acute viral	9	5	9	23
Hepatitis B – unspecified	322	252	275	849
Hepatitis C – acute viral	1	2	—	3
Hepatitis C – unspecified	449	395	425	1269
Hepatitis D – unspecified	1	1	1	3
Hepatitis, acute viral (NOS)	—	1	1	2
HIV infection	66	47	37	150
Hydatid disease	—	—	—	—
Legionnaires' disease	7	12	7	26
Leptospirosis	3	1	1	5
Measles	37	29	38	104
Meningococcal meningitis	1	7	4	12
Meningococcal septicaemia	1	4	4	9
Meningococcal infection (NOS)	1	2	—	3
Mycobacterial – atypical	36	11	7	54
Mycobacterial tuberculosis	16	12	10	38
Mycobacterial infection (NOS)	5	10	6	21
Pertussis	37	31	20	88
Q fever	31	29	27	87
Rubella	24	13	8	45
Salmonella (NOS)	70	54	51	175
Salmonella bovis morbificans	1	1	—	2
Salmonella typhimurium	24	30	20	74
Syphilis	65	50	44	159
Tetanus	—	—	1	1
Typhoid and paratyphoid	2	2	—	4
Total	1536	1196	1203	3934

TABLE 3

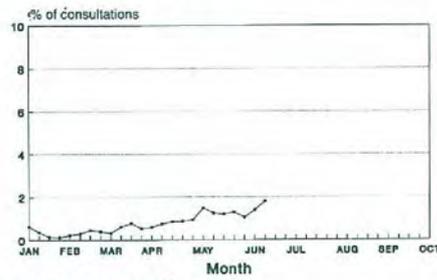
#### NOTIFICATIONS OF NON-NOTIFIABLE SEXUALLY TRANSMITTED DISEASES JANUARY-JUNE 1993 (Diagnoses from sexual health centres unless otherwise stated in footnote)

AHS Infection		CSA + SSA <sup>1</sup>	ESA <sup>2</sup>	SWS <sup>3</sup>	WSA <sup>4</sup> + WEN	NSA <sup>5</sup>	CCA <sup>5</sup>	ILL <sup>5</sup>	HUN <sup>5</sup>	NCR <sup>5</sup>	NER <sup>5</sup>	OFRR <sup>5</sup>	CWR <sup>6</sup>	SWR <sup>7</sup>	SER <sup>8</sup>
<i>Chlamydia trachomatis</i>	Male	—	31	3	—	—	—	2	8	2	2	10	—	4	—
	Female	1	24	3	—	1	—	2	16	—	7	6	—	8	—
	Total	1	55	6	—	1	—	4	24	2	9	16	—	12	2
Donovanosis	Male	—	—	—	—	—	—	—	—	—	—	—	—	—	—
	Female	—	—	—	—	—	—	—	—	—	—	—	—	—	—
	Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—
*Genital herpes	Male	2	94	2	—	9	—	1	13	2	2	—	—	1	—
	Female	1	75	2	—	3	3	3	17	3	3	2	—	9	—
	Total	3	169	4	—	12	3	4	30	5	5	2	—	10	2
*Genital warts	Male	28	267	1	—	11	15	23	70	18	9	12	—	—	—
	Female	15	106	1	—	12	8	11	23	4	13	10	—	—	—
	Total	43	373	2	—	23	23	34	93	22	22	22	—	—	10
Nongonococcal urethritis	Male	5	289	8	—	7	8	20	45	5	1	6	—	1	—
	Female	—	—	3	—	1	5	—	—	—	—	—	—	—	—
	Total	5	289	11	—	8	13	20	45	5	1	6	—	1	—
Lymphogranuloma venereum	Male	—	—	—	—	—	—	—	—	—	—	—	—	—	—
	Female	—	—	—	—	—	—	—	—	—	—	—	—	—	—
	Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—

\* First diagnosis; 1. 01/01/93-31/03/93; 2. 01/01/93-30/04/93; 3. 01/04/93-31/05/93; 4. No data yet received for 1993; 5. 01/01/93-31/05/93; 6. No SHC in Region; 7. No SHC in Region. Laboratory data 01/01/93-31/05/93; 8. No SHC in Region. Data from GP network 01/01/93-20/06/93.

**FIGURE 3**

**INFLUENZA-LIKE ILLNESS NSW 1993**



(Source: NSW Sentinel GP Network)

**INFLUENZA**

Influenza activity in June continued at levels substantially lower than for the same period last year. Eleven PHUs are now carrying out influenza surveillance, including GP sentinel surveillance in nine. Two more PHUs are now monitoring school absentee rates, bringing the total to five, and covering 12 schools in both metropolitan and rural NSW. The State average level of influenza-like illness (ILI) is still below 2 per cent of consultations, a relatively low level for this time of year. School absentee rates have not increased noticeably during the year in those schools where it is being measured, and there was only a small number of isolations of influenza virus, predominantly influenza A, by laboratories in the Eastern Sydney Area laboratory surveillance system during May. The national ASPREN GP surveillance network also reports low levels of ILI activity in May (<1 per cent of consultations).

**TABLE 4**

**INFECTIOUS DISEASE NOTIFICATIONS BY HEALTH AREA AND REGION CUMULATIVE 1993**

Condition	CSA	SSA	ESA	SWS	WSA	WEN	NSA	CCA	ILL	HUN	NCR	NER	OFR	CWR	SWR	SER	U/K	Total
Adverse event after immunisation	1	2	-	-	2	-	1	-	-	1	-	-	-	5	-	-	-	12
AIDS	19	1	55	6	3	-	8	-	2	1	12	1	2	3	4	-	-	117
Arboviral infection	1	1	1	1	1	3	2	1	1	21	45	18	98	13	338	4	-	549
Foodborne illness (NOS)	6	2	-	15	20	12	-	1	5	9	-	-	10	-	-	-	-	80
Gastroenteritis (instit.)	30	2	-	9	10	3	-	-	-	3	-	16	2	20	8	-	-	103
Gonorrhoea	23	8	72	7	9	2	10	3	3	6	8	6	7	5	1	3	-	173
H. Influenzae epiglottitis	1	4	1	-	-	2	3	1	1	2	-	2	-	-	1	2	-	20
H. Influenzae meningitis	1	2	-	3	2	3	2	2	5	1	3	3	1	1	-	1	-	30
H. Influenzae septicaemia	-	2	-	6	-	-	-	-	1	2	-	2	-	-	-	-	-	13
H. Influenzae infection (NOS)	-	-	1	-	1	1	-	2	-	-	-	-	1	-	-	-	-	6
Hepatitis A — acute viral	29	10	23	29	84	13	26	5	9	7	32	23	6	4	3	3	-	306
Hepatitis B — acute viral	2	1	2	-	5	-	-	-	-	-	22	2	-	-	1	1	-	36
Hepatitis B — unspecified	239	159	10	436	230	17	232	15	13	34	30	17	11	8	9	5	-	1465
Hepatitis C — acute viral	-	-	-	-	-	-	-	1	-	-	1	3	-	-	-	2	-	7
Hepatitis C — unspecified	346	147	300	232	234	36	238	116	55	192	156	34	16	24	34	28	-	2188
Hepatitis D — unspecified	2	1	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	4
Hepatitis, acute viral (NOS)	-	-	1	-	-	-	-	-	-	-	-	1	-	2	-	-	-	4
HIV infection	45	3	94	9	5	3	23	5	1	8	5	-	-	-	1	1	66	269
Hydatid disease	-	-	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1
Legionnaires' disease	4	1	-	11	13	-	2	1	1	1	1	-	1	-	-	1	-	37
Malaria	6	11	10	7	12	6	25	3	8	8	3	10	-	1	2	6	7	125
Meningococcal meningitis	-	1	-	5	1	-	1	2	-	2	4	-	1	-	1	3	-	21
Meningococcal septicaemia	3	3	-	1	-	1	-	-	1	-	1	1	1	-	-	1	-	13
Meningococcal infection (NOS)	-	-	1	-	-	-	-	1	-	1	1	-	1	-	-	-	-	6
Mycobacterial atypical	22	5	3	-	17	2	9	-	4	19	11	4	1	-	2	-	-	99
Mycobacterial tuberculosis	10	12	10	-	13	3	13	8	1	10	2	2	2	2	-	-	-	88
Mycobacterial infection (NOS)	9	3	-	-	-	-	12	2	3	-	2	-	1	-	-	-	-	32
Q fever	-	-	1	-	3	-	1	-	-	13	30	43	56	3	1	4	-	155
Salmonella (NOS)	14	34	33	25	11	2	35	23	5	51	37	29	19	5	7	7	-	337
Salmonella bovis morbificans	-	3	-	-	-	-	2	-	-	10	-	-	-	-	-	-	-	15
Salmonella typhimurium	16	19	11	14	5	6	14	2	-	21	5	5	11	-	2	5	-	136
Syphilis	26	9	36	88	10	3	16	3	4	3	27	15	39	2	1	1	-	283
Typhoid and paratyphoid	1	1	4	-	-	2	2	-	-	-	2	-	-	-	-	-	-	12

**TABLE 5**

**VACCINE PREVENTABLE DISEASE NOTIFICATIONS BY HEALTH AREA AND REGION CUMULATIVE 1993**

Condition	CSA	SSA	ESA	SWS	WSA	WEN	NSA	CCA	ILL	HUN	NCR	NER	OFR	CWR	SWR	SER	U/K	Total
Measles	34	23	5	40	51	20	9	9	12	19	17	1	33	2	1	-	-	276
Pertussis	9	5	8	24	25	22	41	1	8	10	13	4	11	17	3	-	-	201
Rubella	5	11	10	10	15	14	21	3	1	8	17	10	-	2	3	6	-	136
Tetanus	-	1	-	-	-	-	-	-	-	-	1	-	1	-	-	-	-	3

**TABLE 6**

**RARELY NOTIFIED INFECTIOUS DISEASES BY HEALTH AREA AND REGION CUMULATIVE 1993**

Condition	CSA	SSA	ESA	SWS	WSA	WEN	NSA	CCA	ILL	HUN	NCR	NER	OFR	CWR	SWR	SER	U/K	Total
Brucellosis	1	-	-	-	-	-	1	-	-	-	-	-	-	-	1	-	-	3
Leptospirosis	-	-	-	-	-	-	-	-	-	1	3	1	1	-	3	-	-	9
Listeriosis	2	-	-	1	-	-	-	-	-	1	-	-	-	-	-	1	-	5

# WHOOPING COUGH IN THE NORTH COAST REGION

Susan Furber, Tim Sladden, Michael Levy and John Beard

On March 27, 1992 a case of whooping cough (pertussis) was notified to the North Coast PHU by a general practitioner. Over the subsequent weeks, the PHU was notified of 10 more cases of whooping cough from the same area.

The index case was a 10-year-old girl who attended a primary school of 31 children aged 5-11 years, in a mountainous area about 35 kilometres inland.

PHU staff undertook active surveillance for further cases of whooping cough by contacting GPs, schools and the media in the northern part of the Region. Fifty schools were contacted and informed of the outbreak and asked to be vigilant for further cases. No more cases were identified through this process.

Of the 11 cases, eight were female and three male. Nine cases (aged 5-11 years) attended the school. The other two (both female) were two and four years old and lived close to the school.

The notifying GP was asked for details of immunisation status of cases and laboratory results. Positive serology was notified to the PHU for the first three cases. All further cases were diagnosed on clinical criteria by the attending doctor. The recorded dates of onset were between March 3 and 28.

The immunisation status of the cases was as follows:

- three were fully immunised, having had four doses of triple antigen (TA);
- two were partially immunised;
- one case was immunised, but the completeness of immunisation was unknown, while in another case the immunisation status was completely unknown;
- one case had received homeopathic immunisation; and
- three cases were not immunised.

The school attended by nine of the cases was closed one week before the Easter school holidays in April to prevent further spread of whooping cough among the children and staff.

Information on antibiotic treatment and immunisation for whooping cough was circulated to GPs, community health centres and community groups.

During the outbreak two press releases were made by the North Coast Director of Public Health, in addition to four television interviews, many radio interviews and several local newspaper reports. The objectives were to promote immunisation in the community, and to advise correct treatment for people who contracted whooping cough.

## FURTHER INVESTIGATION

A case-control study was conducted with the aim of determining the efficacy of:

- whooping cough immunisation using TA; and
- homeopathic immunisation for whooping cough.

In addition, the magnitude of whooping cough-related morbidity in the community was assessed, as indicated by the number of days away from school or work. The study sample comprised all teachers, pupils who attended the school and members of their households. Cases were defined as either having been diagnosed with whooping cough or having had a cough lasting 14 days or more during the previous three months. Controls were those individuals who

TABLE 7

REPORTED TYPE OF WHOOPING COUGH IMMUNISATION

Immunisation	Frequency (n)	Per cent
TA injection	46	58
Homeopathic	8	10
None	9	11
Unknown	16	20
Total	79	100

TABLE 8

REPORTED NUMBER OF IMMUNISATION INJECTIONS RECEIVED

Number of injections	Frequency (n)	Per cent
Not stated	37	47
One	6	8
Two	1	1
Three	16	20
Four	16	20
Five	3	4
Total	79	100

did not have an illness consistent with the case definition.

A questionnaire was devised, distributed through the school and collected a week later. Data were analysed with EpiInfo version 5.01, using univariate and bivariate statistical methods (chi square). Permission was granted by the School Education Department Cluster Director for the PHU to investigate the outbreak further.

## RESULTS

Questionnaire data were received from 20 families, covering 79 individuals. One family with children at the school did not participate. Two families supplied information for children, but not adult household members. Overall 95 per cent of families participated in the study. However, because of the anonymity of respondents, it was not possible to determine whether the questionnaire was completed for all members of each household.

The ages of study participants ranged from five months to 70 years (mean age 19 years). Sixty-five per cent of respondents were female. Teachers and children attending the school accounted for 43 per cent of respondents.

Thirty-five survey respondents (44 per cent) had had an illness consistent with the case definition. Sixty-eight per cent of respondents had close contact with someone with whooping cough. Forty-three per cent stated they had taken antibiotics for 10 days or more to prevent whooping cough.

### Immunisation status of survey respondents

The immunisation status of *survey respondents* (cases and controls) is summarised in Tables 7 and 8.

The immunisation status of *cases* identified in the study was as follows:

- 6 per cent were fully immunised (having had four doses of TA);
- 46 per cent were partially immunised (less than four doses of TA);
- 14 per cent were homeopathically immunised;
- 11 per cent were not immunised; and
- 23 per cent had immunisation status unknown.

Continued on page 84 ►

## Whooping cough

► Continued from page 83

### Efficacy of whooping cough vaccine

People fully immunised were five times less likely to contract whooping cough compared with people with other immunisation status (i.e. partially immunised, homeopathically immunised, unimmunised or unknown immunisation status). OR = 0.20; 95%CI 0.03-0.84. This is a statistically lower risk in fully immunised people.

### Efficacy of homeopathic immunisation

The comparison of the efficacy of homeopathic immunisation with no immunisation showed no difference in controlling whooping cough. (OR = 2.08; 95%CI 0.21-22.15). While not statistically significant, the results suggest that TA immunisation is more protective against whooping cough than homeopathic immunisation. (OR = 0.13; 95%CI 0.01-1.18).

### Effect of whooping cough morbidity on the community

During the outbreak, 24 per cent of respondents stayed away from school or work because they had whooping cough and 5 per cent stayed away in order to avoid catching it. The average number of days away from school or work during the outbreak was 3.7.

## DISCUSSION

The Public Health Act 1991 requires medical practitioners, hospital chief executive officers and laboratories to notify cases of whooping cough to the local PHU, but in this study only one-third of cases of whooping cough were notified by a medical practitioner. The other cases were detected by means of the study questionnaire.

The study suggested that TA immunisation was an effective means of protecting people against whooping cough. However, three respondents who were fully immunised

with TA did contract the disease. It is estimated that TA immunisation provides about 80 per cent protection against whooping cough and this protection is known to wane over time<sup>1</sup>. Infants aged under one year (who are most at risk of serious consequences from whooping cough) obtain the highest level of protection from immunisation. Older children and teenagers have an increased risk of acquiring and transmitting disease.

The study results suggested that homeopathic immunisation was no more effective in protecting against whooping cough than no immunisation at all.

Limitations of the validity of the findings were:

- Possible recall bias. Respondents were required to recall events which had occurred at least six weeks previously.
- Self-report of immunisation status. It was not possible to verify self-reported immunisation.
- Power of the study. The sample size was too small to demonstrate possibly significant effects.

## CONCLUSIONS

To minimise the transmission of whooping cough in school-age children, a fifth dose of whooping cough vaccine at the time of the pre-school booster may be warranted<sup>2</sup>. Whooping cough immunisation of adolescents and adults could also be considered with the routine 10-year tetanus and diphtheria boosters.

Evidence from this study suggested homeopathic immunisation was not effective in preventing whooping cough, in contrast to TA.

1. National Health & Medical Research Council. Immunisation Procedures. 4th Edition. Australian Government Publishing Service, Canberra 1991.

2. Australian College of Paediatrics. Report of the immunisation subcommittee on whooping cough immunisation. Policy Statement. *Journal of Paediatric and Child Health* (1991) 27:16-20.

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with considerable skepticism despite its apparent scientific rigour. Only time will tell whether this skepticism is justified.

Valero MV, Amador LR, Galindo G, Figueroa J et al. Vaccination with SPf66, a chemically synthesized vaccine, against *Plasmodium falciparum* malaria in Colombia. *Lancet* 1993; 341:705-710.

### HIGH DIETARY CALCIUM REDUCES THE INCIDENCE OF KIDNEY STONES

Kidney stones are a major cause of morbidity. A high dietary calcium intake has been strongly suspected of raising the risk that a kidney stone will form. However, an enormous study involving more than 45,000 men in the United States has shown that the reverse is the case, that is, a high dietary calcium intake actually decreases the risk of kidney stones. This finding is intriguing and perhaps counter-intuitive. A possible explanation involves the role of the chemical oxalate. Restricted calcium intake increases

the absorption of oxalate in the gut. This is a complex issue which also involves dietary fat which binds with calcium in the gut. Accordingly, the general policy of calcium restriction for patients who have had kidney stones containing calcium should be re-examined.

Curhan GC, Willett WC, Rimm EB and Stampfer MJ. A prospective study of dietary calcium and other nutrients and the risk of symptomatic kidney stones. *New Engl Med J* 1993; 328:833-838.

### ELDERLY DONORS CAN OFFER RENAL TRANSPLANTS

Renal transplantation is the treatment of choice for end-stage renal failure providing a vastly improved quality of life. An Australian group at the Royal Melbourne Hospital has demonstrated that the use of elderly patients, most of whom have died from stroke, is an excellent source of effective renal donors. In this context, there are thought to be more than 1000 patients awaiting renal transplantation, with fewer than 500 being performed each year.

Smith KCG, Martyn BN, Walker RG, Davis SM et al. The potential for elderly donors to increase renal transplantation rates in Australia. *Med J Aust* 1993; 158:588-590.