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COMMUNICABLE DISEASES NETWORK-AUSTRALIA
A National Network for Communicable Diseases Surveillance

CLOSTRIDIUM PERFRINGENS FOOD POISONING FROM A WEDDING RECEPTION, QUEENSLAND

Thomas Tenkate, Environmental Health Unit, Brisbane North Regional Health Authority; John Bates, Laboratory of Microbiology and Pathology, Queensland Health

On 22 November 1993 the Environmental Health Unit (EHU) of the Brisbane North Regional Health Authority was notified of a possible food poisoning outbreak amongst guests at a wedding reception held on 20 November 1993 at an inner city hotel. Eighty-five persons attended the reception and the complainants stated that most had suffered diarrhoea, cramps and weakness about nine hours after eating. A common entree, chicken vol-au-vent, and alternative main courses, lamb or fish, were consumed by most guests.

Methods

A total of 71 of the 85 guests were interviewed and questionnaires on food consumption and illness completed. In addition, stool samples were collected from eleven of the acutely ill guests. The stool samples were collected within four days of onset of the illness and were submitted to the Laboratory of Microbiology and Pathology for isolation of food poisoning bacteria.

On receipt of the stool sample results eight days after onset, the reception venue was inspected and the management and catering staff interviewed. Food specimens were not available for analysis.

Results

Stool Samples

The pathogen *Clostridium perfringens* was detected in each of the eleven samples with vegetative counts between 4.0×10^3 and 1.1×10^6 and spore counts of up to 2.9×10^6 organisms per gram. *C. perfringens* enterotoxin was not detected in any of the eleven faecal specimens examined by Reverse Passive Latex Agglutination (RPLA-Denka Seiken). This was not unusual in view of the time delay between onset of symptoms and the arrival of samples at the laboratory.

Questionnaires

Three of the guests were vegetarians and alternative meals were provided for these people. The menu included deep fried savouries, vegetarian or chicken vol-au-vent for entree, rack of lamb, coral trout or vegetarian for main course and apple crumble or black forest cake for dessert.

Fifty-three of the persons interviewed reported a possible food related illness and the predominant symptoms were diarrhoea (92%), stomach cramps (64%) and weakness (22%). Other symptoms included headache, joint pain and loss of appetite. Incubation periods ranged between 7 and 19 hours with the median between 10 and 11 hours (0500 and 0600 hours on 21 November 1993) (Figure). The duration of illness was short with 62% being ill for one day and 93% ill for 2.5 days or less.

The attack rates and other statistical indicators were calculated for the foods consumed (Table) and the chicken vol-au-vent was strongly implicated as the source of the outbreak (chi-square = 18.67, $P<0.001$). This was highlighted by the fact that those people who did not eat the chicken entree did not become ill. The rack of lamb main course did also appear to be implicated (chi-square = 5.69, $P<0.025$). The relative risk for the chicken vol-au-vent was also adjusted for lamb consumption and vice-versa, with the chicken still strongly implicated as the source of the outbreak. There was no association with the other foods consumed.

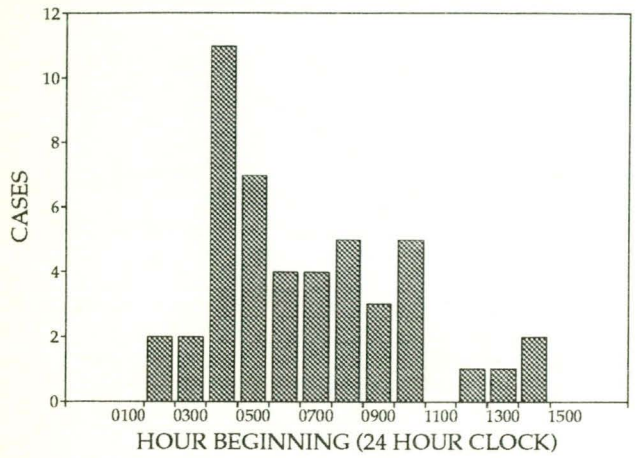
Premises inspection

The hotel manager and chef were interviewed in regard to the food handling practices at the wedding reception. The chickens used in the chicken vol-au-vent were boiled the day prior to the reception so that they were partially cooked and then placed into a cold room

Table. Attack rates, attributable risks and relative risks of illness, by foods served at the wedding reception

	Exposed			Not exposed					(95%) Confidence
Food	Total	Ill	Attack rate (%)	Total	Ill	Attack rate (%)	Attributable risk	Relative risk	interval for relative risk
Savouries	41	35	85.4	1	1	100	-14.6	0.85	0.63 - 1.14
Entree - chicken	64	53	82.8	7	0	0	82.8	∞	∞
Entree - vegetarian	3	0	0	68	53	77.9	-77.9	0	0
Main - lamb	35	31	88.6	36	22	47.8	40.8	1.85	1.12 - 3.06
Main - coral trout	32	22	68.7	39	31	79.5	-10.8	0.86	0.72 - 1.03
Main - vegetarian	3	0	0	68	53	77.9	-77.9	0	0
Dessert - cake	17	14	82.4	20	17	85.0	-2.6	0.97	0.91 - 1.03
Dessert - apple	18	15	83.3	19	16	84.2	-0.9	0.99	0.93 - 1.06

Figure. Cases of possible food-related illness, by hour of onset, 21 November 1993



n an uncovered bowl. About five hours before serving, the chicken was removed from the cold room, broken up and added to a vegetables and sauce mixture. This mixture was warmed and left at room temperature until shortly before the meal was served when it was again slightly heated and placed into the vol-au-vent pastry shells. The lamb was cooked the day prior to the reception so that it was partially cooked and then placed whole into the cold room for storage. About one hour prior to serving the meat was sliced and reheated. A gravy was served with the lamb and this consisted of beef booster, butter, water and flour. This was prepared and cooked two days prior to the reception and stored in a large pot in the cold room. This gravy was used for a number of other meals and so was made up in bulk. When required it was reheated in a pot on the stove. The structural standard of the food preparation area was satisfactory, except it was not large enough for the quantity of food prepared.

Discussion

. *perfringens* food poisoning is an intestinal disorder characterised by the sudden onset of colic followed by diarrhoea. It is generally a mild disease of short duration, one day or less, and has an incubation period of ten to twelve hours usually. Illness results from the ingestion of contaminated food that has been held under conditions that permit germination and multiplication of the organisms' spores which survive normal cooking temperatures[1]. The optimum temperature for growth is 46°C and generation time has been shown to average 12 minutes and be as short as 8.5 minutes at this temperature[2]. Factors that contribute to outbreaks are inadequate cooling of foods (meat, poultry, gravy, stock), lapse of a day or more between preparation and serving, inadequate time or temperature during hot food storage and inadequate time or temperature during reheating of previously cooked foods[3].

The preparation procedures for the chicken vol-au-vents allowed ideal growth conditions for *C. perfringens* and included the factors for food poisoning as outlined above. The chicken was inadequately cooked, cooled and reheated with over a day between initial preparation and serving. The spores could have survived (and germinated during) the initial cooking and slowly multiplied during the initial cooling in the cold room. The next day, reheating in the sauce mixture produced optimum conditions for growth and rapid multiplication would have continued during the slow cooling and storage at room temperature.

The procedures followed during preparation of the lamb and gravy were also of concern due to inadequate cooling and possible inadequate reheating. Catering staff were adamant that the procedures followed were satisfactory and representative of others in the catering industry, although they agreed that they had no knowledge of basic food hygiene and were unaware of the dangers of inadequate cooking, cooling and reheating.

The inadequate size of the food preparation area contributed to advanced preparation of some of the meals and to inconsistent storage temperatures for hot food. The day of the reception was uncharacteristically hot and when the air conditioning failed this produced unbearable interior temperatures for guests and staff. These hot conditions combined with the limited kitchen space could have lead to additional incorrect food handling practices.

Summary

A food poisoning incident involving 85 persons (at least 53 ill) from a wedding reception is discussed. *C. perfringens* was isolated from faecal specimens and an investigation of the food handling revealed inadequate cooking, cooling and reheating practices and a lack of basic food hygiene knowledge by the catering staff. The probable vehicle for the bacterium was an entree, chicken vol-au-vent, however food samples were not available for confirmation. This incident would have been avoided if staff were aware of and practiced safe food hygiene and highlights the need for effective staff training and education in food hygiene.

Acknowledgments

TT would like to thank Nicholas Harvey for his assistance in the data analysis, David Strain for his comments on the draft, and the staff of the Laboratory of Microbiology and Pathology for their timely response.

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GONOCOCCAL ANTIBIOTIC SUSCEPTIBILITY SURVEILLANCE IN THE PERTH METROPOLITAN AREA

Martin Blooms, State Health Laboratory Services, Perth, Western Australia; Kevin Sesnan, Murray Street Clinic for Sexual Health, Perth, Western Australia; reproduced with acknowledgment from the Western Australian Notifiable Diseases Bulletin 1994;4(1):5

The following data on antibiotic susceptibilities of gonococcal isolates were generated by the STD Laboratory, State Health Laboratory Services, Murray Street Clinic and forwarded to the Coordinator of the Australian Gonococcal Surveillance Programme (AGSP), Dr John Tapsall. The Perth STD Laboratory was a founding member of the Programme which has reported extensively on trends in antibiotic resistance in gonococci for nearly a decade and a half. The contribution of the Perth laboratory has been not only the data supplied but also participation in quality control and other activities of the AGSP.

It has been the AGSP's custom to tabulate the penicillin sensitivities of isolates on a quarterly basis in all centres. These reports are published regularly in *Communicable Diseases Intelligence* and are abstracted to other sources for example World Health Organization bulletins. The purpose of this was to accentuate the very significant regional differences in gonococcal sensitivity patterns and the changes in these patterns which occur over time. It has been evident for many years that these regional differences in gonococcal sensitivity patterns affected the choice of treatment regimens in different parts of Australia.

However, over time the number of strains being isolated and examined in each participating centre declined significantly, perhaps due to the success of programs designed to reduce the transmission of HIV and other STDs, and it was decided to publish figures only from centres with larger numbers of isolates. Consequently, quarterly tables usually published in the *CDI* showing the percentage of resistant strains have provided less information for smaller centres such as Perth when only small numbers of isolates were available.

Penicillin sensitivities of 112 gonococci isolated at the Murray Street Clinic were determined during 1991 and 1992 (Table). The method used for determining antibiotic susceptibility was agar dilution[1]. Strains identified as fully sensitive or less sensitive respond to penicillin-based regimens.

Comment

Western Australia has been fortunate in being able to retain penicillin-based regimens (for those cases acquired in Western Australia and not originating in the eastern States or overseas) for a much longer time than some other States where the impact of drug resistance has necessitated the introduction of different and more expensive regimens. Much of this has occurred because of antibiotic susceptibility monitoring and personal communication between community physicians and venereologists.

Reference

1. Australian Gonococcal Surveillance Programme. Penicillin sensitivity of gonococci in Australia: development of an Australian gonococci surveillance programme. *Br J Vener Dis* 1984;**60**:226-230.

Table. Penicillin sensitivities of gonococci isolated at the Murray Street Clinic, 1991 to 1992

	Fully sensitive[1]	Less sensitive[2]	Relatively sensitive[3]	Penicillinase producing *Neisseria gonorrhoeae*
1991 (n=74)	11	50	2	11
1992 (n=38)	3	20	0	15

1. Fully sensitive MIC < 0.03 mg/L.
2. Less sensitive MIC 0.06 - 0.5 mg/L.
3. Relatively resistant MIC > 1.0 mg/L.

REPORT OF THE 1993 SOUTH AUSTRALIAN INFLUENZA VACCINATION PROMOTION

J Carrangis, Communicable Disease Control Unit, South Australian Health Commission; adapted from Communicable Disease Control Bulletin;(3):256-260

The 1993 Influenza Vaccination Promotion

Influenza vaccination cover of adults over 65 years of age in Adelaide increased to 57% in 1993 compared with 34%, estimated in a survey of adults in 1991. Several factors probably contributed to this increase in uptake, including:

- three years of influenza vaccination promotion conducted across South Australia,
- media reporting was minimal with the absence of an influenza epidemic in 1993. In past years a shortage of influenza vaccine and 'sensational' media reports resulted in the 'at risk' target group (primarily those persons over 65 years) missing out on vaccine, and
- supplies of influenza vaccine were plentiful from April 1993.

The following interventions-events were also thought to have contributed to the increase in influenza vaccine uptake:

- occasional media coverage on radio and newspapers, prompted by reporters,
- influenza vaccination advertising on milk cartons,
- implementation of the promotion and distribution of the Influenza Vaccine Priority Request Forms, particularly through pharmacies,
- promotion in the *Communicable Disease Control Bulletin*, circulated to about 600 health workers,
- advertising in journals and newsletters (for example for diabetic and aged persons groups), and
- broad distribution of posters and leaflets.

Influenza survey of Adelaide adults

During June 1993, the South Australian Health Commission contracted a company to present 50 lectures to mature aged groups about the benefits of being immunised with influenza vaccine. The company employed a group of lecturers who are commissioned by mature-aged groups to present a variety of products/lectures to their members. Training was provided by staff from the Communicable Disease Control Unit of the South Australian Health Commission. The venues of the lectures were spread across metropolitan Adelaide. At the conclusion of the lectures the audience was asked to participate in the influenza survey.

A total of 328 persons completed the survey at meetings in 20 local government areas (19 in metropolitan Adelaide) in July 1993. A total of 40.5% of the persons surveyed had been immunised, 57% of those aged over 65 years and 19% of those aged less than 65 years (Table 1). Standard errors have been calculated because of the small sample sizes and the recognised bias of the survey.

This type of survey is inexpensive and easy to organise. The results provide adequate information for measuring the impact of various interventions within the adult target group. The results of previous surveys have been useful in assessing the impact of interventions and the planning related to the promotion of polio, tetanus and influenza vaccination.

Table 1. Findings of the influenza survey of Adelaide adults, by age group

	Age group	Number (percentage)	Standard error
Persons surveyed	>65 yrs	184 (56%)	
	<65 yrs	144 (44%)	
Persons who had influenza vaccination discussed with them by their doctor	>65 yrs	121 (66%)	±8%
	<65 yrs	33 (23%)	±14%
Persons immunised	>65 yrs	105 (57%)	±10%
	<65 yrs	28 (19%)	±15%
Persons aware of the Influenza Vaccine Priority Request Forms	>65 yrs	79 (43%)	±11%
	<65 yrs	52 (36%)	±13%
Persons who had the Influenza Vaccine Priority Request Forms discussed with them by their pharmacist	>65 yrs	31 (17%)	±13%
	<65 yrs	11 (8%)	±16%
Persons who had seen influenza vaccination advertisements on milk cartons	>65 yrs	97 (53%)	±10%
	<65 yrs	49 (34%)	±13%

Report on the Influenza Vaccine Priority Request Form

All 400 pharmacies across South Australia were invited to participate in promoting influenza vaccination for those 'at risk' by making the Influenza Vaccine Priority Request Form readily available.

Pharmacies were chosen to promote the use of the Priority Form because of their regular contact with many of those 'at risk' and because pharmacists are consulted and respected on health related matters.

The purpose of the Priority Form was:

1. to ensure that those 'at risk' were given first priority for the influenza vaccine,
2. to provide an introductory forum for those 'at risk' to discuss influenza vaccination with their doctor, and
3. to remind general practitioners about the importance of immunising the 'at risk' groups against influenza.

Pharmacies were provided with the Priority Forms and monthly summary sheets. About 100 pharmacies participated and returned summary sheets (Table 2).

A working party comprising representatives from the Pharmacy Guild, vaccine manufacturers, individual doctors and those representing professional groups and other government departments assisted in the development of this initiative. Promotion was undertaken by pharmacies and in appropriate newsletters and journals.

This initiative was a worthwhile exercise and assisted in raising awareness of the need for those 'at risk' to be immunised against influenza. Certainly such an exercise would have had a greater effect had there been a vaccine shortage and/or an influenza epidemic. Fortunately neither occurred in 1993.

Conclusions

Influenza vaccine distribution increased by 18% in South Australia in 1993 and rates of cover in the 'at risk' group increased to 57% compared with 34% in 1991.

There is an awareness by mature-aged persons about influenza and the need to be immunised.

General practitioners are asking mature-aged patients about influenza vaccination.

The Influenza Vaccine Priority Request Form was a useful tool for promoting influenza vaccination.

Some pharmacists took the opportunity to promote influenza vaccination by using the Influenza Vaccine Priority Request Form.

Milk cartons are a good vehicle for advertising the need to be immunised to mature-aged people and may have contributed to the effectiveness of this program.

Acknowledgments

A special thanks to the committee including representation from The Australian Geriatrics Society, RACGP, AMA, Dr John Litt, Office of The Commissioner for Ageing, Pharmacy Guild (SA), South Australian Directors of Nursing Association, Dr Peter Lake, Professor Chris Burrell, Dr Pat Phillips (QEH), CSL Limited, Pasteur Merieux Australia, CAFHS and the South Australian Health Commission.

Addendum

The South Australian Health Omnibus Survey conducted in October - December 1993 found that 55.5% of respondents aged over 65 years had had an influenza vaccination in 1993. The Influenza Vaccinaton Promotion for 1994 is currently underway.

Table 2. Influenza Vaccine Priority Request Forms summary, 1993

	March	April	May	June	July	August
Pharmacies which returned summary sheets	13	74	52	46	25	3
Scripts for influenza vaccine dispensed	2405	12834	3370	719	136	0
Scripts for influenza vaccine without Priority Forms	2062	10864	3233	679	136	0
Scripts with Priority Forms	343	1970	137	40	0	0
Reasons for Priority Forms issued by GP						
1. heart, lung or kidney disease	64	200	102	6	0	0
2. diabetes	42	66	24	3	0	0
3. over 65 years old	284	481	217	19	0	0
4. receiving treatment to suppress immune system	3	38	8	1	0	0
5. other risk groups	2	27	8	4	0	0
6. no information	22	317	124	11	0	0

CDI editorial comment

The National Health and Medical Research Council recommends annual influenza vaccination for individuals in the following categories:

- Individuals at particular risk of complications:
  - adults and children with chronic debilitating disease, especially those with chronic cardiac, pulmonary, renal and metabolic disorders,
  - persons over the age of 65 years,
  - residents of nursing homes and other chronic care facilities,
  - persons receiving immunosuppressive therapy.
- Persons engaged in medical and health services and essential public utilities, if they are at increased risk owing to medical disorders such as those above. In the event of a pandemic or other major outbreak, advice should be given about vaccination of staff particularly liable to exposure.

In 1992, when influenza A predominated in Australia, the *CDI* Laboratory Reporting Scheme received 279 reports of untyped influenza A, 11 reports of influenza A H_3N_2, two reports of influenza A H_1N_1 and 21 reports of influenza B in persons over the age of 65 years. In 1993, influenza B predominated overall; there were 100 reports of untyped influenza A, two reports of influenza A H_3N_2 and 51 reports of influenza B in persons over the age of 65 years. In addition, there were reports of influenza in persons with reported risks of diabetes (one), malignancy (one) and other immunocompromised (four).

So far this year, there have been 56 reports of untyped influenza A (13 other than single high titres), and 18 reports of influenza B (four other than single high titres). Most have been from South Australia, Western Australia and Victoria. The number of influenza A reports received so far is about the same as that received by the same time in 1992, the last year in which influenza A predominated.

LONGITUDINAL SURVEY OF HOSPITAL-ACQUIRED INFECTION, ROYAL ALEXANDRA HOSPITAL FOR CHILDREN, SYDNEY

EDG McIntosh, D Dalton, D Isaacs; reproduced from the Royal Alexandra Hospital for Children Monthly Infectious Disease Report No. 51, February 1994

Introduction

In the *Monthly Infectious Disease Report* No. 41, April 1993 (reproduced in *CDI* 1993;**17**:310-311), we reported the results of the first year of longitudinal surveillance of three sentinel hospital-acquired infection, respiratory syncytial virus (RSV) infection, rotavirus infection and chickenpox. We now report the second year of such surveillance conducted at the Royal Alexandra Hospital for Children (RAHC), Sydney.

Definitions

Children admitted to hospital with an infection or developing symptoms after admission but within the defined incubation period of the infection were defined as having community-acquired infection. Children who had been hospitalised for longer than the incubation period before they developed symptoms were defined as having hospital-acquired (nosocomial) infection.

The defined maximum incubation periods were six days for RSV, four days for rotavirus and 21 days for chickenpox.

RSV infection

The names of all in-patients with proven RSV infection, on immunofluorescence or culture, were obtained from the Virology Department. Their admission and discharge dates were obtained from the Medical Records Department. The 'date of specimen' was compared with the admission date. Where these differed by seven or more days, the medical case-notes were obtained, and checked for evidence that the infection was indeed nosocomially-acquired.

There were 211 infants and children (126 male) with RSV infection of which seven (3.3%) were nosocomially acquired. The mean age of the seven with hospital-acquired infection (HAI), excluding one 10 year old, was

Table. Hospital- and community-acquired respiratory syncytial virus infection, 1989 to 1993, by year

Year	Hospital-acquired infections	Community-acquired infections	Total
1989	11	105	116
1990	13	205	218
1991	16	172	188
1992	18	178	196
1993	7	204	211

11.7 months, range 5 to 24 months. The mean age of all subjects with RSV infection was 8.2 months (range 2 weeks to 10 years 10 months). The mean time between hospitalisation and onset of symptoms was 27 days, range 7 to 63 days. The diagnoses of the seven HAI cases was malignancy (2), chronic lung disease, liver transplant, burns, laryngeal granuloma and gastroenteritis (one each). Two cases of nosocomial RSV occurred on the isolation ward and one on each of the five other wards.

These figure represent a fall in incidence of nosocomial RSV infection (Table).

Rotavirus

There were 86 children (48 male) diagnosed with rotavirus infection by electron microscopy of stools, of whom five (5.8%) contracted the disease nosocomially. Their mean age was 9 months (range 5 to 21). Underlying diseases were diabetes, chronic lung disease and RSV, laryngeal granuloma and RSV, subglottic stenosis and RSV, child at risk. Two cases occurred on the infant ward and one on each of three other wards.

In 1992, in comparison, there were 65 cases of rotavirus infection, of which eight (12.3%) were nosocomial.

Chickenpox

There were no cases of children acquiring chickenpox nosocomially, compared with one in 1992. There were 25 children admitted with chickenpox (34 in 1992). Four staff caught chickenpox from patients in 1993.

Discussion

There were less hospital transmission of RSV and rotavirus in 1993 than 1992, despite a greater number of admissions with these infections. In 1992 the majority of RSV strains cultured belonged to the A strain, while in 1993 most were B. Some workers have found that the A strain in more virulent, although a study at RAHC found no difference in severity between A and B strain[1]. However, it is possible that the B strain is less infectious, and thus less likely to cause nosocomial infection.

No major changes have been made in policy for preventing hospital-acquired infections, although there has been some publicity emphasising the importance of handwashing in preventing spread of RSV infection[2].

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CDI NOTICE TO READERS

Staying Healthy in Child Care: Preventing Infectious Diseases in Child Care

Staying Healthy in Child Care: Preventing Infectious Diseases in Child Care is a new publication of the National Health and Medical Research Council and the Commonwealth Department of Human Services and Health. It is an important reference for those working in the child care profession, parents, students, administrators and others with an interest in the health of children in day care settings. It describes daily practices recommended to prevent infectious diseases, details recommended exclusion periods, and provides information on specific diseases that are common among children. The publication is a 'hands-on' workbook which highlights the practical aspects of preventing infectious diseases, the use of cleaning agents and disinfecting, nappy changing and toileting.

The book, which is accompanied by three posters, is available for $19.95 from Commonwealth Government Bookshops or the Australian Government Publishing Service (GPO Box 84 Canberra ACT 2601, phone 008 020 049 outside Canberra or 295 4861 in Canberra). Commonwealth Government Bookshops or agents are located in:

Adelaide (08) 231 0144
Albury (060) 41 3788
Brisbane (07) 229 6822
Canberra (06) 247 7211
Darwin (089) 89 7152
Hobart (002) 34 1403
Melbourne (03) 663 3010
Parramatta (02) 893 8466
Perth (09) 322 4737
Sydney (02) 299 6737
Townsville (077) 21 5212.

OVERSEAS BRIEFS

In the last two weeks, the following information has been supplied by the World Health Organization (WHO), the Institut Pasteur, Paris and the Department of Foreign Affairs and Trade.

Influenza in the Northern Hemisphere

Influenza activity had disappeared in Europe and persisted only in far eastern Russia by mid-April. At the end of March, the United States reported sporadic activity only in 14 States only and pneumonia and influenza death indices near to expected levels. In Japan, influenza activity had ceased by the first week in April. There had been a very quiet season there, with 99% of isolates typed as influenza A H_3N_2.

Cholera update

An outbreak of cholera caused by *Vibrio cholerae* O139 has been reported in Yangon (Rangoon), Myanmar. Cases were reported as occurring sporadically in mid-April and confined to the delta area in the Yangon Division. Residents in several inner suburban areas of Yangon had been infected and about 100 cases were being treated at hospitals each day.

Newly infected areas reported in the last fortnight are Yangon in the Yangoon Division, Myanmar, and the Belet Uen, Kismayo and Mogadishu Districts in Somalia.

Cases of cholera have been reported for February, March and April from Bolivia, Brazil, Burundi, Colombia, El Salvador, India, Myanmar and Somalia.

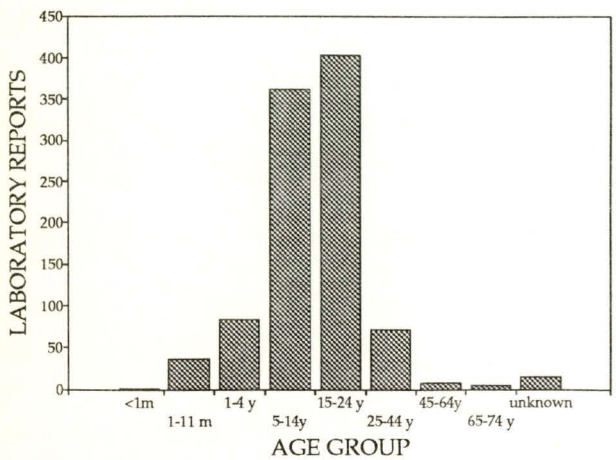
COMMUNICABLE DISEASES SURVEILLANCE

Virology and Serology Reporting Scheme

There were 1674 reports received in the *CDI* Virology and Serology Reporting Scheme this fortnight (Tables 7, 8 and 9).

- Twenty-six reports of **measles** were received including two 3 year old males from Queensland. A total of 15 males and 11 females were included this period. Fourteen patients were in the 5 to 14 year age group, and six in the 15 to 24 year age group. During the recent epidemic most cases occurred in these age groups (Figure 1).
- Eleven cases of **rubella** were reported to the Scheme, 5 females (3 in the 15 to 44 year age group including an unimmunised 17 year old female) and 6 males (5 in the 15 to 44 year age group).

Figure 1. Measles laboratory reports, 1993 to 1994, by age group



- **Hepatitis A** was reported for 20 patients this fortnight, including a 20 year old male who had recently returned from overseas travel.
- One hundred and one reports of positive **hepatitis B** serology were reported including a 14 year old male and an 18 year old female with clinical hepatitis, both from Queensland. Also included was a patient who was the index case in a needle stick injury. A total of 53 patients were in the 25 to 44 year age group, and 24 were in the 15 to 24 year age group.
- Two hundred and forty reports of positive **hepatitis C** serology were received this fortnight including 45 injecting drug users. One hundred and forty-five patients were male, 89 female and 6 sex not stated. One hundred and ninety-one were in the 25 to 44 year age group and 24 in the 15 to 24 year age group. Also included were a newborn male, an index case in a needlestick injury and a patient whose partner was known to be positive for hepatitis C.
- **Ross River virus** infection was reported for 143 patients this period, 130 of whom were from Queensland. Five cases (from Bundamba, Coolumbeach, Browns plains, Elimbah and Amberley in Queensland) were confirmed (fourfold change in titre). The remainder were presumptive diagnoses (IgM positive). The number of reports being received remained high through the month of March.
- Sixteen reports of **Barmah Forest virus** were received, including one confirmed report from Bayswater, Western Australia (fourfold change in titre).

- Untyped **dengue** was reported for 6 patients this fortnight, including a 49 year old male from Western Australia (fourfold change in titre), and a 50 year old female from the Northern Territory (IgM detected).
- Fifty-one reports of **adenovirus** were received this fortnight, 27 isolations and 24 antigen detections. **Adenovirus type 1** was isolated from the nasopharynx of an 8 month old male. **Adenovirus type 2** was isolated from the faeces of a 2 year old female with CNS symptoms and gastroenteritis, and from the nasopharynx of a one year old male with respiratory symptoms.

  Adenovirus type 3 was cultured from the eye of a 7 year old female with conjunctivitis and from the nasopharynx of 16 month and three year old males with respiratory symptoms. **Adenovirus type 4** was isolated from the eye of a 36 year old male with conjunctivitis.

  Seven reports were received of **adenovirus type 8**, all with eye disease. An increased number of adenovirus type 8 reports was received during the summer months (Figure 2).

  A 28 year old male was reported as having **adenovirus type 9** (isolation from urine). **Adenovirus type 26** was isolated from a terminal ileum biopsy and a rectal biopsy from a 35 year old male.
- A total of 443 herpes simplex virus reports were received this fortnight, 420 virus isolates, 14 antigen detections and 9 IgM detections. Ten cases of eye disease due to **herpes simplex virus type 1** were reported including isolation from the eyes of 55 and 60 year old males and a 30 year old female.
- There were 49 reports of **cytomegalovirus** this fortnight, 36 virus isolates, 12 IgM detections and one single high titre.
- Four reports of **coxsackie virus B** viruses were received this fortnight including **coxsackie virus B2** isolated from the CSF of a one year old male with meningitis from New South Wales and **coxsackie virus B4** isolated from the CSF of a 35 year old Western Australian female.
- **Echovirus type 6** was reported for 7 patients this period, including an isolate from the CSF of a 12 year old male.
- The CSF of a six year old female yielded **echovirus type 9** on viral culture.
- Four reports of **echovirus type 11** were received with specimen collection dates in late 1993/early 1994. Included were 2 CSF isolates from males, one 29 years of age the other of unknown age.
- The number of reports of **echovirus type 30** meningitis remains high, 21 having been received this period.
- Sixty-four untyped **enterovirus** reports were received this fortnight including isolation from the faeces of a 2 month old male and from the nasopharynx of a 3 month old female.
- Two reports of **influenza A** virus were received this fortnight, a one year old female from Queensland (positive immunofluorescence) and a 2 year old Northern Territory female (virus isolation).
- **Influenza B** was reported for 2 patients this period, a 9 month old female from the Northern Territory (positive immunofluorescence) and a 29 year old Victorian female (IgM detected).
- **Parainfluenza virus type 1** was reported for 51 patients, 33 diagnosed by virus isolation and 18 by antigen detection. Thirty-one patients were in the one to 4 years age group (Figure 3). Reports of this virus have increased markedly over the last couple of months.
- **Parainfluenza virus type 3** was reported for 11 patients, six in the one to 11 month age group and 4 in the one to 4 year age group (one age not stated). Six diagnoses were by virus isolation and 5 by antigen detection.

Figure 2. Adenovirus type 8 laboratory reports, 1993 to 1994, by month of specimen collection

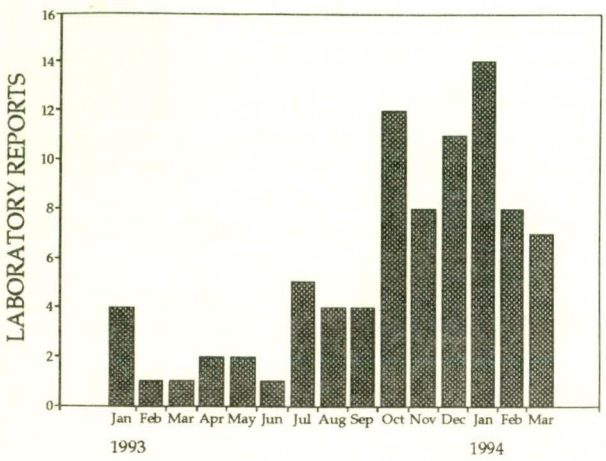
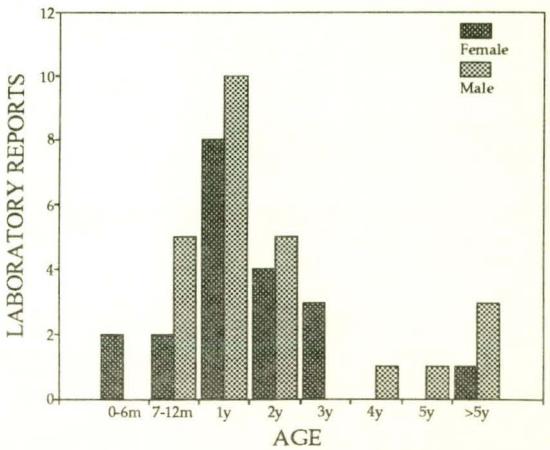


Figure 3. Parainfluenza virus type 1 laboratory reports for this reporting period, by age group and sex



- Thirty-nine reports of **respiratory syncytial virus (RSV)** were received this fortnight 22 of which occurred in the one to 11 month age group. Diagnosis was by virus isolation (23) and antigen detection (16).
- A **small round virus** was detected by electron microscopy in the stool of a 48 year old Victorian male.
- One hundred and twelve reports of ***Chlamydia trachomatis*** were received this fortnight. Included was a one month old male with ophthalmia neonatum, and a 13 year old female with pelvic inflammatory disease.
- ***Mycoplasma pneumoniae*** was reported for 42 patients, 2 diagnosed by fourfold rise in titre and 40 by IgM detection. Included was a 13 year old male with a diagnosis of cerebellitis.
- **Q fever** was reported for 5 patients, all males from Queensland aged from 17 to 43 years. Diagnosis was by IgM detection in all cases.

Australian Sentinel Practice Research Network - correction

Some of the 1994 data for the Australian Sentinel Practice Research Network published so far in *CDI* have been incorrect. The correct information for weeks one to 14 are included in this issue (Table 1).

Overall, influenza has been reported at a rate of 3.6 per 1000 encounters, with higher weekly rates in weeks 9 to 11 and 14. In weeks 11 to 14, higher rates were reported from Western Australia (8.7 per 1000 encounters), New South Wales (6.1), Queensland (5.1) and South Australia (4.9) than for Australia overall (4.7).

Table 1. Australian Sentinel Practice Research Network, weeks 1 to 14, 1994

		Influenza		Measles		Chickenpox		Pertussis		Gastroenteritis	
	Encounters	Reports	Rate per 1000 encounters	Reports	Rate per 1000 encounters	Reports	Rate per 1000 encounters	Reports	Rater per 1000 encounters	Reports	Rate per 1000 encounters
Week 1, to 9 January	5052	21	4.2	1	0.2	11	2.2	3	0.6	83	16.4
Week 2, to 16 January	5922	13	2.2	2	0.3	9	1.5	1	0.2	74	12.5
Week 3, to 23 January	6551	14	2.1	0	0	13	2.0	5	0.8	69	10.5
Week 4, to 30 January	5589	13	2.3	2	0.4	10	1.8	2	0.4	98	17.5
Week 5, to 6 February	7702	9	1.2	1	0.1	4	0.5	8	1.0	110	14.3
Week 6, to 13 February	7454	21	2.8	0	0	7	0.9	2	0.3	77	10.3
Week 7, to 20 February	8157	31	3.8	3	0.4	7	0.9	6	0.7	127	15.6
Week 8, to 27 February	8454	22	2.6	0	0	9	1.1	5	0.6	122	14.4
Week 9, to 6 March	8991	43	4.8	3	0.3	8	0.9	10	1.1	116	12.9
Week 10, to 13 March	9902	45	4.5	0	0	7	0.7	2	0.2	134	13.5
Week 11, to 20 March	9954	67	6.7	1	0.1	7	0.7	2	0.2	130	13.1
Week 12, to 27 March	9755	38	3.9	1	0.1	9	0.9	3	0.3	142	14.6
Week 13, to 3 April	7376	16	2.2	1	0.1	8	1.1	1	0.1	100	13.6
Week 14, to 10 April	6942	38	5.5	2	0.3	11	1.6	3	0.4	129	18.6

Measles has been reported at low rates, between 0 and 0.4 per 1000 encounters. Chickenpox has been reported at an overall rate of 1.1 per 1000 encounters, with higher rates in the first few weeks of the year. Pertussis has been reported at an overall rate of 0.5 per 1000 encounters, and gastroenteritis at a rate of 14.0 per 1000 encounters.

Sterile Sites Surveillance (LabDOSS)

Data for this fortnight have been provided by 7 laboratories. There were 248 reports of recent sepsis: Alice Springs Hospital Northern Territory 29; Sullivan Nicolaides, Queensland 17; Northern Tasmania Pathology Service, Tasmania 17; Royal North Shore Hospital, New South Wales 47; Liverpool Hospital, New South Wales 103; Royal Hobart Hospital, Tasmania 7; Sir Charles Gairdner Hospital, Western Australia 28.

Organisms reported 5 or more times from blood are detailed in Table 2. Other blood isolates not included in Table 2 were:

Gram positive: 1 *Bacillus species*, 1 *Corynebacterium* species, 1 *Enterococcus faecium*, 4 *Streptococcus* Group A, 1 *Streptococcus* Group F, 1 *Streptococcus sanguis*, 1 *Streptococcus mitis*, 1 *Streptococcus* species.

Gram negative: 3 *Haemophilus influenzae* (1 type b in a 3 month old, 1 type not provided in a 2 year old, 1 not groupable in a 46 year old), 1 *Neisseria gonorrhoea* (septic arthritis in a 34 year old male), 1 *Morganella morganii*, 2 *Aeromonas* species, 1 *Campylobacter jejuni*, 2 *Campylobacter* species, 1 *Citrobacter freundii*, 3 *Enterobacter cloacae*, 3 *Enterobacter* species, 1 *Pseudmomonas flourescens*, 1 *Pseudmomoans* species, 1 *Serratia marcescens*, 4 *Xanthomonas maltophilia*.

Table 2. LabDOSS reports of blood isolates, by organism and clinical information

Organism	Clinical information						Risk factors					Total[1]
	Bone/Joint	Lower respiratory	Endocarditis	Gastrointestinal	Urinary tract	Skin	Surgery	Immunosuppressed	IV line	Hospital acquired	Neonatal	
Staphylococcus aureus	4	1	3		1	4	4	13	9	4		39[2]
Staphylococcus epidermidis						3	2	5	6			17
Staphylococcus coagulase negative				1			1	4				7
Streptoccus Group B	1	1	1		1	1		3			1	6
Streptoccus Group G						4		3				5
Streptoccus pneumoniae		11			1			2		1		19
Enterococcus faecalis			2	1		3	2					7
Escherichia coli	1	3		4	19		7	2	1	2	1	47
Klebsiella species				4	1		1		2			11[3]
Proteus mirabilis				1	3		3					5
Pseudomonas aeruginosa		3		1	1	1	5	1	1	2		14
Candida species					1	2						6[4]

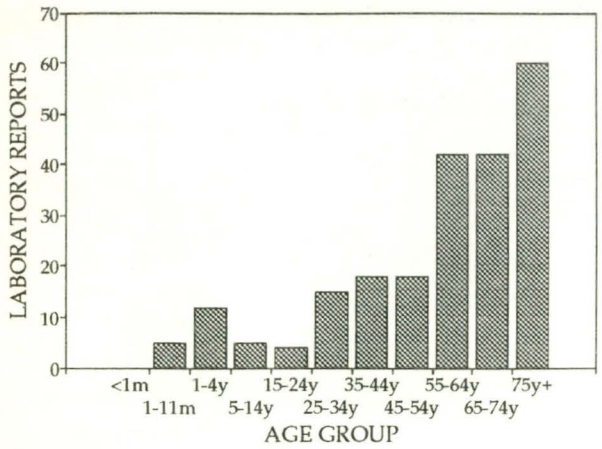
1. Only organisms with 5 or more reports are included in this table.
2. MRSA 4.
3. *Klebsiella pneumoniae* 6.
4. *Candida albicans* 5.

Table 3. LabDOSS reports of meningitis and/or CSF isolates, by organism and age group

	1-11 months	1-4 years	5-14 years	15-24 years	25-44 years	45-54 years	55-64 years	65-74 years	75+ years	Total
Listeria monocytogenes[1]									1	1
Neisseria meningitidis serogroup B[2]	1			1						2
Staphylococcus aureus						1		1		2
Streptococcus pneumoniae			1							1
Staphylococcus coagulase negative							1			1
Streptococcus species									1	1

1. Queensland, additional to cases reported this fortnight in the National Notifiable Diseases Surveillance System.
2. New South Wales.

Figure 4. LabDOSS reports of blood isolates, by age group



Anaerobes: 1 *Bacteroides fragilis*, 1 *Fusobacterium* species.

Other: 1 *Mycobacterium* species.

Most reports were for elderly persons (Figure 4).

CSF isolates and/or meningitis

There were 8 reports of CSF isolates and/or meningitis (Table 3).

Isolates from sites other than blood or CSF

Peritoneal dialysate: 1 *Escherichia coli*, 1 *Staphylococcus epidermidis*.

Joint fluid: 2 *Pseudomonas aeruginosa*, 4 *Staphylococcus aureus*, 1 *Streptococcus* Group B, 1 *Streptococcus* Group G, 1 *Streptococcus pneumoniae*.

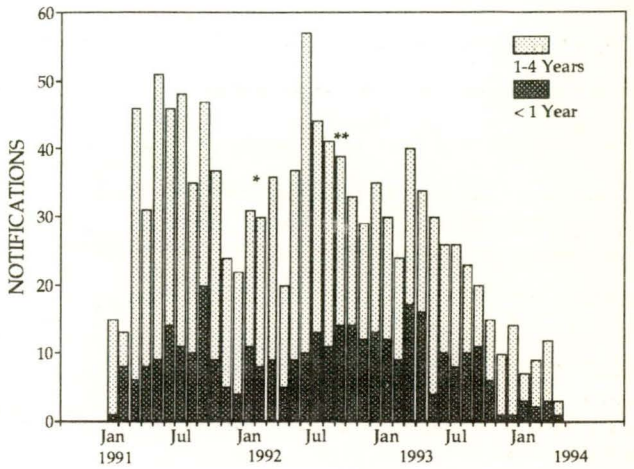
Other: 1 *Enterobacter cloacae*, 1 *Enterococcus* species, 1 *Escherichia coli*, 4 *Staphylococcus aureus*, 1 *Veilonella* species.

National Notifiable Disease Surveillance System, 3 April to 16 April 1994

There were 2095 notifications reported for this period (Tables 4, 5 and 6, and Figure 7).

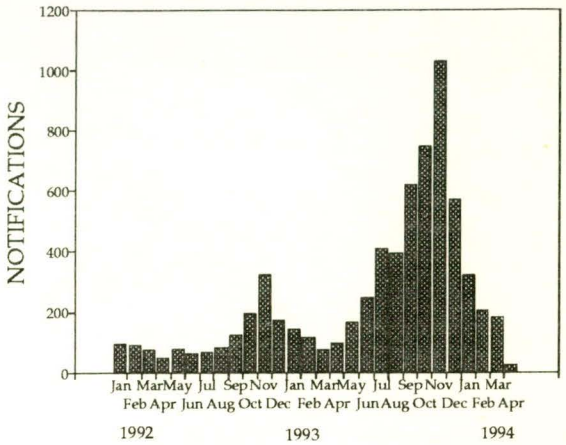
- There were 331 notifications of **Ross River virus infection** received, 149 males and 169 females. Sex was unrecorded for 13 cases. Recorded ages ranged from the 5-9 to the 80-84 years age groups. The largest proportion of cases (42%) were resident in the Brisbane Statistical Division. Onset dates were in January (3), February (26), March (242), and April (60).
- A single case of **dengue** was reported in a male aged 25-29 years who was resident in Victoria.
- Two notifications of **brucellosis** were received. One case was a male in the 55-59 years age group and the other case was a female in the 30-34 years age group. Both cases were resident in Melbourne and the recorded onset dates were in April.
- There were 74 cases of **gonococcal infection** reported; 49 cases were males, 24 were females, and the sex of one case was not recorded. The cases ranged in age between the 10-14 years and the 80-84 years age groups.
- Nine cases of ***Haemophilus influenzae* type b infection** were reported, 5 cases were male and 4 cases were female (Figure 5). Cases ranged in age from the 0-4 to the 70-74 years age group, with 6 cases aged less than 5 years and 2 cases aged less than one year. Recorded onset dates were February (one), March (6), and April (2). There were no apparent clusters.
- There were 65 cases of **hepatitis A** notified in the period. Thirty-six cases were male, 25 cases were female, and sex was unrecorded for 4 cases. Recorded ages ranged from the 0-4 to the 90-94 years age groups with 77% of cases aged less than 35 years and 43% less than 20 years.
- Eight notifications of **hepatitis B** were received; 7 of these cases were from States that report incident cases only. Of the incident cases, 4 were male and 3 were female and these cases ranged in age between the 25-29 and 75-79 years age groups.
- There were two cases of **hydatid infection** reported in the period. One case was a male in the 40-44 years age group and one case was a female whose age was not recorded. One cases was resident in rural Victoria and one case was resident in Melbourne.
- Seven notifications of **legionellosis** were received; 5 cases were male and 2 were female. The cases ranged in age between the 45-49 and the 85-59 years age groups. Three of the cases were resident in Melbourne, one case in rural Victoria, one case in Adelaide, one case in rural South Australia and one case in rural Queensland. Recorded onset dates were February (2), March (2), and April (3).
- A single case of **leprosy** was reported in a female in the 25-29 years age group resident in Melbourne.

Figure 5. *Haemophilus influenzae* type b infection notifications, January 1991 to April 1994, by month of onset and age group



- There were 6 cases of **leptospirosis** reported; 5 cases were male and one case was female. The cases ranged in age between the 20-24 and the 60-64 years age groups. All recorded onset dates were in March. Four of the cases were resident in metropolitan Statistical Divisions (Canberra, Melbourne, and Sydney) and two were resident in rural Statistical Divisions (Far North Queensland and Darling Downs).
- Four cases of **listeriosis** were recorded; 2 cases were male and two cases were female. The cases ranged in age between the 20-24 and the 75-79 years age groups. All cases were resident in the same postcode area of Brisbane and had recorded onset dates within 2 days of each other.
- Twelve cases of **malaria** were notified in the period; 6 cases were male and 6 cases were female. Cases ranged in age between the 5-9 and the 45-49 years age group. One cases was resident in the 'malaria receptive zone'. Recorded onset dates were February (one), March (8), April (2). Onset dates were unrecorded for one case.
- The measles epidemic continues to decline with 64 cases of **measles** reported in the period (Figure 6); 37 cases were male and 27 cases were female. Recorded ages ranged from the 0-4 to the 90-94 years age group,with a mean age of 15.4 years. Two cases were aged less than one year. There were 11 apparent clusters of two or more cases each within the same postcode area. Apparent clusters occurred in Victoria (one), Queensland (8), Western Australia (one), and Northern Territory (one).
- Eleven cases of **meningococcal infection** were reported. Five cases were male and 6 cases were female. Cases ranged in age between the 0-4 and the 90-94 years age group. Recorded onset dates were March (6) and April (5). There were no apparent clusters.
- There were 113 cases of **pertussis** notified in the period; 37 cases were male, 75 cases were female, and sex was unrecorded for one case. Cases ranged in age from the 0-4 to the 90-94 years age group with 4 cases in children less than one year and 7 cases in children less than 5 years. There were 12 apparent clusters of 2 or more cases each in the same postcode area. Apparent clusters occurred in New South Wales (2), Queensland (6), South Australia (3), and Western Australia (one).
- Fifteen notifications of **Q fever** were received in the period. All cases were males and they ranged in age between the 15-19 to the 60-64 years age group.
- Thirty-six cases of **rubella** were reported; 25 cases were male, 9 cases were female, and sex was unrecorded for 2 cases. Recorded ages ranged from the 0-4 to the 90-94 years age group. with a mean age of 34.5 years. Four cases occurred in females in the 15-44 years age group.

Figure 6. Measles notifications, January 1992 to March 1994, by month of onset

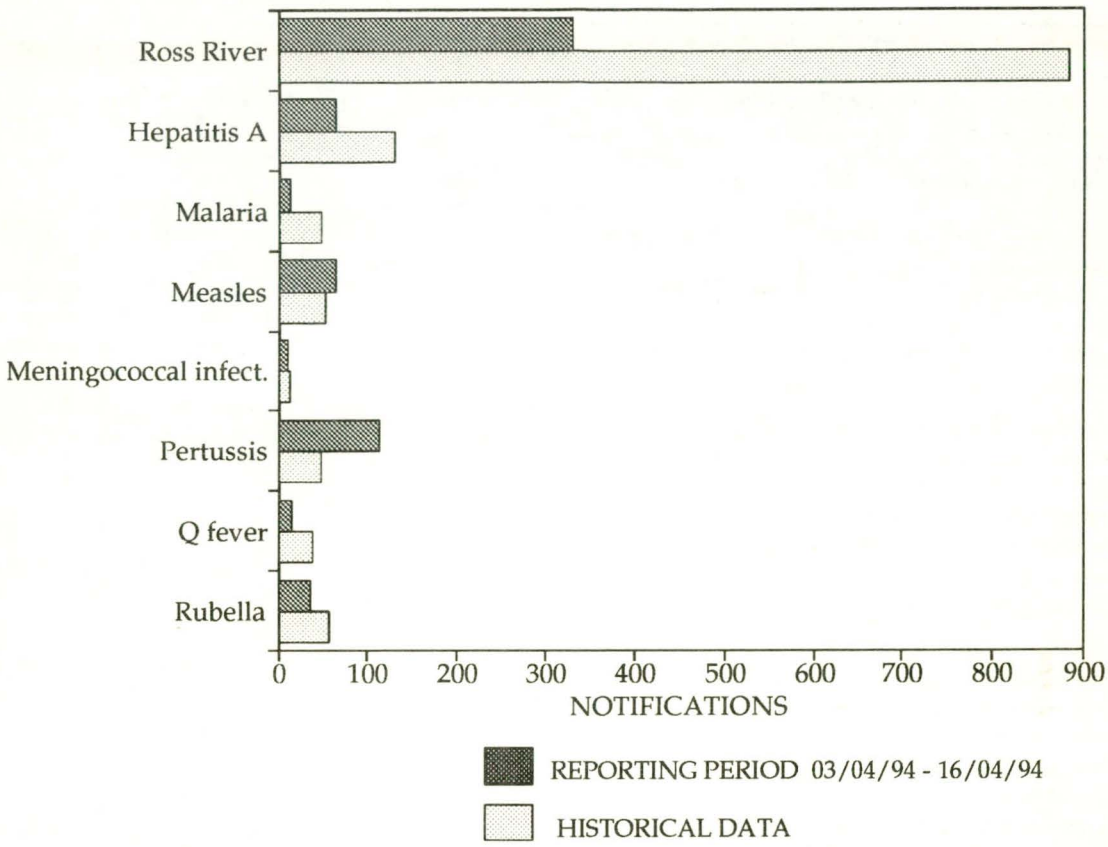


- There were 47 notifications of **syphilis** received, 26 males and 16 females. Sex was unrecorded for 5 cases. Cases ranged in age between the 10-14 and the 85-89 years age groups.
- A single notifications of **tetanus** was received for a female in the 60-64 years age group who was resident in rural New South Wales.
- Twenty-seven cases of **tuberculosis** were reported; 19 cases were male and 8 cases were female. Recorded ages ranged from the 0-4 to the 90-94 years age group. Onset dates were July (one), January (one), February (2), March (10), and April (5).
- A single case of **typhoid** was reported in a female in the 25-29 years age group resident in Sydney. Recorded onset date was March.
- Twenty cases of **yersinosis** were reported; eight cases were male and 12 were female. The cases ranged in age between the 0-4 to the 50-54 years age group with 9 of the cases in the 0-4 years age group.

Correction

There have been errors in the 1993 year to date totals in the table 'Notifications of other diseases received by State and Territory health authorities' published recently (for example Table 5 in *CDI* 1994;**18**:174 and Table 7 in *CDI* 1994;**18**:198). The correct totals to 16 April 1993 are included in Table 5 this fortnight. Correct totals for other periods are available from *CDI* if required.

Figure 7. Selected National Notifiable Diseases Surveillance System reports, and historical data[1]



1. The historical data are the averages of the number of notifications in 6 previous 2-week reporting periods: the corresponding periods of the last 2 years and the periods immediately preceding and following those.

Table 4. Notifications of diseases preventable by vaccines recommended by the NHMRC for routine childhood immunisation, received by State and Territory health authorities in the period 3 to 16 April 1994

DISEASES	ACT	NSW	NT	Qld	SA	Tas	Vic	WA	TOTALS FOR AUSTRALIA[1]			
									This period 1994	This period 1993	Year to date 1994	Year to date 1993
Diphtheria	0	0	0	0	0	0	0	0	0	4	11	6
Haemophilus influenzae b infection	0	4	0	3	1	0	1	0	9	19	60	136
Measles	1	3	1	39	2	1	13	4	64	26	913	362
Mumps	0	0	NN	NN	0	NN	0	0	0	0	3	0
Pertussis	1	24	0	38	24	0	10	16	113	43	1483	472
Poliomyelitis	0	0	0	0	0	0	0	0	0	0	0	0
Rubella[2]	2	4	2	16	1	0	4	7	36	58	514	1049
Tetanus	0	1	0	NN	0	0	0	0	1	0	4	3

1. Totals comprise data from all States and Territories. Cumulative figures are subject to retrospective revision, so there may be discrepancies between the number of new notifications and the increment in the cumulative figure from the previous period.

2. NT, Tas: CRS only.

NN Not Notifiable.

Table 5. Notifications of other diseases[1] received by State and Territory health authorities in the period 3 to 16 April 1994

DISEASES	ACT	NSW	NT	Qld	SA	Tas	Vic	WA	TOTALS FOR AUSTRALIA[2] This period 1994	This period 1993	Year to date 1994	Year to date 1993
Arbovirus infection												
Ross River virus infection	0	20	12	283	6	NN	2	8	331	357	2380	3245
Dengue	0	-	0	0	-	NN	1	NN	1	3	7	44
NEC[3]	0	0	NN	21	0	3	7	0	31	32	226	227
Campylobacteriosis[4]	8	-	3	55	58	13	161	28	326	248	2689	2487
Chlamydial infection (NEC)[5]	1	NN	4	81	23	10	51	30	200	231	1883	1965
Donovanosis	0	NN	0	0	NN	NN	0	0	0	2	28	13
Gonococcal infection[6]	0	9	8	17	8	0	0	32	74	120	866	934
Hepatitis A	1	12	2	36	1	1	7	5	65	67	557	611
Hepatitis B[7]	8	1	0	37	0	0	5	1	52	84	491	709
Hepatitis C	16	0	11	96	0	6	162	29	320	259	2595	1662
Hepatitis (NEC)	0	0	0	0	0	0	0	NN	0	6	16	28
Legionellosis	0	0	0	1	2	0	4	0	7	9	47	46
Leptospirosis	1	1	0	2	0	0	2	0	6	5	65	54
Listeriosis	0	0	NN	4	0	0	0	0	4	1	12	16
Malaria	0	3	0	3	3	1	2	0	12	32	143	218
Meningococcal infection	1	4	0	1	1	0	3	1	11	12	85	64
Ornithosis	0	NN	0	0	0	0	6	0	6	1	34	29
Q fever	0	3	0	9	1	0	2	0	15	21	160	203
Salmonellosis (NEC)	4	44	12	64	23	7	63	51	268	201	2173	1754
Shigellosis[4]	0	-	9	8	7	0	9	10	43	30	265	318
Syphilis	0	26	5	13	0	1	1	1	47	104	592	674
Tuberculosis	1	8	6	0	0	0	11	1	27	21	253	236
Typhoid[8]	0	1	0	0	0	0	0	0	1	0	12	19
Yersiniosis (NEC)[4]	0	-	0	15	4	0	1	0	20	21	169	150

1. For HIV and AIDS, see Tables 2 and 3. For rarely notified diseases, see Table 7.
2. Totals comprise data from all States and Territories. Cumulative figures are subject to retrospective revision so there may be discrepancies between the number of new notifications and the increment in the cumulative figure from the previous period.
3. SA, Tas: includes Ross River virus and dengue.
4. NSW: only as 'foodborne disease' or 'gastroenteritis in an institution'.
5. WA: genital only.
6. NT, Qld, SA and Vic: includes gonococcal neonatal ophthalmia.
7. Acute cases only are reported by NSW, NT, SA, Tas and WA.
8. NSW and Vic: includes paratyphoid.

NN Not Notifiable.
NEC Not Elsewhere Classified.
- Elsewhere Classified.

Table 6. Notifications of rare[1] diseases received by State and Territory health authorities in the period 3 to 15 April 994

DISEASES	Total this period	Reporting States or Territories	Year to date 1994
Botulism	0		0
Brucellosis	2	Vic	4
Chancroid	0		0
Cholera	0		1
Hydatid infection	2	Vic	14
Leprosy	1	Vic	2
Lymphogranuloma venereum	0		0
Plague	0		0
Rabies	0		0
Yellow fever	0		0
Other viral haemorrhagic fevers	0		0

1. Fewer than 50 cases of each of these diseases were notified each year during the period 1988 to 1993.

Table 7. Virology and serology laboratory reports by State or Territory[1] for the reporting period 7 to 20 April 1994,

	State or Territory [1]								Total this fortnight	Historical data [2]	Total reported this year
	ACT	NSW	NT	Qld	SA	Tas	Vic	WA			
MEASLES, MUMPS, RUBELLA											
Measles virus				19			1	6	26	5.5	489
Mumps virus							1		1	2.3	32
Rubella virus		1	1	5				4	11	11.7	252
HEPATITIS VIRUSES											
Hepatitis A virus		1		10			3	6	20	12.8	112
Hepatitis B virus	5	22	1	21	2	1	16	33	101	90.3	824
Hepatitis C virus	12	26	1	43	26	4	3	125	240	117.3	1,806
ARBOVIRUSES											
Ross River virus		5	1	130	2			5	143	149.7	1,026
Barmah Forest virus			1	12				3	16	19.2	108
Dengue not typed			1					5	6	2.5	15
ADENOVIRUSES											
Adenovirus type 1							2		2	1.5	30
Adenovirus type 2		2							2	3.5	30
Adenovirus type 3		1					1		2	9.8	13
Adenovirus type 8							7		7	.7	50
Adenovirus type 9							1		1	.2	2
Adenovirus type 26							1		1	.3	2
Adenovirus not typed/pending		10		1	6	2	14	3	36	38.7	496
HERPES VIRUSES											
Herpes simplex virus type 1		16		71	21	1	36	54	199	122.8	1,710
Herpes simplex virus type 2		31	2	64	21	3	28	65	214	158.8	1,899
Herpes simplex not typed/pending	6	16		6			2		30	25.2	231
Cytomegalovirus	1	6		26	1	1	13	1	49	68.7	537
Varicella-zoster virus		7		9	4		5	12	37	28.8	372
Epstein-Barr virus	2	1		19	2		7	23	54	51.7	573
OTHER DNA VIRUSES											
Parvovirus								3	3	3.7	29
PICORNA VIRUS FAMILY											
Coxsackievirus A16							2		2	.3	19
Coxsackievirus B1		1							1	2.2	17
Coxsackievirus B2		2							2	.0	10
Coxsackievirus B4		1						1	2	.0	7
Echovirus type 6		7							7	.3	11
Echovirus type 9		1							1	3.2	4
Echovirus type 11		4							4	2.2	27
Echovirus type 30	1	1				2	16	1	21	.3	186
Poliovirus type 1 (uncharacterised)		1							1	1.7	8
Poliovirus type 2 (uncharacterised)		3							3	.7	11
Rhinovirus (all types)		3		4			18	2	27	23.2	334
Enterovirus not typed/pending		2	1	28			17	16	64	28.3	534

Table 7. Virology and serology laboratory reports by State or Territory[1] for the reporting period 7 to 20 April 1994, historical data[2], and total reports for the year, continued

	State or Territory [1]								Total this fortnight	Historical data [2]	Total reported this year
	ACT	NSW	NT	Qld	SA	Tas	Vic	WA			
ORTHO/PARAMYXOVIRUSES											
Influenza A virus			1	1					2	14.3	136
Influenza B virus			1				1		2	2.5	87
Parainfluenza virus type 1		3		26	4		18		51	14.5	105
Parainfluenza virus type 2							3		3	4.7	13
Parainfluenza virus type 3		2		4			5		11	19.2	88
Parainfluenza virus typing pending							3		3	4.5	12
Respiratory syncytial virus		9		23	1		5	1	39	50.3	257
OTHER RNA VIRUSES											
HIV-1				4				3	7	2.3	28
Rotavirus	2	6			1	1	5	2	17	23.0	291
Small virus (like) particle							1		1	2.5	6
OTHER											
Chlamydia trachomatis not typed	4	3		30	23		3	49	112	99.2	952
Chlamydia psittaci							2		2	4.2	31
Chlamydia species		1							1	.0	2
Mycoplasma pneumoniae		3		27		1	10	1	42	43.0	405
Coxiella burnetii (Q fever)				5					5	14.3	138
Streptococcus group A		1		11					12	5.3	94
Bordetella pertussis				5			8		13	3.8	222
Leptospira species				1					1	.5	9
Treponema pallidum	1	13							14	12.3	115
TOTAL	34	212	11	605	114	16	258	424	1,674	1,308.5	14,797

1. State or Territory of postcode, if reported, otherwise State or Territory of reporting laboratory.
2. The historical data are the averages of the numbers of reports in 6 previous 2 week reporting periods: the corresponding periods of the last 2 years and the periods immediately preceding and following those.

Table 8. Virology and serology laboratory reports by clinical information for the reporting period 7 to 20 April 1994

	Meningitis	Other CNS	Congenital	Respiratory	Gastrointestinal	Hepatic	Skin	Eye	Muscle/joint	Genital	Other/unknown	Total
MEASLES, MUMPS, RUBELLA												
Measles virus							7				19	26
Mumps virus											1	1
Rubella virus							4				7	11
HEPATITIS VIRUSES												
Hepatitis A virus						14				1	5	20
Hepatitis B virus					1	18					82	101
Hepatitis C virus					1	11					228	240
ARBOVIRUSES												
Ross River virus				1			20		52		70	143
Barmah Forest virus							2		3		11	16
Dengue not typed							1				5	6
ADENOVIRUSES												
Adenovirus type 1				2								2
Adenovirus type 2				1							1	2
Adenovirus type 3								1			1	2
Adenovirus type 8								7				7
Adenovirus type 9											1	1
Adenovirus type 26											1	1
Adenovirus not typed/pending				6	19						11	36
HERPES VIRUSES												
Herpes simplex virus type 1				8			91	10		72	18	199
Herpes simplex virus type 2					2		50			141	21	214
Herpes simplex not typed/pending				1			10			3	16	30
Cytomegalovirus		1	1	14	2		1	2			28	49
Varicella-zoster virus							29	1		1	6	37
Epstein-Barr virus				5	1	4	1		1		42	54
OTHER DNA VIRUSES												
Parvovirus									1		2	3
PICORNA VIRUS FAMILY												
Coxsackievirus A16							2					2
Coxsackievirus B1					1							1
Coxsackievirus B2	1										1	2
Coxsackievirus B4					1						1	2
Echovirus type 6		3					1				3	7
Echovirus type 9		1										1
Echovirus type 11		2									2	4
Echovirus type 30	19				1						1	21
Poliovirus type 1 (uncharacterised)					1							1
Poliovirus type 2 (uncharacterised)											3	3
Rhinovirus (all types)				21							6	27
Enterovirus not typed/pending	7	4		20	7		2				24	64

Table 8. Virology and serology laboratory reports by clinical information for the reporting period 7 to 20 April 1994, continued

	Meningitis	Other CNS	Congenital	Respiratory	Gastrointestinal	Hepatic	Skin	Eye	Muscle/joint	Genital	Other/unknown	Total
ORTHO/PARAMYXOVIRUSES												
Influenza A virus				1							1	2
Influenza B virus				1							1	2
Parainfluenza virus type 1				51								51
Parainfluenza virus type 2				3								3
Parainfluenza virus type 3				9							2	11
Parainfluenza virus typing pending				3								3
Respiratory syncytial virus				38							1	39
OTHER RNA VIRUSES												
HIV-1											7	7
Rotavirus					17							17
Small virus (like) particle											1	1
OTHER												
Chlamydia trachomatis not typed				1			1	1		81	28	112
Chlamydia psittaci				1							1	2
Chlamydia species				1								1
Mycoplasma pneumoniae		1		25							16	42
Coxiella burnetii (Q fever)		1				1					3	5
Streptococcus group A				2			1		1		8	12
Bordetella pertussis				11							2	13
Leptospira species											1	1
Treponema pallidum										7	7	14
TOTAL	27	13	1	226	54	48	223	22	58	306	696	1674

Table 9. Virology and serology laboratory reports by contributing laboratories for the reporting period 7 to 20 April 1994

STATE OR TERRITORY	LABORATORY	REPORTS
Australian Capital Territory	Woden Valley Hospital, Canberra	34
New South Wales	Institute of Clinical Pathology & Medical Research, Westmead	73
	Royal Alexandra Hospital for Children, Camperdown	24
	South West Area Pathology Service, Liverpool	78
Queensland	Queensland Medical Laboratory, West End	487
	State Health Laboratory, Brisbane	155
South Australia	Institute of Medical and Veterinary Science, Adelaide	113
Tasmania	Northern Tasmanian Pathology Service, Launceston	4
	Royal Hobart Hospital	8
Victoria	Royal Children's Hospital, Melbourne	116
	Victorian Infectious Diseases Reference Laboratory, Fairfield Hospital	145
Western Australia	State Health Laboratory Services, Perth	437
TOTAL		1674