



COMMUNICABLE DISEASES INTELLIGENCE

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COMMUNICABLE DISEASES SURVEILLANCE

429

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DEPARTMENT OF
HEALTH, HOUSING,
LOCAL GOVERNMENT AND
COMMUNITY SERVICES

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

LISTERIOSIS IN VICTORIA

(Sally Ng, Infectious Diseases Unit, Health and Community Services, Victoria and Jocelyn R L Forsyth, Microbiological Diagnostic Unit, University of Melbourne)

Listeriosis, as well as the isolation of *Listeria monocytogenes* from food for human consumption, was made notifiable in Victoria in May 1990 by the proclamation of the Health (Infectious Diseases) Regulations 1990.

Prior to the proclamation of this Regulation, cases diagnosed on isolation of the bacteria from blood or CSF were monitored by the Victorian Hospital Pathogens Surveillance Scheme (VHPSS). This Scheme was set up under the umbrella of the Standing Committee for Infection Control and is run by the Microbiological Diagnostic Unit (MDU), University of Melbourne. Under this Scheme, which began in July 1988, participating laboratories notify isolates from blood and cerebrospinal fluid. Eight cases of listeriosis were notified to the VHPSS in 1988 and 19 cases in 1989.

Since proclamation of the Health (Infectious Diseases) Regulations 1990, 73 cases of listeriosis have been notified to Health and Community Services; 33 (45%) of these were in pregnant women (materno-fetal cases) and 40 (55%) in 'non-pregnant' patients (Table 1).

Table 1. Listeriosis cases notified in Victoria, 1990 to July 1993, by year and patient type

| Year | Materno-fetal (deaths) | Non-pregnant (deaths) | Total |
|----------------|------------------------|-----------------------|-------|
| 1990 | 11 (3) | 13 (4) | 24 |
| 1991 | 10 (3) | 16 (2) | 26 |
| 1992 | 6 (3) | 7 (2) | 13 |
| 1993 (to July) | 6 (4) | 4 (1) | 10 |
| Total | 33 (13) | 40 (9) | 73 |

Materno-fetal cases

A materno-fetal case is one in which *L. monocytogenes* was isolated from either a pregnant woman or her fetus or a neonate. A pair consisting of a mother and a neonate is counted as one case.

Infection in the 33 materno-fetal cases resulted in 13 miscarriages and deaths (39%):

five miscarriages, at 13, 18, 20 and 24 weeks' (twins) gestation

four stillbirths, at 18, 24, 26, 29 weeks' gestation

four neonatal deaths, at 26 (2 cases), 28 and 31 weeks' gestation.

This high mortality rate is similar to that reported overseas. Similarly, an outbreak affecting 10 pregnant women in Western Australia in 1990 resulted in six stillbirths or mid-trimester miscarriages¹.

Apart from one patient who had a prolonged low-grade pyrexia and persistent headache, the presentation in the mothers was generally mild, with symptoms ranging from fever at onset of labour to flu-like symptoms of sore throat, myalgia, fever and chills. One mother, who was asymptomatic, presented with spontaneous onset of labour at 28 weeks' gestation; the baby was delivered by caesarean section but died soon after. *L. monocytogenes* was isolated from swabs taken from the ear, umbilicus and groin.

Non-pregnant cases

Infection in the 40 'non-pregnant' cases resulted in nine deaths (23%).

Thirty-two of these cases (80%) had some predisposing factor, mainly the immunosuppression of cancer, transplant or treatment for chronic non-malignant conditions (Table 2). Diabetes was the only risk factor in two patients and alcoholism in two others. The eight patients who had no previous illness included three infants, aged three, four and six months. The remaining 37 cases were aged between seven years and 85 years, with a mean age of 59 years.

Septicaemia was the main presentation in these 40 'non-pregnant' patients. One case of *Listeria* peritonitis was reported in a patient who had been on continuous ambulatory peritoneal dialysis for four years. Contamination of dialysis equipment by the patient was considered a possible source of his infection.

There were three cases of brain abscess, one in a 60 year old male who presented with a history of sudden onset of diplopia with evidence of a third nerve palsy. He recovered uneventfully without surgical intervention.

All cases in Victoria have been sporadic and isolated, and despite extensive sampling of leftover food, the source of infection has not been determined in any of them. In view of the long incubation period of the

Table 2. Risk factors for 'non-pregnant' listeriosis cases, Victoria, 1990 to July 1993

| Risk factor | Male | Female | Total |
|--------------------------------|------|--------|-------|
| Cancer | 6 | 0 | 6 |
| Transplant | 2 | 2 | 4 |
| Leukaemia | 1 | 0 | 1 |
| Diabetes | 1 | 1 | 2 |
| Alcoholism | 2 | 0 | 2 |
| Immunosuppression ¹ | 3 | 3 | 6 |
| Others/unknown | 8 | 3 | 11 |
| Total | 23 | 9 | 32 |

1. Treatment with steroid or immune suppressants for conditions other than cancer.

disease a relevant food history is hard to obtain. However, the establishment of genomic typing methods, including the use of pulsed field gel electrophoresis at MDU, will provide important new tools for the comparison of strains from patients, foods and other sources.

Comments

L. monocytogenes is widely distributed in the environment and surveys overseas and in Australia have shown that a wide variety of ready-to-eat foods are often contaminated with the bacteria. Extensive efforts to control *L. monocytogenes* can reduce the incidence of contamination, but, in view of its ubiquity, eradication of *L. monocytogenes* from the processing environment or from all finished products is impossible². It is therefore important that advice on food hygiene and diet be

given to at-risk groups, especially pregnant women. This is being undertaken by Health and Community Services, in line with a recommendation by the NHMRC. Similar action has been adopted in Western Australia and in Britain, where in recent years, a decline in the number of cases of listeriosis, particularly in pregnant women, followed the issue of Government health warnings on paté consumption.

References

1. Watson C, Oh K. *Listeria* outbreak in Western Australia. *Comm Dis Intell* 1990;(24):9-12.
2. Tompkin, RB, Christiansen LN, Shaparis AB, Baker RL, Shroeder JM. Control of *Listeria monocytogenes* in processed meats. *Food Aust* 1992;44:370-376.

AN OUTBREAK OF ROSS RIVER VIRUS DISEASE IN VICTORIA

(Pam Norris, Communicable Diseases Unit, Public Health Branch, Health and Community Services, Victoria)

Between July 1992 and May 1993, there were 1201 cases of Ross River virus disease notified to the Communicable Diseases Branch, Health and Community Services (H&CS), Victoria. From the available records, this is the largest number of cases ever recorded in Victoria. There were 478 cases notified in 1990-91 and 135 cases in 1991-92.

In comparing the outbreaks of 1990-91 and that of 1992-93, in 1990-91 the predominant region for notifications was H&CS Region 2 (Central Highlands/Wimmera), with 43.5% of the cases notified and Region 3 (Loddon/Campaspe/Mallee) with 11.1% of notified cases. However in the 1992-93 outbreak the predominant region was Region 3 with 45.5% of the notifications, with Region 2 having 14% of cases notified (Figures 1 and 2).

Most cases had onset between January and April (Figure 3).

The notifications were received not only from areas known to be mosquito-prone, but also from areas which have not been considered mosquito-prone areas. In order to ascertain the most probable region of infection a survey of persons notified as having Ross River virus disease was subsequently undertaken. There were 988 questionnaires distributed and we currently have received replies from 841 respondents (85.1%). For 841 (70.0%) cases, the likely source of infection can be identified. A total of 72.5% of cases were notified in the Region of probable infection (Table 1). In the cases of H&CS Regions 6 and 7 there were sufficient responses to indicate that it was unlikely that any infection occurred in these regions.

Figure 1. Victorian Health and Community Services Regions

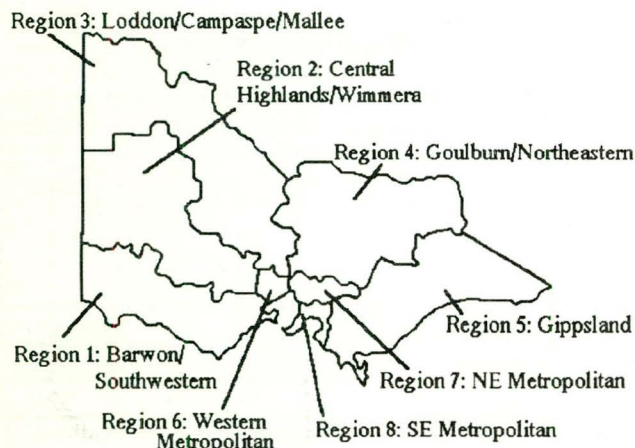


Figure 2. Ross River virus disease notifications, Victoria, July 1992 to May 1993, by Victorian Health and Community Services Regions of notification and probable infection

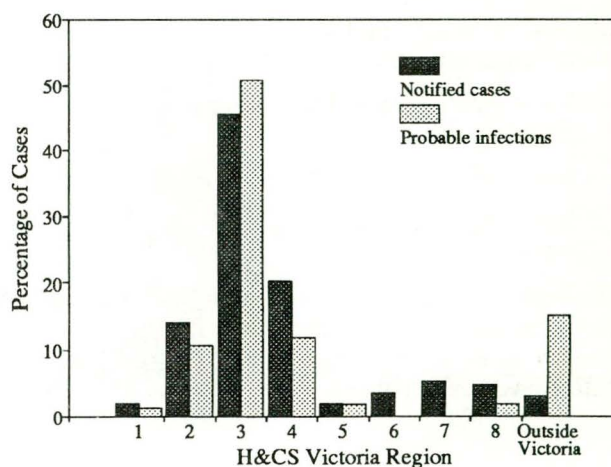


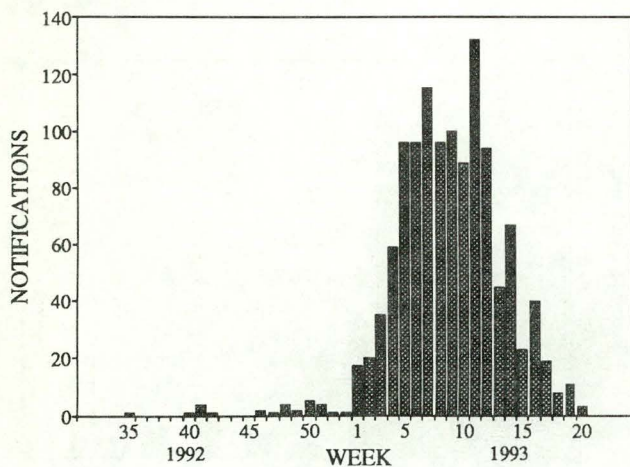
Table 1. Ross River virus disease notifications with identified probable Region of infection, by Region of notification

| Region of notification | Probable region of infection | | | | | | | |
|------------------------|------------------------------|-----------|-----------|------------|------------|-----------|-----------|------------|
| | Outside Victoria | 1 | 2 | 3 | 4 | 5 | 8 | Total |
| 1 | 3 | 6 | 0 | 1 | 1 | 0 | 0 | 11 |
| 2 | 10 | 3 | 87 | 18 | 2 | 0 | 0 | 120 |
| 3 | 57 | 1 | 1 | 350 | 4 | 0 | 0 | 413 |
| 4 | 20 | 0 | 0 | 13 | 138 | 1 | 0 | 172 |
| 5 | 2 | 0 | 0 | 0 | 4 | 12 | 1 | 16 |
| 6 | 12 | 0 | 0 | 12 | 9 | 1 | 4 | 28 |
| 7 | 8 | 1 | 1 | 21 | 0 | 1 | 0 | 45 |
| 8 | 7 | 0 | 0 | 11 | 1 | 0 | 9 | 28 |
| Outside Victoria | 8 | 0 | 0 | 0 | 0 | 0 | 0 | 8 |
| Total | 127 | 11 | 89 | 426 | 159 | 15 | 14 | 841 |

Table 2. Ross River virus disease notifications, Victoria, 1992-93, by age group and Region of notification

| Age group (years) | Region of notification | | | | | | | | | Total |
|-------------------|------------------------|-----------|------------|------------|------------|-----------|-----------|-----------|-----------|--------------------|
| | Outside Victoria | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | |
| 0-9 | 1 | 0 | 1 | 6 | 1 | 0 | 0 | 1 | 0 | 10 (0.8%) |
| 10-19 | 3 | 1 | 15 | 33 | 6 | 3 | 1 | 3 | 2 | 67 (5.6%) |
| 20-29 | 5 | 7 | 18 | 73 | 29 | 1 | 8 | 11 | 13 | 165 (13.7%) |
| 30-39 | 10 | 6 | 39 | 154 | 75 | 4 | 14 | 15 | 8 | 325 (27.1%) |
| 40-49 | 10 | 4 | 39 | 133 | 72 | 4 | 11 | 24 | 18 | 315 (26.3%) |
| 50-59 | 5 | 3 | 26 | 74 | 31 | 5 | 3 | 7 | 6 | 160 (13.3%) |
| 60-69 | 0 | 2 | 22 | 44 | 16 | 4 | 1 | 1 | 5 | 95 (7.9%) |
| 70-79 | 0 | 0 | 4 | 21 | 8 | 2 | 0 | 0 | 2 | 37 (3.1%) |
| 80-89 | 0 | 0 | 1 | 2 | 2 | 0 | 0 | 0 | 0 | 5 (0.4%) |
| Unknown | 2 | 0 | 6 | 6 | 1 | 0 | 4 | 1 | 2 | 22 (1.8%) |
| Total | 36 | 23 | 171 | 546 | 241 | 23 | 42 | 63 | 56 | 1201 (100%) |

Figure 3. Ross River virus disease notifications, Victoria, August 1992 to May 1993, by week of onset



Most persons notified were in the age groups 20 to 59 years (80.4%), both in individual Regions and overall (Table 2).

Comments

Further investigations including second survey forms to non-respondents, notifications after the initial survey, and doctor call backs are all being undertaken in order to assess further the sources of infection. For the full year period July 1992 to June 1993 there were 1222 cases of Ross River virus disease notified in Victoria.

CHOLERA IN 1992

(Reproduced in part from *Weekly Epidemiological Record* 1993;68:149-155, 21 May 1993)

Summary

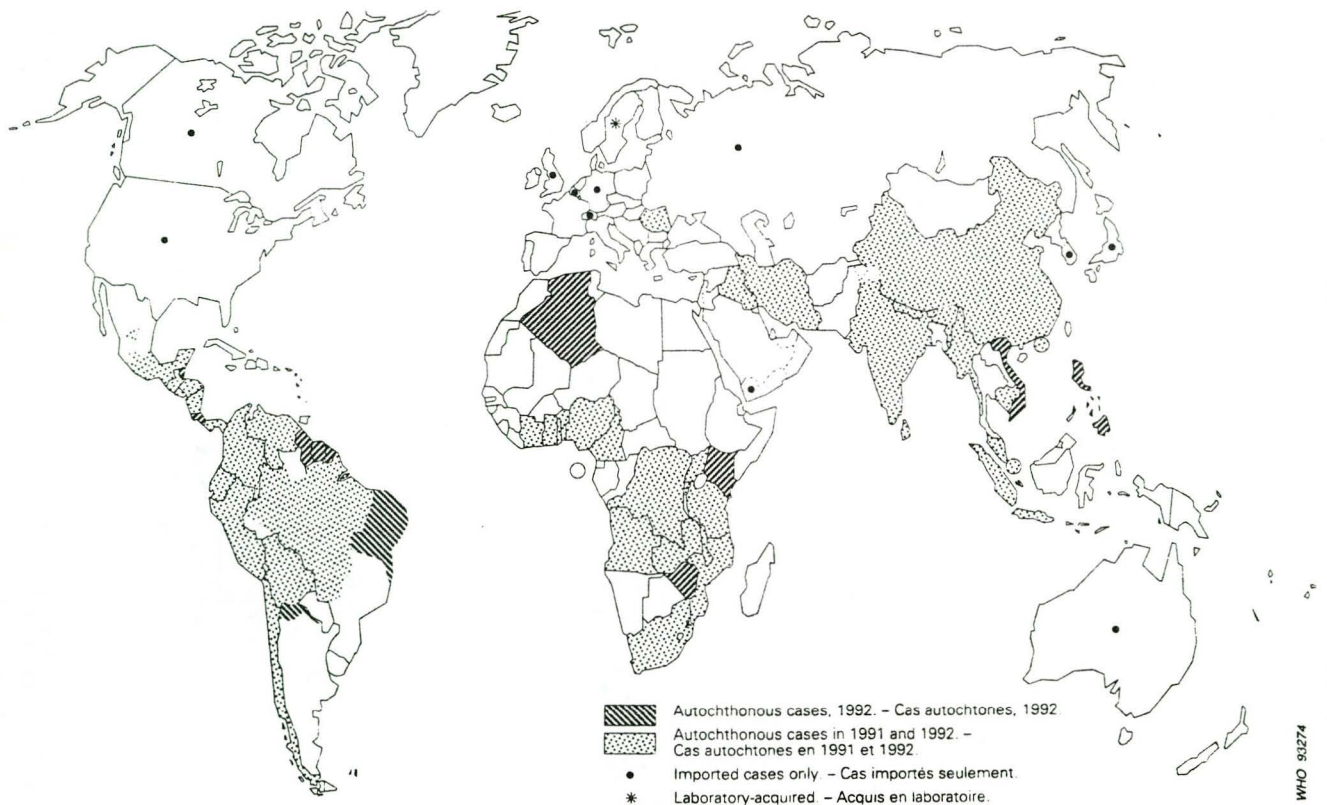
In 1992, the seventh pandemic of *Vibrio cholerae* O1 biotype El Tor continued to spread throughout the world. Sixty-eight countries, representing every region, reported 461,783 cases and 8072 deaths, yielding a global case-fatality rate of 1.7% (Map). A decrease was noted in the reported number of cases (22%) and deaths (58%) in 1992 as compared with 1991, but nine additional countries were affected.

All but two of the 21 countries in Central and South America were affected. Reports of 354,089 cases (a decrease of 9.5%) from 1991, 2401 deaths (a decrease of 40%), and a case-fatality rate of 0.68% were received from the Region of the Americas. In Africa, 20 of the 52 countries reported 91,081 cases and 5291 deaths, a decrease of 41% and 62% respectively, over 1991. The case-fatality rate of 9.1% in 1991 decreased to 5.8% in 1992. The countries of Asia reported 16,299 cases and 372 deaths (decreases of 67% and 71%, respectively), while 296 cases with eight deaths were notified from

Oceania. Europe reported 18 cases, 14 of which were imported (Table 1).

On the whole, the cholera situation in the world during 1992 resembled that of the previous year, in terms of geographical occurrence and reported cases, although the substantial decrease in reported mortality is an encouraging development. While the total number of cases remained relatively stable, important new outbreaks occurred in the Americas, against a background of what increasingly appears to be an endemic situation. In Africa, reported case-fatality rates, although substantially lower than in 1991, continue to be disturbingly high. The continued global and regional economic recession and the lack of substantive improvement in basic living conditions, including limited access to clean water, safe food, and adequate sanitation facilities in most cholera-affected countries, make it unlikely that morbidity due to cholera will greatly decrease in the coming years. New developments, such as increasing resistance to traditionally effective antibiotics, and emerging new strains of toxigenic *V.*

Map. Countries reporting cholera in 1991 and 1992



cholerae non-O1 may further contributed to cholera transmission and its consequences.

Nevertheless, national diarrhoeal diseases control programs which promote interventions proven to be safe and effective for both the prevention and treatment of cholera exist in almost every country and can be substantially strengthened if increased resources are made

available to them. In addition, improved emergency preparedness and response plans, and increasingly aggressive health education campaigns in schools and in the general population may be having some impact in limiting the rapidity and the extent of the spread of cholera, although there are still few data available to support this contention.

Table 1. Cases of cholera and deaths notified to the World Health Organization, 1992

| Country | Cases | Deaths | Country | Cases | Deaths |
|-----------------------------|---------|--------|----------------------------|-----------|--------|
| Africa | | | Americas continued | | |
| Algeria | 69 | 0 | Peru | 212,642 | 727 |
| Angola | 3608 | 184 | Suriname | 12 (7s) | 1 |
| Benin | 413 | 17 | United States of America | 102 (98i) | 1 |
| Burundi | 479 | 29 | Venezuela | 2842 (5i) | 68 |
| Cameroon | 1268 | 66 | Total | 354,089 | 2401 |
| Cote d'Ivoire | 37 | 7 | Asia | | |
| Ghana | 228 | 23 | Bhutan | 494 | 6 |
| Kenya | 3388 | 80 | Cambodia | 1229 | 120 |
| Malawi | 298 | 8 | China | 580 | 1 |
| Mozambique | 30,802 | 726 | Hong Kong | 3 (2i) | 0 |
| Nigeria | 7671 | 686 | India | 6911 | 55 |
| Rwanda | 530 | 32 | Indonesia | 25 | 0 |
| South Africa | 11 | 0 | Iran (Islamic Republic of) | 97 | 4 |
| Swaziland | 2281 | 30 | Iraq | 97 | 0 |
| Togo | 753 | 49 | Japan | 46i | 0 |
| Uganda | 5072 | 104 | Malaysia | 474 | 8 |
| United Republic of Tanzania | 18,526 | 2173 | Myanmar | 826 | 50 |
| Zaire | 1949 | 59 | Nepal | 764 | 15 |
| Zambia | 11,659 | 913 | Philippines | 345 | 0 |
| Zimbabwe | 2039 | 105 | Republic of Korea | 6i | 0 |
| Total | 91,081 | 5291 | Singapore | 17 (1i) | 0 |
| Americas | | | Sri Lanka | 121 | 3 |
| Argentina | 553 | 15 | Vietnam | 4260 | 110 |
| Belize | 159 | 4 | Yemen | 4i | 0 |
| Bolivia | 22,260 | 383 | Total | 16,299 | 372 |
| Brazil | 30,309 | 363 | Europe | | |
| Canada | 4i | 0 | Belgium | 1i | 0 |
| Chile | 73 (5i) | 1 | Germany | 1i | 0 |
| Colombia | 15,129 | 158 | Romania | 3 | 0 |
| Costa Rica | 12 (8i) | 0 | Russian Federation | 6i | 0 |
| Ecuador | 31,870 | 208 | Sweden | 1* | 0 |
| El Salvador | 8106 | 45 | Switzerland | 1i | 0 |
| French Guiana | 16 (6i) | 1 | United Kingdom | 5i | 0 |
| Guatemala | 15,395 | 207 | Total | 18 | 0 |
| Guyana | 576 | 8 | Oceania | | |
| Honduras | 384 | 17 | Australia | 3i | 0 |
| Mexico | 8162 | 99 | Tuvalu | 293 | 8 |
| Nicaragua | 3067 | 46 | Total | 296 | 8 |
| Panama | 2416 | 49 | World Total | 461,783 | 8072 |

i Imported.

s Suspect.

* Laboratory-acquired infection.

Transmission

Central and South America

Two years after cholera was recognised in South America, starting in Peru in January 1991, the epidemic is still progressing. All Latin American countries except Uruguay and Paraguay were involved in 1992. The greatest number of cases, 212,642 (67% of the 316,282 cases reported from South America), was recorded in Peru. Five previously unaffected countries reported cholera during 1992: Argentina, Belize, Costa Rica, Guyana and Suriname.

The epidemic affecting Latin America is characterised by a pattern of rapid spread (Table 2), high attack rates (300-900 cases per 100,000 inhabitants in Bolivia, Ecuador and Peru, for example) and relatively low mortality. The trend appears to be one of continuous transmission with seasonal peaks, as seen in Bolivia, Colombia, Ecuador, Peru and Venezuela, where there was a marked increase in cases during the first three months of the year. Given this past year's experience and the known ability of *V. cholerae* O1 biotype El Tor to survive for long periods in aquatic environments, it appears increasingly likely that cholera will become established as an endemic disease in Latin America.

Africa

Cholera is endemic in many countries of Africa with outbreaks occurring, in general, at the start of the rainy season. In 1992, 20 countries reported 91,081 cases and

5291 deaths. During the last two years cholera occurred increasingly in periurban and urban areas, leading to epidemics of greater magnitude, and frequently overwhelming health care facilities. There is a dearth of epidemiological research on cholera in Africa, and the specific modes of transmission of the disease have not been fully elucidated. All evidence suggests, however, that persistently inadequate levels of environmental sanitation, deficiencies in both the quantity and the quality of water, much of which is obtained from shallow wells and surface sources, and inattention to food hygiene are, as is the usual case, major risk factors. There is also evidence of outbreaks in Africa spreading as a result of funerals of cholera cases, when there is often close contact with the corpse by those involved in the preparation of food.

A major contributing problem in Africa is the recurrent unplanned movements of large populations which result in crowded living conditions in refugee camps, where the risk factors mentioned above are often constant features. In southern Africa especially, refugees from war-torn Mozambique and displaced persons in Angola have particularly suffered. In 1992, Zimbabwe reported its first cases of cholera since 1986. These occurred in November in a refugee camp on the Mozambique border. By the end of the year, 2039 cases and 105 deaths had been reported from both refugee and indigenous populations and the outbreak was continuing to spread. In Malawi, cholera transmission has

Table 2. Cholera in the Americas in 1991 and 1992

| Date of first report | Country | Cumulative cases | | Cumulative deaths | |
|----------------------|--------------------------|------------------|---------|-------------------|------|
| | | 1991 | 1992 | 1991 | 1992 |
| 23.01.91 | Peru | 322,562 | 212,642 | 2909 | 727 |
| 01.03.91 | Ecuador | 46,320 | 31,870 | 697 | 208 |
| 10.03.91 | Colombia | 11,979 | 15,129 | 207 | 158 |
| 08.04.91 | United States of America | 26 | 102 | 0 | 1 |
| 09.04.91 | Brazil | 1567 | 30,309 | 26 | 363 |
| 12.04.91 | Chile | 41 | 73 | 2 | 1 |
| 13.06.91 | Mexico | 2690 | 8162 | 34 | 99 |
| 24.07.91 | Guatemala | 3674 | 15,395 | 50 | 207 |
| 19.08.91 | El Salvador | 947 | 8106 | 34 | 45 |
| 26.08.91 | Bolivia | 206 | 22,260 | 12 | 383 |
| 10.09.91 | Panama | 1178 | 2416 | 29 | 49 |
| 13.10.91 | Honduras | 11 | 384 | 0 | 17 |
| 12.11.91 | Nicaragua | 1 | 3067 | 0 | 46 |
| 29.11.91 | Venezuela | 15 | 2842 | 2 | 68 |
| 14.12.91 | French Guiana | 1 | 16 | 0 | 1 |
| 03.01.92 | Costa Rica | 0 | 12 | 0 | 0 |
| 09.01.92 | Belize | 0 | 159 | 0 | 4 |
| 05.02.92 | Argentina | 0 | 553 | 0 | 15 |
| 06.03.92 | Suriname | 0 | 12 | 0 | 1 |
| 03.06.92 | Canada | 2 | 4 | 0 | 0 |
| 05.11.92 | Guyana | 0 | 576 | 0 | 8 |
| | Total | 391,220 | 354,089 | 4002 | 2401 |

been occurring for several years among Mozambican refugees.

Asia

Reports of cholera declined steeply in the Asian countries, from 49,791 cases and 1286 deaths in 1991 to 16,299 cases and 372 deaths in 1992. Most of this difference is accounted for by the experience in Nepal, where a large outbreak of over 30,000 cases was reported in 1991, while only 764 cases were reported in 1992.

An epidemic of cholera-like illness was recently reported in the medical literature to have begun in southern Asia in late 1992. A previously unknown serogroup of *V. cholerae* non-O1 has been identified as the causative organism (see CDI 1993;17:288). The illness due to this new strain seems to be clinically and epidemiologically indistinguishable from that caused by *V. cholerae* O1.

Case-fatality rates

Wide variations in case-fatality rates reported from different regions were seen again in 1992. Most striking are the differences between Latin America, which consistently reports case-fatality rates of about 1%, and those countries in Africa where rates as high as 11.7% were reported. These differences may be partly due to reporting artefacts. For example, it has been suggested that in Latin America many countries may be reporting all cases of presumed cholera, including those which are relatively mild, whereas in Africa there may be a tendency to report only more severe cases, that is, those admitted to treatment centres. Still, differing case definitions for reporting purposes cannot explain the relatively large number of deaths reported from Africa, which represents 66% of the global total in 1992.

The relatively lower level of access to health care probably explains a large portion of the difference. Most importantly, access to adequately equipped and supplied health centres remains limited in many parts of Africa and care-seeking for severe illness is frequently delayed. Case-fatality may be higher in patients compromised by underlying infections such as malaria or human immunodeficiency virus infection, for example, or by malnutrition, all of which are highly prevalent in Africa. Finally, the development of national diarrhoeal diseases control programs which emphasise case-management training for health care providers, also tends to be further advanced in the Americas. Despite these complicating factors, the 36% reduction in the reported case-fatality rate in Africa during 1992 is an indication of significant progress.

Conclusion

Fewer cases and deaths were reported during 1992 compared with the previous year. The introduction of cholera into the Americas in 1991 brought about a greatly heightened sense of global awareness which undoubtedly contributed to more conscientious reporting. Whether the decrease in morbidity and mortality

in 1992 is an accurate reflection of the actual situation or due to less vigilant surveillance cannot be determined with certainty. What can be said confidently, however, is that unless significant progress is made to improve living conditions in developing countries to allow greater access to clean water, safe food, and a more sanitary environment, the seventh pandemic of cholera will continue to spread.

CDI Editorial Comment

The cholera pandemic has continued in 1993. Countries which have begun to report locally acquired cases this year are Afghanistan, Djibouti, Laos, Tajikistan and the Russian Federation.

Travellers to cholera infected areas are advised to take care in the selection of food and drink to avoid both cholera and other food and waterborne diseases. Specifically, the World Health Organization recommends that travellers

- drink only water that has been boiled or disinfected with chlorine or iodine,
- avoid ice,
- eat food that has been thoroughly cooked and is still hot when served,
- avoid raw seafood and other raw foods, except fruits and vegetables that they have peeled or shelled themselves,
- boil unpasteurised milk,
- avoid icecream if its source is in doubt, and
- be sure that meals bought from street vendors are thoroughly cooked and do not contain any uncooked foods.

The cholera vaccine is not recommended and is not required for entry into any country. The vaccine gives only partial protection for a period of only three to six months. Moreover, it gives a false sense of security to persons who have been vaccinated, who may then fail to practice other, more effective preventative measures.

The three cases of cholera imported into Australia last year were a 44 year old male who had been to Nepal (diagnosed in Queensland in July) and two travellers to Bali, a 56 year old male diagnosed in South Australia in April and a 69 year old male diagnosed in Western Australia in November. All three patients recovered.

Three cases have been notified so far this year. Two were travellers to Bali, a 28 year old female (diagnosed in Western Australia in January) and a male who returned to Queensland this month. The third was a 35 year old female resident of Ipswich, Queensland, who was diagnosed in April. This patient had no history of overseas travel and no history of contact with the water sources that have occasionally been a cause of cholera cases in Queensland in the past (CDI 1987;(12):7-9); the source of her infection has not been determined.

OVERSEAS BRIEFS

In the last two weeks, the following information has been supplied by the World Health Organization and the Embassy of the Russian Federation, Canberra.

Influenza in New Zealand

Localised outbreaks of influenza continued in the northern areas of the North Island in July. Most laboratory confirmed cases were influenza A (H₃N₂), but the number of cases of influenza B was increasing. The number of clinically diagnosed cases of influenza also increased in southern regions of the South Island in July.

Diphtheria in Poland

Between 1988 and 1991, no cases of diphtheria were reported in Poland, however, one case was reported in 1992 and four cases were reported in the second quarter of 1993 (all adults). These recent cases all have epidemiological links with the current diphtheria outbreaks in Ukraine and Belarus. One of the patients had contracted the disease when he travelled to Ukraine. The other patients lived in areas which have recently experienced a large influx of visitors from Ukraine and Belarus.

To prevent spread of diphtheria in Poland, an additional dose of diphtheria toxoid has been included in the immunisation schedule for all adolescents at the age of 19 years. The vaccine is also offered to all adult travellers to the Russian Federation, Belarus and Ukraine. In addition, in the eastern areas of the country considered to be at high risk, immunisation has been offered to persons employed at border check points and to those who have frequent contact with visitors from the neighbouring eastern countries. An additional immunisation campaign is being prepared for immunisation of all persons in the 20 to 29 year age group in the eastern provinces.

Cholera and diphtheria in the Russian Federation

The Russian Federation has recently reported 22 cases of cholera. Most were imported, but there have been five locally acquired cases including three cases in the Republic of Dagestan and two cases in Moscow (a homeless man and a nurse in the hospital in which he was treated). Controls on and testing of water supplies have been increased to avoid further spread of the disease.

The diphtheria outbreak is continuing, with 4000 cases and 104 deaths registered so far this year. Measures are being taken to implement a mass diphtheria vaccination program, aiming at immunising 90% of children and 75% of adults. The government maintains its recommendation for travellers to the Russian Federation to be immunised against diphtheria.

Yellow Fever Update

Barra do Corda Municipio in Maranhao State, Brazil has recently been declared yellow fever infected. Seven cases and four deaths were reported from the area for the period 30 April to 24 May.

Cholera Update

Newly cholera infected areas are Acre and Parana States in Brazil and four districts within Khatlon Region in Tajikistan.

Cases of cholera have been reported for June, July and August from Afghanistan, Belize, Bolivia, Brazil, China, Costa Rica, Djibouti, El Salvador, Guatemala, Honduras, India, Iran, Malawi, Mexico, Mozambique, Nicaragua, Peru, Tajikistan, Tanzania, Venezuela and Zimbabwe.

COMMUNICABLE DISEASES SURVEILLANCE

Virology and Serology Reporting Scheme

There were 2429 reports received in the *CDI* Virology and Serology Reporting Scheme this fortnight (Tables 10, 11 and 12). Included were some reports from Queensland that were not able to be included last fortnight.

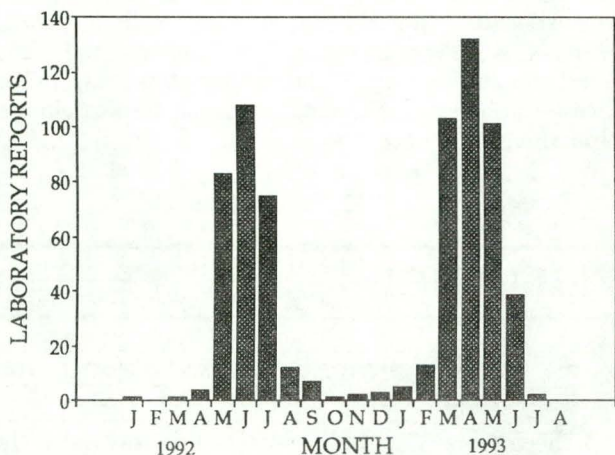
- Measles was reported for 17 patients, 10 from Queensland, 3 from New South Wales and 4 from Victoria. A total of 197 reports of measles has been received so far this year. Sixty have been from Queensland, 39 from New South Wales, 37 from Victoria, 32 from South Australia, 24 from Tasma-

nia, 3 from Western Australia and one each from the Northern Territory and the ACT.

- There were 37 rubella reports this fortnight. Included were a 22 day old female infant with a congenital infection (IgM). Her mother had had a rash at 3 weeks gestation and had been serologically negative at that time. The infant has some signs of congenital disease but, as she is also being investigated for congenital toxoplasmosis, they have not been definitely attributed to the rubella infection. Other patients this fortnight included an 18 year old pregnant female and 3 other females in the 15 to 44 years age group.

- **Hepatitis E** was reported for 3 male patients aged 23 years, 25 years and 28 years. All had a risk factor of overseas travel reported. Diagnosis was by demonstration of IgG by ELISA and by Western Blot.
- There were 56 reports of **Ross River virus** infection this fortnight, bringing the total for the year to 1575. One was confirmed (from Queensland in August); the remainder were presumptive (IgM). Specimen collection dates were in June for one, July for 30 and in August for 25. The peak in reports this year was in March.
- The 8 reports of **Barmah Forest virus** infection were all presumptive (IgM). The specimen collection dates were in July for 2 each from New South Wales and Queensland, and August for one from New South Wales, one from the Northern Territory and 2 from Queensland.
- The **dengue 1** and **untyped flavivirus** reports from New South Wales were both for patients who had been travelling overseas.
- There were 102 reports of **dengue 2** (all presumptive). All were from the Townsville-Cairns region or for patients who had visited the area. Specimen collection dates were in April (3), May (63), June (34) and July (2). The peak in reports this year was earlier than last year, when the current outbreak began (Figure 1).

Figure 1. Dengue 2 laboratory reports, January 1992 to August 1993, by month of specimen collection



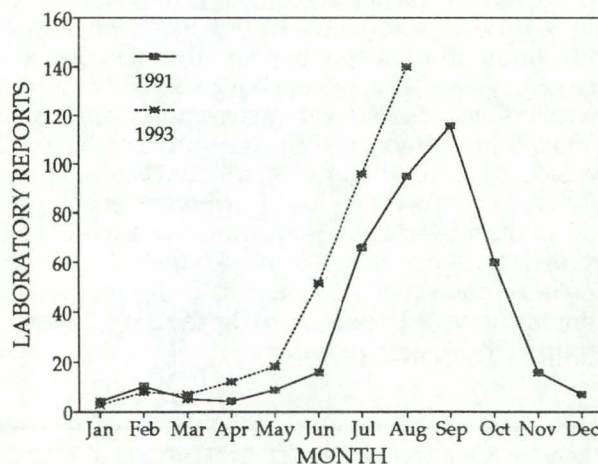
- There were 11 reports of **coxsackievirus type A9**, bringing the total for the year to 42, 16 from the ACT, 21 from New South Wales, 4 from Victoria and 1 from Queensland. This fortnight the patients included a 6 day old female (CSF, faeces, urine and nasopharyngeal isolates), five other patients under

the age of 2 years, and other patients in the age range to 58 years. Four reported meningitis and/or CSF isolates, 2 respiratory tract disease, 3 skin disease, one general malaise and 2 gastrointestinal disease. Specimen collection dates were in July and August.

- **Echovirus type 30** was reported for 8 patients in the age range 5 days to 37 years. CSF isolates and/or meningitis was reported for 6. All were from Victoria.
- There were 173 reports of **influenza**, 63 of **untyped influenza A** (2 isolations, 14 antigen detections, 3 IgM, 7 fourfold changes, 37 single high titres) and 110 reports of **influenza B** (13 isolations including 6 reported as B/Panama/45/90-like, 16 antigen detections, 6 IgM, 8 fourfold changes, 67 single high titres). Ten influenza A reports and 9 influenza B reports were for patients aged over 65 years.

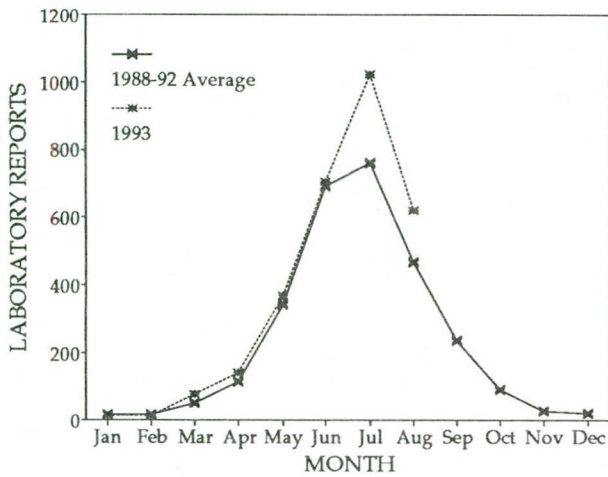
There have been 336 reports of influenza B so far this year, slightly more than by this time in 1991, the last year in which influenza B predominated (Figure 2).

Figure 2. Influenza B laboratory reports, 1992 and 1993, by month of specimen collection



- **Respiratory syncytial virus** infection was reported for 286 patients, 197 under the age of one year. One hundred and sixty-five reports were for males (57.6%) and 120 were for females (42.0%). The peak in these infections usually occurs in July, and seem to have passed for this year (Figure 3). The ACT (82), New South Wales (689), Northern Territory (1), Queensland (739), South Australia (326), Tasmania (82), Victoria (816) and Western Australia (264) have all reported cases.

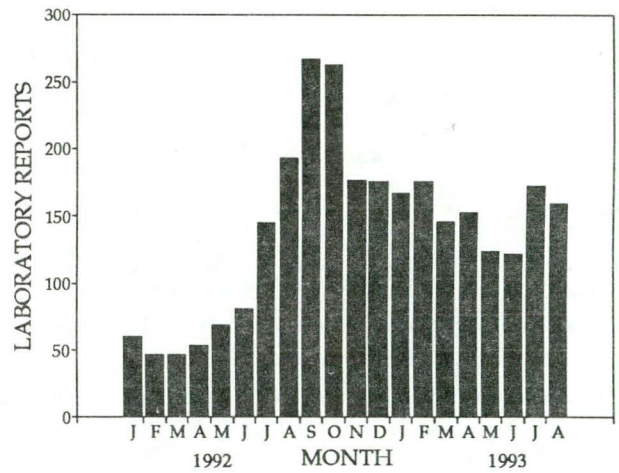
Figure 3. Respiratory syncytial virus laboratory reports, 1988-92 average and 1993, by month of specimen collection



The respiratory syncytial virus case reported with paralysis as the syndrome was a 4 year old male who had weakness in one leg and high titres to respiratory syncytial virus, influenza A and untyped enterovirus. **Poliovirus type 1** was subsequently isolated from faeces and is currently being further typed.

- *Mycoplasma pneumoniae* infection reports are beginning to increase again. The seasonal peak last year was in September-October. The number of reports has not declined to the levels before last spring, so a large peak is expected this year (Figure 4). A total of 107 reports were received this fortnight.

Figure 4. *Mycoplasma pneumoniae* laboratory reports, January 1992 to August 1993, by month of specimen collection



- There were 69 cases of **Q fever** reported this fortnight, bringing the total for the year to 358, more than for any year since 1982. There were 56 males in the age range one to 81 years and 13 females in the age range 7 to 66 years. Eight were described as meat workers. Reported locations were in many areas of New South Wales and Queensland.

Australian Sentinel Practice Research Network

The Australian Sentinel Practice Research Network collected data from 5777 patient encounters in Week 36 and from 6140 patient encounters in Week 37 (Table 1). The rate of reporting of influenza is about the same as for the previous fortnight.

Table 1. Australian Sentinel Practice Research Network, Weeks 36 and 37 1993

| Condition | Week 36, to 5 September 1993 | | Week 37, to 12 September 1993 | |
|-----------------|------------------------------|--------------------------|-------------------------------|--------------------------|
| | Reports | Rate per 1000 encounters | Reports | Rate per 1000 encounters |
| Influenza | 118 | 20.4 | 118 | 19.2 |
| Measles | 3 | 0.5 | 0 | 0 |
| Rubella | 1 | 0.2 | 5 | 0.8 |
| Pertussis | 0 | 0 | 0 | 0 |
| Genital herpes | 5 | 0.8 | 2 | 0.3 |
| Gastroenteritis | 77 | 13.3 | 68 | 11.1 |

Table 2. New diagnoses of HIV infection, new diagnoses of AIDS and deaths from AIDS occurring in the period 1 April to 30 April 1993, by sex and State or Territory in which diagnosis was made

| | | ACT | NSW | NT | Qld | SA | Tas | Vic | WA | TOTALS FOR AUSTRALIA | | | |
|----------------|--------------------|-----|-----|----|-----|----|-----|-----|----|----------------------|------------------|-------------------|-------------------|
| | | | | | | | | | | This Period 1993 | This Period 1992 | Year to Date 1993 | Year to Date 1992 |
| HIV Diagnoses | Female | 0 | 5 | 0 | 1 | 0 | 0 | 2 | 0 | 8 | 10 | 30 | 36 |
| | Male | 0 | 39 | 0 | 0 | 4 | 0 | 14 | 0 | 57 | 90 | 331 | 418 |
| | Sex not reported | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 1 | 0 | 8 | 13 |
| | Total ¹ | 0 | 44 | 0 | 2 | 4 | 0 | 16 | 0 | 66 | 100 | 279 | 462 |
| AIDS Diagnoses | Female | 0 | 1 | 0 | 0 | 1 | 0 | 1 | 0 | 3 | 0 | 6 | 3 |
| | Male | 0 | 10 | 0 | 3 | 1 | 0 | 15 | 0 | 29 | 23 | 145 | 108 |
| | Total ¹ | 0 | 11 | 0 | 3 | 2 | 0 | 16 | 0 | 32 | 23 | 151 | 111 |
| AIDS Deaths | Female | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 1 | 2 | 5 | 8 |
| | Male | 0 | 21 | 2 | 5 | 0 | 0 | 12 | 1 | 41 | 43 | 143 | 167 |
| | Total ¹ | 0 | 21 | 2 | 6 | 0 | 0 | 12 | 1 | 42 | 46 | 148 | 176 |

1. Persons whose sex was reported as transsexual are included in the totals.

Table 3. Cumulative diagnoses of HIV infection, AIDS and deaths from AIDS since the introduction of HIV antibody testing to 30 April 1993, by sex and State or Territory

| | | ACT | NSW | NT | Qld | SA | Tas | Vic | WA | AUSTRALIA |
|----------------|--------------------|-----|-------|----|------|-----|-----|------|-----|-----------|
| HIV Diagnoses | Female | 10 | 467 | 6 | 68 | 36 | 3 | 126 | 41 | 757 |
| | Male | 137 | 8933 | 66 | 1186 | 498 | 65 | 2828 | 611 | 14324 |
| | Sex not reported | 0 | 2058 | 0 | 2 | 0 | 0 | 64 | 0 | 2124 |
| | Total ¹ | 147 | 11465 | 72 | 1259 | 534 | 68 | 3025 | 653 | 17223 |
| AIDS Diagnoses | Female | 2 | 81 | 0 | 15 | 11 | 2 | 19 | 9 | 139 |
| | Male | 47 | 2366 | 16 | 347 | 157 | 24 | 870 | 183 | 4010 |
| | Total ¹ | 49 | 2452 | 16 | 363 | 168 | 26 | 892 | 192 | 4158 |
| AIDS Deaths | Female | 2 | 46 | 0 | 11 | 3 | 1 | 9 | 3 | 75 |
| | Male | 34 | 1495 | 9 | 235 | 97 | 13 | 601 | 121 | 2605 |
| | Total ¹ | 36 | 1543 | 9 | 247 | 100 | 14 | 612 | 124 | 2685 |

1. Persons whose sex was reported as transsexual are included in the totals.

HIV and AIDS Surveillance

Methodological note

National surveillance for HIV disease is coordinated by the National Centre in HIV Epidemiology and Clinical Research (NCHECR), in collaboration with State and Territory health authorities and the Commonwealth of Australia. Cases of HIV infection are notified to the National HIV Database on the first occasion of diagnosis in Australia, by either the diagnosing laboratory (ACT, New South Wales, Tasmania, Victoria) or by a combination of laboratory and doctor sources (Northern Territory, Queensland, South Australia, Western Australia). Cases of AIDS are notified through the State and Territory health authorities to the National AIDS Registry. Diagnoses of both HIV infection and AIDS are notified with the person's date of birth and name code, to minimise duplicate notifications while maintaining confidentiality.

Tabulations of diagnoses of HIV infection and AIDS are based on data available three months after the end of the reporting interval indicated, to allow for reporting delay and to incorporate newly available information. More detailed information on diagnoses of HIV infec-

tion and AIDS is published in the quarterly *Australian HIV Surveillance Report*, available from the National Centre in HIV Epidemiology and Clinical Research, 376 Victoria Street, Darlinghurst NSW 2010. Telephone: (02) 332 4648 Facsimile: (02) 332 1837.

HIV and AIDS diagnoses and AIDS deaths reported for April 1993, and cumulative to 30 April 1993, as reported to 31 July 1993, are included in this issue of *CDI* (Tables 2 and 3).

Australian Encephalitis Sentinel Chicken Surveillance Programme: Serological Results - July and August 1993

Sentinel chicken serology was undertaken for 21 of the 24 flocks in the Kimberley and Pilbara regions of Western Australia in July and August this year. There was a total of 4 seroconversions to flaviviruses in July and only 2 in August. In the Kimberley there was one seroconversion to Murray Valley encephalitis virus (MVE) at Broome in July. There was one seroconversion to MVE in the new flock at Kununurra and one seroconversion to MVE at Derby in August. These

results indicate there is still low level MVE activity in the Kimberley region.

In the Pilbara region there were 2 seroconversions at the Harding Dam, one to MVE and one dual infection (MVE and Kunjin virus), and one seroconversion to MVE at Marble Bar in July. There was no evidence of flavivirus activity in the region in August.

All the sentinel chicken flocks in Western Australia will be replaced over the next two months.

Flavivirus serology was also carried out for 8 flocks in the Northern Territory in July and August.

There have been two new sentinel chicken flocks established in the Northern Territory since June this year, one at Katherine and one at Coastal Plains Research Station (CPRS) approximately 100km south-east of

Darwin. In July there were 4 seroconversions, 3 to MVE and one to Kunjin virus. One chicken seroconverted to MVE at Palumpa, one to MVE at Katherine and 2 at Leanyer, one to MVE and one to Kunjin virus. One of the pre-bleeds sent to CPRS was also found to be positive for MVE antibodies in July. In August there were 4 seroconversions, 3 to MVE and one to Kunjin virus. There were 2 new seroconversions to MVE at Howard Springs and 2 seroconversions, one to MVE and one to Kunjin, in the Gove chickens.

Information on the location of sentinel chicken flocks was presented in *CDI* 1992;16:55-57 and *CDI* 1992;16:169.

(AK Broom, JS Mackenzie, Department of Microbiology, The University of Western Australia)

Victorian Influenza Surveillance System

Included in this issue of *CDI* are results for 1993 fortnights 7 and 8 for the Victorian Influenza Surveillance System (Table 4). This system is conducted by the Infectious Diseases Unit of Health and Community Services, Victoria, and includes surveillance data supplied by sentinel general practitioners, diagnostic laboratories, hospitals, schools and industry. Total deaths (which usually increase during influenza epidemics) are also being monitored.

Cases seen in sentinel general practices and laboratory cases have increased during this period (Figure 5).

(Raina MacIntyre, Health and Community Services, Victoria)

Sterile Sites Surveillance (LabDOSS)

Data for this fortnight has been provided by 9 laboratories. *CDI* welcomes Ipswich Hospital, Queensland to the LabDOSS Scheme. Their 87 records have been merged into the total 1993 file.

Figure 5. Victorian Influenza Surveillance System, laboratory cases and sentinel GP cases per 100 patients, by reporting fortnight

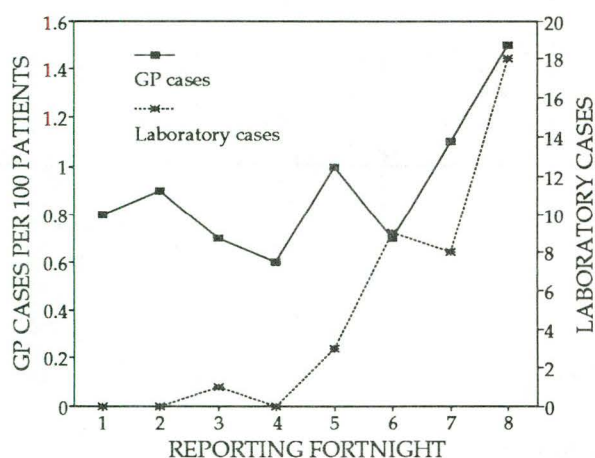


Table 4. Victorian Influenza Surveillance System, fortnights 7 and 8

| | Fortnight 7 26 July to 6 August | Fortnight 8 9 to 20 August |
|--|------------------------------------|-------------------------------|
| General practices (34) | | |
| Influenza cases (per 100 patients) | 38 (1.1) | 83 (1.5) |
| Laboratories (2) | | |
| Influenza cases (per 100 specimens) | 8 ¹ (2.7) | 18 ² (6.2) |
| Hospitals (3) | | |
| Influenza and/or pneumonia admissions (per 100 admissions) | 21 (0.6) | 20 (0.6) |
| Industry (2) | | |
| Total absenteeism (per cent) | 119 (5.7) | |
| Schools (30) | | |
| Total absenteeism, Tuesday (per cent) | 1212 (13.8) | 1488 (17.0) |
| Deaths, total from all causes (per 10,000 population) | 1283 (3.0) | 1355 (3.0) |

1. Seven influenza A (2 H₃N₂), one influenza B.
2. Twelve influenza A, 6 influenza B.

A total of 249 reports have been included: ICPMR, Westmead 25, Institute of Medical and Veterinary Science, Adelaide 76, Northern Tasmanian Pathology Service 21, Royal North Shore Hospital, Sydney 41, Sir Charles Gairdner Hospital, Western Australia 24, Sullivan and Nicolaidis Partners, Queensland 10, Tamworth Laboratory 3, Toowoomba Pathology Laboratory 8, Woden Valley Hospital, ACT 41.

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

Gram positive: *Corynebacterium jeikeium* 2 (associated with IV lines), *Enterococcus faecalis* 4, *Enterococcus faecium* 1, *Enterococcus* species 2, *Streptococcus* group A 4, *Streptococ-*

Table 5. LabDOSS reports of blood isolates, by organism and clinical information

| Organism | Clinical Information | | | | | | Risk Factors | | | | | Total ¹ | Total reported this year |
|--|----------------------|-------------------|--------------|------------------|---------------|------|--------------|------------------|---------|-------------------|----------|--------------------|--------------------------|
| | Bone/Joint | Lower respiratory | Endocarditis | Gastrointestinal | Urinary Tract | Skin | Surgery | Immunosuppressed | IV line | Hospital acquired | Neonatal | | |
| <i>Staphylococcus aureus</i> | 1 | 4 | | 3 | 1 | 11 | 8 | 9 | 5 | 5 | 1 | 50 ² | 536 ³ |
| <i>Staphylococcus epidermidis</i> | | | | | | 2 | 4 | 2 | 5 | | | 15 | 160 |
| <i>Staphylococcus coagulase negative</i> | | 1 | | | | 1 | 1 | | 3 | | 1 | 10 | 183 |
| <i>Streptococcus pneumoniae</i> | | 11 | | | | 2 | | | | | | 15 | 118 |
| <i>Escherichia coli</i> | | | | | 13 | | 1 | 9 | 2 | 1 | | 34 | 557 |
| <i>Haemophilus influenzae</i> | | 1 | | | | 2 | | | | | | 5 ⁴ | 45 |
| <i>Klebsiella pneumoniae</i> | | | | | 2 | | 1 | 2 | 1 | | | 9 | 102 |
| <i>Proteus mirabilis</i> | | | | | 4 | | | 2 | 1 | | | 5 | 49 |
| <i>Pseudomonas aeruginosa</i> | | 3 | | 1 | 1 | | 2 | 6 | 3 | | | 12 | 134 |

1. Only organisms with 5 or more reports are included in this table.
2. MRSA 6.
3. MRSA 151.
4. 2 type b.

Table 6. LabDOSS meningitis reports, by organism and age group

| | 1-4 years | 5-14 years | 15-24 years | 25-34 years | 55-64 years | 75+ years | Total | Total reported this year |
|---------------------------------------|-----------|------------|-------------|-------------|-------------|-----------|-------|--------------------------|
| <i>Neisseria meningitidis</i> group B | | | 1 | | | | 1 | |
| <i>Neisseria meningitidis</i> group C | | | | | 1 | | 1 | 23 ¹ |
| <i>Streptococcus pneumoniae</i> | 1 | | | | 1 | | 2 | 13 |

1. All *Neisseria meningitidis* serogroups.

cus group B 2 (74 year old female, 23 year old male), *Streptococcus* group D non-enterococci 1, *Streptococcus* group G 2, *Streptococcus 'milleri'* 1, *Streptococcus sanguis* 2, *Streptococcus viridans* 1, *Streptococcus species* 2, *Nocardia asteroides* 1.

Gram negative: *Acinetobacter* species 1, *Enterobacter aerogenes* 2, *Enterobacter cloacae* 2, *Enterobacter* species 1, *Klebsiella oxytoca* 4, *Klebsiella* species 4, *Neisseria meningitidis* Group C 1 (14 year old female), *Pseudomonas* species 1, *Serratia* species 2.

Anaerobes: *Bacteroides fragilis* 3, *Bacteroides* species 1, *Bacteroides thetaiotaomicron* 1, *Clostridium septicum* 1, *Propionibacterium acnes* 2.

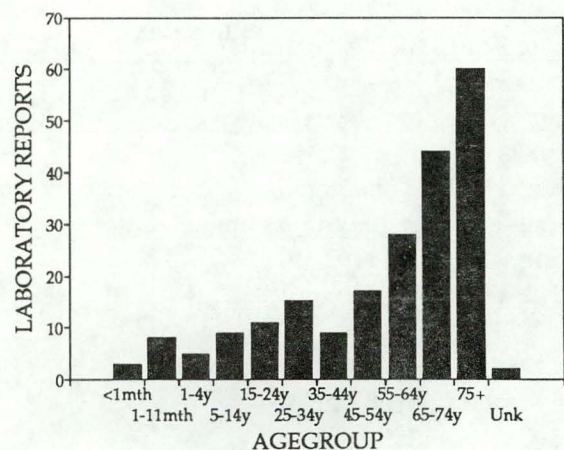
Fungi: *Candida* species 2, *Candida albicans* 2.

Most patients were over the age of 55 years (Figure 6).

CSF isolates and meningitis reports

There were 4 reports of CSF isolates and/or meningitis (Table 6).

Figure 6. LabDOSS reports of blood isolates, by age group



Isolates from sites other than blood or CSF

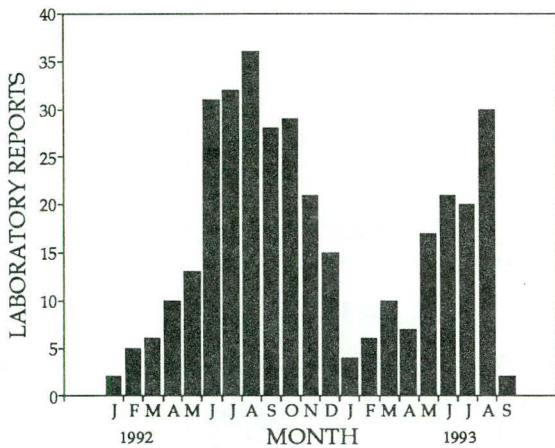
Joint fluid: *Enterobacter* species 1, *Pseudomonas aeruginosa* 1, *Staphylococcus aureus* 6, *Streptococcus* Group B 1, *Streptococcus pneumoniae* 1, *Streptococcus* species 1.

Peritoneal dialysate: *Staphylococcus aureus* 3, *Staphylococcus epidermidis* 4, *Streptococcus sanguis* 2.

Other: *Clostridium perfringens* 1, *Corynebacterium xerosis* 1, *Enterobacter cloacae* 1, *Enterococcus* species 1, *Escherichia coli* 4, *Staphylococcus aureus* 3, *Staphylococcus epidermidis* 3, *Pseudomonas aeruginosa* 1.

The winter seasonal trend of *Streptococcus pneumoniae* reports is shown in Figure 7.

Figure 7. LabDOSS *Streptococcus pneumoniae* isolates 1992 to 1993



National Notifiable Diseases Surveillance System, 22 August to 4 September 1993

There were 2,113 reports received this period (Tables 8, 9 and 10, and Figure 11).

- **Ross River virus infection** was notified for 50 cases this period. There were 26 males and 24 females. Recorded ages were between the 10-14 years and the 75-79 years age groups. Onset dates were recorded as May (1), June (1), July (18), August (29) and September (1). Cases were reported from statistical divisions in Brisbane and in much of rural Queensland, New South Wales and Western Australia.
- There were 43 cases of **dengue** notified. These reports comprised cases in 15 males and 28 females. Recorded ages ranged from the 0-4 to the 85-89 years age groups. All cases were in residents of Queensland and had recorded onset dates between April and July.
- There was a single case of **brucellosis** in a male from Queensland in the 30-34 years age group.

- Two cases of **diphtheria** were reported, bringing the total for the year to 39, compared with 12 for the equivalent period last year. One case was a female in the 35-39 years age group and the other was a male in the 45-49 years age group.
- **Gonococcal infection** was notified for 104 cases. Of these, 65 were males, 34 were females and sex was not recorded in 5 cases. They were aged between the 15-19 years and the 75-79 years age groups.
- There were notifications of 11 cases of **Haemophilus influenzae type b infection**, 4 males and 7 females. Three cases were aged less than one year and 6 were less than 5 years. Other cases were in the 5-9, 15-19, 30-34, and 50-54 (one case each) years age groups. Age was not recorded for one case. There were no apparent clusters of cases.
- There were 83 notifications of **hepatitis A** this period. They were for 45 males and 38 females. Ages ranged from the 0-4 to the 90-94 years age groups. Peak ages were in the 5-9 (15 cases) and the 25-29 (15 cases) age groups.
- There were 5 notifications of **legionellosis** received. One was female (in the 60-64 years age group) and 4 were males. Males were in the 20-24, 40-44 and 60-64 years age groups. The age of one male was unknown.
- Five cases of **leptospirosis** were reported this period. One was a female in the 10-14 years age group. The others were males in the 20-24 (1), 35-39 (1), and 55-59 (2) years age groups. They were from rural New South Wales, Queensland, Victoria and Western Australia.
- There was a single case of **listeriosis** in a female of unknown age from Victoria.
- A total of 31 cases of **malaria** was notified, 21 were males and 10 were females. Ages ranged between the 5-9 and the 60-64 years age groups. Ten were in the 'malaria receptive zone'.
- **Measles** activity is continuing, with 177 cases notified. The total for the year is now 1,562, compared with 605 for the equivalent period last year (Figure 8). Of these cases, 99 were males and 78 were females. Fifteen of the cases were aged less than one year, and the mean age was 11.5 years. There were 33 apparent clusters with up to 22 cases each in separate postcode areas. Apparent clusters were in New South Wales and the Australian Capital Territory (16), Queensland (one), Victoria (one), Western Australia (one) and Tasmania (14).
- There were 22 notifications of **meningococcal infection**, with 12 males and 10 females. Eight cases had recorded ages in the 0-4 years age group and the oldest case was in the 80-84 years age group. There were 3 apparent clusters of 2 cases. Two cases in the same postcode area in New South Wales occurred on the same day. Another apparent cluster occurred in New South Wales and one in Queensland.

Figure 8. Measles notifications, January 1992 to September 1993, by month of onset

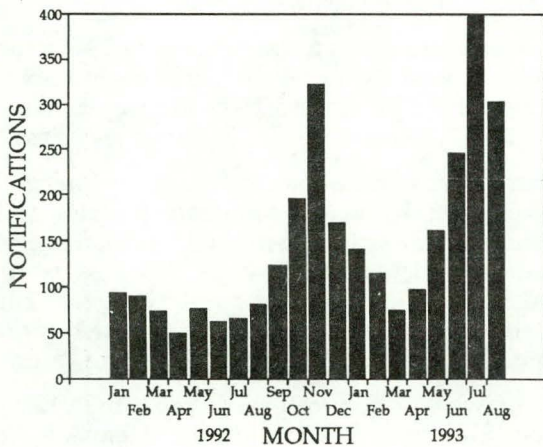
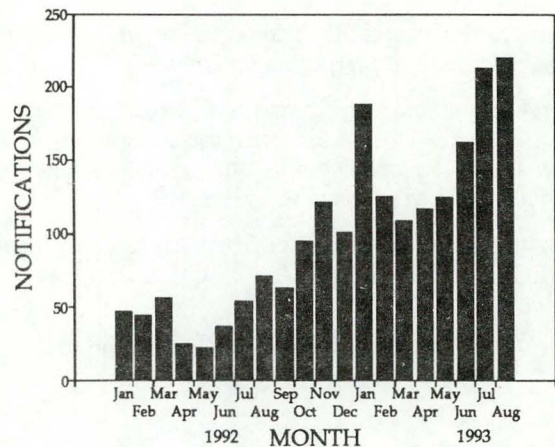
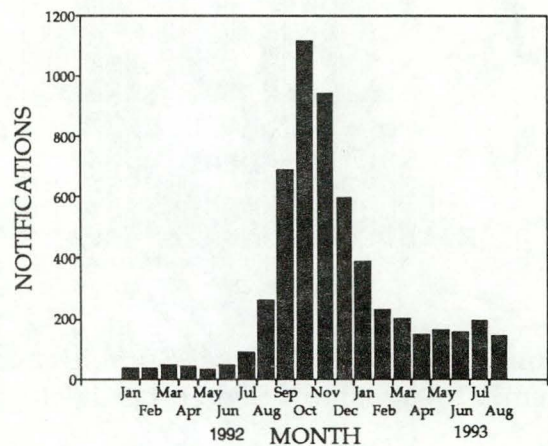


Figure 9. Pertussis notifications, January 1992 to September 1993, by month of onset



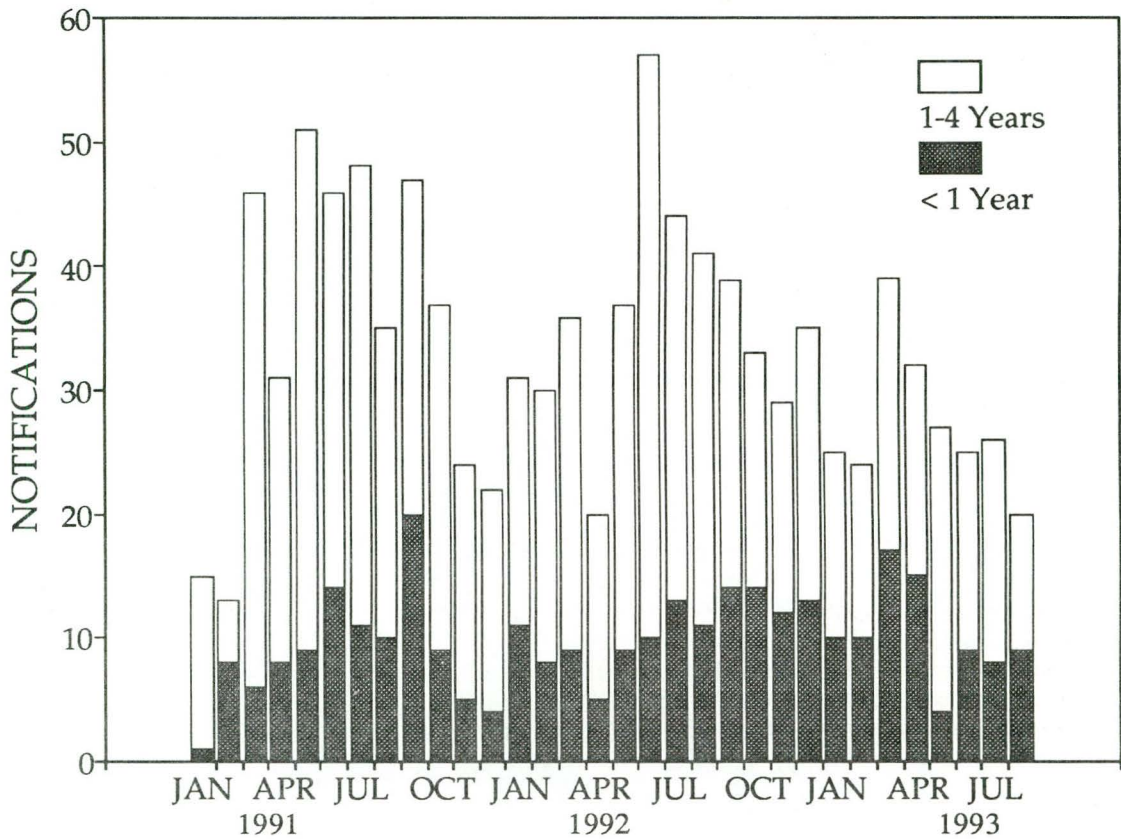
- Pertussis was notified for 156 cases to bring the total for the year to 1,332, compared with 324 for the equivalent period last year (Figure 9). Five of these cases were aged less than one year, 19 were aged less than 5 years and ages ranged up to the 80-84 years age group. There were 24 apparent clusters with 2 to 8 cases each in separate postcode areas.
- There were 51 notifications of Q fever, 44 males and 7 females. Ages ranged from the 0-4 to the 85-89 years age groups. Eleven cases were from Brisbane. Other cases were from rural areas of New South Wales, Queensland, Victoria or South Australia.
- Increased rubella activity continues into the second year. There were 89 notified cases this period, 62 males and 26 females (Figure 10). The mean age of cases was 26.8 years and there were 6 reports for females in the 15-44 years age group. There were 11 apparent clusters of 2 to 3 cases each in separate postcode areas.
- There were 81 notifications of syphilis received this period. Of these, 33 were males and 48 were females.
- There was a single case of tetanus in a male from rural New South Wales in the 70-74 years age group.

Figure 10. Rubella notifications, January 1992 to September 1993, by month of onset



- There were 29 notifications of tuberculosis, 16 males and 12 females. The age of one case was not recorded. Ages ranged from the 0-4 to the 85-89 years age groups.
- There was a single case of typhoid in a male from Queensland in the 30-34 years age group.

Figure 11. Selected National Notifiable Diseases Surveillance System reports, and historical data **



* Includes Ross River virus and Dengue

** 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 7. Notifiable Diseases preventable by vaccines recommended by the NHMRC for routine childhood immunisation for the reporting period 22 August to 4 September 1993

| DISEASES | ACT | NSW | NT | Qld | SA | Tas | Vic | WA | TOTALS FOR AUSTRALIA ¹ | | | |
|--|-----|-----|----|-----|----|-----|-----|----|-----------------------------------|------------------|-------------------|-------------------|
| | | | | | | | | | This Period 1993 | This Period 1992 | Year to Date 1993 | Year to Date 1992 |
| Diphtheria | 0 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 2 | 1 | 39 | 12 |
| <i>Haemophilus influenzae</i> b infection ² | 0 | 3 | 2 | 0 | 2 | 0 | 3 | 1 | 11 | 18 | 310 | 346 |
| Measles | 32 | 79 | 0 | 9 | 1 | 45 | 9 | 2 | 177 | 34 | 1562 | 605 |
| Mumps | 0 | 0 | NN | NN | 0 | NN | 0 | 0 | 0 | 0 | 5 | 16 |
| Pertussis | 3 | 37 | 1 | 22 | 56 | 1 | 33 | 3 | 156 | 44 | 1332 | 324 |
| Poliomyelitis | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Rubella ³ | 9 | 7 | 1 | 39 | 10 | 0 | 13 | 10 | 89 | 103 | 1857 | 489 |
| Tetanus | 0 | 1 | 0 | NN | 0 | 0 | 0 | 0 | 1 | 1 | 7 | 9 |

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 8. Other Notifiable Diseases¹, for the reporting period 22 August to 4 September 1993

| DISEASES | ACT | NSW | NT | Qld | SA | Tas | Vic | WA | TOTALS FOR AUSTRALIA ² | | | |
|---|-----|-----|----|-----|----|-----|-----|----|-----------------------------------|------------------|-------------------|-------------------|
| | | | | | | | | | This Period 1993 | This Period 1992 | Year to Date 1993 | Year to Date 1992 |
| Arbovirus infection (NEC) ³ | 0 | 0 | 1 | 14 | 0 | 0 | 2 | 0 | 17 | 3 | 442 | 214 |
| Ross River virus infection | 0 | 2 | 3 | 42 | - | NN | 0 | 3 | 50 | 92 | 4908 | 5043 |
| Dengue | 0 | - | 0 | 43 | - | NN | 0 | NN | 43 | 19 | 623 | 246 |
| Campylobacteriosis ⁴ | 6 | - | 12 | 59 | 69 | 19 | 56 | 39 | 260 | 312 | 5239 | 5412 |
| Chlamydial infection (NEC) ⁵ | 2 | NN | 38 | 95 | 0 | 2 | 53 | 44 | 234 | 209 | 4498 | 4428 |
| Donovanosis | 0 | NN | 0 | 0 | NN | NN | 0 | 1 | 1 | 4 | 42 | 58 |
| Gonococcal infection ⁶ | 0 | 10 | 28 | 21 | 0 | 1 | 7 | 37 | 104 | 99 | 2020 | 1977 |
| Hepatitis A | 2 | 11 | 11 | 50 | 3 | 0 | 5 | 1 | 83 | 106 | 1335 | 1411 |
| Hepatitis B | 10 | 2 | 5 | 57 | 1 | 0 | 1 | 21 | 97 | 285 | 1577 | 3600 |
| Hepatitis C | 36 | 0 | 10 | 103 | 1 | 16 | 135 | 81 | 382 | 502 | 4707 | 5827 |
| Hepatitis (NEC) | 0 | 0 | 0 | 5 | 0 | 0 | 0 | NN | 5 | 2 | 49 | 44 |
| Legionellosis | 0 | 1 | 0 | 2 | 0 | 0 | 0 | 2 | 5 | 7 | 114 | 144 |
| Leptospirosis | 0 | 1 | 0 | 1 | 0 | 0 | 2 | 1 | 5 | 8 | 111 | 81 |
| Listeriosis | 0 | 0 | NN | 0 | 0 | 0 | 1 | 0 | 1 | 1 | 33 | 27 |
| Malaria | 2 | 3 | 2 | 18 | 0 | 0 | 5 | 1 | 31 | 19 | 443 | 548 |
| Meningococcal infection | 0 | 7 | 0 | 9 | 0 | 0 | 4 | 2 | 22 | 15 | 204 | 183 |
| Ornithosis | 0 | NN | 0 | 1 | 0 | 0 | 0 | 0 | 1 | 5 | 58 | 66 |
| Q fever | 0 | 21 | 0 | 27 | 2 | 0 | 1 | 0 | 51 | 13 | 595 | 337 |
| Salmonellosis (NEC) | 3 | 11 | 21 | 27 | 11 | 4 | 15 | 23 | 115 | 110 | 3344 | 3498 |
| Shigellosis ⁴ | 1 | 0 | 7 | 4 | 2 | 0 | 1 | 5 | 20 | 19 | 532 | 431 |
| Syphilis | 0 | 17 | 23 | 30 | 0 | 0 | 1 | 10 | 81 | 116 | 1575 | 1829 |
| Tuberculosis | 1 | 14 | 0 | 5 | 2 | 1 | 6 | 0 | 29 | 48 | 620 | 576 |
| Typhoid ⁷ | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 1 | 1 | 24 | 39 |
| Yersiniosis (NEC) ⁴ | 0 | - | 0 | 16 | 6 | 0 | 3 | 0 | 25 | 19 | 319 | 441 |

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.
WA: includes 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. NSW and Vic: includes paratyphoid.

NN Not Notifiable.

NEC Not Elsewhere Classified.

- Elsewhere Classified.

Table 9. Rarely Notified Diseases¹ for the reporting period 22 August to 4 September 1993

| DISEASES | Total This Period | Reporting States or Territories | Year to Date 1993 |
|---------------------------------|-------------------|---------------------------------|-------------------|
| Botulism | 0 | | 0 |
| Brucellosis | 1 | Qld | 13 |
| Chancroid | 0 | | 1 |
| Cholera | 0 | | 2 |
| Hydatid infection | 0 | | 18 |
| Leprosy | 0 | | 8 |
| Lymphogranuloma venereum | 0 | | 1 |
| 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 1987 to 1992.

Table 10. Laboratory reports by State or Territory¹ for the reporting period 26 August to 8 September 1993, historical data², and total reports for the year

| | 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 | | 3 | | 10 | | | 4 | | 17 | 10.8 | 248 |
| Mumps virus | | | | 3 | | 1 | 2 | | 6 | 1.3 | 54 |
| Rubella virus | | 7 | | 22 | 7 | | | 1 | 37 | 19.5 | 707 |
| HEPATITIS VIRUSES | | | | | | | | | | | |
| Hepatitis A virus | | 1 | | 8 | | | 3 | | 12 | 20.5 | 417 |
| Hepatitis B virus | 3 | 28 | | 18 | | | 7 | 16 | 72 | 103.2 | 1,853 |
| Hepatitis C virus | 16 | 13 | | 33 | 27 | 1 | 2 | 102 | 194 | 101.0 | 3,016 |
| Hepatitis D virus | | 1 | | | | | 1 | | 2 | 2.7 | 40 |
| Hepatitis E virus | | | | | | | 3 | | 3 | .0 | 5 |
| ARBOVIRUSES | | | | | | | | | | | |
| Ross River virus | | 3 | | 53 | | | | | 56 | 13.0 | 1,673 |
| Barmah Forest virus | | 2 | 1 | 5 | | | | | 8 | 4.2 | 170 |
| Dengue type 1 | | 1 | | | | | | | 1 | .2 | 3 |
| Dengue type 2 | | | | 102 | | | | | 102 | 14.5 | 403 |
| Dengue not typed | | | | 13 | | | | | 13 | 1.3 | 103 |
| Flavivirus (unspecified) | | 1 | | 13 | | | | | 14 | 1.5 | 101 |
| ADENOVIRUSES | | | | | | | | | | | |
| Adenovirus type 1 | | 2 | | | | | 3 | | 5 | 3.2 | 62 |
| Adenovirus type 2 | | 7 | | | | | | | 7 | 7.2 | 92 |
| Adenovirus type 3 | 2 | 3 | | | | | 2 | | 7 | 3.8 | 179 |
| Adenovirus type 5 | | | | | | | 1 | | 1 | 1.0 | 26 |
| Adenovirus type 8 | | | | | | | 1 | | 1 | 2.2 | 17 |
| Adenovirus type 11 | | 1 | | | | | | | 1 | .8 | 6 |
| Adenovirus not typed/pending | | 11 | | 40 | 5 | | 16 | 10 | 82 | 51.0 | 924 |
| HERPES VIRUSES | | | | | | | | | | | |
| Herpes simplex virus type 1 | | 10 | | 56 | 3 | | 39 | 23 | 131 | 137.7 | 3,019 |
| Herpes simplex virus type 2 | 1 | 20 | 1 | 53 | 3 | | 28 | 44 | 150 | 183.2 | 3,637 |
| Herpes simplex not typed/pending | 9 | 10 | | 2 | | | 7 | 3 | 31 | 41.8 | 495 |
| Herpes virus type 6 | | 1 | | | | | | | 1 | .0 | 3 |
| Cytomegalovirus | | 16 | 1 | 47 | 4 | 1 | 15 | 13 | 97 | 82.2 | 1,241 |
| Varicella-zoster virus | | 9 | 1 | 16 | 2 | | 7 | 7 | 42 | 27.3 | 726 |
| Epstein-Barr virus | | 12 | | 26 | 18 | | 6 | 1 | 63 | 63.3 | 1,325 |
| OTHER DNA VIRUSES | | | | | | | | | | | |
| Poxvirus group not typed | | | | | | | | 2 | 2 | .0 | 7 |
| Parvovirus | | 4 | | | 1 | | 2 | | 7 | 4.0 | 96 |
| PICORNA VIRUS FAMILY | | | | | | | | | | | |
| Coxsackievirus A9 | 8 | 1 | | | | | 2 | | 11 | .5 | 53 |
| Coxsackievirus A16 | | 1 | | | | | | | 1 | .5 | 9 |
| Coxsackievirus B3 | | 1 | | | | | | | 1 | .2 | 13 |
| Echovirus type 9 | | 1 | | | | 1 | | | 2 | 3.0 | 49 |
| Echovirus type 11 | | 5 | | | | | | | 5 | .8 | 72 |
| Echovirus type 15 | | 1 | | | | | | | 1 | .0 | 2 |
| Echovirus type 21 | | 1 | | | | | | | 1 | .3 | 3 |
| Echovirus type 30 | | | | | | | 8 | | 8 | .0 | 42 |
| Poliovirus type 1 (uncharacterised) | | 2 | | | | | | | 2 | 2.5 | 38 |
| Poliovirus type 2 (uncharacterised) | | 2 | | | | | | | 2 | 1.5 | 28 |

Table 10. Laboratory reports by State or Territory¹ for the reporting period 26 August to 8 September 1993, historical data², 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 | | | |
| Poliovirus type 3 (uncharacterised) | | 1 | | | | | | | 1 | 2.0 | 25 |
| Rhinovirus (all types) | | 6 | | 5 | | | 12 | 6 | 29 | 29.0 | 542 |
| Enterovirus not typed/pending | | 3 | | 23 | | | 7 | 3 | 36 | 21.8 | 576 |
| ORTHO/PARAMYXOVIRUSES | | | | | | | | | | | |
| Influenza A virus | | 8 | | 19 | 13 | | 13 | 10 | 63 | 44.5 | 229 |
| Influenza B virus | | 4 | | 47 | 22 | 1 | 21 | 15 | 110 | 25.7 | 341 |
| Parainfluenza virus type 1 | | | | | | | 1 | 1 | 2 | 3.5 | 26 |
| Parainfluenza virus type 2 | | | | 7 | 2 | | | 1 | 10 | 4.2 | 112 |
| Parainfluenza virus type 3 | 1 | 7 | | | 1 | 1 | 6 | 13 | 29 | 25.3 | 385 |
| Parainfluenza virus typing pending | | | | | | | 3 | | 3 | 1.8 | 39 |
| Respiratory syncytial virus | 2 | 46 | 1 | 66 | 29 | 10 | 95 | 37 | 286 | 248.5 | 3,020 |
| OTHER RNA VIRUSES | | | | | | | | | | | |
| Rotavirus | 45 | 114 | 1 | | 32 | 2 | 27 | 21 | 242 | 231.5 | 1,557 |
| Reovirus (unspecified) | | | | | | | 3 | | 3 | .5 | 6 |
| Calici virus | | 1 | | | | | | | 1 | 1.5 | 9 |
| Norwalk agent | | 1 | | | | | | | 1 | .8 | 16 |
| Coronavirus | | 1 | | | | | | | 1 | .8 | 12 |
| OTHER | | | | | | | | | | | |
| <i>Chlamydia trachomatis</i> not typed | 3 | 5 | | 51 | 2 | | 3 | 34 | 98 | 132.5 | 2,199 |
| <i>Chlamydia psittaci</i> | | | | 4 | | | | | 4 | 3.0 | 62 |
| <i>Mycoplasma pneumoniae</i> | | 21 | | 67 | | 2 | 16 | 1 | 107 | 55.5 | 1,491 |
| <i>Coxiella burnetii</i> (Q fever) | | 25 | | 40 | 3 | | 1 | | 69 | 10.3 | 410 |
| <i>Streptococcus</i> group A | | 1 | | 14 | | | | | 15 | 4.2 | 215 |
| <i>Bordetella pertussis</i> | | | | | | 1 | 21 | | 22 | .7 | 171 |
| <i>Bordetella</i> species | | | | 6 | | | | | 6 | .8 | 162 |
| <i>Legionella</i> species | | | | 1 | | | | | 1 | .0 | 7 |
| <i>Cryptococcus</i> species | | | | 16 | | | | | 16 | .3 | 24 |
| <i>Leptospira hardjo</i> | | | | 2 | | | | | 2 | .5 | 8 |
| <i>Leptospira</i> species | | 1 | | 2 | | | | | 3 | .8 | 14 |
| <i>Treponema pallidum</i> | | 6 | | 58 | | | 1 | | 65 | 11.2 | 507 |
| <i>Toxoplasma gondii</i> | | | | 2 | | | | | 2 | 1.5 | 45 |
| <i>Echinococcus granulosus</i> | | | | 3 | | | | | 3 | .2 | 15 |
| TOTAL | 90 | 432 | 6 | 953 | 174 | 21 | 389 | 364 | 2,429 | 1,774.7 | 33,182 |

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 11. Laboratory reports by clinical information for the reporting period 26 August to 8 September 1993

| | Encephalitis | Meningitis | Other CNS | Congenital | Respiratory | Gastrointestinal | Hepatic | Skin | Eye | Muscle/joint | Genital | Other/unknown | Total |
|----------------------------------|--------------|------------|-----------|------------|-------------|------------------|---------|------|-----|--------------|---------|---------------|-------|
| MEASLES, MUMPS, RUBELLA | | | | | | | | | | | | | |
| Measles virus | | 1 | | | 1 | | | 4 | | | | 11 | 17 |
| Mumps virus | | | | | | | | | | 1 | | 5 | 6 |
| Rubella virus | | | | 1 | | | | 17 | | 2 | | 17 | 37 |
| HEPATITIS VIRUSES | | | | | | | | | | | | | |
| Hepatitis A virus | | | | | | | 10 | | | | | 2 | 12 |
| Hepatitis B virus | | | | | | | 9 | | | | | 63 | 72 |
| Hepatitis C virus | | | | | 1 | 1 | 16 | | | | | 176 | 194 |
| Hepatitis D virus | | | | | | | 1 | | | | | 1 | 2 |
| Hepatitis E virus | | | | | | | 2 | | | | | 1 | 3 |
| ARBOVIRUSES | | | | | | | | | | | | | |
| Ross River virus | | | | | 1 | | 2 | 1 | | 12 | | 40 | 56 |
| Barmah Forest virus | | | | | | | | 1 | | 2 | | 5 | 8 |
| Dengue type 1 | | | | | | | | | | | | 1 | 1 |
| Dengue type 2 | | | | | 1 | | | 6 | | 7 | | 88 | 102 |
| Dengue not typed | | | | | | | | | | | | 13 | 13 |
| Flavivirus (unspecified) | | | | | | | | | | | | 14 | 14 |
| ADENOVIRUSES | | | | | | | | | | | | | |
| Adenovirus type 1 | | | | | 4 | | | | | | | 1 | 5 |
| Adenovirus type 2 | | | | | 2 | 2 | | 1 | 1 | | | 1 | 7 |
| Adenovirus type 3 | | | | | 3 | 2 | | | 2 | | | | 7 |
| Adenovirus type 5 | | | | | | | | | | | | 1 | 1 |
| Adenovirus type 8 | | | | | | | | | 1 | | | | 1 |
| Adenovirus type 11 | | | | | | | | | | | | 1 | 1 |
| Adenovirus not typed/pending | | 1 | 2 | | 37 | 19 | | | 1 | | | 22 | 82 |
| HERPES VIRUSES | | | | | | | | | | | | | |
| Herpes simplex virus type 1 | | | 1 | | 9 | | | 74 | 6 | | 30 | 11 | 131 |
| Herpes simplex virus type 2 | | | | | 1 | | | 53 | | | 79 | 17 | 150 |
| Herpes simplex not typed/pending | 1 | 1 | | | 1 | | | 9 | 1 | | 10 | 8 | 31 |
| Herpes virus type 6 | | | | | | | | | | | | 1 | 1 |
| Cytomegalovirus | | | 1 | 2 | 41 | 1 | 8 | 1 | | 2 | | 41 | 97 |
| Varicella-zoster virus | | | | | | | 2 | 24 | 2 | | 1 | 13 | 42 |
| Epstein-Barr virus | 1 | | | | 4 | | 3 | 2 | | 1 | | 52 | 63 |
| OTHER DNA VIRUSES | | | | | | | | | | | | | |
| Poxvirus group not typed | | | | | 2 | | | | | | | | 2 |
| Parvovirus | | | | | | | | | | 1 | | 6 | 7 |
| PICORNA VIRUS FAMILY | | | | | | | | | | | | | |
| Coxsackievirus A9 | 1 | 2 | | | 3 | | | 3 | | | | 2 | 11 |
| Coxsackievirus A16 | | | | | | | | 1 | | | | | 1 |
| Coxsackievirus B3 | | | | | | | | | | | | 1 | 1 |
| Echovirus type 9 | | 2 | | | | | | | | | | | 2 |
| Echovirus type 11 | | | | | | 1 | | | | | | 4 | 5 |
| Echovirus type 15 | | | | | | 1 | | | | | | | 1 |
| Echovirus type 21 | | | | | | | | | | | | 1 | 1 |
| Echovirus type 30 | | 6 | | | | 1 | | | | | | 1 | 8 |

Table 11. Laboratory reports by clinical information for the reporting period 26 August to 8 September 1993, continued

| | Encephalitis | Meningitis | Other CNS | Congenital | Respiratory | Gastrointestinal | Hepatic | Skin | Eye | Muscle/joint | Genital | Other/unknown | Total |
|--|--------------|------------|-----------|------------|-------------|------------------|---------|------|-----|--------------|---------|---------------|-------|
| Poliovirus type 1 (uncharacterised) | | | | | 1 | | | | | | | 1 | 2 |
| Poliovirus type 2 (uncharacterised) | | | | | | 1 | | | | | | 1 | 2 |
| Poliovirus type 3 (uncharacterised) | | | | | | 1 | | | | | | | 1 |
| Rhinovirus (all types) | | | | | 23 | | | 1 | | | | 5 | 29 |
| Enterovirus not typed/pending | | 2 | | | 10 | 12 | | | | | | 12 | 36 |
| ORTHO/PARAMYXOVIRUSES | | | | | | | | | | | | | |
| Influenza A virus | | | | | 40 | | 1 | | | 4 | | 18 | 63 |
| Influenza B virus | | 1 | 2 | | 46 | | | | | 4 | | 57 | 110 |
| Parainfluenza virus type 1 | | | | | 2 | | | | | | | | 2 |
| Parainfluenza virus type 2 | | | | | 4 | | | | | | | 6 | 10 |
| Parainfluenza virus type 3 | | | | | 25 | | | | | | | 4 | 29 |
| Parainfluenza virus typing pending | | | | | 3 | | | | | | | | 3 |
| Respiratory syncytial virus | | 1 | 1 | | 271 | 3 | | | | | | 10 | 286 |
| OTHER RNA VIRUSES | | | | | | | | | | | | | |
| Rotavirus | | | | | | 234 | | | | | | 8 | 242 |
| Reovirus (unspecified) | | | | | 3 | | | | | | | | 3 |
| Calici virus | | | | | | 1 | | | | | | | 1 |
| Norwalk agent | | | | | | 1 | | | | | | | 1 |
| Coronavirus | | | | | | 1 | | | | | | | 1 |
| OTHER | | | | | | | | | | | | | |
| <i>Chlamydia trachomatis</i> not typed | | | | | | | | | | | 60 | 38 | 98 |
| <i>Chlamydia psittaci</i> | | | | | 2 | | | | | | | 2 | 4 |
| <i>Mycoplasma pneumoniae</i> | | | | | 57 | 1 | 1 | 1 | | 2 | | 45 | 107 |
| <i>Coxiella burnetii</i> (Q fever) | | | | | 3 | | 2 | | | 1 | | 63 | 69 |
| <i>Streptococcus</i> group A | | | | | 2 | | | 2 | | 1 | | 10 | 15 |
| <i>Bordetella pertussis</i> | | | | | 22 | | | | | | | | 22 |
| <i>Bordetella</i> species | | | | | 3 | | | | | | | 3 | 6 |
| <i>Legionella</i> species | | | | | | | | | | | | 1 | 1 |
| <i>Cryptococcus</i> species | | 2 | 2 | | 3 | | | | | | | 9 | 16 |
| <i>Leptospira hardjo</i> | | | | | | 1 | | | | | | 1 | 2 |
| <i>Leptospira</i> species | | | | | | | | | | | | 3 | 3 |
| <i>Treponema pallidum</i> | | | | | | | | | | | 6 | 59 | 65 |
| <i>Toxoplasma gondii</i> | | | | | | | | | | | | 2 | 2 |
| <i>Echinococcus granulosus</i> | | | | | | | | | | | | 3 | 3 |
| TOTAL | 3 | 19 | 9 | 3 | 631 | 284 | 57 | 201 | 14 | 40 | 186 | 982 | 2429 |

Table 12. Laboratory reports by contributing laboratories for the reporting period 26 August to 8 September 1993

| STATE OR TERRITORY | LABORATORY | REPORTS |
|------------------------------|--|---------|
| Australian Capital Territory | Woden Valley Hospital, Canberra | 87 |
| New South Wales | Institute of Clinical Pathology & Medical Research, Westmead | 197 |
| | Royal Alexandra Hospital for Children, Camperdown | 35 |
| | South West Area Pathology Service, Liverpool | 95 |
| | Tamworth Laboratory, New England Pathology | 63 |
| Queensland | Queensland Medical Laboratory, West End | 339 |
| | State Health Laboratory, Brisbane | 659 |
| South Australia | Institute of Medical & Veterinary Science, Adelaide | 171 |
| Tasmania | Northern Tasmanian Pathology Service, Launceston | 16 |
| Victoria | Microbiological Diagnostic Unit, University of Melbourne | 3 |
| | Monash Medical Centre, Melbourne | 21 |
| | Royal Children's Hospital, Melbourne | 165 |
| | Victorian Infectious Diseases Reference Laboratory, Fairfield Hospital | 207 |
| Western Australia | Princess Margaret Hospital, Perth | 102 |
| | State Health Laboratory Services, Perth | 269 |
| TOTAL | | 2429 |