ISSN 0725 - 3141

Communicable Diseases Intelligence

Bulletin number 90/8
Issue date: 23 April 1990

Contents:

Editor *Dr Robert Hall*

VIRUSES, CHLAMYDIAS, COXIELLAS, RICKETTSIAS AND MYCOPLASMAS REPORTING SCHEME:

A total of 991 reports were processed during this period (29 March to 11 April 1990).

There were 8 reports of rubella. One of these was in a 17-year-old woman in the first trimester of pregnancy.

There were 3 reports of virus isolations associated with Sudden Infant Death Syndrome. In one, poliovirus type 2 was isolated from a post-mortem sample from a baby boy. Untyped enterovirus was detected in faeces samples from the other two patients. One was a three-year-old boy who had experienced colitis and otitis media and the other was a two-year-old girl who had had skin and/or mucous membrane disease.

Enterovirus type 71 was reported from two patients who had experienced central nervous system disease. One patient was a two-year-old girl and the other was a one-year-old boy who had also had respiratory symptoms. (This virus is a recently discovered human enterovirus subtype which is of interest because it has the potential to cause epidemic paralytic disease.)

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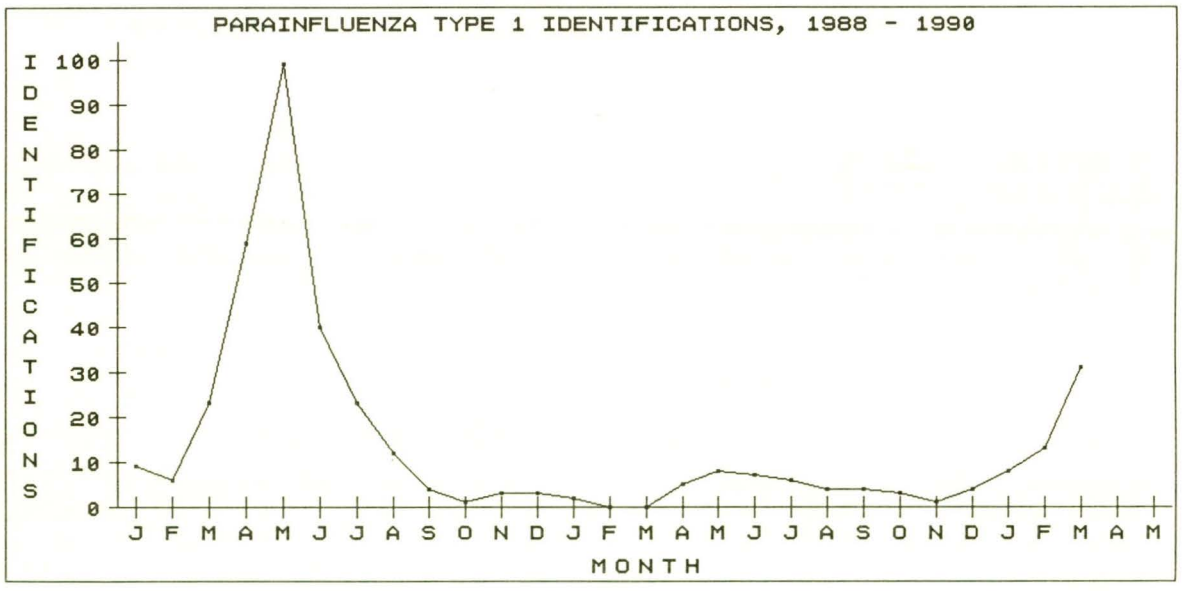
- The Bulletin is compiled and distributed by the Communicable Diseases Section, Communicable Diseases and Social Health Branch, Telephone: (062) 89 1555, Department of Community Services and Health.
- Contributions are solicited, and do not preclude later publication elsewhere.

- Figures given may be subject to revision.

There were 66 reports of Ross River Virus. Locations reported were Townsville (QLD) - 24, Rockhampton (QLD) - 12, Toowoomba (QLD) - 4, Cairns (QLD) - 4, Mackay (QLD) - 3, Brisbane (QLD) - 3, Gold Coast (QLD) - 2, Western Queensland - 2, Kununurra (WA) - 2, and 1 each from Casuarina (NT), Halls Creek (WA), Leanyer (NT), Sydney (NSW), Darling Downs (QLD) and Tasmania.

The Autumn-Winter seasonal increase in respiratory syncytial virus is beginning to occur. There were 19 cases in both January and February and then 35 cases reported in March, the highest number since October last year. Of the 77 cases reported so far this year, 55 have been in children less than 1-year-old and 27 in children three-months-old or less. Symptoms reported have been upper and/or lower respiratory tract disease.

Reports of parainfluenza type 1 are also showing a seasonal increase (figure). In 1989, there were only 44 reports of this virus, and after 8 reports in January 1990 and 13 in February, there were 31 cases in March, the highest number since June 1988. The 56 patients so far this year have all been under 14 years. Symptoms have included upper and lower respiratory tract disease, croup and fever. A large number of the isolates have been from South Australia.



Dengue was diagnosed in 5 patients. One of these was dengue-2 contracted in Papua New Guinea. Another patient had become infected whilst travelling in the Solomon Islands.

A case of cholera was notified. The patient was a 50-year-old male who contracted the disease in Indonesia. He arrived back in Australia on 16 March, was admitted to Royal Prince Alfred Hospital in Sydney on 19 March, and was discharged a few days later. His defacto wife and two teenage children experienced no symptoms of the disease.

One case of hepatitis C was reported. The patient had experienced chronic persistent hepatitis and a tubo-ovarian mass. These symptoms were confirmed by biopsy and surgery, respectively.

Viral identifications made using the polymerase chain reaction (PCR) method are beginning to be reported. In this reporting period, a cytomegalovirus (CMV) infection in an 8-year-old boy was diagnosed after PCR amplifcation of viral sequences in a urine sample. The boy had been on cytotoxic drugs so serological diagnosis would probably not have been possible. The PCR method also had the advantage of speed over virus isolation in cell culture, the other method available for CMV identification.

Q fever was diagnosed 18 times in this reporting period. One patient was an abattoir worker; no exposure details were provided for the other patients.

OVERSEAS BRIEFS

1. CHOLERA IN ANGOLA

After a decline in cholera activity in Angola in January, an increase has again been reported. The Provinces which are currently most affected are Luanda, Benguela and Namibe, and cases have also occurred in the Provinces of Kwanza-Norte, Huila and Bengo. In Luanda Province, around 50 cases per day were registered for a certain period during February but the figure has now decreased to approximately 20 cases per day. In the period 1 January to 6 March there was a total of 1,657 cases and 120 deaths reported throughout the country.

2. DENGUE IN FIJI

Dengue activity continued at a high level in Fiji in February. The Ministry of Health reports that the number of cases per week increased through the month and that in the 4 weeks ending 24 February, there were 283 cases and 3 deaths.

AUSTRALIAN ENCEPHALITIS FATALITY - UPDATE

Further details have been made available on the Australian Encephalitis fatality reported in CDI 90/7. The patient, a seventeen-month-old boy from the Halls Creek area of northern Western Australia, had had *Haemophilus influenzae* meningitis followed by general malaise, fever, seizures and neuro-deterioration. The diagnosis of Australian encephalitis caused by Murray Valley Encephalitis virus was made on 19 March 1990 when serological tests revealed IgG and IgM to the virus.

The Health Department of Western Australia fogged the townsite of Halls Creek with Maldison ULV insecticide on the evening of 25 March, following the detection of low to moderate numbers of potential mosquito vectors for Australian Encephalitis in mosquito traps set the preceeding evening. The following evening, fogging was carried out at Koongie Park, the settlement southwest of Halls Creek at which the boy probably became infected. This followed the detection of moderate numbers of proven vectors of the disease in mosquito traps set the preceeding evening.

Evaluation of the effectiveness of the fogging was made difficult by the onset on 27 March of still, humid conditions which encourage mosquito biting activity. Traps set on that day at both Halls Creek and Koongie Park showed mosquito numbers which had not dropped significantly, but because of the weather conditions it was concluded that real numbers had probably fallen.

Subsequently, there has been dry seasonal conditions, characterised by southeast winds, low humidity and no rainfall. These conditions are inimical to mosquito breeding, survival and dispersal, so a continuing risk to human health is no longer considered likely.

While the Health Department's team was at Halls Creek, the sentinel chicken flock was bled to enable an assessment of virus activity in the area. Arrangements were also made for regular bleeding of this flock in the future.

(Correction: in the article on this subject in CDI 90/7, Dr David Smith was incorrectly referred to as being from the Princess Margaret Hospital. He is from the Queen Elizabeth II Medical Centre in Perth.)

INCREASE IN MENINGOCOCCAL INFECTIONS DETECTED AT THE ROYAL CHILDREN'S HOSPITAL, MELBOURNE

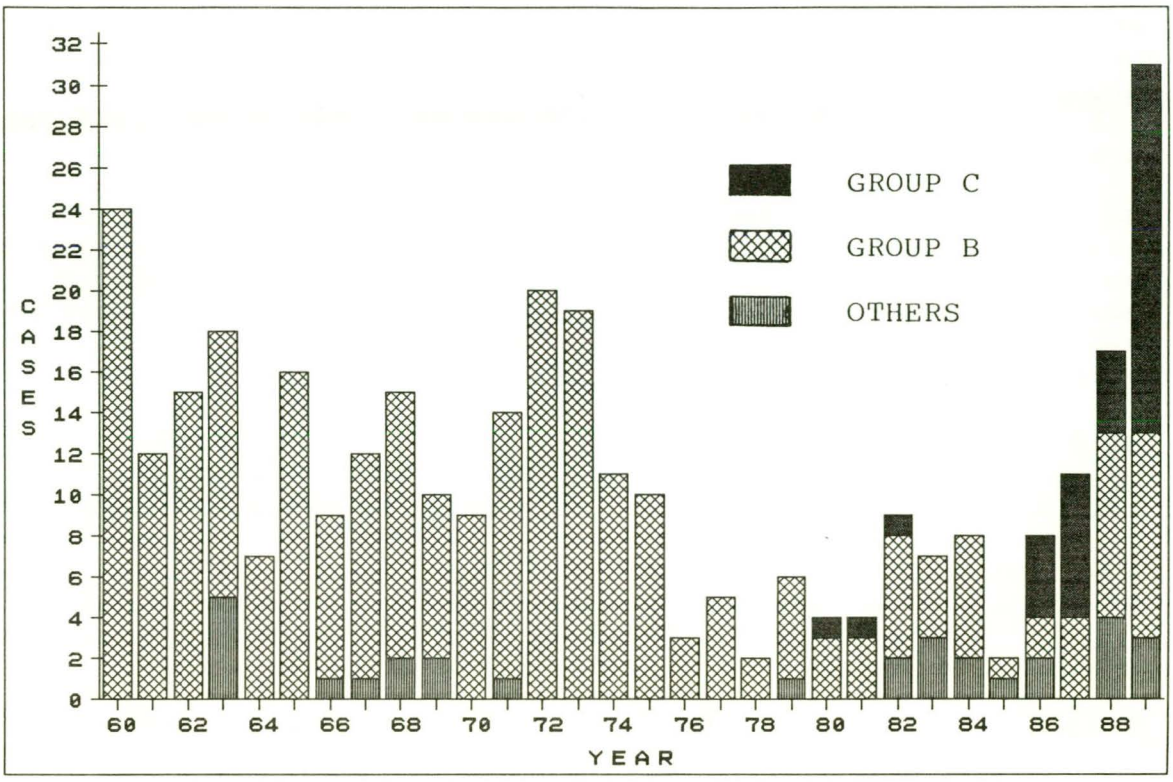
(Based on 'Recent Increase in Meningococcal Infections', Clements, D. and Gilbert, L. 'Infectious Diseases Bulletin', Nov 89, Department of Microbiology, Royal Children's Hospital, Melbourne.)

Since the 1950s, infections with *Neisseria meningitidis* have been relatively uncommon. At the Royal Children's Hospital in Melbourne, the number of patients from whom *N. meningitidis* was isolated from CSF or blood averaged less than 10 per year in the period 1960 to 1975 and decreased to less than 5 per year between 1975 and 1987. However, there has been a significant increase in the past two years with 11 isolates in 1988 and 31 in 1989 (Figure 1).

The majority of *N. meningitidis* isolates in the last thirty years have been Group B (247/301 or 82%). Group A has been responsible for 16 cases, mostly in the 1960s (5 in 1963) and Group Y has only been documented in 3 cases (separate years). Group C was first defected in 1982 and since then has comprised an increasing proportion of *N. meningitidis* isolates. In 1989, 58% (18/31) of the isolates were Group C.

During the 1960-1989 period, the median ages of the 301 children with group A, B and C disease have been 2.75, 0.84 and 1.77 years respectively. Thirty-three percent of the cases occurred in the months of July and August. The median age of meningococcal patients at the Royal Children's Hospital has been higher in the last three years and the increase in median age and increase in incidence may suggest that a substantial increase in disease be expected (1).

Figure 1: Meningococcal infections, Royal Children's Hospital, 1960-1989



The epidemiology of *N. meningitidis* infections in Victoria before 1988 is consistent with that reported in New Zealand, Britain and North America (2-5). There is a background of Group B disease which affects the youngest children; Group B disease is not vaccine preventable at any age and there are increasing reports of rifampicin and sulfonamide resistance (6,7) in other parts of the world. Additionally, in Victorian there have been small clusters of Group A disease (in the 1960s) or Group C disease (presently). Outbreaks with these serotypes are potentially controllable by immunisation (8). Unfortunately, vaccination of young children, in whom the disease is most common, is relatively unsatisfactory. Protein-conjugate meningococcal vaccines, comparable with those available in the United States for *Haemophilus influenzae* type b are under development and are expected to be more effective in young children.

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CDI Editorial Comment

The current high proportion of Group C *N.meningitidis* seen at the Royal Children's Hospital has also been detected in notifications received by the Microbiological Diagnostic Unit (MDU), University of Melbourne, for the Victorian Hospitals Pathogen Surveillance Scheme/Standing Committee on Infection Control.

The MDU has been collecting data on *N. meningitidis* meningitis and bacteraemia cases in Victoria since July 1988. The serotypes and sources of the 112 cases notified up until February, 1990 are detailed in Table 1. Fifty-one percent of these were Group C and 68% were in children aged less than 16 years.

Table 1: Serogroup and source of Victorian isolates of *N. meningitidis*, July 1988-February 1990.

Group	CSF Isolates	Blood Isolates	Total
C	43	14	57
B	24	13	37
Others	10	8	18
Total	77	35	112

Figure 2 shows these cases by serogroup and month of notification. There was a peak in notifications in late winter, 1989; this reflects the long-term pattern of 33% of the Royal Children's Hospital's cases occurring in the months of July and August.

Figure 2: *Neisseria meningitidis* notifications, Victoria, July 1988-February 1990.

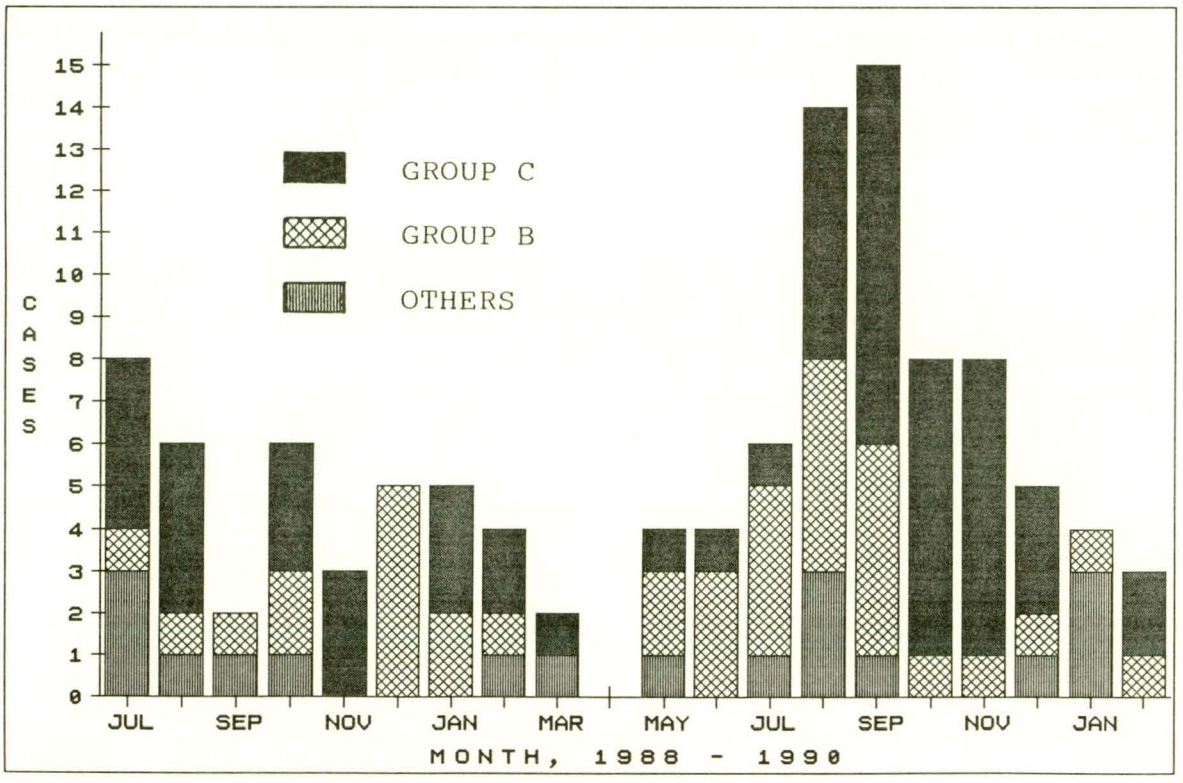
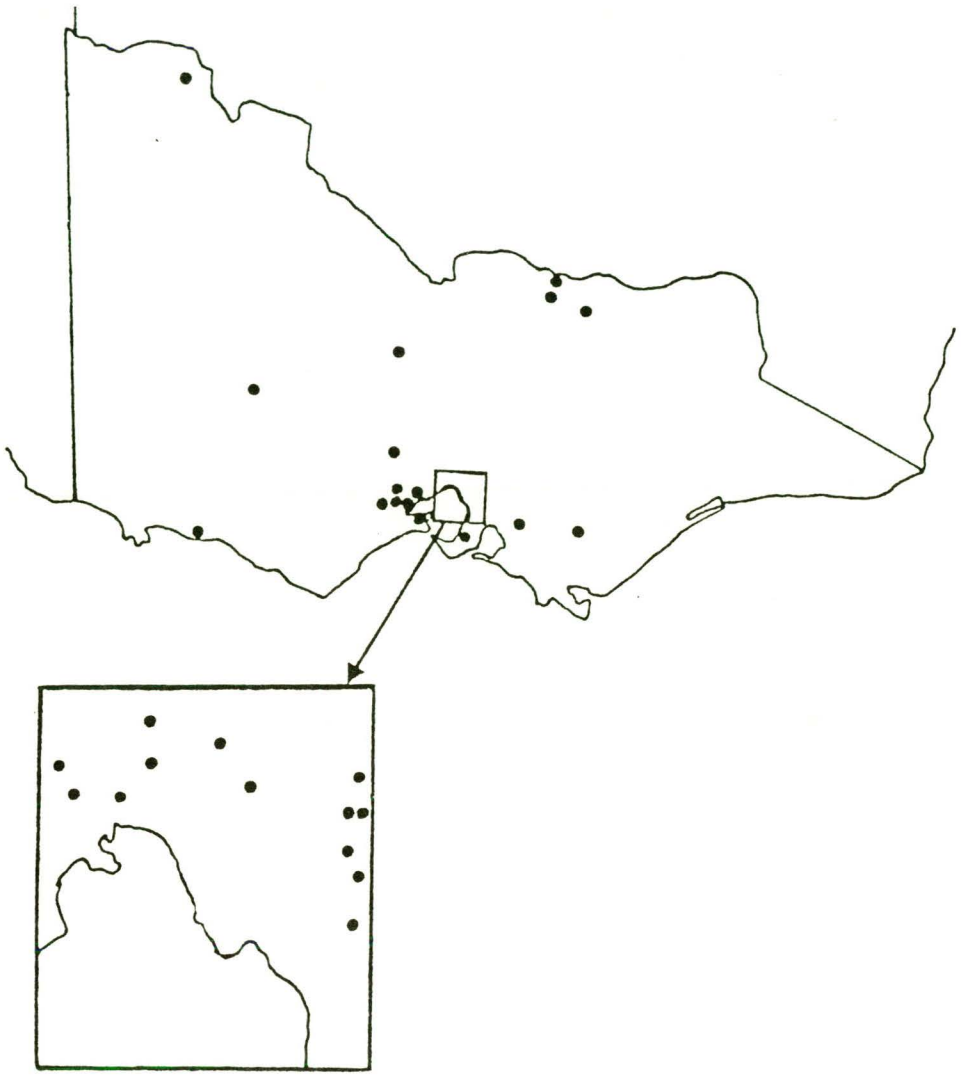


Figure 3 (adapted from Figure 1, *VIC BUG* Insert, February, 1990) shows the geographical distribution of *N. meningitidis* cases in Victoria during the period July 1988 to March 1989. Although the cases were scattered widely throughout the state, areas outside metropolitan Melbourne were disproportionately represented.

Figure 3: Geographical distribution of *N. meningitidis* cases in Victoria, July 1988-March 1989.



There has been a similar high proportion of Group C meningococcal disease in Western Australia recently. A cluster of Group C cases occurred in Katanning (reported in CDI 90/5) and most of the sporadic cases occurring in January and February 1990 were also Group C.

The epidemiology and control of meningococcal disease was reviewed in CDI 89/7.

LEGIONELLA PNEUMOPHILA: MOLECULAR EPIDEMIOLOGY SUPPLEMENTS 'GUMSHOE' EPIDEMIOLOGY

(Contributed by C. Walker, J. Ingham, S. Cameron, Communicable Disease Control Unit, South Australian Health Commission; J. Lanser, Institute of Medical and Veterinary Science; R. Walters, State Water Laboratories, Engineering and Water Supply Department.)

On 23 February 1990, the Communicable Disease Control Unit (CDCU) of the South Australian Health Commission was informed by the Institute of Medical and Veterinary Science that a case of *Legionella pneumophila* serogroup 1 infection had been admitted to an Adelaide metropolitan hospital. The 61-year-old male was a semi-retired waterside worker and alcohol intake and cigarette smoking featured in his risk profile. He had become ill on 16 February.

On 7 March, CDCU was appraised of a second case from the same area of Adelaide. This man's risk factors were similar to those of the first case. Furthermore, the date of onset of his illness was within one incubation period of the former case so they could have been involved in a single source outbreak.

Some of the basic 'gumshoe' epidemiology was undertaken by the wives of the cases while visiting their husbands in the intensive care ward. This was supplemented by extensive interviews by a nurse epidemiologist. An environmental health officer undertook a rapid survey of all the cooling towers in the general area, facilitated by one local council which had all such sites plotted on a map plus data which included the following:

Building use and Ward
Owner and address
Contact person and telephone number
Date of last inspection
Number of towers at site
Whether towers are subject to regular maintenance.

Concurrently, some 300 general practioners in and around the area in which the patients lived and worked were asked to communicate with the CDCU if they were aware of other patients with atypical pneumonias. Pathology courier services provided a fast and convenient means of communicating with the selected population of doctors.

Inspections conducted at the houses of the patients were assisted by the addition of a plumbing inspector to the team. A number of water specimens were collected from the domestic hot and cold water systems. In one of the houses the team noted that the house had been recently replumbed and that the gas water heater was set to deliver water at a temperature of 45°C. This was now about as far as the detective work could go without laboratory assistance. The IMVS had previously obtained from the USA's Centers of Disease Control, Atlanta, a panel of three monoclonal antibodies for typing *L. pneumophila* serogroup 1 isolates. Using these monoclonals, typing of the isolates from these patients and of a number of isolates previously collected from the general area showed that the human strains were of the Pontiac type and that none of the environmental strains were of that type. Subsequently all the

L. pneumophila serogroup 1 isolates from the hot water system noted above and from the fresh cooling tower samples also proved to be non-Pontiac strains.

The laboratory compared the patients' strains using restriction fragment length polymorphism (RFLP) analysis. The DNA probe used in this technique was a recombinant plasmid selected empirically from an *L. pneumophila* serogroup 1 genomal bank. RFLP analysis determined that the two homan isolates were in fact different, hence these cases did not represent a common source outbreak.

These were two sporadic cases associated by time, place and person factors, but not with any identified household or community sources.

LEGIONELLA PNEUMOPHILA: OUTBREAK ASSOCIATED WITH A MIST MACHINE IN A RETAIL FOOD STORE

(Based on WER (1990)10:69-70 and WHO Press Release 89/49)

On 9 January, 1990, the USA's Food and Drug Administration was notified of an outbreak of Legionnaires' disease associated with shopping at a retail food store in Louisiana. The outbreak had occured from 10 October to 13 November 1989, and involved 34 confirmed cases and two deaths. Several other deaths were suspected to have been related to the outbreak.

Available information and laboratory studies have linked this outbreak to an automatic continuous reservoir-type fruit and vegetable mister in the local supermarket. The machine was a type designed specifically for retail food store displays, with a water reservoir tank. It generated a fine aerosol mist with an ultrasonic nebuliser. It appears that this combination of tank and nebuliser may have allowed the bacteria to grow and be transmitted through water droplets.

Legionella pneumophila was isolated from water from the reservoir of the machine. This isolate was the same subtype as the bacteria identified from autopsy specimens from the two patients who died.

This is the fist outbreak of Legionnaires' disease known to be linked to fruit and vegetable misters.

WER Editorial Comment

Legionnaires' disease is an acute pneumonia caused by the bacterium *Legionella pneumophila*. It occurs in outbreaks and as sporadic cases. In addition to causing pneumonia, the bacterium can also cause an influenza-like illness known as Pontiac fever.

Symptoms of *Legionella* infection begin from 2 to 10 days after exposure to the organism, and include fever, cough, chest pain, shortness of breath, headache and muscular pain. Gastrointestional symptoms such as abdominal pain and diarrhoea also occur in many patients. The diagnosis is made serologically or by identifying the organism in respiratory samples. About 15% of Legionnaires' disease cases are fatal, indicating the need for prompt medical attention. Erythromycin is an effective treatment.

Certain people are more susceptible to legionnaires' disease than others. In particular, advanced age, smoking, chronic lung or heart disease, and conditions associated with reduced immunity increase the risk of Legionnaires' disease.

Outbreaks of the disease have most often occured through inhalation of contaminated water droplets dispersed into the air from cooling towers or evaporative condensers. There is no evidence that the disease is spread from person to person, or that it is acquired through food. *Legionella pneumophila* is commonly found in a variety of natural and man-made water sources, including potable water systems, cooling towers and hot water heaters, but outbreaks of disease are infrequent.

To prevent legionnaires' disease, it is recommended that air conditioning systems are cleaned regularly, that hot water systems are maintained at a temperature of at least 50°C and that sterile water is used in humidifiers and respirators.

AIDS AND HIV SURVEILLANCE, AUSTRALIA: 23 FEBRUARY 1990

The National Centre in HIV Epidemiology and Clinical Research reports that as at 23 February 1990, a total of 1789 cases of AIDS had been reported in Australia. Tables 1 to 4 below detail the cases and deaths by period and State of initial diagnosis, sex, age at time of initial diagnosis, transmission category and initial disease reported. There were no newly reported paediatric cases or deaths this period.

(Note that the Centre has advised that future reports will be shortened to two tables. One table with contain the number of new cases and deaths to the end of the four-weekly reporting period, broken down by sex and State/Territory of diagnosis. The second table will contain the number of newly diagnosed cases of HIV infection and the cumulative number of new diagnoses to the end of the reporting period, broken down by sex and State/Territory. More detailed tabulations will be published quarterly, with the next one due in June, 1990.)

Table 1: Cumulative national cases of AIDS and known deaths from AIDS by sex and State/Territory in which initial diagnosis was made, to 23 February 1990.*

STATE/ TERRITORY	CASES Male	Female	Total	% of all cases	KNOWN DEATHS Male	Female	Total	% of cases in State
NSW	1,085 (27)	32	1,117 (27)	62.4	626 (18)	22	648 (18)	58.0
VIC	362 (9)	9	371 (9)	20.8	179 (1)	3	182 (1)	49.1
QLD	122 (1)	5	127 (1)	7.1	71	4	75	59.1
WA	76	6	82	4.6	36	2	38	46.3
SA	59 (2)	2	61 (2)	3.4	30 (2)	1	31 (2)	50.8
NT	2	0	2	0.1	1	0	1	50.0
TAS	8	1	9	0.5	3	1	4	44.4
ACT	20	0	20	1.1	12	0	12	60.0
TOTAL	1,734 (39)	55	1,789 (39)	100.0	958 (21)	33	991 (21)	55.4

* Figures in parentheses are new cases and deaths for the period 27 January to 23 February 1990.

Table 2: Cumulative national cases of AIDS and known deaths from AIDS by sex and age at time of diagnosis, to 23 February 1990.

AGE (YEARS)	CASES Male	Female	Total	% of all cases	KNOWN DEATHS Male	Female	Total	% of cases in age group
0 - 9	10	2	12	0.7	7	1	8	66.7
10 - 19	9	3	12	0.7	4	1	5	41.7
20 - 29	352	17	369	20.6	189	5	194	52.6
30 - 39	747	7	754	42.1	414	3	417	55.3
40 - 49	444	6	450	25.2	238	5	243	54.0
50 - 59	138	9	147	8.2	80	8	88	59.9
60 +	34	11	45	2.5	26	10	36	80.0
TOTAL	1,734	55	1,789	100.0	958	33	991	55.4

Table 3: Cumulative national cases of AIDS and known deaths from AIDS by transmission category: adults/adolescents (14 yrs and older), to 23 February 1990.

TRANSMISSION CATEGORY	CASES	% of all cases	KNOWN DEATHS	% of cases in category
Homosexual/Bisexual	1,574	88.7	868	55.1
IV drug user:				
. Homosexual/Bisexual IV drug user	48	2.7	23	47.9
. Heterosexual IV drug user	26	1.5	6	23.1
Haemophilia	19	1.1	10	52.6
Heterosexual contact*	15	0.8	7	46.7
Blood transfusion**	57	3.2	47	82.5
Undetermined/none of the above	35	2.0	20	57.1
TOTAL	1,774	100.00	981	55.3

* Includes only cases from pattern II countries where the epidemic is predominately heterosexual, and cases who had heterosexual contact with a person from a recognised risk group or known to be HIV antibody positive.

** Includes receipt of blood products or tissue.

Table 4: Cumulative national cases of AIDS and known deaths from AIDS by initial disease reported, to 23 February 1990.

INITIAL DISEASE REPORTED	CASES	KNOWN DEATHS
Neurological disease	49	24
Secondary infectious diseases	1,281	717
Secondary cancers	350	187
Other conditions	20	6
Neurological disease + infectious diseases	16	12
Neurological disease + cancers	1	1
Infectious diseases + cancers	57	37
TOTAL	1,774	984

Tables 5 and 6 show the number of persons newly diagnosed as HIV antibody positive between 27 January and 23 February 1990, transmission categories and the cumulative totals for each State and Territory since 1985. Data on HIV infection for New South Wales, cumulative to 30 June 1989 are included for the first time. These are detailed in Tables 7 and 8 and in a report prepared by the Epidemiology and Health Services Evaluation Branch of the NSW Department of Health, reprinted below.

Table 5: Notifications of persons newly diagnosed as HIV antibody positive, and cumulative since the introduction of anti-HIV antibody testing, by State/Territory of notification.

STATE/ TERRITORY	1990 Weeks 5 - 8	Cumulative 1985 to 23 Feb 1990
NSW	*	8,309**
VIC	21	2,267
QLD	13	860
WA	6	505***
SA	2	369
TAS	1	49***
ACT	1	48
NT	0	103
TOTAL	44	4,160

* Not yet available
** To 30 June 1989; see Table 7 for details
*** Revised total

Table 6: Notifications of persons newly diagnosed as HIV antibody positive by reported transmission category*

REPORTED TRANSMISSION CATEGORY	1990 Weeks 5 - 8		Cumulative 1985 to 23 Feb 1990			
	Male	Female	Male	Female	Total	%
Homo/bisexual	34	-	3,217	-	3,217	79.3
Heterosexual IVDU	0	0	143	45	188	4.6
Homo/bisexual males IVDU	1	-	108	-	108	2.7
Haemophilia	0	0	178	4	182	4.5
Heterosexual contact	5	1	69	46	115	2.8
Blood transfusion	0	0	43	14	57	1.4
Undetermined/None of the above	3	0	178	11	189	4.7
TOTAL	43	1	3,936	120	4,056	100.0

* Data from ACT and the NT included from 1 January, 1990. For NSW see Table 8.

Estimates of Confirmed HIV Positive Cases in NSW, January 1984 to June 1989

(Report Prepared by Mr G. Stewart and Dr G. Rubin, Epidemioloy and Health Services Evaluation Branch, NSW Department of Health.)

Summary of Methodology

The estimates reported here are based on analyses of all available HIV testing data at the three reference laboratories in NSW. Data was available to the end of February 1990 from Prince of Wales Hospital (POWH), to the end of August 1989 from Westmead Hospital (WMH), and to the end of September 1989 from St. Vincent's Hospital (SVH). For reporting purposes the complete quarterly data to the end of June 1989 were used (Table 7).

Table 7: Sources of confirmed HIV positive case estimates in NSW*

Reference Laboratory	Cases	Percent
Prince of Wales Hospital	237	2.9
St Vincent's Hospital	6809	81.9
Westmead Hospital	1263	15.2
Total	1263	100.0

* All numbers are estimates based on case-matching (see text).

The procedures used at the three laboratories for matching patient identifiers across tests were slightly different. In general, however, a group of specimens was counted as a single 'case' for reporting purposes if identifying codes matched, without reference to gender or date of birth. This process results in some under-counting of named patients, but the high proportion of missing gender and date of birth fields makes it impossible to treat the data coherently if those fields are used. The data from POWH have been improved by procedures for comparing indentifiers for new positive results with the laboratory's historical list of positives and allowing patients to be matched manually if machine matches fail. Similar procedures are being applied to the SVH and WMH data. The expected result of this work will be a reduction in the present estimates. At present it is not possible to cross-match identifiers between laboratories, so that cases confirmed at more than a single laboratory will be counted at each. Similarly, patients attending more than a single clinic during the 5.5 year period summarised here will be counted for each clinic code assigned to them. For these reasons the present tabulations must only be treated as estimates, not as true counts of positive individuals.

The tabulations exclude all positive tests for which it was recorded that the person had had a previous positive HIV test. This information was not part of the normal data collection by laboratories until mid-1987, and is missing in a large proportion of cases even after a field for its reporting was

included on HIV test request forms. Even after matching on codes, there were 1670 unmatched positives who had a previous positive result reported. If code-matching alone had been relied on the present estimates would be increased by 20%.

Transmission Categories

The transmission categories used differ considerably among laboratories, and within laboratories over time. Those reported in Table 8 are based on the use of formal algorithms to merge the available catagories, using as little inference as possible, and classifying uncertain cases as 'Specified, not elsewhere classified (n.e.c.)'. It should be stressed that POWH is the only source for which all possible dual combinations of risk groups could be recorded. SVH allows specific codes for the more common combinations, but WMH has used an hierarchical system in which a single category is entered. A striking feature of Table 8 is that in 70% of cases the transmission category is unknown. This means simply that the information was not supplied to the laboratory on the request form. To some extent it will be possible to enhance information on transmission categories, both by active follow-up from laboratories and by further data analysis. Revised data will be reported as and when they become available.

Table 8: Confirmed HIV positive case estimates for NSW by transmission categories*

TRANSMISSION CATEGORY	Female	Male	Unknown	Total
Sexual Contact	4	33	5	42
Homo-/Bisexual	6	1679	124	1809
Heterosexual	11	41	0	52
IVDU	21	81	15	117
Transfusion recipient	17	68	2	87
Child; Mother positive	4	6	1	11
Homo-/Bisexual IVDU	1	35	4	40
Heterosexual IVDU	3	7	0	10
Homo-/Bisexual and Transfusion recipient	0	1	0	1
Specified, n.e.c.**	32	247	38	317
Unknown	194	3052	2577	5823
TOTAL	293	5250	2766	8309

* All numbers are based on case-matching (see text). Haemophilia patients are included with transfusion recipients, since these groups are not distinguished in all databases. According to the New South Wales Red Cross Blood Transfusion Service, there were 113 antibody positive recipients of blood transfusions or blood products to February 23, 1990.

** Not elsewhere classified (see text).

Acknowledgements

The authors of this report wish to acknowledge the work of staff at all laboratories who made considerable efforts to complete the entry of historical testing data for the purposes of this analysis, and the assistance given in data processing by the computing staff involved: Mr Danny Cook (POWH), Mr Peter Tomlinson (WMH) and Mr Mike Czapski (SVH).

INFLUENZA UPDATE 1989-90

(Based on WER 1990, 65:53-56 and MMWR 1990, 39:157-167)

In the Northern hemisphere, the 1989-90 influenza season began unusually early in October-November with outbreaks of influenza A (H_3N_2) in North America, Europe and Asia. The number of outbreaks increased sharply during December and early January in Western Europe, the USA and Northern China. The USA and UK reported excess mortality related to this influenza epidemic. In the UK the epidemic was seen as the worst since the 1975-76 season. In Belgium, where influenza incidence peaked in December, it was 62% higher than previous peaks in the 1980s. Several other countries reported increased influenza mortality among the aged and high rates of morbidity were reported in all age groups. The USA however reported that from activity levels of influenza reported by the State and Territorial health departments there had not been exceptionally high levels of morbidity during the 1989-90 season.

Influenza A (H_3N_2) strains predominated the season in the northern hemisphere with only a few isolates of influenza A (H_1N_1) reported. In the USA, up to the end of February, 99% of all influenza A isolates were of the H_3N_2 type. Influenza B outbreaks were reported from a number of countries with increased reports in January and February but no increase in total activity occurred.

Antigenic analysis of recent isolates

Antigenic analysis of the recent isolates of influenza A (H_3N_2) (Table 1) have shown that the great majority of isolates were related to A/Shanghai/11/87 and A/England/427/88. A number of isolates however, were distinguishable from these reference strains and were related either to A/Guizhou/54/89 and A/Guandong/39/89 or A/Beijing/353/89 and A/Quindao/200/89. It was found that antisera produced against A/Beijing/353/89 and A/Quindao/200/89 reacted poorly with A/Shanghai/11/87 (the H_3N_2 component of the 1990 Australian influenza vaccine). However antisera produced against A/Guizhou/54/89 and A/Guandong/39/89 did react with A/Shanghai/11/87.

Table 1: Haemagglutination-inhibition tests on influenza A (H_3N_2) viruses

	Post-infection ferret sera				
Antigens	A/Shanghai/ 11/87	A/England/ 427/88	A/Guizhou/ 54/89	A/Guandong/ 39/89	A/Beijing/ 353/89
A/Shanghai/11/87	640	120	960	160	120
A/England/427/88	240	160	1,920	240	80
A/Guizhou/54/89	60	20	640	160	20
A/Guandong/39/89	80	40	480	240	30
A/Beijing/353/89	120	80	80	60	1,280
A/Quindao/200/89	80	80	80	160	2,560

The influenza A (H_1N_1) virus isolates were heterogeneous but antigenically closely related to A/Singapore/6/86.

The influenza B virus isolates were antigenically related to B/Victoria/2/87 or B/Yamagata/16/88.

Serological surveys

Serological surveys to assess the prevalence of antibodies to the haemagglutinins of current reference strains and recent isolates of influenza A and B viruses, were carried out in several countries. Sera were collected from a range of age groups in several countries and tested using haemagglutination inhibition (HI) and single radial hemolysis (SRH) tests. The results showed that the frequency of detection of antibodies varied widely in different studies but in general 10-60% of individuals possessed HI titres greater than 1:40 or SRM zone areas greater than 25 mm^2 to the influenza virus strains used in this survey. The data were however, generally consistent with the recorded prevalence of influenza A(H_3N_2), A(H_1N_1) and B virus strain isolates in recent years.

Serological studies were also carried out on persons who had received a single dose of trivalent influenza vaccine (containing haemagglutinins from A/Shanghai/11/87 (H_3N_2)-like, A/Singapore/6/86 (H_1N_1)-like and B/Yamagata/16/88-like viruses). The post vaccination titres of vaccinated subjects to a number of influenza vaccine strains and recent isolates are documented in Table 2.

Table 2: Titres in Vaccinated subjects against influenza virus strains

Influenza Virus	% of Vaccinees with titres > 40 Adults and Children	Elderly persons (> 65 years)
A/Shanghai/11/87	80-100	55-95
A/Guizhou/54/89	70-90	20-90
A/Taiwan/1/86	85-90	50-100
B/Yamagata/16/88	50-80	50-80
B/Hong Kong/22/89	80-100	80-100

There is a great range in antibody response to both vaccine strains and recent isolates particularly in elderly persons. Despite the low responses seen in elderly persons the vaccine is particularly recommended for this group, as it has been shown to be up to 75% effective in preventing complications and death from influenza.

Composition of the 1990 Influenza vaccine

The Australian Influenza Vaccine Committee decided in October 1989, that the composition of the influenza vaccine (to be produced by CSL) for the 1990 season would be:

- A/Victoria/36/88 (H_1N_1)-like strain, 15 micrograms haemagglutinin;
- A/Shanghai/11/87 (H_3N_2)-like strain, 15 micrograms haemagglutinin; and
- B/Yamagata/16/88-like strain, 15 micrograms haemagglutinin.

The decision on strains to be included in the current vaccine needs to be made early (with respect to the Northern hemisphere season) to provide the time necessary to produce sufficient vaccine.

Annual vaccination with influenza vaccine is recommended for individuals in the following categories:-

- persons of all ages with chronic debilitating diseases especially chronic cardiac, pulmonary, renal and metabolic disorders;
- persons over 65 years of age (regardless of health status);
- persons receiving immunosuppressive therapy; and
- persons engaged in medical and health services and essential public utilities.

Individuals in the first three categories are generally at greater risk of complications or deaths from influenza than other members of the community. The annual vaccination of these individuals is the single most important measure to reduce influenza related morbidity and mortality.

The main contraindication to vaccination are individuals with an anaphylactic hypersensitivity to eggs (as the vaccine is produced in eggs).

The use in pregnancy is not contraindicated as immunization with inactivated virus vaccines has not lead to any abnormalities in the fetus.

Influenza vaccine should be administered to children under 5 years of age with care, and preferably only if they fall within the first category of indications for use.

Influenza vaccination is usually carried out in autumn and a single dose is sufficient for individuals who have previously been exposed to viruses of similar antigenic composition to the strains in the vaccine. In children lacking such experience and in those with some impairment of immune mechanisms, two doses of vaccine are required with an interval of at least 4 weeks between doses.

The adverse reactions of the vaccine are mainly mild local reactions including swelling, redness, tenderness and or pain at the site of vaccination. Mild fever of short duration has also been reported. Post-vaccination neurological disorders have rarely been reported. In 1976 Guillan Barre syndrome occurred after influenza immunization at an incidence of approximately 1 in 100,000. This high rate of Guillan Barre syndrome has not been seen since and studies have failed to establish a link between influenza vaccination and Guillan Barre syndrome.

CDI Editorial Comment:

According to the Australian Bureau of Statistics figures, there were 159 deaths from influenza in Australia in 1988. Deaths from influenza are often underreported; the cause of death listed on death certificates is often categorised as cardiovascular. There were a total of 1638 deaths from all causes of pneumonia (including viral, bacterial and unspecified organisms) in 1988. A number of deaths due to influenza involve a secondary bacterial infection.

These statistics reinforce the importance of influenza vaccination for those individuals most at risk of suffering severe complications and include those over 60 and individuals of all ages with chronic respiratory or cardiac illness, asthma, diabetes, emphysema, recurrent bronchitis or other liver, heart or kidney disease. Health care providers should use contact opportunities with persons from the above groups to inform them of the risks of influenza infection and to offer influenza vaccine (and other vaccines as appropriate).

A severe season of influenza in the Northern hemisphere (as has happened in 1989-90) is not an indicator that a severe season will occur during the Southern winter.

AUSTRALIA - COMMUNICABLE DISEASES INTELLIGENCE
VIRAL IDENTIFICATIONS FROM CONTRIBUTING LABORATORIES
BASED ON DATE OF REPORTING

PERIOD 29/3/90 TO 11/4/90

1. CODE 018 - MICROBIOL DIAG UNIT, UNI MELB (VIC)
2. CODE 019 - FAIRFIELD HOSP (VIC)
3. CODE 065 - STATE HEALTH LAB (WA)
4. CODE 066 - PRINCESS MARGARET HOSP (WA)
5. CODE 110 - INST OF MED & VET SCIENCE (SA)
6. CODE 111 - ROYAL CHILDRENS HOSP (VIC)
7. CODE 112 - INST CLINICAL PATH & MED RES (NSW)
8. CODE 113 - PRINCE HENRY/PRINCE OF WALES HOSP (NSW)
9. CODE 114 - ROYAL ALEXANDRA CHILDRENS HOSP (NSW)
10. CODE 115 - STATE HEALTH LAB(QLD)
11. CODE 116 - WODEN VALLEY HOSP (ACT)

		018	065	066	110	111	112	113	114	115	TOTAL
0100	ADENOVIRUS NOT TYPED	0	4	7	0	3	2	1	0	12	29
0101	ADENOVIRUS TYPE 1	0	0	0	0	0	5	0	0	0	5
0102	ADENOVIRUS TYPE 2	0	0	0	1	0	0	0	0	0	1
0103	ADENOVIRUS TYPE 3	0	0	0	7	0	3	0	0	0	10
0104	ADENOVIRUS TYPE 4	0	0	0	0	0	2	0	0	0	2
0105	ADENOVIRUS TYPE 5	0	0	0	0	0	1	0	0	0	1
0117	ADENOVIRUS TYPE 17	0	0	0	0	0	1	0	0	0	1
0199	ADENOVIRUS TYPING PENDING	0	0	0	0	4	0	1	1	0	6
0201	INFLUENZA A VIRUS	0	1	0	0	0	0	3	0	0	4
0301	PARAINFLUENZA VIRUS TYPE 1	0	0	5	11	6	2	1	0	3	28
0302	PARAINFLUENZA VIRUS TYPE 2	0	0	0	0	2	0	0	0	0	2
0303	PARAINFLUENZA VIRUS TYPE 3	0	0	0	0	4	0	0	1	2	7
0399	PARAINFLUENZA VIRUS TYPING PEN	0	0	0	0	3	0	0	0	2	5
0400	RESPIRATORY SYNCYTIAL VIRUS (R	0	0	0	0	0	3	6	8	8	25
0500	RHINOVIRUS (ALL TYPES)	0	1	0	6	11	4	0	0	0	22
0600	MYCOPLASMA PNEUMONIAE	0	5	0	1	2	1	0	0	3	12
0816	COXSACKIEVIRUS A16	0	0	0	1	0	0	0	0	0	1
1001	ECHOVIRUS TYPE 1	0	0	0	0	0	1	0	0	0	1
1003	ECHOVIRUS TYPE 3	0	0	0	0	0	1	1	1	0	3
1004	ECHOVIRUS TYPE 4	0	0	0	0	0	3	0	0	0	3
1006	ECHOVIRUS TYPE 6	0	0	0	0	0	2	0	0	0	2
1007	ECHOVIRUS TYPE 7	0	0	0	0	0	1	0	0	0	1
1011	ECHOVIRUS TYPE 11	0	0	0	1	0	6	0	0	0	7
1014	ECHOVIRUS TYPE 14	0	0	0	0	0	3	0	0	0	3
1022	ECHOVIRUS TYPE 22	0	0	0	0	0	1	0	0	0	1
1100	POLIOVIRUS NOT TYPED	0	0	0	0	0	0	6	0	0	6
1101	POLIOVIRUS TYPE 1	0	0	0	1	0	0	0	0	0	1
1102	POLIOVIRUS TYPE 2	0	0	0	0	0	2	0	1	0	3
1103	POLIOVIRUS TYPE 3	0	0	0	1	0	1	0	1	0	3
1200	MUMPS VIRUS	0	2	0	0	1	0	0	0	0	3
1300	HERPES VIRUS GROUP - NOT TYPED	0	1	0	0	0	0	1	0	0	2
1301	HERPES SIMPLEX VIRUS - NOT TYP	0	0	1	0	0	32	0	0	4	37
1302	EPSTEIN-BARR VIRUS (EB VIRUS)	0	10	0	14	1	0	1	1	17	44
1303	VARICELLA-ZOSTER VIRUS	0	9	0	0	0	3	0	0	3	15
1306	HERPES SIMPLEX TYPE 1	0	40	0	20	1	4	3	0	26	94
1307	HERPES SIMPLEX TYPE 2	0	70	0	23	0	40	8	0	2	143
1399	HERPES VIRUS TYPING PENDING	0	0	0	0	2	0	0	0	0	2
1401	COXIELLA BURNETII	0	0	0	4	0	7	0	0	7	18
1502	PICORNIA VIRUS - NOT TYPED = E	0	5	0	4	0	0	14	0	7	30
1521	MEASLES VIRUS	0	0	0	0	0	0	1	0	0	1
1522	RUBELLA VIRUS	0	3	0	1	0	0	0	0	4	8
1532	HEPATITIS B ANTIGEN	0	39	0	0	0	49	4	0	18	110
1535	HEPATITIS A ANTIBODY	0	1	0	0	0	0	0	0	0	1
1541	CHLAMYDIA A - C. TRACHOMATIS	17	50	1	0	0	51	1	1	0	121
1556	CMV - CYTOMEGALOVIRUS	0	2	6	6	6	8	0	3	14	45
1564	ROTAVIRUS	0	0	0	0	16	1	0	0	0	17
1571	ENTEROVIRUS TYPE 71 (BCR)	0	0	0	0	0	2	0	2	0	4
1599	ENTEROVIRUS TYPING PENDING	0	0	0	0	3	0	13	5	0	21
9906	BARMAH FOREST VIRUS	0	0	0	0	0	0	0	0	1	1
9990	AUSTRALIAN ENCEPHALITIS	0	1	0	0	0	0	0	0	0	1
9992	ROSS RIVER VIRUS	0	6	0	7	0	0	2	0	51	66
9994	SMALL VIRUS (LIKE) PARTICLE	0	0	0	0	0	0	0	1	0	1
9995	DENGUE	0	1	0	0	0	0	0	0	4	5
TOTAL		17	251	20	109	65	242	67	26	188	985

AUSTRALIA - COMMUNICABLE DISEASES INTELLIGENCE

VIRAL IDENTIFICATIONS FROM CONTRIBUTING LABORATORIES BY STATE OF CONTRIBUTING LABORATORY

PERIOD 29/3/90 TO 11/4/90

NSW: ICPMR; PHH POW; RACH; ST GEORGE HOSP, KOGARAH; ROYAL NEWCASTLE HOSP.
VIC: FAIRFIELD; RCH; MDU, UNI MELB
QLD: STATE LAB, BRIS; TOOWOOMBA PATH LAB; ROYAL BRIS HOSP.
WA: STATE LAB, PERTH; PMH.
SA: IMVS.
TAS: ROYAL HOBART HOSP; DIAGNOSTIC SERVICES, LAUNCESTON; LAUNCESTON GEN HOSP; DIAGNOSTIC SERVICES, HOBART; HOBART PATH; MERSEY GEN HOSP, LATROBE.
ACT: WVH.

		NSW	VIC	QLD	WA	SA	TOTAL
0100	ADENOVIRUS NOT TYPED	3	3	12	11	0	29
0101	ADENOVIRUS TYPE 1	5	0	0	0	0	5
0102	ADENOVIRUS TYPE 2	0	0	0	0	1	1
0103	ADENOVIRUS TYPE 3	3	0	0	0	7	10
0104	ADENOVIRUS TYPE 4	2	0	0	0	0	2
0105	ADENOVIRUS TYPE 5	1	0	0	0	0	1
0117	ADENOVIRUS TYPE 17	1	0	0	0	0	1
0199	ADENOVIRUS TYPING PENDING	2	4	0	0	0	6
0201	INFLUENZA A VIRUS	3	0	0	1	0	4
0301	PARAINFLUENZA VIRUS TYPE 1	3	6	3	5	11	28
0302	PARAINFLUENZA VIRUS TYPE 2	0	2	0	0	0	2
0303	PARAINFLUENZA VIRUS TYPE 3	1	4	2	0	0	7
0399	PARAINFLUENZA VIRUS TYPING PEN	0	3	2	0	0	5
0400	RESPIRATORY SYNCYTIAL VIRUS (R	17	0	8	0	0	25
0500	RHINOVIRUS (ALL TYPES)	4	11	0	1	6	22
0600	MYCOPLASMA PNEUMONIAE	1	2	3	5	1	12
0816	COXSACKIEVIRUS A16	0	0	0	0	1	1
1001	ECHOVIRUS TYPE 1	1	0	0	0	0	1
1003	ECHOVIRUS TYPE 3	3	0	0	0	0	3
1004	ECHOVIRUS TYPE 4	3	0	0	0	0	3
1006	ECHOVIRUS TYPE 6	2	0	0	0	0	2
1007	ECHOVIRUS TYPE 7	1	0	0	0	0	1
1011	ECHOVIRUS TYPE 11	6	0	0	0	1	7
1014	ECHOVIRUS TYPE 14	3	0	0	0	0	3
1022	ECHOVIRUS TYPE 22	1	0	0	0	0	1
1100	POLIOVIRUS NOT TYPED	6	0	0	0	0	6
1101	POLIOVIRUS TYPE 1	0	0	0	0	1	1
1102	POLIOVIRUS TYPE 2	3	0	0	0	0	3
1103	POLIOVIRUS TYPE 3	2	0	0	0	1	3
1200	MUMPS VIRUS	0	1	0	2	0	3
1300	HERPES VIRUS GROUP - NOT TYPED	1	0	0	1	0	2
1301	HERPES SIMPLEX VIRUS - NOT TYP	32	0	4	1	0	37
1302	EPSTEIN-BARR VIRUS (EB VIRUS)	2	1	17	10	14	44
1303	VARICELLA-ZOSTER VIRUS	3	0	3	9	0	15
1306	HERPES SIMPLEX TYPE 1	7	1	26	40	20	94
1307	HERPES SIMPLEX TYPE 2	48	0	2	70	23	143
1399	HERPES VIRUS TYPING PENDING	0	2	0	0	0	2
1401	COXIELLA BURNETII	7	0	7	0	4	18
1502	PICORNIA VIRUS - NOT TYPED = E	14	0	7	5	4	30
1521	MEASLES VIRUS	1	0	0	0	0	1
1522	RUBELLA VIRUS	0	0	4	3	1	8
1532	HEPATITIS B ANTIGEN	53	0	18	39	0	110
1535	HEPATITIS A ANTIBODY	0	0	0	1	0	1
1541	CHLAMYDIA A - C. TRACHOMATIS	53	17	0	51	0	121
1556	CMV - CYTOMEGALOVIRUS	11	6	14	8	6	45
1564	ROTAVIRUS	1	16	0	0	0	17
1571	ENTEROVIRUS TYPE 71 (BCR)	4	0	0	0	0	4
1599	ENTEROVIRUS TYPING PENDING	18	3	0	0	0	21
9906	BARMAH FOREST VIRUS	0	0	1	0	0	1
9990	AUSTRALIAN ENCEPHALITIS	0	0	0	1	0	1
9992	ROSS RIVER VIRUS	2	0	51	6	7	66
9994	SMALL VIRUS (LIKE) PARTICLE	1	0	0	0	0	1
9995	DENGUE	0	0	4	1	0	5
TOTAL		335	82	188	271	109	985

NOTE: DIRECT COMPARISION BETWEEN STATES IS NOT POSSIBLE SINCE:
- SOME STATES HAVE MORE THAN ONE CONTRIBUTING LABORATORY; AND
- INTERSTATE REFERRRALS OCCUR REGULARLY.

AUSTRALIA - COMMUNICABLE DISEASES INTELLIGENCE

VIRAL IDENTIFICATIONS BY CLINICAL INFORMATION TABLE I

PERIOD 29/3/90 TO 11/4/90

1. CODE 00, 99 ..... - NO ILL OR DATA
2. CODE 01, 02, 11, 12 - RESPIRATORY
3. CODE E3 ..... - ENCEPHALITIS
4. CODE M3 ..... - MENINGITIS
5. CODE 04 ..... - PARALYSIS
6. CODE 05, 13 ..... - CNS OTHER UNSPEC
7. CODE 07, 49 - GASTRO INTESTINAL
8. CODE 17, 47 - HEPATIC
9. CODE 19 ... - CVS
10. CODE 89 ... - URINARY TRACCT
11. CODE 06 ... - SKIN MUCOUS

		1	2	3	4	6	7	8	10	11	TOTAL
0100	ADENOVIRUS NOT TYPED	1	10	0	0	1	9	0	1	0	22
0101	ADENOVIRUS TYPE 1	2	0	0	0	0	2	1	0	0	5
0102	ADENOVIRUS TYPE 2	1	0	0	0	0	0	0	0	0	1
0103	ADENOVIRUS TYPE 3	2	5	0	0	0	1	0	0	0	8
0105	ADENOVIRUS TYPE 5	0	0	0	0	0	1	0	0	0	1
0117	ADENOVIRUS TYPE 17	1	0	0	0	0	0	0	0	0	1
0199	ADENOVIRUS TYPING PENDING	0	3	0	0	0	1	0	0	0	4
0201	INFLUENZA A VIRUS	0	2	0	0	0	0	0	0	0	2
0301	PARAINFLUENZA VIRUS TYPE 1	0	28	0	0	0	0	0	0	0	28
0302	PARAINFLUENZA VIRUS TYPE 2	0	2	0	0	0	0	0	0	0	2
0303	PARAINFLUENZA VIRUS TYPE 3	0	7	0	0	0	0	0	0	0	7
0399	PARAINFLUENZA VIRUS TYPING PEN	0	5	0	0	0	0	0	0	0	5
0400	RESPIRATORY SYNCYTIAL VIRUS (R	0	25	0	0	0	0	0	0	0	25
0500	RHINOVIRUS (ALL TYPES)	2	18	0	0	0	0	0	0	0	20
0600	MYCOPLASMA PNEUMONIAE	1	8	0	0	0	0	1	0	0	10
0816	COXSACKIEVIRUS A16	0	0	0	0	0	0	0	0	1	1
1003	ECHOVIRUS TYPE 3	1	1	0	0	0	1	0	0	0	3
1004	ECHOVIRUS TYPE 4	1	0	0	2	0	0	0	0	0	3
1006	ECHOVIRUS TYPE 6	0	0	0	1	0	0	1	0	0	2
1007	ECHOVIRUS TYPE 7	0	0	0	1	0	0	0	0	0	1
1011	ECHOVIRUS TYPE 11	2	0	1	0	0	4	0	0	0	7
1014	ECHOVIRUS TYPE 14	1	0	0	1	0	1	0	0	0	3
1022	ECHOVIRUS TYPE 22	1	0	0	0	0	0	0	0	0	1
1100	POLIOVIRUS NOT TYPED	0	0	0	0	0	6	0	0	0	6
1101	POLIOVIRUS TYPE 1	0	1	0	0	0	0	0	0	0	1
1102	POLIOVIRUS TYPE 2	0	0	0	0	0	0	1	0	0	1
1103	POLIOVIRUS TYPE 3	1	0	0	0	1	1	0	0	0	3
1200	MUMPS VIRUS	2	1	0	0	0	0	0	0	0	3
1300	HERPES VIRUS GROUP - NOT TYPED	0	0	1	0	0	0	0	0	1	2
1301	HERPES SIMPLEX VIRUS - NOT TYP	4	0	0	0	0	0	0	0	16	20
1302	EPSTEIN-BARR VIRUS (EB VIRUS)	9	4	0	0	0	0	0	0	1	14
1303	VARICELLA-ZOSTER VIRUS	3	2	0	0	0	0	0	0	9	14
1306	HERPES SIMPLEX TYPE 1	1	14	0	0	0	0	0	0	72	87
1307	HERPES SIMPLEX TYPE 2	1	0	0	0	0	0	0	0	05	06
1399	HERPES VIRUS TYPING PENDING	0	0	0	0	0	0	0	0	1	1
1401	COXIELLA BURNETII	6	0	0	0	0	0	0	0	0	6
1502	PICORNA VIRUS - NOT TYPED = E	0	6	0	0	0	18	0	0	2	26
1521	MEASLES VIRUS	1	0	0	0	0	0	0	0	0	1
1522	RUBELLA VIRUS	2	0	0	0	0	0	0	0	4	6
1532	HEPATITIS B ANTIGEN	77	0	0	0	0	1	30	0	0	108
1535	HEPATITIS A ANTIBODY	1	0	0	0	0	0	0	0	0	1
1541	CHLAMYDIA A - C. TRACHOMATIS	24	1	0	0	0	0	0	0	0	25
1556	CMV - CYTOMEGALOVIRUS	7	16	0	0	1	1	1	4	1	31
1564	ROTAVIRUS	0	0	0	0	0	17	0	0	0	17
1571	ENTEROVIRUS TYPE 71 (BCR)	2	0	0	0	2	0	0	0	0	4
1599	ENTEROVIRUS TYPING PENDING	0	1	0	5	1	14	0	0	0	21
9992	ROSS RIVER VIRUS	27	1	0	0	0	0	0	0	2	30
9994	SMALL VIRUS (LIKE) PARTICLE	0	0	0	0	0	1	0	0	0	1
9995	DENGUE	3	0	0	0	0	0	0	0	0	3
TOTAL		187	161	2	10	6	79	35	5	195	680

AUSTRALIA - COMMUNICABLE DISEASES INTELLIGENCE

VIRAL IDENTIFICATIONS BY CLINICAL INFORMATION TABLE 2

PERIOD 29/3/90 TO 11/4/90

12. CODE 10 - EYE
13. CODE 59 - GENITAL
14. CODE 39 - ENDOCRINE/SALIVARY GL.
15. CODE 38 - RETICULO-ENDOTHELIAL
16. CODE 29 - MUSCLE/JOINT
17. CODE 69 - CONGENTIAL
18. CODE P8 - PUO
19. CODE G8 - FEVER/MALAISE
20. CODE 09 - OTHER
21. CODE A1 - SIDS

		12	13	14	15	16	17	18	19	20	21	TOTAL
0100	ADENOVIRUS NOT TYPED	6	0	0	0	0	0	0	1	0	0	7
0103	ADENOVIRUS TYPE 3	0	0	0	0	0	0	0	0	2	0	2
0104	ADENOVIRUS TYPE 4	2	0	0	0	0	0	0	0	0	0	2
0199	ADENOVIRUS TYPING PENDING	1	0	0	0	0	0	0	1	0	0	2
0201	INFLUENZA A VIRUS	0	0	0	0	1	0	0	1	0	0	2
0500	RHINOVIRUS (ALL TYPES)	0	0	0	0	0	0	0	1	1	0	2
0600	MYCOPLASMA PNEUMONIAE	0	0	0	0	0	0	0	1	1	0	2
1001	ECHOVIRUS TYPE 1	0	0	0	0	0	0	0	0	1	0	1
1102	POLIOVIRUS TYPE 2	0	0	0	0	0	0	0	0	1	1	2
1301	HERPES SIMPLEX VIRUS - NOT TYP	3	14	0	0	0	0	0	0	0	0	17
1302	EPSTEIN-BARR VIRUS (EB VIRUS)	0	0	17	3	0	0	0	7	3	0	30
1303	VARICELLA-ZOSTER VIRUS	1	0	0	0	0	0	0	0	0	0	1
1306	HERPES SIMPLEX TYPE 1	1	6	0	0	0	0	0	0	0	0	7
1307	HERPES SIMPLEX TYPE 2	0	57	0	0	0	0	0	0	0	0	57
1399	HERPES VIRUS TYPING PENDING	0	0	0	0	0	0	0	0	1	0	1
1401	COXIELLA BURNETII	0	0	1	0	1	0	4	3	3	0	12
1502	PICORNIA VIRUS - NOT TYPED = E	0	0	0	0	0	0	0	2	0	2	4
1522	RUBELLA VIRUS	0	0	0	0	0	0	0	0	2	0	2
1532	HEPATITIS B ANTIGEN	0	0	0	0	0	0	0	1	1	0	2
1541	CHLAMYDIA A - C. TRACHOMATIS	2	93	0	0	0	0	0	0	1	0	96
1556	CMV - CYTOMEGALOVIRUS	0	2	0	1	2	3	0	2	4	0	14
9906	BARMAH FOREST VIRUS	0	0	0	0	0	0	0	1	0	0	1
9990	AUSTRALIAN ENCEPHALITIS	0	0	0	0	0	0	0	1	0	0	1
9992	ROSS RIVER VIRUS	0	0	0	0	18	0	0	5	13	0	36
9995	DENGUE	0	0	0	0	0	0	0	2	0	0	2
TOTAL		16	172	18	4	22	3	4	29	34	3	305