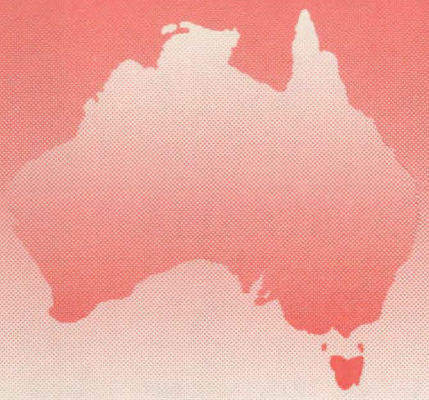

COMMUNICABLE DISEASES INTELLIGENCE

ISSN 0725-3141 VOLUME 15 NUMBER 23 18 November 1991

CONTENTS

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DEPARTMENT OF HEALTH, HOUSING AND COMMUNITY SERVICES

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

A CASE CLUSTER OF LISTERIOSIS IN SOUTH AUSTRALIA

(Phil Weinstein, Epidemiology Registrar and Scott Cameron, Senior Specialist, Communicable Disease Control Unit, South Australian Health Commission)

Introduction

In June 1991, three cases of listeriosis were reported to the Communicable Diseases Control Unit, South Australian Health Commission, by the pathology laboratory associated with a major hospital. The case cluster prompted an investigation of possible nosocomial infection and lead to the definition of a background rate for *Listeria monocytogenes* infection in South Australia.

Results

Case Cluster

By co-operation with the laboratory staff, hospital staff and patients or their relatives, detailed profiles were obtained of the 3 patients and their possible risk behaviours (Table).

It became clear that the patients were admitted already infected with *Listeria*, and that case 1 did not share any hospital staff, equipment or accommodation with cases 2 and 3. Further, the three cases shared no common exposure factors outside of the hospital, and both nosocomial infection and a common source outbreak were ruled out. At the time of the investigation, it was no longer possible to obtain samples of the foods that may have harboured *Listeria*.

Background Rate

Listeriosis is not a notifiable disease in South Australia. No records of background infection rates were readily available for comparison with these three cases. Consequently, all laboratory confirmed cases of listeriosis in South Australia since 1 January 1990 were reviewed to define a background rate.

Patients were identified either from laboratory or ISIS (Inpatient Separations Information System) records from all major hospitals and laboratories. Casenotes for each patient were obtained and reviewed either by ourselves or by the attending physicians, who forwarded the information to us. *Listeria* serotype information was not available.

From 1 January to 1 October 1991, there were 13 laboratory confirmed cases of listeriosis in South Australia, corresponding to a rate of 7.4 cases annually (0.5 cases per 100,000 population).

The male to female ratio was 1.6:1, and the average age of patients was 64 years (range 35 to 82). There was only one case of listeriosis in pregnancy (case 1, above). The mother became transiently febrile with a 'flu-like' illness during travel interstate (12 June 1991), and was reassured by the local medical officer. Her condition deteriorated, and she was admitted to hospital upon her return to Adelaide. Following blood loss per vagina seven days later, she delivered a septicaemic baby in poor condition (Apgar score 1), by lower segment caesarean section. Mother and baby were discharged following extensive antibiotic and supportive treatment of the baby. The other 12 patients were diagnosed with either *Listeria* septicaemia (8), meningoencephalitis (3), or as an incidental finding (1). They were all potentially immunocompromised as a result of underlying disease or treatment (non-Hodgkin's lymphoma (2), haemochromatosis (1), carcinoma of the lung (1), chronic lymphocytic leukaemia (3), chronic renal failure (1), heart disease (congenital/ischaemic) (3), unknown (1)). Apart from the three cases in the cluster, there was no evidence of temporal or geographic clustering.

Most casenotes indicated that specific inquires had been made about exposure to risk-factors such as unpasteurised dairy products, processed meats and pate, and contact with animals or products of conception. In no case was a likely source of infection identified.

Discussion

Because no obvious source of *Listeria* was identified in either the case cluster or case records, it is unlikely that any single practice or product is responsible for the majority of cases in South Australia. With a low but significant incidence of 0.5/100,000, it is more likely that listeriosis results from opportunistic infection with a ubiquitous organism. This would be consistent with

Table. Line listings of patient details

Sex	Age (Years)	Date of Onset	Diagnosis	Other Diagnosis	Exposure	Outcome	Postcode
F	35	12.6.91	Septicaemia	Pregnancy	Milk interstate	Lower Segment Caesarean Section, Discharged	5045
M	80	26.6.91	Septicaemia	Non-Hodgkin's Lymphoma	pre-cooked turkey	Deceased	5024
F	60	30.6.91	Meningo-encephalitis	Non-Hodgkin's Lymphoma	cheddar/ chicken	Discharged	5051

the isolation of *Listeria* from soil, vegetation, water, domestic stock, fowl, wild animals (both warm and cold blooded), and humans[1,2]. Infection may therefore result from exposure to, or consumption of, a large number of different products. The organism is known to occur in several foods in South Australia[3], and may be carried asymptomatically in up to 5% of the population[4]. Fortunately, most infections with *Listeria* remain subclinical or result only in mild fever and influenza-like symptoms[1]. Listeriosis becomes less trivial in pregnancy and in the immunocompromised, and following six stillbirths late in 1990, the Health Department of Western Australia produced guidelines for pregnant women to avoid paté, cooked diced chicken, processed meats, soft cheese and prepared salads[5]. With the majority of South Australian cases occurring in the immunocompromised, it would perhaps be advisable to issue similar recommendations for this group. To help ensure that listeriosis does not become a more significant problem, infection with the organism is being added to the list of notifiable diseases in South Australia.

Acknowledgments

It was only possible to compile this report because of the interest and co-operation of the following people: D Gordon (FMC), I Lim (IMVS), D Looke (QEH), D Shaw (RAH), and R Smith (IMVS).

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CDI EDITORIAL COMMENT

Listeriosis is currently notifiable only in New South Wales, Queensland, Tasmania, Victoria and Western Australia, and was only added to the list of National Notifiable Diseases in 1991.

There have been 32 cases notified so far this year: 22 in Victoria, four in New South Wales, four in Queensland and two in Tasmania. Of the 19 patients with known sex and age, five were aged over 65 years, three were aged over 75 years, and four were women of child-bearing age.

The notifications correspond to about 43 cases for a full year, and about 50 cases if the South Australian cases are included. This gives an attack rate of about 0.30 cases per 100,000 population per year for the six States. This is close to the rate documented in the United States from active surveillance of hospital discharge summaries in 1980 to 1982 (0.36)[1], and to the rates reported in England and Wales in 1990 (0.23)[2] and in Europe (0.2-0.3).

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LISTERIA MONOCYTOGENES AS A CONTAMINANT OF FOOD IN SOUTH AUSTRALIA

(Peter Hobson, Ian Baldwin, Phil Weinstein, Environmental Health Branch, South Australian Health Commission)

Introduction

An outbreak of listeriosis occurred in Western Australia in 1990, and included cases of perinatal mortality[1]. The vehicle for disease transmission was thought to be paté. The South Australian Health Commission consequently undertook to conduct a preliminary survey of high risk food products sold in South Australia.

In several large outbreaks of listeriosis in North America and Europe, the suspected foods were various vegetable, dairy products, processed meats and seafoods[2]. In this survey, samples of paté, cooked diced chicken, processed meat products and pre-prepared salads purchased from retail outlets in the Adelaide metropolitan area were analysed.

Materials and Methods

Twenty five samples each of paté, cooked diced chicken, pre-prepared salads and processed meats were purchased between November 1990 and April

1991 from a variety of retail outlets in greater Adelaide. Samples were collected as the consumer would receive them and were transported to the Institute of Medical and Veterinary Science in a foam container with an ice pack.

All products were primarily analysed for the presence of *Listeria monocytogenes* in accordance with NHMRC methodology[3].

Total plate counts, coagulase-positive staphylococci, *Salmonella*, coliforms and *Escherichia coli* counts were analysed in accordance with Australian Standard 1766, *Methods for the Microbiological Examination of Food*. Pre-prepared salads were analysed for *E. coli* and coliform levels.

Storage temperatures at point of sale, form of the product at sale, and location of product manufacture (Local/Interstate; Factory/Retail) were recorded for each product.

Sampling of coleslaw was carried out by the Food Microbiology subcommittee of the NHMRC, and sampling of soft cheeses had been undertaken by the Environmental Health Branch of the South Australian Health Commission in 1988. The results of these samplings are included with this study for completeness.

Results

L. monocytogenes was detected in all products except pre-prepared salads and soft cheeses (Table 1). Four out of six samples of cooked diced chicken in which *L. monocytogenes* was present were purchased by the retailer from a factory, already cooked and diced. Two samples of pate were positive for *L. monocytogenes*, and both positive samples of pate were cut from a block at the point of sale.

High total plate counts (exceeding 10^6 organisms per gram of food) were recorded in all products tested and were particularly high in products in which *L. monocytogenes* was also detected (cooked diced chicken, Table 1). The total plate counts for the sampled products ranged from 10 to 10^8 organisms per gram (Figure 1). The number of samples of paté cut from a block of the point of sale with unacceptable plate counts is not significantly different from samples of pre-packaged paté ($\chi^2 = 2.78$ $p = 0.10$). There was also no significant difference in plate counts from salads that were packaged at time of sale by the retailer (5/15 samples with total plate counts greater than 10^6 organisms per gram of food) and salads that were either pre-packaged or from self-serve salad bars (6/10 samples with total plate counts greater than 10^6 organisms per gram of food; $\chi^2 = 1.73$ $p = 0.19$).

Coagulase-positive staphylococci were not detected (less than 100 per gram of food) in any product, except for one pre-prepared salad (rice salad) from which 900 coagulase-positive staphylococci were recorded. *Salmonella* was not detected in any 25g sample of food taken.

Twenty-nine per cent of samples of pre-prepared salads had high *E. coli* levels (greater than 100 per gram of food) and 68% (17/25) of samples had high coliform levels (greater than 100 per gram of food). For the initial evaluation of results a level of 100 *E. coli* and 100 coliforms per gram of food was arbitrarily chosen as a maximum acceptable level, to be re-evaluated when assessing future limits. High levels of *E. coli* were not detected in pre-packaged salads, but were present in those packaged by the retailer and in self-serve salads. High *E. coli* levels were not recorded as often as were high coliform levels (Figure 2).

For the food in which most *L. monocytogenes* was detected (cooked-diced chicken) almost half (48%) of the samples were stored at between 5 and 9°C (Table 2). The average storage temperature for foods found positive for *L. monocytogenes* was 7.7°C (N = 9, range 2-17°C). No effects of form of product were detected. Sample sizes were too small to allow analysis of the effect of point of manufacture on food microbiology.

Discussion

L. monocytogenes was detected in a small percentage of cooked diced chicken, paté, processed meat samples and coleslaw but was not detected in pre-prepared salads or soft cheeses. In Australia, *L. monocytogenes* has been reported previously from cooked diced chicken, pate, smallgoods, cheese and ice cream but apparently not from coleslaw[4,5]. Overseas literature reports isolates of the organism from these products[5,6] was well as from fresh vegetables[7].

L. monocytogenes is widespread in nature, and possible routes of contamination have been summarised by Brackett[8] (Figure 3). Cross-contamination of raw and processed products may also occur and human food handlers may have latent infections[8]. There are many points in the life of the products sampled in this survey where contamination could have occurred, and further investigations of processing procedures would be required to uncover these.

High total plate counts indicate the use of poor food hygiene practices which may in turn cause contamination and subsequent proliferation of *L. monocytogenes* in the product. It is therefore not surprising that high total plate counts were found in products positive for *L. monocytogenes*. Both *L. monocytogenes* and high total plate counts were recorded from factory-prepared cooked diced chicken purchased by the retailer. Problems may therefore exist with the processing, storage and/or handling of these products either at the point of manufacture or at the retail outlet.

Satisfactory levels of coagulase - positive staphylococci on the other hand indicate that the personal hygiene of food handlers was adequate, given that *Staphylococcus aureus* has a predominantly human reservoir. The large number of salad samples positive for *E. coli* and coliforms, indicate that salad products are not being managed properly, regardless of the lack of contamination with *L. monocytogenes*. Contamination with human faecal matter at the point of sale or inadequate cleaning of the raw product is likely to be responsible. Given that good personal hygiene is indicated by the absence

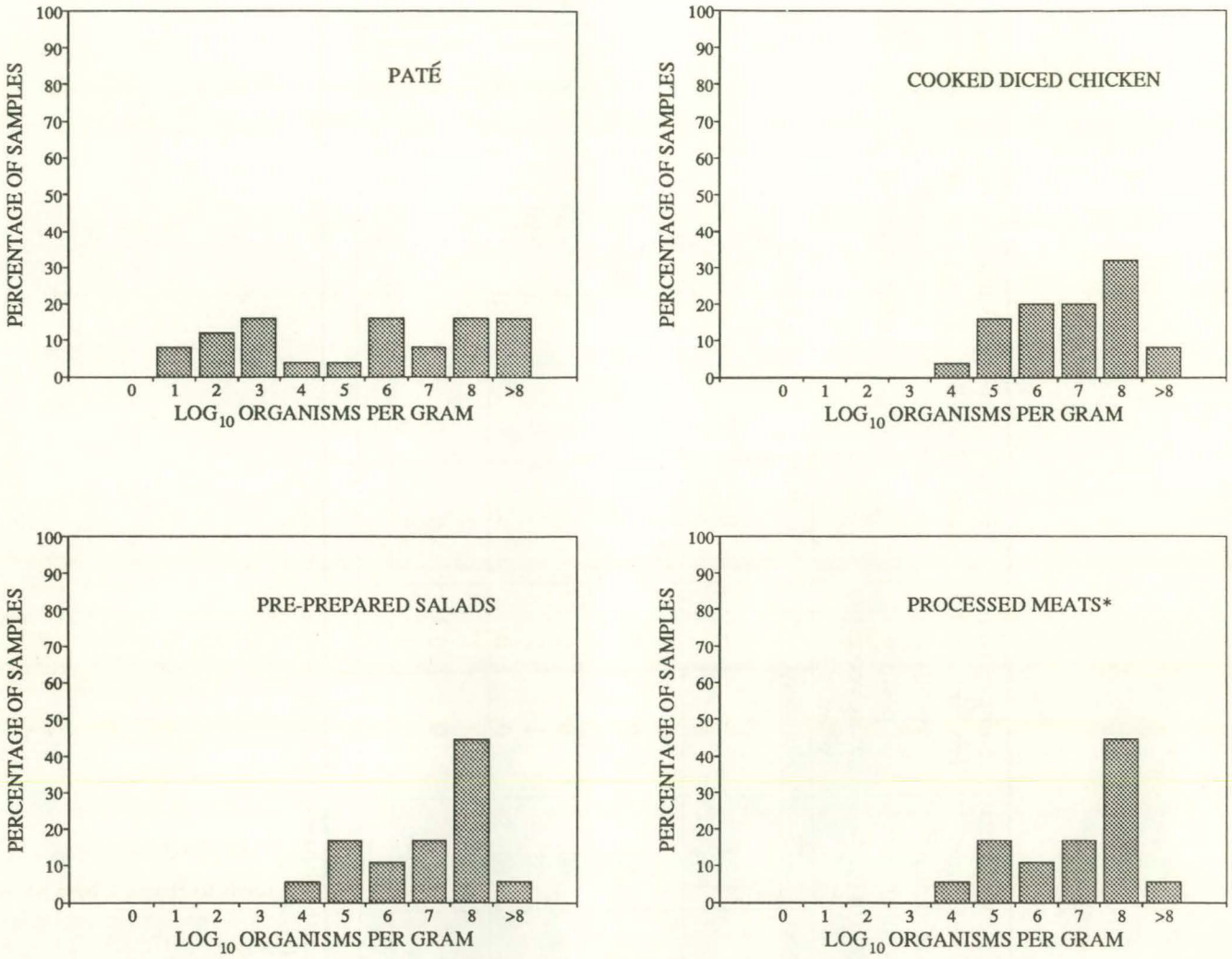
Table 1. Microbiological examination results for products sampled

Product	Number of Samples	Samples in which *Listeria monocytogenes* was detected.		Samples with Total Plate Counts exceeding 10^6 organisms per gram of food.		Samples with greater than 100 coagulase - positive staphylococci per gram of food.		25g samples in which *Salmonella* was detected.		Samples with greater than 100 *Escherichia coli* per gram of food.		Samples with greater than 100 coliforms per gram of food.	
		Number	%	Number	%	Number	%	Number	%	Number	%	Number	%
Paté													
Prepackaged	10	0	0	2	20	-	-	0	0	-	-	-	-
Cut from block	15	2	13	8	53	-	-	0	0	-	-	-	-
Cooked diced Chicken	25	6	24	16	64	0	0	-	-	-	-	-	-
Pre-prepared Salad								-					
Self-serve	5	0	0	3	60	0	0	-	-	3	60	4	80
Packaged by retailer	15	0	0	5	33	1	7	-	-	3	20	9	60
Pre-packaged	5	0	0	3	60	0	0	-	-	0	0	4	80
Processed Meat													
Whole	5	0	0	0*	0*	0	0	0	0	-	-	-	-
Sliced	20	1	5	12**	71**	0	0	0	0	-	-	-	-
Coleslaw	7	2	29	-	-	-	-	-	-	-	-	-	-
Soft Cheeses	25	0	0	-	-	-	-	-	-	-	-	-	-

* Total plate count was determined for only one of the 5 samples of whole meat because the other 4 meats were fermented products

** Total plate counts were determined for only 17 of the 20 samples of sliced meat

Figure 1. Frequency distribution of total plate counts for each product sampled



* Total plate counts were determined for only 18 of the 25 samples of processed meats

Figure 2. Frequency distribution of *E. coli* and coliform levels for prepared salad samples

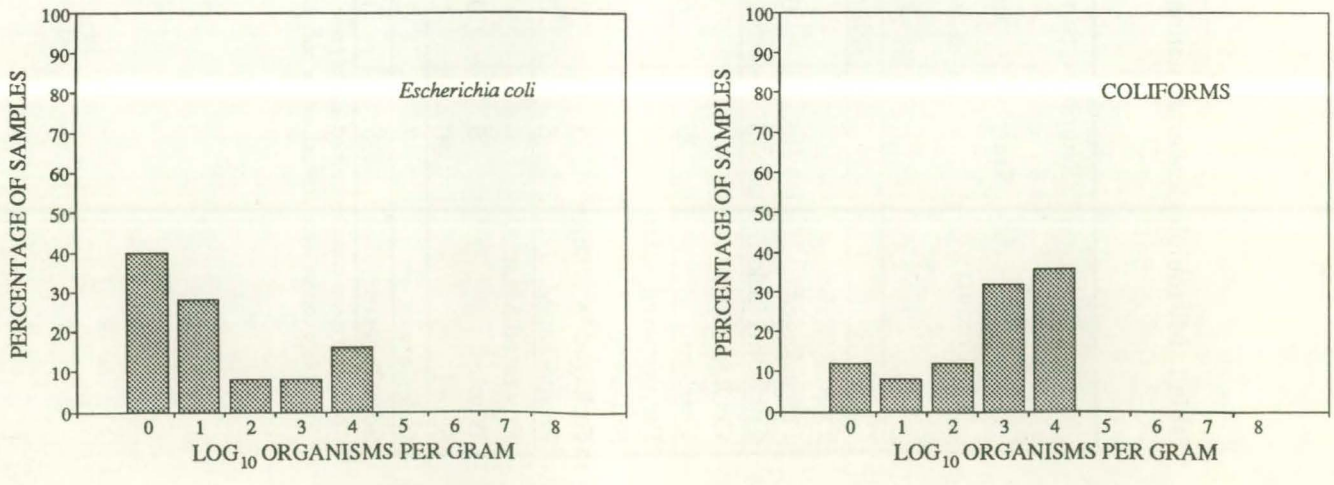
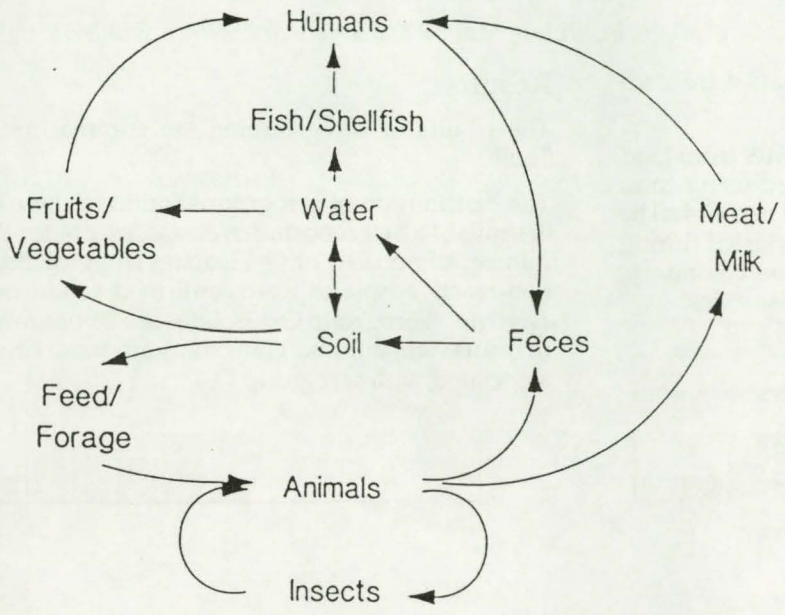


Table 2. Storage temperature of products at point of sale

Storage Temperature at Point of Sale	Percentage of Samples			
	Pate (N = 25)	Cooked-diced Chicken (N = 25)	Pre-prepared Salads (N = 25)	Processed Meats (N = 25)
< 5°C	64	16	36	32
5 - 9°C	32	48	24	40
10 - 19°C	4	20	16	12
> 19°C	0	12	4	16
Unknown	-	4	20	-

Figure 3. Hypothesised cycles of infection for *Listeria monocytogenes



* From Brackett 1988[8]

of *S. aureus* in the salads, inadequate cleaning of the raw product is perhaps the more likely cause.

L. monocytogenes is able to grow at a wide range of temperatures (from 4°C to 42°C, with optimum growth between 30°C and 37°C) and is therefore able to grow at refrigeration temperatures[9]. Although proliferation at low temperatures is very slow, *L. monocytogenes* can sometimes reach high numbers because its growth is less inhibited than that of competing organisms. In this survey, storage temperature was recorded only at point of sale and storage temperatures could have varied at other points in the product's life. The significance of the mean storage temperature of 7.7°C for products positive for *L. monocytogenes* is therefore questionable. However, it is clear from the number of samples positive for both *L. monocytogenes* and total plate count that adequately low storage temperatures were not being achieved.

The results of this survey indicate that *L. monocytogenes* occurs in several types of foods in South Australia. Given the ubiquity of the organism, it is unlikely that all contamination can be avoided. The food industry must therefore be constantly reminded of the importance of good food handling practices, which must include adequate refrigeration and the use of quality control systems.

Acknowledgements

We wish to thank Chris Murray and the Food Hygiene Laboratory, Institute of Medical and Veterinary Science, Adelaide, and the Public and Environmental Health Division, South Australian Health Commission, for their participation and support.

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LISTERIA MONOCYTOGENES SEROTYPES FROM FOOD SOURCES IN SOUTH AUSTRALIA

(C Murray, P Cameron, Division of Clinical Microbiology, Institute of Medical and Veterinary Science, South Australia)

Listeria monocytogenes serogroups O-1 and O-4 are associated with human infection and foods.

A collection of *Listeria monocytogenes* isolates from food sources in South Australia was examined using commercial (Difco) antisera for O groups O-1 and O-4. The isolates had been collected from samples tested during routine testing of foods submitted to the laboratory. None were associated with human disease cases.

Sources and numbers of isolates were -

Salads	20 isolates
Fermented meats	13 isolates
Cooked meats	9 isolates
Miscellaneous	10 isolates

Results

The results of serogrouping are summarised in the Table.

The distribution of serogroups found in these isolates is similar to that reported overseas, except for the high number of non O-1 or O-4 isolates from salads. These non-reactive isolates were confirmed as *Listeria monocytogenes*. Serogroup O-1 isolates are commonly found in meats, while human infections are more commonly associated with serogroup O-4.

Table. Serogrouping of South Australian food isolates of *Listeria monocytogenes*

Product	O - 1	O - 4	Non-Reactive
Salads	2	1	17
Fermented Meats	12	1	0
Cooked Meats - Chicken	5	0	0
- Pork	1	0	0
Miscellaneous - Dairy Environment & products	1	7	0
- Ham sandwich	1	0	0
- Pate	1	0	0

A CASE CLUSTER OF LISTERIOSIS IN TASMANIA

(Dr Derek L Mitchell, Lindisfarne, Tasmania)

This is a report of two cases of infection by *Listeria monocytogenes* which occurred in Hobart in August 1991.

A 37 year old female experienced malaise, chills, fever and headaches starting several hours after the ingestion of about 90 grams of smoked uncooked imported mussels. The symptoms progressed with vomiting and diarrhoea starting twelve hours later.

The patient's 10 year old son, who had ingested a similar quantity of the food, suffered similar symptoms but delayed by twelve hours from the index case. The patient's 13 year old daughter, who had consumed approximately 130 grams of the food, complained of some lethargy and malaise, but remained otherwise asymptomatic.

The Public Health Branch was notified of the case, and sampled the source of the food. *Listeria monocytogenes* was found to be contaminating the mussels at a level of 1.6×10^7 organisms per gram.

The mussels had been imported from New Zealand in cryopacks which, contrary to regulations, had been opened in the retail outlet for subdivision and sale in smaller quantities. The same organism was also isolated from unopened packs obtained from other retail food outlets[1].

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LISTERIA IN SMOKED MUSSELS IN TASMANIA

(Dr A Misrachi, Director of Public Health, Dr A J Watson, Epidemiology Registrar, and David Coleman, Public and Environmental Health Officer, Public Health Branch, Department of Health, Tasmania.)

On 19 August 1991, the Public Health Branch was notified of an enteric illness in an otherwise healthy, 37 year old female, following consumption of smoked mussels on 16 August. The illness had commenced several hours after consumption of 90 grams of the mussels, with malaise, chills, fever, and headache. Twelve hours later, the patient developed vomiting and diarrhoea, which lasted for 24 hours. Her 10 year old son experienced similar symptoms[1].

Culture of the mussels at the Public Health Laboratory grew *Listeria monocytogenes* at a count of 1.6×10^7 per gram. No specimens were taken from the cases.

Sampling and culturing of other smoked mussels packets revealed *Listeria* contamination in 3 batches. The batches had been labelled with incorrect USE-BY dates after arrival in Tasmania. This resulted in some USE-BY labels overestimating the shelf-life by 3 months or more. These batches had been imported from New Zealand directly, and exclusively, to Tasmania.

The implicated mussels were withdrawn from sale, two public warnings were issued, and an information bulletin was circulated to all Tasmanian doctors.

Another case of listeriosis was identified by Public Health Officers investigating an illness reported by a healthy 83 year old woman who had eaten 100 grams of the smoked mussels.

Her symptoms began on 28 September, 21 hours after ingestion of the mussels, with malaise, chills and then diarrhoea, 15 hours later. The diarrhoea persisted for 12 hours.

L. monocytogenes was cultured from the remaining mussels of her meal (3.2×10^6 per gram) and a faecal specimen on 9 October. The cultures are being serotyped by Dr E Russell, Monash Medical Centre.

Listeriosis was made notifiable in Tasmania in September, 1989. This is the first time in Tasmania that human illness has been associated with a confirmed source of *L. monocytogenes*.

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AUSTRALIAN HIV SURVEILLANCE REPORT, VOLUME 7 NUMBER 9 (30 SEPTEMBER 1991)

The National Centre in HIV Epidemiology and Clinical Research reports that as of 31 August 1991 a total of 15224 diagnoses of HIV infection and 2813 cases of AIDS had been reported in Australia. For the most recent period, 1 August to 31 August 1991, 25 new cases of AIDS and 74 new diagnoses of HIV infection were reported.

The following tables provide more detailed information on a State/Territory basis.

Readers should note that cumulative figures are subject to retrospective revision, which may result in apparent discrepancies between the number of new cases for the reporting month and the increment in the cumulative figure from the previous report.

Table 1. New diagnoses of AIDS and deaths from AIDS occurring in the period 1 August to 31 August 1991, by sex and State/Territory in which the diagnosis was made

STATE/	CASES			DEATHS		
TERRITORY	Male	Female	Total	Male	Female	Total
ACT	1	0	1	1	0	0
NSW	13	1	14	10	0	10
NT	0	0	0	0	0	0
Qld	0	0	0	0	0	0
SA	3	0	3	1	0	1
Tas	0	0	0	0	0	0
Vic	5	0	5	0	0	0
WA	3	0	3	0	0	0
TOTAL	24	1	25	12	0	12

Table 2. Cumulative cases of AIDS and deaths from AIDS by sex and State/Territory in which diagnosis was made, to 31 August 1991

STATE/	CASES			DEATHS		
TERRITORY	Male	Female	Total	Male	Female	Total
ACT	36	1	37	22	1	23
NSW	1679	49	1728	1088	35	1123
NT	8	0	8	3	0	3
Qld	206	9	215	140	7	147
SA	95	4	99	50	1	51
Tas	14	1	15	8	1	9
Vic	571	12	583	346	6	352
WA	120	8	128	79	3	82
TOTAL	2729	84	2813	1736	54	1790

Table 3. Number of new diagnoses of HIV infection in the period 1 August to 31 August 1991 and cumulative since the introduction of HIV antibody testing to 31 August 1991 by sex and State/Territory

STATE/ TERRITORY	August 1991[1]			CUMULATIVE TO 31 August 1991			
	Male	Female	Total	Male	Female	Sex not reported	Total
ACT	1	0	1	18	0	97	115
NSW[2]	27	0	32	7788	397	1968	10153
NT	0	0	0	59	5	0	64
Qld	12	0	12	1076	46	0	1122
SA[3]	-	-	-	333	27	0	360
Tas	0	0	0	52	3	0	55
Vic	24	2	26	2640	83	5	2728
WA	3	0	3	595	32	0	627
TOTAL	67	2	74	12561	593	2070	15224

1. Dashes indicate that counts were unavailable for period.
2. Total for NSW includes 5 persons whose sex was not reported.
3. Cumulative counts to 18 May 1990.
4. Total for August includes 5 persons whose sex was not reported.

COMPOSITION OF THE AUSTRALIAN INFLUENZA VACCINE FOR THE 1992 WINTER

The Influenza Vaccine Committee decided in October 1991 that the composition of the influenza vaccine for the 1992 Australian winter will be:

A/Victoria/36/88 (H1N1)-like strain, 15 micrograms haemagglutinin

A/Beijing/353/89 (H3N2)-like strain, 15 micrograms haemagglutinin

B/Yamagata/16/88-like strain, 15 micrograms haemagglutinin, or

B/Panama/45/90-like strain, 15 micrograms haemagglutinin.

Type A Strains

The current vaccine contains an A/Victoria/36/88-like strain as the H1N1 component and A/Beijing/353/89-like strain as the H3N2 component. There has been limited Type A (H3N2 and H1N1) influenza activity in the Northern Hemisphere winter and only sporadic Type A activity in Australia during the 1991 winter. There has also been limited H1N1 activity reported from New Zealand. Antigenic analysis of Type A isolates indicated that there had been no significant antigenic drift from the current vaccine strains. The two Type A influenza strains of the current vaccine have consequently been retained for next year's vaccine.

Type B Strains

The current vaccine contains B/Yamagata/16/88-like strain.

For the Northern Hemisphere winter the majority of influenza isolates were Type B. Although some B/Victoria/2/87-like viruses were isolated, the majority were B/Yamagata/16/88-like with strains resembling B/Panama/45/90-like being isolated more frequently during the latter part of the season. The 1991 New Zealand isolates also resembled B/Yamagata/16/88 and B/Panama/45/90.

The majority of strains isolated during the 1991 Australian winter were Type B. These isolates were also heterogeneous with strains resembling B/Victoria/2/87, B/Yamagata/16/88 and B/Panama/45/90 being isolated. The B/Yamagata/16/88-like strain in the current vaccine is a proven immunogen producing satisfactory antibody responses in vaccines against B/Panama/45/90 and other related B strains. In view of this, and the fact that the B/Yamagata/16/88 and the B/Panama/45/90 strains are relatively similar, the Type B component of the 1992 Australian vaccine can be either a B/Yamagata/16/88-like strain or B/Panama/45/90-like strain.

OVERSEAS BRIEFS

In the last two weeks, the following information regarding cholera cases and recently infected areas has been supplied by the World Health Organization and the Department of Foreign Affairs and Trade.

Cholera in Africa Update

Angola has reported 582 cases with 11 deaths for the period 30 August to 18 October.

There were 355 cases and 15 deaths reported in **Benin** from 15 August to 30 September.

Chad reported 295 cases and 15 deaths for the period 30 September to 27 October.

In **Cote d'Ivoire**, there were 604 cases and 116 deaths reported on 3 October.

Ghana had 1175 cases and 72 deaths reported for the period 20 September to 10 October.

There were 64 cases and 14 deaths reported in **Liberia** from 1 July to 30 September.

Malawi reported 8088 cases and 245 deaths on 30 September.

In **Rwanda**, there were 411 cases and 25 deaths reported for the period 1 June to 30 September.

There were 230 cases and 13 deaths in **Niger** for the period 20 September to 18 October.

Togo has reported 1714 cases and 51 deaths for the period 1 August to 30 September.

Cholera in the Americas Update

Honduras is the latest country to start reporting cases of cholera. One confirmed case and one suspect case were reported between 13 and 24 October, and there were two cases from 25 to 26 October. The Valle Department has been declared infected.

In **Bolivia**, there were 22 cases and 2 deaths from 16 to 24 October and 14 cases from 25 to 31 October.

Brazil reported 12 cases for the period 20 September to 5 October and 25 cases from 6 to 16 October. Sao Paulo State has been removed from the list of cholera-infected areas.

Ecuador reported 397 cases and 4 deaths for the period 22 to 28 September, and 426 cases and 7 deaths from 29 September to 5 October. Infected areas of Ecuador include the Galapagos Islands.

There were 83 cases and 4 deaths in **El Salvador** from 13 to 19 October, and 66 cases from 20 to 26 October.

Guatemala reported 220 cases and 5 deaths for the period 15 to 28 September and 583 cases and 18 deaths from 29 September to 19 October. Newly infected areas are Baja Verapaz, Chinaltenango, El Progreso, Quiche, Sacatepequez, Santa Rosa and Zacapa Departments.

In **Mexico**, there were 597 cases and 9 deaths from 11 September to 9 October, and 202 cases and 2 deaths from 10 to 15 October. Guerrero, Michoacan, Morelos, Yucatan and Zacateca States have recently been declared infected.

To date, there have been some 1800 confirmed cases of cholera in Mexico, with 24 deaths. The initial outbreak occurred in southern Mexico in June and, whilst it has spread to a number of areas of the country, the outbreaks have not reached epidemic levels, and the weekly number of cases may now be declining.

The majority of cases have occurred in lower income rural areas and remote villages through the spread of infected food and water. The States of Puebla, Tabasco and Veracruz are among the worst affected, reporting between 60 and 80 cases each. Cases have also been reported from the State of Guerrero, which includes Acapulco, one of Mexico's largest tourist resorts. The cases reported have, however, been located in the northern part of the State. The risk to tourists travelling to Mexico is considered to be small; no tourists are known to have been infected.

In Mexico City, some 100 cases and 3 deaths have been reported. The majority of these cases have occurred in less developed, poorer suburbs on the outskirts of the city, and all the cases have been a result of infection acquired from outside the city regions. As yet, the infection has not spread to the inner city areas.

The Mexican Ministry of Health identifies poor sanitary conditions in rural towns as a major cause of the spread of the disease. The health authorities have undertaken an agressive campaign of treatment and prevention, including the systematic closure of street food vendors, the use of 'epidemiological brigades' and a 'clean water campaign'.

Panama reported 32 cases and 1 death from 13 to 19 October, and 61 cases and 2 deaths from 20 to 26 October.

Cholera in Asia Update

Bhutan has reported an outbreak which occurred from 26 June to September in the Districts of Mongar, Pemagatsel, Phuntsholing, Punakha, Samdrupjongkhar, Tashigang and Thimphu. A total of 422 cases and 19 deaths were reported.

Two hundred and one cases and 2 deaths were reported from **Malaysia** for an unknown period up to 31 August. The Tawau District of Sabah and the Simunjan District of Sarawak have recently been declared infected.

India reported 559 cases and 8 deaths for the month of August.

In **Iraq**, there were 49 cases from 3 to 16 October and 11 cases from 17 to 23 October.

There was one cases reported from **Singapore** for the period 29 september to 5 October.

Cholera in Europe Update

Romania reported 43 cases and 5 deaths from 9 to 15 October, and a further 16 cases from 16 to 21 October.

Yellow Fever in Brazil

Two fatal cases of yellow fever have been reported from Brazil. One was reported in July in the Tucurui Municipio in Para State and the other occurred in Altamira Municipio, Para State in October. Tucurui Municipio has been added to the list of yellow fever-infected areas.

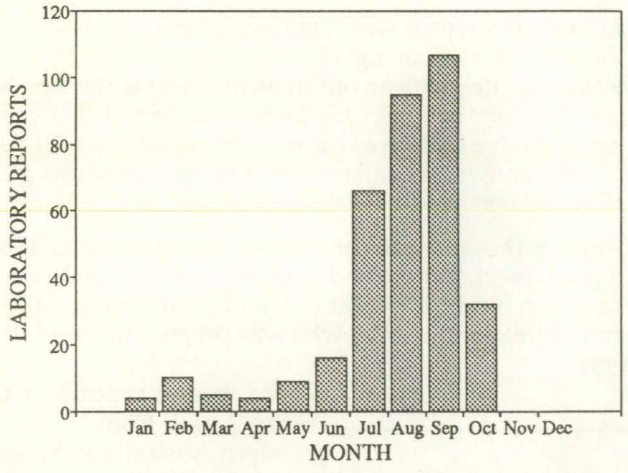
Influenza in the Northern Hemisphere

A few outbreaks of respiratory illness have been reported so far for the northern winter, but most have associated with respiratory viruses other than influenza. Early influenza virus isolates from sporadic cases have been identified as influenza A (H1N1) and influenza A (H2N3) in the USA, and influenza A (H3N2) in Japan and the United Kingdom.

COMMUNICABLE DISEASES SURVEILLANCE

There was a total of 46 reports of **influenza B** this fortnight, bringing the total for the year to 348 (Figure 1). Four of this period's reports were further identified as 'Yamagata/16/88-like' and one was 'Vic/2/87-like'. There were three cases in persons aged 65 years or more: two males and one female. Cardiac symptoms were reported for one patient, a 31 year old male.

Figure 1. Influenza B reports, 1991, by month



Influenza A was reported six times this period. There were three cases in males aged over 65 years.

A further 103 reports of **rotavirus** were received this fortnight, bringing the total for the year to 2184, the highest number ever recorded in this scheme. The high number of reports this year reflects the high rotavirus activity reported from laboratories in New South Wales and the ACT in August and September (Figure 2). Rotavirus activity seems to have declined in all States now, after early peaks in Western Australia and Victoria (Figure 3) and later peaks in New South Wales and the ACT, Tasmania, Queensland and South Australia.

Of the 2047 cases for which sex and age were reported, 1222 (59.7%) were in children aged 1 to 4 years, 654 (31.9%) in infants aged 1 to 11 months, 99 (4.8%) in children 5 to 14 years and there were 11 cases (0.5%) in infants aged less than 1 month. Fifty-six per cent of the cases were in males.

Figure 2. Rotavirus reports 1991, by month, for New South Wales and the ACT, Queensland and South Australia

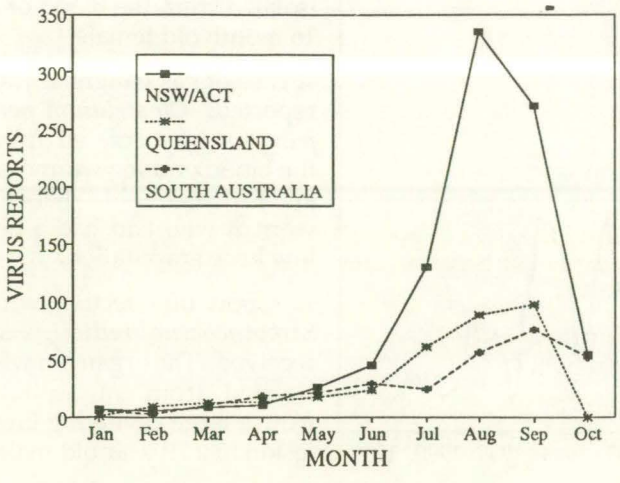
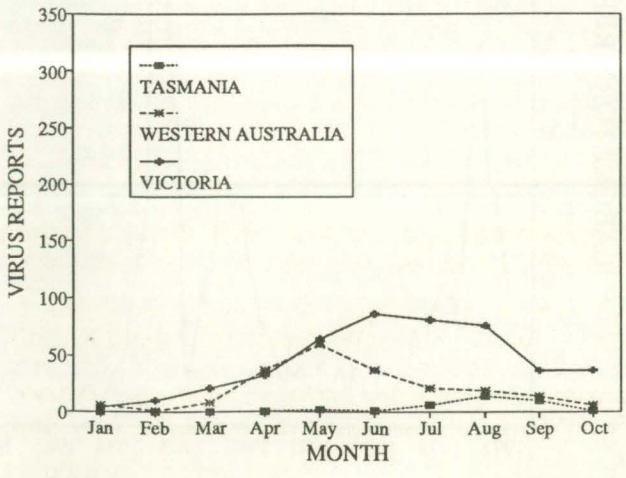


Figure 3. Rotavirus reports 1991, by month, for Tasmania, Western Australia and Victoria

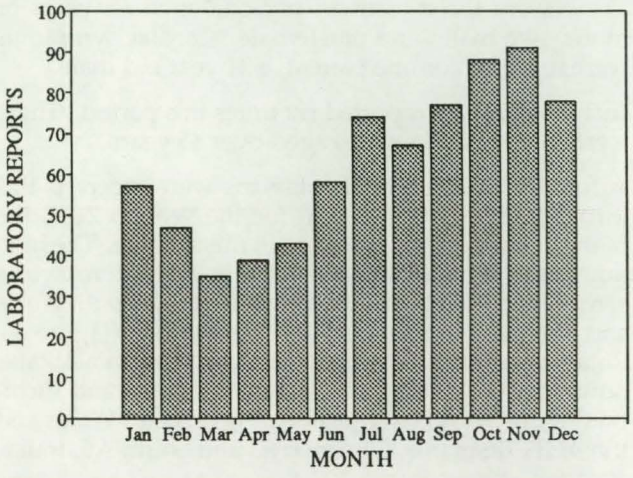


A further 7 cases of **measles** were reported, bringing the total for the year to 209. Three of the cases were in 21 month old triplets, whose sibling also presented with a measles-like illness.

Rubella was reported in 16 patients. They included 3 women of child-bearing age (17 years, 17 years and 40 years) and 8 patients from Tasmania.

There were 15 reports of ***Mycoplasma pneumoniae*** infection, including a 13 year old male with Stevens-Johnson syndrome. *M. pneumoniae* shows a slight seasonality in Australia, with a peak in October-November most years, so it is expected that the number of reports will be slightly higher at this time of the year (Figure 4). Larger outbreaks are not expected this year, however, as *M. pnuemoniae* tends to cause outbreaks in 4 to 5 year cycles in Australia, and we currently appear to be in an interepidemic period (Figure 5).

Figure 4. ***Mycoplasma pneumoniae*** **reports by month, 1986 to 1990 average**



A further 18 reports of **hepatitis A** were received. Ten of the patients were adult males.

There were 102 reports of **hepatitis B**, bringing the total for the year to 1817. The patients included a 13 year old female with thalassaemia.

A total of 64 reports of **hepatitis C** were received. Risk factors reported included history of drug addiction (3 patients), haemophilia A (5 patients) and Von Willebrand's Disease (1 patient).

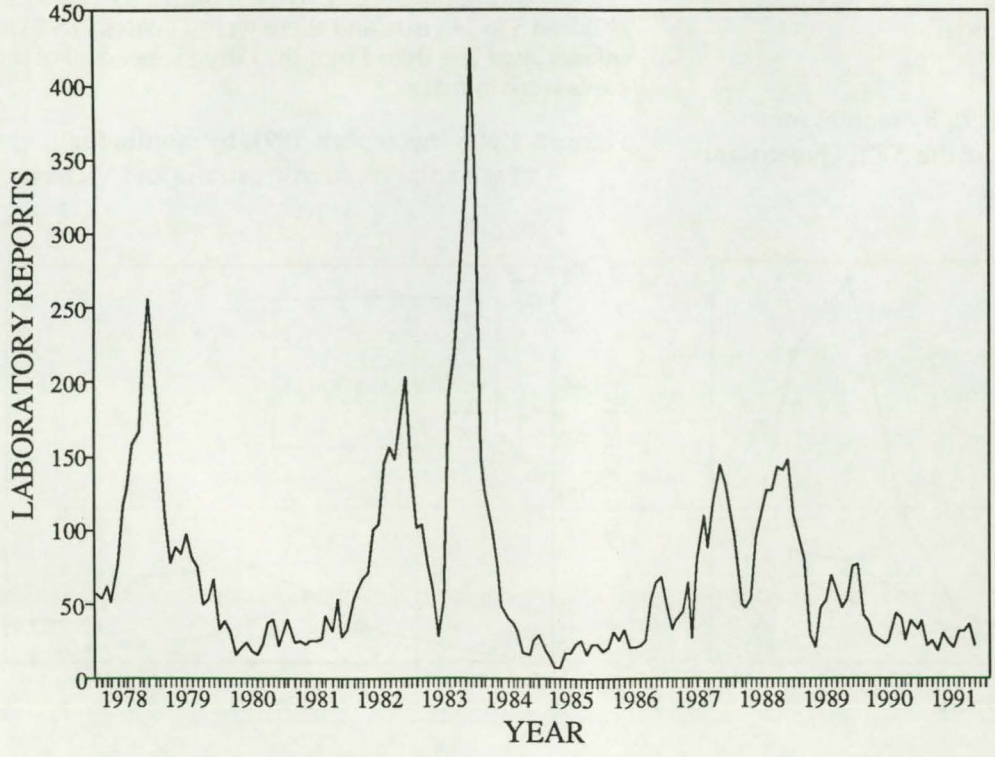
There were only 60 reports of **respiratory syncytial virus** this fortnight, with 27 reports from Queensland laboratories, 13 from Victoria and 12 from South Australia. The peak in reports occurred in July-August this year, slightly later than usual for Australia.

There were 25 reports of **varicella-zoster virus** this period. The patients included a 1 month old male with encephalitis and another patient with other CNS symptoms.

Adenovirus type 8 was reported from 6 patients from Victoria. This virus usually causes conjunctivitis and was associated with an outbreak in adults in the Northern Territory in 1989. All 29 cases reported this year have had eye disease as the reported syndrome. Of the 27 with known age and sex, 26 have been in adults and 18 have been in adult males.

Among the 40 cases of **herpes simplex virus (not typed)** infection reported were a 3 year old male who had been fitting, a 15 year old female with encephalitis and 30 year old woman who was pregnant.

Figure 5. ***Mycoplasma pneumoniae*** **reports by month, 1978 to 1991**

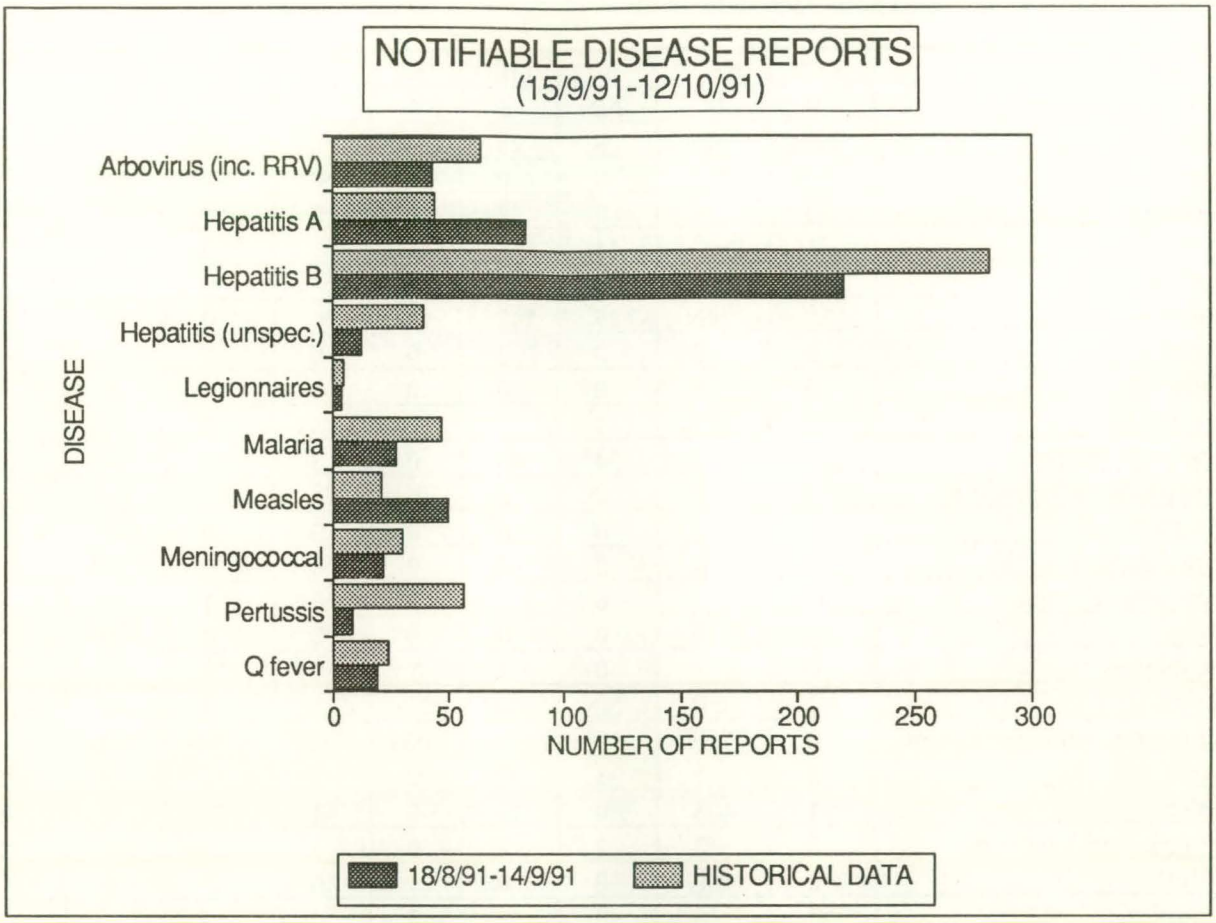


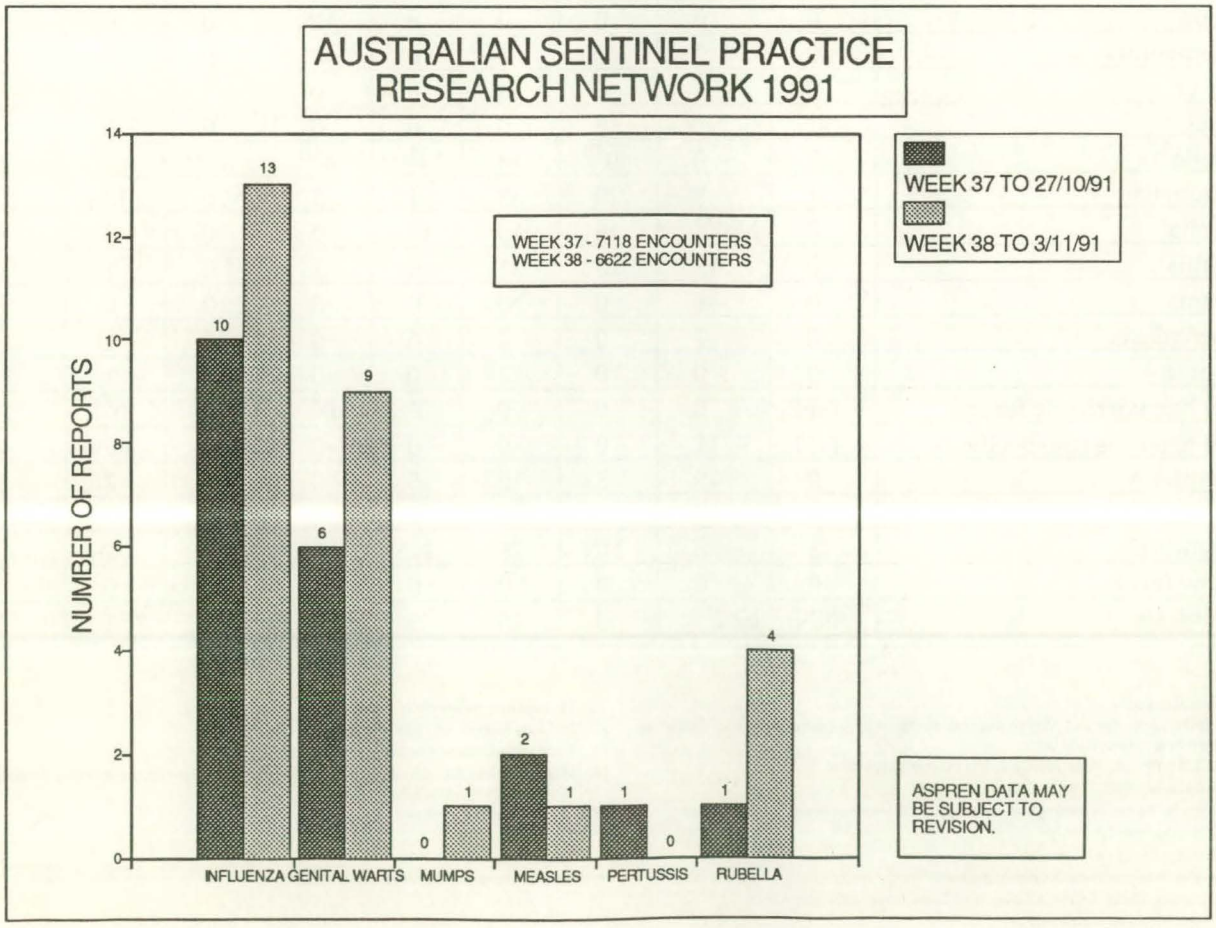
There were 6 reports of **Q fever**, 2 each from Victoria, Western Australia and New South Wales. No exposure details were provided for any of the patients.

One case of ***Haemophilus influenzae*** **type b** was reported. The organism was isolated from the blood of a 16 month old female.

A case of gas gangrene was reported. ***Clostridium perfringens*** was isolated from the blood and leg wound of an 81 year old diabetic woman who had had a below knee amputation.

A report of infection with ***Streptococcus milleri*** was received. The organism was isolated from an aspirate from a large cavitating lung lesion in a 79 year old male.


NOTIFIABLE DISEASE REPORTS
(15/9/91-12/10/91)
Arbovirus (inc. RRV)
Hepatitis A
Hepatitis B
Hepatitis (unspec.)
Legionnaires
Malaria
Measles
Meningococcal
Pertussis
Q fever
DISEASE
0
50
100
150
200
250
300
NUMBER OF REPORTS
18/8/91-14/9/91
HISTORICAL DATA


AUSTRALIAN SENTINEL PRACTICE
RESEARCH NETWORK 1991
WEEK 37 - 7118 ENCOUNTERS
WEEK 38 - 6622 ENCOUNTERS
WEEK 37 TO 27/10/91
WEEK 38 TO 3/11/91
NUMBER OF REPORTS
0
2
4
6
8
10
12
14
10
13
6
9
0
1
2
1
1
0
1
4
INFLUENZA
GENITAL WARTS
MUMPS
MEASLES
PERTUSSIS
RUBELLA
ASPREN DATA MAY
BE SUBJECT TO
REVISION.

National Notifiable Diseases Reports 15/9/91-12/10/91

DISEASES	ACT	NSW*	NT	QLD	SA	TAS	VIC	WA**	TOTAL
Arbovirus Infections (NOS)	0	1[12]	NN	6	0[12]	0	0	NN	7
Ross River Virus	NN	NN	6	28	NN	NN	NN	2	36
Dengue fever	NN	NN	0	0	NN	NN	NN	NN	0
Brucellosis	0	0	0	2	0	0	0	0	2
Campylobacter	1	NN[13]	14	186	164	36	98	32	531
Chancroid	0	NN	0	0	NN	NN	0	1	1
Chlamydia	1[1]	NN	25	142	0[1]	26	0	0[1]	194
Cholera	0	0	0	0	0	0	0	0	0
Diphtheria	0	0	0	0	0	0	0	0	0
Donovanosis	0	NN	1	0	NN	NN	0	NN	1
Gonococcal diseases[2]	0	2	34	46	0	3	0	17	102
Haemophilus influenzae b	NN	6	NN	8	0[5]	2[8]	9[10]	NN	25
HIV infection[14]	0[3]	0	0	0	0	0	0	2[6]	2
Hydatid disease	0	0	0	0	0	0	0	0	0
Legionnaires disease	NN	0	0	2	1	0	1	0	4
Leprosy	0	0	0	0	0	0	0	0	0
Leptospirosis	0	1	0	1	1	0	13	0	16
Listeriosis	NN	0	NN	0	NN	1	1	0	2
Lymphogranuloma venereum	0	NN	0	0	NN	NN	0	NN	0
Malaria	2	1	3	12	2	1	3	4	28
Measles	1	3	0	10	5	1	28	2	50
Meningococcal infections	0	3	2	8	0	3	5	1	22
Ornithosis	0	NN	0	0	1	0	3	0	4
Pertussis	NN	0	0	2	5	0	0	1	8
Plague	0	0	0	0	0	NN	0	0	0
Poliomyelitis	0	0	0	0	0	0	0	0	0
Q fever	0	2	0	16	0	0	1	0	19
Rabies	NN	NN	0	0	0	0	0	0	0
Rubella[4]	7	0	0[4B]	18	14[4A]	4[4B]	10[4A]	0[4B]	53
Salmonella	1	8	20	83	21	5	20	18	176
Shigella	0	NN[13]	16	10	10	0	0	8	44
Syphilis	0	13	18	31	0	1	0	1	64
Tetanus	0	0	0	NN	0	0	0	0	0
Tuberculosis	0	2	0	0	6	0	0	1	9
Typhoid	0	0	0	2	0	0	2[11]	1	5
Viral haemorrhagic fever	NN	0	0	0	0[7]	0[9]	0	0[7]	0
Viral hepatitis (unspecified)	NN	11	0	0	0	0	1	NN	12
Hepatitis A	2	19	5	15	5	0	31	7	84
Hepatitis B	4	18	0	102	0	2	62	32	220
Hepatitis C	5	8	NN	78	NN	1	87	NN	179
Yellow fever	0	0	0	0	0	0	0	0	0
Yersiniosis	NN	NN[13]	0	10	9	0	1	1	21

1. Trachoma only
2. In NT, Qld, SA and Vic, gonococcal ophthalmia neonatorum is also notifiable; numbers may include both
3. AIDS only 4. Rubella only unless otherwise specified

4A. Rubella and CRS 4B. CRS only

5. Only as 'bacterial meningitis'; meningococcal infection is separately notified
6. AIDS, ARC and LAS only
7. Marburg, Ebola and Lassa fevers only
8. Only as 'non-meningococcal meningitis'
9. Marburg, Ebola, Crimean-Congo and Lassa fevers only
10. Epiglottitis and meningitis only
11. Typhoid and paratyphoid included.
12. Includes Ross River Virus infections
13. Only as 'foodborne disease'
14. More complete data on new HIV infections are presented in the monthly Australian HIV Surveillance Reports

NOS Not Otherwise Specified

NN Not notifiable

* data for September 1991

** data for the period between 15/9/91-28/9/91

AUSTRALIA - COMMUNICABLE DISEASES INTELLIGENCE

VIRAL IDENTIFICATIONS FROM CONTRIBUTING LABORATORIES BY STATE OF CONTRIBUTING LABORATORY

PERIOD 23/10/91 TO 5/11/91

NSW: ICPMR; PHH/POW; RACH; ST GEORGE HOSP, KOGARAH; ROYAL NEWCASTLE HOSP; TAMWRTH LAB.
VIC: FAIRFIELD; RCH; MDU, UNI MELB.
QLD: STATE LAB, BRIS; TOOWOOMBA PATH LAB; ROYAL BRIS HOSP; DR TB LYNCH, PATHOLOGIST, ROCKHAMPTON.
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	ACT	TOTAL
0100	ADENOVIRUS NOT TYPED	4	4	26	4	9	0	47
0101	ADENOVIRUS TYPE 1	4	0	0	0	2	0	6
0102	ADENOVIRUS TYPE 2	2	0	0	0	2	1	5
0103	ADENOVIRUS TYPE 3	0	1	0	0	0	0	1
0106	ADENOVIRUS TYPE 6	0	0	0	0	1	0	1
0108	ADENOVIRUS TYPE 8	0	6	0	0	1	0	7
0109	ADENOVIRUS TYPE 9	0	1	0	0	0	0	1
0111	ADENOVIRUS TYPE 11	1	0	0	0	0	0	1
0128	ADENOVIRUS TYPE 28	0	1	0	0	0	0	1
0137	ADENOVIRUS TYPE 37	0	1	0	0	0	0	1
0199	ADENOVIRUS TYPING PENDING	0	2	0	0	0	0	2
0201	INFLUENZA A VIRUS	0	0	0	6	0	0	6
0203	INFLUENZA B VIRUS	4	7	26	1	5	3	46
0301	PARAINFLUENZA VIRUS TYPE 1	1	0	0	0	0	0	1
0302	PARAINFLUENZA VIRUS TYPE 2	0	1	0	0	1	0	2
0303	PARAINFLUENZA VIRUS TYPE 3	5	1	22	0	2	1	31
0399	PARAINFLUENZA VIRUS TYPING PEN	0	3	4	0	0	0	7
0400	RESPIRATORY SYNCYTIAL VIRUS (R	5	13	27	1	12	2	60
0500	RHINOVIRUS (ALL TYPES)	2	4	0	1	1	0	8
0600	MYCOPLASMA PNEUMONIAE	4	1	0	7	2	1	15
0700	ORNITHOSIS-PSITTACOSIS	0	5	0	0	0	0	5
0809	COXSACKIEVIRUS A9	0	3	0	0	0	0	3
0816	COXSACKIEVIRUS A16	0	1	0	0	0	0	1
0903	COXSACKIEVIRUS B3	0	0	0	1	0	0	1
0905	COXSACKIEVIRUS B5	0	1	0	0	0	0	1
1000	ECHOVIRUS NOT TYPED	0	1	0	0	1	0	2
1006	ECHOVIRUS TYPE 6	1	0	0	0	0	0	1
1007	ECHOVIRUS TYPE 7	0	1	0	0	0	0	1
1016	ECHOVIRUS TYPE 16	1	0	0	0	0	0	1
1100	POLIOVIRUS NOT TYPED	1	0	0	0	0	0	1
1103	POLIOVIRUS TYPE 3 (UNCHARACTER	1	0	0	0	0	0	1
1200	MUMPS VIRUS	1	0	0	0	0	0	1
1300	HERPES VIRUS GROUP - NOT TYPED	0	1	0	3	0	0	4
1301	HERPES SIMPLEX VIRUS - NOT TYP	32	0	0	3	1	4	40
1302	EPSTEIN-BARR VIRUS (EB VIRUS)	10	4	0	10	17	0	41
1303	VARICELLA-ZOSTER VIRUS	4	3	4	11	3	0	25
1306	HERPES SIMPLEX TYPE 1	12	47	81	19	21	4	184
1307	HERPES SIMPLEX TYPE 2	38	28	49	50	21	0	186
1399	HERPES VIRUS TYPING PENDING	0	1	0	0	0	0	1
1401	COXIELLA BURNETII	2	2	0	2	0	0	6
1502	PICORNA VIRUS - NOT TYPED = EN	2	0	6	9	0	0	17
1521	MEASLES VIRUS	3	4	0	0	0	0	7
1522	RUBELLA VIRUS	9	2	0	3	1	1	16
1532	HEPATITIS B ANTIGEN	16	10	52	19	5	0	102
1535	HEPATITIS A ANTIBODY	2	5	2	5	2	2	18
1536	HEPATITIS C VIRUS	0	0	0	47	7	10	64
1541	CHLAMYDIA TRACHOMATIS - UNSPEC	17	14	0	29	10	1	71
1555	PAPOVAVIRUS GROUP (PAPILLOMA -	2	0	0	0	0	0	2
1556	CMV - CYTOMEGALOVIRUS	12	40	46	6	0	0	104
1563	CORONAVIRUS	4	2	0	0	0	0	6
1564	ROTAVIRUS	30	21	0	2	26	24	103
1565	CALICI VIRUS	1	0	0	0	0	0	1
1566	NORWALK AGENT	0	2	0	0	0	0	2
1599	ENTEROVIRUS TYPING PENDING	2	6	0	0	0	0	8
1700	PARVOVIRUS	0	3	0	0	0	0	3
9992	ROSS RIVER VIRUS	0	0	0	2	0	0	2
9994	SMALL VIRUS (LIKE) PARTICLE	1	3	0	0	0	0	4
9995	DENGUE NOT TYPED	1	0	0	0	0	0	1
9996	PARAMYXO	0	0	2	0	0	0	2
TOTAL		237	256	347	241	153	54	1288

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 FROM CONTRIBUTING LABORATORIES
BASED ON DATE OF REPORTING

PERIOD 23/10/91 TO 5/11/91

CODE 018 - MICROBIOLOGICAL DIAGNOSTIC UNIT, UNIVERSITY OF MELBOURNE (VIC)
CODE 019 - FAIRFIELD HOSPITAL, MELBOURNE (VIC)
CODE 065 - STATE HEALTH LABORATORY SERVICES, PERTH (WA)
CODE 110 - INSTITUTE OF MEDICAL & VETERINARY SCIENCE, ADELAIDE (SA)
CODE 111 - ROYAL CHIDLDRENS HOSPITAL, MELBOURNE (VIC)
CODE 112 - INSTITUTE OF CLINICAL PATHOLOGY & MEDICAL RESEARCH, WESTMEAD (NSW)
CODE 113 - PRINCE HENRY/PRINCE OF WALES HOSPITALS, SYDNEY (NSW)
CODE 114 - ROYAL ALEXANDRA HOSPITAL FOR CHILDREN, CAMPERDOWN (NSW)
CODE 115 - STATE HEALTH LABORATORY, BRISBANE (QLD)
CODE 116 - WODEN VALLEY HOSPITAL, GARRAN (ACT)

		018	019	065	110	111	112	113	114	115	116	TOTAL
0100	ADENOVIRUS NOT TYPED	0	2	4	9	2	2	2	0	26	0	47
0101	ADENOVIRUS TYPE 1	0	0	0	2	0	4	0	0	0	0	6
0102	ADENOVIRUS TYPE 2	0	0	0	2	0	2	0	0	0	1	5
0103	ADENOVIRUS TYPE 3	0	1	0	0	0	0	0	0	0	0	1
0106	ADENOVIRUS TYPE 6	0	0	0	1	0	0	0	0	0	0	1
0108	ADENOVIRUS TYPE 8	0	6	0	1	0	0	0	0	0	0	7
0109	ADENOVIRUS TYPE 9	0	1	0	0	0	0	0	0	0	0	1
0111	ADENOVIRUS TYPE 11	0	0	0	0	0	1	0	0	0	0	1
0128	ADENOVIRUS TYPE 28	0	1	0	0	0	0	0	0	0	0	1
0137	ADENOVIRUS TYPE 37	0	1	0	0	0	0	0	0	0	0	1
0199	ADENOVIRUS TYPING PENDING	0	1	0	0	1	0	0	0	0	0	2
0201	INFLUENZA A VIRUS	0	0	6	0	0	0	0	0	0	0	6
0203	INFLUENZA B VIRUS	0	6	1	5	1	4	0	0	26	3	46
0301	PARAINFLUENZA VIRUS TYPE 1	0	0	0	0	0	1	0	0	0	0	1
0302	PARAINFLUENZA VIRUS TYPE 2	0	0	0	1	1	0	0	0	0	0	2
0303	PARAINFLUENZA VIRUS TYPE 3	0	0	0	2	1	4	0	1	22	1	31
0399	PARAINFLUENZA VIRUS TYPING PEN	0	0	0	0	3	0	0	0	4	0	7
0400	RESPIRATORY SYNCYTIAL VIRUS (R	0	8	1	12	5	1	2	2	27	2	60
0500	RHINOVIRUS (ALL TYPES)	0	1	1	1	3	1	0	1	0	0	8
0600	MYCOPLASMA PNEUMONIAE	0	1	7	2	0	0	1	3	0	1	15
0700	ORNITHOSIS-PSITTACOSIS	0	5	0	0	0	0	0	0	0	0	5
0809	COXSACKIEVIRUS A9	0	3	0	0	0	0	0	0	0	0	3
0816	COXSACKIEVIRUS A16	0	1	0	0	0	0	0	0	0	0	1
0903	COXSACKIEVIRUS B3	0	0	1	0	0	0	0	0	0	0	1
0905	COXSACKIEVIRUS B5	0	1	0	0	0	0	0	0	0	0	1
1000	ECHOVIRUS NOT TYPED	0	1	0	1	0	0	0	0	0	0	2
1006	ECHOVIRUS TYPE 6	0	0	0	0	0	1	0	0	0	0	1
1007	ECHOVIRUS TYPE 7	0	1	0	0	0	0	0	0	0	0	1
1016	ECHOVIRUS TYPE 16	0	0	0	0	0	1	0	0	0	0	1
1100	POLIOVIRUS NOT TYPED	0	0	0	0	0	0	1	0	0	0	1
1103	POLIOVIRUS TYPE 3 (UNCHARACTER	0	0	0	0	0	1	0	0	0	0	1
1200	MUMPS VIRUS	0	0	0	0	0	0	1	0	0	0	1
1300	HERPES VIRUS GROUP - NOT TYPED	0	1	3	0	0	0	0	0	0	0	4
1301	HERPES SIMPLEX VIRUS - NOT TYP	0	0	3	1	0	31	0	1	0	4	40
1302	EPSTEIN-BARR VIRUS (EB VIRUS)	0	3	10	17	1	8	1	1	0	0	41
1303	VARICELLA-ZOSTER VIRUS	0	3	11	3	0	3	1	0	4	0	25
1306	HERPES SIMPLEX TYPE 1	0	46	19	21	1	7	5	0	81	4	184
1307	HERPES SIMPLEX TYPE 2	0	28	50	21	0	26	11	1	49	0	186
1399	HERPES VIRUS TYPING PENDING	0	0	0	0	1	0	0	0	0	0	1
1401	COXIELLA BURNETII	0	2	2	0	0	2	0	0	0	0	6
1502	PICORNA VIRUS - NOT TYPED = EN	0	0	9	0	0	2	0	0	6	0	17
1521	MEASLES VIRUS	0	3	0	0	1	0	0	3	0	0	7
1522	RUBELLA VIRUS	0	2	3	1	0	8	1	0	0	1	16
1532	HEPATITIS B ANTIGEN	0	9	19	5	1	13	2	1	52	0	102
1535	HEPATITIS A ANTIBODY	0	5	5	2	0	1	1	0	2	2	18
1536	HEPATITIS C VIRUS	0	0	47	7	0	0	0	0	0	10	64
1541	CHLAMYDIA TRACHOMATIS - UNSPEC	12	0	29	10	2	15	2	0	0	1	71
1555	PAPOVAVIRUS GROUP (PAPILLOMA -	0	0	0	0	0	0	2	0	0	0	2
1556	CMV - CYTOMEGALOVIRUS	0	37	6	0	3	9	2	1	46	0	104
1563	CORONAVIRUS	0	2	0	0	0	4	0	0	0	0	6
1564	ROTAVIRUS	0	1	2	26	20	24	6	0	0	24	103
1565	CALICI VIRUS	0	0	0	0	0	1	0	0	0	0	1
1566	NORWALK AGENT	0	2	0	0	0	0	0	0	0	0	2
1599	ENTEROVIRUS TYPING PENDING	0	0	0	0	6	0	0	2	0	0	8
1700	PARVOVIRUS	0	3	0	0	0	0	0	0	0	0	3
9992	ROSS RIVER VIRUS	0	0	2	0	0	0	0	0	0	0	2
9994	SMALL VIRUS (LIKE) PARTICLE	0	3	0	0	0	0	0	1	0	0	4
9995	DENGUE NOT TYPED	0	0	0	0	0	1	0	0	0	0	1
9996	PARAMYXO	0	0	0	0	0	0	0	0	2	0	2
TOTAL		12	191	241	153	53	178	41	18	347	54	1288

AUSTRALIA - COMMUNICABLE DISEASES INTELLIGENCE

VIRAL IDENTIFICATIONS BY CLINICAL INFORMATION TABLE 1

PERIOD 23/10/91 TO 5/11/91

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	9	10	11	TOTAL
0100	ADENOVIRUS NOT TYPED	4	21	0	1	0	15	0	0	0	0	41
0101	ADENOVIRUS TYPE 1	0	3	0	0	2	0	0	0	0	0	5
0102	ADENOVIRUS TYPE 2	1	2	0	0	0	0	0	0	0	0	3
0106	ADENOVIRUS TYPE 6	0	1	0	0	0	0	0	0	0	0	1
0109	ADENOVIRUS TYPE 9	0	0	0	0	0	1	0	0	0	0	1
0128	ADENOVIRUS TYPE 28	0	0	0	0	0	1	0	0	0	0	1
0199	ADENOVIRUS TYPING PENDING	0	1	0	0	0	0	0	0	0	0	1
0201	INFLUENZA A VIRUS	0	5	0	0	0	0	0	0	0	0	5
0203	INFLUENZA B VIRUS	1	38	0	0	0	0	0	1	0	0	40
0301	PARAINFLUENZA VIRUS TYPE 1	0	1	0	0	0	0	0	0	0	0	1
0302	PARAINFLUENZA VIRUS TYPE 2	0	1	0	0	0	0	0	0	0	0	1
0303	PARAINFLUENZA VIRUS TYPE 3	0	30	0	0	0	0	0	0	0	0	30
0399	PARAINFLUENZA VIRUS TYPING PEN	0	7	0	0	0	0	0	0	0	0	7
0400	RESPIRATORY SYNCYTIAL VIRUS (R	1	56	0	0	0	0	0	0	0	0	57
0500	RHINOVIRUS (ALL TYPES)	0	7	0	0	0	0	0	0	0	0	7
0600	MYCOPLASMA PNEUMONIAE	2	10	0	0	0	0	0	0	0	1	13
0700	ORNITHOSIS-PSITTACOSIS	0	4	0	0	0	0	0	0	0	0	4
0809	COXSACKIEVIRUS A9	0	1	0	1	0	0	0	0	0	1	3
0816	COXSACKIEVIRUS A16	0	0	0	0	0	0	0	0	0	1	1
0903	COXSACKIEVIRUS B3	0	0	0	1	0	0	0	0	0	0	1
0905	COXSACKIEVIRUS B5	0	0	0	1	0	0	0	0	0	0	1
1000	ECHOVIRUS NOT TYPED	0	1	0	1	0	0	0	0	0	0	2
1007	ECHOVIRUS TYPE 7	0	0	0	1	0	0	0	0	0	0	1
1100	POLIOVIRUS NOT TYPED	0	0	0	0	0	1	0	0	0	0	1
1103	POLIOVIRUS TYPE 3 (UNCHARACTER	0	0	0	0	0	1	0	0	0	0	1
1300	HERPES VIRUS GROUP - NOT TYPED	0	0	0	0	0	0	0	0	0	4	4
1301	HERPES SIMPLEX VIRUS - NOT TYP	11	0	1	0	1	0	0	0	0	13	26
1302	EPSTEIN-BARR VIRUS (EB VIRUS)	14	1	0	0	0	1	1	0	0	1	18
1303	VARICELLA-ZOSTER VIRUS	2	1	1	0	1	0	0	0	0	20	25
1306	HERPES SIMPLEX TYPE 1	2	11	0	0	0	1	1	0	0	117	132
1307	HERPES SIMPLEX TYPE 2	4	0	0	0	0	0	0	0	0	85	89
1399	HERPES VIRUS TYPING PENDING	0	0	0	0	0	0	0	0	0	1	1
1401	COXIELLA BURNETII	2	1	0	0	0	0	0	0	0	0	3
1502	PICORNA VIRUS - NOT TYPED = EN	2	6	1	0	0	4	0	0	0	2	15
1521	MEASLES VIRUS	2	3	0	0	0	0	0	0	0	2	7
1522	RUBELLA VIRUS	0	0	0	0	0	0	0	0	0	12	12
1532	HEPATITIS B ANTIGEN	39	0	0	0	0	0	53	0	0	0	92
1535	HEPATITIS A ANTIBODY	3	0	0	0	0	0	10	0	0	0	13
1536	HEPATITIS C VIRUS	50	0	0	0	0	0	6	0	0	0	56
1541	CHLAMYDIA TRACHOMATIS - UNSPEC	8	0	0	0	0	0	0	0	0	0	8
1555	PAPOVAVIRUS GROUP (PAPILLOMA -	0	0	0	0	0	0	0	0	2	0	2
1556	CMV - CYTOMEGALOVIRUS	5	41	0	0	0	1	1	0	6	0	54
1563	CORONAVIRUS	0	0	0	0	0	6	0	0	0	0	6
1564	ROTAVIRUS	0	0	0	0	0	101	0	0	0	0	101
1565	CALICI VIRUS	0	0	0	0	0	1	0	0	0	0	1
1566	NORWALK AGENT	0	0	0	0	0	2	0	0	0	0	2
1599	ENTEROVIRUS TYPING PENDING	0	0	0	2	0	3	1	0	0	0	6
1700	PARVOVIRUS	0	0	0	0	0	0	0	0	0	1	1
9994	SMALL VIRUS (LIKE) PARTICLE	0	0	0	0	0	4	0	0	0	0	4
9995	DENGUE NOT TYPED	0	0	0	0	0	1	0	0	0	0	1
9996	PARAMYXO	0	1	0	0	1	0	0	0	0	0	2
TOTAL		153	254	3	8	5	144	73	1	8	261	910

AUSTRALIA - COMMUNICABLE DISEASES INTELLIGENCE

VIRAL IDENTIFICATIONS BY CLINICAL INFORMATION TABLE 2

PERIOD 23/10/91 TO 5/11/91

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	4	0	0	0	0	0	0	0	2	0	6
0101	ADENOVIRUS TYPE 1	0	0	0	0	0	0	1	0	0	0	1
0102	ADENOVIRUS TYPE 2	0	0	0	0	0	0	2	0	0	0	2
0103	ADENOVIRUS TYPE 3	1	0	0	0	0	0	0	0	0	0	1
0108	ADENOVIRUS TYPE 8	7	0	0	0	0	0	0	0	0	0	7
0111	ADENOVIRUS TYPE 11	1	0	0	0	0	0	0	0	0	0	1
0137	ADENOVIRUS TYPE 37	1	0	0	0	0	0	0	0	0	0	1
0199	ADENOVIRUS TYPING PENDING	0	0	0	0	0	0	0	1	0	0	1
0201	INFLUENZA A VIRUS	0	0	0	0	0	0	0	1	0	0	1
0203	INFLUENZA B VIRUS	0	0	0	0	1	0	0	5	0	0	6
0302	PARAINFLUENZA VIRUS TYPE 2	0	0	0	0	0	0	0	0	1	0	1
0303	PARAINFLUENZA VIRUS TYPE 3	0	0	0	0	0	0	0	0	1	0	1
0400	RESPIRATORY SYNCYTIAL VIRUS (R	0	0	0	0	0	0	1	1	1	0	3
0500	RHINOVIRUS (ALL TYPES)	0	0	0	0	0	0	0	0	0	1	1
0600	MYCOPLASMA PNEUMONIAE	0	0	0	0	0	0	0	1	1	0	2
0700	ORNITHOSIS-PSITTACOSIS	0	0	0	0	0	0	0	1	0	0	1
1006	ECHOVIRUS TYPE 6	0	0	0	0	0	0	1	0	0	0	1
1016	ECHOVIRUS TYPE 16	0	0	0	0	0	1	0	0	0	0	1
1200	MUMPS VIRUS	0	0	0	0	0	0	0	1	0	0	1
1301	HERPES SIMPLEX VIRUS - NOT TYP	1	13	0	0	0	0	0	0	0	0	14
1302	EPSTEIN-BARR VIRUS (EB VIRUS)	0	0	18	0	0	0	1	2	1	0	22
1306	HERPES SIMPLEX TYPE 1	12	33	0	0	0	1	0	2	4	0	52
1307	HERPES SIMPLEX TYPE 2	0	97	0	0	0	0	0	0	0	0	97
1401	COXIELLA BURNETII	0	0	0	0	0	0	0	3	0	0	3
1502	PICORNA VIRUS - NOT TYPED = EN	0	0	0	0	0	0	0	2	0	0	2
1522	RUBELLA VIRUS	0	0	0	1	0	0	0	1	1	0	3
1536	HEPATITIS C VIRUS	0	0	0	0	0	0	0	0	8	0	8
1541	CHLAMYDIA TRACHOMATIS - UNSPEC	3	55	0	0	0	0	0	1	0	0	59
1556	CMV - CYTOMEGALOVIRUS	0	4	0	0	1	5	0	4	34	1	49
1564	ROTAVIRUS	0	0	0	0	0	0	1	0	1	0	2
1599	ENTEROVIRUS TYPING PENDING	0	0	0	0	0	0	1	1	0	0	2
1700	PARVOVIRUS	0	0	0	0	0	0	0	0	2	0	2
9992	ROSS RIVER VIRUS	0	0	0	0	2	0	0	0	0	0	2
TOTAL		30	202	18	1	4	7	8	27	57	2	356