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Communicable Diseases Intelligence

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Dr Robert Hall

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

In this period (7 June to 20 June 1990) 1528 reports were processed.

Twenty eight cases of Q fever (21M 5F) were received for the reporting period. Patients ages ranged from 1 to 59. Occupational exposure details were supplied for four patients; 2 as graziers, one working with sheep and goats and one a meatworker. Renal failure was reported as a feature of one of the cases.

Two cases of dengue fever were reported. One, a 50-year-old male had recently visited Vanuatu and the other, a 32-year-old woman was reported as having visited "Pacific islands".

Rubella virus was detected in a 19 week foetus, the mother having been confirmed rubella positive in the 13th week of her pregnancy. No information on the vaccination status of the mother was supplied. This appears to be a continuing problem. A recent item on rubella vaccination in pregnancy appeared in CDI 90/1.

Editorial Staff: Mr Geoff Davis, Ms Evon Bowler

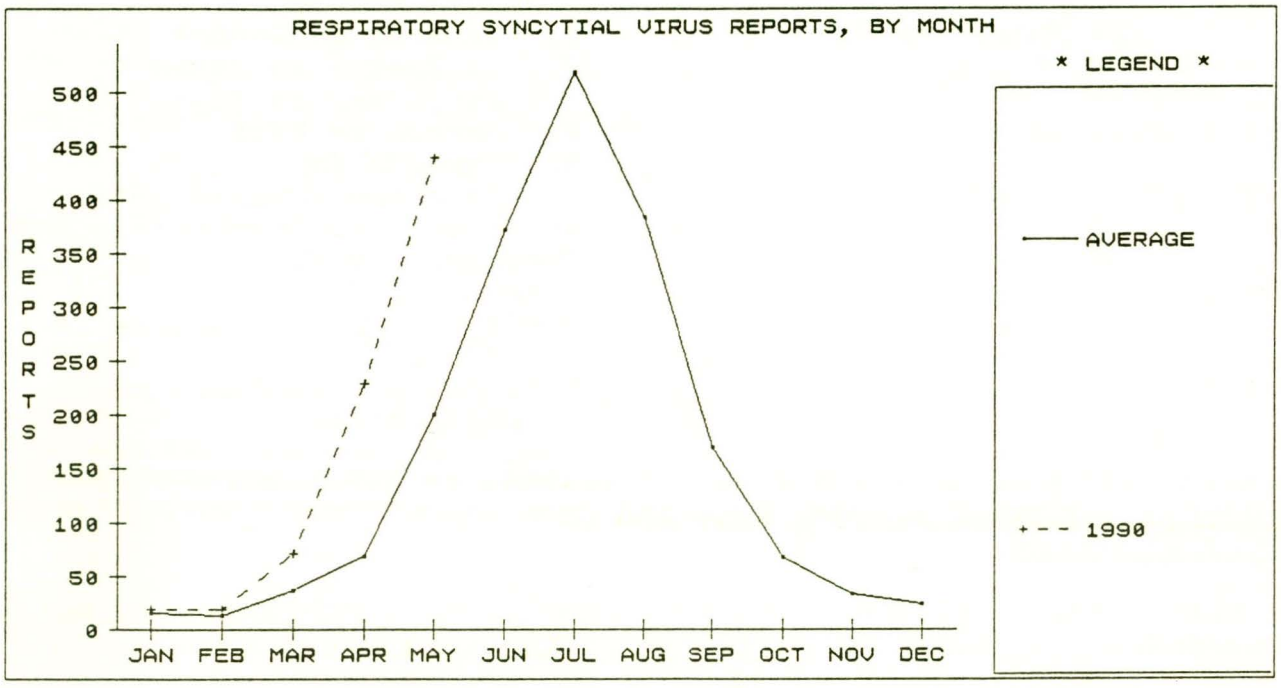
- The Bulletin is compiled and distributed by the Communicable Diseases Section, Communicable Diseases and Social Health Branch, Telephone: (062) 89 1555, Department of Community Services and Health.
- Contributions are solicited, and do not preclude later publication elsewhere.

- Figures given may be subject to revision.

One case of Australian Encephalitis was reported. Specific IgM to MVE virus was detected in a 70-year-old male from Cairns. No exposure details were supplied.

An untyped enterovirus was isolated from the cerebrospinal fluid of a 28-year-old female with meningitis. The isolate was neutralised by antiserum prepared against the 'ACOSTA' enterovirus.

Increased respiratory syncytial virus activity continues to be observed, with 293 reports received during this period. The total number of RSV cases reported for the year now stands at 867. The updated graph, first presented in CDI 90/10, clearly shows RSV reporting to May 1990 to be significantly greater than the average.



PATHOGEN REPORTING SCHEME:

The CDI Pathogen Reporting Scheme received 13 reports of cryptococcal meningitis (11M,2F) from January to April 1990. All patients were in the 25-64 age group and 4M were HIV positive. No additional risk factors were reported for the other patients.

OVERSEAS BRIEFS

1. MALARIA IN LOMBOK

A further case of an Australian visitor in Bali contracting malaria has been reported, making the total for this year 4. All 4 are known to have stayed inthe tourist area (Senggigi beach) of the adjacent island of Lombok where it is reported there is still a high incidence of falciparum malaria.

Travellers to Bali who expect to stay overnight in Lombok should be advised that malaria prophylaxis is warranted.

INFLUENZA IN JAPAN

Influenza B viruses, which became increasingly freuquently diagnosed at the end of the influenza A (H3N2) epidemic in February, continued to be detected up to mid-May, but mainly from sporadic cases. Influenza A (H3N2) virus has only been isolated once in recent months.

3. INFLUENZA IN FIJI

Influenza activity continues in Fiji. A further 2242 cases have now been reported for the fortnight ending 28 April 1990.

4. DENGUE IN FIJI

Dengue activity continues in Fiji. For the two week period ending 28 April 1990 a further 29 cases have been reported. Comparison with recent reports indicate that this recent epidemic, which commenced in September 1989, may be waning.

5. TYPHOID IN EAST NEW BRITAIN (PNG)

As at 22 June 1990 19 confirmed cases of typhoid have been reported for East New Britain province of Papua New Guinea. All cases have occurred in the vicinity of Kokopo. This outbreak is reported as the first incidence of typhoid in this province.

Typhoid in other areas of PNG is considered endemic and those most affected at present are mentioned as the highlands and the provinces of Morobe, Gulf and Oro.

ANTIBIOTIC SUSCEPTIBILITIES OF THE MORE COMMON BACTERIA ISOLATED AT PRINCESS MARGARET HOSPITAL IN 1989

(extracted from Microbiology Newsletter J Wilson, editor C. Richardson, Princess Margaret Hospital for Children, PERTH, Western Australia)

The following tables show the bacterial species most commonly isolated from clinical specimens at Princess Margaret Hospital. The reports have been edited to delete any duplication of isolates from the same patient. Isolates from children with cystic fibrosis have also been excluded (the high rate of antibiotic usage in these children creates a population of resistant bacteria which warrants a separate report).

Blank spaces indicate that either the bacterium has not been tested against the antibiotic or that the result is generally not clinically relevant (because the results of in vitro susceptibility testing correlate poorly with clinical response or less toxic and/or less expensive antibiotics are usually effective).

SUSCEPTIBILITY (%) OF S. AUREUS, S. PYOGENES, S. AGALACTIAE, S. PNEUMONIAE, B. CATARRHALIS AND H. INFLUENZAE ISOLATED DURING 1989 PRINCESS MARGARET HOSPITAL WA

Antibiotic	Concentration tested in mg/L	Staphylococcus aureus	Streptococcus pyogenes (Group A)	Streptococcus agalactiae (Group B)	Streptococcus pneumoniae	Branhamella catarrhalis	Haemophilus influenzae
NUMBER TESTED		1072	211	26	278	214	555
Penicillin	0.1	8	100	100	100	11	
Amoxycillin	0.5	8	100	100	100		81
Amoxycillin/ Clavulanate	0.5/ 4.0	100 *				100	100
Cloxacillin	4	100 *					
Cephalexin	8	100 *	100	100	100	100	79
Cefaclor	4	66	100	100	100	100	90
Cephamandole	8	100 *	100	100	100	100	100
Cefotaxime	8	100	100	100	100	100	
Gentamicin	2	100 *					
Neomycin	16	100 *					
Trimethoprim	1	100 *	99	88	79		90
Sulphafurazole	64	100 *	98	96	52	100	85
Tetracycline	1	94	90	27	92	100	87
Erythromycin	0.25	78	94	100	100	100	
Chloramphenicol	8	100 *	99	100	100	100	98

* some isolates resistant, but represent < 0.5% of the total

SUSCEPTIBILITY (%) OF THE MOST COMMON GRAM-NEGATIVE BACILLI ISOLATED DURING 1989 - PRINCESS MARGARET HOSPITAL WA

Antibiotic	Concentration tested in mg/L	Escherichia coli	Klebsiella species	Enterobacter species	Proteus species	Pseudomonas aeruginosa
NUMBER TESTED		154	80	61	46	130
Amoxycillin	8	48	5	6	78	
Amoxycillin/ Clavulanate	8/4	95	95	18	87	
Ticarcillin	16	48	5	72	93	78
Timentin	16/4	98	100	82	100	90
Cephalexin	8	95	91	18	52	
Cephamandole	8	97	95	70	89	
Cefotaxime	8	100	99	88	100	
Ceftazidime	4	100	99	88	100	98
Ceftriaxone	8	100	100	90	100	
Gentamicin	2	99	100	95	98	41
Tobramycin	2	98	100	97	100	92
Colistin	2					99
Chloramphenicol	8	87	95	72	93	
Trimethoprim	2	89	89	80	93	
Sulphafurazole	128	54	75	79	89	
Silver Sulphadiazine	100	99	99	100	100	100
Ciprofloxacin	0.5	100	100	100	100	94

EVIDENCE OF A PERTUSSIS EPIDEMIC (NZ) IN 1990

(Reproduced with acknowledgement Wilson N, Short P Communicable Disease New Zealand Monthly Report April 90/4)

While pertussis is not a notifiable disease, evidence from hospital admission data confirm that this disease is still widespread. Since 1974 there have been outbreaks at approximately four-yearly intervals. In the last year with an outbreak (1986) there were 339 discharges from hospital. Indeed the proportion of susceptible children in the population remains considerable with the 1985 National Serum Survey finding only 54% of five-year-old children having antibodies to pertussis (1).

The numbers of isolates referred to the New Zealand Centre for Disease Control (NZCDC) in 1989 and to April 1990 are shown in Table 1. Of note is that the number of isolates for the first four months of 1990 is 1.5 times the total number referred in 1989. This supports the view that another epidemic is beginning in 1990.

Table 1 *Bordetella pertussis* isolates referred to the New Zealand Centre for Disease Control Jan 1989 - Apr 1990

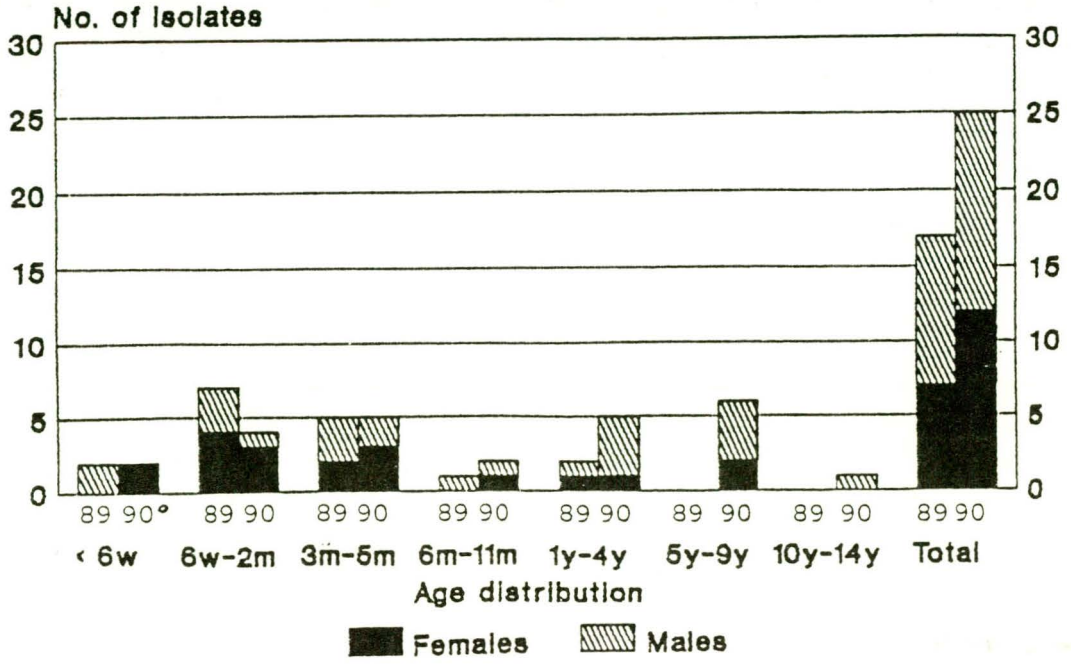
	1989												1990				
MONTH	J	F	M	A	M	J	J	A	S	O	N	D	J	F	M	A	TOTAL
B. Pertussis isolates	0	0	0	1	1	1	2	3	2	2	3	2	5	8	4	8	42

The age and sex distribution of the cases is shown in Figure 1. Of note is that 10% of cases are under six weeks, which is the age that the first dose of the triple vaccine (diphtheria, tetanus, and pertussis) is given. It is of concern that the 64% of cases three months and older had not been protected by one or two doses of DTP. For these cases inadequate vaccine uptake is likely to be the major reason as opposed to primary vaccine failure. There is no data however, to establish this for sure.

Data from laboratory isolates supplied to the NZCDC does not however give a complete picture of pertussis. This is because not all specimens are sent to the NZCDC, and a large proportion of children with clinical pertussis are not culture positive. Indeed, in Auckland during the 1982 epidemic only 55% of children with clinical pertussis were culture positive (2). Nevertheless, in the absence of other surveillance systems, data from laboratory isolates are the best way to monitor an epidemic and perhaps to

identify localised outbreaks. Prompt identification of outbreaks can result in appropriate control mechanisms such as administering erythromycin for close contacts and accelerated immunisation for pre-school children at high risk.

Figure 1 Age and gender distribution of patients with pertussis referred to the New Zealand Centre for Disease Control Jan 1989-Apr 1990



° To the end of April 1990
Data based on B. pertussis isolates referred to the NZCDC

References

1. Lau RCH, Bettelheim KA, Patel AC. The 1985 national immunisation survey: diphtheria, tetanus, and pertussis (whooping cough). NZ Med J 1988;101:797-800.
2. Forsyth K, Farmer K, Lennon DR. High admission rate of infants and young children with whooping cough, clinical aspects and preventive implications. Aust Paediatr J 1984;20:101-3.

PERTUSSIS (WHOOPING COUGH) - CHILDRENS HOSPITAL CAMPERDOWN, NSW

(reproduced with acknowledgement from Monthly Infectious Diseases Reports Nov, Dec 1989, editor D Isaacs, case data from Dr M Gapes, Dr D Dorman, Royal Alexandra Hospital for Children, Camperdown NSW)

WHOOPING COUGH

Many doctors in Sydney have reported seeing an increasing number of children with whooping cough over the last month. This is mirrored by an increase in isolates of *Bordetella pertussis* at Royal Alexandra Hospital for Children (RAHC). During 1989 there was an increase in cases from August, with 39 cases in the 4 months, August - November 1989 (see table 1). The patients were mainly aged < 3 months or > 5 years (see table 2).

Table 1: *B. pertussis* case reports Jan-Nov 1989 RAHC

1989	Jan-July	August	September	October	November
Number of isolates:	10	6	6	14	13

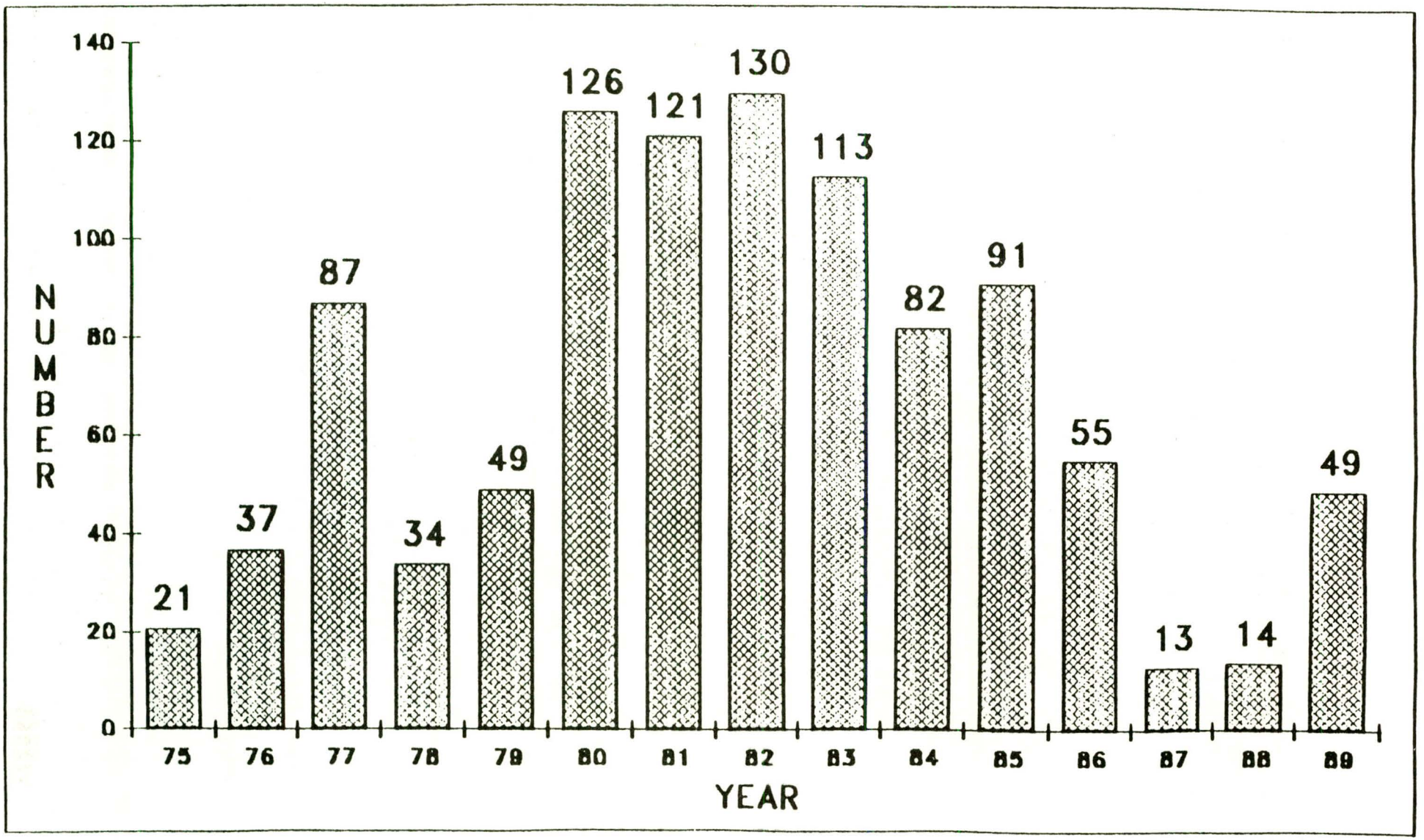
Table 2: *B. pertussis* cases Jan-Nov 1989 age groupings RAHC

Age:	<3mth	4-5mth	6-11mth	1-4yrs	>5yrs
No. of patients:	18	8	4	6	13

Even in a highly immunised population *B. pertussis* tends to cause a low level of cases each year with a minor outbreak every 3 to 4 years. In Australia this is in the summer months. The current number of isolates suggest this may be the largest outbreak since 1985(see Figure 1). There were large numbers of isolates of *B. pertussis* from patients at this hospital during 1981-1985, totalling between 82-130 each year and contrasting with the usual periodicity of outbreaks. There were moderate numbers in 1986 (55 isolates) and small numbers in 1987 and 1988.

Pertussis immunisation decreases both the incidence and severity of infection but protection is not absolute. When the number of children being immunised falls, pertussis circulates readily in schools and even immunised children may develop mild pertussis.

Figure 1: B. pertussis isolates RAHC 1975-1989 (to 29/11/89)



Infected school children, whether immunised or not, are liable to infect their siblings, including the highest risk group, babies in the first 3 months of life. Natural infection with *B. pertussis* affords long-standing protection but vaccine-induced immunity wanes with time. Adults who were immunised as children often become infected during outbreaks and their illness may not be recognised as whooping cough.

The best safeguard against outbreaks of pertussis is to maintain a high level of immunisation in the community.

When a case of whooping cough is diagnosed, clinically or by culture, the issue of contact prophylaxis should be considered. There is no consensus on whether or not erythromycin prophylaxis of close contacts is indicated. The 1988 Red Book of the American Academy of Pediatrics recommends a 14-day course of oral erythromycin for family and close contacts, including day care contacts, of an index case. The rationale is to decrease the severity of infection in close contacts and to reduce their infectivity and thus the spread of pertussis. The efficacy of these recommendations has not been studied. Two small studies suggest that erythromycin does not reduce the incidence of clinical illness in family contacts of an index case, who are presumably already infected, but have not addressed severity or infectivity in contacts [1,2]. On the other hand erythromycin prophylaxis of the newborn baby (and treatment of the mother) when a mother has pertussis at delivery prevents neonatal pertussis [3], indicating that early prophylaxis can be effective in preventing infection if started at the time of exposure.

The possible adverse effects of widespread use of erythromycin include toxicity (gastrointestinal, hepatic), interactions with other drugs (eg. theophylline), selection of resistant organisms and cost. It is questionable whether most families would comply with 14 days of erythromycin.

In the absence of sufficient data it is difficult to make formal recommendations about erythromycin prophylaxis and a RAHC group could reach no consensus. All felt that unimmunised siblings under 6 months old of an index case and those babies who had only received one dose of vaccine should be given 14 days erythromycin prophylaxis. Unimmunised family contacts who develop symptoms should probably be treated with erythromycin, while some felt that immediate prophylaxis of the entire family or all of the unimmunised family members was indicated.

Monthly infectious Diseases Report, RAHC, December 1989

Further to the November report on pertussis we have had one death from bacteriologically-confirmed pertussis (a 2-week-old girl) and one 4-year-old child who despite being fully immunised developed clinical pertussis (not bacteriologically confirmed) which resulted in anoxic seizures and severe encephalopathy. Although immunisation is not 100% protective it usually decreases the

severity of illness, albeit not in the latter case if this was truly due to pertussis. Furthermore when immunisation levels are high, far less pertussis circulates, so children are less likely to be exposed. Interestingly whooping cough is one of the only infectious diseases to which girls are more susceptible than boys.

References

1. Grob PR. Lancet 1981;i:772.
2. Spencely M, Lambert HP. Lancet 1981;i:772-3.
3. Granstrom G, et al. J Infect Dis 1987;155:1210-4.

CDI Editorial Comment

The previous items follow-on from an earlier item in CDI (90/6) and are included to further illustrate the epidemic of pertussis in Australia 1989-90 and to draw attention to the continuing need for all children to be immunised against pertussis according to the NH&MRC recommendations.

MENINGOCOCCAL MENINGITIS IN AFRICA

(Based WER 1990; 16 20 April, 120-122)

African countries reported a marked increase in cases of meningitis in 1988 and 1989 (Table 1). In Benin, Ethiopia, Kenya, Niger, Togo and the United Republic of Tanzania, case levels in 1989 exceeded those of 1988. Laboratory confirmation, when available, indicated serogroups A and C of *Neisseria meningitidis* as the most common organisms.

Meningococcal meningitis epidemics have been documented to recur in 8-12 year cycles during the dry season in the sub-Sahara "meningitis belt" although intervals have been shorter in several countries Disease rates are often elevated 1-2 years after an epidemic Ethiopia continues to experience elevated rates following last year's epidemic: from 100-200 cases per month during September-December 1989 to 305 cases in January 1990 and 702 in February. Epidemics occurring outside the meningitis belt (in Kenya and the United Republic of Tanzania in 1989 and in Uganda this year) are considered rate.

Immunisation

A serogroup A and C meningococcal vaccine is available with only mild and infrequent adverse reactions. The immunisation is valid 10-14 days after administration and protective immunity is estimated to last for 3 to 5 years. Tourists are advised to be immunised before travelling to hyper-endemic areas and to those countries experiencing outbreaks.

Outbreak control

Although much in known of the epidemiology of meningococcal meningitis, defining thresholds for outbreaks can be difficult. Analysis of increased local rates of disease needs to take into consideration the epidemiology of the disease in the region including seasonality, occurrence of recent outbreaks, disease in neighbouring countries and characteristics of the patient. Once an outbreak has been identified, the etiological agent determined and the decision made to immunise, there should be no delay in starting the immunisation campaign. In developing countries where epidemics of meningococcal disease occur frequently, a number of approaches to selective vaccination have been tried. These include vaccination of restricted population groups or vaccination of the entire population in restricted areas where an outbreak has occurred or where surveillance data indicate an imminent risk of outbreaks.

Table 1: Cases of meningitis reported in Africa, 1985-1989

Country/Area	1985	1986	1987	1988	1989
Algeria	968	786	934	545	-
Angola	-	-	-	318	-
Benin	543	464	752	437	2 411
Botswana	38	-	-	25	-
Burkina Faso	6 445	6 367	2 546	4 289	1 465
Burundi	15	59	43	67	-
Cameroon	1 589	1457	825	1 838	550
Cape Verde	-	-	-	56	-
Central African Republic	324	414	484	772	-
Chad	435	413	2 962	-	-
Comoros	-	-	-	23	-
Congo	7	4	-	32	-
Core d'lvoire	194	22	70	-	-
Djibouti	-	-	-	64	-
Egypt	848	824	998	3 327	2 368
Equatorial Guinea	-	-	-	-	-
Ethiopia	378	513	456	359	41 139
Gabon	13	-	225	-	-
Gambia	36	44	-	-	-
Ghana	4 893	-	-	-	19
Guinea	189	313	307	611	4
Guinea-Bissau	-	-	-	-	-
Kenya	-	-	-	784	1 158
Lesotho	-	-	-	9	-
Liberia	86	-	121	-	-
Libyan Arab Jamahiriya	6	4	6	5	-
Madagascar	-	-	-	-	-
Malawi	-	-	600	148	440

Cont'd

Country/Area	1985	1986	1987	1988	1989
Mali	1 247	1 186	658	-	138
Mauritania	-	-	193	184	-
Mauritius	2	3	7	8	-
Morocco	616	629	720	1 348	1 487
Mozambique	9	386	352	504	15
Namibia	-	-	-	-	-
Niger	1 133	20 206	3 385	368	1 654
Nigeria	752	15 550	13 609	6 163	3 490
Reunion	7	3	13	3	-
Rwanda	36	195	158	182	-
Sao Tome and Principe	5	3	2	-	-
Senegal	512	825	98	20	2
Seychelles	6	-	-	-	-
Sierra Leone	166	-	-	-	-
Somalia	3	16	-	22	60
South Africa	-	-	-	-	-
Sudan	317	452	443	32 016	6 789
Swaziland	-	-	-	-	-
Togo	243	333	554	171	1 617
Tunisia	676	992	1 557	699	368
Uganda	-	-	-	-	-
United Republic of Tanzania	-	-	-	-	1 249
Zaire	640	364	615	1 229	-
Zambia	176	180	227	-	-
Zimbabwe	445	-	-	-	-

Chemoprophylaxis

No form of chemoprophylaxis is recommended against epidemic meningitis in Africa. Sulphonamides and rifampicin, which are being used elsewhere, are not suitable. Most *N. meningitidis* strains isolated in Africa are sulphonamide-resistant. The efficacy of rifampicin against epidemic meningococcal meningitis has not been proved and widespread use of the drug could lead to the development of resistant mycobacteria jeopardising the treatment of leprosy and tuberculosis.

Treatment of cases and contacts

The efficacy of a single injection of an oily suspension of chloramphenicol in the treatment of patients of all ages with meningococcal meningitis has been demonstrated. This antibiotic is therefore the recommended form of treatment for the disease under epidemic conditions. However, it is not adequate for treatment of patients with meningitis caused by *Streptococcus pneumoniae* or *Haemophilus influenzae*.

Close contacts of patients with meningococcal disease are at a high risk of infection, especially during the first few days after onset of illness of the index case. Such contacts should be warned about their need to obtain immediate medical attention at the first sign of any illness and immunised with an appropriate vaccine if the serotype of the index case or cases in the community is known.

TUBERCULOSIS IN AUSTRALIA AND NEW ZEALAND INTO THE 1990S

'Tuberculosis in Australia and New Zealand into the 1990s' is the successor to the Commonwealth Department of Health's 'Treatment of tuberculosis: recommendations of the National Tuberculosis Advisory Council'. The booklet which began life in 1969 as five typewritten pages was rapidly expanced into the more comprehensive 1972 edition and revised four more times over the next decade.

This new publication, which has been undertaken jointly by the Tuberculosis Subcommittee of the Thoracic Society of Australia and New Zealand, and the National Health and Medical Research Council of Australia, has considerably extended 'Treatment of tuberculosis' to review of the epidemiology, clinical presentation and diagnosis of tuberculosis, as well as bringing treatment up to date. It now comprises 85 pages.

The booklet is available from the Australian Government Publishing Service at a cost of $11.95 and the catalogue number is 9008630.

AGPS retail outlets can be contacted at the telephone numbers listed below:

Canberra	(06) 247 7211	Perth	(09) 322 4737
Sydney	(02) 296 737	Hobart	(002) 237 151
Melbourne	(03) 663 3010	Brisbane	(07) 229 6822
Adelaide	(08) 237 6955	Darwin	(089) 897 152 (NT Government Information Centre)

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

PERIOD 7/6/90 TO 20/6/90

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 ALEXAND RA CHILDRENS HOSP (NSW)
10. CODE 115 - STATE HEALTH LAB (QLD)
11. CODE 116 - WODEN VALLEY HOSP (ACT)
12. CODE LDS - LAUNCESTONDIAGNOSTIC SERVICES (TAS)
13. CODE RHH - ROYAL HOBART HOSPITAL (TAS)
14. CODE TPL - TOOWOOMBA PATHOLOGY LAB (QLD)

	018	019	065	066	110	111	112	113	114	115	116	LDS	RHH	TPL	TOTAL
0100 ADENOVIRUS NOT TYPED	0	0	3	3	1	0	3	6	1	11	0	0	0	0	28
0101 ADENOVIRUS TYPE 1	0	1	0	0	2	0	4	0	0	0	1	0	0	0	8
0102 ADENOVIRUS TYPE 2	0	0	0	0	1	0	0	0	0	0	0	0	1	0	2
0103 ADENOVIRUS TYPE 3	0	1	0	0	0	0	0	0	0	0	0	0	0	0	1
0104 ADENOVIRUS TYPE 4	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1
0105 ADENOVIRUS TYPE 5	0	1	0	0	1	0	0	0	0	0	0	0	0	0	2
0107 ADENOVIRUS TYPE 7	0	2	0	0	0	0	1	0	0	0	0	0	0	0	3
0109 ADENOVIRUS TYPE 9	0	1	0	0	0	0	1	0	0	0	0	0	0	0	2
0111 ADENOVIRUS TYPE 11	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1
0130 ADENOVIRUS TYPE 30	0	1	0	0	0	0	0	0	0	0	0	0	0	0	1
0199 ADENOVIRUS TYPING PENDING	0	0	0	0	0	4	0	0	0	0	0	0	0	0	4
0201 INFLUENZA A VIRUS	0	0	0	0	1	0	0	0	1	1	1	0	0	0	4
0301 PARAINFLUENZA VIRUS TYPE 1	0	0	0	1	0	8	2	1	0	5	0	0	0	0	17
0302 PARAINFLUENZA VIRUS TYPE 2	0	0	0	0	0	6	0	0	0	0	0	0	0	0	6
0303 PARAINFLUENZA VIRUS TYPE 3	0	2	0	0	0	1	1	0	1	0	0	0	0	0	5
0399 PARAINFLUENZA VIRUS TYPING PEN	0	0	0	0	0	5	0	0	0	0	0	0	0	0	5
0400 RESPIRATORY SYNCYTIAL VIRUS (R	0	15	0	2	2	14	54	32	67	90	9	0	1	8	294
0500 RHINOVIRUS (ALL TYPES)	0	7	2	0	0	4	1	0	0	1	0	0	1	0	16
0600 MYCOPLASMA PNEUMONIAE	0	1	0	0	4	0	5	0	1	6	0	5	0	0	22
0700 ORNITHOSIS-PSITTACOSIS	0	5	0	0	0	0	0	0	0	2	0	0	0	0	7
0816 COXSACKIEVIRUS A16	0	1	0	0	0	0	0	0	0	0	0	0	0	0	1
0903 COXSACKIEVIRUS B3	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1
0905 COXSACKIEVIRUS B5	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1
1003 ECHOVIRUS TYPE 3	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1
1004 ECHOVIRUS TYPE 4	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1
1009 ECHOVIRUS TYPE 9	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1
1011 ECHOVIRUS TYPE 11	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1
1018 ECHOVIRUS TYPE 18	0	1	0	0	0	0	0	0	0	0	0	0	0	0	1
1022 ECHOVIRUS TYPE 22	0	0	0	0	0	0	0	1	0	0	0	0	0	0	1
1033 ECHOVIRUS TYPE 33	0	1	0	0	0	0	0	0	0	0	0	0	0	0	1
1100 POLIOVIRUS NOT TYPED	0	0	0	0	0	0	0	4	0	0	0	0	0	0	4
1101 POLIOVIRUS TYPE 1	0	2	0	0	0	0	2	0	0	0	0	0	0	0	4
1102 POLIOVIRUS TYPE 2	0	3	0	0	0	0	0	0	1	0	0	0	0	0	4
1103 POLIOVIRUS TYPE 3	0	0	0	0	0	0	3	0	0	0	0	0	0	0	3
1200 MUMPS VIRUS	0	1	0	0	0	0	0	3	0	0	0	0	0	0	4
1300 HERPES VIRUS GROUP - NOT TYPED	0	0	0	0	0	0	0	4	0	0	0	0	0	0	4
1301 HERPES SIMPLEX VIRUS - NOT TYP	0	0	0	1	0	0	26	0	0	2	1	12	0	0	42
1302 EPSTEIN-BARR VIRUS (EB VIRUS)	0	6	4	0	8	0	24	1	1	7	0	0	0	0	51
1303 VARICELLA-ZOSTER VIRUS	0	6	4	0	2	0	2	6	0	2	0	0	0	0	22
1306 HERPES SIMPLEX TYPE 1	0	31	21	0	26	0	3	19	1	49	1	0	1	0	152
1307 HERPES SIMPLEX TYPE 2	0	43	58	0	29	0	33	26	0	39	1	0	1	0	230
1399 HERPES VIRUS TYPING PENDING	0	0	0	0	0	1	0	0	0	0	0	0	0	0	1
1401 COXIELLA BURNETII	0	6	0	0	0	0	9	0	0	12	1	0	0	0	28
1502 PICORNIA VIRUS - NOT TYPED = E	0	1	2	0	1	0	0	19	1	13	0	0	0	0	37
1515 CONTAGIOUS PUSTULAR DERMATITIS	0	0	1	0	0	0	0	0	0	0	0	0	0	0	1
1521 MEASLES VIRUS	0	5	0	0	0	2	0	5	0	0	0	0	0	0	12
1522 RUBELLA VIRUS	0	7	0	0	0	0	3	1	0	3	0	0	0	0	14
1532 HEPATITIS B ANTIGEN	0	10	35	0	16	0	24	10	0	18	2	0	0	0	115
1535 HEPATITIS A ANTIBODY	0	3	3	0	3	0	0	1	0	0	0	0	0	0	10
1536 HEPATITIS C VIRUS	0	0	3	0	0	0	0	0	0	0	0	0	0	0	3
1541 CHLAMYDIA A - C. TRACHOMATIS	8	0	40	0	9	0	13	1	1	0	3	26	1	8	110
1556 CMV - CYTOMEGALOVIRUS	0	26	0	1	0	3	23	6	3	21	1	0	0	0	84
1562 REOVIRUS (ALL TYPES)	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1
1563 CORONAVIRUS	0	1	0	0	0	0	1	0	0	0	0	0	0	0	2
1564 ROTAVIRUS	0	3	0	18	1	0	2	2	0	0	0	0	2	2	30
1599 ENTEROVIRUS TYPING PENDING	0	0	0	0	0	8	0	23	1	0	0	0	0	0	32
9990 AUSTRALIAN ENCEPHALITIS	0	0	0	0	0	0	0	0	0	1	0	0	0	0	1
9992 ROSS RIVER VIRUS	0	2	0	0	0	0	21	2	0	53	0	0	0	0	78
9994 SMALL VIRUS (LIKE) PARTICLE	0	0	0	0	0	0	2	0	0	0	0	0	0	0	2
9995 DENGUE	0	0	0	0	1	0	0	0	0	2	0	0	0	0	3
9998 ARBOVIRUS GROUP B.(UNSPECIFIED	0	5	0	0	0	0	0	0	0	0	0	0	0	0	5
TOTAL	8	201	176	26	108	56	271	173	80	338	21	44	8	18	1528

AUSTRALIA - COMMUNICABLE DISEASES INTELLIGENCE

VIRAL IDENTIFICATIONS FROM CONTRIBUTING LABORATORIES BY STATE OF CONTRIBUTING LABORATORY

PERIOD 7/6/90 TO 20/6/90

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	TAS	ACT	TOTAL
0100	ADENOVIRUS NOT TYPED	10	0	11	6	1	0	0	28
0101	ADENOVIRUS TYPE 1	4	1	0	0	2	0	1	8
0102	ADENOVIRUS TYPE 2	0	0	0	0	1	1	0	2
0103	ADENOVIRUS TYPE 3	0	1	0	0	0	0	0	1
0104	ADENOVIRUS TYPE 4	1	0	0	0	0	0	0	1
0105	ADENOVIRUS TYPE 5	0	1	0	0	1	0	0	2
0107	ADENOVIRUS TYPE 7	1	2	0	0	0	0	0	3
0109	ADENOVIRUS TYPE 9	1	1	0	0	0	0	0	2
0111	ADENOVIRUS TYPE 11	1	0	0	0	0	0	0	1
0130	ADENOVIRUS TYPE 30	0	1	0	0	0	0	0	1
0199	ADENOVIRUS TYPING PENDING	0	4	0	0	0	0	0	4
0201	INFLUENZA A VIRUS	1	0	1	0	1	0	1	4
0301	PARAINFLUENZA VIRUS TYPE 1	3	8	5	1	0	0	0	17
0302	PARAINFLUENZA VIRUS TYPE 2	0	6	0	0	0	0	0	6
0303	PARAINFLUENZA VIRUS TYPE 3	2	3	0	0	0	0	0	5
0399	PARAINFLUENZA VIRUS TYPING PEN	0	5	0	0	0	0	0	5
0400	RESPIRATORY SYNCYTIAL VIRUS (R	153	29	98	2	2	1	9	294
0500	RHINOVIRUS (ALL TYPES)	1	11	1	2	0	1	0	16
0600	MYCOPLASMA PNEUMONIAE	6	1	6	0	4	5	0	22
0700	ORNITHOSIS-PSITTACOSIS	0	5	2	0	0	0	0	7
0816	COXSACKIEVIRUS A16	0	1	0	0	0	0	0	1
0903	COXSACKIEVIRUS B3	1	0	0	0	0	0	0	1
0905	COXSACKIEVIRUS B5	1	0	0	0	0	0	0	1
1003	ECHOVIRUS TYPE 3	1	0	0	0	0	0	0	1
1004	ECHOVIRUS TYPE 4	0	0	0	0	0	1	0	1
1009	ECHOVIRUS TYPE 9	1	0	0	0	0	0	0	1
1011	ECHOVIRUS TYPE 11	1	0	0	0	0	0	0	1
1018	ECHOVIRUS TYPE 18	0	1	0	0	0	0	0	1
1022	ECHOVIRUS TYPE 22	1	0	0	0	0	0	0	1
1033	ECHOVIRUS TYPE 33	0	1	0	0	0	0	0	1
1100	POLIOVIRUS NOT TYPED	4	0	0	0	0	0	0	4
1101	POLIOVIRUS TYPE 1	2	2	0	0	0	0	0	4
1102	POLIOVIRUS TYPE 2	1	3	0	0	0	0	0	4
1103	POLIOVIRUS TYPE 3	3	0	0	0	0	0	0	3
1200	MUMPS VIRUS	3	1	0	0	0	0	0	4
1300	HERPES VIRUS GROUP - NOT TYPED	4	0	0	0	0	0	0	4
1301	HERPES SIMPLEX VIRUS - NOT TYP	26	0	2	1	0	12	1	42
1302	EPSTEIN-BARR VIRUS (EB VIRUS)	26	6	7	4	8	0	0	51
1303	VARICELLA-ZOSTER VIRUS	8	6	2	4	2	0	0	22
1306	HERPES SIMPLEX TYPE 1	23	31	49	21	26	1	1	152
1307	HERPES SIMPLEX TYPE 2	59	43	39	58	29	1	1	230
1399	HERPES VIRUS TYPING PENDING	0	1	0	0	0	0	0	1
1401	COXIELLA BURNETII	9	6	12	0	0	0	1	28
1502	PICORNIA VIRUS - NOT TYPED = E	20	1	13	2	1	0	0	37
1515	CONTAGIOUS PUSTULAR DERMATITIS	0	0	0	1	0	0	0	1
1521	MEASLES VIRUS	5	7	0	0	0	0	0	12
1522	RUBELLA VIRUS	4	7	3	0	0	0	0	14
1532	HEPATITIS B ANTIGEN	34	10	18	35	16	0	2	115
1535	HEPATITIS A ANTIBODY	1	3	0	3	3	0	0	10
1536	HEPATITIS C VIRUS	0	0	0	3	0	0	0	3
1541	CHLAMYDIA A - C. TRACHOMATIS	15	8	8	40	9	27	3	110
1556	CMV - CYTOMEGALOVIRUS	32	29	21	1	0	0	1	84
1562	REOVIRUS (ALL TYPES)	1	0	0	0	0	0	0	1
1563	CORONAVIRUS	1	1	0	0	0	0	0	2
1564	ROTAVIRUS	4	3	2	18	1	2	0	30
1599	ENTEROVIRUS TYPING PENDING	24	8	0	0	0	0	0	32
9990	AUSTRALIAN ENCEPHALITIS	0	0	1	0	0	0	0	1
9992	ROSS RIVER VIRUS	23	2	53	0	0	0	0	78
9994	SMALL VIRUS (LIKE) PARTICLE	2	0	0	0	0	0	0	2
9995	DENGUE	0	0	2	0	1	0	0	3
9998	ARBOVIRUS GROUP B.(UNSPECIFIED	0	5	0	0	0	0	0	5
TOTAL		524	265	356	202	108	52	21	1528

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 1

PERIOD 7/6/90 TO 20/6/90

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	9	10	11	TOTAL
0100	ADENOVIRUS NOT TYPED	0	9	0	0	0	11	0	0	0	0	20
0101	ADENOVIRUS TYPE 1	1	5	0	0	0	2	0	0	0	0	8
0105	ADENOVIRUS TYPE 5	0	1	0	0	0	1	0	0	0	0	2
0107	ADENOVIRUS TYPE 7	0	2	0	0	0	1	0	0	0	0	3
0109	ADENOVIRUS TYPE 9	0	0	0	0	0	1	0	0	0	1	2
0111	ADENOVIRUS TYPE 11	1	0	0	0	0	0	0	0	0	0	1
0130	ADENOVIRUS TYPE 30	0	0	0	0	0	0	0	0	0	1	1
0199	ADENOVIRUS TYPING PENDING	0	4	0	0	0	0	0	0	0	0	4
0201	INFLUENZA A VIRUS	2	1	0	0	0	0	1	0	0	0	4
0301	PARAINFLUENZA VIRUS TYPE 1	1	16	0	0	0	0	0	0	0	0	17
0302	PARAINFLUENZA VIRUS TYPE 2	0	6	0	0	0	0	0	0	0	0	6
0303	PARAINFLUENZA VIRUS TYPE 3	0	5	0	0	0	0	0	0	0	0	5
0399	PARAINFLUENZA VIRUS TYPING PEN	0	5	0	0	0	0	0	0	0	0	5
0400	RESPIRATORY SYNCYTIAL VIRUS (R	20	274	0	0	0	0	0	0	0	0	294
0500	RHINOVIRUS (ALL TYPES)	0	12	0	0	1	0	0	1	0	0	14
0600	MYCOPLASMA PNEUMONIAE	3	17	0	0	0	0	0	0	0	0	20
0700	ORNITHOSIS-PSITTACOSIS	3	3	0	0	0	0	0	0	0	0	6
0816	COXSACKIEVIRUS A16	0	0	0	0	0	0	0	0	0	1	1
0903	COXSACKIEVIRUS B3	1	0	0	0	0	0	0	0	0	0	1
0905	COXSACKIEVIRUS B5	0	0	0	0	0	1	0	0	0	0	1
1003	ECHOVIRUS TYPE 3	1	0	0	0	0	0	0	0	0	0	1
1009	ECHOVIRUS TYPE 9	0	0	0	0	0	0	0	0	0	1	1
1018	ECHOVIRUS TYPE 18	0	0	0	0	0	0	0	0	0	1	1
1100	POLIOVIRUS NOT TYPED	0	0	0	0	0	4	0	0	0	0	4
1101	POLIOVIRUS TYPE 1	0	0	0	0	0	2	0	0	0	0	2
1102	POLIOVIRUS TYPE 2	0	1	0	0	0	0	0	0	0	0	1
1103	POLIOVIRUS TYPE 3	0	0	0	0	0	3	0	0	0	0	3
1200	MUMPS VIRUS	1	0	0	0	0	0	0	0	1	0	2
1300	HERPES VIRUS GROUP - NOT TYPED	2	0	0	0	0	0	0	1	0	0	3
1301	HERPES SIMPLEX VIRUS - NOT TYP	3	1	0	0	0	0	0	0	0	14	18
1302	EPSTEIN-BARR VIRUS (EB VIRUS)	11	1	0	0	0	0	1	1	0	0	14
1303	VARICELLA-ZOSTER VIRUS	1	0	2	0	1	0	0	0	0	11	15
1306	HERPES SIMPLEX TYPE 1	1	4	0	0	0	0	0	0	0	103	108
1307	HERPES SIMPLEX TYPE 2	1	1	0	0	1	0	0	0	0	93	96
1399	HERPES VIRUS TYPING PENDING	0	0	0	0	0	0	0	0	0	1	1
1401	COXIELLA BURNETII	11	0	0	0	0	1	0	0	0	1	13
1502	PICORNIA VIRUS - NOT TYPED = E	1	8	0	3	0	23	0	0	0	2	37
1515	CONTAGIOUS PUSTULAR DERMATITIS	0	0	0	0	0	0	0	0	0	1	1
1521	MEASLES VIRUS	4	1	0	0	0	0	0	0	0	3	8
1522	RUBELLA VIRUS	1	0	0	0	0	1	0	0	0	6	8
1532	HEPATITIS B ANTIGEN	52	4	0	0	0	0	46	1	0	0	103
1535	HEPATITIS A ANTIBODY	4	1	0	0	0	0	5	0	0	0	10
1536	HEPATITIS C VIRUS	0	0	0	0	0	0	3	0	0	0	3
1541	CHLAMYDIA A - C. TRACHOMATIS	11	1	0	0	0	0	0	0	0	0	12
1556	CMV - CYTOMEGALOVIRUS	6	15	0	1	1	1	5	2	6	1	38
1562	REOVIRUS (ALL TYPES)	0	0	0	0	0	1	0	0	0	0	1
1563	CORONAVIRUS	0	1	0	0	0	1	0	0	0	0	2
1564	ROTAVIRUS	0	0	0	0	0	30	0	0	0	0	30
1599	ENTEROVIRUS TYPING PENDING	0	4	0	2	1	21	0	0	0	0	28
9990	AUSTRALIAN ENCEPHALITIS	1	0	0	0	0	0	0	0	0	0	1
9992	ROSS RIVER VIRUS	22	1	0	0	0	0	2	0	0	4	29
9994	SMALL VIRUS (LIKE) PARTICLE	0	0	0	0	0	2	0	0	0	0	2
9995	DENGUE	1	0	0	0	0	0	0	0	0	1	2
9998	ARBOVIRUS GROUP B.(UNSPECIFIED	2	0	0	0	0	0	0	0	0	0	2
TOTAL		169	404	2	6	5	107	63	6	7	246	1015

AUSTRALIA - COMMUNICABLE DISEASES INTELLIGENCE

VIRAL IDENTIFICATIONS BY CLINICAL INFORMATION TABLE 2

PERIOD 7/6/90 TO 20/6/90

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	0	2	0	8
0102	ADENOVIRUS TYPE 2	0	0	0	0	0	0	0	1	0	1	2
0103	ADENOVIRUS TYPE 3	1	0	0	0	0	0	0	0	0	0	1
0104	ADENOVIRUS TYPE 4	1	0	0	0	0	0	0	0	0	0	1
0500	RHINOVIRUS (ALL TYPES)	0	0	0	0	0	0	0	0	1	1	2
0600	MYCOPLASMA PNEUMONIAE	0	0	0	0	0	0	0	0	2	0	2
0700	ORNITHOSIS-PSITTACOSIS	0	0	0	0	0	0	0	1	0	0	1
1004	ECHOVIRUS TYPE 4	0	0	0	0	0	0	1	0	0	0	1
1011	ECHOVIRUS TYPE 11	0	0	0	0	0	0	1	0	0	0	1
1022	ECHOVIRUS TYPE 22	0	0	0	0	0	0	0	1	0	0	1
1033	ECHOVIRUS TYPE 33	0	0	0	0	0	0	0	1	0	0	1
1101	POLIOVIRUS TYPE 1	0	0	0	0	0	0	0	0	0	2	2
1102	POLIOVIRUS TYPE 2	0	0	0	0	0	0	0	0	1	2	3
1200	MUMPS VIRUS	0	0	2	0	0	0	0	0	0	0	2
1300	HERPES VIRUS GROUP - NOT TYPED	0	0	0	0	0	0	0	0	1	0	1
1301	HERPES SIMPLEX VIRUS - NOT TYP	1	22	0	0	0	0	0	0	1	0	24
1302	EPSTEIN-BARR VIRUS (EB VIRUS)	0	0	23	2	1	0	2	2	7	0	37
1303	VARICELLA-ZOSTER VIRUS	0	1	0	0	0	0	1	2	3	0	7
1306	HERPES SIMPLEX TYPE 1	6	36	0	0	0	0	0	2	0	0	44
1307	HERPES SIMPLEX TYPE 2	0	134	0	0	0	0	0	0	0	0	134
1401	COXIELLA BURNETII	0	0	0	0	0	0	6	8	1	0	15
1521	MEASLES VIRUS	0	0	0	0	0	0	0	3	1	0	4
1522	RUBELLA VIRUS	0	0	1	1	1	1	0	0	2	0	6
1532	HEPATITIS B ANTIGEN	0	0	0	0	0	0	0	0	12	0	12
1541	CHLAMYDIA A - C. TRACHOMATIS	2	96	0	0	0	0	0	0	0	0	98
1556	CMV - CYTOMEGALOVIRUS	0	1	1	2	1	2	4	8	27	0	46
1599	ENTEROVIRUS TYPING PENDING	0	0	0	0	0	1	0	2	1	0	4
9992	ROSS RIVER VIRUS	0	0	0	0	33	0	1	12	3	0	49
9995	DENGUE	0	0	0	0	0	0	0	0	1	0	1
9998	ARBOVIRUS GROUP B.(UNSPECIFIED	0	0	0	0	0	0	0	3	0	0	3
TOTAL		17	290	27	5	36	4	16	46	66	6	513