



COMMUNICABLE DISEASES INTELLIGENCE

ISSN 0725-3141 VOLUME 15 NUMBER 25 16 December 1991

CONTENTS

ARTICLES

	Page
Spring Rubella Outbreak Amongst Military Apprentices, North-west Sydney	464
Two Cases of Congenital Rubella Syndrome after Previous Maternal Immunisation	465
Adult Measles Case in Western Australia	468
HIV Surveillance Report, 31 October 1991	468
1991 Index	470

OVERSEAS BRIEFS 476

COMMUNICABLE DISEASES SURVEILLANCE 477

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CDI is produced fortnightly by:

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**DEPARTMENT OF
HEALTH, HOUSING AND
COMMUNITY SERVICES**

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

SPRING RUBELLA OUTBREAK AMONGST MILITARY APPRENTICES IN NORTH-WEST SYDNEY

(Dr Jeffrey Stephenson, Medical Officer, RAAF Richmond*)

Introduction

A outbreak of rubella infection has occurred amongst a group of 32 Naval Apprentices and three RAAF members at a nearby base.

All the Naval personnel lived in communal quarters and the appearance of new cases was rapid over several days in late September and early October 1991.

Survey Methods

As the apprentices were living on base and were infectious to other members, they were placed in a separate ward at No. 3 RAAF Hospital, Richmond. This would not be feasible in the general community.

All the members were tested serologically for IgM and IgG antibodies specific to rubella. In addition each patient was asked to participate in a questionnaire to determine their symptoms, their likely contact with pregnant women and the number of working days lost.

A confirmed case was one in which the patient demonstrated rubella-specific IgM antibodies.

The member was considered to have clinical rubella if the symptoms comprised rash and fever and one or more of arthralgia, lymphadenopathy or conjunctivitis¹. The patients were also asked if they had been in contact with any other rubella cases. A further two questions related to the presence of a sore throat and nausea and vomiting. The patients were asked if their illness had been correctly diagnosed on first presentation.

Results

All the cases were in males in the age group 16 to 25 years. The results of serological testing were that 94% (33/35) were rubella IgM positive.

Rash was reported as a symptom by all patients; other symptoms were less frequently reported (Table).

All the cases, except one, were epidemiologically linked.

Of the 35 cases, two patients stated they had been in contact with pregnant women.

The cases were correctly diagnosed on initial presentation in 77% (27/35) of cases. The remaining 23% (8/35) were treated for other illnesses.

There were 153 lost working days at an average of 4.4 days per patient.

Conclusion and Recommendations

The rapid outbreak of rubella is demonstrated by the appearance of 35 cases within a 3 week interval. All

Table. Symptoms reported by the 35 cases of rubella

Symptom	Cases	
	Number	%
Rash	35	100
Sore throat	19	54
Lymphadenopathy	17	49
Arthralgia	12	34
Fever	11	31
Conjunctivitis	10	29
Nausea/vomiting	2	6
Other symptoms*	2	6

* One patient had abdominal pain and another had generalised pruritis.

people entering the Armed Services invariably live in close quarters during their training and whilst on exercise. In view of the large number of working days lost, rubella vaccination should be considered for all new service members, as it may prove cost effective.

* The views expressed in this article are those of the author, and not those of the Department of Defence.

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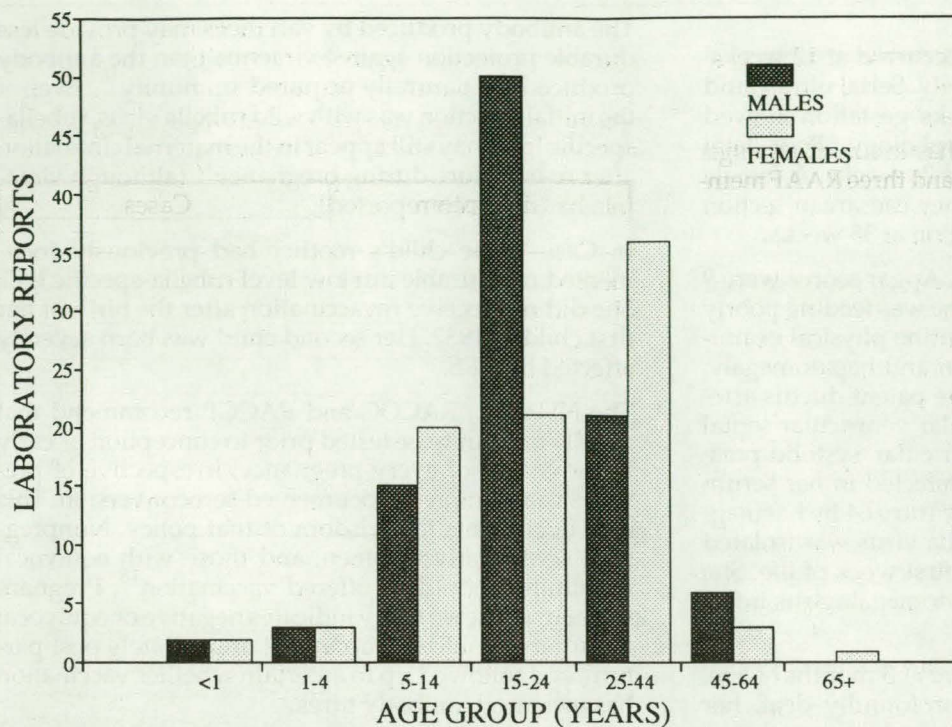
CDI Editorial Comment

The occurrence of this rubella outbreak coincided with the usual spring peak in rubella reports received by the CDI Laboratory Reporting Schemes; a peak has occurred in October or November most years, and October has had the most reports for this year so far.

This is the third report of outbreaks or sporadic rubella activity in teenage males this year. Earlier in the year, an outbreak was identified in a Perth high school¹, and there have been continuing reports of rubella in teenage and young adult males in Tasmania (19 cases reported to 4 December).

Indeed, of the 188 cases (with known sex and age) reported so far this year, 45 (including 15 associated with the above outbreak) have been in males in the age group 15-24 years (Figure). This age and sex distribution is typical of that recorded for rubella for Australia in recent years². It reflects the fact that, although the incidence of clinical disease is traditionally recognised to be highest in children aged 5-9 years, it is now seen

Figure. Rubella laboratory reports 1991, by age group and sex



more often in older age groups, because the widespread use of rubella vaccine has decreased the circulation of the virus in the community. It also reflects the fact that since 1971, school girls and not school boys have been immunised against rubella. It will probably be many years before the 1988 introduction of measles-mumps-rubella vaccination for all children at 12 months begins to have an affect on the relatively high rates of rubella reported in teenage and young adult males.

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TWO CASES OF CONGENITAL RUBELLA SYNDROME AFTER PREVIOUS MATERNAL IMMUNISATION

(Dr Robert Condon (NCEPH Epidemiology Registrar, Health Department of WA), and Dr Carol Bower (Medical Officer, Birth Defects Registry, King Edward Memorial Hospital).)

Introduction

Reinfection of pregnant women with wild rubella virus may occur after both naturally acquired and vaccine induced immunity^{1,2}. Reinfection is thought to pose little risk to the fetus³, even when rubella-specific IgM is detected in the maternal circulation⁴.

In spite of this, occasional reports exist of babies born with congenital infection and malformations after their previously immunised mothers were exposed to wild virus during pregnancy^{5,6,7,8}.

Possible reasons for apparent maternal reinfection and viraemia include primary vaccine failure, or falling antibody levels many years after immunisation⁹, with inadequate antibody response after exposure to wild rubella virus^{10,11}.

The UK National Congenital Rubella Surveillance Programme has accepted the following criteria^{6,12} for defining maternal reinfection in pregnancy:

1. at least two previous antibody positive laboratory reports, or

2. a documented history of rubella vaccination followed by at least one antibody positive laboratory report.

We present two case reports of congenital rubella syndrome (CRS). Both mothers had been immunised during the schoolgirl vaccination programme. Neither case conforms strictly to the UK criteria, but both demonstrate important aspects of testing for rubella immunity before or during early pregnancy.

Case Reports

Case 1

A 29 year old woman had been vaccinated against rubella during her first year at high school (age 12).

During her first pregnancy in 1982, her rubella IgG serology by radial haemolysis was 11 IU/mL. The pregnancy progressed normally and she delivered a healthy female infant at term. She was not offered revaccination against rubella post partum.

She booked for antenatal care in February 1990 after 9 weeks' amenorrhoea. She had no known exposure to rubella, nor did she experience symptoms suggestive of rubella infection. Her immunity against rubella was not re-tested.

An episode of vaginal bleeding occurred at 12 weeks' gestation, but settled spontaneously. Serial ultrasound examinations at 13, 16 and 20 weeks' gestation showed normal foetal growth and morphology. Poor fetal growth occurred between 30 and 36 weeks. A female infant was delivered by emergency caesarean section for fetal distress following induction at 38 weeks.

The baby weighed 2090g at birth. Apgar scores were 9 at 1 minute and 10 at 5 minutes. She was feeding poorly on the 3rd day after birth and routine physical examination revealed a cardiac murmur and hepatomegaly. Echocardiography showed a large patent ductus arteriosus (PDA) and a small muscular ventricular septal defect, with elevated right ventricular systolic pressure. Rubella-specific IgM was detected in her serum taken on the fourth post natal day (titre 64 by haemagglutination inhibition), and rubella virus was isolated from her urine at the end of the first week of life. She had no serological evidence of cytomegalovirus infection or toxoplasmosis.

The PDA required surgical closure at 3 months of age. At 8 months of age, she was profoundly deaf, her weight was on the 25th percentile, and her length and head circumference were on the 3rd percentile.

Case 2

The 30 year old mother of this child received rubella vaccination in her first year at high school. This was her first pregnancy.

Her last normal menstrual period (LNMP) began on 9 January 1990. On 4 February, she became ill with what she thought was a 'cold' and a rash; she took 2 days off work. She presented for antenatal care in March after 2 months' amenorrhoea. Blood was taken for rubella serology (haemagglutination inhibition for IgG) and was reported as 'immune'.

Her pregnancy progressed normally and she delivered a male infant at term. His birth weight was 2770g, and his Apgar scores were 9 at 1 minute and 10 at 5 minutes.

The family's general practitioner referred him to a paediatrician for investigation of poor weight gain at 6 weeks of age. The paediatrician diagnosed microphthalmia and a cataract in the right eye, and pulmonary stenosis. He is profoundly deaf. The diagnosis of congenital rubella syndrome (CRS) is based on clinical grounds and the mother's history; rubella serology has not been performed on the infant.

Discussion

Both naturally acquired and vaccine induced rubella antibody levels fall with the passage of time^{9,13}.

Individuals with low or undetectable antibody levels several years after vaccination occasionally show an IgM response and viraemia when challenged with wild

virus^{10,11}, but the associated degree of risk to the fetus is uncertain. Vaccinees are more likely to show an IgM response to reinfection than individuals with naturally acquired immunity^{13,14,15}.

The antibody produced by vaccinees may provide less durable protection against viraemia than the antibody produced by naturally acquired immunity¹⁶. Even if the initial infection was with wild rubella virus, rubella-specific IgM may still appear in the maternal circulation after re-exposure during pregnancy¹⁷ (although viraemia has not been reported).

In Case 1, the child's mother had previously-documented measurable but low level rubella-specific IgG. She did not receive revaccination after the birth of her first child in 1982. Her second child was born severely affected by CRS.

The NHMRC, RACOG and RACGP recommend that rubella immunity be tested prior to conception or early in the course of every pregnancy, irrespective of previous vaccination or documented seroconversion. This case documents the wisdom of that policy. Nonpregnant seronegative women, and those with equivocal immunity, should be offered vaccination¹⁸. Pregnant women whose serology indicates negative or equivocal immunity should be vaccinated immediately post partum, and followed up to ascertain whether vaccination has increased antibody titres.

The mother of Case 2 gave a history of rubella vaccination as a schoolgirl, without documented seroconversion. She developed an illness compatible with clinical rubella between 2 and 3 weeks after her LNMP. By the time she attended her first antenatal clinic, her serology indicated immunity to rubella. Her IgM titre was not measured.

If maternal rubella infection occurs within 7 days of the LNMP, the risk to the fetus is probably negligible. Between 12 and 21 days after the LNMP, there is a progressive increase in the risk of fetal infection¹⁹. At least 25% of babies born to non-immune women who acquire rubella infection during the first trimester of pregnancy will develop CRS. Even infection in the 16th week of gestation carries a 10-20% risk of a single congenital abnormality occurring²⁰. Birth defects are rare after maternal rubella infection in the 20th week of pregnancy or beyond.

Case 2 demonstrates the importance of a careful history at the first antenatal visit. Rubella exposure or a history of a rash during pregnancy requires full serological investigation (including rubella-specific IgM), regardless of serology results during previous pregnancies or a past history of immunisation¹⁸.

Canberra²¹, Perth¹⁸, New South Wales²² and Tasmania have recently experienced outbreaks or increased sporadic rubella activity. Pregnant women will continue to have some risk of exposure to rubella infection for 10 years or more, until universal childhood vaccination with MMR vaccine substantially reduces the number of males and prepubertal children who can sustain transmission.

We remind medical practitioners to carefully identify the immune status of every woman who is pregnant or planning to become pregnant, and to provide appropriate information about revaccination and follow-up testing as necessary. We also encourage clinicians to notify the relevant surveillance body if they diagnose a case of CRS.

Acknowledgement

We wish to thank the mothers of the two infants for their permission to produce these case reports, and Dr Harvey Coates, Dr Ian Wallman and Ms Jodi Mazzucchelli for their kind assistance with the case investigations.

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A CONFIRMED CASE OF AN ADULT WITH MEASLES IN WESTERN AUSTRALIA

(Dr J S Gill, Principal Medical Officer, Communicable Disease Control, Health Department of Western Australia, and Dr John Radunovich, General Practitioner)

This is a case report of an adult female, 24 years of age living in the wheatbelt area of Western Australia.

The patient returned from a four week holiday in New Zealand on 30 August 1991. Eleven days after her return she developed a fever with cough and coryza and three days later a rash. She consulted her general practitioner that day and was found to have Koplik's spots and a diagnosis of measles was made. The following day, as a result of severe vomiting, diarrhoea and dizziness, she was hospitalised. Intravenous fluid therapy was required to treat dehydration. She spent a total of four days in hospital and recovered fully, returning to work 15 days after the onset of disease.

The first serological specimen on 17 September 1991 was IgM FA positive. The CFT IgG titre was less than 10 and increased to 20 eight days after the initial specimen.

There was no history of contact with any individual with clinical signs or symptoms suggestive of measles, although on 29 August, she and her travelling companions attended a ballet matinee in Auckland that was filled with 'coughing and sneezing' children. She returned to work on 2 September and had close contact with at least three pre-primary children who she screened for visual acuity on 10 September. Two of these children have been contacted and remain well. The third child has not been contactable, but no secondary or tertiary spread has been noted in the State.

It seems likely that the patient was infected in New Zealand as no local outbreak occurred at that time. New Zealand has reported an epidemic affecting the North Island¹. This is an interesting case as it illustrates the possible international spread of measles by adults and that no secondary spread occurred in spite of contact with children. The measles immunisation coverage in the area is estimated to be above 90% in year 1 school entrants.

With improvement in vaccination uptake, it can be expected that there will be a growing number of older children and young adults who will be susceptible to the disease. This emphasises the need to consider a two dose strategy for measles preferably combined with mumps and rubella vaccination for better control of these diseases.

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CDI Editorial Comment

Further details on the measles epidemic in New Zealand have previously been presented (*CDI* 15:316-317) and are updated in the Overseas Briefs section of this issue.

AUSTRALIAN HIV SURVEILLANCE REPORT, VOLUME 7 NUMBER 10 (31 OCTOBER 1991)

The National Centre in HIV Epidemiology and Clinical Research reports that as of 30 September 1991 a total of 15254 diagnoses of HIV infection and 2882 cases of AIDS had been reported in Australia. For the most recent period, 1 September to 30 September 1991, 32 new cases of AIDS and 159 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 September to 30 September 1991, by sex and State/Territory in which the diagnosis was made

STATE/ TERRITORY	CASES			DEATHS		
	Male	Female	Total	Male	Female	Total
ACT	0	0	0	0	0	0
NSW	15	0	15	5	0	5
NT	1	0	1	0	0	0
Qld	0	0	0	0	0	0
SA	5	0	5	1	0	1
Tas	0	0	0	0	0	0
Vic	8	0	8	5	0	5
WA	3	0	3	0	0	0
TOTAL	32	0	32	11	0	11

Table 2. Cumulative cases of AIDS and deaths from AIDS by sex and State/Territory in which diagnosis was made, to 30 September 1991

STATE/ TERRITORY	CASES			DEATHS		
	Male	Female	Total	Male	Female	Total
ACT	36	1	37	22	1	23
NSW	1709	50	1759	1098	35	1133
NT	9	0	9	3	0	3
Qld	206	9	215	140	7	147
SA	104	4	108	54	1	55
Tas	14	1	15	8	1	9
Vic	593	13	606	362	6	368
WA	125	8	133	79	3	82
TOTAL	2796	86	2882	1766	54	1820

Table 3. Number of new diagnoses of HIV infection in the period 1 September to 30 September 1991 and cumulative since the introduction of HIV antibody testing to 30 September 1991 by sex and State/Territory

STATE/ TERRITORY	CASES			DEATHS			
	Male	Female	Total	Male	Female	Sex not reported	Total
ACT	0	0	0	18	0	97	115
NSW	103	8	116	7891	405	1973	10269
NT	0	0	0	57	6	0	63
Qld	10	0	10	1086	46	0	1132
SA	1	0	1	334	27	0	361
Tas	0	0	0	52	3	0	55
Vic	28	2	30	2469	91	67	2627
WA	2	0	2	600	32	0	632
TOTAL	144	10	159	12507	610	2137	15254

1. Total for NSW for September includes 5 people whose sex was not reported.
2. Cumulative total for SA does not include new diagnoses detected during the period 18 May 1990 - 9 September 1991.
3. Total for Australia for September includes 5 people whose sex was not reported.

1991 INDEX

A

- Adenovirus type 11, 28
- Adenovirus type 8, 432
- Adenovirus type 46, 10
- Aedes vigilax*
 - NSW arbovirus surveillance, 231
- Aeromonas* spp, 29
- Africa
 - Cholera, 254, 273, 298, 319, 340, 364, 387, 409, 430, 452, 476
 - Malaria, 404
- AIDS
 - Australian HIV Surveillance Reports, 18, 92, 139, 170, 197, 236, 253, 317, 359, 428, 468
 - By age and sex, 142
 - By defining condition, 142
 - By exposure category, 142
 - International Updates, 39, 360
 - Survival following diagnosis, 141
 - Western Pacific update, 122, 363
- Air travel
 - Associated gastroenteritis, 292
- Algeria
 - Cholera, 177
- Alphaviruses
 - NSW surveillance, 229
- Americas
 - Cholera, 135, 149, 255, 274, 298, 319, 340, 364, 387, 409, 430, 452, 476
 - Malaria, 405
- Angola
 - Cholera, 254, 273, 364, 430
- Anopheles* spp
 - Malaria in Australia, 1990, 400
 - Northern Territory, 116, 117
- Anthrax
 - NSW case, 296
- Arbovirus
 - Queensland, 170
 - South Australia, 183
- Arbovirus surveillance
 - New South Wales, 229
 - South Australia, 233
 - Victoria, 233
- Asia
 - Cholera, 255, 274, 298, 319, 340, 364, 387, 409, 430, 452, 476
 - Influenza, 72, 150, 228
 - Malaria, 404
- ASPREN
 - See Australian Sentinel Practice Research Network
- Australian Animal Health Laboratory
 - Notice to Readers, 320
- Australian Capital Territory
 - Measles, 479
 - Rubella, 328
- Australian encephalitis, 144, 159, 217
 - NT case, 201
 - Qld case, 296
 - Western Australia and Northern Territory, 294
- Australian Sentinel Practice Research Network, 107-109, 144, 172, 186, 201, 220, 238, 257, 278, 303, 322, 342, 367, 390, 433, 412, 455, 481
 - Case definitions, 108

- Influenza, 229, 388
- Location of practices, 109

B

- Bacillus anthracis*, 296
- Bacteraemia
 - Case report, 79
- Bacteroides melaninogenicus*, 217
- Barmah Forest virus, 301, 453
 - Queensland, 170
- Benin
 - Cholera, 35, 387, 430
- Bhutan
 - Cholera, 430
- Bolivia
 - Cholera, 319, 340, 364, 387, 409, 430, 452, 476
- Bordetella pertussis*, 11, 52
 - Western Australia, 5
- Brazil
 - Cholera, 149, 216, 255, 274, 298, 319, 364, 409, 430, 452, 476
 - Yellow fever, 431
- Brucella abortus*, 10
 - Queensland, 376, 378
 - Queensland, correction, 410
 - South Australia, 194
- Brucella suis*
 - Queensland, 376, 379
- Brucellosis
 - Queensland, 376, 378
 - Queensland, correction, 410
 - South Australia, 194
- Bunyaviruses
 - NSW surveillance, 229
- Burkina Faso
 - Cholera, 298, 387
- Burundi
 - Cholera, 452

C

- Calici virus, 321
- Cambodia
 - Cholera, 452
- Cameroon
 - Cholera, 254, 273, 340, 364, 452
- Campylobacter fetus*, 388
- Campylobacter jejuni*, 411
- Campylobacter* spp, 29, 179
- Canada
 - Neisseria gonorrhoeae*, 21
- Canberra
 - Measles, 479
- Candida albicans*, 28
- Cat-scratch disease, 126
- Capnocytophaga canimorsus*, 79
- CDI Data
 - Hepatitis A, 249, 384
 - Measles, 313
 - Ross River virus, 339
 - Rubella, 331
 - Rubella and congenital rubella syndrome, 333
- Central Australia
 - Gonococcal conjunctivitis, 264
 - Neisseria meningitidis*, rifampicin resistance, 166
- Chad

- Cholera, 197, 216, 254, 273, 298, 340, 364, 387, 430
- Chemoprophylaxis
Haemophilus influenzae, 2
- Chile
 Cholera, 149, 177, 387
- Chlamydia pneumoniae*, 275
- Chlamydia psittaci*, 172, 301
- Chlamydia trachomatis*, 28
- Cholera
 Africa, 254, 273, 298, 319, 340, 364, 387, 409, 430, 452, 476
 Algeria, 177
 Americas, 135, 149, 255, 274, 298, 319, 340, 364, 387, 409, 430, 452, 476
 Angola, 254, 273, 364, 430
 Asia, 255, 274, 298, 319, 340, 364, 387, 409, 430, 452, 476
 Benin, 35, 387, 430
 Bhutan, 430
 Bolivia, 319, 340, 364, 387, 409, 430, 452, 476
 Brazil, 149, 216, 255, 274, 298, 319, 364, 409, 430, 452, 476
 Burkino Faso, 298, 387
 Burundi, 452
 Cambodia, 452
 Cameroon, 254, 273, 340, 364, 452
 Chad, 193, 216, 254, 273, 298, 340, 364, 387, 430
 Chile, 177, 149, 387
 Colombia, 92, 115, 135, 149, 177, 193, 216, 255, 274, 298, 319, 340, 364, 409, 452, 476
 Cote d'Ivoire, 430
 Ecuador, 91, 115, 135, 149, 177, 193, 255, 274, 319, 340, 364, 387, 409, 430, 476
 El Salvador, 319, 340, 364, 387, 430, 452, 476
 Europe, 320, 340, 365, 388, 409, 431, 452, 476
 Ghana, 273, 364, 387, 430, 476
 Guatemala, 274, 340, 364, 387, 430, 476
 Honduras, 430, 452
 Hong Kong, 298, 340, 365
 India, 274, 298, 319, 365, 430, 452
 Indonesia, 255
 Iraq, 177, 216, 274, 319, 340, 364, 387, 409, 430, 452, 476
 Japan, 274, 364
 Kenya, 387
 Korea, 319, 340, 365, 387
 Liberia, 274, 430
 Malawi, 430
 Malaysia, 177, 430
 Mexico, 255, 274, 298, 319, 340, 364, 430, 452, 476
 Morocco, 2
 Mozambique, 254, 274, 319, 387, 476
 Nepal, 298, 387
 Nicaragua, 452
 Niger, 254, 273, 298, 319, 364, 387, 430, 452, 476
 Nigeria, 273, 298, 364, 452
 Pakistan, vaccination requirements, 92
 Panama, 364, 387, 409, 430, 452, 476
 Peru, 57, 71, 91, 115, 118, 135, 149, 177, 193, 198, 216, 255, 274, 298, 319, 364, 387, 409, 452, 476
 Romania, 2, 320, 340, 365, 388, 409, 431, 452, 476
 Rwanda, 273, 319, 364, 430
 Sao Tome and Principe, 298
 Singapore, 255, 274, 298, 365, 409, 431, 452, 476
 Sri Lanka, 319, 387
 Sudan, vaccination requirements, 2
 Tanzania, 409
 Togo, 254, 430
 Uganda, 476
 Ukrainian SSR, 340, 388, 452, 476
 United States of America, 298, 364, 452
 Vaccination certificates, 216
- Zambia, 2, 17, 274
- Ciguatera
- Darwin, 386
- Clostridium perfringens*, 432
- Collie, WA
 Measles, 150
- Colombia
 Cholera, 92, 115, 135, 149, 177, 197, 216, 255, 274, 298, 319, 340, 364, 409, 452, 476
- Congenital rubella syndrome
 CDI Data, 333
 Western Australia, 332, 465
- Cook Islands
 Dengue, 299
- Corynebacterium bovis*, 201
- Corynebacterium diphtheriae*, 277
- Cote d'Ivoire
 Cholera, 430
- Coxsackievirus type A2, 478
- Coxsackievirus type A9, 217, 411
- Coxsackievirus type A16, 217
- Coxsackievirus type B1, 217
- Coxsackievirus type B2, 217
- Coxsackievirus type B3, 217
- Coxsackievirus type B4, 10, 217
- Coxsackievirus type B5, 217
- Coxsackievirus type B7, 52
- Cryptococcus* spp, 11, 365, 411, 454
- Cryptosporidium* spp, 29
- Culex annulirostris*
 NSW arbovirus surveillance, 231
- Cytomegalovirus, 10, 28, 144, 256, 322, 478
- ## D
- Darwin
 Ciguatera, 386
 Measles, 65, 80, 107
- Dengue, 144, 183, 217, 300, 365, 388, 411, 453
- Cook Islands, 299
- Queensland, 170
- Trinidad and Tobago, 57
- Desk top publishing
 Notice to readers, 1
- Doomadgee, Qld
Neisseria meningitidis, 168
- ## E
- Echinococcus granulosus*, 389, 454
- Echovirus type 17, 256, 275, 302, 320, 341, 365, 411, 453
- Ecuador
 Cholera, 17, 91, 115, 135, 149, 177, 193, 255, 274, 319, 340, 364, 387, 409, 430, 476
 Yellow fever, 255
- Eikenella corrodens*, 28
- El Salvador
 Cholera, 319, 340, 364, 387, 430, 452, 476
- England and Wales
 Methicillin-resistant *Staphylococcus aureus*, 184
 Pertussis, 9
- Enteric pathogens
 Western Australia, 178
- Enterobacter aerogenes*, 10
- Enterovirus type 71, 454
- Epidemic polyarthritis
 Northern Territory, 80
 See also Ross River virus
- Western Australia, 442
- Epstein-Barr virus, 28
- Escherichia coli*, 10, 28, 29, 52, 388

Europe

Cholera, 320, 340, 365, 388, 409, 431, 452, 476
Influenza, 72, 150, 228

F

Fit to Travel and Return

Notice to Readers, 410

Flaviviruses

NSW surveillance, 229

Queensland, 170

Victorian arbovirus surveillance, 233

Food products

Listeria monocytogenes, South Australia, 421, 426

G

Gambierdiscus toxicus

Ciguatera in Darwin, 386

Gastroenteritis

Air travel associated, 292

Genital warts

ASPREN case definition, 108

Ghana

Cholera, 273, 364, 387, 430, 476

Giardia lamblia, 11, 29

Gonococcal conjunctivitis

Central Australia, 264

Gonococcal Surveillance Reports

1st quarter 1991, 266

2nd quarter 1991, 382

3rd quarter, 1990, 20

4th quarter, 1990, 143

Guatemala

Cholera, 274, 340, 364, 387, 430, 476

Shigella dysenteriae, 255

H

Haemophilus influenzae, 11, 52, 66, 126, 186, 201, 217, 276,
300, 322, 365, 432, 454

Chemoprophylaxis, 2

Vaccines, 4

Haemophilus parainfluenzae, 28

Hajj vaccination requirements, 165

Health Information for International Travel

Notice to Readers, 409

Hepatitis A, 322, 341, 365, 411, 432, 454

CDI Data, 249, 384

South Australia, 244

Travellers, 251

Victoria, 246, 383

Western Australia, 247

Hepatitis A, 301

Hepatitis B, 432

South Australia, 244

Hepatitis C, 73, 256, 277, 301, 322, 341, 365, 388, 411,
432, 454, 478

Hepatitis D, 201, 454

Herpes simplex virus

Neonatal infections, 65

Herpes simplex virus (not typed), 432, 454

Herpes simplex virus type 2, 65, 478

Herpes virus (typing pending), 322

Heterosexual contact in South-east Asia

HIV, 318

HIV

Australian Surveillance Reports, 18, 92, 139, 141,
170, 197, 236, 253, 317, 359, 428, 468

Heterosexual contact in South-east Asia, 318

Screening of pregnant women, 9

Surveillance, STD Clinics, 196

Western Pacific update, 122, 363

HIV Surveillance Reports, Australia, 18, 92, 139, 170,
197, 236, 253, 317, 359, 428, 468

Honduras

Cholera, 430, 452

Hong Kong

Cholera, 298, 340, 365

Hospital-acquired infections

Surveys, 36, 289

HTLV-1, 454

Hunter region, NSW

Measles, 208

I

Immunisation

For adults, USA, 25

Immunisation Conference

Notice to readers, 51

Immunisation Procedures

Notice to Readers, 410

Index, 1990, 43

Index, 1991, 470

India

Cholera, 274, 298, 319, 365, 430, 452

Indonesia

Cholera, 255

Influenza, 431

1991 Northern Hemisphere vaccine composition, 150

1992 Australian vaccine composition, 429

Asia, 72, 150, 228

ASPREN case definition, 108

CSL Updates, 72, 150, 228

Europe, 72, 150, 228

New Zealand, 228, 274, 299

North America, 72, 150

Northern Hemisphere, 35, 72, 431, 476

Papua New Guinea, 228, 274

Influenza A, 52, 72, 217, 229, 341, 365, 410, 431, 453, 477

Vaccine, 429

Influenza B, 72, 217, 229, 275, 299, 320, 341, 365, 388,

410, 453, 477

Vaccine, 429

Influenza C, 388

Iraq

Cholera, 177, 216, 274, 319, 340, 364, 387, 409, 430,
452, 476

J

Japan

Cholera, 274, 364

Japanese encephalitis vaccine

Notice to Readers, 274

K

Katanning, WA

Neisseria meningitidis, 58

Kenya

Cholera, 387

Kokobera virus, 80

Korea

Cholera, 319, 340, 365, 387

Kunjin virus, 183

Cases reported in Victoria, 295

Victorian arbovirus surveillance, 233

- WA case, 294
- Kunjin virus cases, 296

L

- LabDOSS, 277
- Legionella pneumophila*, 126, 209, 276, 365, 411, 454
 - Victoria, 209
- Leptospira* spp
 - South Australia, 194
- Leptospirosis
 - South Australia, 194
- Liberia
 - Cholera, 274, 430
- Listeria monocytogenes*, 185
 - Food products, South Australia, 426
 - Mussels, Tasmania, 427
 - South Australia, 420 - 421
 - Victoria, 234
- Listeriosis
 - South Australia, 420
 - Tasmania, 427
 - Victoria, 234

M

- Madagascar
 - Plague, 388
- Malaria, 389, 454
 - Australia, 1990, 400
 - Northern Territory, 116
 - Solomon Islands, 476
- Malaria receptive zone, 400
- Malawi
 - Cholera, 430
- Malaysia
 - Cholera, 177, 430
- Measles, 52, 301, 341, 365, 388, 411, 432, 454, 477
 - Adult case, WA, 468
 - ASPREN case definition, 108
 - CDI Data, 313
 - Canberra, ACT, 479
 - Collie, Western Australia, 150
 - Darwin, 65, 80, 107
 - New South Wales, 125, 208
 - New Zealand, 316, 388, 452, 477
 - South Australia, 312
 - United States of America, 104
- Melbourne
 - Salmonellosis outbreaks, 118
- Melioidosis, 144, 270
 - Australian epidemiology, 272
 - Northern Territory, 272
 - Queensland, 272
 - Western Australia, 152
- Meningococcal meningitis
 - See *Neisseria meningitidis*
- Mexico
 - Cholera, 255, 274, 298, 319, 340, 364, 430, 452, 476
- Morganella morganii*, 11
- Morocco
 - Cholera, 2
- Mosquito
 - Arbovirus, NSW, 229
 - Victorian arbovirus surveillance, 233
- Mozambique
 - Cholera, 254, 274, 319, 387, 476
- Mumps
 - ASPREN case definition, 108
 - New Zealand, 23

- Vaccination, 23
- Murray Valley encephalitis virus, 144, 159, 183, 217, 453
 - NT case, 201
 - Queensland, 447
 - Victorian arbovirus surveillance, 233
 - WA and NT cases, 294
- Murray Valley encephalitis virus cases, 296
- Mussels
 - Listeria monocytogenes*, Tasmania, 427
- Mycoplasma hominis*, 185
- Mycoplasma pneumoniae*, 432, 453, 477, 478

N

- Neisseria gonorrhoeae*
 - Antibiotic resistance, Canada, 21
 - Conjunctivitis, Central Australia, 265
 - Surveillance Reports, 20, 143, 266, 382
- Neisseria meningitidis*, 52, 66, 126, 201, 237, 256, 277, 322, 388, 454
 - Doomadgee, Qld outbreak, 168
 - Katanning, WA, 58
 - Rifampicin resistance, Central Australia, 166
 - Tanzania, 320
- Nepal
 - Cholera, 298, 387
- New South Wales
 - Anthrax case, 296
 - Arbovirus surveillance, 229
 - Measles, Sydney, 125, 208
 - Rabies case, 143
 - Rubella, 464
 - Syphilis, 210
 - Tetanus case, 65
- New Zealand
 - Influenza, 228, 274, 299
 - Measles, 316, 388, 452, 477
- Nicaragua
 - Cholera, 452
- Niger
 - Cholera, 254, 273, 298, 319, 364, 387, 430, 452, 476
- Nigeria
 - Cholera, 273, 298, 364, 452
 - Yellow fever, 388
- North America
 - Influenza, 72, 150
- Northern Hemisphere
 - Influenza, 35, 72, 431, 476
- Northern Territory
 - Australian encephalitis, 294
 - Epidemic polyarthritis, 80
 - Malaria, 116
 - Measles, Darwin, 65, 80, 107
 - Melioidosis, 272
 - Ross River virus, 80
 - Scrub typhus, 136
- Norwalk-like agent
 - Air travel-associated gastroenteritis, 293
- Notices to Readers
 - Australian Animal Health Laboratory, 320
 - Fit to Travel and Return*, 410
 - Health Information for International Travel*, 409
 - Immunisation Conference, 51
 - Immunisation Procedures*, 410
 - Introduction of desktop publishing, 1
 - Japanese encephalitis vaccine, 274
 - Polio Reference Laboratory, 237
 - Synopsis of Zoonoses in Australia*, 452
 - Tuberculosis in Australia and New Zealand*, 410
 - WA Notifiable Diseases Bulletin*, 274

Notifiable Diseases Reports, 11, 82 - 84, 126 - 127, 159 - 160, 187 - 188, 219 - 220, 257 - 258, 303 - 304, 342 - 345, 366, 368, 389 - 391, 433 - 434, 480, 482

P

Pakistan

Cholera vaccination requirements, 92

Panama

Cholera, 364, 387, 409, 430, 452, 476

Papua New Guinea

Influenza, 228, 274

Malaria, 400, 408

Parainfluenza type 1, 322

Parainfluenza type 2, 322

Parainfluenza type 3, 322, 453, 476

Parasites

Western Australian enteric pathogens, 180

Parvovirus, 300, 478

Perth

Mycoplasma, 478

Pertussis

ASPREN case definition, 108

England and Wales, 9

Western Australia, 5

Peru

Cholera, 57, 71, 91, 115, 118, 135, 149, 177, 193, 198, 216, 255, 274, 298, 319, 364, 387, 409, 452, 476

Plague

Madagascar, 388

Tanzania, 36

Plasmodium falciparum, 116, 389, 400, 454

Plasmodium malariae, 116, 401

Plasmodium ovale, 401

Plasmodium vivax, 389, 401, 454

Polio Reference Laboratory

Notice to Readers, 237

Poultry and eggs

Salmonellosis, 62

Proteus mirabilis, 28

Pseudomonas aeruginosa, 52, 81

Pseudomonas mirabilis, 52

Pseudomonas pseudomallei, 144

See also melioidosis

Multiple antibiotic resistance, case report, 270

Queensland, 272

Western Australia, 152

Psittacosis, 125, 172, 301, 454, 478

Q

Q Fever, 10, 28, 52, 65, 80, 107, 125, 144, 159, 172, 185, 201, 217, 237, 256, 276, 301, 321, 341, 365, 388, 411, 432, 454, 478

South Australia, 194, 478

Queensland

Arbovirus activity, 170

Brucellosis, 376, 378

Brucellosis, correction, 410

Melioidosis, 272

Murray Valley encephalitis virus, 447

Neisseria meningitidis, Doomadgee, 168

R

Rabies

NSW case, 143

Respiratory syncytial virus, 275, 301, 321, 342, 366, 388, 410, 432, 454

Rickettsia tsutsugamushi

Northern Territory, 136

Rifampicin

Haemophilus influenzae chemoprophylaxis, 4

Resistance - *Neisseria meningitidis*, 166

Romania

Cholera, 2, 320, 340, 365, 388, 409, 431, 452, 476

Ross River virus, 80, 107, 125, 144, 217, 301, 453

CDI Data, 339

Queensland, 170

South Australia, 183

Victoria, 137, 337

Western Australia, 442

Rotavirus, 201, 256, 276, 300, 321, 341, 365, 388, 411, 431, 454, 478

Royal Australian College of General Practitioners

ASPREN, 107

Rubella, 10, 256, 276, 300, 321, 342, 365, 388, 411, 432, 454, 478

ASPREN case definition, 108

Australian Capital Territory, 328

CDI Data, 331, 333

North-west Sydney, 464

Western Australia, 332, 465

Rwanda

Cholera, 273, 319, 364, 430

S

Salmonella, 11, 29, 52, 60, 94, 153, 180, 284, 352, 449

Outbreaks, 118, 289

Poultry and eggs, 62

Salmonella Anatum

Outbreak, South Australia, 181

Salmonella Bovismorbificans, 450

Salmonella Enteritidis, 60

Salmonella Heidelberg, 180, 450

Salmonella Mississippi, 154

Salmonella nomenclature, 154

Salmonella Paratyphi, 99, 156, 178, 182, 286, 355, 449

Salmonella Reference Laboratory Reports

1st quarter, 1991, 180

2nd quarter, 1991, 449

October, November 1990, 60

Salmonella Surveillance Scheme Reports

1st and 2nd quarters, 1990, 94

3rd quarter, 1990, 153

4th quarter 1990, 284

Annual, 1990, 352

Salmonella Typhi, 98, 155, 178, 182, 286, 355, 450

Salmonella Typhimurium, 135, 288, 450

Outbreak, Victoria, 195

Sao Tome and Principe

Cholera, 298

Saudi Arabia

Hajj vaccination requirements, 165

Scrub typhus

Northern Territory, 136

Shigella

United States of America, 75

Shigella dysenteriae

Guatemala, 255

Shigella sonnei

11, 29

Western Australia enteric pathogens, 178

Shigella spp, 95, 157, 179, 286, 354

Sindbis virus

Victorian arbovirus surveillance, 233

Singapore

Cholera, 255, 274, 298, 365, 409, 431, 452, 476

Small round structured virus

Air travel associated gastroenteritis, 293

- Solomon Islands
Malaria, 476
- South Australia
Arbovirus, 183
Arbovirus surveillance, 233
Hepatitis A and B, 244
Listeria monocytogenes, 421
Listeria monocytogenes, food products, 426
Listeriosis, 420
Measles, 312
Occupation-related zoonoses, 194
Salmonella Anatum outbreak, 181
- South-east Asia
Malaria, 404
- South-west Pacific
Malaria, 404
- Sri Lanka
Cholera, 319, 387
- St Louis encephalitis
United States of America, 63
Staphylococcus aureus, 11, 28, 52, 186
Staphylococcus aureus, methicillin resistant, 28
England and Wales, 184
Staphylococcus epidermidis, 11
- STD Clinics
HIV Surveillance, 196
Streptococcus agalactiae, 52
Streptococcus durans, 11
Streptococcus, Group B, 81, 126
Streptococcus, Group G, 126
Streptococcus milleri, 432
Streptococcus mitis, 11
Streptococcus pneumoniae, 11, 28, 52, 126
Streptococcus sanguis, 52
- Sudan
Cholera vaccination requirements, 2
- Synopsis of Zoonoses in Australia*
Notice to Readers, 452
- Sydney
Measles, 125, 208
Rubella, 464
- Syphilis, 276, 454
Early, NSW, 210
United States of America, 213
- T**
- Tanzania
Cholera, 409
Neisseria meningitidis, 320
Plague, 36
- Tasmania
Listeriosis, 427
- Tetanus
Immunoglobulin shortage, 18
NSW case, 65, 172
- Togo
Cholera, 254, 430
- Torres Strait Islands
Malaria, 400
- Toxoplasma gondii*, 411, 454
- Travellers
Gastroenteritis, air travel, 292
Hajj vaccination requirements, 165
Hepatitis A, 251
Malaria, 400
- Trinidad and Tobago
Dengue, 57
- Tuberculosis
Country of birth, Australia, 440
Correction, 479
Notification rates, Australia, 267
Tuberculosis in Australia and New Zealand
Notice to readers, 410
- U**
- Uganda, 476
- Ukrainian SSR
Cholera, 340, 388, 452, 476
- United States of America, 75
Adult immunisation, 25
Cholera, 298, 364, 452
Measles vaccination levels, 104
Syphilis, 213
St Louis encephalitis, 63
- V**
- Vaccine
Influenza, Australia 1992, 429
Haemophilus influenzae, 4
Varicella-zoster virus, 341, 365, 388, 411, 432, 454
- Victoria
Arbovirus surveillance, 233
Hepatitis A, 246, 383
Kunjin cases reported, 295
Legionnaire's Disease, 209
Listeriosis, 234
Ross River virus, 137, 337
Salmonella Typhimurium 135 outbreak, 118, 195
Salmonella Heidelberg outbreak, 118
- Vincent's organisms, 28
- W**
- Western Australia
Australian encephalitis, 294
Congenital rubella syndrome, 332, 465
Enteric pathogens, 178
Epidemic polyarthritides, 442
Hepatitis A, 247
Measles, adult case, 468
Measles, Collie, 150
Meloidosis, 152
Mycoplasma, Perth, 478
Neisseria meningitidis, Katanning, 58
Pertussis, 5
Ross River virus, 442
Rubella, 332, 465
Western Australian Notifiable Diseases Bulletin
Notices to Readers, 274
- Western Pacific Region
HIV and AIDS update, 363
- Whooping cough, 28
England and Wales, 9
See also Bordetella pertussis
- Y**
- Yellow fever
Brazil, 431
Ecuador, 11, 255
Niger, 58
Nigeria, 388
Yersinia enterocolitica, 29, 276, 478
Yersinia spp, 276

Z**Zambia**

Cholera, 2, 17,274

Zoonoses

Occupation-related, South Australia, 194

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.

Cholera in Africa Update

Uganda has reported its first recent cases of cholera. There were 5 cases reported for the period 9 to 15 November and 38 cases and 11 deaths for the period 16 to 22 November. The area of the country which is infected has not yet been specified.

Ghana reported 792 cases and 14 deaths for the period 11 October to 15 November.

There were 27 cases reported in **Mozambique** from 20 September to 22 November.

Niger reported 68 cases and 18 deaths for the period 9 to 15 November.

Cholera in the Americas Update

In **Bolivia**, there were 20 cases and 2 deaths from 8 to 25 November.

Brazil has reported a further 45 cases for the period 28 September to 31 October and 20 cases for the period 13 to 21 November.

Colombia has reported 444 cases and 1 death from 2 to 16 November and a further 484 cases and 13 deaths for 17 to 23 November. The Departments of Cesar and Guajira and the Intendancies of Caqueta and San Andres have recently been declared infected.

In **Ecuador**, 1311 cases and 17 deaths were reported for the period 6 October to 2 November.

There were 101 cases and 8 deaths in El Salvador from 17 to 30 November.

Guatemala reported a further 1067 cases and 12 deaths for the period 20 October to 16 November. Alta Verapaz, Chiquimula, Izabal and Jutiapa Departments have recently been declared infected.

In **Mexico**, Colima State has recently been declared infected. There were 224 cases and 4 deaths from 29 October to 8 November.

Panama reported 672 cases and 4 deaths from 2 to 30 November. Colon and Panama Provinces have recently been declared infected.

There were 9179 cases and 56 deaths reported in **Peru** for the period 30 October to 13 November.

Cholera in Asia Update

In **Iraq**, there were 9 cases and 1 death from 1 to 15 November.

Singapore reported 1 case for the period 3 to 9 November.

Cholera in Europe Update

Romania has declared all of its territory free of cholera.

Three cases were reported from the **Ukrainian SSR** for the period 4 to 17 October.

Malaria in the Solomon Islands

Information regarding malaria incidence in the Solomon Islands has recently been released by the Solomon Islands Government. The incidence rate has increased dramatically recently: in 1990, there were 400 cases per 1000 population per year recorded, compared with an incidence rate of 280 per 1000 per year in 1989 and an incidence rate of 200 per 1000 per year in 1988. The incidence rate is expected to increase to 500 per 1000 per year for 1991.

In Australia in 1990, there were 47 reports of persons who had contracted malaria in the Solomon Islands (41 vivax and 6 falciparum); 32 of these were returning Australian residents. Indeed, the estimated risk of Australian residents acquiring malaria was estimated as being higher for the Solomon Islands than for any other region, including Papua New Guinea¹.

Influenza in the Northern Hemisphere

Influenza activity has been reported from many areas of Europe and North America over the last few weeks. In the United States and Canada, all isolates have been influenza A. Most further characterised have been H3N2, although a few H1N1 isolates have also been reported. Europe has also reported mainly influenza A. In the United Kingdom, France and Switzerland, isolates have been further characterised as H3N2. Thailand has also reported influenza A and B activity.

Measles in New Zealand Update

By the 29 November, there had been a total of 8701 cases and 217 hospitalisations reported for the New Zealand measles epidemic. Cases have been reported from the North and South Islands, with reported incidences of up to 942 per 100,000 population (Table)².

Table. Measles in New Zealand: incidence rate per 100,000 population at 15 November 1991

New Zealand Area Health Board	Meales Incidence Rate per 100,000 population
Tairāwhiti	942
Wellington	378
Northland	336
Waikato	336
Auckland	303
Otago	71
Canterbury	42

REFERENCES

1. Report of the Australian malaria register for 1990. *Comm Dis Intell* 1991;15:400-409.
2. News of the week. *Communicable Diseases New Zealand Weekly* 1991;(46).

COMMUNICABLE DISEASES SURVEILLANCE

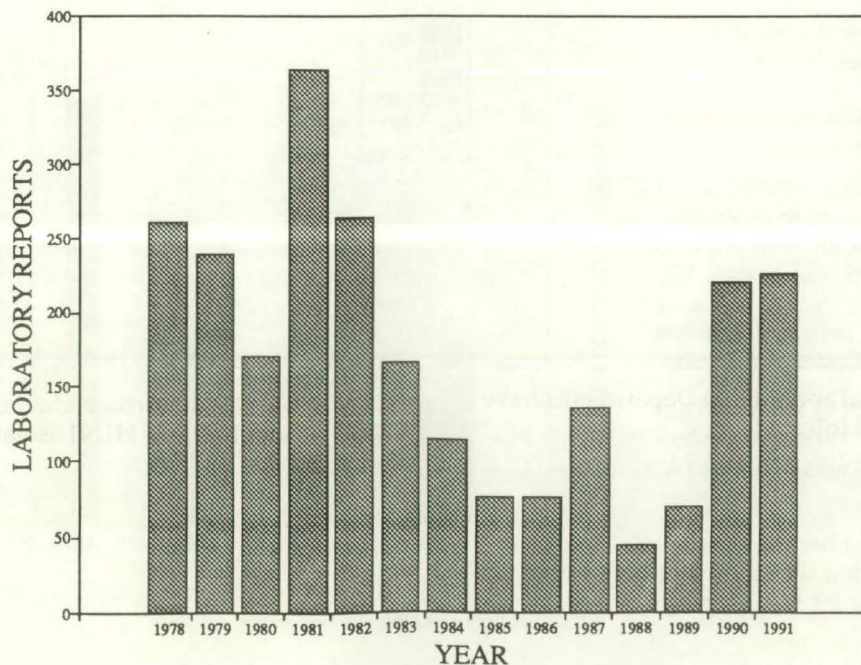
There was a total of only 13 reports of influenza this fortnight. Five were influenza B, 2 were influenza A (unspecified), and there were 6 influenza A H1N1 reported from Western Australia. One influenza A H1N1 was in a female aged 65 years or more.

There were 21 reports of *Mycoplasma pneumoniae* infection, including 13 from Western Australia and 5 from Victoria. The Western Australian situation is described further below.

Twenty-eight reports of parainfluenza type 3 were received this fortnight. This brought the totals for the year to 488, and for October to 67, the highest for any month since the spring of 1989. CNS symptoms were reported for one patient, a 22 year old male.

A further 11 cases of measles were reported, bringing the total for the year to 226. The number of measles reports for the last two years is now similar to that recorded a decade ago, after a period of many fewer reports in the mid-1980s (Figure 1). There is currently

Figure 1. Measles reports, 1978 to 1991, by year



a measles outbreak occurring in the Australian Capital Territory (described further below).

There were 11 reports of rubella. One report was of virus isolation from the amniotic fluid of a 26 year old pregnant woman. One other report was also of a woman of child bearing age (38 years).

There were 8 reports of psittacosis this fortnight, with 6 from Victoria. One of the patients, a male aged 55 years, was reported as having had contact with sick parrots. A 30 year old female patient was reported as working with ducks.

A total of 76 reports of hepatitis C were received. A history of injecting drug use was reported as a risk factor for 2 patients.

One report of coxsackievirus type A2 was received, the first since 1984. The patient was a 9 month old male who had lower respiratory tract symptoms. The virus was isolated from a nasopharyngeal specimen and was reported from a Sydney laboratory.

There was one report of *Yersinia enterocolitica* infection. The patient was a female in the age group 45 to 64 years, and the reported symptom was muscle/joint disease.

There were 49 reports of cytomegalovirus infection, bringing the total for the year to 1560. Included were 2 pregnant women (one 8 weeks pregnant, period not stated for the other) and 5 infants:

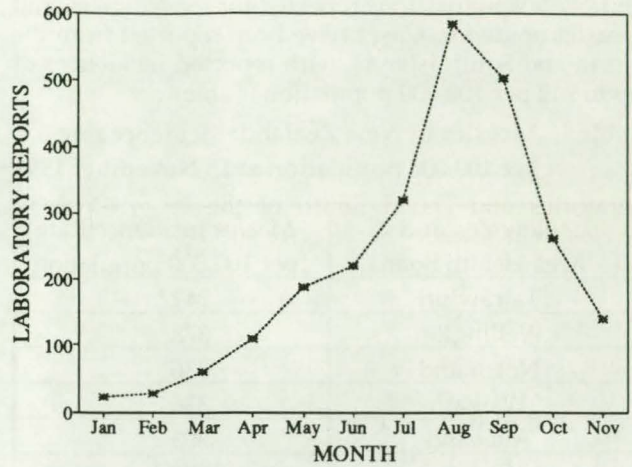
- one aged 10 days, who had a low birth weight and petechiae at birth; the virus was isolated from saliva and urine
- one aged 8 months, who had been congenitally infected
- one aged 6 months, who had splenomegaly; the virus was isolated from urine
- one aged 3 months; the virus was isolated from urine
- one infant born at 33 weeks gestation, with jaundice.

The peak in rotavirus activity occurred in August-September this year (Figure 2), but significant numbers of reports are still being received; there were 100 reports this fortnight, with 48 cases reported from South Australia, 21 from Victoria and 21 from Western Australia.

There were 3 reports of Q fever: 2 from Victoria and one from Western Australia. One of the patients was described as a meatworker.

Among the 113 cases of herpes simplex type 2 infection reported was a 28 year old woman who was 20 weeks pregnant.

Figure 2. Rotavirus reports, 1991, by month

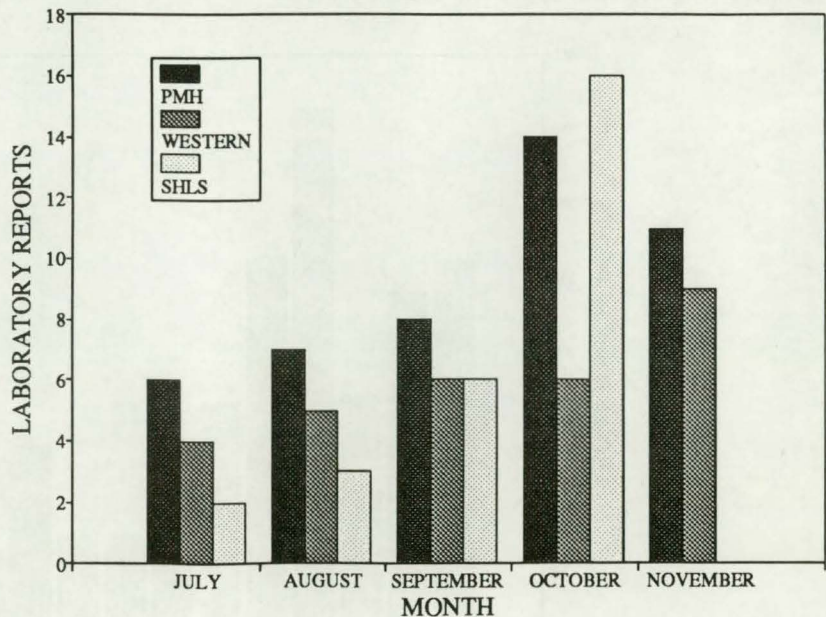


There were 6 reports of parvovirus infection. One patient was a 36 year old woman whose fetus was hydroptic. For 3 other patients, joint pains or arthritis were included with rash and/or upper respiratory disease as the reported syndrome.

Respiratory Infections in the Perth Metropolitan Area

Medical practitioners in Perth have noted an increased number of children and adolescents presenting with acute lower respiratory tract infections. Many of these patients have had positive *Mycoplasma* serology or sputum isolates.

Figure 3. *Mycoplasma* diagnoses, Perth laboratories, July to November, 1991*



* SHLS data not available for November

Figure 3 illustrates the recent trend in laboratory diagnoses of *Mycoplasma* infections at the State Health Laboratory Service, Western Diagnostic Pathology Laboratories and the Princess Margaret Hospital for Children.

(Thanks to Beryl Wilde of the Princess Margaret Hospital for Children, Gordon Rich of Western Diagnostic Pathology Laboratories and David Smith of the State Health Laboratory Service, for supplying the data for Figure 3.)

Measles in Canberra

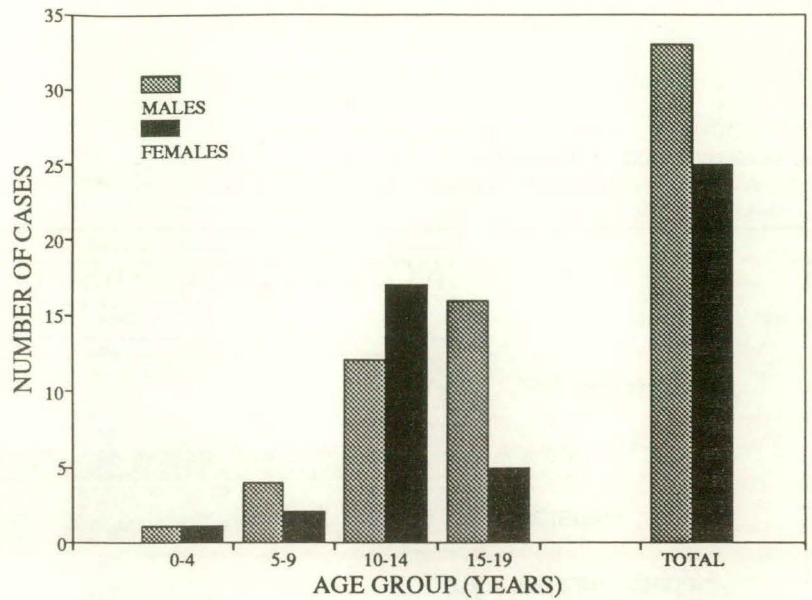
An outbreak of measles in Canberra is currently being investigated. Teenage schoolchildren are predominantly being affected, at least 7 high schools are involved, and at least 58 cases had been identified by active case finding by 9 December. All cases conform with the case definition of the Canadian Surveillance System. Eleven of the 58 cases were notified by medical practitioners, although measles is not a notifiable disease in the Australian Capital Territory.

At this stage, 5 of the 6 cases tested have serological confirmation, and laboratory results are pending for another 9 cases. In at least 2 family clusters, the index case has been serologically proven to be measles.

More cases have been found in high schools than in primary schools, and there is a preponderance of males relative to females (Figure 4).

It is possible that this outbreak will continue and spread with holiday travel. Measles should therefore be considered if teenagers present with a rash during the holiday period.

Figure 4. Measles cases in Canberra outbreak, November-December, 1991, by age group and sex

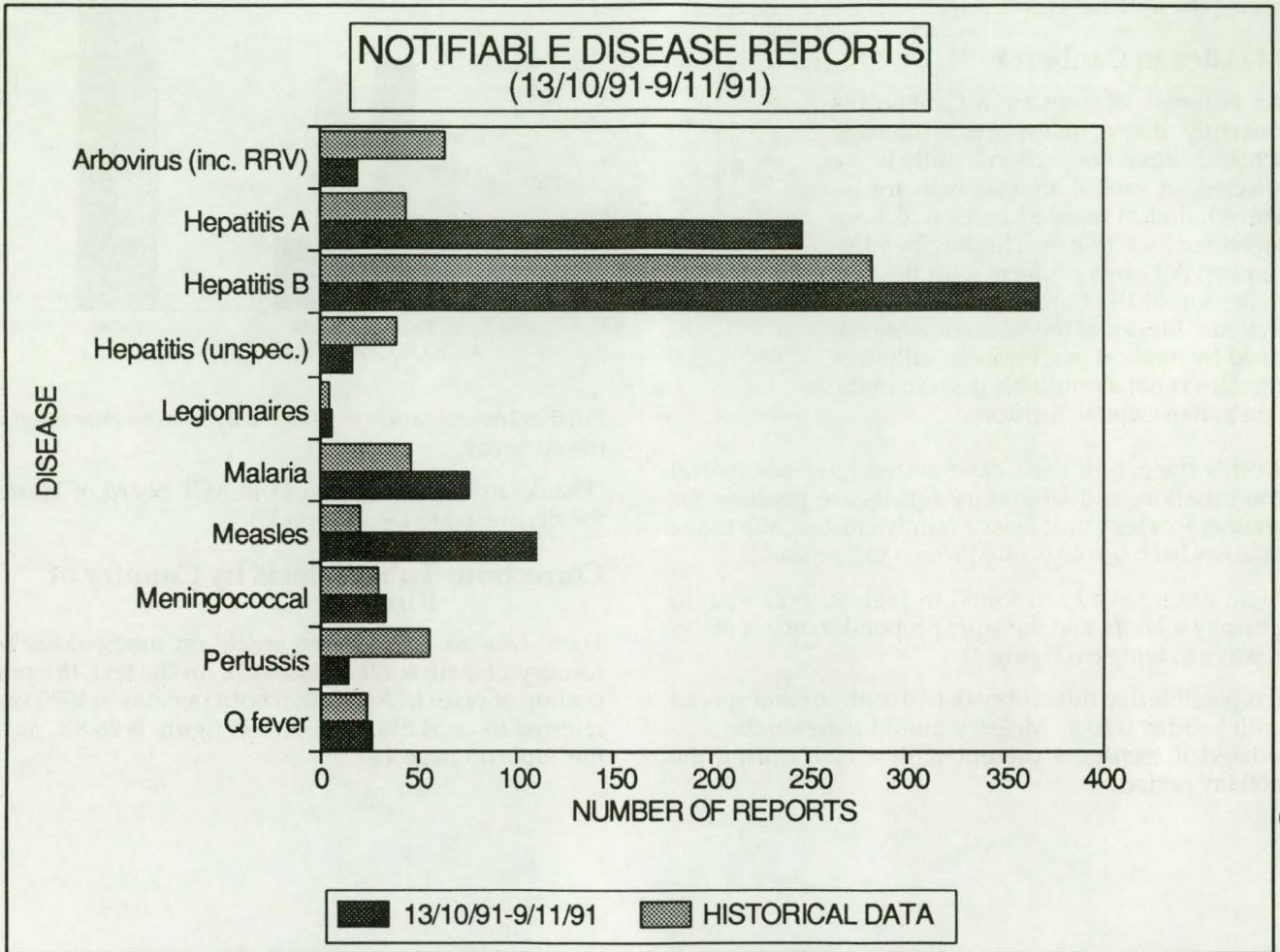


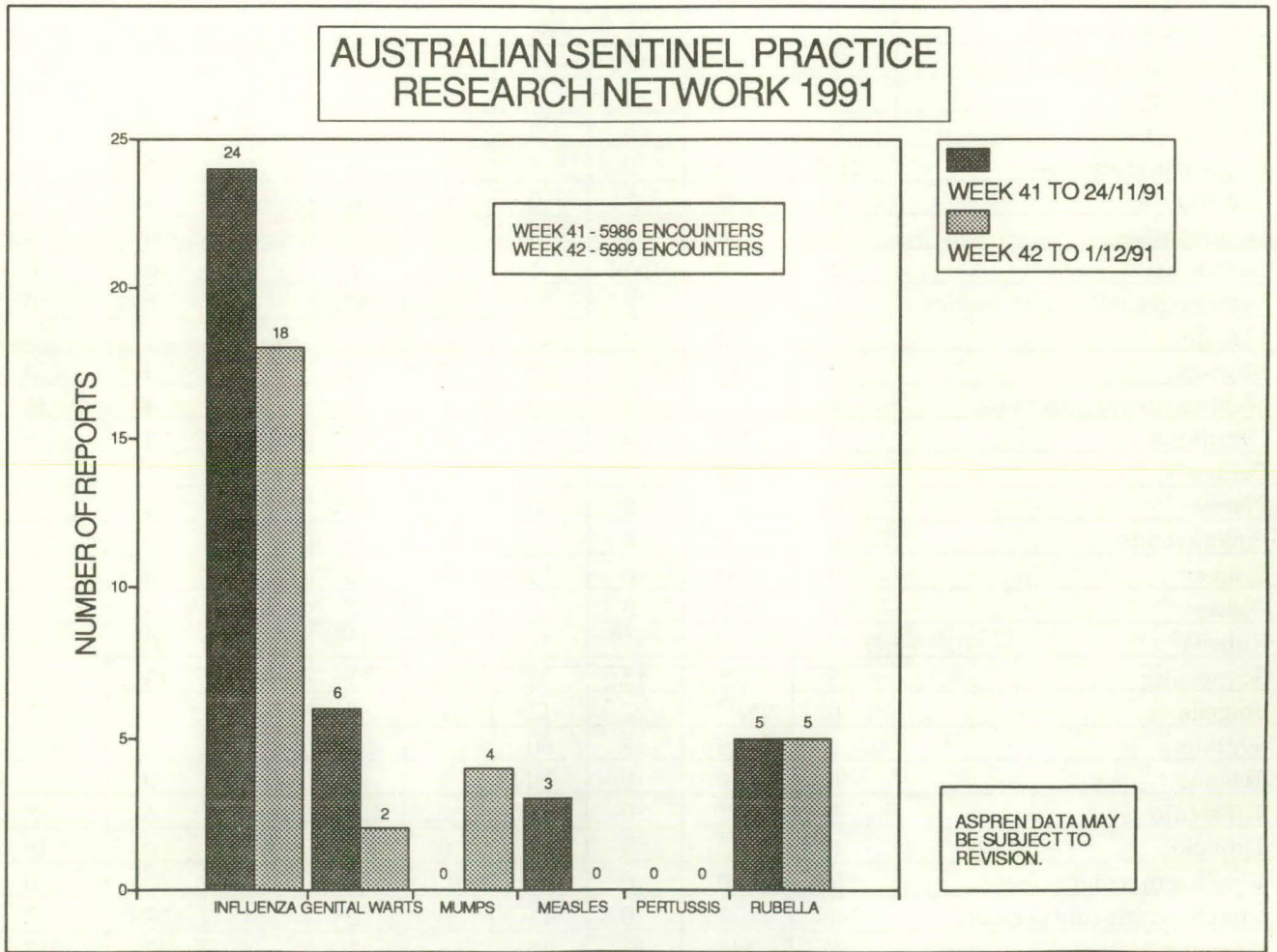
Further investigation is under way to fully characterise the outbreak.

(Thanks to Irene Passaris of the ACT Board of Health for alerting us to the outbreak.)

Correction: Tuberculosis by Country of Birth

There was an error in the article on tuberculosis by country of birth (*CDI* 15:440-442). In the text, the proportion of cases in Australian born persons in 1990 was referred to as 34.5%. The correct figure is 28.8%, as in the Table on page 440.





National Notifiable Diseases Reports 13/10/91-09/11/91

DISEASES	ACT	NSW*	NT	QLD	SA	TAS	VIC	WA**	TOTAL
Arbovirus Infections (NOS)	0	11 ¹²	NN	6	2 ¹²	1	0	NN	20
Ross River Virus	NN	NN	4	37	NN	NN	1	4	46
Dengue fever	NN	NN	0	1	NN	NN	NN	NN	1
Brucellosis	0	0	0	2	0	0	0	0	2
Campylobacter	NN	0 ¹³	16	262	170	107	194	62	811
Chancroid	0	NN	0	0	NN	NN	0	3	3
Chlamydia	2 ¹	NN	30	179	105 ^{1***}	20	0	0 ¹	336
Cholera	0	0	0	0	0	0	0	0	0
Diphtheria	0	0	1	0	0	0	0	0	1
Donovanosis	0	NN	3	0	NN	NN	0	NN	3
Gonococcal diseases ²	1	42	35	66	15***	2	0	80	241
Haemophilus influenzae b	1	31	NN	11	0 ⁵	0 ⁸	6 ¹⁰	NN	49
HIV infection ¹⁴	1 ³	0	0	0	12	0	0	9 ⁶	22
Hydatid disease	0	0	0	0	0	0	0	0	0
Legionnaires disease	NN	0	0	5	1	0	0	0	6
Leprosy	0	0	1	0	0	0	0	0	1
Leptospirosis	0	4	0	3	1	2	5	0	15
Listeriosis	NN	1	NN	1	NN	1	1	0	4
Lymphogranuloma venereum	0	NN	0	0	NN	NN	0	NN	0
Malaria	2	20	0	41	5	0	7	1	76
Measles	2	45	0	19	9	2	30	3	110
Meningococcal infections	0	13	2	3	0	1	11	4	34
Ornithosis	0	NN	0	0	4	0	4	0	8
Pertussis	NN	5	0	3	4	1	1	1	15
Plague	0	0	0	0	0	NN	0	0	0
Poliomyelitis	0	0	0	0	0	0	0	0	0
Q fever	0	10	0	15	0	0	2	0	27
Rabies	NN	NN	0	0	0	0	0	0	0
Rubella ⁴	0	7	1 ^{4B}	18	9 ^{4A}	1 ^{4B}	14 ^{4A}	0 ^{4B}	50
Salmonella	5	75	15	78	17	13	47	43	293
Shigella	0	NN ¹³	22	13	11	0	14	15	75
Syphilis	0	38	33	60	8***	3	0	11	153
Tetanus	0	0	0	NN	0	0	0	0	0
Tuberculosis	3	57 ¹⁵	0	11	7	1	0	6	85
Typhoid	0	4 ¹¹	0	2	0	0	4 ¹¹	0	10
Viral haemorrhagic fever	NN	0	0	0	0 ⁷	0 ⁹	0	0 ⁷	0
Viral hepatitis (unspecified)	NN	1	0	15	0	0	1	NN	17
Hepatitis A	7	145	11	17	6	1	48	12	247
Hepatitis B	4	95	4	114	3	4	112	31	367
Hepatitis C	27	77	2	74	NN	2	112	NN	294
Yellow fever	0	0	0	0	0	0	0	0	0
Yersiniosis	NN	NN ¹³	1	18	16	0	3	0	38

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

15. Includes mycobacterial atypical and mycobacterial infections (NOS).

NOS Not Otherwise Specified

NN Not notifiable

* data for October 1991

** data for the period between 29/9/91-26/10/91

*** data for the period between 10/10/91-07/11/91

AUSTRALIA - COMMUNICABLE DISEASES INTELLIGENCE

VIRAL IDENTIFICATIONS FROM CONTRIBUTING LABORATORIES
BASED ON DATE OF REPORTING

PERIOD 20/11/91 TO 3/12/91

- CODE 019 - FAIRFIELD HOSPITAL, MELBOURNE (VIC)
- CODE 065 - STATE HEALTH LABORATORY SERVICES, PERTH (WA)
- CODE 066 - PRINCESS MARGARET HOSPITAL, PERTH (WA)
- CODE 110 - INSTITUTE OF MEDICAL & VETERINARY SCIENCE, ADELAIDE (SA)
- CODE 111 - ROYAL CHILDRENS HOSPITAL, MELBOURNE (VIC)
- 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)

	019	065	066	110	111	113	114	115	116	TOTAL
0100 ADENOVIRUS NOT TYPED	0	2	6	5	3	4	3	4	0	27
0101 ADENOVIRUS TYPE 1	2	0	0	2	0	1	0	0	0	5
0102 ADENOVIRUS TYPE 2	1	0	0	0	12	1	0	0	0	14
0103 ADENOVIRUS TYPE 3	4	0	0	0	0	0	0	0	0	4
0199 ADENOVIRUS TYPING PENDING	1	0	0	0	2	0	0	0	0	3
0201 INFLUENZA A VIRUS	0	6	0	0	0	0	0	0	0	6
0203 INFLUENZA B VIRUS	2	1	0	1	1	0	0	0	0	5
0206 INFLUENZA A H1N1	0	0	0	0	2	0	0	0	0	2
0301 PARAINFLUENZA VIRUS TYPE 1	0	0	0	0	3	0	0	0	0	3
0302 PARAINFLUENZA VIRUS TYPE 2	0	0	0	1	4	0	0	0	0	5
0303 PARAINFLUENZA VIRUS TYPE 3	0	3	2	2	5	2	0	14	0	28
0399 PARAINFLUENZA VIRUS TYPING PEN	0	0	0	0	5	0	0	0	0	5
0400 RESPIRATORY SYNCYTIAL VIRUS (R	4	0	7	2	7	0	1	6	0	27
0500 RHINOVIRUS (ALL TYPES)	0	2	0	12	32	0	2	1	1	50
0600 MYCOPLASMA PNEUMONIAE	5	7	6	3	0	0	0	0	0	21
0700 ORNITHOSIS-PSITTACOSIS	6	1	0	0	0	0	0	0	1	8
0802 COXSACKIEVIRUS A2	0	0	0	0	0	0	1	0	0	1
0809 COXSACKIEVIRUS A9	1	0	0	0	0	0	0	0	0	1
0902 COXSACKIEVIRUS B2	0	4	0	0	0	0	1	0	0	5
0903 COXSACKIEVIRUS B3	0	1	0	0	0	0	0	0	0	1
1022 ECHOVIRUS TYPE 22	0	0	0	0	0	0	1	0	0	1
1100 POLIOVIRUS NOT TYPED	0	0	0	0	0	3	0	0	0	3
1102 POLIOVIRUS TYPE 2 (UNCHARACTER	1	0	0	0	0	0	0	0	0	1
1200 MUMPS VIRUS	2	0	0	0	0	0	0	0	0	2
1300 HERPES VIRUS GROUP - NOT TYPED	2	0	0	0	1	0	0	0	0	3
1301 HERPES SIMPLEX VIRUS - NOT TYP	1	0	3	0	0	0	5	2	6	17
1302 EPSTEIN-BARR VIRUS (EB VIRUS)	1	5	0	16	1	0	0	0	1	24
1303 VARICELLA-ZOSTER VIRUS	5	2	0	0	0	0	0	1	1	9
1306 HERPES SIMPLEX TYPE 1	33	24	0	35	5	5	0	24	0	126
1307 HERPES SIMPLEX TYPE 2	28	36	0	10	0	8	0	31	0	113
1399 HERPES VIRUS TYPING PENDING	0	0	0	0	1	0	0	0	0	1
1401 COXIELLA BURNETII	2	1	0	0	0	0	0	0	0	3
1502 PICORNA VIRUS - NOT TYPED = EN	0	5	0	0	0	1	0	6	1	13
1521 MEASLES VIRUS	5	0	0	2	1	0	3	0	0	11
1522 RUBELLA VIRUS	5	3	0	3	0	0	0	0	0	11
1532 HEPATITIS B ANTIGEN	12	9	0	13	0	3	0	17	0	54
1535 HEPATITIS A ANTIBODY	3	4	0	3	0	0	0	1	1	12
1536 HEPATITIS C VIRUS	2	23	0	48	0	0	0	0	3	76
1541 CHLAMYDIA TRACHOMATIS - UNSPEC	0	52	0	24	1	0	0	0	2	79
1556 CMV - CYTOMEGALOVIRUS	26	2	4	6	3	1	2	5	0	49
1563 CORONAVIRUS	1	0	0	0	0	0	0	0	0	1
1564 ROTAVIRUS	0	0	21	48	21	7	2	0	1	100
1566 NORWALK AGENT	1	0	0	1	0	0	0	0	0	2
1599 ENTEROVIRUS TYPING PENDING	0	0	0	0	10	0	1	0	0	11
1700 PARVOVIRUS	5	0	0	0	0	0	0	0	0	5
9992 ROSS RIVER VIRUS	0	4	0	0	0	0	0	0	0	4
9994 SMALL VIRUS (LIKE) PARTICLE	1	0	0	0	0	0	1	0	0	2
TOTAL	162	197	49	237	120	36	23	112	18	954

AUSTRALIA - COMMUNICABLE DISEASES INTELLIGENCE

VIRAL IDENTIFICATIONS FROM CONTRIBUTING LABORATORIES BY STATE OF CONTRIBUTING LABORATORY

PERIOD 20/11/91 TO 3/12/91

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	7	3	4	8	5	0	27
0101 ADENOVIRUS TYPE 1	1	2	0	0	2	0	5
0102 ADENOVIRUS TYPE 2	1	13	0	0	0	0	14
0103 ADENOVIRUS TYPE 3	0	4	0	0	0	0	4
0199 ADENOVIRUS TYPING PENDING	0	3	0	0	0	0	3
0201 INFLUENZA A VIRUS	0	0	0	6	0	0	6
0203 INFLUENZA B VIRUS	0	3	0	1	1	0	5
0206 INFLUENZA A H1N1	0	2	0	0	0	0	2
0301 PARAINFLUENZA VIRUS TYPE 1	0	3	0	0	0	0	3
0302 PARAINFLUENZA VIRUS TYPE 2	0	4	0	0	1	0	5
0303 PARAINFLUENZA VIRUS TYPE 3	2	5	14	5	2	0	28
0399 PARAINFLUENZA VIRUS TYPING PEN	0	5	0	0	0	0	5
0400 RESPIRATORY SYNCYTIAL VIRUS (R	1	11	6	7	2	0	27
0500 RHINOVIRUS (ALL TYPES)	2	32	1	2	12	1	50
0600 MYCOPLASMA PNEUMONIAE	0	5	0	13	3	0	21
0700 ORNITHOSIS-PSITTACOSIS	0	6	0	1	0	1	8
0802 COXSACKIEVIRUS A2	1	0	0	0	0	0	1
0809 COXSACKIEVIRUS A9	0	1	0	0	0	0	1
0902 COXSACKIEVIRUS B2	1	0	0	4	0	0	5
0903 COXSACKIEVIRUS B3	0	0	0	1	0	0	1
1022 ECHOVIRUS TYPE 22	1	0	0	0	0	0	1
1100 POLIOVIRUS NOT TYPED	3	0	0	0	0	0	3
1102 POLIOVIRUS TYPE 2 (UNCHARACTER	0	1	0	0	0	0	1
1200 MUMPS VIRUS	0	2	0	0	0	0	2
1300 HERPES VIRUS GROUP - NOT TYPED	0	3	0	0	0	0	3
1301 HERPES SIMPLEX VIRUS - NOT TYP	5	1	2	3	0	6	17
1302 EPSTEIN-BARR VIRUS (EB VIRUS)	0	2	0	5	16	1	24
1303 VARICELLA-ZOSTER VIRUS	0	5	1	2	0	1	9
1306 HERPES SIMPLEX TYPE 1	5	38	24	24	35	0	126
1307 HERPES SIMPLEX TYPE 2	8	28	31	36	10	0	113
1399 HERPES VIRUS TYPING PENDING	0	1	0	0	0	0	1
1401 COXIELLA BURNETII	0	2	0	1	0	0	3
1502 PICORNA VIRUS - NOT TYPED = EN	1	0	6	5	0	1	13
1521 MEASLES VIRUS	3	6	0	0	2	0	11
1522 RUBELLA VIRUS	0	5	0	3	3	0	11
1532 HEPATITIS B ANTIGEN	3	12	17	9	13	0	54
1535 HEPATITIS A ANTIBODY	0	3	1	4	3	1	12
1536 HEPATITIS C VIRUS	0	2	0	23	48	3	76
1541 CHLAMYDIA TRACHOMATIS - UNSPEC	0	1	0	52	24	2	79
1556 CMV - CYTOMEGALOVIRUS	3	29	5	6	6	0	49
1563 CORONAVIRUS	0	1	0	0	0	0	1
1564 ROTAVIRUS	9	21	0	21	48	1	100
1566 NORWALK AGENT	0	1	0	0	1	0	2
1599 ENTEROVIRUS TYPING PENDING	1	10	0	0	0	0	11
1700 PARVOVIRUS	0	5	0	0	0	0	5
9992 ROSS RIVER VIRUS	0	0	0	4	0	0	4
9994 SMALL VIRUS (LIKE) PARTICLE	1	1	0	0	0	0	2
TOTAL	59	282	112	246	237	18	954

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

AUSTRALIA - COMMUNICABLE DISEASES INTELLIGENCE

VIRAL IDENTIFICATIONS BY CLINICAL INFORMATION TABLE 1

PERIOD 20/11/91 TO 3/12/91

- 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	4	5	6	7	8	9	10	11	TOTAL
0100 ADENOVIRUS NOT TYPED	0	7	0	0	1	16	0	0	0	1	25
0101 ADENOVIRUS TYPE 1	0	3	0	0	0	1	0	0	0	0	4
0102 ADENOVIRUS TYPE 2	0	10	1	0	0	1	0	0	0	0	12
0199 ADENOVIRUS TYPING PENDING	0	0	0	0	0	1	0	0	0	0	1
0201 INFLUENZA A VIRUS	1	5	0	0	0	0	0	0	0	0	6
0203 INFLUENZA B VIRUS	1	3	0	0	0	0	0	0	0	0	4
0206 INFLUENZA A H1N1	0	2	0	0	0	0	0	0	0	0	2
0301 PARAINFLUENZA VIRUS TYPE 1	0	3	0	0	0	0	0	0	0	0	3
0302 PARAINFLUENZA VIRUS TYPE 2	0	5	0	0	0	0	0	0	0	0	5
0303 PARAINFLUENZA VIRUS TYPE 3	0	27	0	0	1	0	0	0	0	0	28
0399 PARAINFLUENZA VIRUS TYPING PEN	0	5	0	0	0	0	0	0	0	0	5
0400 RESPIRATORY SYNCYTIAL VIRUS (R	0	24	0	0	0	2	0	0	0	0	26
0500 RHINOVIRUS (ALL TYPES)	1	43	1	0	0	0	0	0	0	0	45
0600 MYCOPLASMA PNEUMONIAE	3	16	0	0	1	0	0	0	0	0	20
0700 ORNITHOSIS-PSITTACOSIS	1	4	0	0	0	0	0	0	0	0	5
0802 COXSACKIEVIRUS A2	0	1	0	0	0	0	0	0	0	0	1
0809 COXSACKIEVIRUS A9	0	0	0	0	0	0	0	0	0	1	1
0902 COXSACKIEVIRUS B2	0	0	0	0	0	3	0	0	0	1	4
0903 COXSACKIEVIRUS B3	1	0	0	0	0	0	0	0	0	0	1
1022 ECHOVIRUS TYPE 22	0	1	0	0	0	0	0	0	0	0	1
1100 POLIOVIRUS NOT TYPED	0	0	0	0	0	3	0	0	0	0	3
1200 MUMPS VIRUS	2	0	0	0	0	0	0	0	0	0	2
1300 HERPES VIRUS GROUP - NOT TYPED	0	0	0	0	0	0	0	0	0	3	3
1301 HERPES SIMPLEX VIRUS - NOT TYP	1	1	0	1	0	0	0	0	0	10	13
1302 EPSTEIN-BARR VIRUS (EB VIRUS)	2	1	0	0	0	0	1	0	0	0	4
1303 VARICELLA-ZOSTER VIRUS	0	0	0	0	0	0	0	0	0	8	8
1306 HERPES SIMPLEX TYPE 1	4	6	0	0	0	0	0	0	0	74	84
1307 HERPES SIMPLEX TYPE 2	2	1	0	0	0	0	0	0	0	58	61
1399 HERPES VIRUS TYPING PENDING	0	0	0	0	0	0	0	0	0	1	1
1401 COXIELLA BURNETII	0	1	0	0	0	0	0	0	0	0	1
1502 PICORNA VIRUS - NOT TYPED = EN	0	4	0	0	0	7	0	0	0	1	12
1521 MEASLES VIRUS	2	2	0	0	0	0	0	0	0	3	7
1522 RUBELLA VIRUS	2	0	0	0	0	0	0	0	0	5	7
1532 HEPATITIS B ANTIGEN	15	0	0	0	0	0	15	0	0	1	31
1535 HEPATITIS A ANTIBODY	0	0	0	0	0	0	8	0	0	0	8
1536 HEPATITIS C VIRUS	19	1	0	0	0	1	8	0	0	0	29
1556 CMV - CYTOMEGALOVIRUS	1	10	0	0	0	0	3	1	3	1	19
1563 CORONAVIRUS	0	0	0	0	0	1	0	0	0	0	1
1564 ROTAVIRUS	2	0	0	0	0	98	0	0	0	0	100
1566 NORWALK AGENT	0	0	0	0	0	1	0	0	0	0	1
1599 ENTEROVIRUS TYPING PENDING	1	1	3	0	0	0	0	0	0	1	6
1700 PARVOVIRUS	0	0	0	0	0	0	0	0	0	3	3
9992 ROSS RIVER VIRUS	2	0	0	0	0	0	0	0	0	0	2
9994 SHALL VIRUS (LIKE) PARTICLE	0	0	0	0	0	2	0	0	0	0	2
TOTAL	63	187	5	1	3	137	35	1	3	172	607

AUSTRALIA - COMMUNICABLE DISEASES INTELLIGENCE

VIRAL IDENTIFICATIONS BY CLINICAL INFORMATION TABLE 2

PERIOD 20/11/91 TO 3/12/91

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

	12	13	14	15	16	17	18	19	20	21	TOTAL
0100 ADENOVIRUS NOT TYPED	1	0	0	0	0	0	0	1	0	0	2
0101 ADENOVIRUS TYPE 1	0	0	0	1	0	0	0	0	0	0	1
0102 ADENOVIRUS TYPE 2	0	0	0	0	0	0	0	2	0	0	2
0103 ADENOVIRUS TYPE 3	3	0	0	0	0	0	0	1	0	0	4
0199 ADENOVIRUS TYPING PENDING	0	0	0	0	0	0	0	2	0	0	2
0203 INFLUENZA B VIRUS	0	0	0	0	0	0	0	0	1	0	1
0400 RESPIRATORY SYNCYTIAL VIRUS (R	0	0	0	0	0	0	0	1	0	0	1
0500 RHINOVIRUS (ALL TYPES)	0	0	0	0	0	0	0	5	0	0	5
0600 MYCOPLASMA PNEUMONIAE	0	0	0	0	0	0	0	1	0	0	1
0700 ORNITHOSIS-PSITTACOSIS	0	0	0	0	0	0	0	2	0	0	2
0902 COXSACKIEVIRUS B2	0	0	0	0	0	0	0	0	1	0	1
1102 POLIOVIRUS TYPE 2 (UNCHARACTER	0	0	0	0	0	0	0	0	1	0	1
1301 HERPES SIMPLEX VIRUS - NOT TYP	0	4	0	0	0	0	0	0	0	0	4
1302 EPSTEIN-BARR VIRUS (EB VIRUS)	0	1	16	0	0	0	0	0	2	0	19
1303 VARICELLA-ZOSTER VIRUS	0	0	0	0	0	0	0	1	0	0	1
1306 HERPES SIMPLEX TYPE 1	5	30	0	0	0	0	0	2	5	0	42
1307 HERPES SIMPLEX TYPE 2	0	52	0	0	0	0	0	0	0	0	52
1401 COXIELLA BURNETII	0	0	0	0	0	0	0	1	1	0	2
1502 PICORNA VIRUS - NOT TYPED = EN	0	0	0	0	0	0	0	1	0	0	1
1521 MEASLES VIRUS	0	0	0	0	0	0	0	1	3	0	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	0	11	0	11
1535 HEPATITIS A ANTIBODY	0	0	0	0	0	0	0	0	1	0	1
1536 HEPATITIS C VIRUS	0	0	0	0	0	0	0	0	44	0	44
1541 CHLAMYDIA TRACHOMATIS - UNSPEC	1	77	0	0	0	0	0	0	0	0	78
1556 CMV - CYTOMEGALOVIRUS	3	1	0	0	0	2	1	0	21	1	29
1566 NORWALK AGENT	0	0	0	0	0	0	0	0	1	0	1
1599 ENTEROVIRUS TYPING PENDING	0	0	0	0	0	0	0	4	1	0	5
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	13	165	16	1	2	2	1	25	97	1	323