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COMMONWEALTH DEPARTMENT OF HUMAN SERVICES AND HEALTH

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

ANNUAL REPORT OF THE *CDI* VIROLOGY AND SEROLOGY REPORTING SCHEME, 1993

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Introduction

The *CDI* Virology and Serology Laboratory Reporting Scheme, LabVISE, began in 1977. Data are contributed on the laboratory diagnosis of viruses and other organisms made by sentinel laboratories from all States and from the Australian Capital Territory. This is the annual report for 1993.

Laboratories elect to submit data on either computer diskette using LabVISE software (written in Epi Info), or on paper forms in the same format. Reports are submitted, collated and anlaysed and published in *CDI* each fortnight. Each record includes details of the reporting laboratory, specimen collection date, name code, specimen source, the agent detected and the method of diagnosis (compulsory fields), and also optionally specimen accession number, sex, date of birth (or age), postcode, clinical diagnosis, and risk factors.

CDI fortnightly reports are based on the date of reporting to the scheme, that is, they are published in *CDI* in the issue following their receipt. However cumulative records are kept according to the date of specimen collection, which should more accurately reflect the date of onset for acute infections. Graphs published in the *CDI* fortnightly report are based on specimen collection dates as are those in this annual report.

Data derived from this scheme must be interpreted with caution as the number and type of reports received is subject to a number of biases. These include the location of participating laboratories, the availability of diagnostic services and diagnostic practices.

Total reports

In 1993 18 laboratories contributed a total of 44,690 reports to the scheme (Table 1), the highest number ever recorded (Figure 1). More reports were received for the winter months, peaking in the month of July (Figure 2). This corresponds to the seasonal peaks observed for several viruses, paricularly the respiratory viruses (respiratory syncytial virus, the influenza and parainfluenza viruses) and rotavirus. One hundred and thirty-six virus/organism or virus/organism groups were represented (Table 2).

Table 1. Laboratory reports with 1993 specimen collection dates, by State or Territory and contributing laboratory

State or Territory	Laboratory	Reports
Australian Capital Territory	Woden Valley Hospital, Canberra	808
New South Wales	Institute of Clinical Pathology and Medical Research, Westmead	3709
	Prince Henry/Prince of Wales Hospitals, Sydney	126
	Royal Alexandra Hospital for Children, Camperdown	779
	South West Area Pathology Service, Liverpool	1268
	New England Laboratory, Tamworth	160
Queensland	Nambour Hospital, Nambour	4
	Queensland Medical Laboratory, West End	8751
	State Health Laboratory, Brisbane	6925
	Dr TB Lynch, Pathologist, Rockhampton	803
South Australia	Institute of Medical and Veterinary Science, Adelaide	5335
Tasmania	Northern Tasmanian Pathology Service, Launceston	222
	Royal Hobart Hospital, Hobart	308
Victoria	Microbiological Diagnostic Unit, University of Melbourne	166
	Monash Medical Centre, Melbourne	222
	Royal Children's Hospital, Melbourne	2554
	Victorian Infectious Diseases Reference Laboratory, Fairfield Hospital	5061
Western Australia	Princess Margaret Hospital, Perth	1266
	State Health Laboratory, Perth	6219
Total		44690

Table 2. Laboratory reports, 1993, by virus/organism and State or Territory[1], and 1990-1992 average

	State or Territory									Average
	ACT	NSW	NT	Qld	SA	Tas	Vic	WA	Total	1990-92
MEASLES, MUMPS, RUBELLA										
Measles virus	4	158	1	542	36	31	72	8	852	227
Mumps virus		5		45	5	2	15	5	77	45
Rubella virus	11	139	1	527	110	1	26	108	923	433
HEPATITIS VIRUSES										
Hepatitis A virus	5	77		243	55		37	35	452	359
Hepatitis B virus	25	604		737	124	8	388	438	2324	2489
Hepatitis C virus	155	413	3	789	1353	154	72	1564	4503	1311
Hepatitis D virus		2		35	2		8		47	28
Hepatitis E virus			1	5			6		12	0.3
ARBOVIRUSES										
Ross River virus	3	62	9	1161	353	1	193	108	1890	940
Barmah Forest virus		3	8	162	2			29	204	99
Dengue type 1		1							1	8
Dengue type 2				422					422	100
Dengue type 3		1		1					2	2
Dengue not typed		1		90				12	103	50
Murray Valley encephalitis virus				1				8	9	4
Flavivirus (unspecified)		2		79			23		104	32
ADENOVIRUSES										
Adenovirus type 1		34			19	1	30		84	106
Adenovirus type 2	2	71			12	3	33		121	130
Adenovirus type 3	8	113			21	1	57	1	201	108
Adenovirus type 4	1	6			7		24		38	64
Adenovirus type 5		10			6	2	8		26	35
Adenovirus type 6					2		1		3	9
Adenovirus type 7		3			3		5		11	7
Adenovirus type 8		4			1		50		55	36
Adenovirus type 9		1					4		5	9
Adenovirus type 10		1							1	6
Adenovirus type 11		3			1				4	30
Adenovirus type 12		3							3	2
Adenovirus type 19							3		3	9
Adenovirus type 22							1		1	2
Adenovirus type 26							2		2	6
Adenovirus type 28							1		1	6
Adenovirus type 35							1		1	2
Adenovirus type 37							1		1	4
Adenovirus type 40		9							9	3
Adenovirus type 46							1		1	2
Adenovirus not typed/pending	3	167	1	448	236	2	201	241	1299	960
HERPES VIRUSES										
Herpes simplex virus type 1	7	284	2	1417	537	52	1079	638	4016	3306
Herpes simplex virus type 2	14	523	4	1838	489	18	857	1156	4899	4190
Herpes simplex not typed/pending	112	370	1	54	11	3	78	50	679	941
Herpes virus type 6		4							4	2
Cytomegalovirus	10	171	3	613	35	12	510	205	1559	1786
Varicella-zoster virus	4	116	1	356	63	5	226	152	923	552
Epstein-Barr virus	4	198	5	643	331	1	163	225	1570	1399
Herpes virus group - not typed		1		2	7		9	8	27	120

Table 2. Laboratory reports, 1993, by virus/organism and State or Territory[1], and 1990-1992 average, continued

	State or Territory								Total	Average 1990-92
	ACT	NSW	NT	Qld	SA	Tas	Vic	WA		
OTHER DNA VIRUSES										
Papovavirus group								1	1	10
Molluscum contagiosum							1	7	8	12
Contagious pustular dermatitis (Orf virus)								4	4	5
Poxvirus group not typed							8	2	10	1
Parvovirus		17		5	5		48	11	86	69
PICORNA VIRUS FAMILY										
Coxsackievirus A9	18	27		2		1	14		62	31
Coxsackievirus A16		5				1	12		18	19
Coxsackievirus A21							1		1	
Coxsackievirus A untyped/pending				1					1	
Coxsackievirus B1	4	26		2	1		11	7	51	21
Coxsackievirus B2		4					4		8	21
Coxsackievirus B3		5				1	9		15	16
Coxsackievirus B4		6			1	1	3		11	41
Coxsackievirus B5	9	9			1		4	3	26	40
Coxsackievirus B6	1								1	1
Coxsackievirus B untyped/pending							1		1	1
Echovirus type 5					4		1		5	3
Echovirus type 6		5					1	3	9	36
Echovirus type 7	2	46		1			21	4	74	15
Echovirus type 9	1	12				3	4	1	21	77
Echovirus type 11	7	69		1	2		45	11	135	30
Echovirus type 12		1							1	
Echovirus type 14		18			1		3	1	23	14
Echovirus type 15		2			1				3	1
Echovirus type 17		1			2		1		4	33
Echovirus type 18							1		1	4
Echovirus type 19								1	1	1
Echovirus type 21		3							3	2
Echovirus type 22	1	3				2	3		9	18
Echovirus type 25		2					2	1	5	16
Echovirus type 30	1	13			4	1	170	6	195	2
Echovirus not typed/pending							1		1	4
Poliovirus type 1 (uncharacterised)	1	32				3	5		41	55
Poliovirus type 2 (uncharacterised)		29				1	1		31	53
Poliovirus type 3 (uncharacterised)	1	25			1	1	2		30	33
Poliovirus not typed/pending							12		12	68
Rhinovirus (all types)	4	115		266	15	13	335	119	867	602
Enterovirus type 71 (BCR)		1							1	16
Enterovirus not typed/pending		45	7	559		3	159	170	943	733
ORTHO/PARAMYXOVIRUSES										
Influenza A virus	1	31	3	130	146	3	99	99	512	461
Influenza A virus H3N2		7		1		1	23		32	81
Influenza B virus	5	16	10	217	144	8	116	132	648	192
Influenza virus - typing pending								4	4	2
Parainfluenza virus type 1		5		16	5		16	2	44	247
Parainfluenza virus type 2		14		45	23	2	27	16	127	90
Parainfluenza virus type 3	10	81		96	69	2	164	91	513	460
Parainfluenza virus typing pending	1					7	30	8	46	74
Respiratory syncytial virus	82	729	3	806	435	104	948	399	3506	3081

Table 2. Laboratory reports, 1993, by virus/organism and State or Territory[1], and 1990-1992 average, continued

	State or Territory								Total	Average 1990-92
	ACT	NSW	NT	Qld	SA	Tas	Vic	WA		
OTHER RNA VIRUSES										
HIV-1		2		34		2	1	31	70	58
HTLV-1								13	13	4
Rotavirus	237	596	2	54	282	71	412	335	1989	2217
Astrovirus		4							4	21
Reovirus (unspecified)		1					6		7	12
Calici virus		12							12	26
Norwalk agent		9					12		21	15
Coronavirus		11							11	25
Small virus (like) particle		19					10	4	33	57
OTHER										
Chlamydia trachomatis not typed	58	409		1052	257	50	181	828	2835	2784
Chlamydia pneumoniae					1				1	5
Chlamydia psittaci			1	18	4	1	50		74	107
Chlamydia species not typed/pending				1	5	1		2	9	4
Chlamydia species	2	7	1	5				3	18	2
Mycoplasma pneumoniae	7	244		840	106	26	479	57	1759	787
Coxiella burnetii (Q fever)		219		278	16		15	24	552	253
Rickettsia prowazeki				1					1	0
Rickettsia australis				2	1				3	3
Rickettsia species		3		8					11	2
Streptococcus group A		37		252			2	1	292	24
Salmonella Typhi				1					1	
Yersinia enterocolitica				5					5	2
Campylobacter species				1					1	
Brucella species				3					3	5
Bordetella pertussis		6		36		8	276	22	348	7
Bordetella parapertussis				1					1	
Bordetella species		34		229	1				264	24
Legionella longbeachae				2		1			3	0.3
Legionella species				8					8	1
Cryptococcus species		2		28					30	4
Leptospira canicola				2					2	0.3
Leptospira icterohaemorrhagiae				3			1		4	0.7
Leptospira pomona				7					7	2
Leptospira hardjo		1		18		1			20	3
Leptospira australis				4					4	1
Leptospira species		2		19		1			22	3
Treponema pallidum	1	158		382			6		547	89
Entamoeba histolytica				9					9	1
Acanthamoeba species							1		1	
Toxoplasma gondii		2		32			14		48	12
Schistosoma species				1					1	
Echinococcus granulosus		2		21					23	2
TOTAL	822	6744	67	15715	5355	617	7957	7414	44690	33,461

1. State or Territory of postcode, if reported, otherwise State or Territory of reporting laboratory.

Figure 1. Total laboratory reports, 1978 to 1993, by year of specimen collection

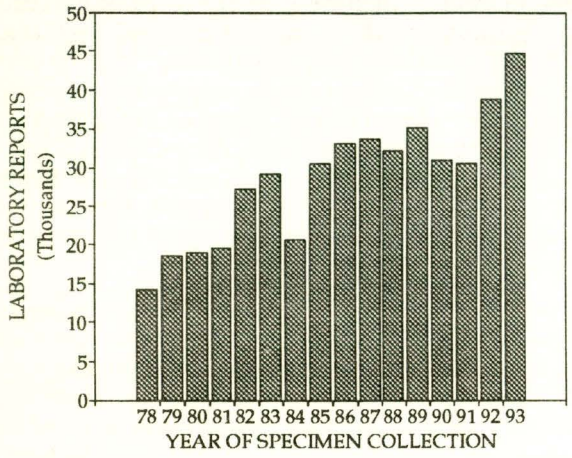
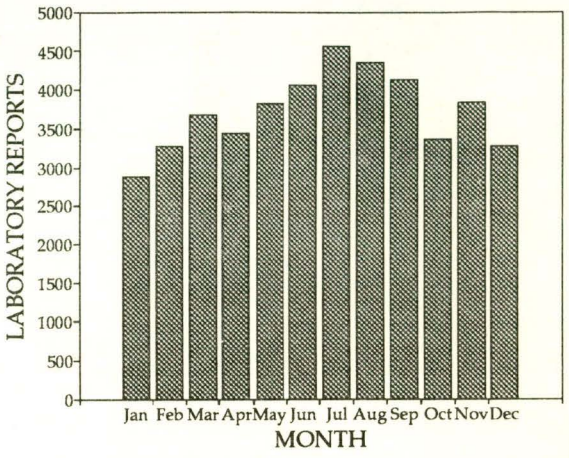


Figure 2. Total laboratory reports, 1993, by month of specimen collection



Commonly reported viruses and other organisms

The twenty most commonly reported agents for 1993 accounted for 37027 or 83% of total reports (Figure 3). Herpes simplex virus type 2 (HSV2) remained the most commonly reported virus whilst reports of hepatitis C ranked second followed by HSV1, repiratory syncytial virus (RSV) and *Chlamydia trachomatis*.

Age and sex distribution

Sex was recorded in 99% of cases, the overall male/female ratio being 1.05/1.

Date of birth or age was provided for 97% of total reports in 1993. Young children under the age of five years were most frequently represented, this age group accounting for 25% of all reports. However this group represents only 7.3% of the Australian population (Figure 4). This is largely due to the higher attack rates of many viral diseases in young children, particularly the respiratory viruses and the agents of viral gastroenteritis. By contrast, only 8% of reports were for the 45 to 64

Figure 3. The twenty most commonly reported agents, 1993 and 1990-92 average, as % of total reports for the period

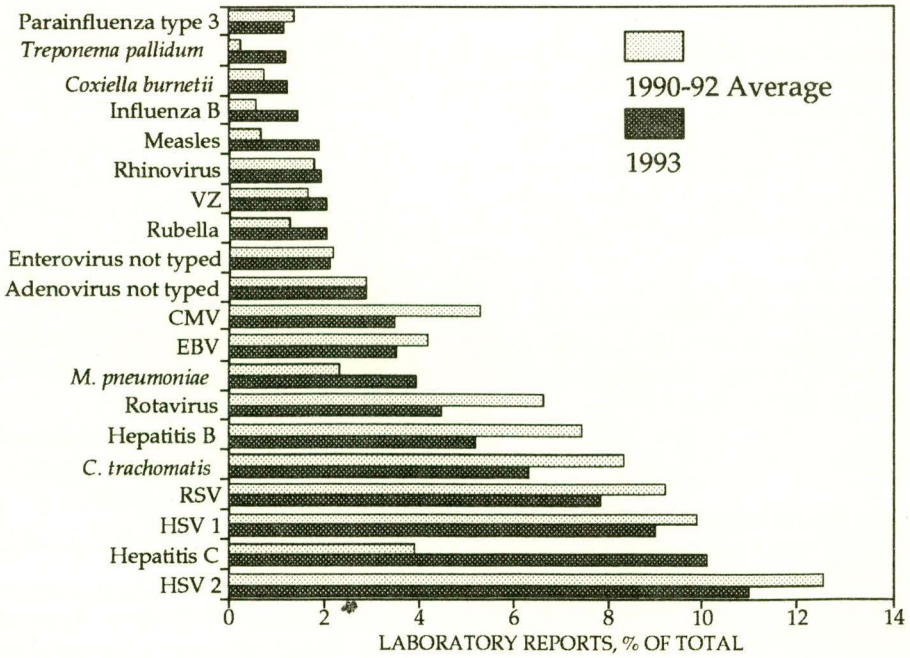
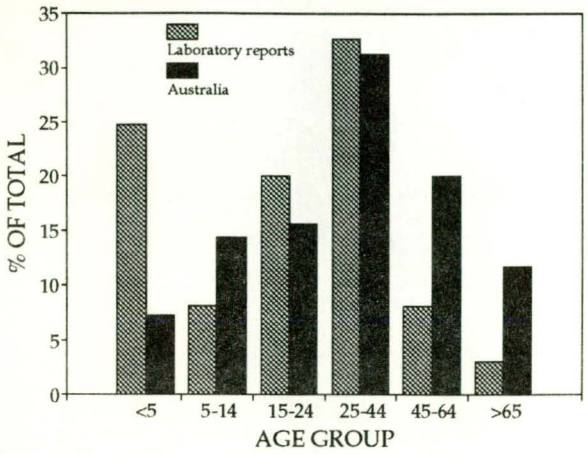


Figure 4. Laboratory reports and Australian population, 1993, by age group as % of total



[illegible]r age group compared to 20% of the Australian population, and 3% of reports for those over the age of 65 years compared to 11.7% of the population.

Respiratory syncytial virus (RSV) was the most commonly reported virus in the less than one month age group (Figure 5), followed by the enteroviruses, cytomegalovirus (CMV), the rhinoviruses and rotavirus. For infants aged one to 11 months, RSV remained the most frequently diagnosed virus, in addition to the other respiratory viruses (adenoviruses, rhinoviruses and parainfluenza virus type 3) and rotavirus.

For the one to four year age group rotavirus was most commonly reported, followed by RSV (responsible for a smaller proportion of reports than for patients under the age of one year), the adenoviruses, HSV 1 and the enteroviruses. For children of school age (five to 14 years), *Mycoplasma pneumoniae*, HSV 1, measles, Epstein-Barr virus and the adenoviruses were the five agents for which most reports were received.

[illegible]ung adults between 15 and 24 years of age reported high numbers of the sexually transmissible agents, (HSV 2, *Chlamydia trachomatis*) in addition to HSV 1, Epstein-Barr virus and hepatitis C. For the 25 to 44 year age group, hepatitis C was most commonly reported followed by HSV 2, hepatitis B, HSV 1 and Ross River virus. Patients in the 45 to 64 year age group reported the same five most common viruses though a smaller proportion of reports were for hepatitis C virus and larger proportion were for Ross River virus. Over the age of 65 years the herpesviruses, HSV 1 and 2 and varicella-zoster virus (VZ) were commonly reported as was Ross River virus and influenza A.

Clinical diagnosis

Clinical information was available for 33,682 reports (75% of total) in 1993. Eleven types of clinical diagnosis were reported more than 100 times, accounting for 28,443 (64% of total) reports received (Figure 6). Respiratory tract infections (upper, lower and unspecified) were most commonly reported, followed by genital disease, skin/mucous membrane disease and gastrointestinal infections.

In 1993, 9182 reports of respiratory tract infection were received (Table 3) including upper respiratory (2300), lower respiratory (4470) and unspecified respiratory (2412). RSV, *Mycoplasma pneumoniae* and the rhinoviruses were most commonly reported in association with lower respiratory tract disease (Table 3), whilst RSV, the rhinoviruses and the adenoviruses were reported for upper respiratory tract infections. Influenza virus types A and B and *Bordetella* reports were amongst the 10 most common causes of lower respiratory tract infection.

For skin/mucous membrane disease (5695 reports) the herpesviruses (HSV 1 and 2 and VZ) were frequently reported, followed by the childhood exanthems, rubella and measles, and the arboviruses (Ross River virus and dengue 2). The enteroviruses were also amongst the viruses reported in association with skin/mucous membrane disease.

Six thousand two hundred and fifty reports of genital disease were received for 1993. Included were HSV 2 and *Chlamydia trachomatis*, the two most commonly reported agents, and HSV 1 and *Treponema pallidum*.

Rotavirus, the adenoviruses and the enteroviruses were most frequently reported in association with gastrointestinal disease and a number of reports of small round viruses and Norwalk agent were also received. The total number of reports for gastrointestinal disease was 2726.

For clinical diagnoses of hepatitis, 1343 reports were received for the year. Hepatitis B was most commonly reported followed by hepatitis C, A, D, cytomegalovirus (CMV), Epstein-Barr virus (EBV) and hepatitis E.

Four hundred and fifty-nine reports of viral meningitis were received for 1993. Several echovirus types (7, 9, 11, 14 and 30) and coxsackievirus types A9 and B5 were reported. Also included were a small number of influenza B and adenovirus reports.

For patients with eye disease (511 reports), HSV 1 was most frequently reported, followed by the adenoviruses (particularly types 3, 4 and 8) and *Chlamydia trachomatis*.

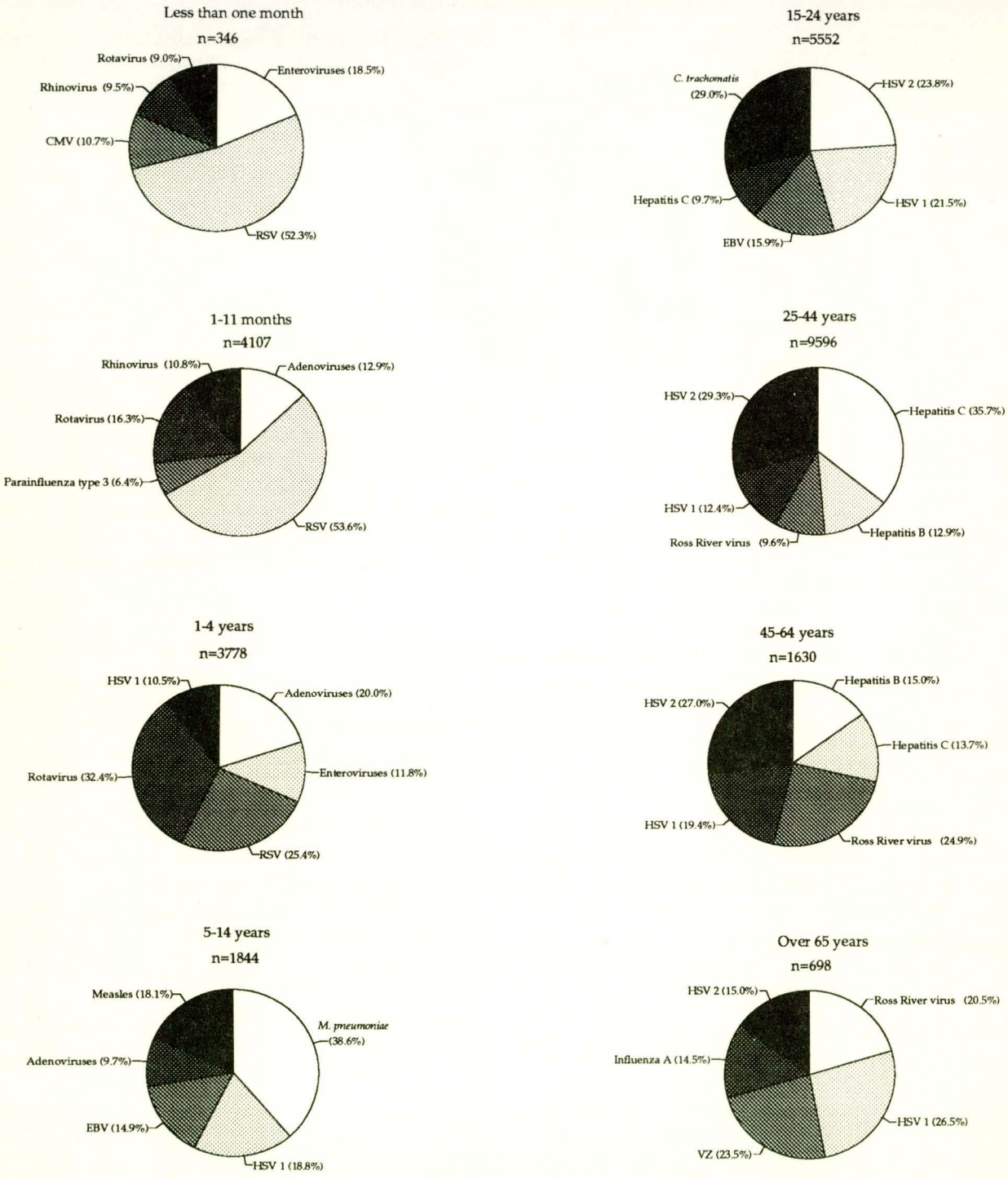
One thousand and forty-two reports of muscle/joint disease were received in 1993. Ross River virus accounted for the largest proportion of these, followed by Barmah Forest virus, Epstein-Barr virus and dengue type 2.

For reticuloendothelial disease in 1993, 200 reports were received. EBV was most commonly reported followed by rubella and CMV.

Other diagnoses (not included in Table 3)

Reports included 55 diagnoses of sudden infant death syndrome in 1993. Viruses reported in association with this diagnosis were adenoviruses (seven), CMV (six),

Figure 5. The five most frequently reported agents, 1993, by virus/organism and age group

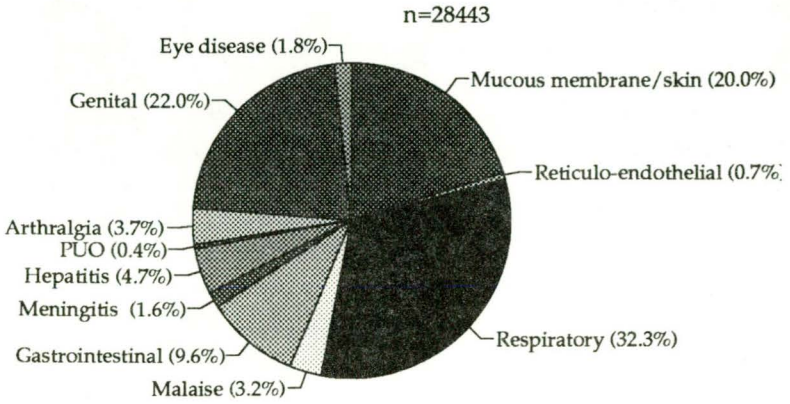


HSV 1 (three), enteroviruses (36), parainfluenza type 3 (one), rhinoviruses (two).

Encephalitis was reported for 74 patients. The following agents were diagnosed in association with a clinical diagnosis of encephalitis: measles (two), rubella (two), Murray Valley encephalitis virus (seven), adenoviruses (four), HSV 1 (three), HSV not typed (11), CMV (six), VZ (six), EBV (two), herpes group not typed (one), enteroviruses (16), rhinovirus (one), influenza A (one), influenza B (four), parainfluenza type 3 (one), rotavirus (two), *Mycoplasma pneumoniae* (three), *Leptospira* species (one) and *Treponema pallidum* (one).

Sixty-five reports of congenital infection were received in 1993. Included were rubella (two), hepatitis C (one), HSV 1 (one), adenovirus (one), HSV 2 (three), HSV not typed (two), CMV (47), enterovirus (two), RSV (one), *Chlamydia trachomatis* (one), *Treponema pallidum* (three) and *Toxoplasma gondii* (one).

Figure 6. Commonly reported clinical diagnoses, 1993



Fifty reports of myo/pericarditis were received. Included were hepatitis B (one), hepatitis C (one), adenoviruses (four), HSV 1 (four), CMV (11), EBV (one), coxsackievirus B1 (one), coxsackievirus B3 (one), echovirus type 11 (two), untyped enteroviruses (two), rhinovirus (two), influenza A (four), influenza B (five), parainfluenza virus type 3 (two), RSV (one), coronavirus (one), *Mycoplasma pneumoniae* (six) and Q fever (two).

Table 3. The ten most frequently reported clinical diagnoses, by frequently reported agents, 1993

	Lower respiratory tract disease		Upper respiratory tract disease	
Rank	Virus/organism	Reports	Virus/organism	Reports
1	Respiratory syncytial virus	1856	Respiratory syncytial virus	625
2	*Mycoplasma pneumoniae*	710	Rhinoviruses	293
3	Rhinovirus	277	Adenoviruses (all)	217
4	Cytomegalovirus	225	Cytomegalovirus	134
5	Parainfluenza virus type 3	215	Enterovirus (untyped)	125
6	Influenza B	192	Parainfluenza virus type 3	120
7	Adenoviruses (all)	167	Herpes simplex virus type 1	107
8	Influenza A	148	Epstein-Barr virus	94
9	*Bordetella pertussis*	145	*Mycoplasma pneumoniae*	69
10	*Bordetella* species	52	Influenza B	64
	All reports	4470	All reports	2300

	Skin/mucous membrane disease		Genital disease	
Rank	Virus/organism	Reports	Virus/organism	Reports
1	Herpes simplex virus type 1	2084	Herpes simplex virues type 2	2836
2	Herpes simplex virus type 2	1530	*Chlamydia trachomatis*	2102
3	Varicella-zoster virus	669	Herpes simplex virus type 1	1109
4	Rubella	338	Herpes simplex virus not typed	98
5	Measles	314	*Treponema pallidum*	66
6	Herpes simplex (not typed)	307	Enterovirus	7
7	Ross River virus	133	Varicella-zoster virus	5
8	Enterovirus (not typed)	41		
9	Epstein-Barr virus	34		
10	Dengue 2	33		
	All reports	5695	All reports	6250

Table 3. The ten most frequently reported agents, by frequently reported clinical diagnoses, 1993

	Gastrointestinal disease		Hepatitis	
Rank	Virus/organism	Reports	Virus/organism	Reports
1	Rotavirus	1879	Hepatitis B	530
2	Adenoviruses (all)	479	Hepatitis C	453
3	Enteroviruses (not typed)	128	Hepatitis A	242
4	Small round viruses	28	Hepatitis D	40
5	Norwalk agent	20	Cytomegalovirus	34
6	Cytomegalovirus	14	Epstein-Barr virus	18
7	Poliovirus type 3 (uncharacterised)	10	Hepatitis E	8
8	Influenza B	7		
9	*Mycoplasma pneumoniae*	6		
10	Epstein-Barr virus	5		
	All reports	2726	All reports	1343

	Meningitis		Eye disease	
Rank	Virus/organism	Reports	Virus/organism	Reports
1	Echovirus type 30	163	Herpes simplex virus type 1	164
2	Enteroviruses (untyped)	103	Adenoviruses (not typed)	85
3	Echovirus type 11	47	Adenovirus type 3	56
4	Echovirus type 7	27	Adenovirus type 8	54
5	Coxsackievirus A9	23	*Chlamydia trachomatis*	43
6	Echovirus type 9	11	Adenovirus type 4	24
7	Influenza B	8	Herpes simplex virus (not typed)	17
8	Coxsackievirus B5	7	Cytomegalovirus	15
9	Echovirus type 14	7	Enterovirus (not typed)	13
10	Adenoviruses (not typed)	7	Herpes simplex virus type 2	8
	All reports	459	All reports	511

	Muscle/joint disease		Reticuloendothelial disease	
Rank	Virus/organism	Reports	Virus/organism	Reports
1	Ross River virus	770	Epstein-Barr virus	102
2	Barmah Forest virus	60	Rubella	23
3	Epstein-Barr virus	23	Cytomegalovirus	21
4	Dengue 2	22	Mumps	13
5	Influenza B	20	*Mycoplasma pneumoniae*	10
6	Q fever	20	*Toxoplasma gondii*	6
7	Group A *Streptococcus*	19		
8	Parvovirus	13		
9	Cytomegalovirus	12		
10	Influenza A	11		
	All reports	1042	All reports	200

Risk factors

One thousand seven hundred and eight reports (3.8%) included risk factor information. Of these 534 (31.3%) reported injecting drug use, 418 (24.5%) were pregnant, 195 (11.4%) were HIV/AIDS patients, 152 (8.9%) were transplant recipients and 409 (23.9%) reported other risk factors (Figure 7).

Specimen type

Blood was the most commonly reported specimen type accounting for 19,827 reports in 1993 (Figure 8). Nasopharyngeal specimens were reported in 7905 instances; genital 7017, skin 4523, and faeces 3069.

Figure 7. Reports with commonly reported risk factors, 1993, by risk factor

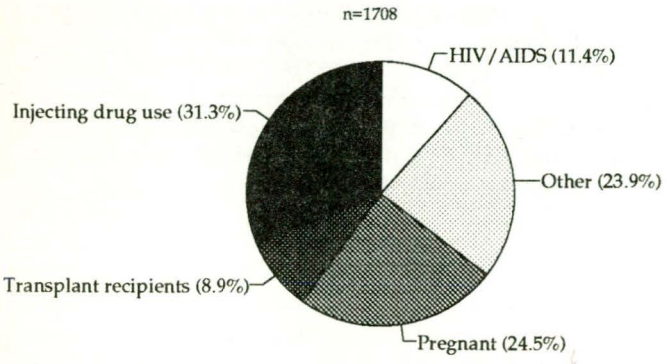
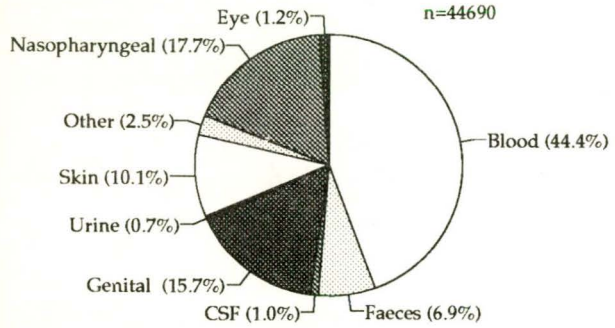


Figure 8. Virus reports received, 1993, by specimen type



Method of diagnosis

With respect to method of laboratory diagnosis, 38% of reports were for virus isolation, 22% antigen detection and 40% antibody detection.

Viruses most commonly diagnosed by culture were the herpesviruses, the enteroviruses and *Chlamydia trachomatis* (Table 4).

Enzyme immunoassay (EIA) was the most frequently reported method of antigen detection accounting for 52% of antigen reports (Table 5), followed by immunofluorescence (IF) with 34% of such reports.

Antigen detection was commonly reported as the method of diagnosis for hepatitis B (EIA and radioimmunoassay (RIA)), adenoviruses (IF and EIA), HSV 1 and 2 (EIA and IF), the influenza viruses, the parainfluenza viruses and RSV (IF and some EIA), rotavirus (EIA, latex agglutination and electon microcopy), astrovirus, Norwalk agent, coronavirus and small virus-like particles (EM) and *Chlamydia trachomatis* (EIA and IF).

For 62.4% of serological diagnoses EIA was the method of choice, followed by the complement fixation test (CFT) 10%, and IF 4.4% (Table 6). The most commonly reported criterion for a positive serological diagnonsis was IgM detection (51% of antibody diagnoses)

Table 4. Most commonly isolated agents, 1993 (>200 reports)

Agent	Reports	%
HSV 2	4749	27.7
HSV 1	3784	22.0
Enteroviruses	1653	9.6
Chlamydia trachomatis	1286	7.5
RSV	1280	7.5
Adenoviruses	1163	6.8
CMV	1015	5.9
Rhinoviruses	865	5.0
HSV (not typed)	526	3.1
Parainfluenza	336	2.0
VZ	276	1.6
Influenza	233	1.4
Total	17166	100

Table 5. Method of antigen detection, 1993

Method	Reports	%
EIA	5059	51.9
IF	3314	34.0
RIA	517	5.3
Latex agglutination	357	3.7
EM	346	3.6
Nucleic acid detection	85	0.9
Other	64	0.7
Total	9742	100

Table 6. Method of antibody detection, 1993

Method	Reports	%
EIA	11084	62.3
CFT	1807	10.2
IF	781	4.4
HAI	465	2.6
Particle agglutination	49	0.3
RIA	40	0.3
Neutralisation	24	0.1
Other	3532	19.9
Total	17782	100

followed by single high titre (21%), other (13%), total antibody (11%), fourfold rise in titre (2%), and IgA detection (2%).

Antibody detection was the method of diagnosis commonly reported for measles, mumps, rubella, hepatitis A (IgM detection), hepatitis C (IgG), the arboviruses, (mostly IgM detection, some fourfold rises), herpesviruses, (IgM detection) influenza viruses (mostly single high titres, some fourfold rises and IgM detection), *Mycoplasma pnemoniae* and Q fever (IgM, fourfold rises and single high titres), *Bordetella* (IgA detection in both serum and nasopharyngeal specimens, some IgM detection) and *Treponema pallidum.*

Reports by organism

The remainder of this report consists of selected details of viruses/organisms reported to the Scheme, presented in the same order as in Table 2.

Figure 9. Measles laboratory reports, 1982 to 1993, by year of specimen collection

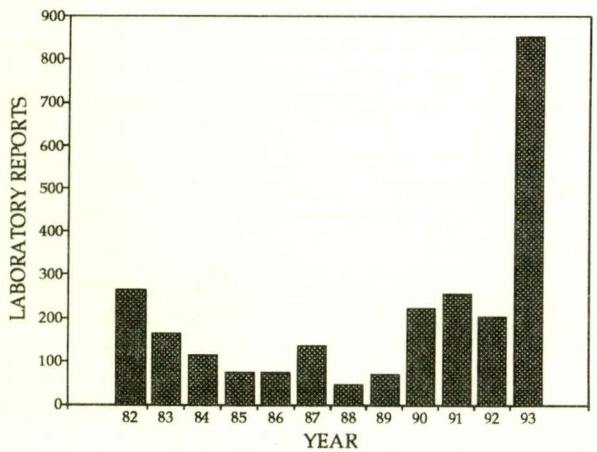
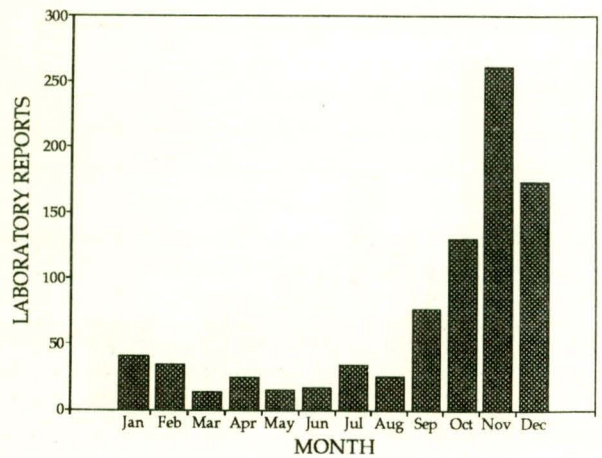


Figure 10. Measles laboratory reports, 1993, by month of specimen collection



Measles, mumps, rubella

Measles virus

For 1993, 852 reports of measles were received, the highest figure since the Scheme began (Figure 9), and a marked increase on the number of reports (204) received for 1992. Most reports were for the spring-summer months, September to December (Figure 10). The majority were received from Queensland (542), New South Wales (158) and Victoria (72). The largest number of reports was for the 5 to 24 year age group (Figure 11). The overall male/female ratio was 1.03/1. Skin disease and respiratory tract symptoms were the most common clinical manifestations, 314 and 31 reports respectively. Two cases of encephalitis and one of meningitis were also included. Laboratory diagnosis was by antigen detection (14), virus isolation (four) and antibody detection (834, including 767 IgM detections, 16 fourfold rises in titre, 37 single high titres and 14 other).

Mumps virus

Mumps virus was reported for 77 patients in all age groups. Males were more commonly reported than females, M/F ratio 1.24/1. Respiratory symptoms and reticulo-endothelial disease were frequently stated clinical diagnoses. No reports of mumps meningitis were received for 1993. One patient was HIV positive. One laboratory diagnosis was by virus isolation from the nasopharynx and the remainder were serological diagnoses (66 IgM detections and 10 single high titres).

Figure 11. Measles laboratory reports, 1993, by age group and sex

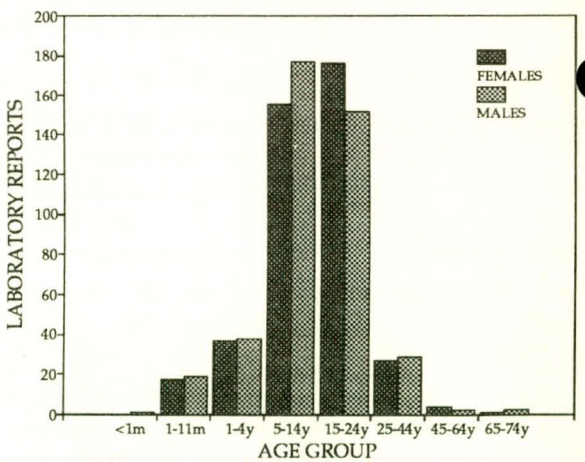


Figure 12. Rubella laboratory reports, 1982 to 1993, by year of specimen collection

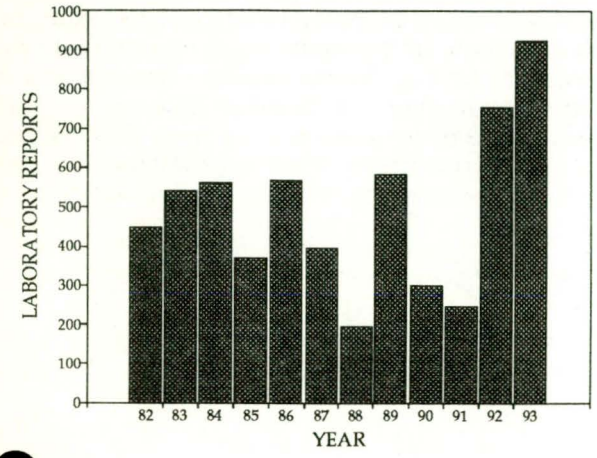
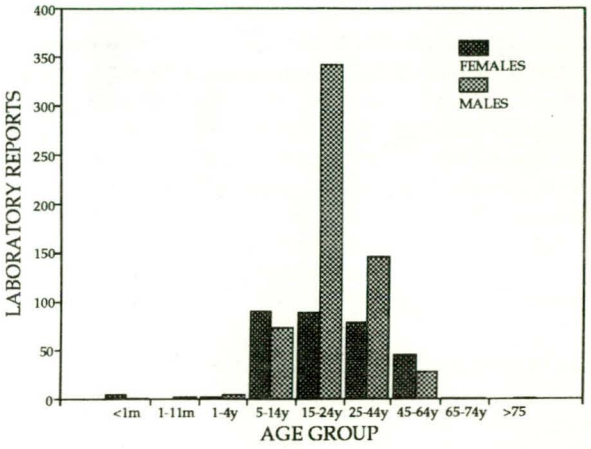


Figure 14. Rubella laboratory reports, 1993, by age group and sex



Rubella virus

A larger number of rubella virus reports, 923, were recorded for 1993 than for any other year of this Scheme (Figure 12). An increased number of reports was received for the spring and summer months as was the case in 1992, with fewer reports in the intervening winter and autumn (Figure 13). The peak number of reports of 154 for November was lower than that observed for the same month in 1992. An increased number of reports was received from Queensland (527), New South Wales (139), South Australia (110), Western Australia (108) and Victoria (26).

The age group most commonly reported were 15 to 24 year olds, particularly males, this age group accounting for 47% of all reports (Figure 14). One hundred and sixty-eight reports were for women of child-bearing age (15 to 44 years), 10 of whom were pregnant. Overall there was a marked predominance of males, the male/female ratio being 1.92/1. The most common clinical manifestation was skin disease (338), followed by muscle/joint disease (30) and reticuloendothelial disease (23). Two cases of encephalitis and one of meningitis were also reported. Two diagnoses were by virus culture, five by antigen detection and the remaining 916 by serological means (870 IgM detections, 24 fourfold rises in titre, 17 single high titres and five other).

Hepatitis viruses

Hepatitis A virus

A total of 452 reports of hepatitis A was received with specimen collection dates in 1993. More reports were received in the first half of the year (Figure 15). The male/female ratio was 1.4/1, the sex difference being most apparent in the 25 to 44 year age group (Figure 16). All diagnoses were by serology.

Figure 13. Rubella laboratory reports, 1992 to 1993, by month of specimen collection

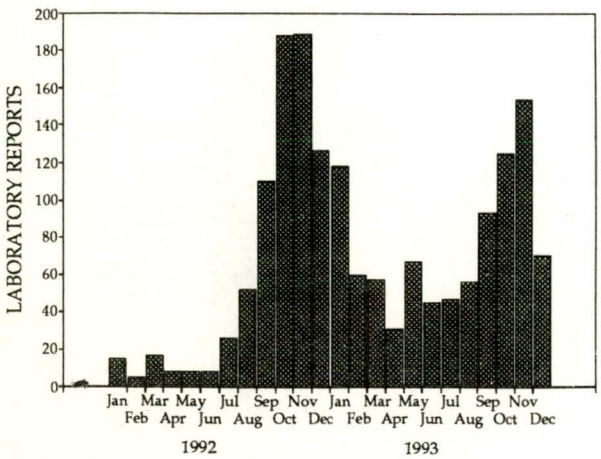


Figure 15. Hepatitis A laboratory reports, 1993, by month of specimen collection

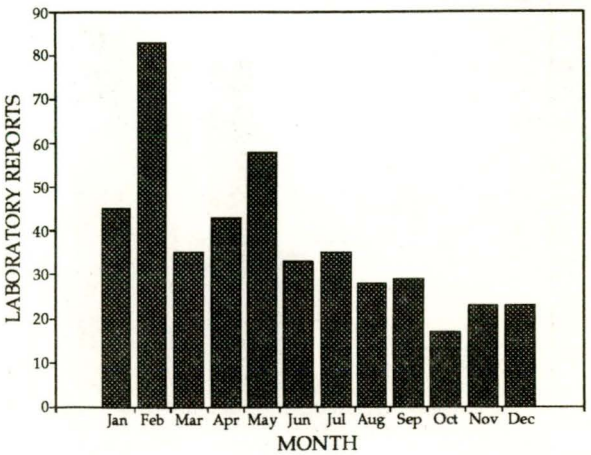
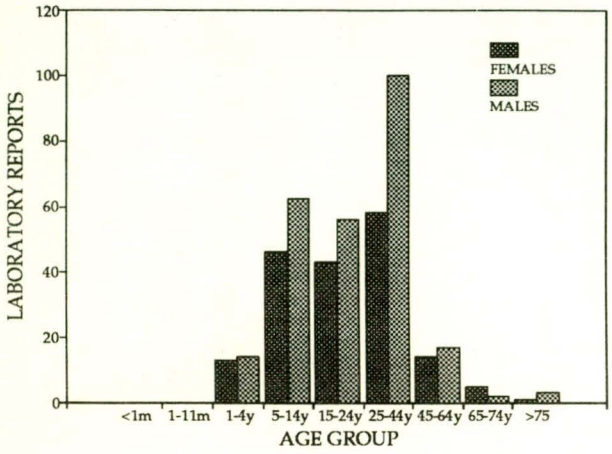


Figure 16. Hepatitis A laboratory reports,1993, by age group and sex



Hepatitis B virus

Positive hepatitis B serology was reported for 2,324 patients, only four of whom reported evidence of acute infection (hepatitis B core IgM detected). The remaining diagnoses were established by the detection of hepatitis B surface antigen (HBsAg), and hence may have been acute or chronic infections. The male/female ratio was 1.1/1, and most reports were for individuals in the 15 to 44 year age group (Figure 17). Five hundred and thirty patients (23%) reported clinical hepatitis. Seventeen patients reported injecting drug use, 221 were pregnant and one had a history of blood transfusion.

Hepatitis C virus

A total of 4,503 reports of hepatitis C were received for 1993. Since the introduction of testing in 1990 there has been an incremental increase in the number of positive reports received, this probably being a reflection of increasing case ascertainment. Also current laboratory methods do not usually differentiate between acute and chronic infection. In addition whilst every attempt is made to delete duplicate records from the Scheme, this cannot be completely ruled out, particularly if patients are re-tested many months or years later.

More males were reported than females, the male/female ratio being 1.7/1 and 3,428 (76%) of reports were for the 25 to 44 year age group (Figure 18). Four hundred and fifty-three patients (10%) reported clinical hepatitis. Five hundred and nine patients (11%) reported injecting drug use, 26 were pregnant and 14 reported a history of blood transfusion. Eighteen diagnoses were by nucleic acid detection.

Hepatitis D virus

Forty-seven reports of hepatitis D were received, 38 males and nine females, 42 of whom were in the 15 to 44 year age group. Forty patients reported clinical hepatitis and two had a history of injecting drug use.

Hepatitis E virus

Hepatitis E was reported for 12 patients in 1993, nine males and three females all in the age range 15 to 64 years. Six reports were from Victoria, five from Queensland and one from the Northern Territory. Six patients reported recent overseas travel and one, from the Northern Territory was thought to have been locally infected.

Clinical symptoms included eight cases of hepatitis. All laboratory diagnoses were by serology, three single high titres and nine other.

Figure 17. Hepatitis B laboratory reports,1993, by age group and sex

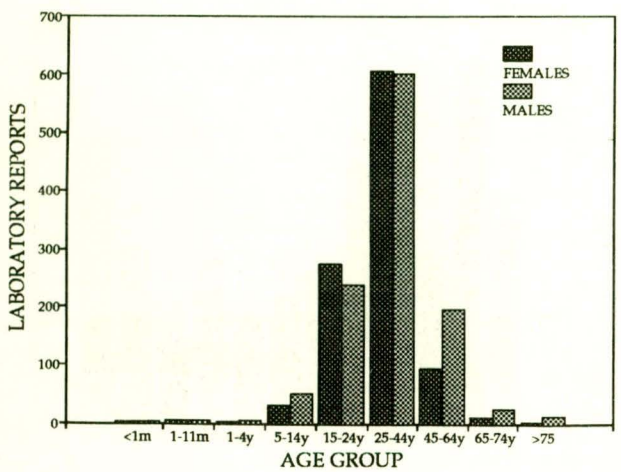


Figure 18. Hepatitis C laboratory reports, 1993, by age group and sex

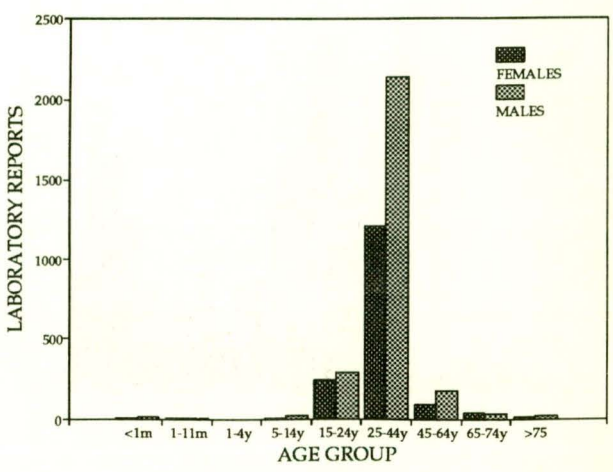
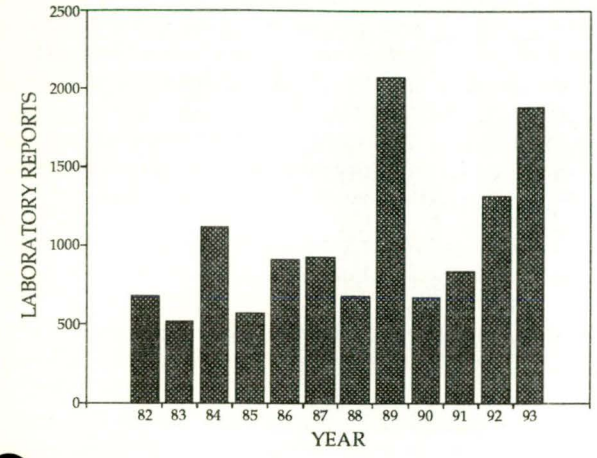


Figure 19. Ross River virus laboratory reports, 1982 to 1993, by year of specimen collection



Arboviruses

Ross River virus

One thousand eight hundred and ninety reports of Ross River virus infection were received in 1993, more than for any year since 1989 (Figure 19). Numbers peaked in March, as is normally the case (Figure 20). Reports were received from Queensland 1161 (61%), South Australia 353 (19%), Victoria 193 (10%), Western Australia 108 (6%), New South Wales 62 (3.3%), the Northern Territory 9 (0.5%), the Australian Capital Territory 3 (0.2%) and Tasmania 1 (0.05%). The male/female ratio was 1.04/1 and most patients were in the 25 to 64 year age group (Figure 21). The diagnosis was confirmed (fourfold change in titre) in 37 cases, the remainder being presumptive diagnoses (IgM detected). One hundred and thirty-three patients (7%) reported having a rash, 140 (7%) general malaise and 770 (41%) reported muscle/joint disease.

Figure 20. Ross River virus laboratory reports, 1993, by month of specimen collection

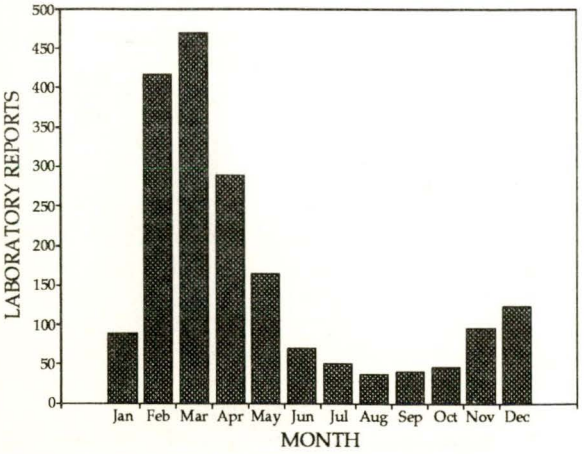
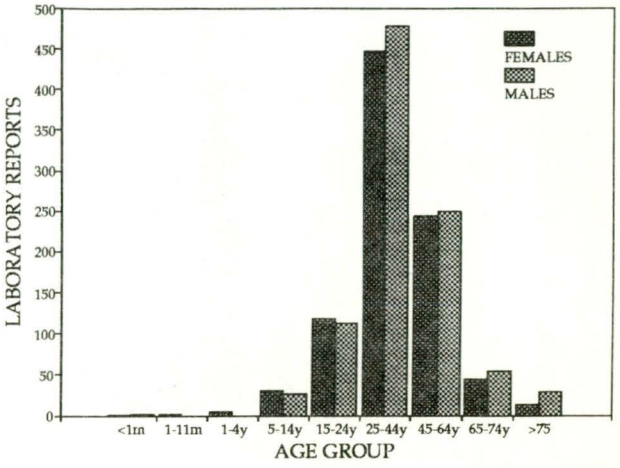


Figure 21. Ross River virus laboratory reports, 1993, by age group and sex



Barmah Forest virus

Barmah Forest virus was reported for 204 patients in 1993, most reports being from Queensland (162) and Western Australia (29). This compared to an average of 99 for the previous three years but was slightly fewer than the 251 reported in 1992. A peak was observed in the late summer/autumn months (Figure 22), the seasonal distribution being similar to that for Ross River virus. The male/female ratio was 1.2/1 and adults aged 25 to 64 years were primarily affected (Figure 23). Sixty patients reported joint/muscle disease, nine skin disease and 26 general malaise. Two diagnoses were confirmed (fourfold rise in titre), the remainder being presumptive (IgM detected).

Figure 22. Barmah Forest virus laboratory reports, 1993, by month of specimen collection

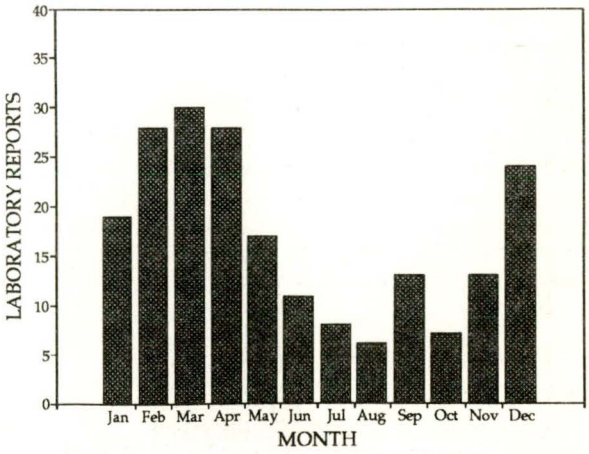


Figure 23. Barmah Forest virus laboratory reports, 1993, by age group and sex

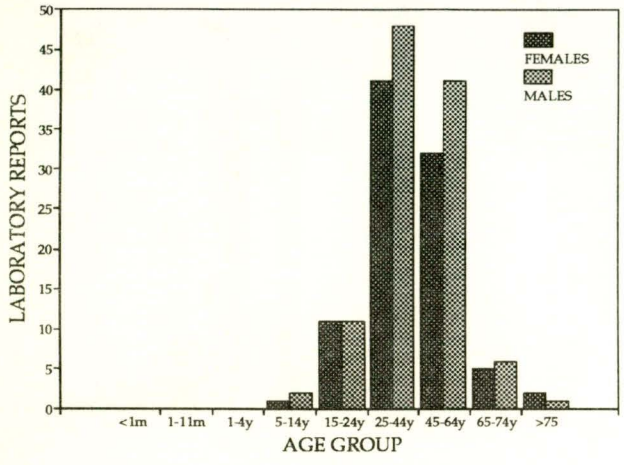
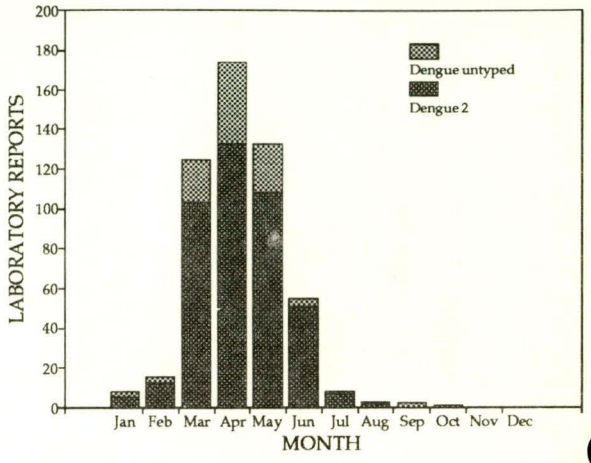


Figure 24. Dengue 2 and untyped dengue laboratory reports, 1993, by month of specimen collection



Dengue 1

One report of dengue 1 was received for a male in the 15 to 24 age group, diagnosed by IgM detection.

Dengue 2

Dengue 2 was reported for 422 persons in 1993 compared to 297 in 1992. All were from Queensland, and females were more commonly reported than males, male/female ratio 0.78/1. Reports peaked in the month of April (Figure 24), earlier than the June peak observed in 1992. Adults in the 25 to 44 year age group were largely affected (Figure 25).

Thirty-three cases reported skin manifestations, 22 muscle/joint disease and 60 general malaise/fever. All diagnoses were by IgM detection.

Dengue 3

Two reports of dengue 3 were received, one male and one female, both in the 15 to 24 year age group. Both diagnoses were by IgM detection.

Dengue not typed

There were 103 reports of untyped dengue mostly from Queensland with a peak in April as for dengue 2 (Figure 24). Fifty-four were male and 49 female and all diagnoses were by IgM detection.

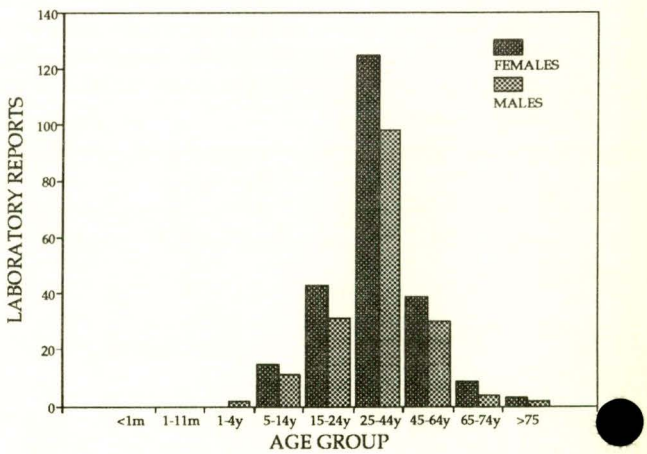
Murray Valley encephalitis virus

Nine reports of Murray Valley encephalitis virus were received for 1993, one from Queensland and eight from Western Australia. All had onset dates in April and May and seven included a clinical diagnosis of encephalitis. Six males and three females were included, age range one to 64 years. All diagnoses were by IgM detection.

Flaviviruses not typed

Untyped flaviviruses were reported from Queensland (79), Victoria (23), and New South Wales (two), a total of 104. There was a predominance of females, the male/female ratio being 1.7/1, and all were over the age of 15 years. Four patients reported skin manifestations, six muscle/joint disease, 17 general malaise/fever and fourteen patients reported recent overseas travel. Fourteen diagnoses were by fourfold rise in titre and 90 by IgM detection.

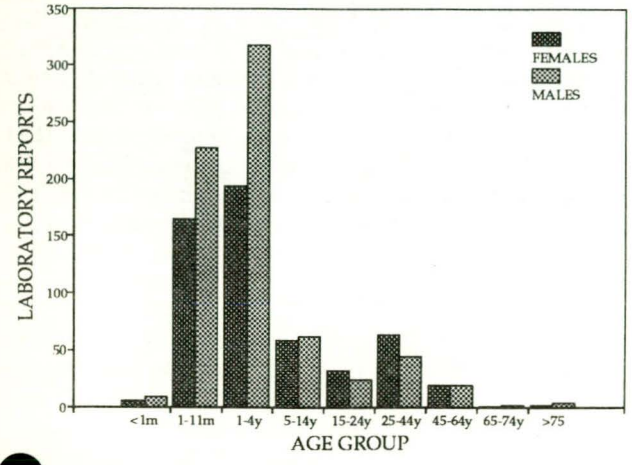
Figure 25. Dengue 2 laboratory reports, 1993, by age group and sex



Adenoviruses

A total of 1,860 reports of adenoviruses was received of which 571 (31%) were typed. There was a predominance of males, the overall male/female ratio being 1.4/1. Most patients were in the under five year age group (Figure 26). Adenovirus type 3 was most commonly reported (201 reports, 35% of those typed), followed by type 2 (121, 21%), type 1 (84, 15%), type 8 (55, 10%) and type 5 (26, 5%). Respiratory symptoms were reported in association with types 1, 2 and 3; eye disease in association with types 3, 4 and 8; and gastrointesinal disease with types 1, 2 and 3. Seventeen

Figure 26. Adenovirus (not typed) laboratory reports, 1993, by age group and sex



patients were HIV positive, six were transplant recipients, eight were immunocompromised and 6 had malignant disease.

An increased number of reports of adenovirus type 3 was received in the first half of the year (Figure 27), particularly from New South Wales (March to June), and Victoria (May to June). Adenovirus type 2 reports rose slightly from April to July and an increase in the number of type 8 reports was observed in the latter part of the year.

Specimen types included faeces (583), eye (247), nasopharyngeal (235), blood (104) and urine (13). Sixty-three per cent of diagnoses were established by virus isolation, 25% by antigen detection and 12% by serology.

Herpesviruses

As the herpesviruses are persistent in nature, many diagnostic tests are unable to distinguish between primary and recurrent infection (for example between varicella and zoster), thus care must be exercised in the interpretation of these data.

Figure 27. Adenovirus type 3 laboratory reports, 1993, by month of specimen collection

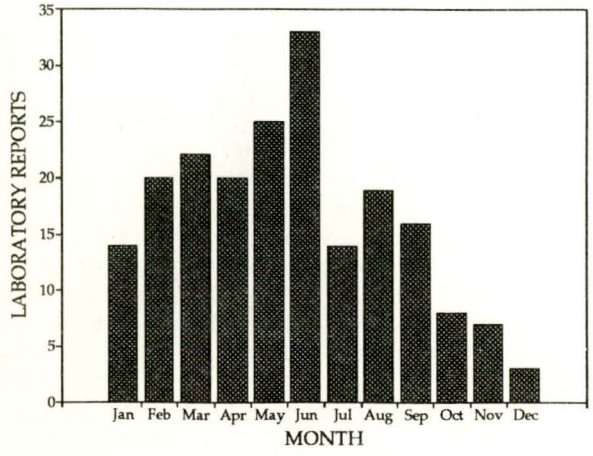
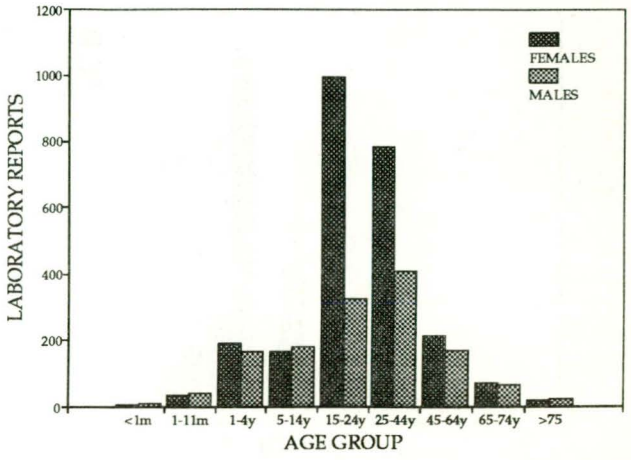


Figure 28. Herpes simplex virus type 1 laboratory reports, 1993, by age group and sex



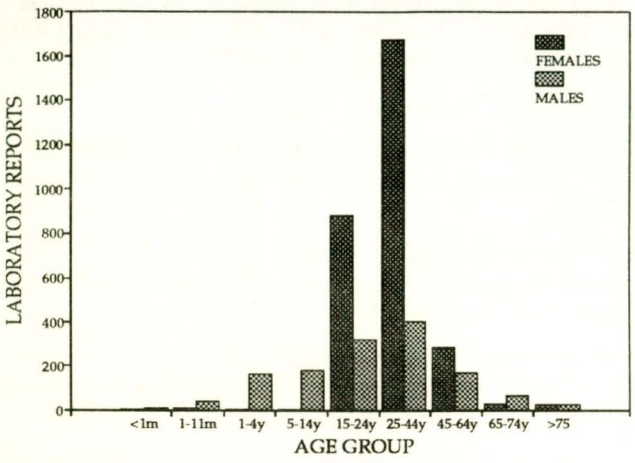
Herpes simplex virus type 1 (HSV1)

A total of 4016 reports of HSV 1 were reported, male/female ratio 0.56/1. Patients aged 15 to 44 years were most commonly reported this group accounting for 63% of all reports (Figure 28). Clinical manifestations included skin disease 2,084 (52%); genital disease 1,109 (28%); eye disease 164 (4%); and respiratory symptoms 149 (4%). Three patients were reported as having encephalitis and six meningitis. Risk factors included HIV infection (13), transplant receipt (27), malignancy (five), pregnancy (five) and immunosuppression (nine). Specimen types included skin (1,890), genital (1,172), nasopharyngeal (456), eye (172), bronchial washings (31) and CSF (one). Diagnosis was by virus isolation, 3,784 reports; serology, 15 (14 IgM detection and one other); and antigen detection, 217 (134 EIA, 81 IF, one EM and one other).

Herpes simplex virus type 2 (HSV2)

HSV 2 was reported for 4,899 patients in 1993, with a predominance of females, the male/female ratio being 0.60/1. The sex difference was most apparent for 15 to 44 year olds, this age group accounting for 82% of all reports (Figure 29), which may be due to higher case ascertainment in women of child-bearing years. Genital disease was reported most commonly (2,836, 58%), followed by skin disease (1,530, 31%). A single report of meningitis was also reported. Fourteen patients were HIV positive, 26 were pregnant and three were immunosuppressed. The most common specimen type was genital (3,004), followed by skin (1,654), nasopharyngeal (19), and eye (seven). One CSF specimen was also included. Method of diagnosis included 4,749 virus isolations, six serological diagnoses (all IgM detection), 143 antigen detections (99 EIA, 40 IF and four other) and one nucleic acid detection.

Figure 29. Herpes simplex type 2 laboratory reports, 1993, by age group and sex



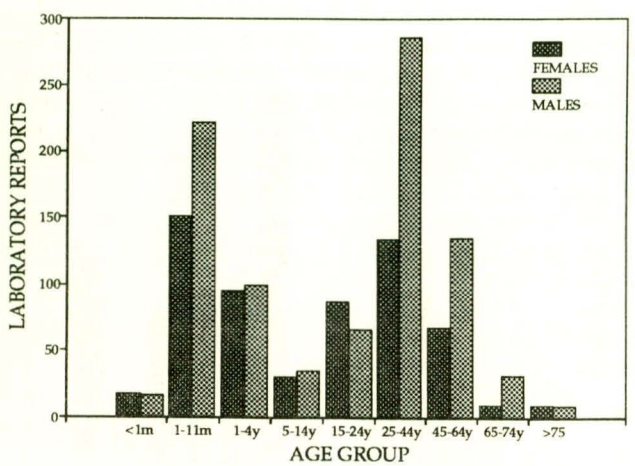
Herpes simplex not typed

A total of 679 HSV reports were for untyped viruses, representing 7% of all herpes simplex reports. The male/female ratio was 0.85/1 and 31% of reports were for the 25 to 44 year age group. Clinical diagnosis included skin disease, 307; eye, 164; genital, 98; respiratory, 25; encephalitis, 11; and meningitis, three. Specimen types included skin, 247; blood 127; nasopharyngeal 84; genital 86 and eye 22. Five hundred and six diagnoses were by virus isolation, 127 by serology (110 IgM detections, 13 single high titres , one IF and three other), 19 by antigen detection (12 EIA, five IF and two other) and four nucleic acid detections.

Herpes virus type 6

Human herpes virus type 6 was reported for four patients in 1993, two males both in the 25 to 44 year age group and two females, in the under one and 5 to 14 year age groups. One patient was a transplant recipient and one had a malignancy. All diagnoses were by IgM detection.

Figure 30. Cytomegalovirus laboratory reports, 1993, by age group and sex



Cytomegalovirus

CMV was reported for 1,559 patients, 918 males and 621 females, male/female ratio 1.5/1. This virus was most commonly diagnosed for infants in the one to 11 month age group and for the 25 to 44 year age group, the predominance of males being most marked in these groups (Figure 30). Twenty-six patients were reported to have died, 124 were HIV positive, 96 were transplant recipients, 27 immunosuppressed, 17 pregnant and 11 had a malignancy. Clinical manifestations included 504 respiratory (134 upper, 225 lower, 145 unspecified), 159 malaise/fever and 34 hepatitis. Specimen types included nasopharyngeal, 512; blood, 323; urine, 244; bronchial washings, 91; leucocytes, 35; and post-mortem lung, 19. Diagnosis was by virus isolation, 1,015; antigen detection, 13 (10 IF, two EM and one other); serology, 530 (508 IgM, nine fourfold rises, four single high titres, three total antibody and six other); and nucleic acid detection, one.

Varicella-zoster virus

Nine hundred and twenty-three reports of this virus were received, an increase on the 684 reported in 1992. As mentioned above, due to the recurrent nature of this virus and the limitations of current testing methods a distinction cannot be made between reports which may be due to chickenpox and those due to shingles.

More females were reported than males, male/female ratio 0.9/1, and all age groups were represented (Figure 31). Clinical manifestations included 669 reports of skin disease, six of encephalitis and three of meningitis. Risk factors included 18 pregnant women, four patients with malignancies, three transplant recipients, two HIV positive patients and two patients with immunosuppression (other). Source of specimen included skin (604) and blood (448). Two hundred and eighty-four diagnoses were established by virus isolation, 395 by antigen detection (IF 386, 9 EIA), one nucleic acid detection and 243 serological diagnoses (220 IgM, 10 single high titre, six fourfold rises in titre and seven other).

Figure 31. Varicella-zoster laboratory reports, 1993, by age group and sex

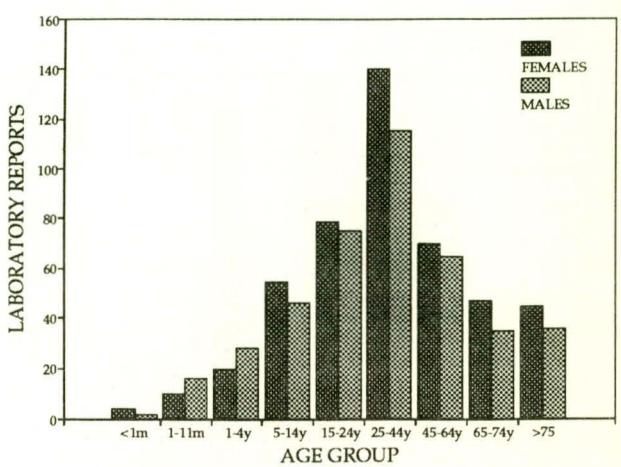
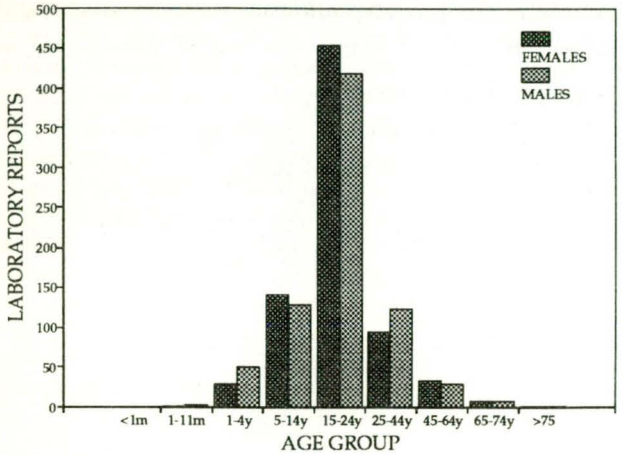


Figure 32. Epstein-Barr virus laboratory reports, 1993, by age group and sex



Epstein-Barr virus

Epstein-Barr virus was reported for 1,570 patients in 1993. The overall male/female ratio was 1/1 and the majority of reports were for the 15 to 24 year age group 56% (Figure 32), there being a slight predominance of females in this group. One hundred and thirty-two patients reported malaise/fever, 97 respiratory symptoms, 38 reticuloendothelial disease, 23 bone/joint disease, 18 hepatitis and two encephalitis. Risk factors included pregnancy (18), malignancy (four), transplant receipt (three), HIV infection (two) and other immunosuppresion (two).

Other DNA viruses

Parvovirus

A total of eighty-six reports of parvovirus were received, fewer than the 178 received for 1992. Included were 15 males and 71 females, male/female ratio 0.2/1. Forty-eight per cent of reports were for women in the to 44 year age group (Figure 33), case ascertainment probably being higher for females of child-bearing years compared to other groups. More reports were received in the late autumn and winter months, April to August. Three patients were reported as being pregnant and one was HIV positive. Cinical manifestations included 24 reports of skin disease and 13 reports of arthralgia. All laboratory diagnoses were by demonstration of parvovirus specific IgM.

Other DNA viruses

One report of papovavirus was received for a female in the 45 to 64 year age group with skin disease, diagnosed by EM.

Molluscum contagiosum was reported for eight patients, five males and three females, age range five to 44 years. Seven patients reported skin disease.

Four reports of orf virus were received, all for males in the 15 to 44 year age group. Skin manifestations were reported for three and all diagnoses were by EM.

Ten reports of untyped poxviruses were received, eight males and two females eight of whom reported skin disease. All diagnoses were by EM.

Picornavirus family

Coxsackievirus A9

Sixty-two reports were received for coxsackievirus A9 (male/female ratio 0.9/1), the highest annual figure since 1988 and the second highest since records began (Figure 34). Reports were received from the Australian Capital Territory (18, 11 with collection dates in July), New South Wales (27, nine in January and five in July), Queensland (two), Tasmania (one) and Victoria (14, no apparent temporal cluster). Six patients were under the age of one month and a total of 35 (57%) were under the age of four years. Clinical manifestations included meningitis (23), encephalitis (three), other CNS disease (five), SIDS (one), respiratory symptoms (nine), skin manifestaions (six) and gastrointestinal disease (four). One patient was pregnant. All diagnoses were by virus isolation from the following specimen types: 26 CSF, 16 faeces, 18 nasopharyngeal, one skin and one urine.

Figure 33. Parvovirus laboratory reports, 1993, by age group and sex

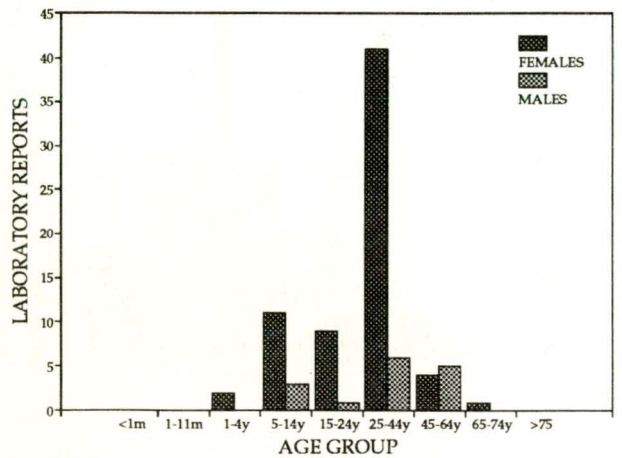
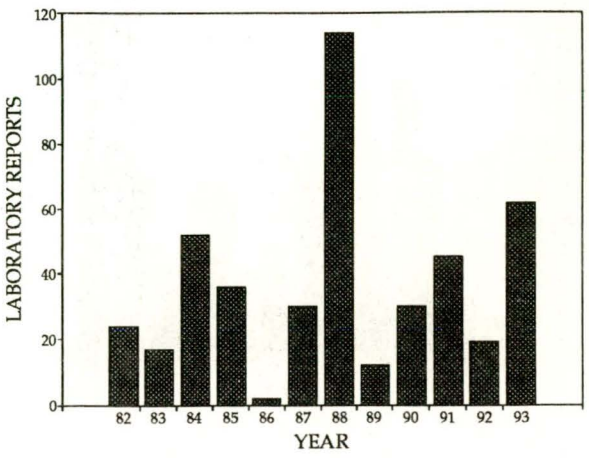


Figure 34. Coxsackievirus A9 laboratory reports, 1982 to 1993, by year of specimen collection



Coxsackievirus A16

This virus was reported for 18 patients, eight males and nine females (one sex unknown), 14 (78%) of whom were in the under four year age group. One patient reported skin disease. Specimen types included skin (10), nasopharyngeal (seven), other (one). The method of diagnosis was virus isolation in all cases.

Coxsackievirus A (other)

Two other reports of coxsackie A viruses were received, coxsackievirus A21 for a male in the 25 to 44 year age group (virus isolated from CSF) and untyped coxsackievirus A for a female also in the 25 to 44 year age group (virus isolated from nasopharynx).

Coxsackievirus B1

Fifty-one reports of coxsackievirus B1 were received, a similar number to 1992 (57), but higher than average (Figure 35). Males were more commonly reported than females, the male/female ratio being 2.1/1. Thirty-nine patients (77%) were under the age of four years and 16 (31%) were males in the under one year age group. Reports were received from the Australian Capital Territory (four), New South Wales (26), Queensland (two), South Australia (one), Victoria (11) and Western Australia (seven). More reports were received for the summer months than for other times of year. One patient was reported to have died. Clinical symptoms included five meningitis, one encephalitis, eight gastrointestinal, six lower respiratory, one skin, five general malaise/fever, one skin disease, two hepatitis, one myocarditis and one arthralgia. Specimen types included CSF (nine), faeces (22), nasopharyngeal (17), unspecified biopsy (one) and other (two). All diagnoses were by virus isolation.

Coxsackievirus B5

Coxsackievirus B5 was reported for 26 patients in 1993. Included were 13 males (10 under the age of one year) and 11 females (two sex unknown). Two deaths were reported including one SIDS, seven cases of meningitis, four lower respiratory tract disease, one gastrointestinal disease, one skin disease and four lower respiratory tract disease. Specimen types included CSF (seven), faeces (three), nasopharyngeal (12), unspecified post-mortem (one), unspecified biopsy (one), other (one) and spleen (one). All diagnoses were by virus isolation.

Coxsackievirus B (other)

Thiry-five reports of other coxsackie B viruses were received, coxsackievirus B2 (eight), coxsackievirus B3 (15), coxsackievirus B4 (11) and coxsackievirus B6 (one). The overall male/female ratio was 1.6/1, and 13 patients (37%) were under the age of one year. Two deaths were reported (coxsackievirus B3 and B4), as were seven cases of meningitis (B2 two, B3 three, B4 two), one encephalitis (coxsackievirus B4) and one case of myocarditis (coxsackievirus B3). All laboratory diagnoses were by virus isolation, from CSF (four), faeces (nine), nasopharyngeal (20) and other (two).

Echovirus type 7

Echovirus type 7 was reported for 74 patients, more than for any year since 1985 (Figure 36). Forty-eight reports (65%) were for children under the age of four years and the male/female ratio was 1.63/1. Fifty-three reports (72%) were recorded for the summer months, January to March, particularly those from New South Wales. Twenty-seven patients reported meningitis, two encephalitis, 13 gastrointestinal symptoms, five respiratory symptoms, two skin disease, two other CNS disease and four general malaise/fever. One patient was a transplant recipient. Specimen types included CSF (25), faeces (28), nasopharyngeal (18), skin (one), urine (one), and other (one). All diagnoses were established by virus diagnosis.

Echovirus type 9

A total of 21 echovirus type 9 reports were received, twelve of which were from New South Wales. Thirteen males and eight females were included and all age groups were represented. There was no apparent sea-

Figure 35. Coxsackievirus B1 laboratory reports, 1982 to 1993, by year of specimen collection

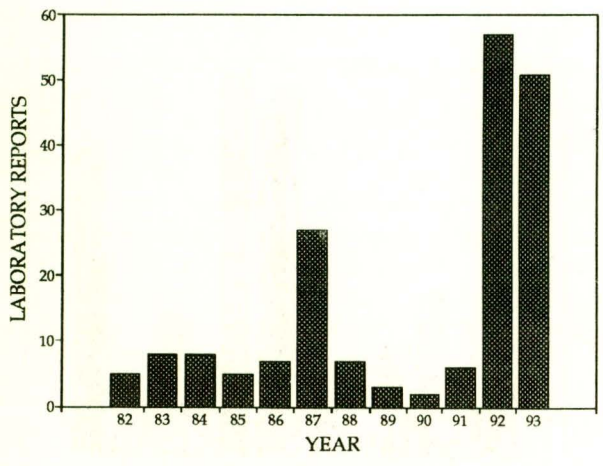


Figure 36. Echovirus type 7 laboratory reports, 1982 to 1993, by year of specimen collection

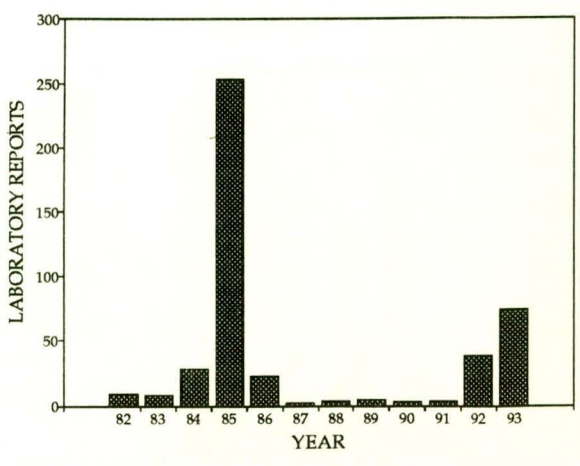


Figure 37. Echovirus type 11 laboratory reports, 1982 to 1993, by year of specimen collection

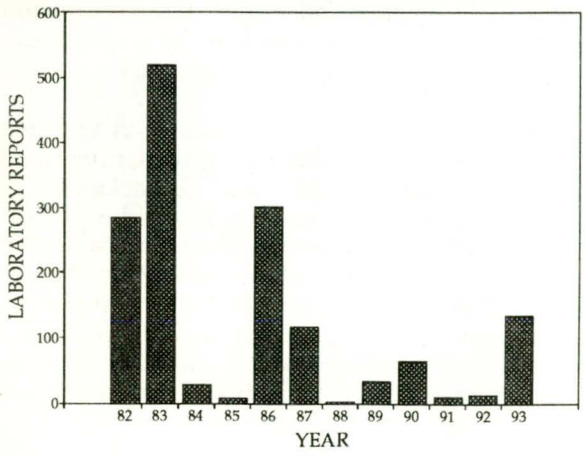
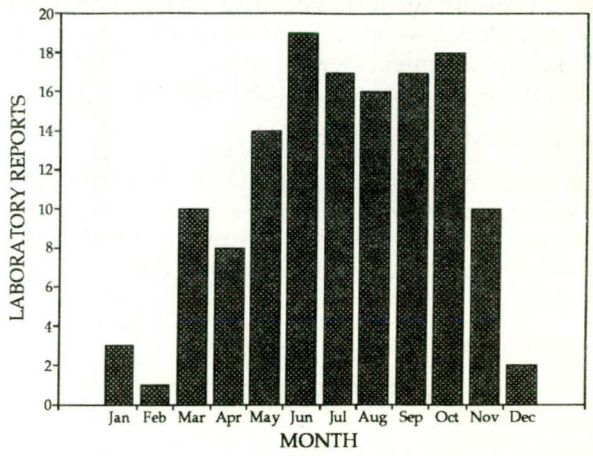


Figure 39. Echovirus type 11 laboratory reports, 1993, by month of specimen collection



onal distribution. Clinical diagnoses included meningitis (11), encephalitis (one), upper respiratory symptoms (two) and gastrointestinal (one). Virus was isolated from 12 CSF specimens, four faeces and five nasopharyngeal specimens.

Echovirus type 11

One hundred and thirty-five reports of echovirus type 11 were received for the year, more than for any year since 1987 (Figure 37). The male/female ratio was 1.7/1. Forty-seven patients, 34 of whom were male, were under the age of one year and a total of 85% of reports were for the under 4 year age group (Figure 38). More reports were received for the winter and spring months (Figure 39), particularly from Victoria, New South Wales and the Australian Captial Territory. Forty-seven patients reported meningitis, three SIDS, five other CNS disease, 27 respiratory symptoms and nine gastrointestinal symptoms.

Specimen types included CSF (47), faeces (30), bronhial washings (three), nasopharyngeal (46), lymph node (one), post-mortem (one), eye (one), urine (two) and other (four). All diagnoses were by virus isolation.

Echovirus type 14

A total of 23 echovirus type 14 reports were received with specimen collection dates in 1993, 18 of which were from New South Wales. Seventeen males and six females were included, all in the age range one month to 44 years. More reports were received for the months of May and June than for other times of year. One SIDS was reported in addition to seven reports of meningitis, four reports of gastrointestinal symptoms and two reports of skin manifestations. All diagnoses were by virus isolation, specimen types including CSF (seven), faeces (nine), nasopharyngeal (four), skin (one) and other (two).

Echovirus type 30

For 1993, 195 reports of echovirus type 30 were received, the biggest epidemic year since 1989 (Figure 40). The majority of reports were from Victoria (170, 87% of total), and most specimen collection dates were in the

Figure 38. Echovirus type 11 laboratory reports, 1993, by age group and sex

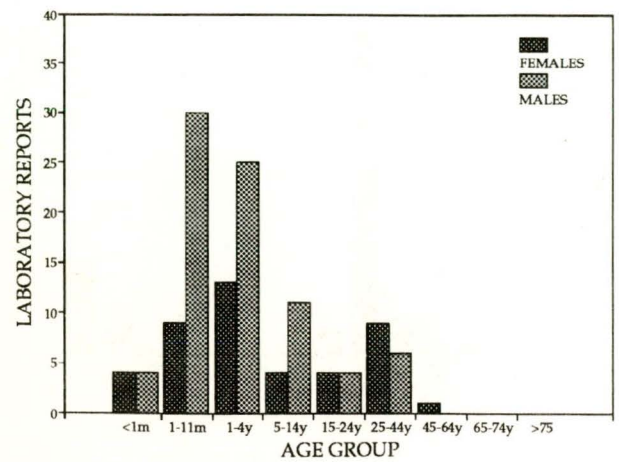


Figure 40. Echovirus type 30 laboratory reports, 1982 to 1993, by year of specimen collection

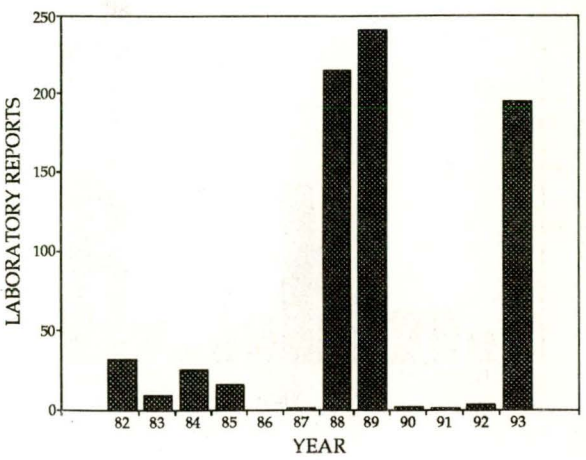
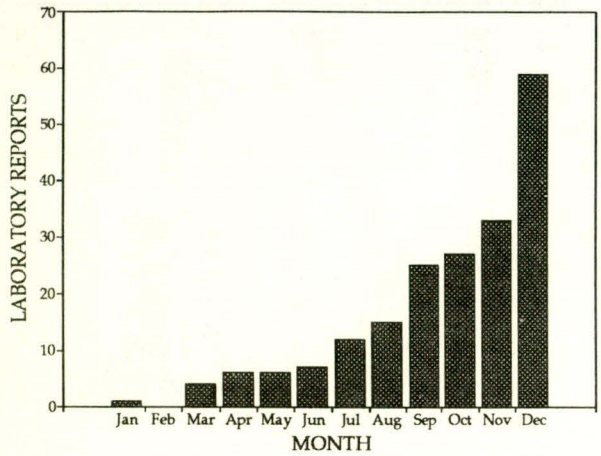


Figure 41. Echovirus type 30 laboratory reports, 1993, by month of specimen collection



latter part of the year (Figure 41). The male/female ration was 1/1 and 65 reports (33%) were for adults in the 25 to 44 year age group (Figure 42). Clinical diagnoses included meningitis (163, 84% of all reports), encephalitis (one), respiratory symptoms (four), CNS other (one), gastrointestinal (three) and general malaise/fever (seven). One patient was reported to be pregnant. One hundred and forty-three specimens were CSFs, 19 were faeces, 30 were from the nasopharynx, two were urine specimens and one other. Laboratory method was virus isolation in all cases.

Polioviruses

Polioviruses were reported for 114 patients (type 1, 41; type 2, 31; type 3, 30; and untyped, 12, all uncharacterised). The male/female ratio was 1.4/1 and 84 (74%) were under the age of one year. All were diagnosed by virus isolation.

Enteroviruses not typed

There were 943 reports of untyped enteroviruses, male/female ratio 1.3/1. Most reports were for young

Figure 42. Echovirus type 30 laboratory reports, 1993, by age group and sex

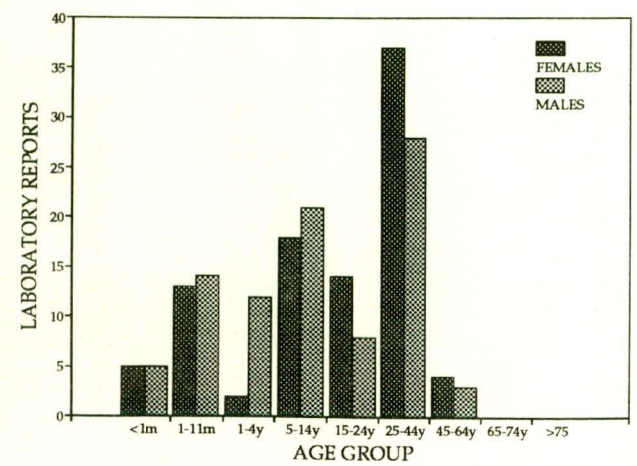
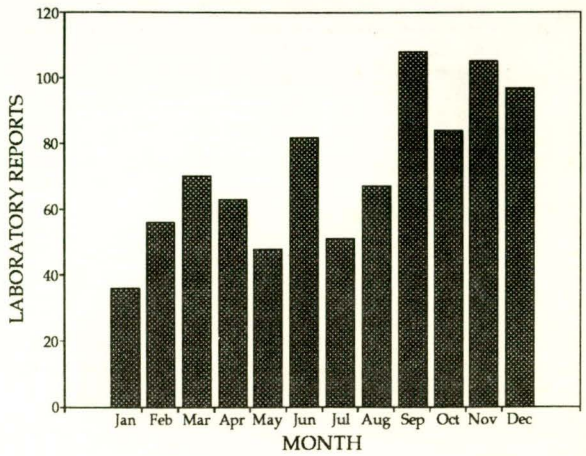


Figure 43. Rhinovirus laboratory reports, 1993, by month of specimen collection



children aged under four years (619 reports, 66% of total). Fifteen patients were reported to have died, including 10 SIDS, two were immunosuppressed, and two were pregnant. Meningitis was reported for 103 patients, encephalitis for five, upper respiratory disease for 125, lower respiratory tract infection for 49, gastrointestinal symptoms for 128, skin manifestations for 41 and eye disease 13. Specimen types included CSF (120), bronchial washings (five), blood (36), eye (13), faeces (197), nasopharynx (437), skin(41), urine (22) and other (72). Diagnosis was by virus isolation, 853, nucleic acid detection, 54 and serology, 36.

Rhinoviruses

Rhinoviruses were reported for 867 patients, above the average figure of 602 for the previous three years. A rise in the number of reports was observed for the spring months (Figure 43). The male/female ratio was 1.4/1 and 51% of reports were for the one to 11 month age group (Figure 44). Three deaths were reported including two reports of SIDS, one case each of meningitis and encephalitis, 293 upper respiratory disease, 277 lower respiratory tract infection, eight skin disease, and two

Figure 44. Rhinovirus laboratory reports, 1993, by age group and sex

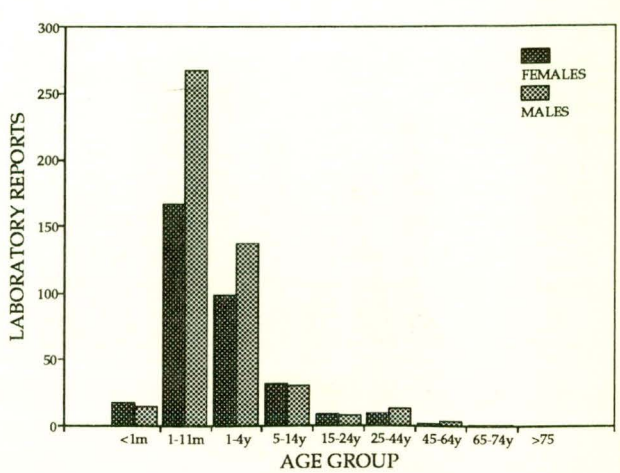
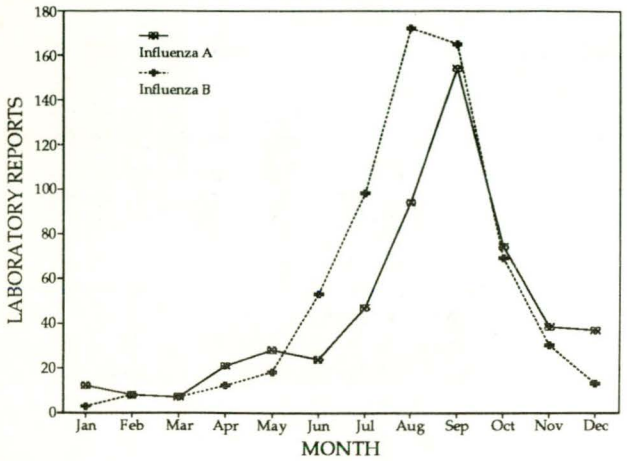


Figure 45. Influenza A and influenza B laboratory reports, 1993, by month of specimen collection collection



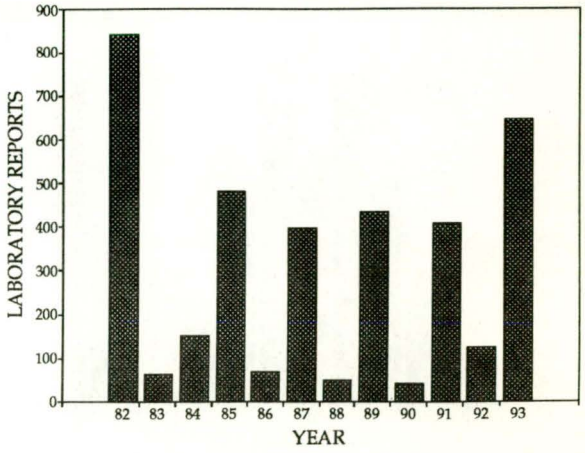
with gastrointestinal symptoms. One patient was HIV positive, two were transplant recipients, two had malignancies and seven were hospital acquired. All diagnoses were by single high titre from nasopharyngeal specimens (833), bronchial washings (eight) and other (26).

Ortho/paramyxoviruses

Influenza A

A total of 544 reports of influenza A were received in 1993, including 32 H_3N_2 strains. There was a seasonal peak in the late winter/early summer months (Figure 45) particularly in New South Wales in August, Queensland, South Australia and Victoria in August-September, and in Western Australia in September-October. The male/female ratio was 1.2/1 and all age groups were affected (Figure 46), including 103 patients over the age of 65 years. Three deaths were reported, for 53 and 61 year old males and a 76 year old female; virus was isolated from the lung at postmortem in two of the cases. Two patients were immunocompromised and one infection was reported to have been hospital acquired. Reported clinical syndromes included lower respiratory tract disease (164), upper and other respiratory tract disease (139), muscle/joint disease (11), gastrointestinal (five), general malaise/fever (20), CNS (four) and cardiovascular (four). Specimen types included 156 nasopharyngeal specimens, 386 sera and two lung specimens. Methods of detection were antigen detection, 82 (70 IF, 12 EIA); virus isolation, 233; and serology, 386 (49 fourfold rises, 40 IgM detections, 287 single high titres and 10 other).

Figure 47. Influenza B laboratory reports, 1982 to 1993, by year of specimen collection



No reports of influenza A H_1N_1 were received for 1993.

Influenza B

An epidemic of influenza B occurred in 1993 with 648 cases reported, more than for any year since 1982 (Figure 47). Numbers were slightly higher than those for influenza A (Figure 45) and total reports peaked in July, two months earlier than those for influenza A. Reports

Figure 46. Influenza A laboratory reports, 1993, by age group and sex

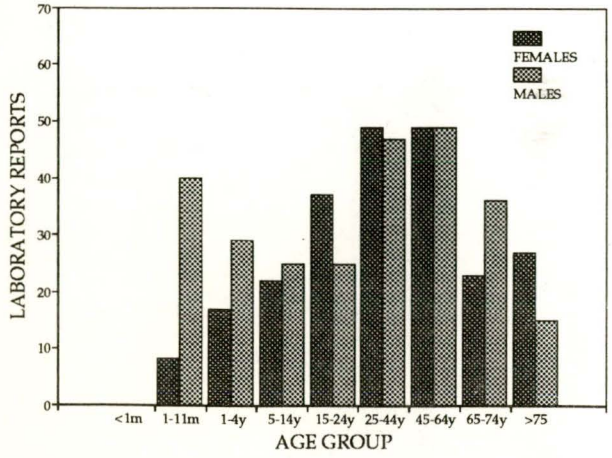


Figure 48. Influenza B laboratory reports, 1993, by age group and sex

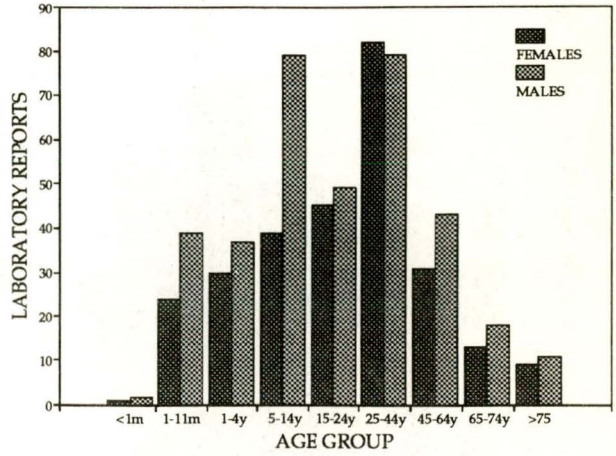
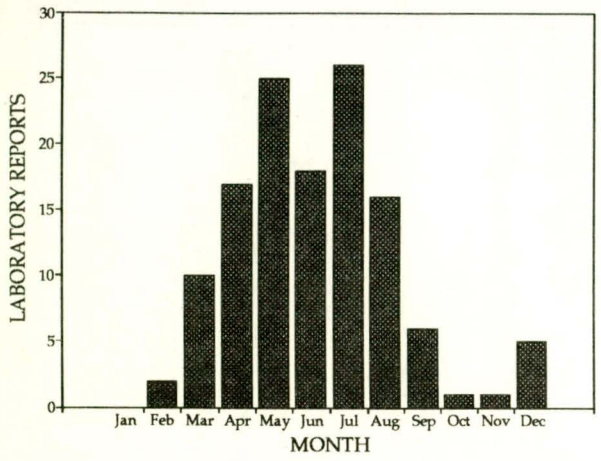


Figure 49. Parainfluenza virus type 2 laboratory reports, 1993, by month of specimen



peaked in Western Australia in July, New South Wales, Queensland and South Australia in August, and in Victoria in September. More males were reported than females, male/female ratio 1.3/1, and all age groups were affected (Figure 48). Fifty-one patients were over 65 years of age. One hundred and ninety-two patients reported lower respiratory tract disease, 64 upper respiratory tract disease, and 29 muscle/joint manifestations. Specimen types included sera, 415; nasopharyngeal, 227; lung, four and other, two. Method of diagnosis was virus isolation 153, antigen detection 80 (68 IF, 11 EIA and one other), and serology, 415 (37 fourfold rises, 47 IgM detections, 324 single high titres and seven other).

Parainfluenza type 1

There were 44 reports of parainfluenza type 1, the lowest number ever recorded. Included were 28 males and 16 females, 12 patients being in the under one year age group. Upper (11), lower (13), and unspecified (10) respiratory tract symptoms were most commonly reported. Specimens included blood, 17; nasopharyngeal, 25; and other, two. Diagnosis was by culture, 10; antigen detection, 17 (one EIA, 16 IF); and serology, 17 (one fourfold rise, 16 single high tires).

Parainfluenza type 2

One hundred and twenty-seven reports of parainfluenza type 2 were received, slightly more than average. There was a seasonal peak in the autumn and winter months (Figure 49). More males were reported than females, male/female ratio 2/1 and 92 (72%) were for children under the age of four years. Fourteen patients reported respiratory tract symptoms. Specimen types included 110 nasopharyngeal and 17 sera. Diagnoses included 74 virus isolations, 36 antigen detections (24 IF, 11 EIA, one other), and 18 serology (one fourfold rise, 16 single high tires, one other).

Parainfluenza type 3

Parainfluenza type 3 was reported for 513 patients, similar to the average figure for the previous three years. Reports peaked in Sepember (Figure 50). Similar numbers of males and females were reported (282 and 227 reports respectively), and 53% of patients were under the age of one year (Figure 51). One death was reported. Also included was one transplant recipient and one patient with a malignancy. Respiratory tract disease was reported for 443 patients (120 upper, 215 lower and 108 other). Two cases of meningitis, one encephalitis and a case of SIDS were also reported. Specimen types included blood (31), nasopharyngeal (467) and other (15). Serology was the method of diagnosis for 31 patients (one IgM detection, three fourfold rise in titre and 27 single high titres), isolation for 252 and antigen detection for 230 (215 IF and 15 EIA).

Figure 50. Parainfluenza virus type 3 laboratory reports, 1993, by month of specimen collection

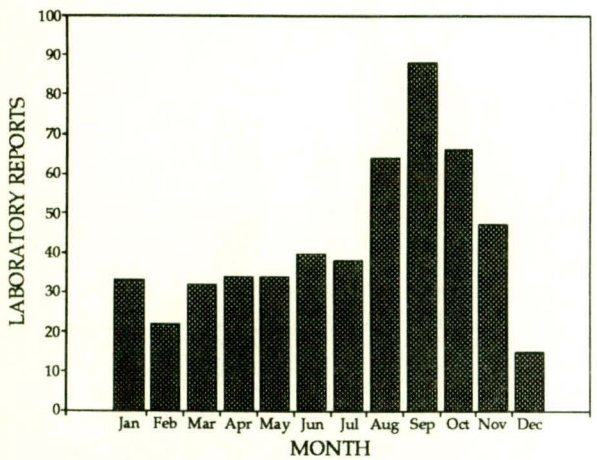


Figure 51. Parainfluenza virus type 3 laboratory reports, 1993, by age group and sex

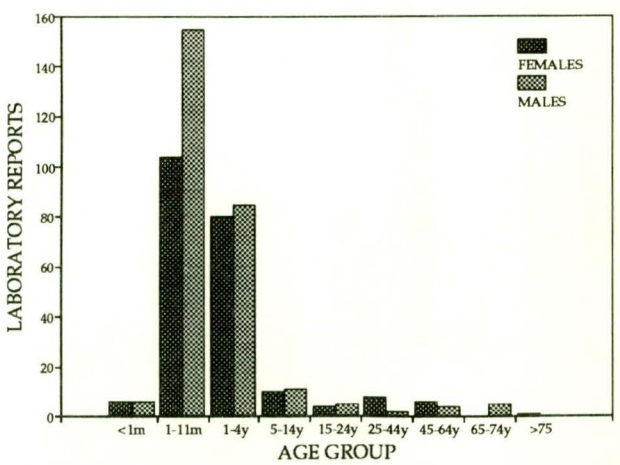


Figure 52. Respiratory syncytial virus laboratory reports, 1993, by month of specimen

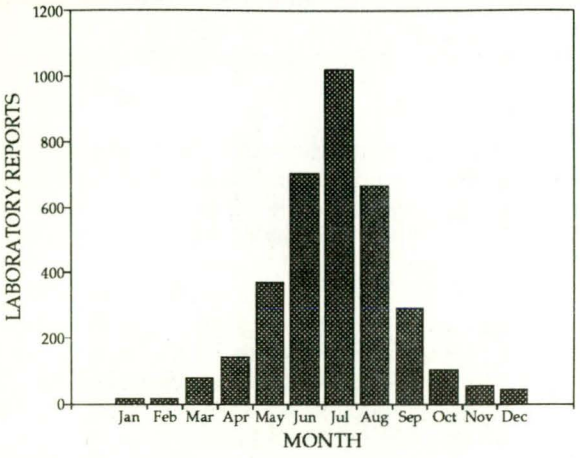
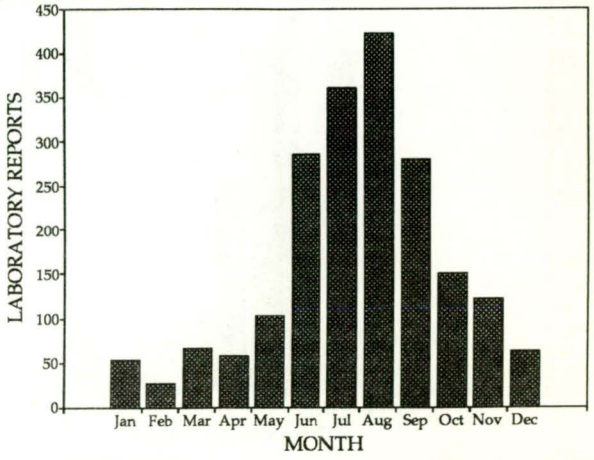


Figure 54. Rotavirus laboratory reports, 1993, by month of specimen collection



Respiratory syncytial virus (RSV)

A total of 3,506 reports of RSV was received for 1993, slightly more than average. Overall reports peaked in July (Figure 52) as was the case for the Australian Capital Territory, New South Wales, Queensland, South Australia and Victoria. Tasmania and Western Australia reported maximum numbers in August. The male/female ratio was 1.4/1. There were 2,382 reports (68%) for children under the age of one year and 3,240 (92%) for the under four years age group (Figure 53). Three patients had malignancies, three were transplant recipients and three were immunosuppressed (other). Upper respiratory tract disease was reported for 625, lower for 1,856 and unspecified for 843. Specimen types included 3,406 nasopharyngeal specimens, 78 sera, 11 bronchial washings, one lung specimen and 10 other. Method of diagnosis was antigen detection, 2149 (1,781 IF, 366 EIA, two other), isolation, 1280 and serology, 77 (four fourfold rises, 65 single high titres, eight other).

Other RNA viruses

HTLV-1

Human T-cell lymphotrophic virus type 1 was reported for 13 patients in 1993, seven males and six females, all in the 5 to 64 year age group.

Figure 53. Respiratory syncytial virus laboratory reports, 1993, by age group and sex

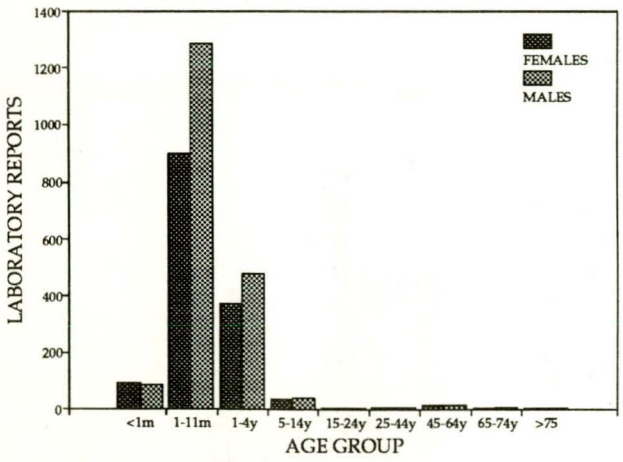


Figure 55. Rotavirus laboratory reports, 1993, by age group and sex

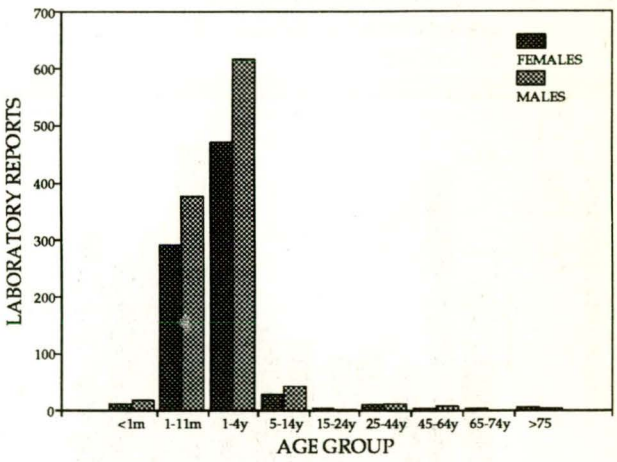
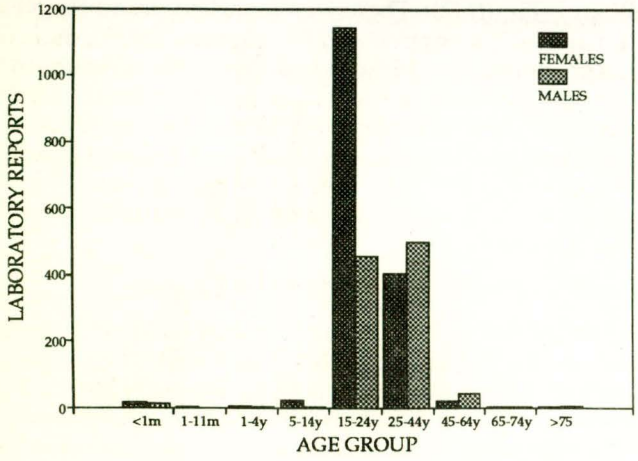


Figure 56. *Chlamydia trachomatis* laboratory reports, 1993, by age group and sex



Rotavirus

There were 1,989 reports of rotavirus, an average annual figure. Reports peaked in the month of August (Figure 54), although numbers for Western Australia peaked in July and Victoria experienced a plateau for the months of July and August. More males were reported than females, male/female ratio 1.3/1, and most patients (1796, 90%) were under the age of four years, 702 (35%) being in the under one year age group (Figure 55). A total of 1879 cases reported gastrointestinal symptoms. Diagnosis was by EM (159), EIA (1,536) and latex agglutination (294).

Figure 57. *Mycoplasma pneumoniae* laboratory reports, 1982 to 1993, by year of specimen collection

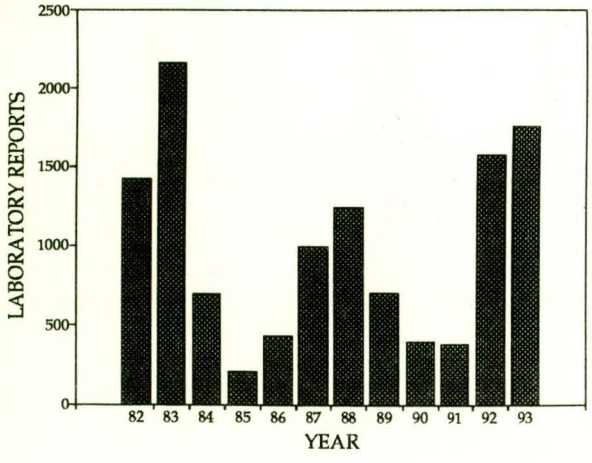
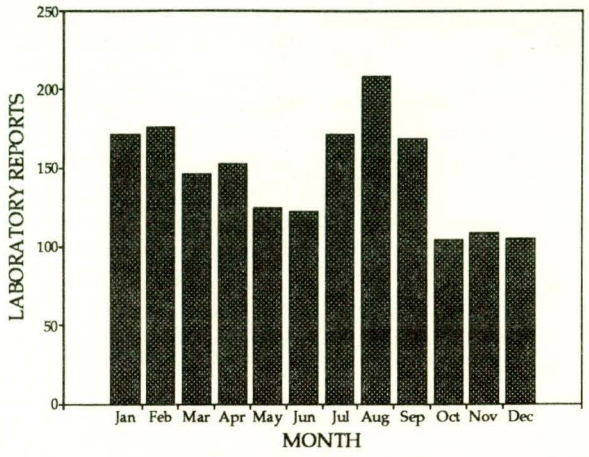


Figure 58. *Mycoplasma pneumoniae* laboratory reports, 1993, by month of specimen collection collection

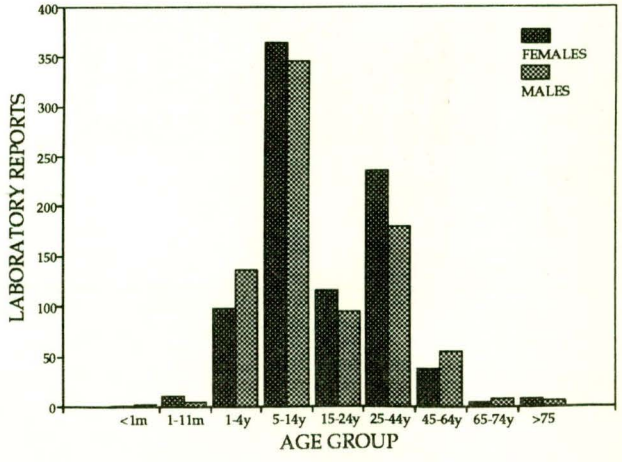


Other

Chlamydia trachomatis

Two thousand eight hundred and thirty-five reports of *Chlamydia trachomatis* were received with collection dates in 1993. More females were reported than males, male/female ratio 0.7/1, and 2515 (89%) reports were for the 15 to 44 year age group (Figure 56). Thirty-two reports were for infants under the age of one month. Twelve patients were pregnant, 43 reported eye disease and 2102 reported genital tract infections. Specimen types included 2715 genital specimens, 46 eye specimens and 74 other. Diagnosis was by culture, 1294; serology, 19; and antigen detection, 1522 (1132 EIA, 377 IF, 13 other).

Figure 59. *Mycoplasma pneumoniae* laboratory reports, 1993, by age group and sex



Chlamydia psittaci

Chlamydia psittaci was reported for 74 patients, 46 males and 28 females, 29 reports (39%) being for the 45 to 64 year age group. Fifty reports (68%) were received from Victoria, 13 of these with collection dates in October. Forty-five patients reported respiratory symptoms.

Mycoplasma pneumoniae

Mycoplasma pneumoniae was reported for 1,759 patients in 1993, a slight increase on 1992 and the highest figure since 1983 (Figure 57). Reports were received for all months of the year with a slight peak in the winter months (Figure 58). The largest number of reports was for the 5 to 14 year age group (712 reports, 41%), followed by the 25 to 44 year age group (416 reports, 24%) (Figure 59). The male/female ratio was 1/1. Seven hundred and ten patients reported lower respiratory tract disease, 19 upper and 266 unspecified. Two reports of encephalitis were also included. Specimen types included serum, 1745; nasopharyngeal, 12; and other, two. Diagnosis was by serology 1743 (fourfold rise, 54; IgM detection, 1337; single high tire, 317; other, 41) and culture 10.

Coxiella burnetii (Q fever)

Five hundred and fifty-two reports of Q fever were received, the highest number ever recorded by this scheme (Figure 60). There was a marked predominance of males (471 reports, male/female ratio 5.9/1), most of whom were in the 15 to 44 year age group (Figure 61). Thirty-two were described as being either meat or farm workers. One hundred and thirty-four patients reported general malaise/fever, 20 muscle/joint disease and 22 respiratory tract disease. Diagnosis was by IgM detection (267), single high titre (207), fourfold rise (62) and other (16).

Bordetella pertussis and *Bordetella* species

A total of 612 reports of *Bordetella pertussis* and *Bordetella* species were received for 1993, there being a rise in the number of reports throughout the year (Figure 62). The male/female ratio was 0.8/1 and cases occurred in all age groups (Figure 63). Eighty-nine reports were for nasopharyngeal specimens and 523 for blood. Methods included isolation 12, IF 60 and antibody detection 540 (262 IgA, 203 IgM, 75 other).

Figure 60. *Coxiella burnetii* (Q fever) laboratory reports, 1982 to 1993, by year of specimen collection

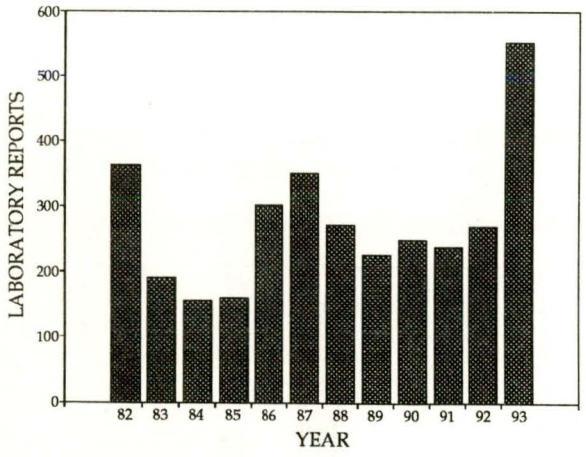


Figure 61. *Coxiella burnetii* (Q fever) laboratory reports, 1993, by age group and sex

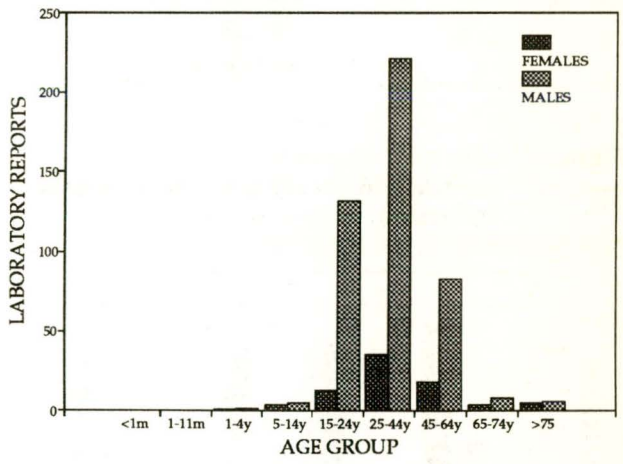


Figure 62. *Bordetella pertussis* and *Bordetella* species laboratory reports, 1993, by month of

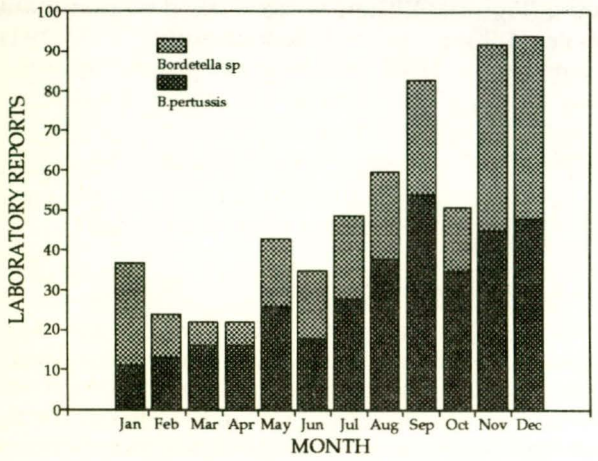


Figure 64. *Treponema pallidum* laboratory reports, 1993, by age group and sex

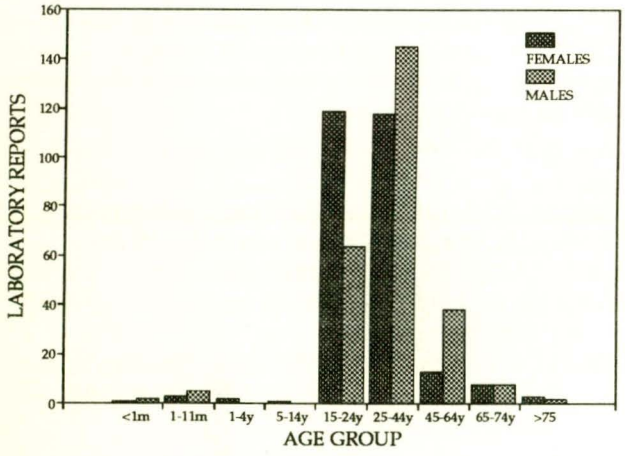
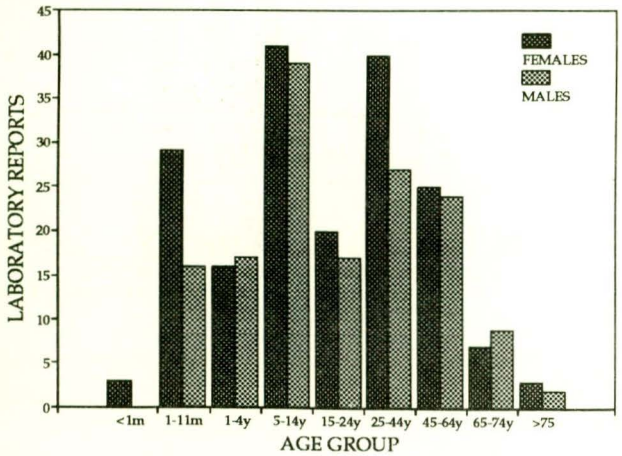


Figure 63. *Bordetella pertussis* laboratory reports, 1993, by age group and sex



Cryptoccocus species

Thirty reports of *Cryptoccocus* species were received (23 males and seven females), 18 of whom were in the 25 to 44 year age group. Included were four cases of meningitis, one other CNS symptoms and four reports of lower respiratory tract disease. Specimen types were blood (28) and CSF (two).

Treponema pallidum (syphilis)

Five hundred and forty-seven reports of positive syphilis serology were received, 277 for males and 270 for females. No information is available as to whether these were recently acquired or past infections. Most reports (446, 82%) were for the 15 to 44 year age group (Figure 64). Fifty-eight were pregnant, two were HIV positive and 222 were diagnosed as a result of antenatal/asymptomatic screening. Specimen types included serum (543), CSF (two), cord blood (one) and genital tract (one).

Toxoplasma gondii

Toxoplasma gondii was reported for 48 patients in 1993, 26 males and 22 females. Included were two infants under the age of one month and 14 women of childbearing age, two of whom were reported to have been pregnant. Diagnosis was by IgM detection (43), single high titre (two) and other (three).

Acknowledgement

The contribution of all the LabVISE laboratories is gratefully acknowledged, as is the assistance of Michelle Wood and Leona Seib.

MEASLES OUTBREAK IN THE ALICE SPRINGS REGION, NORTHERN TERRITORY, JUNE TO OCTOBER 1994

Douglas Lush[1,3] *Marion Maloney*[2], *Angela Merianos*[3]

At 31 October 1994, a total of 258 cases of measles had been reported to the Disease Control Centre in Alice Springs, Northern Territory, since the end of June. There had been at least 42 measles related admissions to Alice Springs Hospital and over 8,000 measles-mumps-rubella (MMR) vaccinations had been given during the period of the outbreak. The last large outbreak in Central Australia occurred in late 1981-early 1982. During this outbreak there were over 125 cases admitted to Alice Springs Hospital with at least five deaths attributed to measles[1].

Verification of all cases is still in progress. Of the 113 tested for measles specific IgM antibody to date, 97 (86%) have been positive. Because of the large number of vaccinations administered during the outbreak it has been necessary to differentiate mild symptoms following vaccination from true measles. This has been achieved by assuring strict adherence to the case definition and by ensuring cases are epidemiologically linked to a confirmed case.

In the initial week of the outbreak there were three laboratory confirmed cases who were recent arrivals in the Alice Springs region and who had no known common link. The first reported case arrived in Alice Springs from Queensland on 27 June and became unwell with a rash on 30 June. On 1 July, rash developed in an unvaccinated teenager arriving from Darwin. The third case was in a young man whose rash began on 5 July. He had been near the Queensland-Northern Territory border throughout the incubation period. In addition three cases in local school children attending different schools were notified in the first week of July.

The epidemic curve shows a peak in the number of cases in the middle of August, 38 cases being reported in the week ending 13 August 1994 (Figure). The initial period of the outbreak was characterised by cases from the Alice Springs urban area and the latter part by cases from geographically remote Aboriginal communities.

One hundred and thirty-eight cases (55%) were reported amongst Aboriginal persons and 105 cases (44%) in non-Aboriginal persons. One hundred and fifty-one cases (60%) were from persons giving Alice Springs as their home address. Of these cases, 96 (70%) were in non-Aboriginal persons while 42 (30%) were in Aboriginal persons. One Aboriginal community reported 22 cases, one fifteen cases and three eleven cases to date.

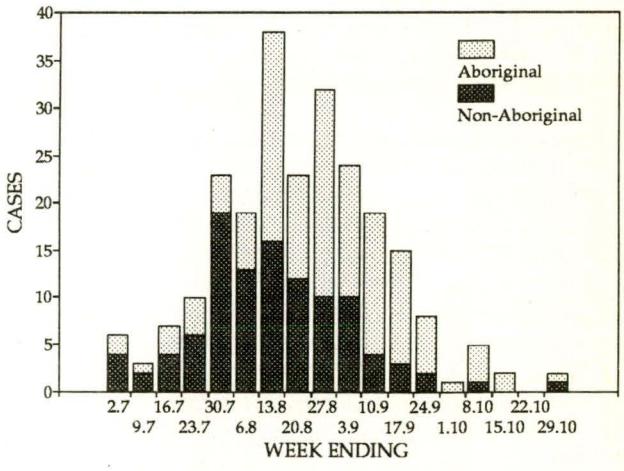
Of the 45 cases admitted to hospital 42 (93%) were Aboriginal patients and three (7%) were non-Aboriginal. The common reasons for admission have been pneumonia and/or dehydration. There have been no deaths reported amongst measles cases to date.

Of the 258 cases, 135 (52%) were female and 118 (46%) were male (five unknown). The overall attack rate for measles in the Alice Springs region was 6.8 per thousand population. The attack rate in females was slightly higher than the attack rate in males, this being most marked in the 10 to 20 year age range (Table 1). (Population data for the Alice Springs region was obtained from the Northern Territory Statistics Branch adaption of the Australian Bureau of Statistics' 1991 Census data.)

The age group specific attack rates for Aboriginal persons were higher in all ages groups than for non-Aboriginal persons. This difference was most marked in the cases under the age of one year (Table 2). There were eight confirmed cases in Aboriginal infants under the age of six months.

On review of the immunisation records of all cases we found that over 30% had previously been immunised before the outbreak, usually as part of the childhood immunisation program. Previous immunisation is expected finding in a measles outbreak within a partially vaccinated population. Further analysis of this out-

Figure. Measles cases in the Alice Springs region, 26 June to 29 October 1994, by week and Aboriginality



1. National Centre for Epidemiology and Population Health, ANU, Canberra
2. Disease Control Centre, Alice Springs, Northern Territory.
3. Disease Control Centre, Darwin, Northern Territory.

Table 1. Age group and sex specific attack rates per 1000 population[1]

Age group (years)	Females		Males	
	Cases	Rate	Cases	Rate
<1	15	44.5	19	52.9
0-4	34	20.2	41	21.8
5-9	17	10.6	24	13.3
10-14	19	13.7	12	7.4
15-19	32	24.7	19	13.0
20-29	21	5.6	11	2.5
30+	3	0.4	4	0.6
Unknown	9		7	
Total	135	7.4	118	5.9

1. The five cases with unknown sex are not included in this table.

Table 2. Age group specific attack rates per 1000 population, by Aboriginality[1]

Age group (years)	Aboriginal		Non-Aboriginal	
	Cases	Rate	Cases	Rate
<1	23	80.0	8	19.9
0-4	41	28.5	30	14.1
5-9	26	18.0	17	9.7
10-14	19	14.3	13	8.6
15-19	22	18.5	25	18.6
20-29	18	8.5	13	2.7
30+	3	1.5	2	0.2
Unknown	9		5	
Total	138	12.6	105	4.0

1. The 14 cases with unspecified Aboriginality are not included in this table.

break will provide information on how much of the outbreak was due to low coverage rates and how much was due to vaccination failure. We will attempt to differentiate primary vaccine failure from secondary vaccine failure. Primary vaccine failure refers to the failure of the individual to seroconvert and in infants less than 12 months of age it is generally attributed to the neutralisation of the attenuated virus by persistent maternal antibodies. Secondary vaccine failure refers to the development of clinically apparent infection despite an immune response to the primary vaccination.

Eight confirmed cases of measles in Aboriginal infants aged less than six months indicates that there had been inadequate transfer of maternal antibodies. The records of the mothers will be pursued to determine past history of measles or measles vaccine, and whether they suffered measles infection during the current outbreak. These mothers may represent a cohort who were not vaccinated and who have not been exposed to the wild virus, or they may represent secondary vaccine failure if vaccinated in the past.

The age for routine measles vaccination in Central Australia was changed from 12 months to nine months in July 1984. The rationale was that Aboriginal children, having less circulating maternal antibodies at nine months, would achieve good seroconversion rates and additionally be protected during the 9-12 month period where they are at high risk of morbidity and mortality. Hanna et al have demonstrated 93% seroconversion to measles in Aboriginal children vaccinated at nine months of age[2]. There has been only one notable outbreak in the 10 year period between the introduction of this policy and the current outbreak. This occurred in a remote community in 1986-1987 when there were 49 reported cases resulting in the death of one child aged eight months.

Studies have indicated that coverage rates for measles vaccine in central Aboriginal Australian communities may be greater than 90%, but have indicated problems with timeliness of vaccination[1,3]. Investigation of this outbreak will allow critical appraisal of the present strategy. Additional studies of affected cohorts such as school children may be required to further assess vaccine coverage and efficacy.

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3. Skov S. Immunization status of Aboriginal children in rural central Australia. *Central Australian Rural Practitioners Association Newsletter* 1990;(11):80-84.

CDI editorial comment

The National Notifiable Diseases Surveillance System has documented increased measles activity since June this year in the Northern Territory, Queensland, South Australia and the Australian Capital Territory. There has been a total of 3145 reports with 1994 onset dates so far, compared with 4740 in 1993. The largest number of reports (788) has been for children under the age of 5 years, but there have also been 721 reports for persons in the 15 to 19 year age group. The *CDI* Virology and Serology Reporting Scheme has received 620 measles reports for the year so far. Increases have been documented over recent months in Queensland, South Australia and the ACT.

OVERSEAS BRIEFS

In the last two weeks, the following information has been supplied by the World Health Organization (WHO) and the United States' Centers for Disease Control and Prevention.

Plague in India

There were no new confirmed cases of plague in India in the week ending 4 November. Continued precautions are recommended while travelling to Surat in Gujarat State and Beed in Maharashtra State, which are still considered to be infected.

Plague in Zimbabwe

Nineteen cases of plague and 11 deaths were reported in October from the Nkayi District, Matabeleland North in Zimbabwe. Nkayi District has been declared infected.

Certification of poliomyelitis eradication in the Americas

In May 1985, the interruption of wild poliovirus transmission in the Western Hemisphere by 1990 was proposed as a goal by the Pan American Health Association (PAHO), and accepted by all member governments. In 1990, the PAHO established the International Commission for the Certification of Poliomyelitis Eradication in the Americas (ICCPE) to oversee the regional eradication efforts and to determine when the goal was achieved. The ICCPE established three criteria for certification of polio-free status - poliovirus vaccine coverage among children of more than 80%, adequate surveillance for polio cases (including surveillance for acute flaccid paralysis and for wild poliovirus isolated from stool specimens) and at least three years without any confirmed polio cases.

The last confirmed case of poliomyelitis in the Americas associated with the isolation of wild polio virus occurred in Peru in August 1991. Since then, 33 of 38 countries have achieved and maintained vaccine coverage of more than 80% (overall regional coverage of 87% in 1993), about 6000 cases of acute flaccid paralysis have been investigated (none confirmed as paralytic polio resulting from wild poliovirus infection), about 25,000 stool specimens obtained from acute flaccid paralysis patients and their contacts have been tested (all found to be negative for wild poliovirus), and key surveillance indicators have been at acceptable levels.

Based on these laboratory and surveillance data and on recommendations of national certification committees, on 29 September 1994 the ICCPE announced that wild poliomyelitis transmission has been interrupted in the Americas[1].

Malaria in India

There has been an outbreak of malaria in Rajasthan in India[2]. Contrary to reports of up to 4000 deaths, the Indian Government has reported 237 deaths in government hospitals and an estimated 50 more in private hospitals. This is many more than reported for recent years from this State (2, 1 and 65 in 1988, 1989 and 1990, respectively) and about that reported for India as a whole in recent years (209, 268 and 353 in 1988, 1989 and 1990, respectively). One of the causative factors involved in the outbreak was a prolonged and excessive monsoon in 1994. Rajasthan has also been affected by increasing chloroquine resistance; chloroquine has been traditionally prescribed for both prophylaxis and treatment but is no longer totally reliable. The government has undertaken widespread spraying of insecticide and made appropriate antimalarials available.

Influenza in the Northern Hemisphere

Influenza B has been isolated from a specimen collected on 12 October in Switzerland. This was the first laboratory confirmed case of influenza reported to the WHO for the 1994-95 northern season.

Cholera update

Algeria has reported 118 cases and 4 deaths occurring in October in the town of Setif. The outbreak has been completely controlled and no other cases have been reported in any other areas.

Cholera cases reported to the WHO from European countries have increased considerably in 1994 over 1993[3]. From January to October 1994, there were 2339 cases and 47 deaths reported from 17 countries, compared with 73 cases and 2 deaths reported for 1993. Eastern European countries have mainly been affected, with 370 cases reported in Albania, 66 (36 imported) in Romania, seven in Moldova, 1048 in Dagestan, 813 in the Ukraine and two recently in Italy. Twelve other countries have reported a total of 69 imported cases. The outbreaks have been stemmed by the implementation of appropriate control measures.

Cholera cases have been reported for August, September and October from Algeria, Albania, Benin, Brazil, Burundi, Cambodia, Cameroon, Chad, Cote d'Ivoire, Dagestan, Djibouti, El Salvador, Guinea, Guinea Bissau, Hong Kong, India, Italy, Moldova, Mozambique, Niger, Nigeria, Philippines, Romania, Rwanda-Zaire, Sierra Leone, Singapore, Tajikstan, Uganda and Ukraine.

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COMMUNICABLE DISEASES SURVEILLANCE

Virology and Serology Reporting Scheme

There were 1543 reports received in the *CDI* Virology and Serology Reporting Scheme this fortnight (Tables 8, 9 and 10).

- Forty-two reports of **measles** were received this period, 17 males and 25 females, 30 of whom were in the 5 to 24 year age group. Included was a 27 year old male with pyrexia, rash, cough, jaundice and splenomegaly. Diagnosis was by IgM detection (40) and fourfold rise in titre (2).
- **Rubella** was reported for 60 patients this fortnight including 11 females, 7 of whom were in the 15 to 44 year age group, and 49 males. Diagnosis was by IgM detection (56) and fourfold rise in titre (2).
- Six reports of **hepatitis A** were received, 5 males and one female, age range 5 to 74 years. Included was a 16 year old male who had recently visited Vietnam.
- Positive **hepatitis B** serology was reported for 58 patients this fortnight, 27 males and 29 females (2 sex not stated). Thirty-six patients were in the 25 to 44 year age group. Included was a 29 year old immunocompromised female with acute hepatitis.
- Positive **hepatitis C** serology was reported for 192 patients this fortnight, 116 males and 66 females (10 sex not stated). One hundred and thirty-three reports were for the 25 to 44 year age group, and 32 for the 15 to 24 year age group. Included were 13 injecting drug users, 3 pregnant women and one patient with chronic renal failure. Also included was a 38 year old male with a history of alcohol abuse and hepatitis B who was the index case in a needlestick injury
- **Ross river virus** infection was reported for 19 patients this period, 17 from Queensland, one from South Australia and one from New South Wales. Specimen collection dates were from late September to mid-October. Included were 12 males and 7 females, age range 23 to 75 years. All diagnoses were presumptive (IgM detected).
- Two reports of **Barmah Forest virus** were received this fortnight for a 51 year old male from the Northern Territory and a 55 year old female from Queensland, both diagnosed by IgM detection. Both specimens had collection dates in early October.
- An **untyped flavivirus** was reported for a 25 year old female from Victoria who had a recent history of overseas travel.
- Fifty-two reports of **adenovirus** were received this fortnight, 36 virus isolations, 14 antigen detections and 2 single high titres. Thirteen patients were under the age of one year and a total of 22 were in the under 4 year age group.
- **Herpes simplex virus type 1** was reported for 209 patients this fortnight, 199 isolations and 10 antigen detections. Included was isolation from the lung at postmortem of a 45 year old male and from the nasopharynx of a 2 week old child whose mother developed primary genital herpes 6 days post-delivery. This virus was also isolated from the eye of a 4 year old female with a herpetic lesion on her right eyelid.
- One hundred and ninety-four reports of **herpes simplex virus type 2** were received this fortnight diagnosed by virus isolation (189) and antigen detection (5).
- Twenty-nine reports of **untyped herpes simplex virus** were reported, 28 virus isolations and one IgM detection, reported for a 25 year old female who had a fetal death *in utero*.
- There were 65 reports of **cytomegalovirus** (CMV) this fortnight, 49 virus isolations, 3 antigen detections, 10 IgM detections and 3 other serological diagnoses. Included were 8 HIV positive patients, 3 transplant recipients, one injecting drug user, one

Figure 1. Untyped adenovirus laboratory reports, 1989-94 average and 1994, by month of specimen collection

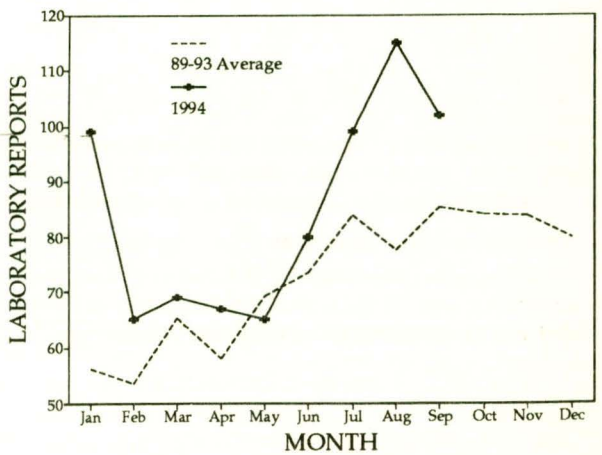


Figure 2. Rhinovirus laboratory reports, 1989-93 average and 1994, by month of specimen collecton

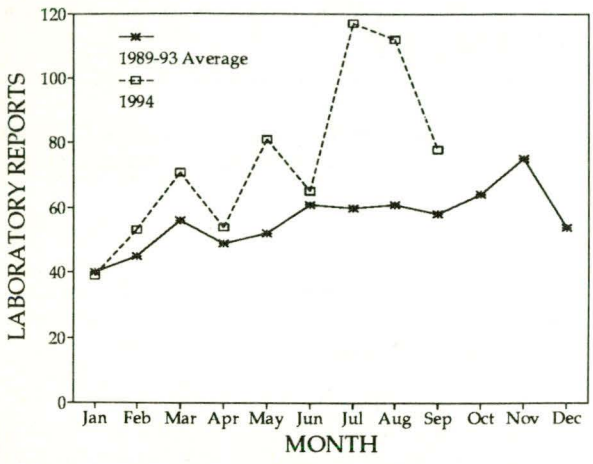
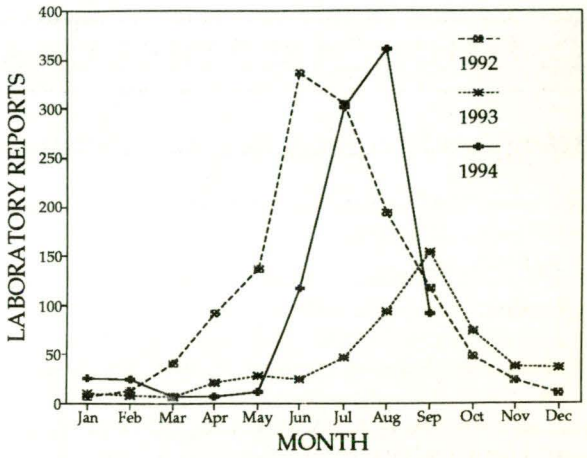


Figure 3. Influenza A laboratory reports, 1992 to 1994, by year and month of specimen collection



patient on haemodialysis and one pregnant woman. This virus was also isolated from a post-mortem lung specimen from a 9 day old male who had died of SIDS.

- **Varicella-zoster virus** was reported for 23 patients this period. Diagnosis was by virus isolation (6), antigen detection (14) and IgM detection (3).
- **Coxsackievirus type B3** was reported for 4 patients this period including isolation from the CSF of a 2 month old male with meningitis and from a lung biopsy from a 21 year old immunocompromised female with multi-organ failure.
- Six reports of **echovirus type 6** were received including meningitis reported for a 3 year old female (virus isolated from CSF) and 23 and 30 year old males (virus isolated from faeces).
- **Echovirus type 11** was reported for 5 patients this period, 3 of whom had meningitis. Included were 3 males and one female (one sex not stated) all in the age range less than one month to 44 years.
- Twenty-two reports of **untyped enterovirus** were received including isolation from the eye of a 5 year old male.
- **Rhinovirus** was reported for 23 patients, 17 of whom were under the age of 4 years. Diagnosis was by virus isolation (22) and antigen detection (one).
- **Influenza A** was reported for 10 patients this fortnight including 6 H_3N_2 strains. Diagnosis was by virus isolation (7, collected in August and September), and single high titre (3).
- Two reports of **influenza B** were received this period, one single high titre and one fourfold rise in titre. Both were males in the 45 to 64 year age group.
- Two reports of **untyped influenza** were received this period, both virus isolates from patients in the one to 4 year age group, one male and one female.
- Twenty-three reports of **parainfluenza virus type 3** were received this fortnight, 13 virus isolations, 9 antigen detections and one single high titre. Twenty patients were under the age of 4 years.
- Seventy-eight reports of **respiratory syncytial virus (RSV)** were received this fortnight, 57 for patients under the age of one year and a total of 75 in the under 4 year age group.
- **Rotavirus** was reported for 188 patients this period, 112 males and 73 females (3 sex not stated). One hundred and sixty-three patients were less than 4 years of age, 44 being in the under one year age group.
- Forty-seven reports of ***Chlamydia trachomatis*** were received this fortnight, 15 males and 32 females. Thirty-one patients were in the 15 to 24 year age group. Diagnosis was by culture (36) and antigen detection (11).
- Thirty reports of ***Mycoplasma pneumoniae*** were received this period, 14 males and 16 females, 13 under the age of 14 years. Included was an 83 year old female with septicaemia and a 47 year old male renal transplant recipient.
- Thirty-nine reports of ***Bordetella*** were received this fortnight, 36 ***Bordetella pertussis*** (10 isolations, 25 IgA detections and one IgM detection) and 3 ***Bordetella*** species (2 IgM detections and one IgA detection). Seventeen patients were male and 21 female, 15 in the 5 to 14 year age group.
- Positive **syphilis** serology was reported for 23 patients this period, 18 males and 5 females, 11 in the 25 to 44 year age group. Included was a 30 year old pregnant female at 22 weeks' gestation.

Table 1. Australian Sentinel Practice Research Network, weeks 42 and 43, 1994

Condition	Week 42, to 23 October 1994		Week 43, to 30 October 1994	
	Reports	Rate per 1000 encounters	Reports	Rate per 1000 encounters
Influenza	43	4.7	28	3.1
Measles	2	0.2	5	0.6
Chickenpox	17	1.9	21	2.4
Pertussis	2	0.2	2	0.2
Gastroenteritis	127	13.9	171	19.2

Australian Sentinel Practice Research Network

Data for weeks 42 and 43 are included in this issue of *CDI* (Table 1). There were 9127 consultations reported for week 42 (ending 23 October) and 8889 for week 43 (ending 30 October). The rate of influenza reporting declined further this fortnight overall and in all States except Western Australia. The rate of reporting of chickenpox has been higher in the last ten weeks than in the early parts of the year.

HIV and AIDS Surveillance

Methodological note

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

Tabulations of diagnoses of HIV infection and AIDS are based on data available three months after the end of the reporting interval indicated, to allow for reporting delay and to incorporate newly available information. More detailed information on diagnoses of HIV infection and AIDS is published in the quarterly *Australian HIV Surveillance Report*, available from the National Centre in HIV Epidemiology and Clinical Research, 376 Victoria Street, Darlinghurst NSW 2010. Telephone: (02) 332 4648 Facsimile: (02) 332 1837.

HIV and AIDS diagnoses and AIDS deaths reported for 1 to 31 May 1994, as reported to 31 August 1993, are included in this issue of *CDI* (Tables 2 and 3).

Table 2. New diagnoses of HIV infection, new diagnoses of AIDS and deaths following AIDS occurring in the period 1 to 31 May 1994, by sex and State or Territory of diagnosis

		ACT	NSW	NT	Qld	SA	Tas	Vic	WA	TOTALS FOR AUSTRALIA			
										This period 1994	This period 1993	Year to date 1994	Year to date 1993
HIV diagnoses	Female	0	2	0	2	0	0	0	1	5	7	34	34
	Male	0	35	0	14	2	0	14	4	69	83	377	406
	Sex not reported	0	3	0	0	0	0	0	0	3	0	8	4
	Total[1]	0	40	0	16	2	0	14	5	77	91	419	447
AIDS diagnoses	Female	0	1	0	0	0	0	0	0	1	3	5	9
	Male	0	4	0	6	3	0	10	0	23	20	193	187
	Total[1]	0	5	0	6	3	0	10	0	24	23	198	196
AIDS deaths	Female	0	1	0	0	0	1	0	0	2	3	14	10
	Male	0	14	1	2	1	0	11	0	29	45	190	218
	Total[1]	0	15	1	2	1	1	11	0	31	49	204	229

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

Table 3. New diagnoses of HIV infection, AIDS and deaths following AIDS, cumulative to 31 May 1994, by sex and State or Territory of diagnosis

		ACT	NSW	NT	Qld	SA	Tas	Vic	WA	AUSTRALIA
HIV diagnoses	Female	11	504	4	79	40	3	143	50	834
	Male	140	9381	72	1376	506	68	3046	674	15263
	Sex not reported	0	2042	0	1	0	0	44	0	2087
	Total[1]	151	11935	76	1460	546	71	3240	725	18204
AIDS diagnoses	Female	2	99	0	21	13	2	31	10	178
	Male	57	2820	20	447	207	25	1040	208	4824
	Total[1]	59	2924	20	470	220	27	1076	218	5014
AIDS deaths	Female	2	65	0	14	9	2	15	3	110
	Male	39	1926	15	310	126	20	785	136	3357
	Total[1]	41	1996	15	325	135	22	803	139	3476

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

Sterile Sites Surveillance (LabDOSS)

Data for this fortnight have been provided by 9 laboratories. There were 115 reports of recent significant sepsis:

New South Wales: John Hunter Hospital 22; Royal Prince Alfred Hospital 23.
Queensland: Sullivan, Nicolaides and Partners 7; Toowoomba Pathology Laboratory 14.
Northern Territory: Alice Springs Hospital 17.
Western Australia: Princess Margaret Hospital for Children 7.
Tasmania: Northern Tasmanian Pathology Service 2; Royal Hobart Hospital 11.
ACT: Woden Valley Hospital 12.

An additional 84 reports of sepsis in August and September were reported including 5 cases of *Streptococcus pneumoniae* infection (including one case of meningitis in an eleven month old male; and two cases of pneumonia, reported in a 37 year old female and an 86 year old female). Reports with specimen collection dates prior to the first day of the previous month are not reported fortnightly in *CDI* however these reports are added to the annual data.

Organisms reported 5 or more times from blood are detailed in Table 4. Other blood isolates not included in Table 4 were:

Gram positive: 3 *Bacillus cereus* (one case in a 35 year old immunocompromised male from New South Wales; one case in a three week old hospitalised female from the Northern Territory), 1 *Bacillus* species, 1 *Corynebacterium* species, 1 *Enterococcus faecium*, 2 *Staphylococcus* coagulase negative, 3 Group A *Streptococcus*, 3 Group B *Streptococcus* (one day old male with meconium aspiration; one day old male with neonatal sepsis; 57 year old male with myeloma), 1 Group G *Streptococcus*, 1 *Streptococcus milleri*, 2 *Streptococcus sanguis*, 1 *Streptococcus* 'viridans', 2 *Streptococcus mitis*, 1 *Streptococcus* species.

Gram negative: 1 *Acinetobacter species*, 1 *Enterobacter aerogenes*, 1 *Haemophilus influenzae* (non-serotypable in a 72 year old female with pneumonia from the Northern Territory), 1 *Klebsiella oxytoca*, 1 *Neisseria meningitidis*

Table 4. LabDOSS reports of blood isolates, by organism and clinical information

	Clinical information						Risk factors					
Organism	Bone/Joint	Lower respiratory	Endocarditis	Gastrointestinal	Urinary tract	Skin	Surgery	Immunosuppressed	IV line	Hospital acquired	Neonatal	Total[1]
Staphylococcus aureus	1				1	1	3	2	1			17[2]
Staphylococcus epidermidis				2				4	6			14
Streptococcus pneumoniae		7		1								8
Escherichia coli				3	3		1	5				12
Klebsiella pneumoniae				2	2		2	2				6

1. Only organisms with 5 or more reports are included in this table.
2. MRSA 3.

Group C (reported in a one year old male presenting with a characteristic rash, from New South Wales), 1 *Pasteurella multocida* (reported from New South Wales, in a 74 year old immunocompromised male with skin cellulitis who had been bitten by a cat 10 days previously), 2 *Pseudomonas aeruginosa*, 1 *Salmonella* Typhi (27 year old European tourist reporting travel in Indonesia), 1 *Serratia liquefaciens*.

Anaerobes: 1 *Bacteroides fragilis*, 2 *Clostridium perfringens*, 1 *Clostridium septicum*, 3 *Clostridium* species.

Fungi: 1 *Candida tropicalis*.

There were eight blood isolates from patients aged less than one year and 66 from patients aged over 45 years (Figure 4).

Meningitis and/or CSF isolate reports

There were 5 reports of meningitis and/or CSF isolates. One isolate was *Serratia marcescens* reported in a two week old female with spina bifida from Western Australia. Three isolates were *Staphylococcus epidermidis*. These were reported in a 5 year old male with cryptococcal meningitis, from the Northern Territory, whose risk factors included a shunt and a reservoir for intrathecal amphotericin B; a 51 year old female with meningitis; and a 71 year old female. Both these latter two patients had undergone surgery and were from Tasmania. One isolate was *Streptococcus pneumoniae* in a 19 month old male from Western Australia.

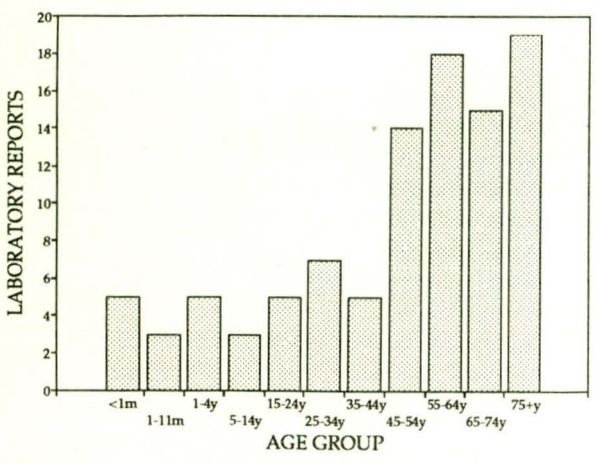
Isolates from sites other than blood or CSF

Joint fluid: 1 *Haemophilis influenzae* (one year old male with septic arthritis from Western Australia), 2 *Staphylococcus aureus* (1 MRSA), 1 Group F *Streptococcus*.

Peritoneal fluid: 1 *Staphylococcus aureus*, 1 *Staphylococcus epidermidis*, 1 *Streptococcus sanguis*.

Other: 1 *Candida* species, 1 *Enterobacter cloacae*, 1 Group A *Streptococcus*, 1 Group B *Streptococcus*.

Figure 4. LabDOSS reports of blood isolates, by age group



National Notifiable Diseases Surveillance System, 16 October to 29 October 1994

There were 2091 notifications received for the period. (Tables 5, 6 and 7 and Figure 7). No notifications were received for New South Wales due to revisions being made to the New South Wales Infections Diseases Surveillance System.

- Thirty-eight notifications of **Ross River virus infection** were received; 21 cases were male, 16 cases were female, and the sex of one case was not recorded. Cases were aged between the 5-9 and the 85-89 years age group. Two cases were resident in Western Australia and 36 cases were resident in Queensland. Recorded onset dates were in February (one), September (7), and October (30).
- A single case of **dengue** was notified for a female in the 55-59 years age group resident in the Northern Territory.
- Two notifications of **brucellosis** were received. Both cases were male and they were aged in the 30-34 years and the 45-49 years age group respectively.
- Fifty-nine notifications of **gonococcal infection** were received; 41 cases were male, 17 cases were female, and the sex of one case was not recorded. Cases were aged between the 0-4 and the 75-79 years age group with one case aged less than one year.
- Two cases of ***Haemophilus influenzae* type b infection** were reported. Both cases were male and they were aged in the 0-4 years and the 45-49 years age group respectively. Onset dates were in October.
- Four cases of **hepatitis B** were reported in the period. All cases were male and they were aged between the 20-24 and the 35-39 years age groups.
- Eight notifications of **legionellosis** were received. All cases were male and recorded ages were between the 30-34 and the 60-64 years age groups. Onset dates were in July (one), August (one), September (one), and October (5). There was one geographic cluster of two cases both from the same postcode area, however, recorded onset dates were 31 days apart.
- A single case of **leprosy** was notified for a male in the 10-14 years age group resident in the Statistical Division of Far North Queensland.
- Three notifications of **leptospirosis** were received. The cases were males and they were aged between the 15-19 and the 30-34 years age group.
- A single case of **listeriosis** was notified for a male in the 55-59 years age group.
- Twenty-nine notifications of **malaria** were received; 22 cases were male and 7 cases were female. Recorded ages were between the 5-9 and the 70-74 years age groups. Onset dates were in February (9),

April (one), May (2), June (one), July (one), August (one), September (5), and October (9).

- There were 129 notifications of **measles** received. Fifty-seven cases were male and 72 cases were female. Recorded ages were between the 0-4 and the 55-59 years age group with a mean age of 17.9 years. Nine cases were aged less than one year. There were 30 apparent clusters of between 2 and 6 cases each in the same postcode area. Eighty-four per cent of the cases were notified by Queensland.
- Fifteen notifications of **meningococcal infection** were received; 11 cases were male and 4 were female. Recorded ages were between the 0-4 and the 65-69 years age group with 8 cases aged less than 20 years. Recorded onset dates were in September (one) and October (14). There were no apparent clusters.
- There were 165 cases of **pertussis** reported; 66 cases were male, 97 cases were female, and the sex of one case was not recorded. The cases were aged from the 0-4 to the 80-84 years age group with 2 cases aged less than one year. Sixty per cent (99) of the notifications were from Queensland, 19% (32) were from South Australia, and 15% (25) were from Victoria.
- Ten notifications of **Q fever** were reported; 5 cases were male and 5 were female. Recorded ages were between the 15-19 and the 55-59 years age group.
- The number of notifications of **rubella** reported each fortnight continues to rise with 291 cases reported in this period compared to 202 cases reported for the last fortnight (Figure 5). Two hundred and four cases were male and 83 were female. The sex of 4 cases was unrecorded. The cases were aged between the 0-4 and the 55-59 years age group with 54% (159) cases recorded for males in the 10-29 years age group. There were 39 cases recorded fr females in the 15-44 years age group (Figure 6). Eighty-six per cent (251) of the notifications were received from Queensland.
- Fifty cases of **syphilis** were reported; 19 cases were male, 30 cases were female, and the sex of one case was unrecorded. Cases were aged between the 10-14 and the 70-74 years age group.
- A single case of **tetanus** was reported for a female in the 55-59 years age group.
- There were 25 cases of **tuberculosis** reported; 12 cases were male, 11 cases were female, and the sex of 2 cases was not recorded. The cases were aged between the 0-4 and the 80-84 years age group. Onset dates were in February (one), March (one), June (one), July (one), August (3), September (2), October (16).
- Two notifications of **typhoid** were received. Both cases were females in the 15-19 years age group. Recorded onset dates were in October.
- Thirteen cases of **yersinosis** were reported; 6 cases were male and 7 were female. Recorded ages were between the 0-4 and the 45-49 years age group.

Figure 5. Notifications of rubella from States[1] and Territories, January to October 1994

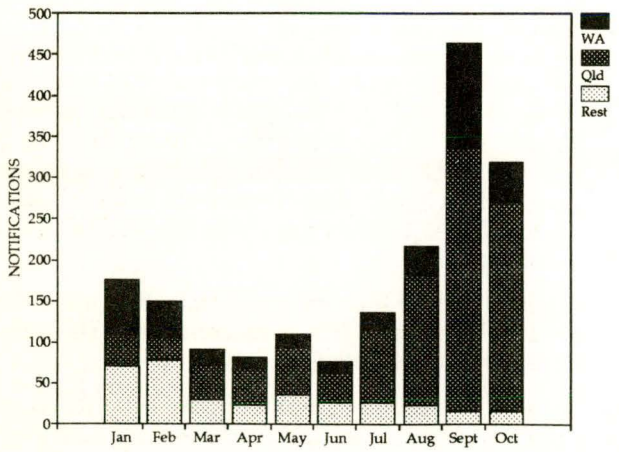
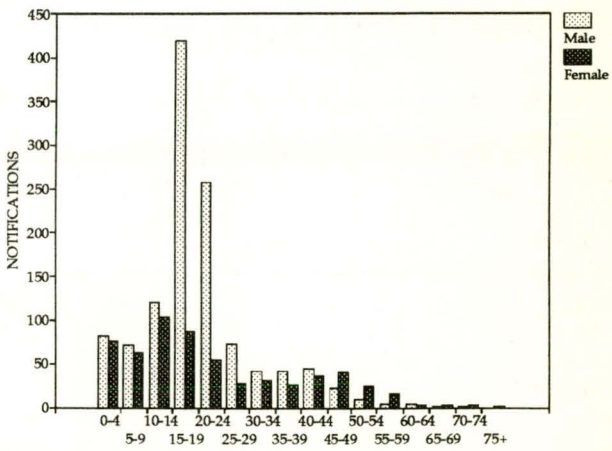
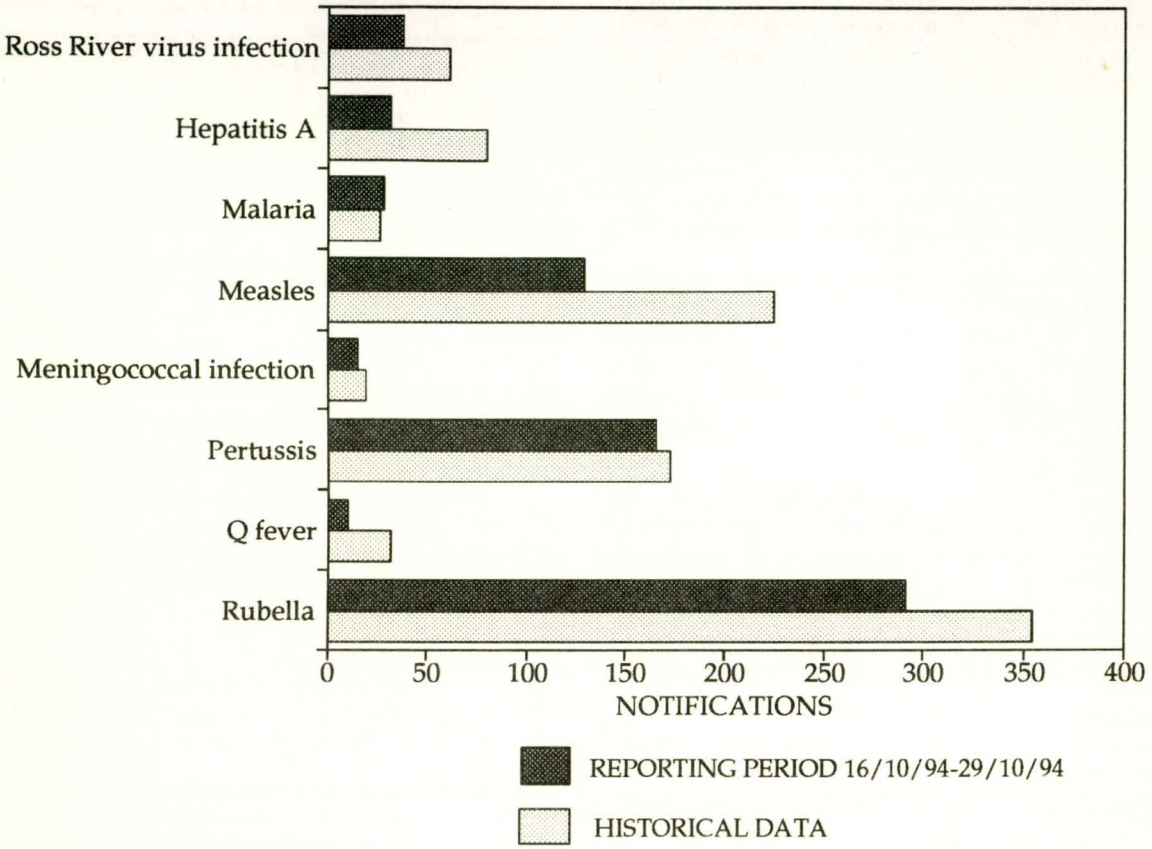


Figure 6. Notifications of rubella by age group and sex, January to October 1994



1. Data from New South Wales not included for the period 20 September to 29 October 1994

Figure 7. Selected National Notifiable Diseases Surveillance System reports, and historical data[1]



1. The historical data are the averages of the number of notifications in 6 previous 2-week reporting periods: the corresponding periods of the last 2 years and the periods immediately preceding and following those.

Table 5. Notifications of diseases preventable by vaccines recommended by the NHMRC for routine childhood immunisation, received by State and Territory health authorities in the period 16 to 29 October 1994

DISEASES	ACT	NSW	NT	Qld	SA	Tas	Vic	WA	TOTALS FOR AUSTRALIA[1]			
									This period 1994	This period 1993	Year to date 1994	Year to date 1993
Diphtheria	0		0	0	0	0	0	0	0	0	23	0
Haemophilus influenzae b infection	0		0	0	0	1	1	0	2	19	154	354
Measles	7		0	109	2	1	7	3	129	374	3387	2858
Mumps	0		NN	NN	0	NN	0	0	0	4	17	18
Pertussis	0		1	99	32	2	25	6	165	338	4341	2358
Poliomyelitis	0		0	0	0	0	0	0	0	0	0	0
Rubella[2]	1		0	251	0	0	9	30	291	234	1950	2837
Tetanus	0		0	NN	1	0	0	0	1	0	14	9

1. Totals comprise data from all States and Territories. Cumulative figures are subject to retrospective revision, so there may be discrepancies between the number of new notifications and the increment in the cumulative figure from the previous period.

2. NT, Tas: CRS only.

NN Not Notifiable.

Table 6. Notifications of other diseases[1] received by State and Territory health authorities in the period 16 to 29 October 1994

DISEASES	ACT	NSW	NT	Qld	SA	Tas	Vic	WA	TOTALS FOR AUSTRALIA[2] This period 1994	This period 1993	Year to date 1994	Year to date 1993
Arbovirus infection												
Ross River virus infection	0		0	36	0	NN	0	2	38	50	3819	5143
Dengue	0		1	0	0	NN	0	0	1	4	18	680
NEC[3]	0		1	22	0	0	0	1	24	14	532	498
Campylobacteriosis[4]	6	-	6	90	123	34	168	28	455	373	8110	6534
Chlamydial infection (NEC)[5]	2	NN	8	90	22	13	41	30	206	227	5337	5450
Donovanosis	0	NN	1	1	NN	NN	0	1	3	7	91	57
Gonococcal infection[6]	0		8	16	8	0	6	21	59	101	2324	2326
Hepatitis A	1		0	19	1	1	6	4	32	71	1554	1681
Hepatitis B incident	0		0	0	2	0	2	0	4	7	282	231
Hepatitis C incident[7]	-		0	-	0	-	-	-	0	1	15	23
Hepatitis C unspecified[7]	14			106		2	194	20	336	339	7516	6081
Hepatitis (NEC)	0		0	1	2	0	2	NN	5	1	42	61
Legionellosis	0		0	2	0	0	5	1	8	5	178	147
Leptospirosis	0		0	0	1	0	2	0	3	7	117	141
Listeriosis	0		0	0	0	0	1	0	1	2	23	45
Malaria	1		0	22	0	0	5	1	29	10	624	535
Meningococcal infection	0		0	5	0	0	8	2	15	22	310	310
Ornithosis	0	NN	0	0	0	0	1	0	1	15	73	81
Q fever	0		0	3	1	0	6	0	10	41	517	763
Salmonellosis (NEC)	1		8	43	33	3	45	16	149	178	4531	3885
Shigellosis[4]	2	-	3	4	3	0	6	5	50	29	622	615
Syphilis	0		6	18	2	0	24	0	50	94	1773	1911
Tuberculosis	0		0	3	4	0	16	2	25	72	861	880
Typhoid[8]	0		0	0	1	0	0	1	2	4	35	57
Yersiniosis (NEC)[4]	0	-	0	10	3	0	0	0	13	17	357	383

1. For HIV and AIDS, see Tables 2 and 3. For rarely notifiable diseases, see Table 7.
2. Totals comprise data from all States and Territories. Cumulative figures are subject to retrospective revision so there may be discrepancies between the number of new notifications and the increment in the cumulative figure from the previous period.
3. SA, Tas: includes Ross River virus and dengue.
4. NSW: only as 'foodborne disease' or 'gastroenteritis in an institution'.
5. WA: genital only.
6. NT, Qld, SA and Vic: includes gonococcal neonatal ophthalmia.
7. Comparative totals for 1993 comprise incident and unspecified cases.
8. NSW and Vic includes paratyphoid.

NN Not Notifiable.

NEC Not Elsewhere Classified.

- Elsewhere Classified.

Table 7. Notifications of rare[1] diseases received by State and Territory health authorities in the period 16 to 29 October 1994

DISEASES	Total this period	Reporting States or Territories	Year to date 1994
Botulism			0
Brucellosis	2	Qld	22
Chancroid			0
Cholera			3
Hydatid infection			37
Leprosy	1	Qld	9
Lymphogranuloma venereum			0
Plague			0
Rabies			0
Yellow fever			0
Other viral haemorrhagic fevers			0

1. Fewer than 50 cases of each of these diseases were notified each year during the period 1988 to 1993.

Table 8. Virology and serology laboratory reports by State or Territory[1] for the reporting period 20 October to 2 November 1994, historical data[2], and total reports for the year

	State or Territory [1]								Total this fortnight	Historical data [2]	Total reported this year
	ACT	NSW	NT	Qld	SA	Tas	Vic	WA			
MEASLES, MUMPS, RUBELLA											
Measles virus	2	2		33	5				42	32.2	977
Mumps virus				2					2	3.0	75
Rubella virus				60					60	61.0	710
HEPATITIS VIRUSES											
Hepatitis A virus	1	2		1	1		1		6	14.2	306
Hepatitis B virus		35		9	3		11		58	96.5	2,050
Hepatitis C virus	10	74		22	58	17	11		192	148.3	5,191
ARBOVIRUSES											
Ross River virus		1		17	1				19	17.2	1,504
Barmah Forest virus			1	1					2	4.5	207
Flavivirus (unspecified)							1		1	2.7	15
ADENOVIRUSES											
Adenovirus type 1							1		1	4.7	58
Adenovirus type 2							3		3	4.7	50
Adenovirus type 5							1		1	2.3	14
Adenovirus type 8							1		1	3.5	70
Adenovirus not typed/pending	1	10		17	10	1	7		46	58.3	1,097
HERPES VIRUSES											
Herpes simplex virus type 1	1	51	1	64	30	1	61		209	163.2	4,079
Herpes simplex virus type 2		53		61	31	1	48		194	188.7	4,467
Herpes simplex not typed/pending	6	22					1		29	24.7	579
Cytomegalovirus	3	21		16	2	1	22		65	62.5	1,492
Varicella-zoster virus		6		12	1		4		23	33.2	871
Epstein-Barr virus	1	4		8	20		8		41	65.2	1,210
OTHER DNA VIRUSES											
Molluscum contagiosum							1		1	.2	3
Parvovirus				1			1		2	7.5	70
PICORNA VIRUS FAMILY											
Coxsackievirus B3	1					1	2		4	.2	15
Echovirus type 6		2				1	3		6	.5	61
Echovirus type 9		1							1	3.0	6
Echovirus type 11		5							5	3.2	47
Echovirus type 14		1							1	.0	8
Echovirus type 30		2					1		3	6.5	265
Poliovirus type 1 (uncharacterised)		7							7	2.7	27
Poliovirus type 2 (uncharacterised)		2							2	1.0	27
Poliovirus type 3 (uncharacterised)		1							1	.3	12
Rhinovirus (all types)		3		3			17		23	38.0	877
Enterovirus not typed/pending		3		18			1		22	46.5	1,131

Table 8. Virology and serology laboratory reports by State or Territory[1] for the reporting period 20 October to 2 November 1994, historical data[2], and total reports for the year, continued

	State or Territory [1]								Total this fortnight	Historical data [2]	Total reported this year
	ACT	NSW	NT	Qld	SA	Tas	Vic	WA			
ORTHO/PARAMYXOVIRUSES											
Influenza A virus		3		1					4	29.5	946
Influenza A virus H_3N_2	1	5							6	1.5	74
Influenza B virus		2							2	22.2	117
Influenza virus - typing pending							2		2	.0	8
Parainfluenza virus type 2		1							1	.8	55
Parainfluenza virus type 3	1			11	2		9		23	30.3	326
Parainfluenza virus typing pending						1			1	.5	65
Respiratory syncytial virus	3	7		6	23	14	25		78	44.7	3,503
OTHER RNA VIRUSES											
HIV-1				2					2	3.7	75
Rotavirus	16	113			28	15	16		188	110.5	2,009
OTHER											
Chlamydia trachomatis not typed	2	12		15	13		5		47	95.7	2,084
Chlamydia species					6				6	1.5	21
Mycoplasma pneumoniae		2		15	1		12		30	84.5	838
Coxiella burnetii (Q fever)		2		3	2		2		9	15.0	264
Rickettsia australis							1		1	.2	4
Streptococcus group A		1		5					6	7.5	273
Bordetella pertussis							18	18	36	7.3	552
Bordetella species				3					3	5.3	199
Treponema pallidum		20		1			2		23	20.3	370
Toxoplasma gondii	1								1	2.0	67
TOTAL	50	476	2	407	237	53	299	18	1,542	1,582.8	39,423

1. State or Territory of postcode, if reported, otherwise State or Territory of reporting laboratory.
2. The historical data are the averages of the numbers of reports in 6 previous 2 week reporting periods: the corresponding periods of the last 2 years and the periods immediately preceding and following those.

Table 9. Virology and serology laboratory reports by clinical information for the reporting period 20 October to 2 November 1994

	Encephalitis	Meningitis	Other CNS	Congenital	Respiratory	Gastrointestinal	Hepatic	Skin	Eye	Muscle/joint	Genital	Other/unknown	Total
MEASLES, MUMPS, RUBELLA													
Measles virus					1		1	16				24	42
Mumps virus												2	2
Rubella virus					1			35		1		23	60
HEPATITIS VIRUSES													
Hepatitis A virus							3					3	6
Hepatitis B virus							13					45	58
Hepatitis C virus					1		39					152	192
ARBOVIRUSES													
Ross River virus					1					7		11	19
Barmah Forest virus								1				1	2
Flavivirus (unspecified)												1	1
ADENOVIRUSES													
Adenovirus type 1					1								1
Adenovirus type 2					2							1	3
Adenovirus type 5												1	1
Adenovirus type 8									1				1
Adenovirus not typed/pending					19	17						10	46
HERPES VIRUSES													
Herpes simplex virus type 1					5			86	10		55	53	209
Herpes simplex virus type 2					1			46			91	56	194
Herpes simplex not typed/pending						1		12			8	8	29
Cytomegalovirus				1	15	1			1		1	46	65
Varicella-zoster virus								17				6	23
Epstein-Barr virus					6							35	41
OTHER DNA VIRUSES													
Molluscum contagiosum								1					1
Parvovirus								1				1	2
PICORNA VIRUS FAMILY													
Coxsackievirus B3		3										1	4
Echovirus type 6		4			1							1	6
Echovirus type 9												1	1
Echovirus type 11		3										2	5
Echovirus type 14			1										1
Echovirus type 30		3											3
Poliovirus type 1 (uncharacterised)					1	1						5	7
Poliovirus type 2 (uncharacterised)						1						1	2
Poliovirus type 3 (uncharacterised)												1	1
Rhinovirus (all types)					19							4	23
Enterovirus not typed/pending			3		11	1			1	1	1	4	22

Table 9. Virology and serology laboratory reports by clinical information for the reporting period 20 October to 2 November 1994, continued

	Encephalitis	Meningitis	Other CNS	Congenital	Respiratory	Gastrointestinal	Hepatic	Skin	Eye	Muscle/joint	Genital	Other/unknown	Total
ORTHO/PARAMYXOVIRUSES													
Influenza A virus					2							2	4
Influenza A virus H_3N_2					1							5	6
Influenza B virus												2	2
Influenza virus - typing pending					2								2
Parainfluenza virus type 2												1	1
Parainfluenza virus type 3					20			1				2	23
Parainfluenza virus typing pending					1								1
Respiratory syncytial virus					70							8	78
OTHER RNA VIRUSES													
HIV-1												2	2
Rotavirus						181						7	188
OTHER													
Chlamydia trachomatis not typed									2		40	5	47
Chlamydia species					6								6
Mycoplasma pneumoniae	2				16			1				11	30
Coxiella burnetii (Q fever)							1			1		7	9
Rickettsia australis												1	1
Streptococcus group A												6	6
Bordetella pertussis					35							1	36
Bordetella species					2							1	3
Treponema pallidum												23	23
Toxoplasma gondii												1	1
TOTAL	2	13	4	1	240	203	57	217	15	10	196	585	1542

Table 10. Virology and serology laboratory reports by contributing laboratories for the reporting period 20 October to 2 November 1994

STATE OR TERRITORY	LABORATORY	REPORTS
Australian Capital Territory	Woden Valley Hospital, Canberra	52
New South Wales	Institute of Clinical Pathology & Medical Research, Westmead	210
	Prince Henry/Prince of Wales Hospitals, Sydney	123
	Royal Prince Alfred Hospital, Camperdown	24
	South West Area Pathology Service, Liverpool	104
Queensland	Queensland Medical Laboratory, West End	315
	State Health Laboratory, Brisbane	108
South Australia	Institute of Medical and Veterinary Science, Adelaide	237
Tasmania	Royal Hobart Hospital, Hobart	52
Victoria	Microbiological Diagnostic Unit, University of Melbourne	4
	Monash Medical Centre, Melbourne	27
	Royal Children's Hospital, Melbourne	96
	Victorian Infectious Diseases Reference Laboratory, Fairfield Hospital	173
Western Australia	Princess Margaret Hospital, Perth	18
TOTAL		1542