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Contributions covering any aspect of communicable diseases are invited. Instructions to authors can be found in CDI 1995; 20: 13.

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A HUMAN CASE OF ENCEPHALITIS DUE TO A LYSSAVIRUS RECENTLY IDENTIFIED IN FRUIT BATS

Anthony Allworth[1], *Keith Murray*[2] *and John Morgan*[3]

This is a report of the first known human case of illness apparently due to the newly identified lyssavirus. The lyssavirus had previously only been identified in fruit bats (flying foxes).

A 39 year old female living in Rockhampton became unwell in late October 1996 with pain and numbness in her left arm. She had been caring for a number of fruit bats for the preceding two to four weeks and had sustained numerous scratches to her left arm. There was no history of a bite from the fruit bats. She had previously cared for a number of other animals including cockatoos, dogs, cats, an insectivorous bat and marsupials, but had been caring for fruit bats in the recent period only.

Over the subsequent two to three days she developed fevers, headaches, dizziness and vomiting, and was admitted to hospital. Lumbar puncture revealed a pleocytosis with 100 white blood cells per mm^3 (80% lymphocytes, 20% polymorphs), five red blood cells per mm^3, glucose 3.7 mmol/L, and protein 1.23 gm/L. No organisms were seen on microscopy and there was no growth on culture.

She was treated with broad-spectrum antibiotics but her condition deteriorated and she developed diplopia and swallowing difficulties with evidence of a bulbar palsy. She required intubation for airway protection and was transferred to Royal Brisbane Hospital. Broad-spectrum antibiotics and intravenous acyclovir were continued.

Over days eight to ten of her illness, she developed complete extraocular muscle palsies, progressive weakness in all limbs and eventually a depressed conscious state. On one occasion she became extremely agitated then lapsed into her previous state. CT head scan revealed no abnormalities and repeat lumbar puncture revealed similar results to the first. Magnetic resonance imaging of the brain revealed several small areas of increased signal on T2 weighted images in the brain stem but was otherwise unremarkable. By day 11 she was areflexic, unresponsive, hyperthermic (39^oC) and ventilator dependent. An electroencephalogram was consistent with a diffuse encephalitis.

Serum and cerebrospinal fluid were sent to the CSIRO Australian Animal Health Laboratory in Geelong. Serum was found to contain antibodies to the lyssavirus group. Polymerase chain reaction performed on cerebrospinal fluid with primers specific for the lyssavirus recently identified in fruit bats produced a 250 base pair product. Cultures for virus isolation are continuing. No antibodies to equine morbillivirus were identified. Acute phase serology for Murray Valley encephalitis, dengue, Kunjin, Alfuy, Kokobera, Stratford, Edge Hill, Barmah Forest, Sinbis and Ross River viruses were all negative.

The patient was administered rabies immunoglobulin. Family members were treated with rabies immunoglobulin and commenced on a rabies post-exposure prophylaxis vaccination schedule. After a period of apparent stabilisation of her clinical condition, the patient deteriorated further with progressive evidence of cerebral damage and died.

This appears to be the first case of human infection with the newly recognised lyssavirus which has been identified in five fruit bats from Ballina, New South Wales and Townsville and Robina in Queensland. Further investigations involving some of the animals in contact with this patient as well as other animals are ongoing.

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PREVENTION OF HUMAN LYSSAVIRUS INFECTION

Recommendations of the Lyssavirus Expert Group meeting, Canberra, 11 November 1996[1]*. Endorsed by the Communicable Diseases Network Australia New Zealand.*

Introduction

This document provides a background to the newly identified bat lyssavirus and recommendations for prevention of human lyssavirus infections. The recommendations are based on the currently available information on the newly identified virus, and may be updated as more information becomes available.

Medical practitioners are advised to contact public health authorities regarding post-exposure vaccination.

Background

A lyssavirus which is likely to represent a new genotype was first identified in May 1996 from a fruit bat in northern New South Wales[1,2]. The virus has now been isolated from five animals belonging to two bat species in New South Wales and Queensland. The two species are the Black flying fox (*Pteropus alecto*) and the Little Red flying fox (*Pteropus scapulatus*). The first human case apparently due to this virus was identified in a woman from Queensland in November 1996[3].

The genus *Lyssavirus* falls within the family *Rhabdoviridae.* There are currently six genotypes recognised within the genus. These include the classic rabies virus, Lagos bat virus, Mokola virus, Duvenhage virus and the two European bat lyssaviruses. These viruses have not previously been reported to occur in Australia. The newly identified lyssavirus is closely related to, but is distinct from, the classic rabies virus. In laboratory animals, rabies vaccine and rabies immunoglobulin are protective against this new lyssavirus.

Non-rabies lyssaviruses usually do not spread among terrestrial animals and human infections are rare. The newly identified lyssavirus is currently only known to have infected fruit bats (flying foxes) and one human. Insectivorous bats are known to carry other lyssaviruses overseas and therefore cannot be discounted as a potential risk at this stage.

Rabies virus and other lyssaviruses are usually transmitted to humans via bites or scratches which provide direct access of the virus in saliva to exposed tissue and nerve endings. This means that most people would not be exposed to lyssavirus through casual contact with bats.

As the bat lyssavirus is closely related to classic rabies virus, infection may be prevented by rabies vaccine and rabies immunoglobulin. Recommendations for administering these are provided below. Further research is being conducted into the distribution and transmissibility of the virus.

Recommendations

PRE-EXPOSURE VACCINATION

Pre-exposure vaccination should be recommended to those occupationally or recreationally exposed to bats, where there is a risk of being bitten or scratched, for example:

- Bat carers
- Veterinary laboratory staff
- Veterinarians
- Wildlife officers (including local government officers)
- Managers of display or research colonies
- Members of indigenous communities who may catch bats for consumption
- Power line workers who frequently remove bats from power lines

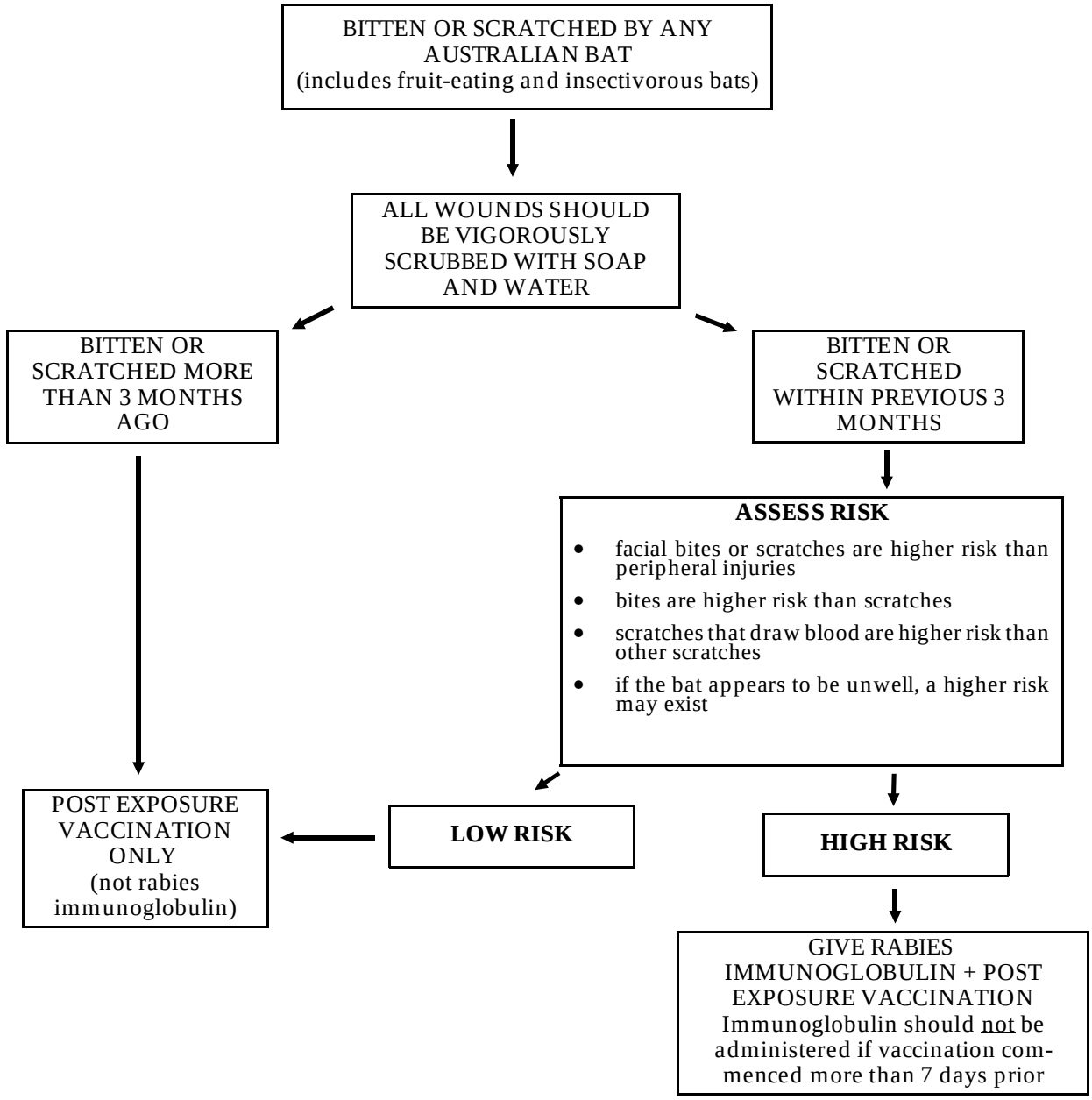
Pre-exposure vaccination consists of three deep subcutaneous or intramuscular doses of 1ml rabies vaccine given on days 0, 7 and 28. Doses should be given in the deltoid area, as rabies neutralising antibody titres may be reduced after administration in other sites. In children, administration into the anterolateral aspect of the thigh is also acceptable. Where possible, serum should be collected prior to vaccination and sent to the state health laboratory for possible examination when appropriate diagnostic tests become available.

POST-EXPOSURE MANAGEMENT AND VACCINATION

If a person is bitten or scratched by any Australian bat, the flow chart (Figure) should be used to determine the appropriate post-exposure treatment. Contact such as patting bats or exposure to urine and faeces does not constitute an

1. The members of the Lyssavirus Expert Group are: Dr Cathy Mead (Chair) (Commonwealth Department of Health and Family Services), Dr David Adams (Commonwealth Department of Primary Industries and Energy), Dr Tony Allworth (Royal Brisbane Hospital), Dr Craig Dalton (National Centre for Epidemiology and Population Health), Dr Kevin Doyle (Commonwealth Department of Primary Industries and Energy), Dr Kevin Dunn (Queensland Department of Primary Industries), Prof Ian Gust (CSL Ltd), Dr Dick Jane (New South Wales Department of Agriculture), Dr Jeremy McAnulty (New South Wales Health Department), Prof John MacKenzie (University of Queensland), Dr Keith Murray (Australian Animal Health Laboratories), Dr Graham Rouch (Department of Health and Community Services, Victoria), Dr Linda Selvey (University of Queensland) and Dr John Sheridan (Queensland Department of Health).

Figure. Bat exposure flow chart



at-risk exposure. Pre-exposure vaccination should be offered if the person has ongoing contact with bats.

In all cases, the wound should be scrubbed thoroughly, as soon as possible, with soap and water. Proper cleansing of the wound is the single most effective measure for reducing virus transmission. Where possible, the bat should be sent to the State veterinary laboratory for further investigation.

Post-exposure vaccination consists of five doses of 1ml of rabies vaccine given by deep subcutaneous or intramuscular injection, on days 0, 3, 7, 14 and 28. Doses should be given in the deltoid area, as rabies neutralising antibody titres may be reduced after administration in other sites. In children, administration into the anterolateral aspect of the thigh is also acceptable. Where possible, serum should be collected prior to vaccination and sent to the state health laboratory for possible examination when appropriate diagnostic tests become available.

Rabies immunoglobulin, when required, should be given as a single dose at the same time as the first dose of the post-exposure vaccination course. The dose is 20 International Units per kilogram body mass. Where the site permits, half the dose should be infiltrated into the wound and half given intramuscularly. If vaccination has been commenced more than seven days prior, rabies immunoglobulin should not be administered.

Rabies immunoglobulin is currently in short supply worldwide. An assessment should be made of the risk of virus transmission before immunoglobulin is given. Considerations as to the level of risk include:

- facial bites or scratches are higher risk than peripheral injuries;
- bites are higher risk than scratches;
- scratches that draw blood are higher risk than other scratches;
- if the bat appears to be unwell, a higher risk may exist.

For more information on rabies immunoglobulin and vaccine, see *The Australian Immunisation Procedures Handbook, 5th edition*[4].

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3. Allworth AM, Murray K, Morgan J. A human case of encephalitis due to a lyssavirus recently identified in flying foxes. *Comm Dis Intell* 1996;20:504.
4. National Health and Medical Research Council. *The Australian immunisation procedures handbook, fifth edition*. Canberra: Australian Government Publishing Service, 1994.

ANNUAL REPORT OF THE *CDI* VIROLOGY AND SEROLOGY LABORATORY REPORTING SCHEME, 1995

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Summary

There were 42,451 laboratory reports recorded by the Virology and Serology Laboratory Reporting Scheme in 1995. Following recent epidemic years, low numbers of measles reports were received. The number of reports of pertussis was similar to previous years. Ross River virus reports were markedly reduced compared with previous years. Six reports of Japanese encephalitis virus were recorded following the outbreak in the Torres Strait. For viral meningitis no single type of enterovirus was reported in large numbers as is usually the case. Consecutive epidemics of influenza A and influenza B were recorded in the winter months. Influenza A sub-type H_1N_1 was the predominating strain for the first time since 1988. Reports of respiratory syncytial virus were received in large numbers while rotavirus numbers remained low compared with previous years.
***Comm Dis Intell* 1996;20:507-524.**

Introduction

For many diseases laboratory identification of the agent of disease is essential for accurate diagnosis. For these diseases laboratory surveillance is useful. The laboratory can also provide additional information regarding specific characteristics of microorganisms. For example the antigenic characterisation of influenza virus is important in deciding the formulation of the vaccine for the following season.

The Virology and Serology Laboratory Reporting Scheme, LabVISE, began in 1977. It is a sentinel scheme which collects data on viruses and other agents (bacteria, chlamydial infections, coxiellas and rickettsias) diagnosed in virology and serology laboratories. Laboratories in all States and the Australian Capital Territory contribute to the scheme.

Data are reported in *Communicable Diseases Intelligence* (*CDI*) each fortnight. An annual report is produced each year[1,2,3]. This is the annual report for 1995.

Methods

Twenty-two laboratories currently contribute to the LabVISE scheme. Participation is voluntary. Included are both public and private laboratories with representation in all States and the Australian Capital Territory. A number of State reference laboratories are included.

Laboratories elect to submit data on either computer disk using LabVISE software, written in Epi Info, or on forms in the same format. Reports are submitted, collated and analysed and published in *CDI* each fortnight. Each record includes compulsory fields: laboratory; specimen collection date; patient name code; specimen source; the agent detected and the method of diagnosis. Additional optional fields include: specimen laboratory code number; sex; date of birth, or age; postcode; clinical diagnosis; and risk factors. Data presented in this annual report are based on reports with specimen collection dates in 1995.

Due to the limitations of the system, age group data are only available in unequal age groups, hence this must be borne in mind when interpreting figures of age-sex distribution.

Data derived from this scheme must be interpreted with caution. The number and type of reports received is subject to a number of biases. These include the number of participating laboratories which has varied over time. The locations of laboratories also create biases in the system as some jurisdictions are better represented than others. Also changes in diagnostic practices, particulary the introduction of new testing methodologies, may affect the number of laboratory reports received. The introduction of testing for hepatitis C in 1990 has resulted in an increase in the

Table 1. Laboratory reports with 1995 specimen collection dates, by contributing laboratory and State or Territory

State or Territory	Laboratory	Reports
Australian Capital Territory	Woden Valley Hospital, Canberra	794
New South Wales	Institute of Clinical Pathology and Medical Research, Westmead	1407
	Prince Henry Hospital and Prince of Wales Hospital, Sydney	1477
	Royal Alexandra Hospital for Children, Camperdown	677
	Royal Prince Alfred Hospital, Camperdown	371
	Royal North Shore Hospital, St Leonards	296
	South West Area Pathology Service, Liverpool	1712
Queensland	Nambour Hospital, Nambour	52
	Queensland Medical Laboratory, West End	10793
	State Health Laboratory, Brisbane	3616
South Australia	Institute of Medical and Veterinary Science, Adelaide	3776
Tasmania	Northern Tasmanian Pathology Service, Launceston	184
	Royal Hobart Hospital, Hobart	596
Victoria	Microbiological Diagnostic Unit, University of Melbourne	126
	Monash Medical Centre, Melbourne	798
	Royal Children's Hospital, Melbourne	2449
	Commonwealth Serum Laboratories, Melbourne	36
	Unipath Laboratories	436
	Victorian Infectious Diseases Reference Laboratory, Fairfield Hospital	4100
Western Australia	Princess Margaret Hospital, Perth	1251
	PathCentre Virology, Perth	6603
	Western Diagnostic Pathology	900
TOTAL		42451

Figure 1. The twenty most commonly reported agents, 1995 and 1992-94 average, as percentage of total reports for the period

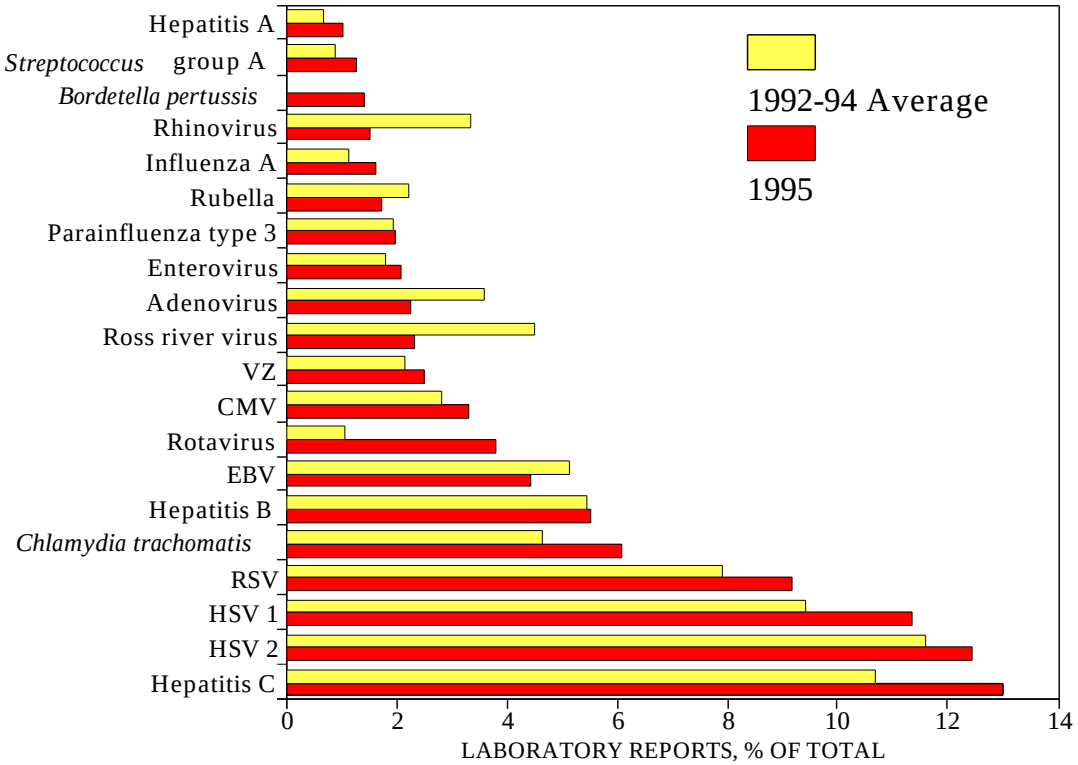


Table 2. Laboratory reports, 1995, by virus/organism and State or Territory

	State or Territory[1]									Average
	ACT	NSW	NT	Qld	SA	Tas	Vic	WA	Total	1992-94
MEASLES, MUMPS, RUBELLA										
Measles virus	1	26	15	64			21	26	153	684
Mumps virus		10		28	4		21	6	69	55
Rubella virus	4	139	3	369	23	15	52	131	736	701
HEPATITIS VIRUSES										
Hepatitis A virus	2	79	14	172	17		64	82	430	275
Hepatitis B virus	28	617	61	655	84	15	414	476	2350	1577
Hepatitis C virus	177	443	174	1332	810	316	224	2044	5520	3540
Hepatitis D virus		8		7	2		5	1	23	24
Hepatitis E virus				1			6	1	8	6
ARBOVIRUSES										
Ross River virus	2	29	164	640	16	10	6	121	988	1378
Barmah Forest virus	2	46	8	137	2		3	4	202	160
Dengue type 1		2		1					3	0
Dengue type 2		1							1	142
Dengue type 3		2							2	2
Dengue not typed			5					14	19	43
Japanese encephalitis virus				5				1	6	0
Kunjin virus			1					4	5	1
Flavivirus (unspecified)	2	15	1	7			20		45	42
ADENOVIRUSES										
Adenovirus type 1					13		19		32	44
Adenovirus type 2		3			13		21		37	58
Adenovirus type 3					38		28		66	87
Adenovirus type 4							2		2	14
Adenovirus type 5		2			6		6		14	13
Adenovirus type 6					2				2	1
Adenovirus type 7		1			17		8		26	9
Adenovirus type 8							22		22	37
Adenovirus type 9							2		2	3
Adenovirus type 10								1	1	0
Adenovirus type 11							3		3	2
Adenovirus type 19							3		3	1
Adenovirus type 26							2		2	1
Adenovirus type 30							2		2	0
Adenovirus type 35								1	1	1
Adenovirus type 37							2		2	1
Adenovirus type 42							1		1	0
Adenovirus type 46							2		2	1
Adenovirus not typed / pending	4	230	4	286	148	9	128	153	962	864
HERPESVIRUSES										
Herpes simplex virus type 1	11	489	41	1640	491	50	1207	883	4812	2876
Herpes simplex virus type 2	3	624	80	1985	491	41	983	1078	5285	3263
Herpes simplex not typed / pending	119	252		41	12	1	27	45	497	502
Herpes virus type 6		3							3	3
Cytomegalovirus	17	265	10	410	47	53	421	182	1405	1096
Varicella-zoster virus	7	139	4	410	86	1	198	227	1072	662
Epstein-Barr virus	8	263	29	852	269	15	178	273	1887	1028
Herpes virus group - not typed		5		1			7	19	32	14
OTHER DNA VIRUSES										
Papovavirus group		1			1		9		11	2
Molluscum contagiosum								3	3	4
Contagious pustular dermatitis (Orf virus)								1	1	2
Poxvirus group not typed				2			2		4	4
Parvovirus		3	1	14	14		15	55	102	65
PICORNA VIRUS FAMILY										
Coxsackievirus A9		6					1	1	8	21
Coxsackievirus A10							1		1	0
Coxsackievirus A16					1				1	17
Coxsackievirus A untyped / pending	1								1	0
Coxsackievirus B2	1				1		2		4	10
Coxsackievirus B3	4	4				1	2		11	15
Coxsackievirus B4		2							2	8
Coxsackievirus B5	1	1					2		4	14
Echovirus type 1					3				3	0
Echovirus type 3		12			1		3		16	9

Table 2. Laboratory reports, 1995, by virus/organism and State or Territory, continued

	State or Territory[1]								Total	Average 1992-94
	ACT	NSW	NT	Qld	SA	Tas	Vic	WA		
Echovirus type 4		1							1	0
Echovirus type 6	1				1		9	1	12	39
Echovirus type 7		2							2	25
Echovirus type 9	4	19					17		40	10
Echovirus type 11		2					2		4	56
Echovirus type 13		1							1	0
Echovirus type 14		35							35	12
Echovirus type 15					1				1	1
Echovirus type 18					1		1		2	1
Echovirus type 22		10					3		13	6
Echovirus type 23					1				1	0
Echovirus type 24					3				3	0
Echovirus type 25		2					1		3	2
Echovirus type 30	1	18		1			7	1	28	148
Echovirus type 31					1				1	0
Echovirus type 33					1				1	0
Echovirus not typed / pending								38	38	1
Poliovirus type 1 (uncharacterised)	1	20			2	1	3		27	28
Poliovirus type 2 (uncharacterised)		24			1		4		29	25
Poliovirus type 3 (uncharacterised)		10		1	1		1		13	15
Poliovirus not typed / pending		2							2	7
Rhinovirus (all types)	3	116		109	21		396	5	650	591
Enterovirus type 71 (BCR)							34		34	0
Enterovirus not typed / pending		94	6	374	2	1	156	256	889	681
ORTHO / PARAMYXOVIRUSES										
Influenza A virus	6	141	18	113	92	3	162	160	695	545
Influenza A virus H_1N_1		16	3	43	1		29		92	0
Influenza A virus H_3N_2				2			5	2	9	35
Influenza B virus	3	109	2	102	35	1	79	24	355	245
Influenza virus - typing pending								2	2	4
Parainfluenza virus type 1		2		3	11		11	5	32	197
Parainfluenza virus type 2		6		60	26	2	77	7	178	63
Parainfluenza virus type 3	20	129		302	45		230	108	834	346
Parainfluenza virus type 4				2					2	0
Parainfluenza virus typing pending						11	21	4	36	38
Respiratory syncytial virus	98	872	1	852	394	162	1002	507	3888	2419
Paramyxovirus (unspecified)							5		5	0
OTHER RNA VIRUSES										
HIV-1	1	5		85		9	5	21	126	49
HTLV-1			1					3	4	5
Rotavirus	159	304		26	278	86	433	330	1616	1422
Astrovirus		1					5		6	2
Calicivirus							1		1	6
Norwalk agent				2		3	42		47	11
Coronavirus								1	1	4
Small virus (like) particle		1					15		16	22
OTHER										
Chlamydia trachomatis - A-K		1							1	0
Chlamydia trachomatis not typed	64	287	137	1044	198	46	221	581	2578	1671
Chlamydia pneumoniae				1			1		2	0
Chlamydia psittaci		2		9	2	1	160	2	176	63
Chlamydia species		54		3	23	1			84	33
Mycoplasma pneumoniae		44	4	154	22	6	55	50	335	859
Coxiella burnetii (Q fever)		54		54	8		45	6	167	299
Rickettsia australis		3	2	7	2		10		24	2
Rickettsia tsutsugamushi			1	3			2		6	0
Rickettsia - Spotted fever group			1				1		2	0
Rickettsia species - other							3	4	7	6
Staphylococcus epidermidis				1					1	0
Streptococcus group A		41	213	292			7		553	211
Streptococcus species		1							1	2
Salmonella typhi		2							2	1
Salmonella paratyphi		2							2	0
Salmonella species								1	1	0
Yersinia enterocolitica	1	20		3			6	1	31	13
Campylobacter jejuni							3		3	0

Table 2. Laboratory reports, 1995, by virus/organism and State or Territory, continued

	State or Territory[1]								Total	Average 1992-94
	ACT	NSW	NT	Qld	SA	Tas	Vic	WA		
Brucella abortus				1					1	4
Brucella species		3		2			2		7	4
Bordetella pertussis	1	9	21	7		7	265	297	607	325
Bordetella species		15	12	234					261	141
Legionella pneumophila		4		1					5	1
Legionella longbeachae				2			2	18	22	5
Legionella species				1				10	11	12
Helicobacter pylori		4					3		7	0
Cryptococcus neoformans		7							7	1
Cryptococcus species	1	11		6			1		19	17
Leptospira pomona				4					4	4
Leptospira hardjo				7			2		9	15
Leptospira australis				3					3	3
Leptospira species		2	1	15				8	26	22
Treponema pallidum	1	276	69	42			16	51	455	326
Entamoeba histolytica		2		2			12	4	20	5
Toxoplasma gondii		78		16		1	12		107	44
Schistosoma species		4	3		2	4	92	74	179	2
Strongyloides stercoralis		3	10				8		21	1
Echinococcus granulosus		3		5			2	1	11	15
TOTAL	760	6600	1120	13057	3789	872	7847	8420	42451	30550

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

number of reports of this virus in subsequent years. The ability of laboratory tests to distinguish acute from chronic or past infection must also be considered in interpretation of the data. A report of herpes simplex virus may be due to either a new (primary) infection or a recurrrence of this virus, hence such data are of limited value in determining trends in the occurrence of such viruses. However laboratory data for acute infections such as influenza or respiratory syncytial virus (RSV) are more reliable indicators of the trends in the occurrence of these diseases.

As the risk factor field is frequently incomplete, no conclusions can be drawn as to the risk factors associated with the agents recorded in this scheme.

This is a sentinel scheme hence changes in incidence cannot be determined. However, general trends can be observed in the number of laboratory reports received, for example with respect to seasonality and the age-sex distribution of patients.

Results

In 1995, 22 laboratories contributed 42,451 reports to the LabVISE scheme (Tables 1 and 2).

Commonly reported viruses and other organisms

The twenty most commonly reported agents for 1995 accounted for 89% of reports (Figure 1). Hepatitis C remained the most commonly reported virus while herpes simplex virus type 2 (HSV2) ranked second.

Age and sex distribution

Sex and date of birth or age were recorded in 99% of cases. Overall the male:female ratio was 1:1. Young children were the most frequently represented group. Fourteen per cent of reports were for those under the age of 1 year and 25% were for the under 5 years age group (Figure 2). Many viral diseases are known to have higher attack rates in young children, particularly the respiratory viruses and the agents of viral gastroenteritis than in the older age groups.

Respiratory syncytial virus continued to be the most commonly reported virus in those aged less than 5 years (Figure 3), as has been the case in previous years. For persons aged between 5 - 24 years, and those aged 65 years or more, herpes simplex virus type 1 (HSV1) was the most common agent reported. Hepatitis C was the most commonly reported agent in the 25 - 44 years age group, with HSV2 the most common in the 45 - 64 years age group.

Figure 2. Laboratory reports and Australian population, 1995, by age group

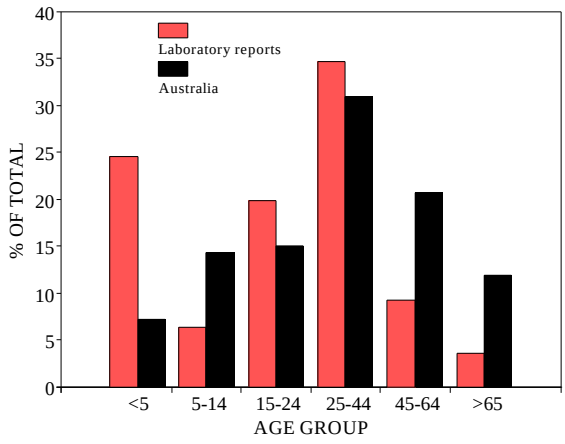


Figure 3. The five most frequently reported agents, 1995, by virus/organism and age group

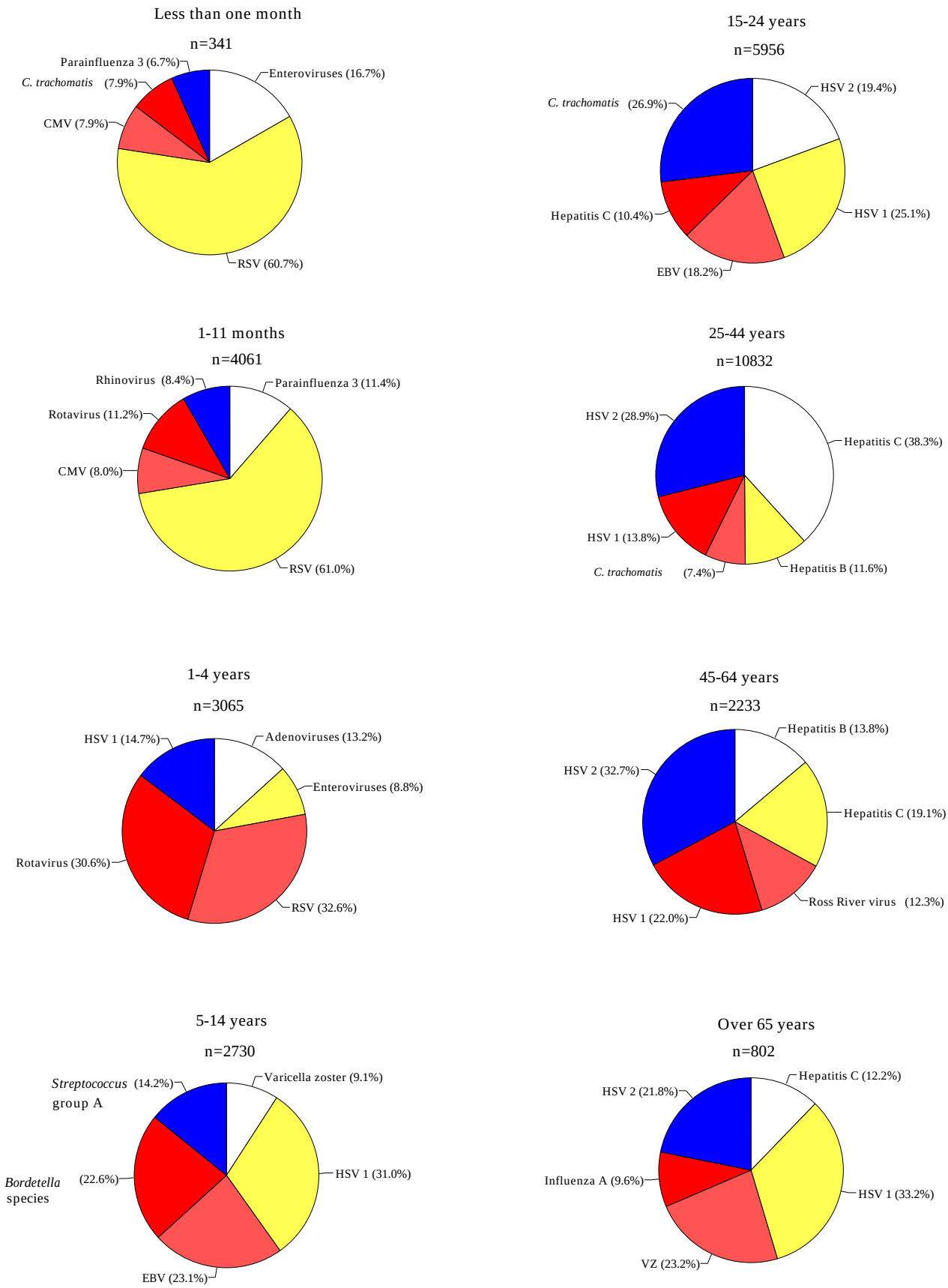


Figure 4. Diagnoses for which 100 or more reports were received in 1995

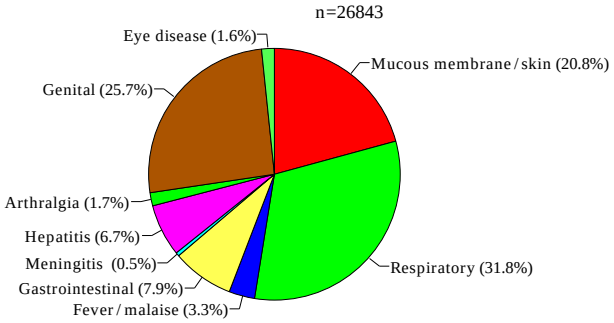
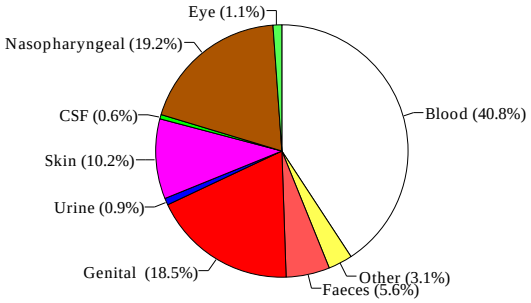


Figure 5. Laboratory reports, 1995, by specimen type



Clinical diagnosis

Clinical information was available for 29,797 reports (70%) in 1995. Nine clinical diagnoses were reported more than 100 times, accounting for 26,843 (63% of total) reports received (Figure 4). Respiratory tract infections were most commonly reported, followed by genital disease, skin / mucous membrane disease and gastrointestinal infections. The most frequently reported agents associated with common clinical diagnoses are shown in Table 3.

Twenty-two reports of sudden infant death syndrome were received in 1995. Associated agents included cytomegalovirus (5), coxsackievirus type A 9 (1), adenovirus not typed (6), and enteroviruses not typed (10).

Encephalitis was reported for 37 patients. The following agents were diagnosed in association with encephalitis: measles (2), Japanese encephalitis (5), HSV 1 (1), HSV 2 (1), HSV not typed (9), cytomegalovirus (CMV) (3), varicella zoster (VZ) (3), Epstein-Barr virus (EBV) (3), enterovirus type 71 (1), enterovirus not typed (3), influenza A (2), parainfluenza virus type 3 (1), RSV (1), rotavirus (1) and small round virus (1).

Twenty-five reports of congenital disease were received. Associated agents included hepatitis B (1), hepatitis C (3), adenovirus not typed (1), HSV 1 (1), HSV 2 (1), CMV (13) enterovirus not typed (1), and *Treponema pallidum* (4).

There were 23 reports of myocarditis / pericarditis received. Associated agents included mumps (1), hepatitis B (1), hepatitis C (1), adenovirus not typed (1), CMV (1), EBV (1), rhinovirus (1), untyped enterovirus (5), influenza A (4), *Chlamydia pneumoniae* (2), *Rickettsia* species (1), *Streptococcus* group A (3) and *Legionella longbeachae* (1).

Risk factors

There were 1,574 reports (4%) which included risk factor information. Of these, 8.7% were HIV / AIDS patients, 45.2% reported injecting drug use, 14.6% were transplant recipients, 24% were pregnant and 7.5% reported other risk factors.

Specimen type

Blood was the most commonly reported specimen type, accounting for 41% of reports in 1995 (Figure 5). This was followed by nasopharyngeal specimens, genital, skin and faeces.

Method of diagnosis

With respect to method of laboratory diagnosis, 41% of reports were for virus isolation, 41% antigen detection and 36% antibody detection. Some reports had more than one method of diagnosis.

Viruses most commonly diagnosed by culture were HSV types 1 and 2, RSV, the adenoviruses and CMV (Table 4).

Enzyme-immunoassay (EIA) was the most frequently reported method of antigen detection (Table 5), followed by immunofluorescence (IF). Antigen detection was the method of diagnosis for hepatitis B (EIA), adenoviruses (IF, EIA and latex agglutination), the herpesviruses (EIA, IF and nucleic acid detection), the influenza viruses, the parainfluenza viruses and RSV (IF and EIA), rotavirus (EIA, latex agglutination and electron microscopy), Norwalk agent, small virus-like particles (electron microscopy, EM) and *Chlamydia trachomatis* (EIA, IF and nucleic acid detection).

For 75% of serological diagnoses, EIA was the method af choice, followed by IF (Table 6). The most commonly reported criterion was IgM detection (37% of antibody diagnoses) followed by single high titre (28%), total antibody (23%), IgA detection (3%), four-fold rise in titre (3%), and other (6%).

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

Table 3. The most frequently reported clinical diagnoses, by frequently reported agents, 1995

	Lower respiratory tract disease (n = 3565)		Upper respiratory tract disease (n = 1760)	
Rank	Virus / organism	Reports	Virus / organism	Reports
1	Respiratory syncytial virus	1813	Respiratory syncytial virus	365
2	Parainfluenza virus type 3	247	*Bordetella pertussis*	277
3	Cytomegalovirus	203	Parainfluenza virus type 3	145
4	Rhinovirus	181	Rhinovirus	194
5	*Bordetella* species	142	Epstein-Barr virus	131
6	*Mycoplasma pneumoniae*	141	Herpes simplex virus type 1	109
7	Adenoviruses (all)	128	Influenza A	100
8	Influenza A	100	Adenoviruses	97
9	*Bordetella pertussis*	97	Enteroviruses	89
10	Enterovirus (not typed)	84	Cytomegalovirus	59

	Skin / mucous membrane disease (n=5573)		Muscle / joint disease (n=454)	
Rank	Virus / organism	Reports	Virus / organism	Reports
1	Herpes simplex virus type 1	2544	Ross River virus	303
2	Herpes simplex virus type 2	1477	Group A Streptococcus	51
3	Varicella-zoster virus	808	Barmah Forest virus	36
4	Rubella	194	Rubella	14
5	Herpes simplex (not typed)	137	Parvovirus	12
6	Enterovirus (not typed)	66	Cytomegalovirus	5
7	Measles	49	Epstein-Barr virus	4
8	Ross River virus	47		
9	Cytomegalovirus	22		
10	Barmah Forest virus	11		

	Gastrointestinal disease (n=2131)		Hepatitis (n=1800)	
Rank	Virus / organism	Reports	Virus / organism	Reports
1	Rotavirus	1552	Hepatitis C	1010
2	Adenoviruses (all)	300	Hepatitis B	496
3	Enteroviruses	144	Hepatitis A	229
4	Norwalk agent	45	Cytomegalovirus	21
5	Small round viruses	15	Epstein-Barr virus	17
6			Hepatitis D	10
7			Hepatitis E	4

	Meningitis (n=126)		Eye disease (n=439)	
Rank	Virus / organism	Reports	Virus / organism	Reports
1	Enteroviruses (untyped)	53	Herpes simplex virus type 1	214
2	Echovirus type 30	13	Adenovirus (not typed)	71
3	Echovirus type 9	11	Cytomegalovirus	30
4	Cytomegalovirus	7	Adenovirus type 8	20
5	Echovirus type 6	6	Adenovirus type 3	10
6	Herpes simplex virus (not typed)	6	Adenovirus type 7	6
7	Coxsackievirus B5	4	Herpes simplex virus (not typed)	4
8			Herpes simplex virus type 2	3
9			Enterovirus	2

	Genital disease (n=6901)		Reticuloendothelial disease (n=65)	
Rank	Virus / organism	Reports	Virus / organism	Reports
1	Herpes simplex virus type 2	3392	Epstein-Barr virus	56
2	*Chlamydia trachomatis*	1960	Cytomegalovirus	1
3	Herpes simplex virus type 1	1330	Rubella	1
4	Herpes simples virus not typed	104		
5	*Treponema pallidum*	53		

Table 4. Agents for which there were 200 or more reported isolations, 1995

Agent	Isolate reports	%
Herpes simplex virus type 2	5217	30.9
Herpes simplex virus type 1	4650	27.5
Respiratory syncytial virus	1392	8.2
Adenoviruses	856	5.1
Cytomegalovirus	834	4.9
Enteroviruses	745	4.4
Parainfluenza viruses	671	4.0
Rhinoviruses	649	3.8
Chlamydia trachomatis	542	3.2
Influenza viruses	482	2.9
Varicella-zoster virus	456	2.7
Herpes simplex virus (not typed)	391	2.3
TOTAL ISOLATES	16885	100

Table 5. Method of antigen detection, 1995

Method	Reports	%
Enzyme immunoassay	3865	39.8
Immunofluorescence	3698	38.1
Nucleic acid detection	1179	12.1
Latex agglutination	476	4.9
Radio immunoassay	200	2.1
Electron microscopy	185	1.9
Other	105	1.1
TOTAL	9708	100

Table 6. Method of antibody detection, 1995

Method	Reports	%
Enzyme immunoassay	11538	75.3
Immunofluorescence	1008	6.6
Complement fixation	961	6.3
Latex agglutination	445	2.9
Haemagglutination inhibition	270	1.8
Particle agglutination	245	1.6
Other	863	5.6
TOTAL	15330	100

Reports by organism

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

Measles, mumps and rubella

Measles virus

For 1995, 153 reports of measles were received. This is the lowest figure since 1989 (Figure 6). More reports were received for the early months of the year, representing the end of the 1993-1994 epidemic. The largest number of reports received was for the 15 - 24 years age group (Figure 7), as has been the case in recent years. The male:female ratio was 1:1.2, however there was a predominance of males in the 0 - 4 years age group, where the male:female ratio was 2:1. Two reports of encephalitis and 2 of meningitis were included. Laboratory diagnosis was by virus isolation (1) and antibody detection (152 including 146 IgM detections, 4 single high titres and 2 other).

Figure 6. Measles laboratory reports, 1982 to 1995, by year of specimen collection

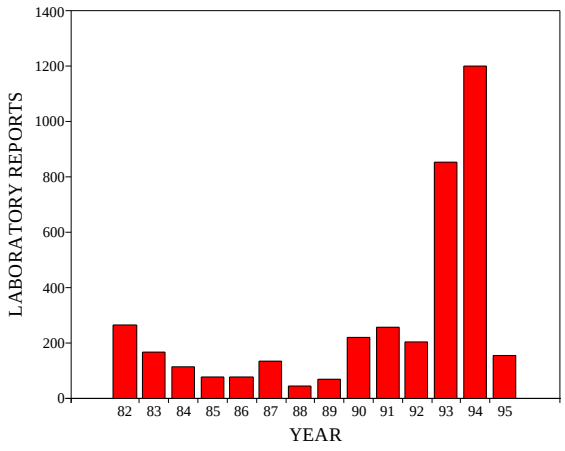
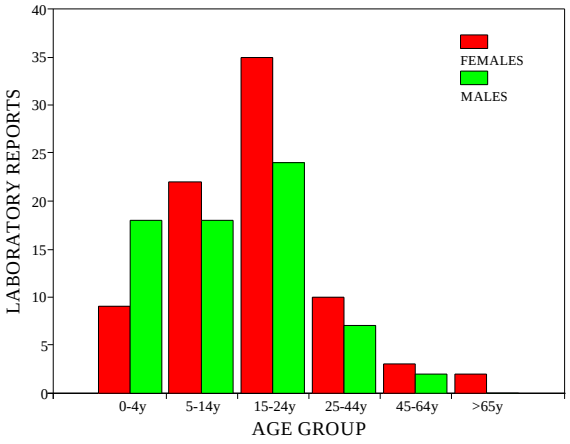


Figure 7. Measles laboratory reports, 1995, by age group and sex



Mumps virus

Mumps was reported for 69 patients, similar to the number of reports received in recent years. All age groups were included, with the male:female ratio being 1:1.2. Three cases of mumps meningitis were included. One diagnosis was by virus isolation, with the remainder by serology (59 IgM detections, 8 single high titres and one four-fold rise in titre).

Rubella virus

The number of rubella virus reports fell to 736 in 1995, the lowest number since 1991. An increased number of reports was received for the spring months, as is usually the case (Figure 8). The 15 - 24 years age group accounted for 50% of all reports and had a predominance of males (Figure 9). One hundred and twenty-three reports were for women of child-bearing age (15 - 44 years), 7 of whom were pregnant. Overall, there was a marked predominance of males, the male:female ratio being 1.8:1. Eight diagnoses were by virus isolation, the remaining 728 by serology (717 ELISA, 4 haemagglutination inhibition (HAI), one complement fixation test (CFT) and 6 other; 691 IgM detections, 30 four-fold rise in titre and 7 single high titres).

Figure 8. Rubella laboratory reports, 1993 to 1995, by month of specimen collection

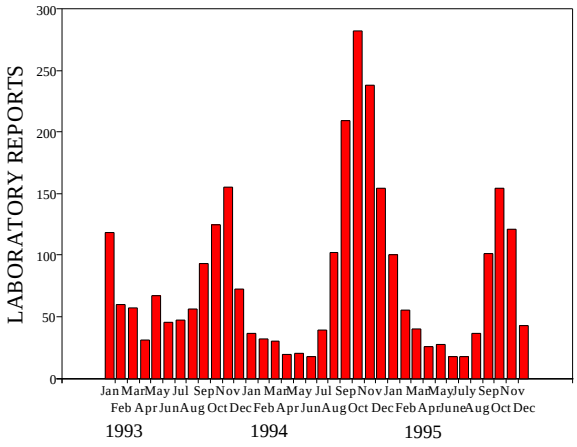
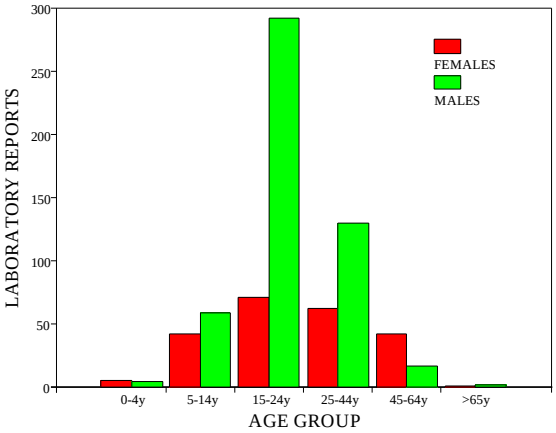


Figure 9. Rubella laboratory reports, 1995, by age group and sex

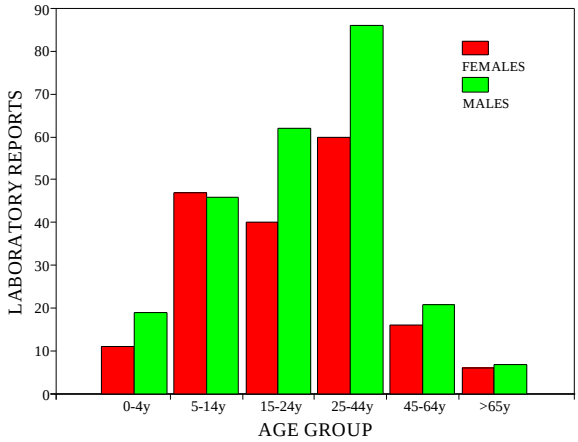


Hepatitis viruses

Hepatitis A virus

There were 430 reports of hepatitis A received with specimen collection dates in 1995, more than the average of 275 for the previous 3 year period. Fewer reports were received for June and July than for other months. Males were more commonly reported than females, the male:female ratio being 1.4:1. This sex difference was most apparent for the adult age groups (Figure 10). All diagnoses were by ELISA IgM detection.

Figure 10. Hepatitis A laboratory reports, 1995, by age group and sex



Hepatitis B virus

Positive hepatitis B serology was reported for 2,350 patients, 521 of whom had 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 they may have been acute or chronic infections. The male:female ratio was 1.1:1. Most reports (78%) were for individuals in the 15 - 44 years age group. Four hundred and ninety-six patients (21%) were reported to have clinical hepatitis. Risk factors included injecting drug use (27) and pregnancy (172).

Hepatitis C virus

There were 5,520 reports of hepatitis C received for 1995. Although this is a slight reduction from the previous year, the number of reports has remained high following the introduction of testing in 1990. Current testing methods do not distingusih between acute and chronic infection with this virus. In addition, while 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. The male:female ratio was 1.6:1 and 4,145 reports (75%) were for the 25 - 44 years age group. One thousand and ten patients (18%) were reported to have clinical hepatitis. Reported risk factors included injecting drug use (566, 10%) and pregnancy (46, 1%).

Hepatitis D virus

Twenty-three reports of hepatitis D were received for 1995, similar to previous years. Included were 18 males and 4 females (the sex of one case was not stated), 18 of whom were in the 25 - 44 years age group. Ten patients were reported to have clinical hepatitis. One patient had a history of injecting drug use.

Hepatitis E virus

Hepatitis E was reported for 8 patients in 1995, 4 males and 4 females all in the 5 - 44 years age group. Two patients had recently travelled overseas and one was pregnant. Clinical symptoms included 4 with hepatitis. All laboratory diagnoses were by ELISA.

Arboviruses

Ross River virus

There were 988 reports of Ross River virus received in 1995. This is the lowest number of reports recorded since 1992 (Figure 11). The number of reports peaked in March and April, as is normally the case. Most reports were from Queensland (65%), the Northern Territory (17%) and Western Australia (12%). The male:female ratio was 1:1 and most patients (80%) were in the 25 - 64 years age range. The diagnosis was confirmed (four-fold change in titre) in 38 cases, the remainder being presumptive diagnoses (IgM detected). Forty-seven patients (5%) were reported to have a rash, 38 (4%) general malaise and 303 (31%) muscle / joint disease.

Barmah Forest virus

Barmah Forest virus was reported for 202 patients in 1995, fewer than the 273 reported the previous year. Most reports were from Queensland (137) and New South Wales (46). Included was the outbreak on the South Coast of New South Wales[4]. The maximum monthly number of reports was received for April (Figure 12). The male:female ratio was 1:1.1 and adults aged 25 - 64 years were primarily affected, accounting for 86% of all reports. Thirty-six patients were reported to have joint / muscle disease, 11 skin disease and 8 general malaise. Only one diagnosis was confirmed (four-fold rise in titre), the remainder being presumptive (IgM detected).

Dengue

A total of twenty-five reports of dengue were received in 1995.

Three reports of dengue type 1 were received, 2 from New South Wales and one from Queensland. Included were 2 males in the 15 - 24 years age group and a female in the 25 - 44 years age group. All diagnoses were presumptive (IgM detected).

A single report of dengue type 2 was received from New South Wales for a female in the 25 - 44 years age group. Few reports have been received since the outbreak of 1992 - 1993 (Figure 13). Diagnosis was by IgM detection. No risk factor information was available.

Two reports of dengue type 3 were received, both for males from New South Wales in the 25 - 44 years age range.

Figure 11. Ross River virus laboratory reports, 1982 to 1995, by year of specimen collection

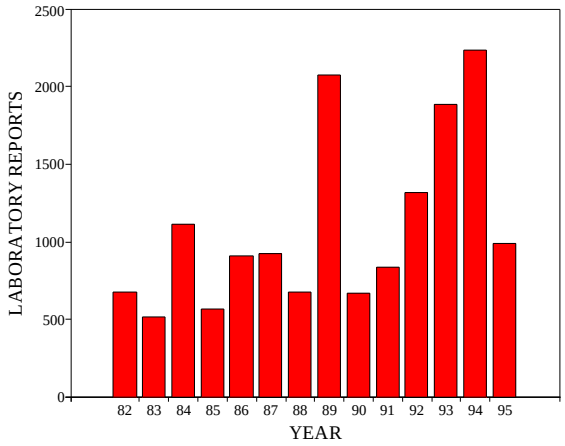


Figure 12. Barmah Forest virus laboratory reports, 1994 to 1995, by month of specimen collection

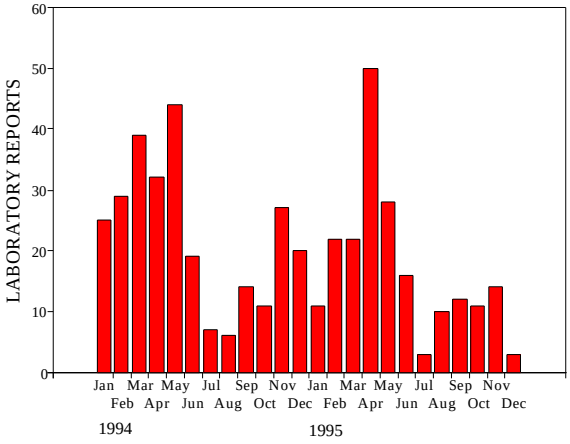
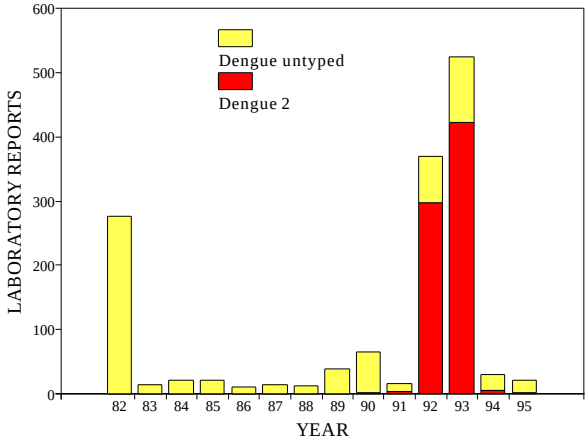


Figure 13. Dengue laboratory reports, 1982 to 1995, by year of specimen collection



Both were reported to have had a recent history of overseas travel and both were diagnosed by IgM detection.

There were 19 reports of untyped dengue received in 1995, fewer than in previous years (Figure 13). Twelve patients were reported to have had a history of overseas travel. Two diagnoses were confirmed (four-fold rise in titre), the remainder were presumptive (IgM detected).

Japanese encephalitis

Six reports of Japanese encephalitis were received in 1995. Five patients were reported to have encephalitis. All were males aged 5 - 44 years. Included was the outbreak reported from the Torres Strait[5]. All diagnoses were by IgM detection.

Kunjin virus

Kunjin virus was reported for 5 patients in 1995, one from the Northern Territory and 4 from Western Australia. Included were 4 males in the 25 - 64 years age group and one female in the 65 - 74 years age group. Two diagnoses were by four-fold rise in titre and 3 by IgM detection.

Flaviviruses not typed

There were 45 reports of untyped flavivirus received in 1995. The male:female ratio was 1.2:1 and all patients were in the 15 - 74 years age range. Thirteen had reported a recent history of overseas travel. Fourteen diagnoses were by four-fold rise in titre and 31 by IgM detection.

Adenoviruses

There were 1,182 reports of adenovirus received in 1995, of which 220 (19%) were typed. The proportion of typed viruses is the same as that recorded in 1994. There was a predominance of males, the male:female ratio being 1.5:1. Most patients were in the under five years age group (Figure 14). Adenovirus type 3 was most commonly reported (66 reports, 30% of those typed), followed by type 2 (37 reports, 17%), type 1 (32, 15%) and type 7 (26, 12%).

Respiratory symptoms were reported in association with types 1, 2, 3, 4, 5, 7 and 11; eye disease in association with types 2, 3, 4, 7, 8, 19 and 37; and gastrointestinal disease with types 9 and 26. One report of sudden infant death syndrome was received in association with an adenovirus. Five patients were HIV positive, 5 were transplant recipients, and 59 had a malignancy.

More reports were received for the second half of the year, with a peak in November. Adenovirus type 3 was reported most commonly in November and December. Adenovirus type 7 peaked in November and adenovirus type 8 in March and April.

Specimen types included faeces (380), eye (140), nasopharyngeal (540), blood (44), urine (14) and other (64). Two hundred and eighty-three diagnoses (24%) were established by antigen detection, 856 (72%) by virus isolation and 43 (4%) 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 chickenpox and shingles), thus care must be exercised in the interpretation of these data.

Herpes simplex virus type 1

There were 4,812 reports of HSV 1, with the male:female ratio being 1:1.7. Patients aged 15 - 44 years accounted for 62% of all reports (Figure 15). Clinical manifestations included skin disease (53%), genital disease (28%) and eye disease (5%). One patient was reported to have meningitis. Risk factors included HIV / AIDS (13), transplant recipient (29), malignancy (10), pregnancy (2) and immunosuppression (4). Specimen types included skin (2,185), genital (1,508), nasopharyngeal (408), eye (252) and bronchial washings (33). Diagnosis was by virus isolation (4,650 reports); serology (15: 11 IgM detections and 4 single high titres); and antigen detection (148: 128 IF and 20 EIA).

Figure 14. Untyped adenovirus laboratory reports, 1995, by age group and sex

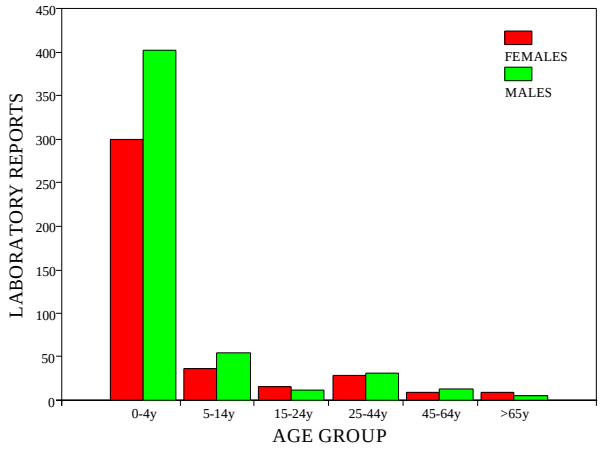


Figure 15. Herpes simplex virus type 1 laboratory reports, 1995, by age group and sex

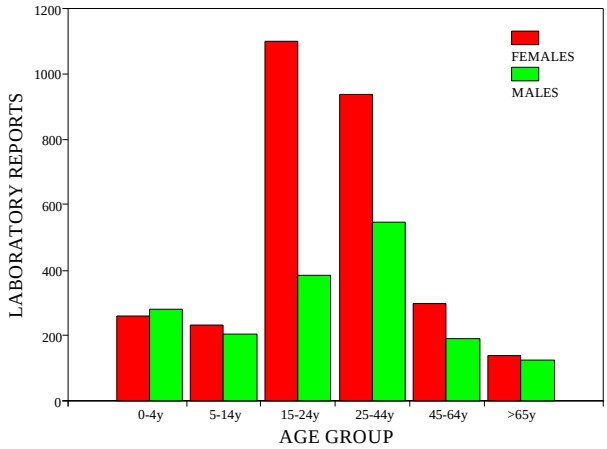


Figure 16. Herpes simplex virus type 2 laboratory reports, 1995, by age group and sex

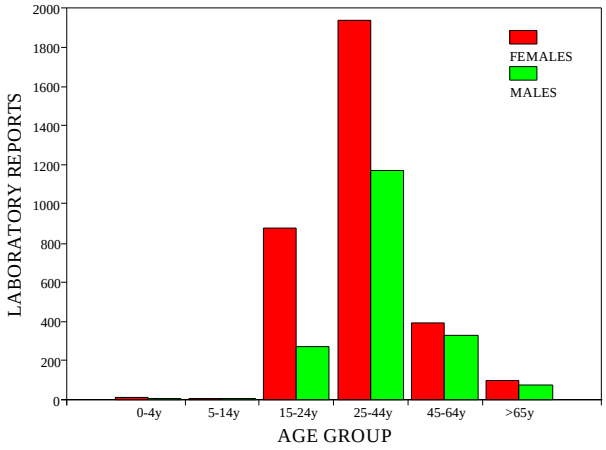
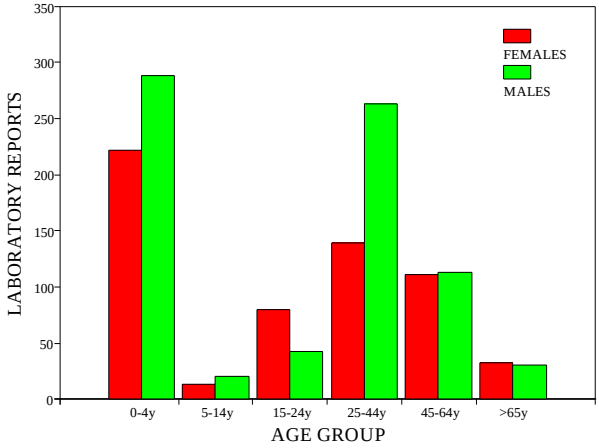


Figure 17. Cytomegalovirus laboratory reports, 1995, by age group and sex



Herpes simplex virus type 2

HSV 2 was reported for 5,285 patients in 1995, with a predominance of females, the male:female ratio being 1:1.8. The sex difference was most apparent for those aged 15 - 44 years, with this age group accounting for 81% of all reports (Figure 16). This may be due to higher case ascertainment in women of child-bearing years. Genital disease was reported most commonly (72%), followed by skin disease (21%). Eighteen patients were HIV positive and 9 were pregnant. The most common specimen type was genital (3,806), followed by skin (1,127), nasopharyngeal (21) and eye (3). Method of diagnosis included 5,217 virus isolations, 4 serological diagnoses (3l IgM detections, one single high titre) and 78 antigen detections (20 EIA and 57 IF).

Herpes simplex virus not typed

A total of 497 herpes simplex virus reports were for untyped viruses (5% of all herpes simplex reports). The male:female ratio was 1:1.2, and 35% of reports were for the 25 - 44 years age group. Clinical diagnosis included skin disease (137), genital (104), respiratory (15), encephalitis (9) and meningitis (6). Specimen types included skin (99), blood (74), nasopharyngeal (74), genital (120) and eye (7). There were 391 diagnoses by virus isolation, 73 by serology (15 CFT and 58 EIA; 56 IgM detections, 3 four-fold rise in titre and 13 single high tires) and 33 by antigen detection (17 nucleic acid detection, 13 IF, 4 EIA and 3 other).

Herpes virus type 6

Human herpes virus type 6 was reported for 3 patients in 1995, 2 males and one sex not stated. All were under 44 years of age. All diagnoses were by IgM detection.

Cytomegalovirus

CMV was reported for 1,405 patients. The male:female ratio was 1.3:1. This virus was most commonly diagnosed for those in the 1 - 11 months and 25 - 44 years age groups (Figure 17). Six patients were reported to have died. Fifty-two were HIV positive, 108 transplant recipients, 14 immunosuppressed, 7 were pregnant and 6 had a malignancy. Clinical manifestations included 434 respiratory (59 upper, 203 lower, 172 unspecified), 75 malaise / fever and 21 hepatitis. Specimen types included nasopharyngeal (415), blood (562), urine (217), bronchial washings (75), leucocytes (34), and post-mortem (5). Diagnosis was by virus isolation (834), antigen detection (49: 28 IF, 12 nucleic acid detection, and 9 other); serology (526: 7 CFT, 501 EIA, 17 IF and one other; 505 IgM, 3 four-fold rises 15 single high titres, 3 other).

Varicella-zoster virus

There were 1,072 reports of this virus in 1995. Due to the recurrent nature of this virus and the limitations of current testing methods, a distinction frequently cannot be made between reports due to chickenpox and those due to shingles.

The male:female ratio was 1:1.1, and all age groups were represented. Clinical manifestations included 808 reports of skin disease, 3 of encephalitis, one of meningitis and 5 of eye disease. Risk factors included 15 pregnancies, 6 patients wtih malignancies, 6 who were transplant recipients and one who was immunosuppressed. Source of specimens included skin (790) and blood (212). Four hundred and fifty-six diagnoses were established by virus isolation, 406 by antigen detection (388 IF, 6 EIA, nucleic acid detection 12), and 211 serological diagnoses (12 CFT, 174 EIA, 25 IF; 189 IgM, 12 single high titre, 9 four-fold rises in titre).

Epstein-Barr virus

Epstein-Barr virus was reported for 1,187 patients in 1995. The male:female ratio was 1:1.1 and the majority (58%) of reports were for the 15 - 24 years age group. Malaise / fever

was reported for 112 patients. Other illnesses included respiratory (179), reticuloendothelial disease (38), hepatitis (17), encephalitis (3) and meningitis (3). Risk factors included pregnancy (1) and transplant recipient (1).

Other DNA viruses

There were 102 reports of parvovirus received. The male:female ratio was 1:3.3. Sixty-one per cent of reports were for females in the 15 - 44 years age group (Figure 18), case ascertainment probably being higher for females of child-bearing years compared with other groups. One patient was reported to be pregnant and one had HIV / AIDS. Clinical manifestations included 28 reports of skin disease and 12 of arthralgia.

Eleven reports of papovavirus were received, all for males.

Molluscum contagiosum was reported for 3 patients, all males aged 25 - 44 years. Diagnosis was by electron microscopy in all cases.

One report of Orf virus was received for a male in the 15 - 24 years age group. Diagnosis was by EM.

Four reports of untyped poxvirus were received in 1995 for 2 males and 2 females.

Picornavirus family

Coxsackieviruses

Ten reports of type A coxsackieviruses were received in 1995, type A9 (8, including one death), type 10 (1) and type A16 (1). All diagnoses were by virus isolation.

Coxsackievirus type B was reported for 21 patients in 1995. Included were type B2 (4), type B3 (11), type B4 (2) and type B5 (4). All were diagnosed by virus isolation.

Echovirus type 9

Forty reports of echovirus type 9 were received in 1995, the highest number received since 1992 (Figure 19). The number of reports peaked in September and October. Tweny-one patients (53%) were under the age of 25 years. Included were 11 reports of meningitis, 6 of respiratory tract disease, 2 of skin disease and 1 of eye disease. Specimen types included CSF (11), eye (1), faeces (5), nasopharyngeal (20) and other (3). All diagnoses were by virus isolation.

Echovirus type 14

Echovirus type 14 was reported for 35 patients in this period, more than for any other year recorded by this scheme (Figure 20). Most reports were received for November and December. The male:female ratio was 1.4:1, and 24 (69%) reports were for children under the age of 5 years. Included were 2 reports of meningitis and 3 of respiratory tract disease. All diagnoses were by virus isolation. Specimen types included CSF (5), faeces (15), nasopharyngeal (10) and other (5).

Figure 18. Parvovirus laboratory reports, 1995, by age group and sex

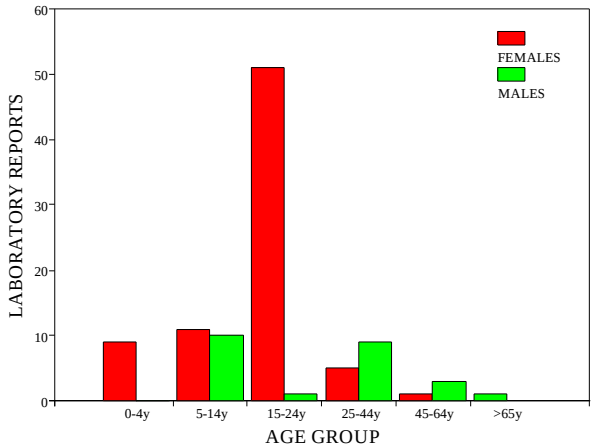


Figure 19. Echovirus type 9 laboratory reports, 1982 to 1995, by year of specimen collection

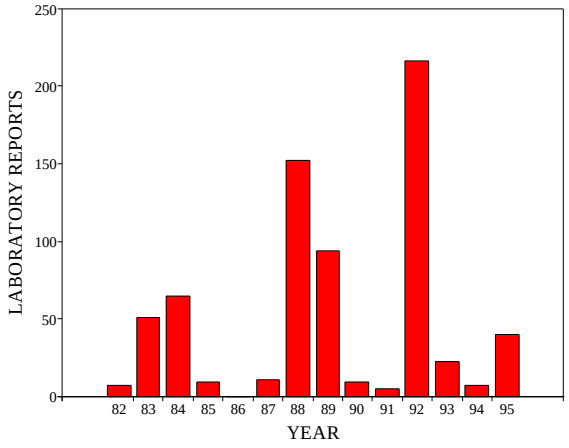


Figure 20. Echovirus type 14 laboratory reports, 1982 to 1995, by year of specimen collection

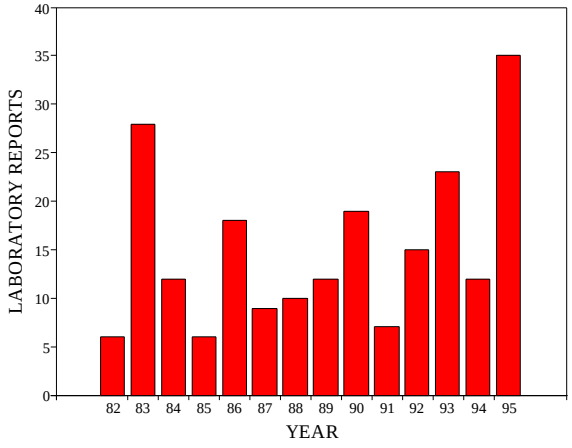


Figure 21. Echovirus type 30 laboratory reports, 1982 to 1995, by year of specimen collection

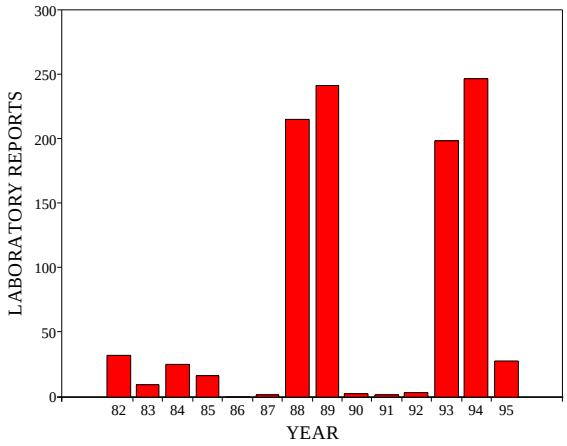
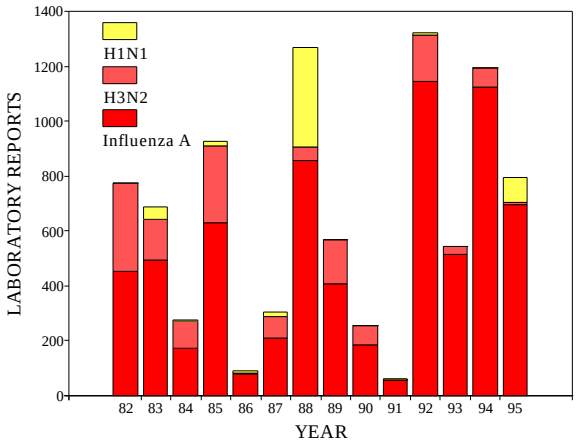


Figure 22. Influenza A laboratory reports, 1982 to 1995, by year of specimen collection



Echovirus type 30

Echovirus type 30 was reported for 28 patients in 1995, fewer than were recorded in 1993 and 1994 (Figure 21). Most reports had specimen collection dates in January. The male:female ratio was 1.2:1. All reports were for those aged 44 years or under. Thirteen patients were reported to have meningitis. All diagnoses were by virus isolation. Specimen types included CSF (15), eye (1), faeces (3) and nasopharyngeal (9).

Polioviruses

Polioviruses were reported for 71 patients (27 type 1; 29 type 2; 13 type 3; and 2 untyped), all uncharacterised. The male:female ratio was 1.4:1 and 86% were under the age of one year. All were diagnosed by virus isolation.

Rhinoviruses

Rhinoviruses were reported for 650 patients, fewer than in recent years. A peak in the number of reports was observed for September to November. The male:female ratio was 1.5:1, with 53% of reports being for the 1 - 11 months age group. Eighty per cent were under the age of 5 years. Included were 194 cases of upper respiratory tract disease, 181 of lower respiratory tract infection and 149 respiratory infection (unspecified). Ten patients were transplant recipients and 7 had a malignancy. Specimen types included nasopharyngeal specimens (611), bronchial washings (7) and other (32).

Ortho/paramyxoviruses

Influenza

Influenza reports for 1995 have been reported separately in the annual report of national influenza surveillance[6].

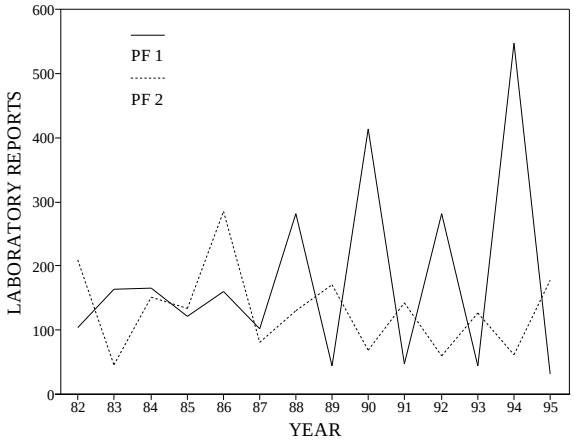
There were 796 reports of influenza A received in 1995, including 92 H_1N_1 strains (Figure 22). This was the first year since 1988 that this strain has predominated. Only 9 reports of H_3N_2 isolates were received. There was a seasonal peak in June. All age groups were affected, including 76 patients (10%) over the age of 65 years. Most patients were in the under 5 years age group. One death was reported. Included was one HIV / AIDS patient, 2 immunocompromised patients, and 11 with a malignancy. Two had a recent history of overseas travel. Reported clinical syndromes included lower respiratory tract disease (161), upper and other respiratory tract disease (288), muscle / joint disease (1), gastrointestinal (4), general malaise / fever (46), and skin manifestations (2). Specimen types included 413 nasopharyngeal specimens and 376 sera. Methods of detection were 89 by antigen detection (85 IF, 4 EIA); 325 virus isolation; and 376 by serology (63 four-fold rises, 7 IgM detections, 301 single high titres and 5 others).

Three hundred and fifty-five reports of influenza B were received in 1995. The number of reports received was fewer than that for the previous epidemic year of 1993. Reports peaked in July and August at a time when influenza A reports were declining. Similar numbers of males and females were reported. One hundred and fourteen reports (32%) were for the under 5 years age group, and 29 (8%) were over the age of 65 years. Seventy-two patients were reported to have lower respiratory tract disease, 23 upper respiratory tract disease, 94 respiratory tract disease (unspecified) and one muscle / joint manifestations. Specimen types included sera (172) and nasopharyngeal (183). Method of diagnosis was by virus isolation (145), antigen detection (38, all IF), and serology (172: 29 four-fold rise in titre, 3 IgM detections 139 single high titres and one other).

Parainfluenza type 1

There were 32 reports of parainfluenza virus type 1 in 1995. This was a non-epidemic year for this virus (Figure 23). In recent years outbreaks of parainfluenza virus types 1 and 2 have been recorded in alternate years by this scheme. All patients were in the 25 - 74 years age range. Upper (11), lower (7), and unspecified (13) respiratory tract symptoms were most commonly reported. Specimens included blood (5) and nasopharyngeal (27). Diagnosis was by culture (13); antigen detection (14: one

Figure 23. Parainfluenza virus types 1 and 2 laboratory reports, 1982 to 1995, by year of specimen collection



EIA, 13 IF); and serology (5: all CFT; 2 four-fold rise in titre, 3 single high titres).

Parainfluenza type 2

There were 178 reports of parainfluenza virus type 2 received. This was an epidemic year (Figure 23). There was a seasonal peak from April to June (Figure 24). Most patients (140, 79% of total) were in the under 5 years age group. The male:female ratio was 1.6:1. Twenty-five patients were reported to have lower respiratory tract symptoms and 141 upper or unspecified respiratory symptoms. Specimen types included 171 nasopharyngeal, one bronchial washing, one serum and 5 other. Diagnoses included 116 virus isolations, 61 antigen detections (all IF), and one serology (single high titre).

Parainfluenza type 3

Parainfluenza virus type 3 was reported for 834 patients, the highest number ever recorded by this scheme. Reports peaked in August (Figure 25) which is earlier than usual. The male:female ratio was 1.4:1. Fifty-eight per cent of patients were under the age of 5 years. One case of encephalitis and 2 of meningitis were recorded. Respiratory tract disease was reported for 711 patients (145 upper, 247 lower and 319 other). Specimen types included blood (26), bronchial washings (5), biopsy (1), nasopharyngeal (743), CSF (12) and other (47). Serology was the method of diagnosis for 25 patients (3 four-fold rise in titre and 22 single high titres), isolation for 540 and antigen detection for 269 (267 IF and 2 EIA).

Respiratory syncytial virus

There were 3,888 reports of RSV received for 1995, more than for any previous year (Figure 26). Overall reports peaked in July (Figure 27) as is usually the case. The male:female ratio was 1.5:1. Sixty-nine per cent of reports were for children under the age of one year and 95% were in the under 5 years age group. Eight patients had malignancies and 3 were transplant recipients. Upper respiratory tract disease was reported for 365, lower respiratory tract diseas for 1,813 and unspecified for 1,408

Figure 24. Parainfluenza virus type 2 laboratory reports, 1995, by month of specimen collection

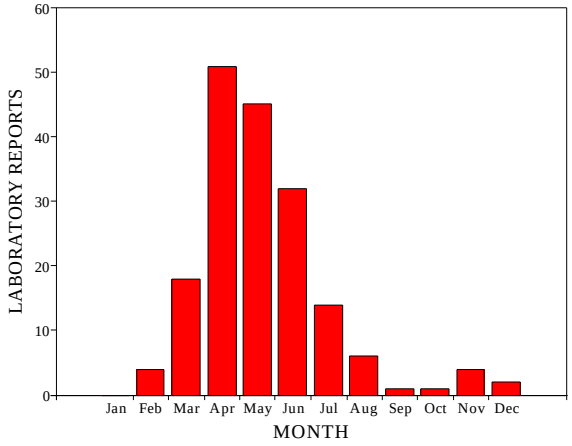


Figure 25. Parainfluenza virus type 3 laboratory reports, 1995, by month of specimen collection

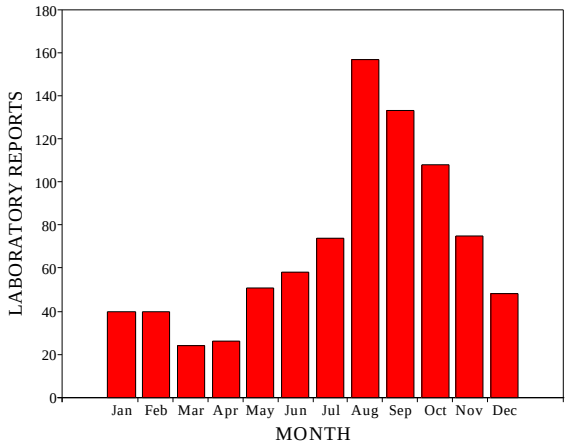


Figure 26. Respiratory syncytial virus laboratory reports, 1982 to 1995, by year of specimen collection

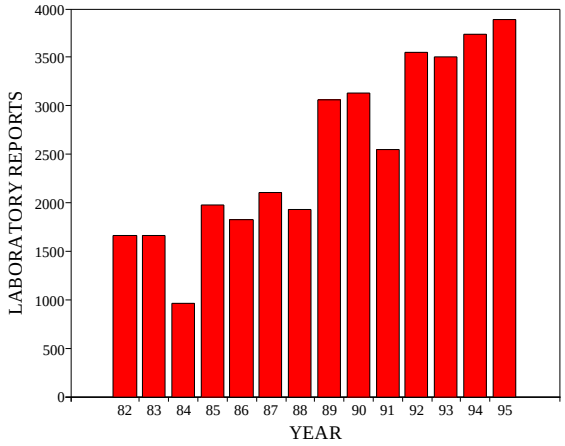
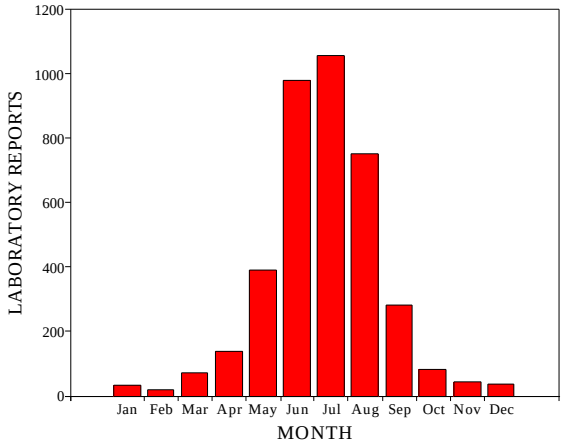


Figure 27. Respiratory syncytial virus laboratory reports, 1995, by month of specimen collection



patients. Specimen types included 3,757 nasopharyngeal specimens, 72 sera, 6 bronchial washings, and 53 other. Method of diagnosis was by antigen detection (2,425: 1,933 IF, 488 EIA, 4 other), isolation (1,392) and serology (72: all CFT; 6 four-fold rise in titre, 66 single high titres).

Other RNA viruses

Rotavirus

There were 1,616 reports of rotavirus received for 1995, the lowest number since 1987. Reports peaked in August (Figure 28), as is usually the case. The male:female ratio was 1.4:1. Most patients (91%) were under the age of 5 years, and 86% were in the under one year age group. A total of 1,552 (96%) cases were reported to have gastrointestinal symptoms. Diagnosis was by EM (69), EIA (1,138) and latex agglutination (409).

Other

Chlamydia trachomatis

There were 2,579 reports of *Chlamydia trachomatis* received with collection dates in 1995. The male:female ratio was 1:1.8. Most (93%) were for the 15 - 44 years age group. Twenty-seven reports were for infants under the age of one month. Nineteen patients were pregnant, 46 reported eye disease and 1,960 reported genital tract infections. Specimen types included 2,358 genital specimens, 58 eye specimens and 163 other. Diagnosis was by culture (542), serology (27) and antigen detection (2,009: 369 EIA, 525 IF, 1,056 nucleic acid detection, and 59 other).

Chlamydia psittaci

Chlamydia psittaci was reported for 176 patients. Eighty-one reports (46%) were for the 45 - 64 years age group. There was a peak in October and November. Most reports for these months were from Victoria where there was an outbreak[7]. Eighty-five patients were reported to have respiratory symptoms.

Mycoplasma pneumoniae

Mycoplasma pneumoniae was reported for 335 patients in 1995, the lowest number since 1985 (Figure 29). Reports were lowest in July and peaked in November. One hundred and ten reports (33%) were for the 25 - 44 years age group (Figure 30). The male:female ratio was 1:1.5. One hundred and forty-one patients were reported to have lower respiratory tract disease, 9 upper and 26 unspecified. One report of meningitis was also included. All diagnoses were by serology: CFT (46), EIA (91), agglutination (194) and other (4). Criteria included four-fold rise in titre (21), IgM detection (230), single high titre (49) and other (32).

Coxiella burnetii (Q fever)

There were 167 reports of Q fever received, fewer than any year since 1985. There was a marked predominance of males, the male:female ratio being 4.5:1. Most (53%) were in the 25 - 44 years age group. Thirteen were reported to have had animal exposure and one case was occupationally acquired. Thirty-seven patients were reported to have general malaise / fever, 2 muscle / joint disease and 4 respiratory tract disease. Diagnosis was by IgM detection (68), single high titre (28) and four-fold rise in titre (71).

Figure 28. Rotavirus laboratory reports, 1995, by month of specimen collection

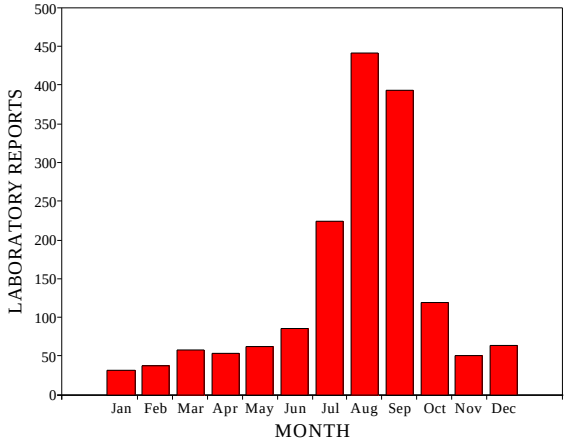


Figure 29. *Mycoplasma pneumoniae* laboratory reports, 1982 to 1995, by year of specimen collection

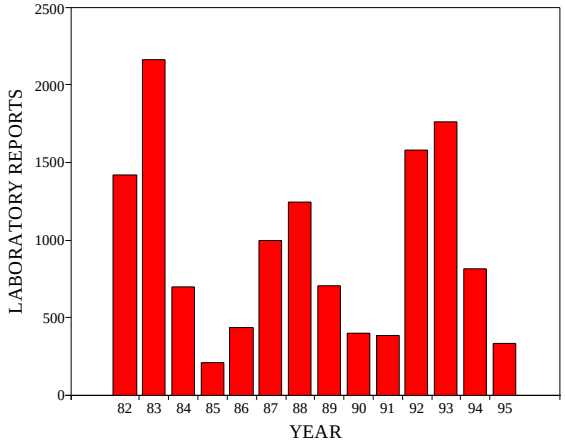


Figure 30. *Mycoplasma pneumoniae* laboratory reports, 1995, by age group and sex

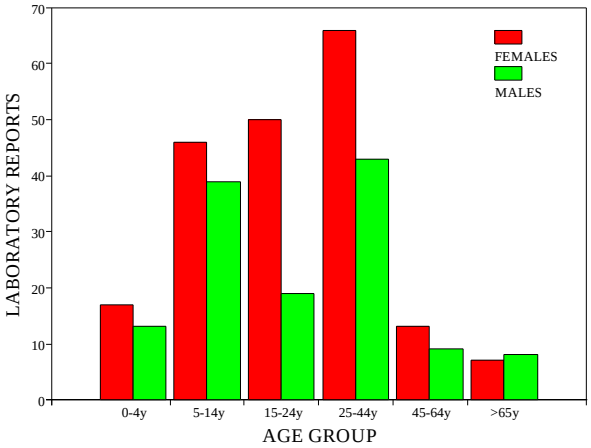
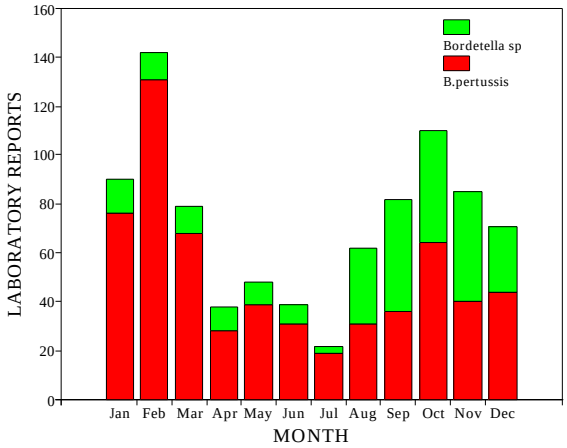


Figure 31. *Bordetella pertussis* and *Bordetella* species laboratory reports, 1995, by month of specimen collection



***Bordetella pertussis* and *Bordetella* species**

There were 868 reports of *Bordetella pertussis* and *Bordetella* species received. More reports were received for the warmer months of the year (Figure 31). The male:female ratio was 1:1.2 and cases occurred in all age groups. Methods of diagnosis included isolation (17), antigen detection (76) and antibody detection (122).

***Cryptoccocus* species**

Twenty-six reports of *Cryptococcus* species were received including 7 *Cryptococcus neoformans*. Twenty-one were males and 3 females (sex of two was not stated). All were in the 25 - 74 years age range. Included was one case of meningitis and one of other CNS disease. Specimen types were blood (25) and CSF (1).

Treponema pallidum

There were 455 reports of *Treponema pallidum* reported. Most reports (73%) were for the 15 - 44 years age group. Twenty-three were pregnant, one was HIV positive and one reported recent overseas travel. All specimens were blood.

Toxoplasma gondii

Toxoplasma gondii was reported for 107 patients in 1995. More reports were received for April than for other months. Included were 69 females of child-bearing age, 2 of whom were reported to be pregnant. Diagnosis was by IgM detection (40), single high titre (6), total antibody (60) and other (1).

***Echinococcus granulosus* (hydatid disease)**

Eleven reports of hydatid disease were received in 1995 for 5 males and 5 females. The sex of one case was not reported. All diagnoses were by serology.

Acknowledgements

The contribution of all the LabVISE laboratories is gratefully acknowledged.

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OVERSEAS BRIEFS

Source: World Health Organization (WHO)

Ebola haemorrhagic fever

South Africa. A case of Ebola haemorrhagic fever was confirmed in a nurse on 16 November. The illness started with mild fever and when severe headache developed the nurse was admitted to hospital with suspected encephalitis. The patient developed a fine rash and diarrhoea, and her platelet count, which had been low on admission, continued to fall. This was accompanied by marked leukopenia and abnormal liver enzyme tests.

This is the first case of Ebola fever diagnosed in South Africa. Tracing the source of the infection established that the nurse had been exposed in late October to the blood of

a very ill doctor who had been brought from Libreville, Gabon on 27 October. The doctor recovered and was later discharged to convalesce in a nearby facility. He was shown to have antibody to Ebola virus; virus isolation is being attempted from blood specimens collected during his acute illness. Immediately after the laboratory confirmation, committees were established to oversee infection control, contact tracing and observation, and all other aspects of outbreak control.

Gabon. A source from the Ministry of Health in Gabon has notified WHO that the doctor who flew to South Africa for treatment on 27 October had been in direct contact with one of two patients previously identified during the Booué outbeak. These two patients had travelled to Libreville for health care. The Ministry of Health is now looking for additional contacts in Libreville. As the maximum incubation period has elapsed since the infected doctor left the country and no new cases have been seen, it is unlikely that Ebola virus transmission is still going on in the capital. If no new cases are detected, the doctor will be the last in the outbreak which then could be declared over on 11 December. The total number of cases is 25 with 17 deaths.

COMMUNICABLE DISEASES SURVEILLANCE

National Notifiable Diseases Surveillance System

The NNDSS is conducted under the auspices of the Communicable Diseases Network Australia New Zealand. The system coordinates the national surveillance of more than 40 communicable diseases or disease groups endorsed by the National Health and Medical Research Council (NHMRC). Notifications of these diseases are made to State and Territory health authorities under the provisions of their respective public health legislations. De-identified core unit data are supplied fortnightly for collation, analysis and dissemination. For further information, see CDI 1996;20:9-10.

Reporting period 27 October to 9 November 1996

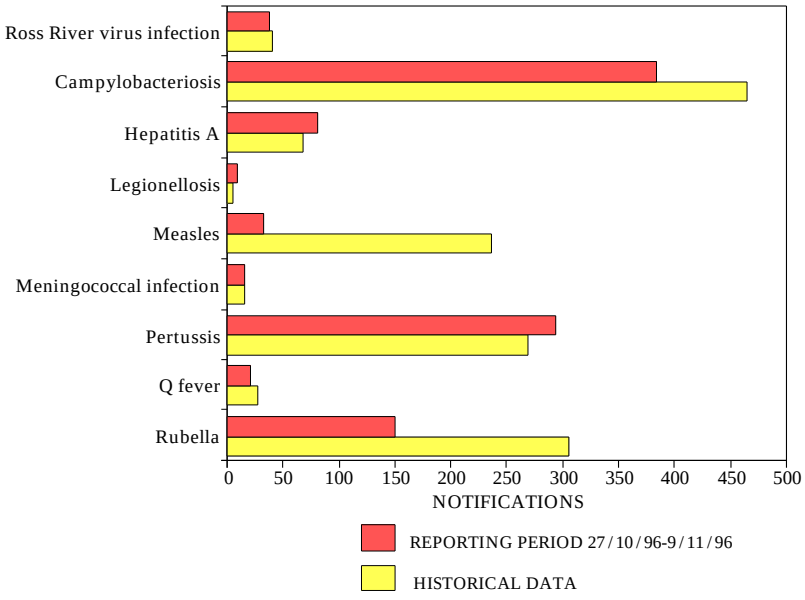
There were 2,330 notifications received for this two-week period (Tables 1, 2 and 3). The numbers of reports for selected diseases have been compared with average data for this period in the previous three years (Figure 1).

One case of *Haemophilus influenzae* type b infection was received this reporting period for a male in the 25 - 29 years age group. Notifications continue in low numbers (Figure 2).

Measles notifications rose slightly in the month of October, but remained below the number reported for this month in previous years.

Few reports of Ross River virus continue to be received, as is usual for the time of year (Figure 3). The seasonal rise in notifications begins in the months of December and January.

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



1. The historical data are the averages of the number of notifications in 9 previous 2-week reporting periods: the corresponding periods of the last 3 years and the periods immediately preceding and following those.

Table 1. Notifications of diseases preventable by vaccines recommended by the NHMRC for routine childhood immunisation, received by State and Territory health authorities in the period 27 October to 9 November 1996

DISEASE[1]	ACT	NSW	NT	Qld	SA	Vic	WA	TOTALS FOR AUSTRALIA[2] This period 1996	This period 1995	Year to date 1996	Year to date 1995
Haemophilus influenzae b infection	0	0	1	0	0	0	0	1	2	48	59
Measles	1	9	12	5	1	4	1	33	44	431	1201
Mumps	1	1	0	NN	0	0	0	2	2	105	131
Pertussis	0	37	0	49	79	119	10	294	218	3008	3693
Rubella	3	10	0	55	45	22	15	150	365	2207	3307
Tetanus	0	0	0	0	0	1	0	1	0	2	3

NN Not Notifiable.

1. No notifications of poliomyelitis have been reported since 1986.
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.

Table 2. Notifications of other diseases received by State and Territory health authorities in the period 27 October to 9 November 1996

DISEASE[1]	ACT	NSW	NT	Qld	SA	Vic	WA	TOTALS FOR AUSTRALIA[2] This period 1996	This period 1995	Year to date 1996	Year to date 1995
Arbovirus infection (NEC)[3]	0	0	1	0	0	1	1	3	1	92	65
Barmah Forest virus infection	0	2	0	7	0	0	-	9	11	33	686
Ross River virus infection	0	9	6	20	0	1	1	37	17	7589	2464
Dengue	0	2	1	0	0	0	0	3	3	33	28
Campylobacteriosis[4]	14	0	8	148	85	46	80	381	573	10024	9186
Chlamydial infection (NEC)[5]	9	NN	29	130	0	110	65	343	224	6339	5373
Donovanosis	0	NN	4	1	NN	0	0	5	5	45	71
Gonococcal infection[6]	2	20	46	47	0	7	39	161	140	3281	2709
Hepatitis A	2	37	6	22	1	7	6	81	62	1935	1322
Hepatitis B	0	1	0	2	0	0	0	3	11	184	276
Hepatitis C incident	1	0	0	-	0	-	-	1	0	27	63
Hepatitis C unspecified	21	NN	15	102	NN	19	34	191	390	7808	8323
Hepatitis (NEC)	0	0	0	0	1	0	NN	1	2	18	12
Legionellosis	0	1	0	0	2	1	5	9	3	154	141
Leptospirosis	0	1	0	1	0	5	0	7	5	200	115
Listeriosis	0	0	0	0	0	0	1	1	0	58	49
Malaria	2	5	4	19	1	0	2	33	27	750	550
Meningococcal infection	0	3	0	3	0	7	3	16	10	368	337
Ornithosis	0	NN	0	0	0	2	0	2	25	58	124
Q fever	0	9	0	2	0	10	0	21	21	454	403
Salmonellosis (NEC)	4	38	19	75	17	14	20	187	222	4863	5181
Shigellosis[4]	0	0	8	3	2	0	5	18	24	554	659
Syphilis	0	14	35	8	0	0	1	58	86	1281	1630
Tuberculosis	4	6	0	15	2	16	2	45	42	938	883
Typhoid[7]	0	0	0	0	0	1	0	1	2	73	62
Yersiniosis (NEC)[4]	0	0	0	10	9	0	0	19	10	236	275

1. For HIV and AIDS, see Tables 4 and 5. For rarely notified diseases, see Table 3 .
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. Tas: includes Ross River virus and dengue.
4. NT, Vic and WA: includes Barmah Forest virus.
5. NSW: only as 'foodborne disease' or 'gastroenteritis in an institution'.
6. WA: genital only.
7. NT, Qld, SA and Vic: includes gonococcal neonatal ophthalmia.
8. NSW, Vic: includes paratyphoid.

NN Not Notifiable.
NEC Not Elsewhere Classified.
- Elsewhere Classified.

Table 3. Notifications of rare[1] diseases received by State and Territory health authorities in the period 27 October to 9 November 1996

DISEASE[2]	Total this period	Reporting States or Territories	Year to date 1996
Brucellosis	2	NSW 1, Qld 1	32
Chancroid	0		1
Cholera	0		4
Hydatid infection	2	NSW 1, Qld 1	35
Leprosy	0		9

1. Fewer than 60 cases of each of these diseases were notified each year during the period 1988 to 1995.
2. No notifications have been received during 1996 for the following rare diseases: botulism lymphogranuloma venereum; plague; rabies; yellow fever; or other viral haemorrhagic fevers.

Figure 2. *Haemophilus influenzae* type b infection notifications, 1991 to 1996, by month of onset and age group

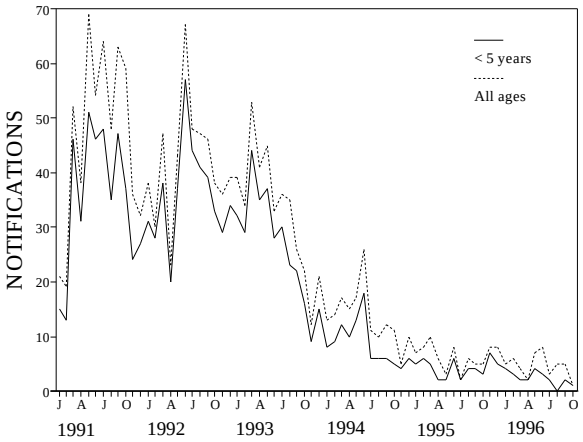
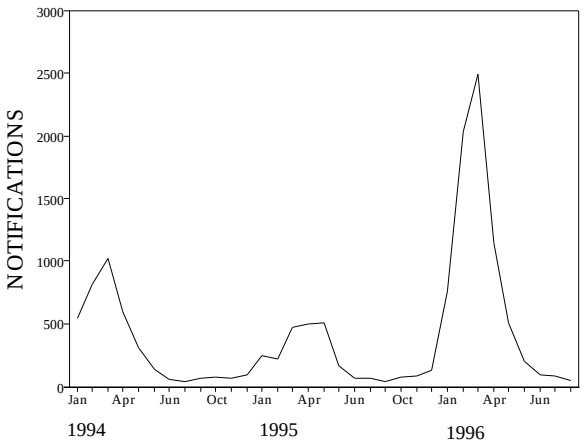


Figure 3. Ross River virus notifications, 1994 to 1996, by month of onset



HIV and AIDS Surveillance

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

Table 4. New diagnoses of HIV infection, new diagnoses of AIDS and deaths following AIDS occurring in the period 1 to 30 June 1996, by sex and State or Territory of diagnosis

		ACT	NSW	NT	Qld	SA	Tas	Vic	WA	TOTALS FOR AUSTRALIA			
										This period 1996	This period 1995	Year to date 1996	Year to date 1995
HIV diagnoses	Female	0	1	0	0	0	0	1	0	2	12	36	54
	Male	0	37	1	14	4	0	16	0	72	50	384	396
	Sex not reported	0	0	0	0	0	0	0	0	0	0	3	7
	Total[1]	0	38	1	14	4	0	17	0	74	62	423	459
AIDS diagnoses	Female	0	2	0	0	0	0	0	0	2	3	8	19
	Male	0	11	0	0	7	0	10	0	28	53	219	372
	Total[1]	0	13	0	0	7	0	10	0	30	56	227	392
AIDS deaths	Female	0	0	0	1	0	0	0	0	1	2	10	21
	Male	0	11	0	5	2	0	12	1	31	44	181	318
	Total[1]	0	11	0	6	2	0	12	1	32	46	191	340

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

Table 5. Cumulative diagnoses of HIV infection, AIDS and deaths following AIDS since the introduction of HIV antibody testing to 30 June 1996, by sex and State or Territory

		ACT	NSW	NT	Qld	SA	Tas	Vic	WA	AUSTRALIA
HIV diagnoses	Female	15	567	3	98	44	4	167	73	971
	Male	171	10098	84	1619	575	74	3411	760	16792
	Sex not reported	0	2048	0	0	0	0	42	0	2090
	Total[1]	186	12720	87	1722	619	78	3629	835	19876
AIDS diagnoses	Female	5	137	0	29	18	2	48	17	256
	Male	76	3859	26	662	284	32	1368	293	6600
	Total[1]	81	4006	26	693	302	34	1423	312	6877
AIDS deaths	Female	2	101	0	24	13	2	37	11	190
	Male	50	2714	20	462	194	21	1080	216	4757
	Total[1]	52	2821	20	488	207	23	1123	228	4962

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

Table 6. Australian Sentinel Practice Research Network reports, weeks 44 and 45, 1996

Condition	Week 44, to 3 November 1996		Week 45, to 10 November 1996	
	Reports	Rate per 1,000 encounters	Reports	Rate per 1,000 encounters
Influenza	26	3.7	27	4.1
Rubella	3	0.4	4	0.6
Measles	0	0	0	0
Chickenpox	26	3.7	18	2.7
Pertussis	4	0.6	1	0.2
Gastroenteritis	133	18.8	111	16.7

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 deaths following AIDS reported for June 1996, as reported to 30 September 1996, are included in this issue of *CDI* (Tables 4 and 5).

Australian Sentinel Practice Research Network

The Australian Sentinel Practice Research Network (ASPREN) comprises 99 sentinel general practitioners from throughout the country. A total of approximately 9,000 consultations are recorded each week for 12 conditions. Of these, CDI reports the consultation rate for influenza, rubella, measles, chickenpox, pertussis and gastroenteritis. For further information including case definitions see CDI 1996;20:98-99.

Data for weeks 44 and 45 ending 3 and 10 November respectively are included in this issue of *CDI* (Table 6). The consultation rate for influenza-like illness has remained at low levels since the beginning of October. There has been no appreciable change in the consultation rate for gastroenteritis since the beginning of August. Consultation rates for chickenpox have remained higher than the rates in August and early September. Very few cases of rubella and pertussis have been reported during the last six reporting weeks. Only two cases of measles have been reported since the beginning of May, one in June and one in September.

LabVISE

The Virology and Serology Laboratory Reporting Scheme, LabVISE, is a sentinel reporting scheme. Twenty-one laboratories contribute data on the laboratory identification of viruses and other organisms. Data are collated and published in Communicable Diseases Intelligence each fortnight. These data should be interpreted with caution as the number and type of reports received is subject to a number of biases. For further information, see CDI 1996;20:9-12.

There were 617 reports received in the *CDI* Virology and Serology Laboratory Reporting Scheme this period (Tables 7 and 8).

Reports of parainfluenza virus type 3 continued to increase for October and are approaching the levels of August-September 1995, which were the highest recorded (Figure 4). In the last fortnight, 42 reports were received with diagnosis by antigen detection (25) and virus isolation (17).

In Australia, reports of parainfluenza virus type 1 occur in the autumn and winter months of alternate years. The greatest number of reports were received in 1994. Reports for the year to date are similar to the 1992 levels but below those recorded in 1994 (Figure 5).

Figure 4. Parainfluenza virus type 3 laboratory reports, 1994, 1995 and 1996, by month of specimen collection

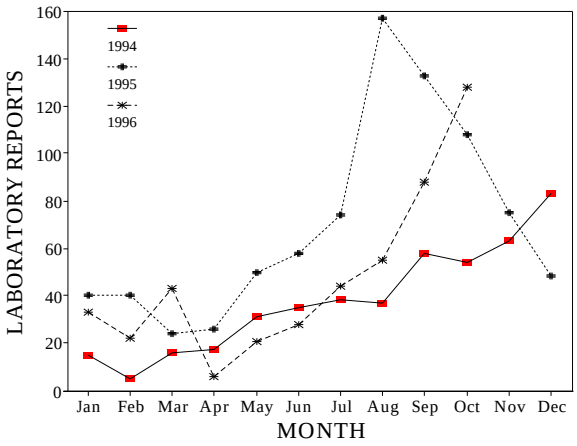


Figure 5. Parainfluenza virus type 1 laboratory reports, 1992, 1994 and 1996, by month of specimen collection

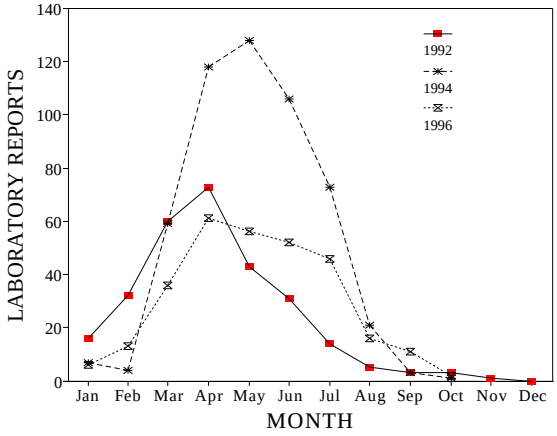


Table 7. Virology and serology laboratory reports by State or Territory[1] for the reporting period 31 October to 13 November 1996, historical data[2], and total reports for the year

	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			4		1			1	6	22.5	52
Rubella virus					26		1	1	28	106.3	560
HEPATITIS VIRUSES											
Hepatitis A virus			3		1			2	6	17.3	367
ARBOVIRUSES											
Ross River virus			1						1	12.0	3,114
Barmah Forest virus			1						1	4.8	195
ADENOVIRUSES											
Adenovirus type 2					1	1			2	3.5	30
Adenovirus type 3							2		2	1.0	68
Adenovirus type 8							1		1	.8	7
Adenovirus not typed / pending		3		9	3		6	22	43	43.0	1,272
HERPES VIRUSES											
Cytomegalovirus		3		4	3	2	1	22	35	60.0	1,418
Varicella-zoster virus				4	4	1	9	2	20	46.5	1,052
Epstein-Barr virus		17	4		33		6	18	78	82.3	1,846
OTHER DNA VIRUSES											
Poxvirus group not typed							1		1	.5	5
Parvovirus	1				1		8		10	5.7	192
PICORNA VIRUS FAMILY											
Coxsackievirus B2						2			2	1.0	12
Coxsackievirus B5							2		2	.3	13
Echovirus type 5							1		1	.0	2
Rhinovirus (all types)				12	5				17	30.7	649
Enterovirus not typed / pending				7					7	37.3	769
ORTHO / PARAMYXOVIRUSES											
Influenza A virus							2		2	8.8	1,470
Influenza B virus				1	1				2	4.2	54
Parainfluenza virus type 1					1				1	.3	304
Parainfluenza virus type 3		8		7	3		10	14	42	32.7	641
Parainfluenza virus typing pending								1	1	.8	20
Respiratory syncytial virus		6			5	1	30	8	50	43.3	4,077
Paramyxovirus (unspecified)							5		5	.8	28
OTHER RNA VIRUSES											
Rotavirus		22			12	8	17	11	70	84.5	1,537
Small virus (like) particle							1		1	1.3	16
OTHER											
Chlamydia trachomatis not typed		4	29		25	6	4	26	94	104.8	3,361
Mycoplasma pneumoniae		6	1		2		12	12	33	21.0	721
Coxiella burnetii (Q fever)		2					3		5	10.3	168
Bordetella pertussis							46		46	36.2	598
Cryptococcus species								1	1	.3	11
Schistosoma species							1		1	7.2	230
TOTAL	1	71	43	44	127	21	169	141	617	832.3	24,859

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 8. Virology and serology laboratory reports by contributing laboratories for the reporting period 31 October to 13 November 1996

STATE OR TERRITORY	LABORATORY	REPORTS
New South Wales	Institute of Clinical Pathology & Medical Research, Westmead	26
	Royal Alexandra Hospital for Children, Camperdown	15
	South West Area Pathology Service, Liverpool	29
Queensland	State Health Laboratory, Brisbane	44
South Australia	Institute of Medical and Veterinary Science, Adelaide	127
Tasmania	Northern Tasmanian Pathology Service, Launceston	3
	Royal Hobart Hospital, Hobart	16
Victoria	Microbiological Diagnostic Unit, University of Melbourne	3
	Royal Children's Hospital, Melbourne	114
	Victorian Infectious Diseases Reference Laboratory, Fairfield Hospital	56
Western Australia	Princess Margaret Hospital, Perth	47
	Royal Perth Hospital	45
	Western Diagnostic Pathology	92
TOTAL		617

Contributions covering any aspects of communicable disease are invited. Instructions to authors can be found in *CDI* 1996;20:13.

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