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

ANNUAL REPORT OF LABDOSS, THE CDI STERILE SITES LABORATORY REPORTING SCHEME, 1993

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Introduction

The *Communicable Diseases Intelligence's* Sterile Sites Laboratory Reporting Scheme (LabDOSS) was introduced in January 1992. It is a passive surveillance scheme based on voluntary reports contributed by a sample of laboratories around Australia. Contributing laboratories provide reports of organisms isolated from normally sterile sites. The definition of a normally sterile site is a site in the body that does not under normal healthy conditions contain any micro-organisms. Examples of normally sterile sites are blood, cerebrospinal fluid, joint fluid, and tissue samples such as spleen, liver, muscle. This is the annual report for the Scheme for 1993.

CDI fortnightly reports are based on the date of specimen collection. 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. The date of specimen collection gives a better indication of the date of illness than the reporting date and allows more valid interpretation of seasonal trends. Clinical information was not consistently provided as the data were provided by laboratory staff who do not have direct contact with the patient.

Data in 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 and type

of participating laboratories, the availability of diagnostic services, and diagnostic practices.

Total reports

The reports for 1993 were contributed by 18 laboratories in six States and Territories (Table 1). There was a total of 4283 reports of significant sepsis with 1993 specimen collection dates.

The top 20 organisms

Reports of the 20 most commonly reported organisms comprised 3419 or 79.8% of the total reports (Figure 2). The most commonly reported organism in 1993 was *Staphylococcus aureus*. *Escherichia coli*, *Staphylococcus coagulase negative*, *Staphylococcus epidermidis* and *Streptococcus pneumoniae* were all in the top five organisms reported.

Age and sex distribution

The sex of the patient was included in 95% of the reports. Of those with known sex, 56% were males and 44% were females, giving a ratio of 1.3 males to 1.0 females. The age and/or date of birth of the patient was provided for 97% of total reports in 1993. Elderly persons, 65 years of age and over, were the most frequently represented, with this age group accounting for 43% of all reports (Figure 2).

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

State or Territory	Laboratory	Reports
Australian Capital Territory	Woden Valley Hospital, Canberra	272
New South Wales	Institute of Clinical Pathology & Medical Research, Westmead	805
	New England Pathology, Tamworth	49
	Concord Hospital, Sydney	80
	Gosford Central Coast Hospital Service	62
	South West Area Pathology Service, Liverpool	567
	Royal North Shore Hospital	441
	Royal Prince Alfred Hospital	263
Queensland	Dr TB Lynch, Pathologist, Rockhampton	25
	Central Queensland Pathology Laboratory, Mackay	38
	Ipswich General Hospital	88
	Nambour General Hospital	86
	Drs JJ Sullivan, NJ Nicolaides and Partners, Taringa	246
	Toowoomba Pathology Laboratory	127
South Australia	Institute of Medical and Veterinary Science, Adelaide	547
Tasmania	Northern Tasmanian Pathology Service, Launceston	206
	Royal Hobart Hospital	217
Western Australia	Sir Charles Gairdner Hospital	164
Total		4283

Figure 1. The 20 most commonly reported organisms, 1993, as % of total reports

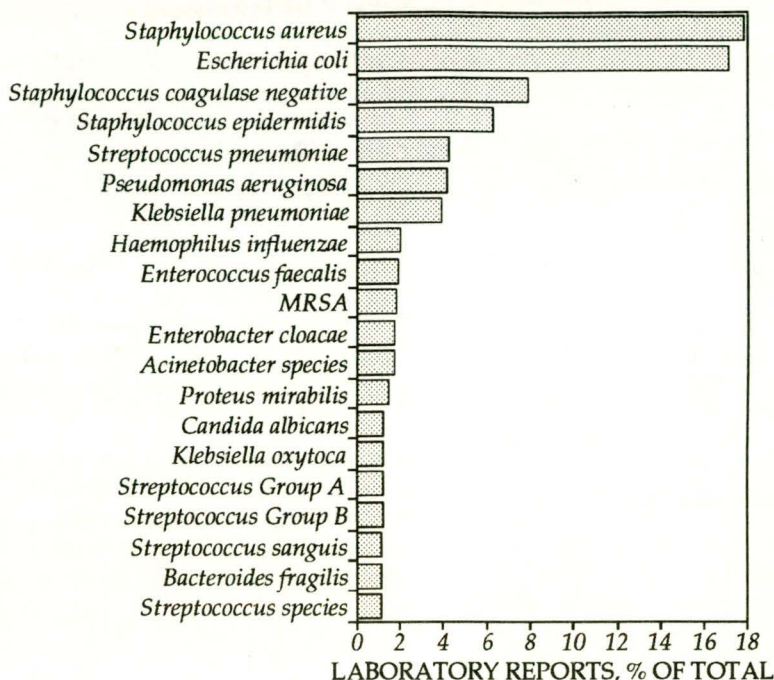
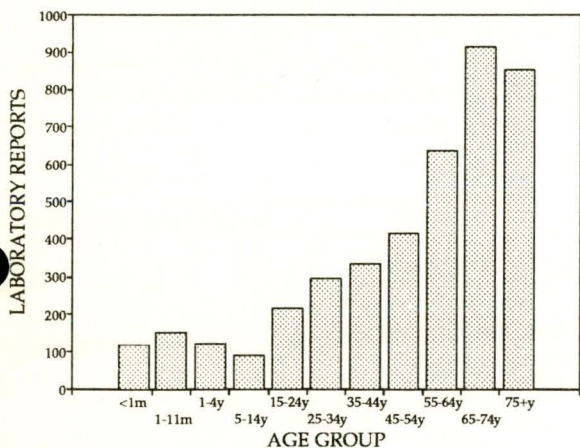


Figure 2. LabDOSS reports, 1993, by age group



Staphylococcus coagulase negative was the most commonly reported isolate in the less than one month age group, followed by *Escherichia coli*, *Staphylococcus aureus*, *Staphylococcus epidermidis* and *Streptococcus Group B*. For infants aged one to 11 months, *Staphylococcus coagulase negative* remained the most frequently reported organism, in addition to *Haemophilus influenzae*, *Staphylococcus epidermidis*, *Staphylococcus aureus*, *Streptococcus pneumoniae* and *Escherichia coli*.

For the one to four year age group *Haemophilus influenzae* was most commonly reported (responsible for a higher proportion than for patients under one year), followed by *Streptococcus pneumoniae*, *Neisseria meningitidis*, *Staphylococcus coagulase negative* and *Escherichia coli*.

coli. For children of school age (five to 14 years), *Staphylococcus aureus*, *Neisseria meningitidis*, *Haemophilus influenzae*, *Streptococcus pneumoniae*, *Staphylococcus coagulase negative* and *Escherichia coli* were the most reported isolates.

In the 15 to 24 years age group, *Staphylococcus aureus* was the most common isolate, followed by *Staphylococcus coagulase negative*, *Staphylococcus epidermidis*, *Escherichia coli* and *Pseudomonas aeruginosa*.

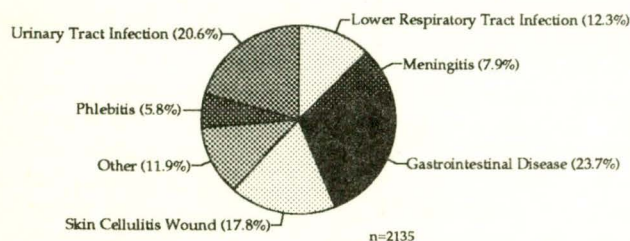
Staphylococcus aureus also dominated in the 25 to 34 years age group, followed by *Escherichia coli*, *Staphylococcus coagulase negative*, *Staphylococcus epidermidis*, and *Streptococcus pneumoniae*. In the 35 to 44 year age group, *Staphylococcus aureus* was also the most common followed by *Staphylococcus coagulase negative*, *Staphylococcus epidermidis*, *Escherichia coli* and *Pseudomonas aeruginosa*.

In the 45 to 54 year age group, *Escherichia coli* was the most common followed by *Staphylococcus aureus*, *Staphylococcus coagulase negative*, *Klebsiella pneumoniae* and *Pseudomonas aeruginosa*.

In the the older adult age groups (55 to 74 years), the same six most common organisms were reported. *Escherichia coli* was most frequently reported, followed by *Staphylococcus aureus*, *Staphylococcus coagulase negative*, *Staphylococcus epidermidis*, *Klebsiella pneumoniae* and *Pseudomonas aeruginosa*.

In the 75 years plus age group, *Escherichia coli* was also the most common followed by *Staphylococcus aureus*, *Staphylococcus coagulase negative*, *Pseudomonas aeruginosa*, *Klebsiella pneumoniae* and *Proteus mirabilis*.

Figure 3. Commonly reported clinical diagnoses, 1993¹



1. 'Other' comprises epiglottitis 0.2%, osteomyelitis 2.2%, septic cathritis 5.5%, and endocarditis 3.9%.

Clinical diagnosis

Information on the clinical diagnosis was provided for 2135 (49.8% of total) reports received in 1993 (Figure 3). For a further 1106 (25.8%), the reported diagnosis was 'other'. Gastrointestinal disease was most commonly reported, followed by skin/cellulitis/wounds, urinary tract infections and lower respiratory tract infections.

Risk factors

Two thousand four hundred and thirty-eight reports (56.9% of total) included risk factor information. Of these 1034 (42.4%) reported immunosuppression, 596 (24.4%) had a vascular prosthesis, 459 (18.8%) under-

went surgery, and 349 (14.3%) reported other risk factors (Figure 4).

Source of isolate

Blood was the most commonly reported source of isolate accounting for 86.2% of all reports. Cerebrospinal fluid was reported in 2.5% of isolates; peritoneal dialysate 2.5%; joint fluid 2.4%; pleural fluid 1.8%; and other 3.2%.

Blood

Elderly persons 65 years of age and over were the most frequently represented, with this age group accounting for 45% of all reports (Figure 5). Gram positive aerobic bacteria (48.9%) were reported more frequently than gram negative aerobic bacteria (43.3%), anaerobes (3.8%) or fungi (2.0%).

The most common gram positives reported were *Staphylococcus aureus* (including MRSA) (37.8%), *Staphylococcus coagulase negative* (15.1%), *Staphylococcus epidermidis* (12.6%), *Streptococcus pneumoniae* (9.4%), *Enterococcus faecalis* (3.9%).

For the gram negative bacteria *Escherichia coli* (43.7%) was the most frequently reported followed by *Pseudomonas aeruginosa* (9.9%), *Klebsiella pneumoniae* (9.6%), *Enterobacter cloacae* (4.1%), and *Acinetobacter* species (3.9%).

Within the anaerobes, *Bacteroides fragilis* (35.0%) was reported most frequently followed by *Bacteroides* species (10.9%), *Clostridium perfringens* (10.9%), *Clostridium* species (9.5%), and *Fusobacterium* species (8.0%).

Candida albicans (60.8%) accounted for the majority of fungi reported followed by *Candida* species (35.1%), *Cryptococcus neoformans* (1.4%), and *Cryptococcus neoformans* var *neoformans* (2.7%).

Figure 4. Reports with commonly reported risk factors, 1993, by risk factor

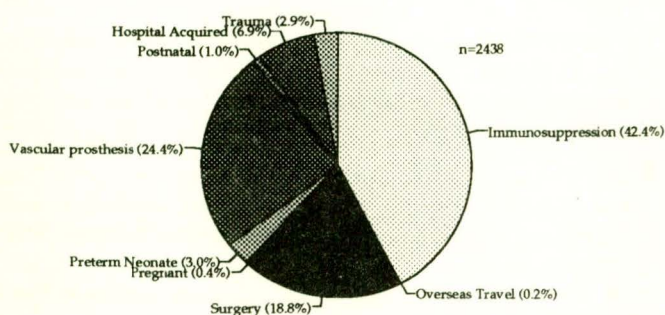
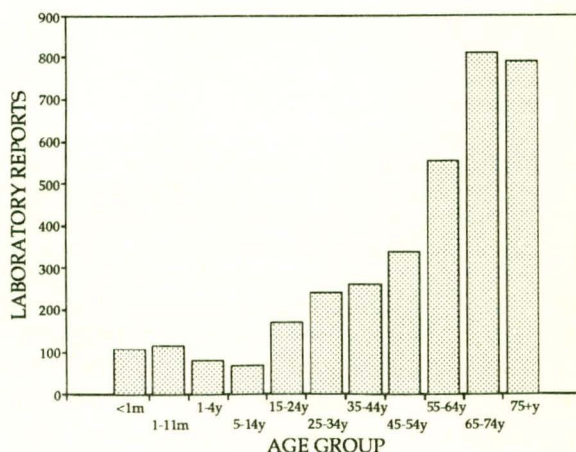


Figure 5. LabDOSS reports of blood isolates, 1993, by age group



CSF

Reports of CSF isolates are included in the meningitis section, below.

Other sites

A total of 409 reports were received for other sterile sites. There were 70 different organisms or organism groups reported. Five isolates accounted for 60% of all reports from other sterile sites (Table 2).

Joint fluid

The most common isolates reported were *Staphylococcus aureus* (70.7%), *Pseudomonas aeruginosa* (4.0%), *Escherichia coli* 3.0%, *Staphylococcus coagulase negative* (3.0%) and *Streptococcus* Group G (3.0%).

Peritoneal dialysate

Staphylococcus epidermidis (32.7%) was the most frequently reported isolate followed by *Staphylococcus aureus* (14.4%), *Escherichia coli* (7.7%), *Staphylococcus coagulase negative* (5.8%), *Pseudomonas aeruginosa* (4.8%) and *Acinetobacter* species (4.8%).

Pleural fluid

The most frequently reported organism was *Staphylococcus coagulase negative* (23.3%) followed by *Staphylococcus aureus* (27.0%), *Escherichia coli* (5.4%), *Acinetobacter* species (4.1%), *Corynebacterium* species (4.1%), and *Streptococcus 'viridans'* (4.1%).

Other

The most common organisms reported were *Staphylococcus aureus* (18.0%), *Escherichia coli* (13.5%), *Staphylococcus epidermidis* (4.5%), *Enterococcus* species (5.4%), *Streptococcus* Group A (3.8%), and *Streptococcus 'milleri'* (3.8%).

Clinical category and risk factors

The remainder of this report consists of selected details of clinical categories and risk factors.

Meningitis

A total of 168 cases of meningitis and/or CSF isolate were reported in 1993 (Table 3). Most reports were in

children under the age of five years, this group accounting for 42% of total reports (Figure 6).

Three of the four most frequently reported organisms are well recognised as the common causative agents of meningitis: *Neisseria meningitidis* 39 cases, *Haemophilus influenzae* 31 cases, and *Streptococcus pneumoniae* 13 cases. Fifteen cases of meningitis due to *Cryptococcus neoformans* var *neoformans* were reported.

Neisseria meningitidis

There were 39 reports of *Neisseria meningitidis* meningitis. Sex was provided for 37 patients, 21 males and 16 females. Eighteen (46%) of these were in children under five years of age (Figure 7). Serogroup information was provided for 24 reports, eleven cases were reported as serogroup B and 12 as serogroup C (Table 4). The seasonal trend of meningococcal meningitis occurring in winter and spring is evident in the LabDOSS reports (Figure 8).

Figure 6. LabDOSS reports of meningitis, 1993, by age group

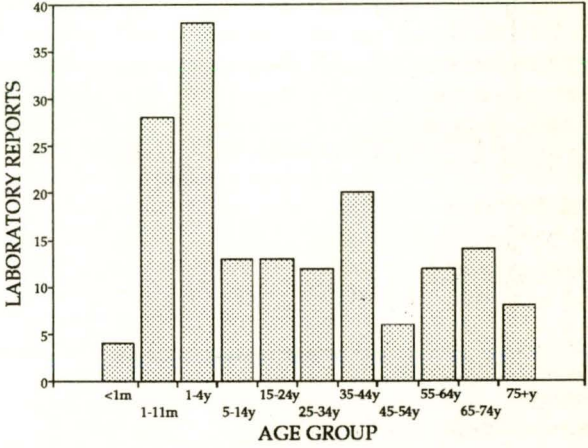


Figure 7. *Neisseria meningitidis* meningitis reports, 1993, by age group

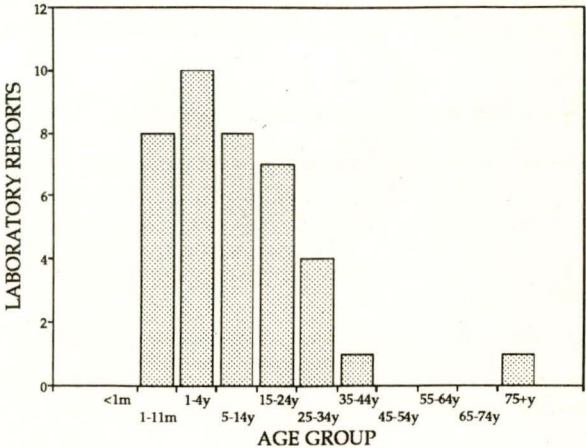


Table 2. Other sterile sites, percentage of reports for common organisms, 1993, n = 409

Organism	Per cent of reports for other sterile sites
<i>Staphylococcus aureus</i>	30.6
<i>Staphylococcus epidermidis</i>	10.3
<i>Escherichia coli</i>	8.1
<i>Staphylococcus coagulase negative</i>	7.3
<i>Pseudomonas aeruginosa</i>	3.7

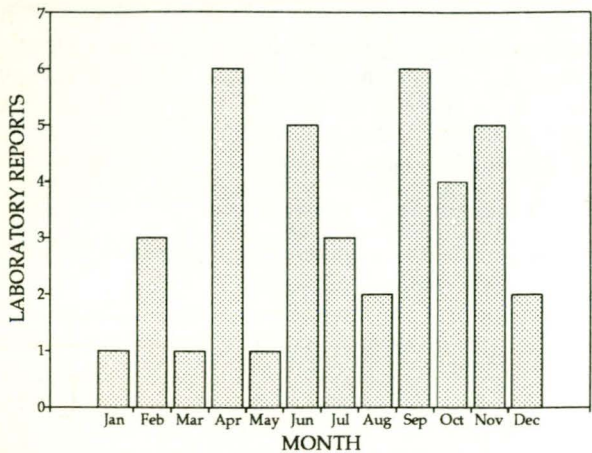
Table 3. LabDOSS reports of meningitis, 1993, by organism and age group

Organism	Age											
	Months		Years									Total
	<1	1-11	1-4	5-14	15-24	25-34	35-44	45-54	55-64	65-74	75+	
<i>Bacillus</i> species			1									1
<i>Candida albicans</i>	1											1
<i>Corynebacterium</i> species									1			1
<i>Cryptococcus neoformans</i>							2					2
<i>Cryptococcus neoformans</i> var <i>gattii</i>					1	1						2
<i>Cryptococcus neoformans</i> var <i>neoformans</i>						5	7		2		1	15
<i>Enterobacter aerogenes</i>		1							2			3
<i>Enterobacter cloacae</i>		1					1					2
<i>Enterococcus faecalis</i>						1						1
<i>Escherichia coli</i>							1		1			2
<i>Haemophilus influenzae</i>		9	18	1			3					31
<i>Haemophilus parainfluenzae</i>			1									1
<i>Klebsiella oxytoca</i>										1		1
<i>Klebsiella pneumoniae</i>									3			3
<i>Listeria monocytogenes</i>										4		4
<i>Micrococcus</i> species				1								1
<i>Neisseria gonorrhoeae</i>			1									1
<i>Neisseria meningitidis</i>		8	10	8	7	4	1				1	39
<i>Propionibacterium acnes</i>								1				1
<i>Propionibacterium</i> species		1				1						2
<i>Proteus mirabilis</i>		1								1		2
<i>Pseudomonas aeruginosa</i>		2										2
<i>Pseudomonas</i> species							1	1				2
<i>Serratia marcescens</i>	1	1										2
<i>Staphylococcus aureus</i>		1	1		1			2		3	1	9
<i>Staphylococcus coagulase negative</i>			2		1		3	2	1	2	1	12
<i>Staphylococcus epidermidis</i>			1		2							3
<i>Streptococcus</i> Group A				2	1						1	4
<i>Streptococcus</i> Group B	2	1										3
<i>Streptococcus pneumoniae</i>		1	3	1					2	3	3	13
<i>Streptococcus sanguis</i>							1					1
<i>Streptococcus</i> 'viridans'		1										1
Total	4	28	38	13	13	12	20	6	12	14	8	168

Table 4. *Neisseria meningitidis* meningitis reports, 1993, by group and age group

	Age							Total
	Months	Years						
		1-11	1-4	5-14	15-24	25-34	35-44	
Group B	3	1		4	3			11
Group C	1	2	4	3	1	1		12
Polyvalent ACYW135	1	1						2
Not provided	3	6	4				1	14
Total	8	10	8	7	4	1	1	39

Figure 8. *Neisseria meningitidis* meningitis reports, 1993, by month of specimen collection



Haemophilus influenzae

Twenty-six of the 31 cases of *Haemophilus influenzae* meningitis were reported as due to *Haemophilus influenzae* type b (Table 5). There were 18 males and 13 females. Twenty-seven (87%) of the reports were in children less than 4 years of age and nine (29%) were in children less than 11 months of age (Figure 9). Reports were received for each month of the year (Figure 10).

Table 5. *Haemophilus influenzae* meningitis reports, 1993, by serogroup and age group

	Age				Total
	Months	Years			
	1-11	1-4	5-14	35-44	
Serogroup b	8	17	0	1	25
No group	1	4	1	2	8
Total	9	18	1	3	31

Figure 9. *Haemophilus influenzae* meningitis reports, 1993, by age group

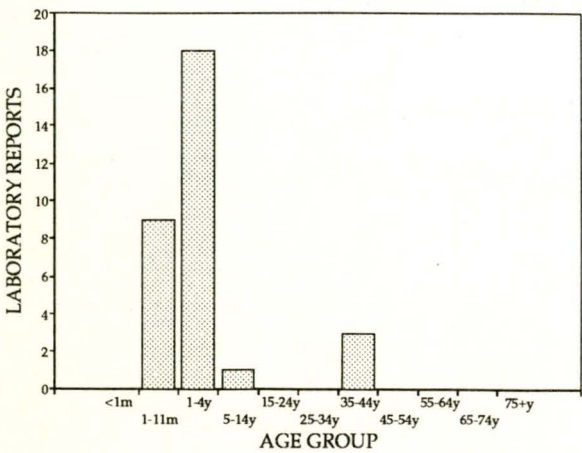
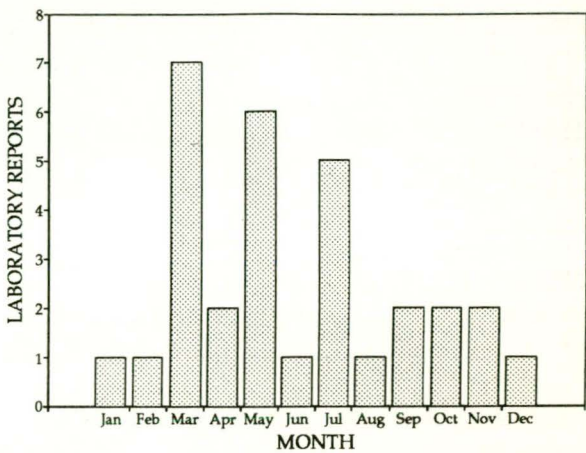


Figure 10. *Haemophilus influenzae* meningitis reports, 1993, by month of specimen collection



Streptococcus pneumoniae

Thirteen cases of pneumococcal meningitis were reported in 1993. Five cases were in children under 4 years and eight cases were in the 55 years and over age group (Figure 11). Sex distribution was four males, eight females and one unknown. Cases of pneumococcal meningitis occur in the elderly, the young and those with a predisposing risk factor. Risk factors were reported in only two cases, both reporting surgery and occurring in the 55-64 year age group. In the 1993 LabDOSS reports, pneumococcal meningitis occurred in most months of the year (Figure 12).

Figure 11. *Streptococcus pneumoniae* meningitis reports, 1993, by age group

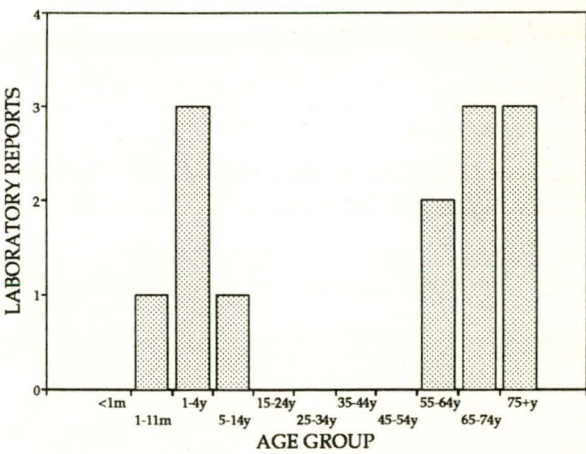
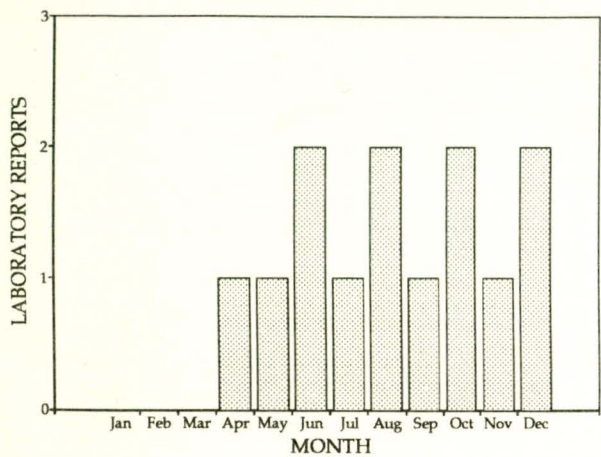


Figure 12. *Streptococcus pneumoniae* meningitis reports, 1993, by month of specimen collection



Cryptococcus neoformans

Immunodeficiency was identified as a risk factor for 14 of the 19 cases of cryptococcal meningitis reported; eleven patients had HIV infection (all males); one patient had a renal transplant. All cases occurred in the 15 years and over age groups and sex was reported for all patients, 14 males and 5 females. Biovariant information was provided for 17 reports; 15 were *Cryptococcus neoformans* var *neoformans* and two were *Cryptococcus neoformans* var *gattii*.

Staphylococcus coagulase negative

There were 12 cases of meningitis reported due to *Staphylococcus coagulase negative*. Seventy-five per cent were reported in the 35 years and over age groups; two (17%) cases were in children under four years. Clinical risk factors for sepsis were reported in six cases: one recent neurological surgery; two recent surgery, type unstated; two with CSF shunts; and one trauma patient.

Risk factors

In addition to the clinical diagnosis information, risk factor information was provided for some of the reports. In 16 reports of meningitis, a risk factor of

Table 6. Meningitis reports with a risk factor of surgery reported, 1993, by organism and surgery type

Organism	Risk factor			Total
	Surgery, unspecified	Neurosurgery	Vascular surgery	
<i>Enterobacter aerogenes</i>		1		1
<i>Enterococcus faecalis</i>		1		1
<i>Haemophilus influenzae</i>		1	1	2
<i>Klebsiella oxytoca</i>		1		1
<i>Klebsiella pneumoniae</i>		1		1
<i>Propionibacterium acnes</i>		1		1
<i>Staphylococcus aureus</i>		3		3
<i>Staphylococcus coagulase negative</i>	2	1		3
<i>Staphylococcus epidermidis</i>		1		1
<i>Streptococcus pneumoniae</i>	1	1		2
Total	3	12	1	16

Table 7. Meningitis reports with a risk factor of immunodeficiency reported, 1993, by organism and immunodeficiency type

Organism	Risk factor					Total
	HIV infection	Diabetes	Renal failure	Malignancy	Other	
<i>Cryptococcus neoformans</i>					1	1
<i>Cryptococcus neoformans</i> var <i>neoformans</i>	10		1		1	12
<i>Listeria monocytogenes</i>		1	1			2
<i>Cryptococcus neoformans</i> var <i>gattii</i>	1					1
<i>Pseudomonas</i> species				1		1
<i>Staphylococcus aureus</i>		1		1		2
<i>Staphylococcus coagulase negative</i>				1		1
Total	11	2	2	3	2	20

surgery was reported (Table 6) and in 20 cases immunodeficiency was reported (Table 7). Vascular prostheses were reported in 9 cases; 8 had CSF shunts, and 8 were neonates.

Other reports of *Streptococcus pneumoniae*, *Haemophilus influenzae* and *Neisseria meningitidis*

Streptococcus pneumoniae

There were 164 reports of *Streptococcus pneumoniae* bacteraemia without meningitis. There was a slight preponderance of males (88) over females (75), and reports were more common in the very young and elderly (Figure 13).

Clinical diagnosis was provided for 111 cases; lower respiratory tract infection was reported in 102 cases, gastrointestinal disease in seven cases, 'deep skin' infection in one case, and there was one case of septic arthritis. Risk factors were provided for 31 cases: 20 immunocompromised, five surgery, one pregnancy, and one preterm neonate.

Haemophilus influenzae

A total of 52 reports of isolates of *Haemophilus influenzae* bacteraemia without meningitis were received (Figure 14). Thirty-four reports were *Haemophilus influenzae* type b, one was reported as not type b, and in 17 no group was provided. Sex was provided for all 52 reports; 30 (58%) of these were female. There were more reports in the age group four years and younger than in older age groups. In the 5-14 year age group there were six reports, five infections with type b. All of these reports were in children aged five and six years.

The clinical information recorded for the reports of *Haemophilus influenzae* reflects the documented spectrum of disease due to this organism. Of the 52 reports there were 15 cases of lower respiratory tract infection, 10 cases of 'deep skin' infection, four cases of epiglottitis (three aged one to four years, one aged 55 to 64 years) and one case of septic arthritis. Risk factors were provided for 11 patients; three immunocompromised, two preterm neonates, five surgery and one vascular prosthesis.

Neisseria meningitidis

The 1993 LabDOSS data contains seven reports of *Neisseria meningitidis* bacteraemia without meningitis. All reports were for females; three in the less than four years age group, one in each age group from five to 24 years, and one in the 45 to 54 year age group. Serogroup data were provided for five of the reports; 4 group B, one group C. This is similar to the reports of meningococcal meningitis where group B was also more frequently reported than group C.

Endocarditis

There were 84 cases of endocarditis reported, 66 involving a native valve and 18 cases a prosthetic valve. The number of reports was highest in the 45 to 54 year age group followed by the 65 to 74 year age group (Figure 15). Seventy-three per cent of cases were 45 years of age

Figure 13. *Streptococcus pneumoniae* reports of bacteraemia without meningitis, 1993, by

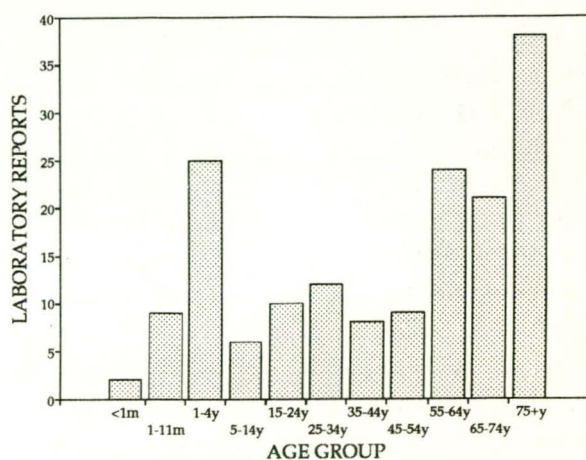


Figure 14. *Haemophilus influenzae* reports of bacteraemia without meningitis, 1993, by age group

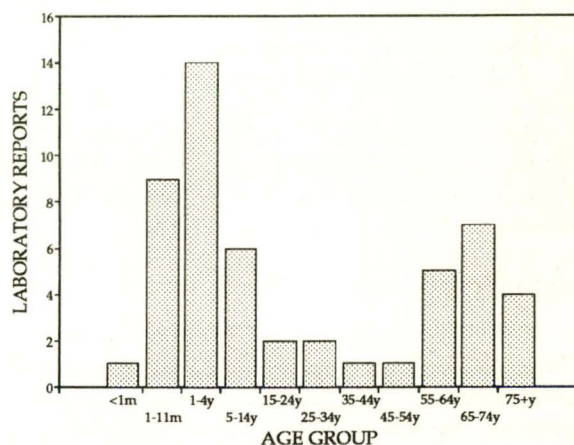


Figure 15. LabDOSS reports of endocarditis, 1993, by age group and sex

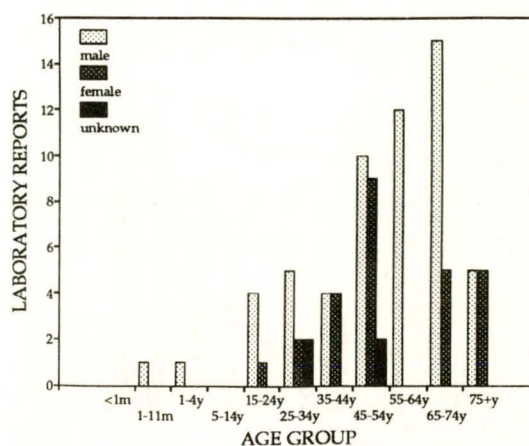


Table 8. Commonly reported organisms for cases of native valve and prosthetic valve endocarditis, 1993, per cent

Organism	Native valve n = 66	Prosthetic valve n = 18	Total n = 84
<i>Staphylococcus aureus</i>	24.2	22.2	23.8
<i>Staphylococcus coagulase negative</i>	7.6	5.6	7.1
<i>Enterococcus faecalis</i>	4.5	16.7	7.1
<i>Streptococcus sanguis</i>	16.7	16.7	16.7
<i>Streptococcus 'viridans'</i>	12.1	5.6	10.7
<i>Streptococcus species</i>	10.6	5.6	9.5
<i>Staphylococcus epidermidis</i>	3.0	11.1	4.8
Other	21.3	16.5	20.2
Total	100	100	100

and over. Endocarditis was more common in males, the male to female ratio being 2.3:1. The male predominance was present in all age groups except for the 35 to 44 years and over the 75 years age groups. Gram positive organisms were responsible for 87% of reports of endocarditis. Eighty-six per cent of reports were attributed to three organisms or organism groups (Table 8). Enterococcal endocarditis was not reported under 55 years of age. Native valve infection was more frequently reported due to *Staphylococcus aureus* and *Streptococcus sanguis*. Prosthetic valve endocarditis was more frequently reported due to enterococci and *Staphylococcus aureus*.

Epiglottitis

There were five reports of epiglottitis. *Haemophilus influenzae* was isolated in four cases, *Streptococcus pneumoniae* in one case. Sex was reported in four cases, three females and one male. Three cases were under four years of age and two were in the 55-64 year age group.

Gastrointestinal disease

A total of 506 cases of gastrointestinal disease were reported. Cases of gastrointestinal disease were predominant in males, the male to female ratio being 1.2:1.0 (Figure 16). *Escherichia coli* was the most frequently reported organism. Fifty-two per cent of cases were due to eight organisms (Table 9). *Escherichia coli* was the most common organism in all age groups 35 years and

over. *Escherichia coli* was also the most commonly reported organism in infants less than one month and in the five to 14 year age group. *Staphylococcus coagulase negative* was the most commonly reported organism in the one to 11 months and 15 to 24 year age groups. *Salmonella species* was most commonly reported in the one to 4 year age group.

Lower respiratory tract infections

Lower respiratory tract infections were reported for 262 cases. Cases of lower respiratory tract infections were predominant in males, the male to female ratio being 1.2:1 (Figure 17). *Streptococcus pneumoniae*, *Staphylococcus aureus*, *Escherichia coli* and *Haemophilus influenzae* were the most frequently reported organisms. Seventy-three per cent of cases were due to seven organisms (Table 10). *Streptococcus pneumoniae* was the most common organism in all age groups except age less than one month. *Streptococcus Group B* was the most common organism reported in infants less than one month. *Staphylococcus aureus* was the second most frequently reported organism. Lower respiratory tract

Figure 16. LabDOSS reports of gastrointestinal disease, 1993, by age group and sex

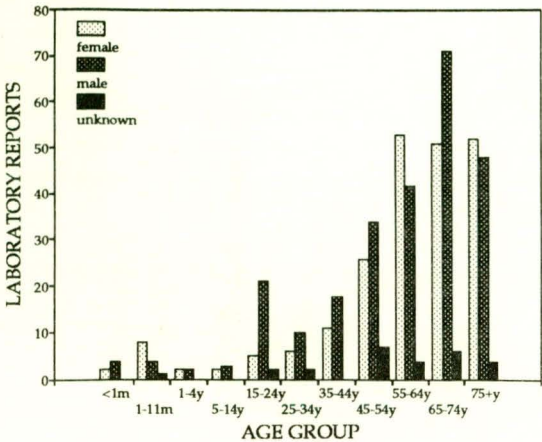


Table 9. Commonly reported organisms for cases of gastrointestinal disease, 1993, per cent

Organism	Per cent of total n = 506
<i>Escherichia coli</i>	22.8
<i>Kingella kingae</i>	6.2
<i>Pseudomonas aeruginosa</i>	4.8
<i>Staphylococcus aureus</i>	4.2
<i>Staphylococcus coagulase negative</i>	4.2
<i>Bacteriodes fragilis</i>	3.6
<i>Klebsiella oxytoca</i>	3.2
<i>Staphylococcus epidermidis</i>	3.2

Figure 17. LabDOSS reports of lower respiratory tract infection, 1993, by age group and sex

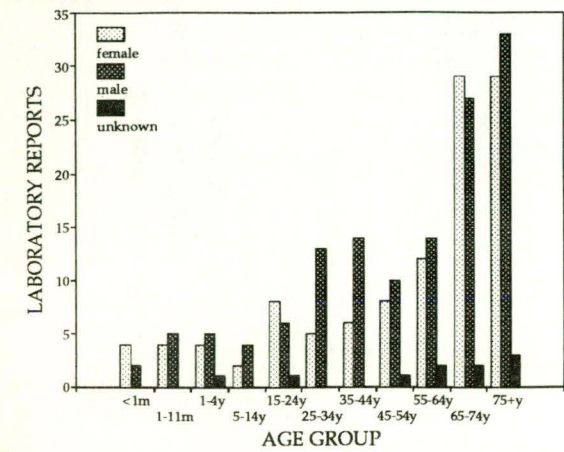


Table 10. Commonly reported organisms for cases of lower respiratory tract infection, 1993, per cent

Organism	Per cent of total n = 262
<i>Streptococcus pneumoniae</i>	40.2
<i>Staphylococcus aureus</i>	10.8
<i>Escherichia coli</i>	7.7
<i>Haemophilus influenzae</i>	6.6
<i>Pseudomonas aeruginosa</i>	4.2
<i>Staphylococcus coagulase negative</i>	4.2
<i>Staphylococcus epidermidis</i>	3.5

infection sepsis from this organism was only present in adolescents over 15 years of age.

Septic arthritis and osteomyelitis

A total of 118 cases of septic arthritis and 48 cases of osteomyelitis were reported. Cases of septic arthritis were predominant in males, the male to female ratio being 2.1:1.0 (Figure 18). Sex was reported for 44 cases of osteomyelitis and there were nearly equal numbers of each sex, 24 males to 20 females (Figure 19). *Staphylococcus aureus* was the most frequently reported organism in both septic arthritis and osteomyelitis. (Table 11). Staphylococci were responsible for most cases of infection of bone and joints. For septic arthritis, *Staphylococcus aureus* was the most common organism reported in all age groups except in infants aged between one and 11 months. *Haemophilus influenzae* and *Streptococcus* Group A were the two organisms reported in this age group. For osteomyelitis, *Staphylococcus aureus* was the most frequently reported isolate in the over 55 years age groups, and also in the less than one month, 5 to 14 years and 25 to 34 years age groups. In the 15 to 24 year age group *Streptococcus*

Figure 18. LabDOSS reports of septic arthritis, 1993, by age group and sex

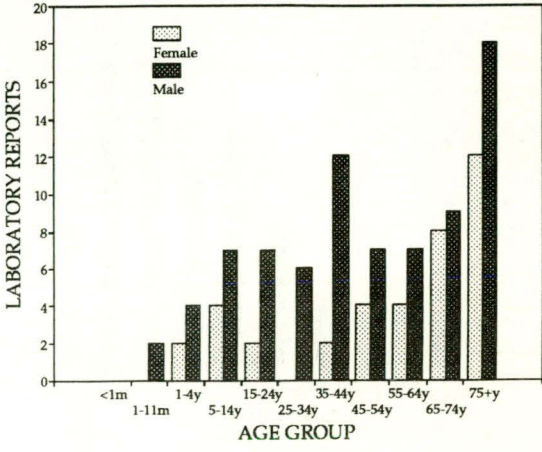


Figure 19. LabDOSS reports of osteomyelitis, 1993, by age group and sex

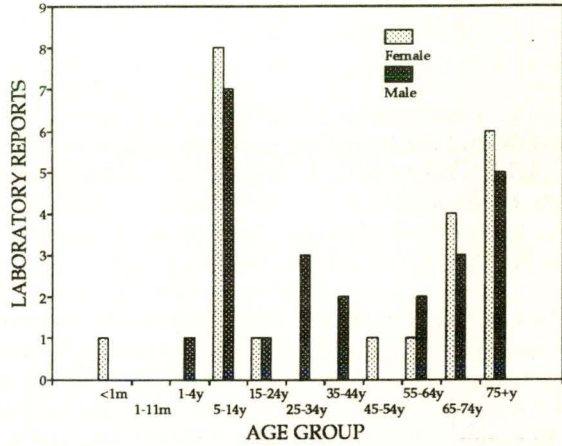
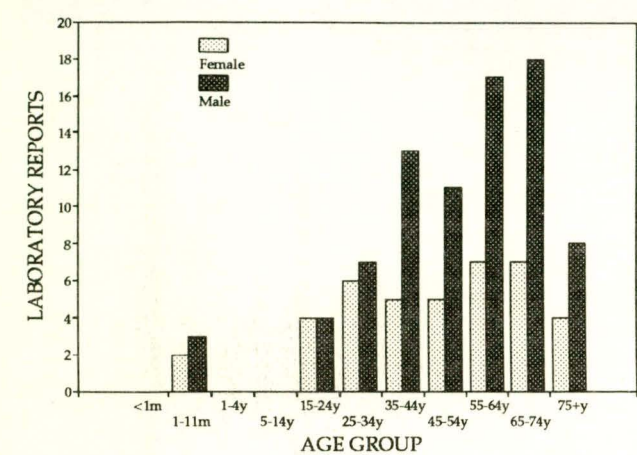


Table 11. Commonly reported organisms for cases of septic arthritis and osteomyelitis, 1993, per cent

Organism	Septic arthritis, % of total n = 118	Osteomyeli- tis, % of total n = 48
<i>Staphylococcus aureus</i>	67.8	70.8
<i>Staphylococcus coagulase negative</i>	2.5	12.5
<i>Escherichia coli</i>	4.2	-
<i>Streptococcus</i> Group G	3.4	2.1
<i>Streptococcus</i> Group A	3.4	2.1
<i>Pseudomonas aeruginosa</i>	3.4	-
<i>Haemophilus influenza</i>	0.8	-

Figure 20. LabDOSS reports of phlebitis, 1993, by age group and sex



'milleri' was the most frequently reported and in the 45 to 54 year age group, *Enterococcus faecum*. *Staphylococcus* coagulase negative was the second most frequently reported organism and was the most common in the one to 4 years (also with *Kingella kingae*) and the 35 to 44 years age groups.

Phlebitis

There were 124 cases of phlebitis. Cases of phlebitis were predominant in males, the male to female ratio being 2.1:1.0 (Figure 20). *Staphylococcus aureus*, *Staphylococcus epidermidis* and *Staphylococcus* coagulase negative were the most frequently reported organisms. Seventy-seven per cent of cases were due to seven organisms (Table 12). *Staphylococci* were responsible for most cases of phlebitis. *Staphylococcus aureus* was the most common organism reported in the 15 to 24 year age group and in all age groups over 45 years. *Staphylococcus epidermidis* was also equally reported in the 15 to 24 year and 45 to 54 year age groups. *Staphylococcus epidermidis* was the second most frequently reported organism, and was the most common organism reported in all other age groups with reports.

Table 12. Commonly reported organisms for cases of phlebitis, 1993, per cent

Organism	Per cent of total n = 124
<i>Staphylococcus aureus</i>	32.3
<i>Staphylococcus epidermidis</i>	22.6
<i>Staphylococcus coagulase negative</i>	14.5
<i>Corynebacterium jk</i>	3.2
<i>Enterococcus species</i>	3.2
<i>Streptococcus sanguis</i>	2.4

Figure 21. LabDOSS reports of skin/cellulitis/wound, 1993, by age group and sex

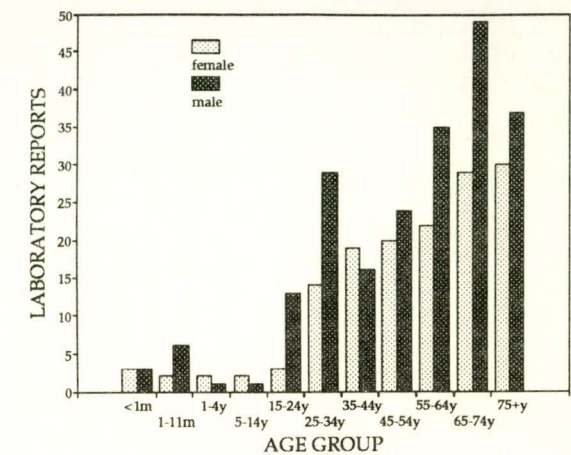
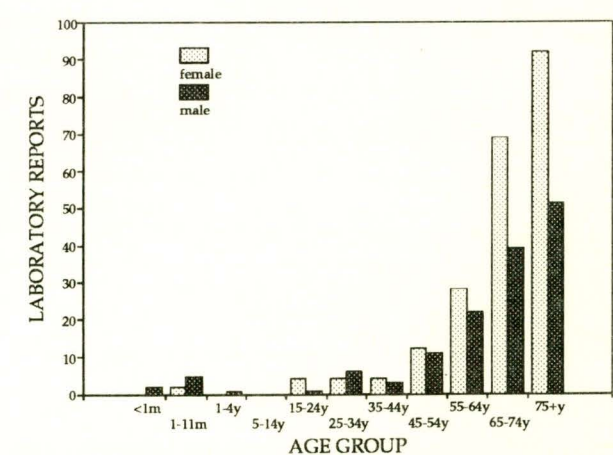


Figure 22. LabDOSS reports of urinary tract infection, 1993, by age group and sex



Skin/cellulitis/wound

Skin/cellulitis/wound was reported in 380 cases. Cases were predominant in males, the male to female ratio being 1.5:1.0. (Figure 21). *Staphylococcus aureus* (including MRSA), *Escherichia coli* and *Staphylococcus* coagulase negative were the most frequently reported organisms. Seventy per cent of cases were due to eight organisms (Table 13). *Staphylococcus aureus* was the most common organism in all age groups. *Staphylococcus* coagulase negative was the third most frequently reported organism and was equally as common as *Staphylococcus aureus* in the one to 11 month and the one to 4 year age groups.

Urinary tract infection

A total of 369 cases of urinary tract infection (UTI) and 71 cases of UTI post catheterisation or instrumentation were reported. Cases of UTI were predominant in females, the female to male ratio being 1.5:1.0 (Figure 22). Cases of UTI post catheterisation/instrumentation

Figure 23. LabDOSS reports of urinary tract infection post catheterisation/instrumentation, 1993, by age group and sex

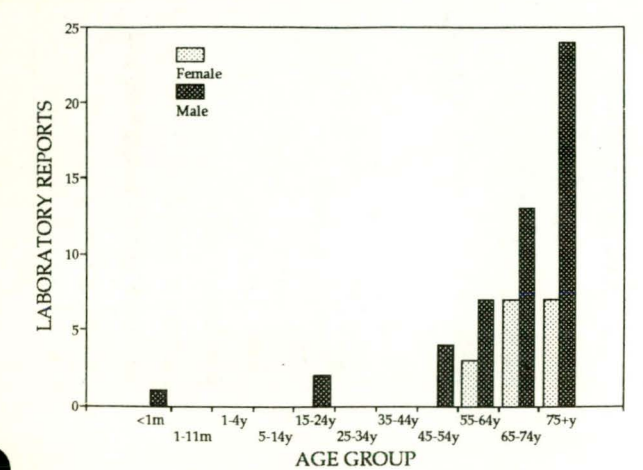


Table 13. Commonly reported organisms for cases of skin/cellulitis/wound, 1993, per cent

Organism	Per cent of total n = 380
<i>Staphylococcus aureus</i>	40.5 ¹
<i>Escherichia coli</i>	5.3
<i>Staphylococcus coagulase negative</i>	5.0
<i>Streptococcus</i> Group A	4.2
<i>Staphylococcus epidermidis</i>	3.4
<i>Streptococcus</i> Group G	3.2
<i>Streptococcus faecalis</i>	3.2
<i>Pseudomonas aeruginosa</i>	3.2

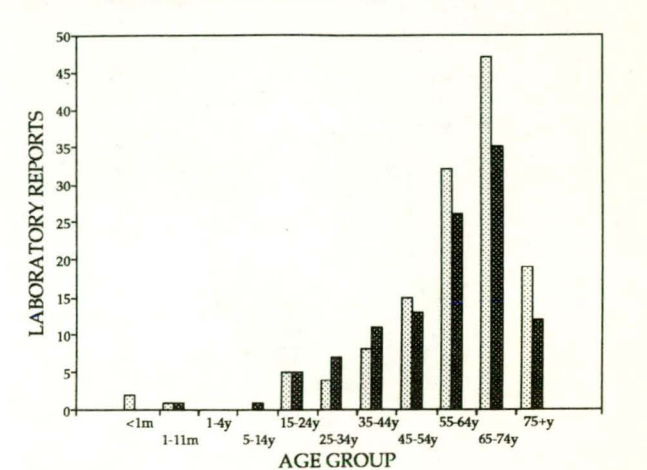
1. MRSA 5.5%.

Table 14. Commonly reported organisms for cases of urinary tract infection, 1993, per cent

Organism	UTI % of total n = 369	UTI post catheterisation % of total n = 290
<i>Escherichia coli</i>	71.0	39.4
<i>Proteus mirabilis</i>	5.4	14.1
<i>Klebsiella pneumoniae</i>	4.6	11.3
<i>Pseudomonas aeruginosa</i>	3.8	8.5
<i>Klebsiella species</i>	2.4	2.8
<i>Staphylococcus aureus</i>	2.2	8.5

were predominant in males; the male to female ratio for cases of UTI post catheterisation/instrumentation was 2.9:1.0 (Figure 23). *Escherichia coli*, *Proteus mirabilis* and *Klebsiella pneumoniae* were the most frequently reported organisms in both UTI and UTI post catheterisation/in-

Figure 24. LabDOSS reports of hospital acquired infection, 1993, by age group and sex



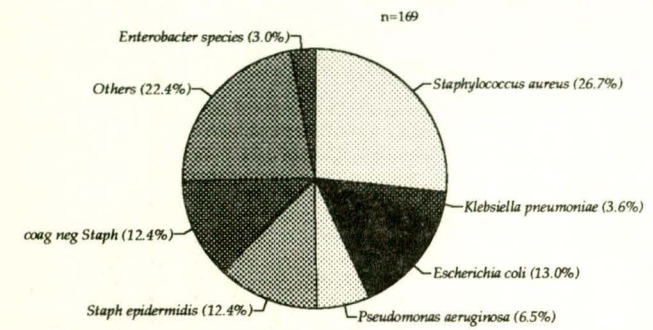
strumentation. Eighty-nine per cent of cases were due to six organisms (Table 14). *Escherichia coli* was the most commonly reported organism in all age groups for urinary tract infections. *Proteus mirabilis* was the second most frequently reported organism. UTI from this organism was only present in adults 55 years of age and older.

In UTI post catheterisation/instrumentation *Escherichia coli* was the most common organism in the less than one month of age and the 55 to 74 year age groups. *Proteus mirabilis* was the second most frequently reported organism and the most common in the 75 years and over age group. *Staphylococcus aureus* was the most common organism in the 15 to 24 year age group and *Klebsiella pneumoniae* was most frequently reported in the 45 to 54 year age group.

Hospital acquired infections

There were 169 reports of organisms from sterile sites in patients with hospital acquired infections. Hospital acquired infections were predominant in males, the male to female ratio being 2.7:1. Infections were more common in the 55 years and over age groups, which accounted for 61.2% of all reports (Figure 24). *Staphylococcus aureus* (including MRSA), *Escherichia coli*, *Staphylococcus coagulase negative* and *Staphylococcus epidermidis* were the most frequently reported organisms. Seventy-eight per cent of cases were due to eight organisms (Figure 25). *Staphylococcus aureus* was the most common organism reported in all age groups 45 years and over as well as in the one to 11 month and 25 to 34 years (equal numbers reported of *Staphylococcus epidermidis* in this age group). *Staphylococcus epidermidis* was the third most frequently reported organism and the most common in the 15 to 24 year and 35 to 44 year age groups.

Figure 25. Commonly reported organisms for cases of hospital acquired infection, 1993, per cent



Surgery

A risk factor of recent surgery was reported in 459 reports of organisms from sterile sites (10.7%). Abdominal surgery was most frequently reported, 4.6% of all reports, followed by thoracic (1.5%), orthopaedic (0.9%), urinary tract and vascular surgery (0.8% each), neurological (0.7%). Surgery type unspecified represented 1.3%.

Abdominal surgery

There were 197 reports with abdominal surgery as a risk factor for sepsis. Cases were predominant in males, the male to female ratio being 1.4:1.0. Cases were reported in all age groups with the majority in the older age group (72.7% occurring in patients 55 years and older) (Figure 26). The three most frequently reported organisms were *Escherichia coli*, *Staphylococcus aureus* and *Pseudomonas aeruginosa*.

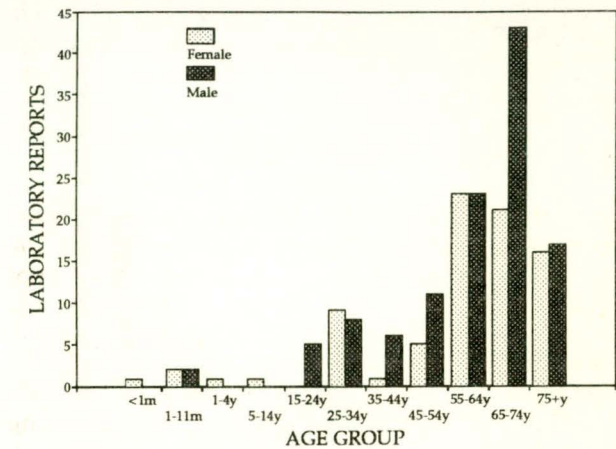
Orthopaedic surgery

Forty reports with orthopaedic surgery as a risk factor for sepsis were received. There were nearly equal cases reported in both sexes, the male to female ratio being 1.1:1.0. Sepsis was only present in persons 15 years and over. The majority of cases (67.5%) occurred in the 65 years and over age groups (Figure 27). The three most frequently reported organisms were *Staphylococcus aureus*, *Staphylococcus coagulase negative* and *Escherichia coli*.

Urinary tract surgery

A total of 36 reports with urinary tract surgery as a risk factor for sepsis were received. Cases were predominant in males, the male to female ratio being 4.1:1.0. All cases were reported in the 55 years and over age groups. The four most frequently reported organisms were *Escherichia coli*, *Pseudomonas aeruginosa*, *Enterococcus faecalis* and *Proteus mirabilis*.

Figure 26. LabDOSS reports with abdominal surgery as a risk factor, 1993, by age group and sex



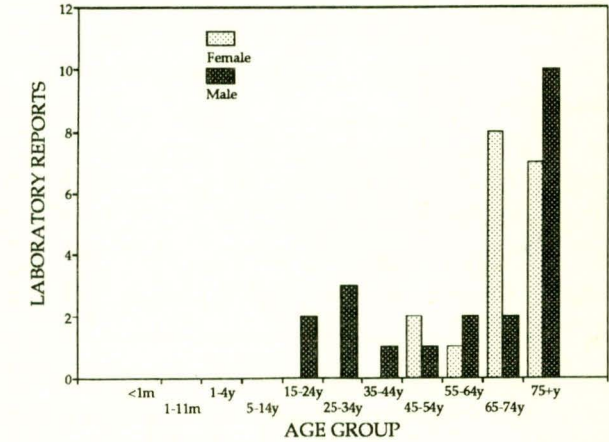
Thoracic surgery

Thoracic surgery was recorded as a risk factor for sepsis in 66 reports. Cases were predominant in males, the male to female ratio being 3.1:1.0. The majority of cases (84.8%) were reported in the 55 years and over age groups. The four most frequently reported organisms were *Staphylococcus aureus*, *Staphylococcus epidermidis*, *Enterobacter cloacae* and *Enterococcus faecalis*.

Vascular surgery

Thirty-five reports recorded vascular surgery as a risk factor for sepsis. Cases were predominant in males, the male to female ratio being 3.4:1.0. The 55 years and over age groups reported 71% of cases. The three most frequently reported organisms were *Staphylococcus aureus*, *Staphylococcus coagulase negative* and *Escherichia coli*.

Figure 27. LabDOSS reports with orthopaedic surgery as a risk factor, 1993, by age group and sex



Neurosurgery

There were 29 reports with neurosurgery as a risk factor for sepsis. Cases were predominant in males, the male to female ratio being 1.4:1.0. The majority of cases (68.9%) were reported in the 45 years and over age groups. The four most frequently reported organisms were *Staphylococcus aureus*, *Klebsiella pneumoniae*, *Pseudomonas aeruginosa*, and *Staphylococcus epidermidis*.

Compromised immune status

Twenty-four per cent (1034) of all reports listed immunocompromised status as a risk factor for sepsis. The sexes were approximately equally represented except for HIV/AIDS where males were predominant, the male to female ratio being 10:1 in this group. Thirty-three per cent of these 1034 reported malignancy, 24.3% renal failure, 14.9% neutropaenia, 8.8% diabetes, 5.3% HIV/AIDS, 3.2% renal transplant, and 1.2% injecting drug use. Immunocompromised type, unspecified, represented 8.5%.

HIV/AIDS

There were 55 reports with HIV/AIDS as a risk factor for sepsis. Most cases (74.5%) were reported in the 25 to 44 year age groups and the male to female ratio was 10:1 (Figure 28). The three most commonly reported organisms were *Cryptococcus neoformans* var *neoformans*, *Staphylococcus aureus* and *Staphylococcus coagulase* negative.

Diabetes

Diabetes was reported as a risk factor for sepsis in 91 patients. There were nearly equal cases reported in both sexes, the female to male ratio being 1.1:1.0. The majority of cases (84.7%) occurred in the 45 years and over age groups. Two organisms, *Escherichia coli* and *Staphylococcus aureus* were the most commonly reported and were responsible for 44.5% of cases.

Injecting drug use

Twelve reports nominated injecting drug use as a risk factor for sepsis. Cases were reported only in the 15 to 44 year age groups and occurred equally in males and females. The most commonly reported organism was *Staphylococcus aureus* which was identified in 55% of cases.

Renal transplant

A total of 33 reports with renal transplant as a risk factor for sepsis were received. Cases were predominant in males, the male to female ratio being 1.8:1.0. The highest number of cases (42%) was reported in the 55 to 64 year age group. The two most frequently reported organisms were *Staphylococcus aureus* and *Enterobacter cloacae*.

Renal failure

Renal failure was reported in 251 patients as a risk factor for sepsis. There were nearly equal cases reported in both sexes, the female to male ratio being 1.2:1.0. Most cases (68.2%) were reported in the five

Figure 28. LabDOSS reports with HIV/AIDS as a risk factor, 1993, by age group and sex

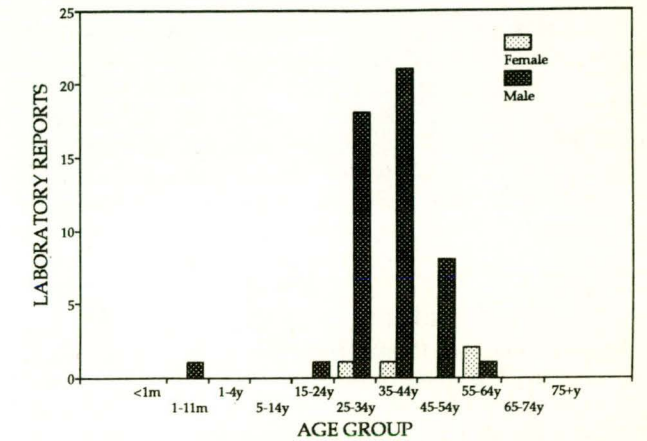


Figure 29. LabDOSS reports with renal failure as a risk factor, 1993, by age group and sex

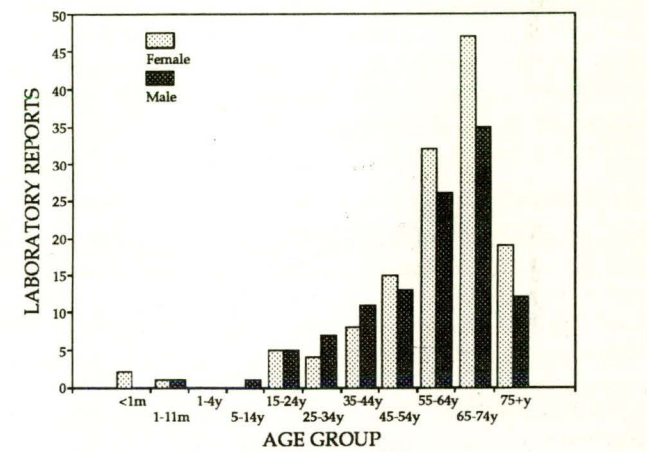
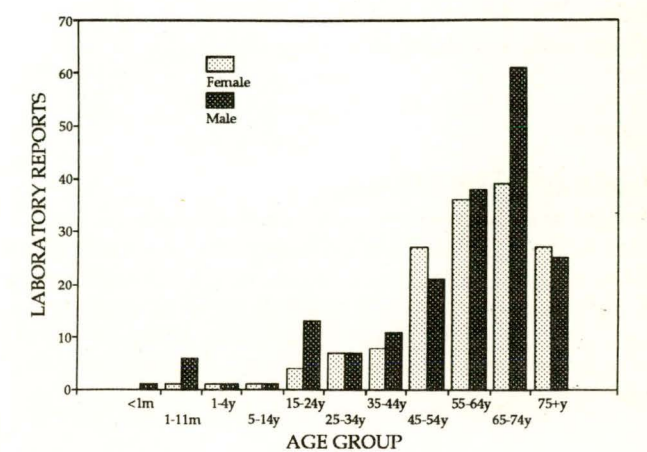


Figure 30. LabDOSS reports with malignancy as a risk factor, 1993, by age group and sex



years and over age groups (Figure 29). The three most commonly reported organisms were *Staphylococcus aureus*, *Staphylococcus epidermidis* and *Escherichia coli*.

Malignancy

A total of 350 reports with malignancy as a risk factor for sepsis were received. Cases of malignancy were predominant in males, the male to female ratio being 1.3:1. The largest number of cases (65.7%) were reported in the over 55 years age groups (Figure 30). The three most commonly reported organisms were *Escherichia coli*, *Staphylococcus aureus* and *Pseudomonas aeruginosa*.

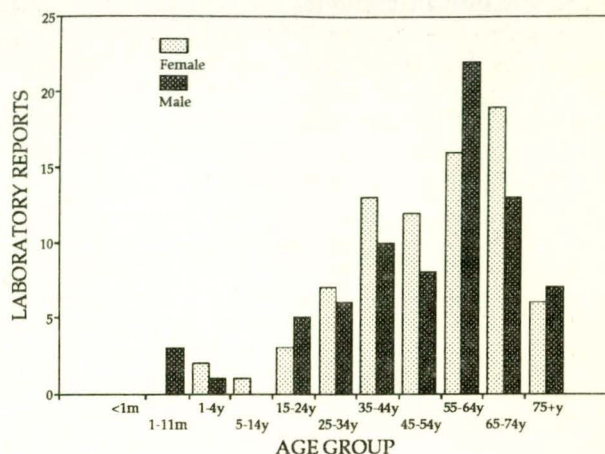
Neutropaenia

One hundred and fifty-four cases included neutropaenia as a risk factor for sepsis. There were nearly equal cases reported in both sexes, the female to male ratio being 1.1:1.0. Patients 35 years and over were the most frequently represented, with this age group accounting for 81.8% of all reports (Figure 31). The three most frequently reported organisms were *Escherichia coli*, *Pseudomonas aeruginosa* and *Staphylococcus epidermidis*.

Acknowledgement

The contribution of all the LabDOSS laboratories is gratefully acknowledged, as is the assistance of Htoo Myint and Michelle Wood.

Figure 31. LabDOSS reports with neutropaenia as a risk factor, 1993, by age group and sex



SCHISTOSOMIASIS - A NEED FOR INCREASING VIGILANCE

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Introduction

Schistosomiasis, or bilharziasis, is a chronic debilitating parasitic infection caused by four main blood flukes of the class Trematoda. About 300 million persons throughout the world are infected. The geographic distribution is governed by the distribution of the intermediate fresh water snail hosts¹:

Urinary schistosomiasis

Schistosoma haematobium Africa (including Madagascar and Mauritius); the Middle East; India (Maharashtra)

Intestinal schistosomiasis

Schistosoma mansoni Africa (including Madagascar); the Arabian peninsula; South America (Brazil, Surinam and Venezuela); some Caribbean islands.

Schistosoma japonicum China; Japan; Philippines; Indonesia (Sulawesi)

Schistosoma mekongi

Mekong River area of Laos; Cambodia; Thailand.

The infected fresh water snails release cercariae (the larval form of the worms) into their fresh water habitats. Infection is acquired when the cercariae penetrate the skin, usually while the person is working, swimming or wading in water. In the human host, cercariae mature into adult worms that mate and deposit eggs. Adult worm pairs are generally located in the venous plexi surrounding the urogenital tract for *Schistosoma haematobium* or surrounding the intestine for *S. mansoni*, *S. japonicum*, and *S. mekongi*.

Egg deposition takes place intravascularly from four to 12 weeks after infection and the eggs work their way through the tissues into the lumen of the urinary bladder or the intestine. Migration of either adult worm pairs or eggs may result in the dissemination of eggs to ectopic locations such as the central nervous system (CNS) or the spinal cord. Eggs passed in faeces and urine contain a mature miracidium that actively seeks out a suitable fresh water snail host. Infected snails release cercariae to reinitiate the cycle.

Although the appropriate intermediate snail host is not found in Australia and transmission in this country does not occur, we are seeing many more cases of schistosomiasis and wish to report our experience over the past two years, from 1 October 1992 to 30 September 1994. Prior to this time, very few cases were diagnosed through this laboratory.

Methods

For most cases, diagnosis has initially been made on the basis of serological tests. The test employed in our laboratory is indirect haemagglutination (IHA) which utilises adult worm somatic antigens (Cellognost Schistosomiasis, Behring). Titres $\geq 1:64$ were considered diagnostically significant. Low positive titers (1:16, 1:32) were assessed in conjunction with the clinical history, presence of eosinophilia on full blood count and the results a second diagnostic serological test. For the second test, serum was forwarded to the Parasitology Department, Westmead Hospital, Sydney, which used an ELISA method employing soluble egg extracts as antigen. In both test types the worm used for antigen (adult and egg, respectively) was *S. mansoni*. Because both tests detect genus specific antibodies, in the absence of egg detection, travel history is necessary if the species of worm is to be determined².

Results

Amongst about 175 patients tested by IHA, 65 showed positive titres. Twenty-two had low positive titres (1:16, 1:32), whilst 43 had high positive titers ($\geq 1:64$). All the latter were travellers to or expatriates from Africa. Many of the 65 were asymptomatic and had presented for screening because they were aware of having been to a bilharzia endemic area. Ten presented following onset of terminal haematuria or the passage of blood clots in urine and dysuria.

Thirteen cases had eggs in urine with the terminal spine morphology of *S. haematobium*. Two were initially diagnosed on bladder histology following cystoscopy for haematuria whilst one was detected on urine cytology on investigation for haematuria. Although many patients had one or more stool examinations, eggs of *S. mansoni*, also endemic in Africa, were not found. For a small number of patients, the miracidial hatch technique was performed on freshly collected faecal specimens to increase the volume of faeces examined; none was positive. Similarly, a small number of rectal biopsies demonstrated no pathology.

Of the 22 samples positive in low titres only, 18 were tested by the ELISA method at Westmead Hospital. Only two were positive (optical density readings >0.500), whilst five fell into the borderline category for the ELISA test (>0.250 and ≤ 0.500) and 11 gave negative results (≤ 0.250). At least two of the 22 are likely to have had false positive IHA results as the patients had travelled only to Bali, Sabah and Sarawak where schistosomiasis is not endemic. Another had confirmed filarial disease, and the low positive result may

have represented a cross reaction. Follow-up tests showed no increases in titres.

An additional case of schistosomiasis diagnosed during this period had false negative results with both the IHA and ELISA (Westmead) tests. The patient was an expatriate who had lived in Mauritius for 14 years and who presented with haematuria and probably renal colic. Biopsy of the urinary bladder showed *S. haematobium* eggs without tissue reaction around them, suggesting old inactive disease. An immunoblot performed at the Centers for Disease Control and Prevention (CDC), Atlanta, was positive for antibody to *S. haematobium*.

A high attack rate for infection was demonstrated for one group of travellers which included symptomatic cases, and in which testing of travelling asymptomatic companions demonstrated further infections. A rugby union team had travelled from Brisbane to Zimbabwe from 24 February to 10 March this year. Contact with fresh water included white water rafting on the Zambezi River above the Victoria Falls and three days on a houseboat on Lake Kariba. A few also water skied on the dam outside Harare. Seven weeks after return, two players presented simultaneously with symptoms consistent with Katayama fever ('acute' schistosomiasis, which occurs when the worms have matured and egg production begins, characterised by fevers, night sweats, abdominal pain, anorexia, diarrhoea, weight loss, lethargy, headaches and a non-productive cough). Both had eosinophilia on full blood count (2.27 and 2.10×10^9 /L; normal range $0.00 - 0.60$). IHA titres for schistosomiasis were 1:256 for both, and supplementary testing by ELISA at Westmead was also positive. Following their diagnosis, we attended a team training session and provided educational material about the condition, administered questionnaires, and advised screening with full blood count, serology and urine examinations. Tests were arranged at 11 weeks and again at 21 weeks after return from Zimbabwe.

Information was available on 23 of the 27 players (Table). The attack rate was 57% (13/23). Six suffered symptoms consistent with Katayama fever. One with a low positive titre (1:16) later developed spinal cord schistosomiasis. The remaining 10 players have remained asymptomatic. Eggs could not be demonstrated in urine or stool of the players tested, so the infecting species remains uncertain. Species spe-

Table. IHA serology testing of rugby players (n = 23)

	Weeks after return	
	11	21
Positive high titre	12 eosinophilia: 8	13
Positive low titre	3 eosinophilia: 2	3
Negative	8 eosinophilia: nil	7

cific immunoblot results on sera and cerebrospinal fluid are awaited from CDC, Atlanta.

Another patient diagnosed in the last two years, whose only fresh water exposure was at Lake Malawi, presented with marked pruritus, urticaria, a persistent dry non-productive cough with a chest X-ray showing a bilateral interstitial infiltrate. He had a peripheral eosinophilia ($4.08 \times 10^9/L$). Another presented with a persistent widespread pruritus, rash predominantly involving the thighs and peripheral eosinophilia for two years following an overland trip across Africa. Biopsy of the rash suggested a dermal hypersensitivity reaction with large numbers of eosinophils. No granulomas or eggs were demonstrated but serology was strongly positive. Her symptoms and eosinophilia resolved with praziquantel therapy. For both these cases, asymptomatic travelling companions had high positive serology although they were asymptomatic.

Conclusions

The prevalence of schistosomiasis is increasing in many areas of the world due to agricultural development. Because travel to endemic areas, particularly Africa, is becoming increasingly popular, Australian medical practitioners should be aware of the various clinical features and methods of diagnosis and management; schistosomiasis, should be considered in returning overseas travellers as well as malaria and other exotic infections³.

Eggs may remain undetectable in urine or faeces until the end of the prepatent period which may last up to 12 weeks. With a light worm burden, only a few eggs may be present. Serological diagnosis is most sensitive, enabling diagnosis before substantial egg deposition or excretion. Antibodies may not develop for several weeks so testing should be repeated up to three months after last possible exposure. There is some suggestion that IHA becomes positive before the egg antigen ELISA².

In this series, although attempts were made to obtain a specific parasitological diagnosis, confirmation was obtained in only 13 of the 65 positive cases (20%). The most useful specimen, because of the species involved, was the centrifuged deposit of the terminal portion of urine collected between 12 midday and 3pm, where peak egg excretion is thought to occur. All of the sediment must be examined. One patient had five urine examinations before small numbers of eggs were found.

Medical practitioners must be aware that symptoms may not appear until many months or years following exposure to the parasite. Rarely, tragic consequences may occur, as with non-resolving neurological involvement.

This study shows infection with *S. haematobium* to be more commonly diagnosed than *S. mansoni* infection

amongst travellers to Africa. The majority of the patients, apart from the footballers, acquired infection in Lake Malawi, a lake described as risk free in a general travel handbook⁵. Following two cases of neuroschistosomiasis in United States Peace Corp Volunteers acquired in Lake Malawi in 1992⁴, a follow-up investigation of 917 resident expatriates discovered 33% positive for schistosomal antibody by immunoblot. Of these, 97% had antibody to *S. haematobium*. In addition, the seroprevalence was 33% amongst 427 persons whose only reported recreational water exposure in schistosomiasis endemic countries was in Lake Malawi.

Besides recognition and diagnosis, health and travel professionals need to advise travellers journeying to schistosomiasis-endemic areas. A recent book⁶ detailing such medical advice will prove useful.

A safe, highly effective oral agent, Praziquantel (Biltricide) is available⁷. One problem is that the budget traveller who contracts this disease often has limited financial resources and the cost of a course of treatment ranges from \$50 to \$70. At least two patients delayed therapy until they could afford to purchase the drug. An argument could be made for the drug becoming available on the Pharmaceutical Benefits Schedule.

Acknowledgments

We thank all the diligent medical practitioners who referred patients for screening, and acknowledge the hard work of all laboratory staff at Drs JJ Sullivan, NJ Nicolaides and Partners involved with these cases.

References

1. Benenson AS. *Control of Communicable Diseases in Man*. 15th ed. Washington: American Public Health Association, 1990.
2. Walker J, Ho J. The role of serological tests in the diagnosis of human schistosomiasis. *Inoculum* 1994;3(5):3-5.
3. Oman KM, Kempster P, Grayson ML. Neurocysticercosis and new-onset seizures in short term travellers to Bali. *Med J Aust* 1994;161:399.
4. Wolfe M, Parenti D, Pollner J, Kobrine A, Schwartz A. Schistosomiasis in U.S. Peace Corps volunteers - Malawi, 1992. *MMWR Morb Mortal Wkly Rep* 1993; 42:565-570.
5. Crowther G. *Africa*. Lonely planet, 1992.
6. Mills D. *Travelling well*. Brisbane: D Mills, 1994.
7. Pearson RD, Guerrant RL. Praziquantel: A major advance in antihelminthic therapy. *Ann Intern Med* 1983;99:195-198.

HEPATITIS A IN INJECTING DRUG USERS - PRELIMINARY REPORT

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Introduction

A rise in hepatitis A notifications became evident in Eastern Sydney during October and November 1994, prompting a review of the situation and a search for possible common factors. Discussion with notifying doctors suggested that many cases were among injecting drug users (IDUs), clients of methadone clinics or their contacts. Anecdotal reports also suggest that hepatitis A may be spreading among homeless young persons.

The Eastern Sydney Public Health Unit maintains a hepatitis A database which was developed during the 1991 outbreak among homosexual men¹. It contains demographic and risk factor data in de-identified form. The database has now been modified to include fields pertaining to injecting drug use and methadone use. Risk factor information is recorded only if provided by the notifying doctor, as cases are not generally interviewed by Public Health Unit staff.

Recent epidemiology of hepatitis A

There were 32 cases notified with onset of jaundice between 1 September and 30 November 1994, compared with six cases in the same period in 1993. In contrast, the number of cases notified from January to August 1994 averaged five per month. Of the 32 cases, four had acquired infection overseas and are excluded from the following summary.

Two cases were in children, of whom one was a child of a methadone client. The adult cases, whose mean age was 28 years, comprised six women, 19 men and one transsexual. Of the 12 men for whom sexual preference was known, seven were homosexual or bisexual.

Nine (35%) of the 26 adult cases were IDUs, and one other was a probable user; four IDUs were on methadone and two were prison inmates. Cases have been concentrated in the inner city suburbs of Kings Cross, Darlinghurst and Surry Hills. This area has a transient population of young homeless persons whose lifestyle

(perhaps including injecting drug use) may put them at risk of hepatitis A.

Actions

Primary care workers have been informed of the occurrence of the outbreak and its characteristics. Letters have been sent to hospital emergency departments, sexual health and methadone clinics, HIV physicians and general practitioners, reminding them to seek information on risk factors and to notify cases. Advisory letters have also been written to youth services operating in the inner city. Public Health Unit staff met with youth service representatives to seek advice on education of the risk group regarding hepatitis A prevention.

Discussion

Previous outbreaks of hepatitis A among injecting drug users have been reported^{2,3}. Although a brief period of viraemia occurs in hepatitis A, blood-borne transmission is not considered to be important in this group. It is thought that spread occurs more as a result of frequent and close social contacts, and may be related to faecal contamination of drugs, injecting paraphernalia or other shared items if hygiene is poor²⁻⁴.

References

1. Stokes M-L, Manning W. Dramatic increase in hepatitis A. *NSW Public Health Bull* 1991;2:77-78.
2. Harkess J, Gildon B, Istre GR. Outbreaks of hepatitis A among illicit drug users, Oklahoma, 1984-87. *Am J Public Health* 1989;79:463-466.
3. Jin A, Bardsley J. Intravenous drug use and hepatitis A: an investigation of an outbreak. *Can J Public Health* 1990;81:79-81.
4. Schade CP, Lambert EY. Factors in hepatitis A transmission [letter; comment]. *Am J Public Health* 1989;79:1571.

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OVERSEAS BRIEFS

In the last two weeks, the following information has been supplied by the World Health Organization and the Institut Pasteur, Paris.

Influenza in the Northern Hemisphere

Sporadic influenza activity has been reported from Belgium (influenza A), the Czech Republic, France (influenza A), Portugal (influenza B), Romania (influenza B) and Switzerland (influenza A and B). There have been sporadic cases of influenza A in the United States, one further identified as influenza A H₃N₂, and sporadic cases of influenza B in Canada.

Diphtheria in Belarus

The number of diphtheria cases reported in Belarus has increased markedly since the late 1980s¹, with 66 cases reported in 1992, 120 in 1993 (1.19 per 100,000 population) and 68 in the first four months of this year. In 1993, more than half of the cases were reported from the capital city of Minsk, which had an incidence rate of 3.75 per 100,000 population.

Cases have occurred mainly in urban areas, and affected all age groups. The incidence rate in children under 14 years of age was 1.58 per 100,000 while for persons over 14 years of age, it was 1.08 per 100,000. In 1992-93 there were three peaks in the age distribution, in children five to seven years of age, adolescents 15 to 19 years of age and adults 30 to 50 years old. Cases have occurred in small and limited foci involving one to four cases in families or collectivities such as day-care centres, schools and psychiatric hospitals. Sixteen patients

reported visiting the Russian Federation or Ukraine (where diphtheria has also occurred at high rates in the last few years) or having contact with persons from those countries in the two weeks before onset.

The Ministry of Health plans to control diphtheria by increasing immunisation coverage in Minsk, particularly in infants and three year old children; conducting an nationwide immunisation campaign in adolescents 15 to 19 years of age; improving the diagnosis of diphtheria; and shortening the period between onset of the disease and hospitalisation.

Cholera update

Chile has been declared cholera free, as there have been no new cases notified to the World Health Organisation from the country since December 1993. In Albania, there has been an outbreak of cholera in a psychiatric hospital in Elbasan involving 57 cases and 13 deaths.

Cholera cases have been reported for September, October and November from Algeria, Albania, Benin, Brazil, Burundi, Chad, Costa Rica, Cote d'Ivoire, Dagestan, El Salvador, Gaza, Ghana, Guinea, Guinea Bissau, Hong Kong, India, Italy, Laos, Moldova, Mozambique, Morocco, Niger, Philippines, Romania, Sierra Leone, Singapore, Somalia, Tanzania and Ukraine.

Reference

1. Expanded programme on immunisation. Diphtheria outbreak. *Wkly Epidemiol Rec* 1994;69:349-352.

CDI NOTICES TO READERS

Publication of CDI

This is last issue of CDI for 1994. As is our custom, there will be no issue published between Christmas and New Year. The first issue for 1995 will be published on 9 January.

McGill University Summer Program in Epidemiology and Biostatistics

The 10th Annual Summer Program in Epidemiology and Biostatistics is to be conducted by the Department

of Epidemiology and Biostatistics, Faculty of Medicine, McGill University, Montreal, Canada, from 8 May to 30 June 1995. Further information on the Program is available from:

Coordinator, Annual Summer Program
McGill University
1020 Pine Avenue West, Room 38-B.8
Montreal, Quebec H3A 1A2

Phone: 0011 1 514 398 3973
Fax: 0011 1 514 398 4503.

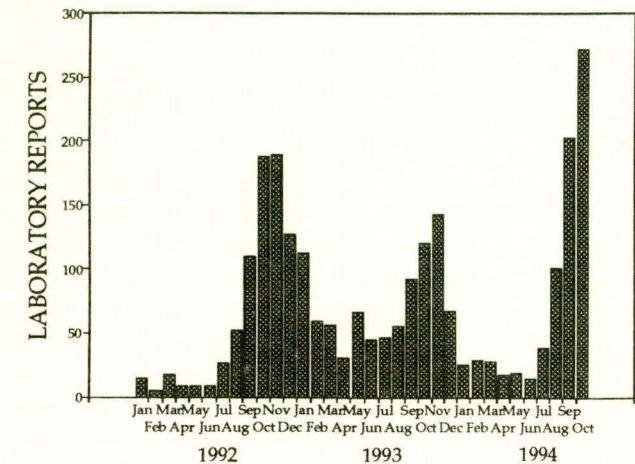
COMMUNICABLE DISEASES SURVEILLANCE

Virology and Serology Reporting Scheme

There were 2173 reports received in the CDI Virology and Serology Reporting Scheme this fortnight (Tables 8, 9 and 10).

- Fifty-five reports of **measles** were received this period, 26 males and 29 females, 42 of whom were in the 5 to 24 year age group. All diagnoses were by measles specific IgM detection.
- **Rubella** was reported for 176 patients this fortnight, 125 males and 51 females (27 in the 15 to 44 year age group). Diagnosis was by IgM detection (164) and fourfold rise in titre (12). The number of reports continues to rise (Figure 1).
- Twenty-six reports of **hepatitis A** were received this period, for 18 males and 8 females.
- Positive **hepatitis B** serology was reported for 142 patients this fortnight, 80 males and 60 females (2 sex not stated). Seventy-eight patients were in the 25 to 44 year age group and 31 in the 15 to 24 year age group. Included were 4 pregnant women, 3 injecting drug users and a 12 year old male, the index cases in a needlestick injury. Also included was a patient with thalassemia major and a patient who also had tuberculosis.
- Positive **hepatitis C** serology was reported for 447 patients this fortnight, 285 males and 152 females (10 sex not stated). Three hundred and fifty-three reports were for the 25 to 44 year age group, and 57 for the 15 to 24 year age group. Included were 75 injecting drug users, 2 pregnant women and one HIV positive patient. Also included was a 19 year old male with sickle cell disease.
- **Ross river virus** infection was reported for 6 patients this period, one from Western Australia

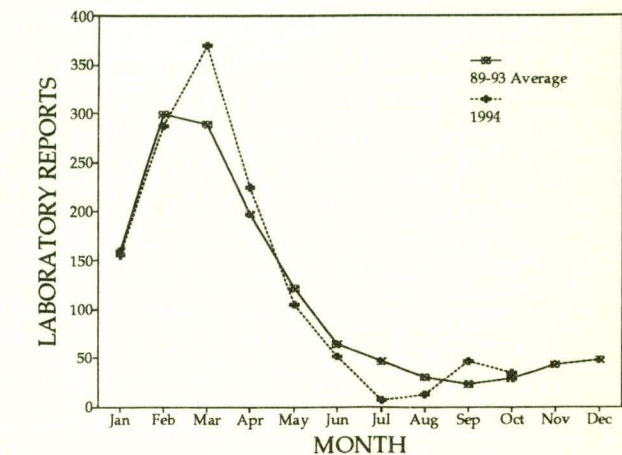
Figure 1. Rubella laboratory reports, 1992 to 1994, by month of specimen collection



(specimen collection date September) and 6 from Queensland (specimen collection dates in late October and early November). Included was one male and 5 females, age range 35 to 63 years. All diagnoses were presumptive (IgM detected). The number of reports received is average for the time of year (Figure 2).

- Eight reports of **Barmah Forest virus** were received this fortnight, 2 from Western Australia and 6 from Queensland. Specimen collection dates were from early October to early November and all diagnoses were by IgM detection. Three patients were male and 5 female.
- **Untyped dengue** was reported for 5 Western Australian patients this period, 3 males and 2 females, all in the 11 to 48 year age group. All diagnoses were presumptive (IgM detected).
- Twenty-six reports of **adenovirus** were received this fortnight, 14 virus isolations and 12 antigen detections. **Adenovirus type 9** was reported isolated from a colon biopsy from a 47 year old male with CNS disease and gastroenteritis.
- **Herpes simplex virus type 1** was reported for 216 patients this fortnight, 210 isolations, 5 antigen detections and one IgM detection.
- Three hundred and seven reports of **herpes simplex virus type 2** were received this fortnight, diagnosed by virus isolation (305) and antigen detection (2).
- Twenty-seven reports of **untyped herpes simplex virus** were received, including nucleic acid detection in the CSF of an 80 year old female with encephalitis.
- There were 44 reports of **cytomegalovirus (CMV)** this fortnight, 28 virus isolations, 13 IgM detected

Figure 2. Ross river virus laboratory reports, 1989 to 1993 average and 1994, by month of specimen collection



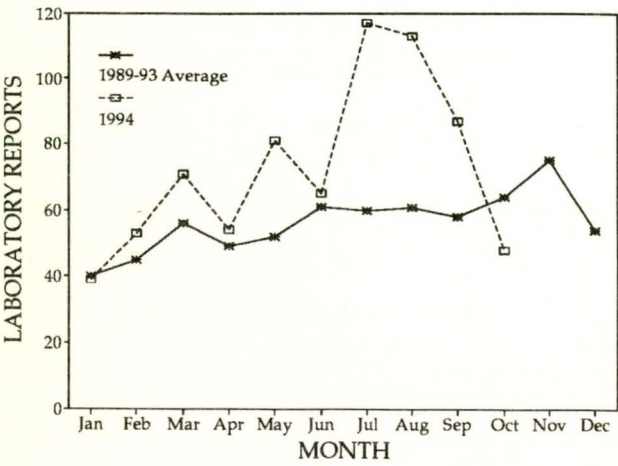
tions, 2 antigen detections and one fourfold rise in titre. This virus was isolated from lung tissue at postmortem from a 71 year old male, and from the urine of a 48 year old male blood transfusion recipient and a 69 year old female heart transplant recipient. CMV specific IgM was detected in the serum of a 49 year old male with ischaemic cardiomyopathy, a 34 year old female who had experienced recurrent miscarriages and a 33 year old female who had had a fetal death *in utero*.

- **Varicella-zoster virus** was reported for 52 patients this period. Diagnosis was by virus isolation (14), antigen detection (26) and IgM detection (12). Included were 23 and 35 year old females from Western Australia and Queensland respectively, both of whom had a clinical diagnosis of chicken-pox. Also included were 2 pregnant females.
- **Polyomavirus** was isolated from the urine of a 17 year old male bone marrow transplant recipient.
- **Orf** was detected by electron microscopy in the skin of a 22 year old Queensland male.
- Eighteen reports of **parvovirus** were received this fortnight all diagnosed by IgM detection. Included was a 4 year old Queensland male with skin manifestations and malaise.
- Five reports of **echovirus type 6** were received this period including isolation from the nasopharynx of a 10 year old female from whom influenza A was also isolated. This virus was also isolated from a faeces specimen from a one week old female.
- Sixty-two reports of **untyped enteroviruses** were received this period including diagnosis by nucleic acid detection in the CSF of a 2 month old male with meningitis and a single high titre reported for a 33 year old male with chest pain. Also included was virus isolated from an 8 month old female at post-mortem who had died of AIDS. A total of 55 reports

were of virus isolation, 2 nucleic acid detection and 5 single high titres.

- **Rhinovirus** was reported for 36 patients, 30 of whom were under the age of 4 years. Diagnosis was by virus isolation in all cases. Included was isolation from the nasopharynx of a 43 year old female who had pneumonia and died. The number of reports received has fallen in recent months following above average numbers received during the winter months (Figure 3).
- **Influenza A** was reported for 17 patients this fortnight, 16 single high titres and one H3N2 isolate with a specimen collection date in August. Nine patients were males and 7 female including a 38 year old who experienced auditory nerve damage following severe clinical influenza.
- One report of **influenza B** was received this period for a female in the 25 to 44 year age group, diagnosed by single high titre.
- Twenty-six reports of **parainfluenza virus type 3** were received this fortnight, 8 virus isolations, 17 antigen detections and one single high titre. Twenty-two patients were under the age of 4 years, 12 being in the under one year age group. Included was a 13 year old male with a diagnosis of Guillain-Barré syndrome.
- Thirty-one reports of **respiratory syncytial virus (RSV)** were received this fortnight, 15 for patients under the age of one year and a total of 20 in the under 4 year age group. The number of reports continues to decline.
- **Rotavirus** was reported for 55 patients this period, 27 males and 25 females (3 sex not stated). Fifty-one patients were less than 4 years of age, 10 being in the under one year age group.
- **Norwalk-like virus** was detected in the faeces of a male involved in an outbreak of gastroenteritis at an aged hostel.
- One hundred and thirty-five reports of **Chlamydia trachomatis** were received this fortnight, 50 males and 84 females (one sex not stated). One hundred and twenty-three patients were in the 15 to 44 year age group. Diagnosis was by culture (41), antigen detection (75), nucleic acid detection (14) and serology (5).
- Seventeen reports of **Mycoplasma pneumoniae** were received this period, for 11 males and 6 females, 8 under the age of 14 years.
- **Coxiella burnetii** (Q fever) was reported for 11 patients this period, 4 females and 5 males all in the age range 20 to 41 years. Included was a 20 year old Victorian abattoir worker.
- Fifty-eight reports of **Bordetella** were received this fortnight, 52 **Bordetella pertussis** (8 isolations, 6 antigen detections, 37 IgA detections and one single high titre) and 6 **Bordetella** species (all IgM detections). Twenty-three patients were male and

Figure 3. Rhinovirus laboratory reports, 1989 to 1993 average and 1994, by month of specimen collection



- 35 female. The number of reports has risen in recent months (Figure 4).
- A report of *Leptospira* species was received, diagnosed by IgM detection, for a 51 year old Queensland male.
 - Positive syphilis serology was reported for 15 patients this period, 7 males and 8 females. Included was one injecting drug user and 2 pregnant females.

Australian Sentinel Practice Research Network

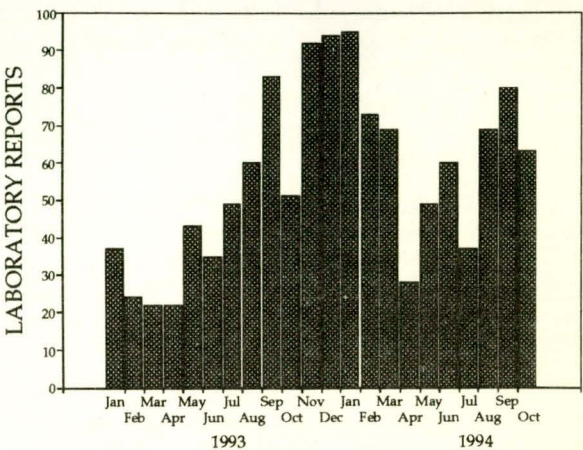
Data for week 45 (ending 13 November), 46 (ending 20 November) and 47 (ending 27 November) are included in this issue of CDI (Table 1). There were 9230, 9124 and 8070 consultations reported, respectively. Pertussis continues to be reported more frequently than earlier in the year.

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

Figure 4. *Bordetella pertussis* and *Bordetella* species laboratory reports, 1993 to 1994, by month



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

Table 1. Australian Sentinel Practice Research Network, weeks 45, 46 and 47, 1994

Condition	Week 45, to 13 November 1994		Week 46, to 20 November1994		Week 47, to 27 November1994	
	Reports	Rate per 1000 encounters	Reports	Rate per 1000 encounters	Reports	Rate per 1000 encounters
Influenza	41	44	38	4.2	23	2.9
Measles	2	0.2	1	0.1	0	0
Chickenpox	27	2.9	17	1.9	20	2.5
Pertussis	4	0.4	4	0.4	1	0.1

Table 2. New diagnoses of HIV infection, new diagnoses of AIDS and deaths following AIDS occurring in the period 1 to 31 July 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	1	3	0	0	0	0	1	0	5	3	46	45
	Male	0	32	1	11	3	0	16	1	64	98	524	570
	Sex not reported	0	0	0	0	0	0	0	0	0	1	10	6
	Total ¹	1	35	1	11	3	0	17	1	69	103	580	625
AIDS diagnoses	Female	0	0	0	0	0	0	1	0	1	4	8	16
	Male	0	20	0	1	4	0	9	0	34	24	303	265
	Total ¹	0	20	0	1	4	0	10	0	35	29	312	283
AIDS deaths	Female	0	1	0	0	1	0	0	0	2	1	17	11
	Male	1	23	0	3	4	0	13	0	44	38	290	302
	Total ¹	1	24	0	3	5	0	13	0	46	40	307	315

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

Table 3. Cumulative diagnoses of HIV infection, diagnoses of AIDS and deaths following AIDS since the introduction of HIV antibody testing to 31 July 1994, by sex and State or Territory of diagnosis

		ACT	NSW	NT	Qld	SA	Tas	Vic	WA	AUSTRALIA
HIV diagnoses	Female	12	508	4	80	40	3	146	53	846
	Male	144	9460	74	1400	513	68	3076	677	15412
	Sex not reported	0	2043	0	2	0	0	44	0	2089
	Total ¹	156	12019	78	1486	553	71	3273	731	18367
AIDS diagnoses	Female	2	100	0	21	13	2	33	10	181
	Male	58	2903	21	463	217	25	1067	208	4962
	Total ¹	60	3009	21	486	230	27	1105	218	5156
AIDS deaths	Female	2	67	0	14	10	2	15	3	113
	Male	40	1980	16	319	133	20	815	136	3459
	Total ¹	42	2052	16	334	143	22	833	139	3581

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

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 July 1994, and cumulative to 31 July 1994, as reported to 31 October 1994, are included in this issue of *CDI* (Tables 2 and 3).

Australian Encephalitis: Sentinel Chicken Surveillance Programme, serological results, September and October 1994

AK Broom¹, JS Mackenzie¹, L Melville²

Sentinel chicken serology was undertaken for 17 of the 23 flocks in the north of Western Australia in September and October this year. There were no seroconversions

to flaviviruses during this period. All the sentinel chicken flocks have now been replaced.

Seven of the 9 Northern Territory flocks were tested in September and October and there were no new seroconversions to flaviviruses.

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Sterile Sites Surveillance (LabDOSS)

Data for this fortnight have been provided by 5 laboratories. There were 113 reports of recent significant sepsis:

New South Wales: John Hunter Hospital 19; Liverpool Hospital 36; Royal Prince Alfred Hospital 16.

Queensland: Nambour General Hospital 6.

Tasmania: Northern Tasmanian Pathology Service 4.

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

Gram positive: 1 *Enterococcus faecium*, 1 *Enterococcus* species, 4 *Staphylococcus epidermidis*, 2 Group B *Streptococcus*, 2 Group G *Streptococcus*, 3 *Streptococcus*

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

Organism	Clinical information						Risk factors					Total ¹
	Bone/joint	Lower respiratory	Endocarditis	Gastrointestinal	Urinary tract	Skin	Surgery	Immunosuppressed	IV line	Hospital acquired	Neonatal	
<i>Staphylococcus aureus</i>	3					1		3	3			16 ²
<i>Staphylococcus coagulase negative</i>				1				1			1	5
<i>Escherichia coli</i>				1	4			3				8

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

pneumoniae, 1 *Streptococcus sanguis*, 1 *Streptococcus mitis*, 2 *Streptococcus* species.

Gram negative: 1 *Acinetobacter* species, 1 *Enterobacter agglomerans*, 1 *Klebsiella oxytoca*, 2 *Klebsiella pneumoniae*, 4 *Klebsiella* species, 1 *Prevotella* species (reported in a 59 year old male with gastrointestinal malignancy, from New South Wales), 4 *Pseudomonas aeruginosa*, 1 *Pseudomonas alcaligenes* (reported in a 31 year old male with a malignancy, from New South Wales), 1 *Pseudomonas putida* (reported in a 19 year old male from Queensland), 1 *Pseudomonas* species, 3 *Xanthomonas maltophilia*.

Anaerobes: 1 *Bacteroides fragilis*, 1 *Propionibacterium acnes*.

Fungi: 2 *Candida albicans*, 1 *Candida parapsilosis*, 1 *Candida* species.

There were 13 blood isolates from patients aged less than one year and 46 from patients aged 45 years and over (Figure 5).

Hospital acquired blood isolates

A total of 17 isolates were reported as hospital acquired. The two most commonly reported organisms were: 5 *Staphylococcus aureus* (including 1 MRSA); 2 *Staphylococcus coagulase negative*.

Meningitis and/or CSF isolate reports

There were 4 reports of meningitis and/or CSF isolates. One isolate was *Escherichia coli* reported in a 72 year old female with malignancy, who subsequently died. One isolate was *Neisseria meningitidis* reported in a three year old male (no serogroup available). Two isolates were *Streptococcus pneumoniae*. These were reported in a 37 year old female who subsequently died (no risk factors reported) and a four year old male with a CSF shunt. All patients were from New South Wales.

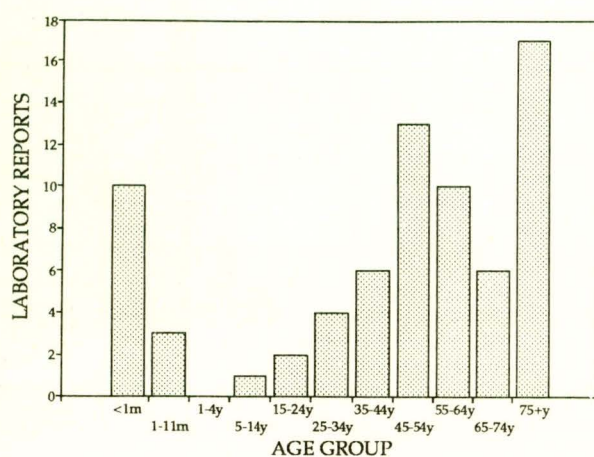
Isolates from sites other than blood or CSF

Joint fluid: 1 *Staphylococcus aureus*.

Peritoneal fluid: 1 *Staphylococcus aureus*, 1 *Streptococcus 'viridans'*.

Other: 1 *Candida albicans*, 1 *Escherichia coli*.

Figure 5. LabDOSS reports of blood isolates, by age group

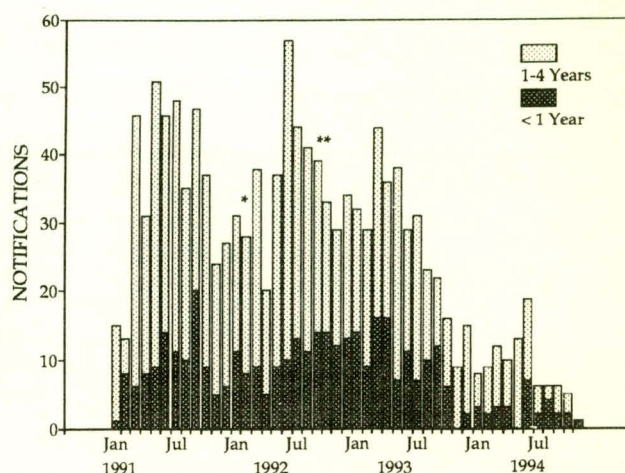


National Notifiable Diseases Surveillance System, 13 November to the 26 November 1994

There were 2486 reports received for this period (Tables 5, 6 and 7 and Figure 10).

- Twenty-six notifications of **Ross River virus infection** were received; 15 cases were male and 11 were female. The cases were aged from the 0-4 to the 70-74 years age group. Recorded onset dates were in September (5), October (11), and November (10).
- There were 528 reports of **campylobacteriosis**; 297 cases were male, 228 cases were female, and the sex of 3 cases was unrecorded. Cases were aged between the 0-4 and the 85-89 years age group with 31% of cases aged less than 5 years.
- Eighty-eight notifications of **gonococcal infection** were received; 63 cases were male and 25 were female. Recorded ages were between the 0-4 and the 55-59 years age group. Three cases were aged less than 5 years and a single case was aged less than one year.
- The number of cases of **Haemophilus influenzae type b** reported continues to decrease (Figure 6). There was a single notification received in the period, for a male aged less than one year.
- There were 59 cases of **hepatitis A** notified; 32 cases were male, 26 were female and the sex of one case was not recorded. The cases were aged between the 0-4 and the 80-84 years age groups.
- Four incident cases of **hepatitis B** were reported; 2 cases were male and 2 were female. Recorded ages were between the 15-19 and the 50-54 years age group.
- There were 2 notifications of **hydatid infection** received in the period. One case was male and one

Figure 6. *Haemophilus influenzae* type b notifications by age group and month of onset, January 1991 to November 1994



* PRP-D approved in February 1992.

** Infant vaccine approved in September 1992.

- was female. Recorded ages were in the 65-69 years age group and the 75-79 years age group respectively. Both cases were resident in the Statistical Division of Melbourne.
- Five notifications of **legionellosis** were received; 3 cases were male and 2 were female. Recorded ages were between the 60-64 years and the 80-84 years age groups.
 - A single case of **leprosy** was reported for a male in the 10-14 years age group. The case was resident in the Statistical Division of Far North Queensland.
 - Two cases of **leptospirosis** were reported. Both cases were males and they were in the 15-19 and the 20-24 years age groups respectively.
 - There were 2 notifications of **listeriosis** received. One case was a male in the 60-64 years age group and one case was a female in the 30-34 years age group.
 - Twenty-five cases of **malaria** were reported; 18 cases were male and 7 were female. Recorded ages were between the 5-9 and the 65-69 years age groups. Onset dates were in July (2), August (3), September (5), October (7), and November (8). Ten cases were resident in the Statistical Division of Brisbane.
 - The **measles** epidemic continues with 214 cases notified for the period (Figure 7). Ninety-nine cases were male, 114 were female, and the sex of one case was unrecorded. The cases were aged between the 0-4 and the 55-59 years age group with a mean age of 12.4 years. Sixteen cases were reported for children aged less than one year. There were 24 apparent clusters of between 2 and 26 cases each resident in the same postcode area. Measles activity in Queensland has remained high through out the year with 2172 cases reported year to date. There was an increase in activity in the Northern Territory from July to August and the number of cases from New South Wales has increased since September (Figure 8).
 - Ten cases of **meningococcal infection** were reported; 2 cases were male and 8 were female. Cases were aged from the 0-4 to the 80-84 years age group with 8 cases aged less than 25 years. There was one apparent cluster of 4 cases with onset dates within 7 days and who were resident in the same postcode area in rural Victoria.
 - There has been an increase in the number of cases of **pertussis** reported in the last few months with a peak number of cases (534) with onset dates in September (Figure 9). Two hundred and twenty-one notifications were received for the current period; 104 cases were male and 117 were female. Cases were aged between the 0-4 and the 80-84 years age group with 12 cases aged less than one year. Fifty-two per cent of the cases were reported by Queensland.

Figure 7. Notifications of measles by month of onset, January 1992 to November 1994

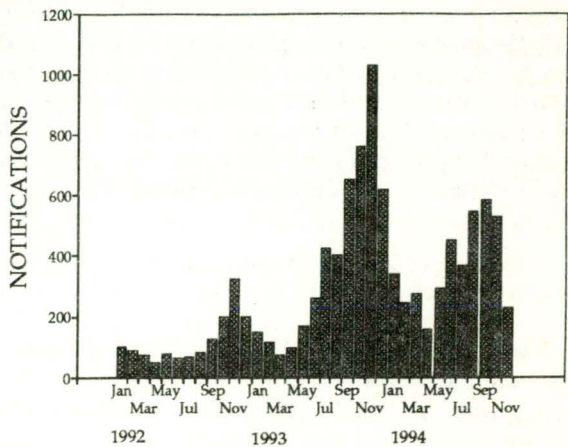


Figure 8. Notifications of measles by month of onset and State or Territory, January to November 1994

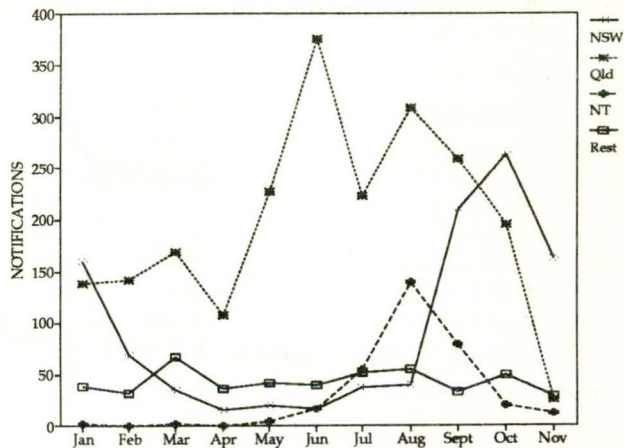
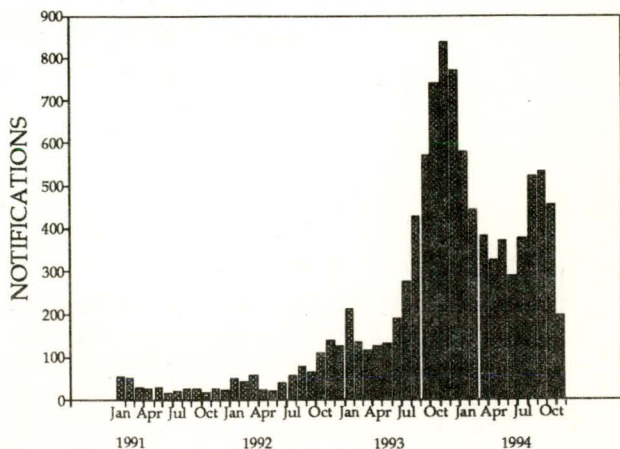
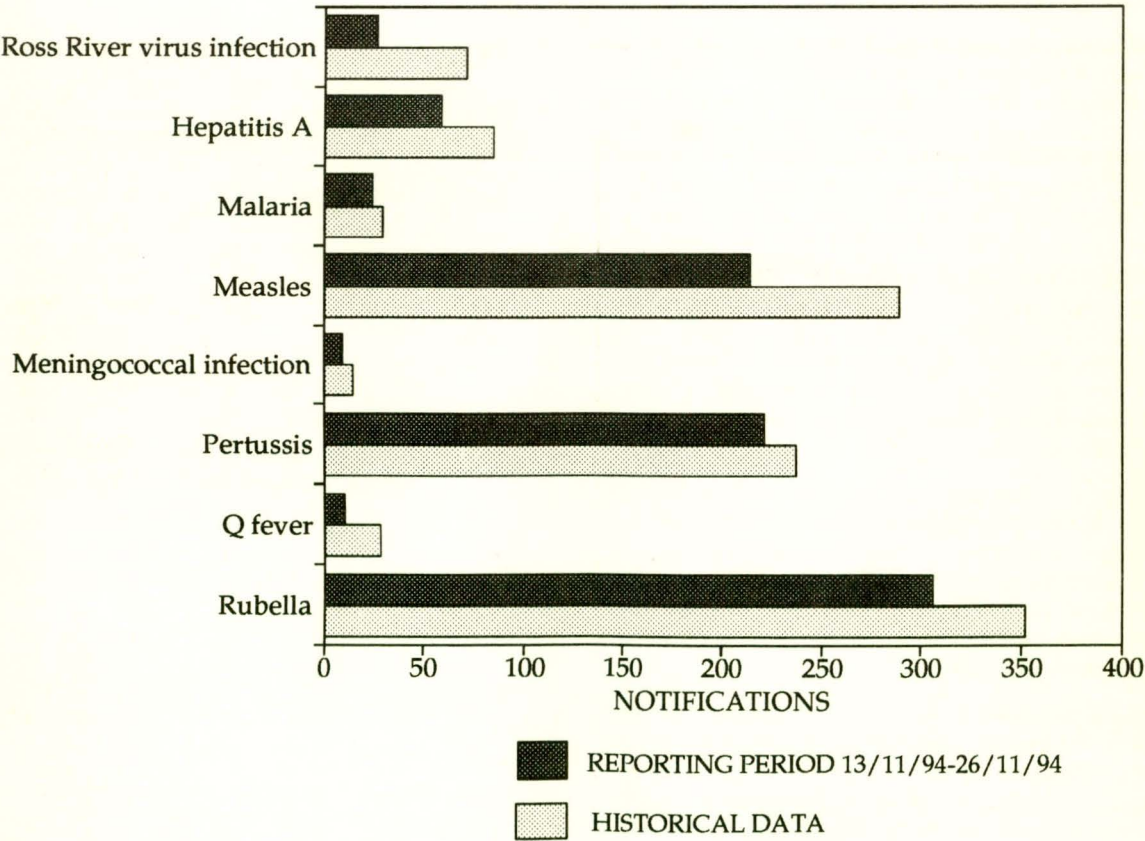


Figure 9. Notifications of pertussis by month of onset, January 1991 to November 1994



- Eleven cases of **Q fever** were reported; 8 cases were male and 3 were female. Recorded ages were between the 20-24 and the 50-54 years age group.
- There were 306 notifications of **rubella** received; 212 cases were male, 90 cases were female, and the sex of 4 cases was unrecorded. The cases were aged between the 0-4 and the 70-74 years age group with 53 cases reported for females in the 15-44 years age group. Seventy per cent of the cases were reported by Queensland and 26% were reported by Western Australia.
- There were 187 notifications of **salmonellosis (not elsewhere classified)**; 107 cases were male, 75 cases were female, and the sex of 5 cases was unrecorded. Cases were aged between 0-4 and the 85-89 years age group with 39% of cases in the 0-4 years age group. There were 6 apparent clusters of between 2 and 20 cases each resident in the same postcode area with recorded onset dates within 2 days.
- Fifty-six cases of **syphilis** were reported; 31 cases were male and 25 were female. Recorded ages were between the 0-4 and the 80-84 years age group with a single case aged less than one year.
- There were 34 notifications of **tuberculosis** received; 14 cases were male and 20 cases were female. Recorded ages were between the 15-19 and the 90-94 years age group.
- A single case of **typhoid** was notified for a female in the 25-29 years age group.
- Seven notifications of **yersiniosis** were received; 3 cases were male and 4 were female. Recorded ages were between the 0-4 and the 40-44 years age groups.

Figure 10. Selected National Notifiable Diseases Surveillance System reports, and historical data¹



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 13 to 26 November 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	1	24	1
<i>Haemophilus influenzae</i> b infection	0	1	0	0	0	0	0	0	1	4	166	367
Measles	6	121	9	62	4	3	5	4	214	505	4253	3776
Mumps	1	0	NN	NN	1	NN	0	0	2	0	27	21
Pertussis	0	23	12	115	5	4	31	31	221	487	5076	3196
Poliomyelitis	0	0	0	0	0	0	0	0	0	0	0	0
Rubella ²	3	1	0	214	0	0	8	80	306	265	2590	3360
Tetanus	0	0	0	NN	0	0	0	0	0	1	16	10

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. Tas: CRS only.
NN Not Notifiable.

Table 6. Notifications of other diseases¹ received by State and Territory health authorities in the period 13 to 26 November 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	1	0	22	0	-	0	3	26	65	3877	5270
Dengue	0	0	0	0	0	-	0	0	0	7	17	688
NEC ³	0	3	0	21	0	0	0	0	24	20	570	540
Campylobacteriosis ⁴	3	-	7	53	142	22	247	54	528	384	9204	7275
Chlamydial infection (NEC) ⁵	1	NN	70	94	16	13	24	22	240	242	5819	5906
Donovanosis	0	NN	3	3	NN	NN	0	0	6	1	105	58
Gonococcal infection ⁶	1	8	30	24	6	0	6	13	88	128	2581	2547
Hepatitis A	0	20	1	22	2	0	8	6	59	59	1722	1828
Hepatitis B incident	0	0	2	0	2	0	0	0	4	9	311	249
Hepatitis C incident	-	0	0	-	0	-	-	-	0	5	20	28
Hepatitis C unspecified	18			148		2	141	62	371	439	8184	6857
Hepatitis (NEC)	0	0	0	0	0	0	2	NN	2	0	45	63
Legionellosis	0	1	0	0	1	1	2	0	5	5	198	153
Leptospirosis	0	0	0	1	0	0	1	0	2	11	121	159
Listeriosis	0	1	0	1	0	0	0	0	2	2	26	48
Malaria	2	4	0	17	0	0	2	0	25	63	673	637
Meningococcal infection	0	1	0	1	1	0	7	0	10	16	360	344
Ornithosis	0	NN	0	1	0	0	0	0	1	2	76	88
Q fever	0	4	0	5	0	0	1	1	11	34	592	819
Salmonellosis (NEC)	0	19	20	41	31	7	51	18	187	176	5017	4259
Shigellosis ⁴	0	-	6	3	2	0	3	6	20	31	663	660
Syphilis	2	12	10	10	3	0	12	7	56	111	2037	2093
Tuberculosis	0	5	1	7	0	0	20	1	34	44	996	989
Typhoid ⁷	0	0	0	0	1	0	0	0	1	2	38	62
Yersiniosis (NEC) ⁴	0	-	0	4	1	0	2	0	7	25	372	419

1. For HIV and AIDS, see Tables 2 and 3. For rarely notified 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. 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. NSW, Vic: includes paratyphoid.

NN Not Notifiable.

NEC Not Elsewhere Classified.

- Elsewhere Classified.

Table 7. Notifications of rare¹ diseases received by State and Territory health authorities in the period 13 to 26 November 1994

DISEASES	Total this period	Reporting States or Territories	Year to date 1994
Botulism	0		0
Brucellosis	0		27
Chancroid	0		0
Cholera	0		3
Hydatid infection	2	Vic	44
Leprosy	1	Qld	10
Lymphogranuloma venereum	0		0
Plague	0		0
Rabies	0		0
Yellow fever	0		0
Other viral haemorrhagic fevers	0		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 Territory¹ for the reporting period 17 to 30 November 1994, historical data², 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	1	3	3	37			1	10	55	74.8	1,060
Mumps virus				4			1	1	6	3.0	81
Rubella virus		4		136				36	176	94.3	1,054
HEPATITIS VIRUSES											
Hepatitis A virus		3		3			1	22	29	16.5	347
Hepatitis B virus		27	1	14			23	79	144	92.3	2,261
Hepatitis C virus	5	74	7	52	2		9	298	447	214.3	5,786
Hepatitis D virus				1			2		3	1.5	27
ARBOVIRUSES											
Ross River virus				5				1	6	37.2	1,522
Barmah Forest virus				6				2	8	6.3	218
Dengue not typed								5	5	1.8	25
ADENOVIRUSES											
Adenovirus type 1							1		1	6.0	61
Adenovirus type 3							1		1	6.0	49
Adenovirus type 9							1		1	.0	4
Adenovirus not typed/pending		6	1	2			2	12	23	62.0	1,191
HERPES VIRUSES											
Herpes simplex virus type 1	1	10		71		2	46	86	216	179.3	4,476
Herpes simplex virus type 2		20	1	84			39	163	307	223.7	4,925
Herpes simplex not typed/pending	7	11		3			3	3	27	28.8	626
Cytomegalovirus		2		10		3	18	11	44	73.2	1,614
Varicella-zoster virus		1		23			14	14	52	39.5	978
Epstein-Barr virus		7	1	32			7	26	73	91.8	1,369
Herpes virus group - not typed		1					1		2	2.0	17

Table 8. Virology and serology laboratory reports by State or Territory¹ for the reporting period 17 to 30 November 1994, historical data², 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			
OTHER DNA VIRUSES											
Papovavirus group							1		1	.3	3
Molluscum contagiosum								1	1	.2	4
Contagious pustular dermatitis (Orf virus)								1	1	.3	2
Parvovirus		1		10				7	18	6.5	94
PICORNA VIRUS FAMILY											
Coxsackievirus B2							1		1	.3	26
Coxsackievirus B3							1		1	.0	16
Coxsackievirus B5							1		1	3.3	14
Echovirus type 6							5		5	.2	69
Echovirus type 30		1					1		2	6.0	270
Poliovirus type 1 (uncharacterised)							2		2	2.0	30
Rhinovirus (all types)	1			3			28	4	36	43.5	948
Enterovirus not typed /pending		2	1	12			8	39	62	41.5	1,225
ORTHO /PARAMYXOVIRUSES											
Influenza A virus		3	3					10	16	23.2	967
Influenza A virus H3N2	1								1	.7	75
Influenza B virus		1							1	14.8	119
Parainfluenza virus type 1								2	2	2.5	536
Parainfluenza virus type 3		2		7			14	3	26	30.2	395
Parainfluenza virus typing pending							1		1	.3	69
Respiratory syncytial virus	1	1	1	4		2	11	11	31	26.7	3,603
OTHER RNA VIRUSES											
HIV-1		1						2	3	3.3	78
Rotavirus	3	5	1	2		1	8	35	55	102.3	2,219
Calici virus							2		2	.3	7
Norwalk agent							1		1	1.2	9
Small virus (like) particle							2	1	3	2.2	33
OTHER											
Chlamydia trachomatis not typed	1	15		43	1	1	7	67	135	126.0	2,284
Chlamydia psittaci			1				1		2	2.8	63
Mycoplasma pneumoniae		1		12			1	3	17	88.8	867
Coxiella burnetii (Q fever)		5		2			3	1	11	21.0	281
Rickettsia spp - other								1	1	.8	10
Streptococcus group A		2		25					27	13.7	324
Yersinia enterocolitica							1		1	.2	19
Bordetella pertussis		1	1			2	24	24	52	11.5	639
Bordetella species			1	5					6	19.0	215
Legionella species								3	3	.2	9
Leptospira species				3					3	.7	18
Treponema pallidum		15							15	16.2	393
Toxoplasma gondii							1		1	2.5	70
TOTAL	21	225	23	611	3	11	295	984	2,173	1,869.7	43,694

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 17 to 30 November 1994

	Encephalitis	Meningitis	Other CNS	Congenital	Respiratory	Gastrointestinal	Hepatic	Skin	Eye	Muscle/joint	Genital	Other/unknown	Total
MEASLES, MUMPS, RUBELLA													
Measles virus					2			17				36	55
Mumps virus					1							5	6
Rubella virus					2			71		2		101	176
HEPATITIS VIRUSES													
Hepatitis A virus							21					8	29
Hepatitis B virus							21					123	144
Hepatitis C virus			1	1		1	27					417	447
Hepatitis D virus												3	3
ARBOVIRUSES													
Ross River virus										2		4	6
Barmah Forest virus								1		1		6	8
Dengue not typed												5	5
ADENOVIRUSES													
Adenovirus type 1					1								1
Adenovirus type 3		1											1
Adenovirus type 9						1							1
Adenovirus not typed/pending					9	10			1			3	23
HERPES VIRUSES													
Herpes simplex virus type 1					7			123	8		69	9	216
Herpes simplex virus type 2								104			194	9	307
Herpes simplex not typed/pending	1				1			8			10	7	27
Cytomegalovirus					18	1			1		1	23	44
Varicella-zoster virus								37			1	14	52
Epstein-Barr virus					8		1			1		63	73
Herpes virus group - not typed								2					2
OTHER DNA VIRUSES													
Papovavirus group												1	1
Molluscum contagiosum								1					1
Contagious pustular dermatitis (Orf virus)								1					1
Parvovirus								11		1		6	18
PICORNA VIRUS FAMILY													
Coxsackievirus B2								1					1
Coxsackievirus B3					1								1
Coxsackievirus B5					1								1
Echovirus type 6		1			1							3	5
Echovirus type 30		2											2
Poliovirus type 1 (uncharacterised)					2								2
Rhinovirus (all types)					34							2	36
Enterovirus not typed/pending		7	1		23	9		4	1			17	62

Table 9. Virology and serology laboratory reports by clinical information for the reporting period 17 to 30 November 1994, continued

	Encephalitis	Meningitis	Other CNS	Congenital	Respiratory	Gastrointestinal	Hepatic	Skin	Eye	Muscle/joint	Genital	Other/unknown	Total
ORTHO/PARAMYXOVIRUSES													
Influenza A virus			1		4			1				10	16
Influenza A virus H ₃ N ₂					1								1
Influenza B virus												1	1
Parainfluenza virus type 1					2								2
Parainfluenza virus type 3			1		22							3	26
Parainfluenza virus typing pending					1								1
Respiratory syncytial virus					25			2				4	31
OTHER RNA VIRUSES													
HIV-1												3	3
Rotavirus					1	52						2	55
Calici virus						2							2
Norwalk agent						1							1
Small virus (like) particle						3							3
OTHER													
<i>Chlamydia trachomatis</i> not typed					2			2	3		92	36	135
<i>Chlamydia psittaci</i>					1			1					2
<i>Mycoplasma pneumoniae</i>					8							9	17
<i>Coxiella burnetii</i> (Q fever)												11	11
<i>Rickettsia</i> spp - other												1	1
<i>Streptococcus</i> group A					5			4		4		14	27
<i>Yersinia enterocolitica</i>												1	1
<i>Bordetella pertussis</i>					48							4	52
<i>Bordetella</i> species					5							1	6
<i>Legionella</i> species												3	3
<i>Leptospira</i> species												3	3
<i>Treponema pallidum</i>											3	12	15
<i>Toxoplasma gondii</i>												1	1
TOTAL	1	11	4	1	236	80	70	391	14	11	370	984	2173

Table 10. Virology and serology laboratory reports by contributing laboratories for the reporting period 17 to 30 November 1994

STATE OR TERRITORY	LABORATORY	REPORTS
Australian Capital Territory	Woden Valley Hospital, Canberra	22
New South Wales	Prince Henry /Prince of Wales Hospitals, Sydney	112
	Royal Prince Alfred Hospital, Camperdown	11
	South West Area Pathology Service, Liverpool	61
Queensland	Nambour Hospital	4
	Queensland Medical Laboratory, West End	600
	State Health Laboratory, Brisbane	51
Tasmania	Northern Tasmanian Pathology Service, Launceston	8
Victoria	Microbiological Diagnostic Unit, University of Melbourne	5
	Monash Medical Centre, Melbourne	26
	Royal Children's Hospital, Melbourne	93
	Victorian Infectious Diseases Reference Laboratory, Fairfield Hospital	174
Western Australia	Princess Margaret Hospital, Perth	66
	State Health Laboratory Services, Perth	940
TOTAL		2173