ESR LABLINK
MARCH 1998
ISSN 1173-1591
Volume 5 No 1

ANNUAL SUMMARIES - 1997

This issue of *LabLink* introduces a slight change to the production format and presentation of the journal. *LabLink* has now been published for three and a half years. In the first issue, we introduced the publication by saying "*LabLink* will feature information from each of the component laboratories . . . This information will include surveillance data, case reports and literature review/news etc."

We hope that *LabLink* continues to provide you with useful information about communicable diseases. Responses received in a recent survey of hospital and community laboratories indicate that the contents are valuable. We are reliant on our contributing laboratories for cultures, data and samples, and would like to take this opportunity to thank them for their continuing interest, involvement and support.

Previously the annual summaries of data were published separately (and often rather belatedly) from the quarterly issues. The first quarterly issue of each year will now be an expanded one, containing the previous year's data and commentary. This will ensure timely dissemination of the information. This issue also marks a change in our colour scheme, in line with changes to the ESR logo.

We welcome comments about *LabLink* and its contents, to ensure it gives you maximum benefit.

Judith Miller
Communicable Disease Group Manager

BACTERIOLOGY

INVASIVE INFECTIONS

Numbers of isolates received from cases of invasive disease caused by *Haemophilus influenzae, Neisseria meningitidis, Streptococcus pneumoniae, Streptococcus pyogenes* (Group A) and *Streptococcus agalactiae* (Group B) for the twelve months January to December 1997, are shown in Table 1.

Table 1. Invasive disease isolates, 1997

Organism	BC	CSF or CSF/BC	Other sterile site	Total
*H. influenzae**	30	5	4	39
N. meningitidis	179	134	4	317
S. pneumoniae	360	32	16	408
S. pyogenes	63	1	10	74
S. agalactiae	32	6	3	41

* *H. influenzae*: 9 serotype b and 29 not serotype b. A blood culture isolate received from an 86 year old patient was non-viable on receipt.

The age profile of the patients from whom the isolates were obtained is given in Table 2.

Table 2. Age distribution of patients with invasive infections, 1997

Organism	<1m	1-11m	1y	2y	3y	4y	5-9y	10-24y	25-59y	≥60y
H. influenzae b	0	3	3	1	0	0	0	0	0	2
H. influenzae non-b*	1	6	1	2	1	0	1	1	6	9
N. meningitidis	1	60	33	33	17	13	40	75	37	8
S. pneumoniae	1	46	54	19	3	6	12	19	89	159
S. pyogenes	1	3	1	1	0	1	6	8	27	26
S. agalactiae	18	5	0	0	0	0	0	2	8	8

* No age was supplied for one isolate of *H. influenzae*, not serotype b.

Haemophilus influenzae

Isolates were received from 39 cases of *Haemophilus influenzae* invasive disease in 1997, one of which was non-viable. Nine of these isolates were serotype b, three were serotype f and the others were non-typable. This compares with 24 serotype b out of a total of 45 viable organisms in 1996.

During 1997, PCR testing of non-serotypable organisms was introduced to determine if any of them carried the gene for expression of the serotype b capsular polysaccharide. All were negative.

The antimicrobial susceptibilities of the isolates are reported in the *Antibiotic Resistance* section of this issue of *LabLink*.

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ANTIBIOTIC SUSCEPTIBILITIES OF INVASIVE PATHOGENS

Streptococcus pneumoniae

A total of 333 *S. pneumoniae* isolates from invasive disease were tested for susceptibilities. Penicillin resistance occurred in 10.5% (35) of the isolates; 3.3% (11) with high-level resistance (MIC ≥ 2 mg/L), and 7.2% (24) with intermediate-level resistance (MIC 0.12 - 1 mg/L). In 1996, 6.2% were penicillin-resistant; 1.8% with high-level resistance and 4.4% with low-level resistance. Cefotaxime resistance was confirmed for the first time among isolates from invasive pneumococcal disease in New Zealand. Three isolates (0.9%) were cefotaxime-resistant (MIC ≥ 2 mg/L) and 21 isolates (6.3%) were intermediate cefotaxime-resistant (MIC 1 mg/L). Chloramphenicol resistance occurred in 12% (40) of the isolates. All isolates were vancomycin-sensitive. The MIC ranges and MIC_{90} of the isolates are shown in Table 16. The eleven high-level penicillin-resistant *S. pneumoniae* belonged to serogroup 23 (4), serogroup 19 (3), serotype 14 (2), and serogroup 9 (2). Three of the high-level penicillin-resistant isolates were cefotaxime-resistant; two belonged to serogroup 19 and one to serotype 14. One serogroup 19 isolate had a cefotaxime MIC (8 mg/L) that was higher than its penicillin MIC (4 mg/L).

Haemophilus influenzae

Among the 38 *H. influenzae* isolates from invasive disease that were tested for susceptibilities in 1997, 10.5% (4) were ampicillin-resistant (MIC ≥4 mg/L) and ß-lactamase positive. All four ampicillin-resistant isolates were not serotype b. All isolates were sensitive to cefotaxime, chloramphenicol and rifampicin. The MIC range and MIC_{90} of the isolates to cefotaxime are shown in Table 16.

Neisseria meningitidis

Of 206 *N. meningitidis* isolates from invasive disease that were tested for susceptibilities, 1.5% (3) had reduced penicillin susceptibility (MICs 0.12 - 0.25 mg/L). The prevalence of isolates with reduced penicillin susceptibility had been 0.6% in 1994, 6.4% in 1995 and 3.8% in 1996. With the exception of a serotype C isolate that was rifampicin-resistant, all the other isolates were rifampicin-sensitive. All isolates were sensitive to ceftriaxone and ciprofloxacin. The MIC ranges and MIC_{90} of the isolates are shown in Table 16.

Table 16. MIC ranges and MIC_{90} (mg/L) of isolates from invasive disease, 1997

Antibiotic	*S. pneumoniae*		*H. influenzae*		*N. meningitidis*	
	Range	MIC_{90}	Range	MIC_{90}	Range	MIC_{90}
penicillin	0.008-4	0.12	-	-	0.016-0.25	0.06
cefotaxime	0.008-8	0.25	0.016-0.06	0.03	-	-
ceftriaxone	-	-	-	-	0.002-0.004	0.004

NCCLS NEW PUBLICATIONS

NCCLS released updated tables for the NCCLS antimicrobial susceptibility testing standards M2-A4 and M7-A4 in January 1998:

- M100-S8, *Performance Standards for Antimicrobial Susceptibility Testing; Eighth Informational Supplement*

The publication can be purchased from NCCLS, 940 West Valley Road, Suite 1400, Wayne, Pennsylvania 19087-1898, USA.(Fax 610.688.0700)

VIROLOGY

This report summarises viral infections in New Zealand for 1997 (Table 17). The information is based on weekly data collated from the virology laboratories of Auckland Healthcare, Healthcare Waikato, Canterbury Health Laboratories, Healthcare Otago and ESR.

RESPIRATORY VIRUSES

Influenza virus

The National Influenza Surveillance Programme isolated and identified 743 influenza cases. There were two significant peaks throughout the season. The first peak was influenza B seen in July closely resembling B/Beijing/184/93. The second peak was seen in September and was caused by two groups of circulating influenza A H3N2, the most common one closest to A/Sydney/5/97.

Respiratory Syncytial Virus

Respiratory syncytial virus (RSV) was very predominant in the winter months with a peak in September of 255 cases.

ENTERIC VIRUSES

A total of 567 adenoviruses were isolated in 1997 compared with 226 in 1996. The outbreak peaked in June. Most of the isolates were from cases of conjunctivitis. The most common type identified was adenovirus type 4, with 271 cases identified.

A coxsackie A virus type 24 outbreak occurred from February to April. There were 82 positive isolations mainly from cases of haemorrhagic conjunctivitis. Five isolates of coxsackie A virus type 8 were identified. Coxsackie A type 8 mainly causes hand, foot and mouth disease in young children.

The most predominant echovirus for 1997 was echovirus type 17 with 17 positive isolates identified.

VIRAL RASH & CHILDHOOD ILLNESSES

The measles epidemic accounted for 1,220 laboratory-confirmed cases from March through to the end of the year. The peak of the laboratory-confirmed cases was in July, with 312 cases. Of the 1,220 cases, 66% were children under the age of 10 years.

A total of 21 cases of rubella were reported, a marked decrease from previous years. In 1996 there were 339 cases and in 1995 there were 1581 cases. There was no typical seasonal increase for rubella this year. This may have been due to the mass MMR vaccination campaign undertaken during the measles outbreak.

As in 1996, very few (11) cases of mumps were reported.

Twenty-six parvovirus B19 infections were reported compared with five in 1996 and nine in 1995. There were two clusters reported during the year; a cluster of nine from Tauranga and a cluster of five from Otago.

Table 17. Summary of virus identifications and mycoplasma notifications, 1997

Causative Agent	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Total
Influenza A H3N2	0	0	0	0	0	2	9	98	169	68	7	2	355
Influenza A H1N1	0	0	0	0	0	0	1	1	5	10	0	0	17
Influenza B	0	0	3	0	11	66	154	100	31	4	2	0	371
Parainfluenza 1	0	0	0	0	0	0	0	2	7	2	0	0	11
Parainfluenza 2	0	0	0	0	0	1	0	1	1	1	0	2	6
Parainfluenza 3	1	0	0	0	0	1	10	7	18	45	13	4	99
Respiratory syncytial virus	0	0	4	0	6	6	71	141	255	110	34	18	645
Rhinovirus	0	2	8	5	1	14	7	12	5	8	3	5	70
Adenovirus	10	41	70	60	55	203	33	19	24	22	21	9	567
Enerovirus	10	29	54	17	6	14	9	4	7	4	2	9	165
Herpes virus	65	69	56	49	62	60	35	28	18	16	14	12	484
Cytomegalovirus	0	3	2	0	0	4	3	1	2	3	3	0	21
Mumps	0	0	0	3	3	1	3	1	0	1	2	0	14
Rubella	0	4	9	0	0	4	3	1	0	0	0	0	21
Measles	0	0	4	20	100	236	312	180	118	112	80	58	1220
Parvovirus	1	1	0	1	6	1	3	1	8	3	0	1	26
Mycoplasma	25	21	16	16	48	10	30	47	27	12	14	11	277

CULTURE COLLECTION

A summary of the new accessions to the Collection during 1997 is shown in Table 18.

Table 18. NZRM new accessions, 1997

Name	NZRM No.	Source, Strain	Comments
Bacillus thuringiensis	3610	NZ isolate, 1996	
Bacillus stearothermophilus	3531	ATCC 10149	Assay of penicillins in milk. *B. calidolactis.*
Bacteroides vulgatus	3615	NCTC 11154	Type strain
Bordetella pertussis	3607	ATCC 8467	
Campylobacter jejuni	3600	ATCC 29428	
Clostridium difficile	3605	ATCC 43593	
Corynebacterium amycolatum	3623	DSM 6922	Type strain
Corynebacterium auris	3625	DSM 44122	Type strain
Dermabacter hominis	3622	NZ isolate, 1995	
Escherichia coli	3614	NCTC 12900	O157:H7 VT-
Escherichia coli	3616	NZ isolate, 1997	serotype 0113:H21 VT+
Eubacterium lentum	3606	ATCC 43055	Recommended reference strain for antimicrobial susceptibility testing
Leuconostoc mesenteroides	3620	DSM 20240	Produces dextran
Prevotella buccae	3598	ATCC 33574	Type strain
Prevotella corporis	3597	ATCC 33547	Type strain
Salmonella Salford	3617	NZ isolate, 1997	
Turicella otitidis	3624	DSM 8821	Type strain

ESR NEWS

In December 1997 our ESR virologist and fellow *LabLink* editor, David Featherstone, resigned from ESR in order to take up an appointment in the World Health Organization in Geneva. We would like to take this opportunity to wish Dave well in his new career and to thank him for the contribution he made to the *LabLink* editorial team. Sue Huang has been appointed as science leader of the viral respiratory disease and viral STD areas. She has a background in molecular technology and virology. Sue is currently on parental leave and will commence with ESR in late May 1998.

Annette Chereshky retired in January 1998 after 18 years service in ESR. We would like to thank Annette for the major contribution she has made to the development of Legionella and Leptospira testing and surveillance during her time with ESR and wish her all the best in her retirement. Els Maas has been appointed as science leader in the Legionella and Leptospira science areas. We take this opportunity to welcome Els to the *LabLink* editorial team.

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