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Preface

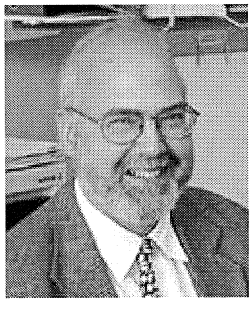
Welcome to the 2006 Annual Report of the New Zealand Paediatric Surveillance Unit (NZPSU). This is the ninth of its kind since the Unit was established in 1997.

The NZPSU was established with funding from the Ministry of Health in order to undertake surveillance of acute flaccid paralysis (AFP) for the Ministry of Health's National Certification Committee for the Eradication of Poliomyelitis (NCCEP). The opportunity was taken for the study of other uncommon high impact conditions, most of which has been undertaken by paediatricians with a particular research interest.

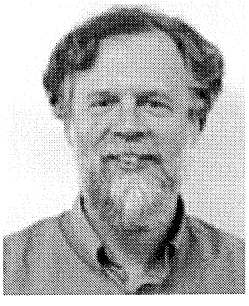
The ongoing success of the NZPSU is largely due to the high level of support from New Zealand paediatricians who have taken the time to provide information on the conditions under surveillance.

We would like to acknowledge the ongoing funding from the Ministry of Health.

Barry Taylor



Nigel Dickson



Amanda Phillips

Introduction

Surveillance is important to monitor both the incidence of emerging conditions and the effectiveness of prevention measures. The Paediatric Society of New Zealand (PSNZ) had for some years promoted the establishment of a unit that could regularly request specialist paediatricians to report on a number of conditions. This led to the establishment of the New Zealand Paediatric Surveillance Unit (NZPSU) in October 1997.

The aim of the NZPSU is to facilitate and improve the knowledge of uncommon high-impact childhood conditions in New Zealand. These conditions are of sufficiently low incidence or prevalence that case ascertainment on a national scale is needed to generate adequate numbers for meaningful study. The method was developed in the United Kingdom by the British Paediatric Surveillance Unit (BPSU) and has been used there since 1986. Subsequently, it has been introduced into several other countries, including Australia, and is used by some other specialist groups.

The core activities of the NZPSU are funded through a contract with the Ministry of Health to provide active surveillance of acute flaccid paralysis (AFP). The World Health Organisation (WHO), as part of the global eradication process, requires such surveillance to confirm New Zealand is free of poliomyelitis. Since the establishment of the NZPSU, the number of conditions under surveillance has increased and in 2006 includes eight high impact childhood conditions.

The NZPSU is a member of the International Organisation of Paediatric Surveillance Units (INoPSU).

Aims

The aims of the NZPSU are:

- To operate a system for monitoring acute flaccid paralysis, as part of the global certification of eradication of poliomyelitis, required by WHO.
- To facilitate national surveillance and improve the knowledge of uncommon high-impact childhood conditions in New Zealand.

How the Surveillance System Works

The method of surveillance is based on that developed in the United Kingdom in 1986 by the British Paediatric Surveillance Unit (BPSU). It has subsequently been used for the monitoring of rare childhood conditions in several other countries, including Australia, and also by other specialist groups.

Paediatricians in New Zealand gave their support to the surveillance system after the concept was discussed at several annual meetings of the Paediatric Society of New Zealand. A database of eligible clinicians, which included all paediatricians and other specialists working predominantly with children, was developed using the specialist register and the membership list of the Paediatric Society. All eligible clinicians were contacted and invited to participate. Those who agreed were provided with study protocols, which included definitions of the conditions under surveillance, specific reporting instructions, and a contact telephone number. Efforts are made to keep up-to-date with the paediatric specialist work force.

Every month participants are sent either a reply-paid card or an email (depending on their preferred method of reporting) to report whether in the previous month they have seen any cases of the conditions under surveillance. However, cases of AFP are also required to be reported immediately by phone to the NZPSU. When a case of any of the conditions is reported, the reporting clinician is sent a short questionnaire to

complete on the case. The identity of the case remains anonymous. Duplicate notification is recognised by a code derived from the child's initials and date of birth.

Where possible, cases are regularly compared with other data sources such as hospital discharge data, notifications to the local Medical Officer of Health, and the New Zealand AIDS Epidemiology Group.

It is envisaged that some of the conditions under surveillance will be ongoing, while others will be for a finite period, usually two or three years.

Regular surveillance reports are made to the Ministry of Health specifically updating the progress with AFP surveillance.

Inclusion of New Conditions

A Scientific Review Panel (SRP) has been established primarily to consider the inclusion of new conditions into the scheme (see *Table 1* for details on members of the SRP). A study is eligible for consideration in the scheme if the condition of interest is:

- a relatively uncommon high-impact childhood condition (or an uncommon complication of a more common disease); and
- of such a low incidence or prevalence as to require ascertainment of cases on a national scale in order to generate sufficient numbers for study; and
- the SRP may also consider inclusion of short-term or geographically limited studies of comparatively more common conditions.

It is important for the success of the scheme that the workload of the mailing list is kept to a minimum. Accordingly, the SRP must be certain that studies conducted through the NZPSU are well designed and worthwhile. The SRP will take into consideration the scientific interest and public health importance of the proposed study, its methodology, and the suitability of the condition for ascertainment through the NZPSU scheme. Studies depending on immediate reporting and/or sample collection, or requiring the participation of other specialties, are less likely to be suitable.

***Table 1*: The Members of the NZPSU Scientific Review Panel (SRP)**

Member	Institution
Professor Barry Taylor	University of Otago, Dunedin
Dr Nigel Dickson	University of Otago, Dunedin
Dr Alison Roberts	Ministry of Health
Professor Elizabeth Elliot	Australian Paediatric Surveillance Unit
Dr Jeff Brown	Palmerston North Hospital
Professor Brian Darlow	University of Otago, Christchurch
Professor Diana Lennon	University of Auckland

Surveillance Activities in 2006

In 2006, 205 clinicians participated in the system. The average response rate to the monthly report card/email was 95%. We are very pleased with the ongoing high response rate from the whole of the country.

Respondent Workload

Minimising the extra workload that the system imposes on paediatricians is a key factor for its success.

The range of conditions under surveillance and their incidence needs to be kept under review.

Table 2 shows the percentage of clinicians on the mailing list that reported cases during 2005 and 2006. The table shows that in 2006, 151 of the participants did not report any cases, with one reporting five or more, compared to three in 2005.

In 2006 the NZPSU monitored eight uncommon childhood conditions *(Table 3)*. Some of the protocols and questionnaires used were adapted from those used by the Australian Paediatric Surveillance Unit.

***Table 2*: Respondents' Workload 2005 & 2006**

Notifications	2005		2006	
	No.	%	No.	%
None	142	68	151	73.6
One	37	18	34	16.5
2-4	26	12.5	19	9.3
5 or more	3	1.5	1	0.5

***Table 3:* Conditions Under Surveillance in 2006**

Condition	Surveillance Started	Surveillance Ended	Principal Investigators
Acute flaccid paralysis	October 1997	Ongoing	Dr Nigel Dickson Dr Paul Shillito
Haemolytic uraemic syndrome	January 1998	Ongoing	Dr William Wong
Congenital rubella syndrome	January 1998	Ongoing	Professor Diana Lennon
Perinatal HIV exposure	January 1998	Ongoing	Dr Nigel Dickson Dr Lesley Voss
Vitamin K deficiency bleeding	January 1998	Ongoing	Professor Brian Darlow
Inborn errors of metabolism	January 2004	Ongoing	Dr Nikki Kerruish Dr Callum Wilson
Foregut and hindgut malformations	January 2004	August 2006	Dr Michael Sullivan
Pneumococcal meningitis	April 2005	Ongoing	Professor Diana Lennon

Brief reports on Ongoing Studies

ACUTE FLACCID PARALYSIS (AFP)

Dr Nigel Dickson

Ongoing study started in October 1997

INTRODUCTION

To confirm the absence of poliomyelitis WHO requires a surveillance system to be in place:

1. That captures an annual incidence of acute flaccid paralysis (AFP), not due to poliomyelitis, of at least one per 100,000 children < 15 years.

2. In which 80% of cases of AFP have two stool samples taken at least 24 hours apart, within 14 days of onset tested negative for wild polio virus in a WHO-accredited laboratory.

Telephone notification of all cases of AFP is required by the NZPSU to ensure that the necessary stool containers are dispatched in time to the notifying paediatrician.

KEY RESULTS FOR 2006

- There were eight cases notified to the NZPSU in 2006
- Information has been obtained on all of these children including follow-up information two months after diagnosis
- Seven AFP cases were from the North Island, and two were from the South Island
- Four males, four females
- Age range 6 months to 12 years, median age 4 years
- No seasonal variation
- The overall incidence was 1.05 per 100,000 children < 15 years
- A diagnosis of Guillain-Barré Syndrome (GBS) has been made in six of these cases, Muller Fisher Syndrome in one, and a spinal epidural abscess in the remaining case

- All eight cases have been discounted as Polio by the National Certification Committee for the Eradication of Polio (NCCEP)
- Timely analysis (< 14 days after onset paralysis) of stool samples satisfying the WHO criteria was complete for seven of the eight children

***Table 4*: Percentage of AFP cases with adequate stool samples (or otherwise)**

Category	Stool samples	
	No.	%
2 stool samples within 14 days of onset of paralysis	7	87.5
2 stool samples, but one or both not within 14 days of onset of paralysis	0	0
1 stool sample	0	0
No stool samples	1	12.5

COMMENT

The system successfully captured the required rate of AFP. The rate of stool testing (87.5%) is meeting the WHO criteria (80%). The NZPSU appreciates the support from clinicians in making telephone notifications of AFP, and attempts to ensure that timely stool specimens are sent to ESR for appropriate testing.

Ongoing surveillance of AFP, even though the WHO believes Polio to have been eradicated from the Western Pacific region, is likely to be required for some years. This will require the continued telephone notification of all cases of AFP, including those with a definitive diagnosis such as Guillain-Barre syndrome etc. A challenge has always been to utilise a non-specific case definition – such as 'acute flaccid paralysis' – in a health system where a more definitive diagnosed for children with such symptoms is likely to be made.

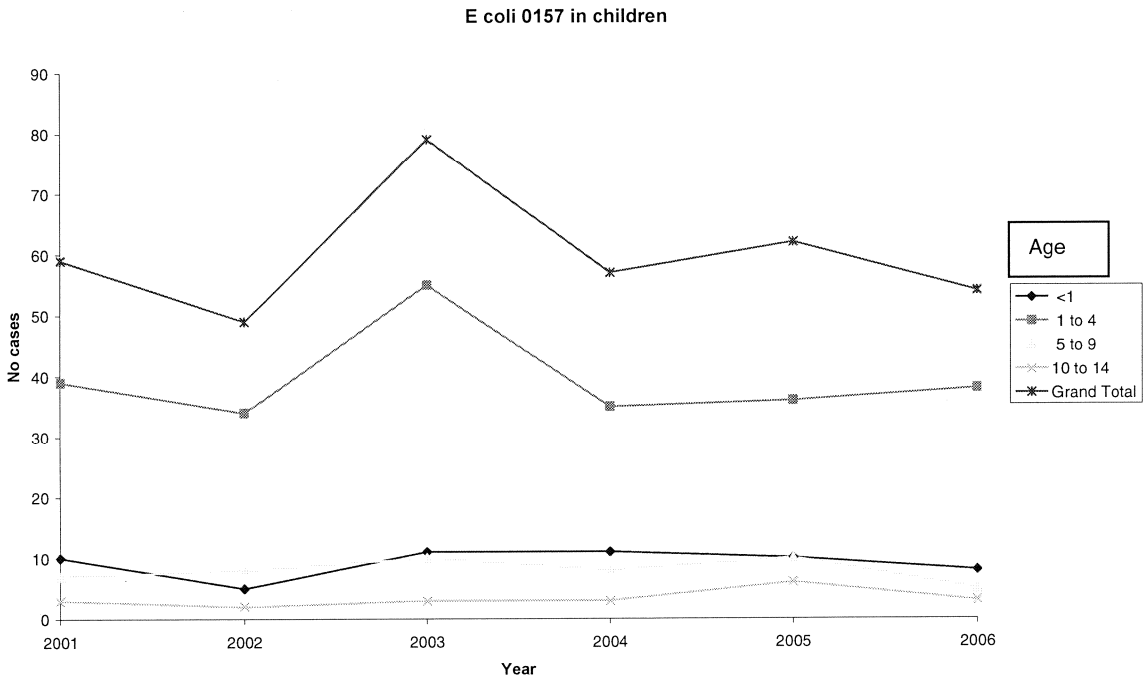
HAEMOLYTIC URAEMIC SYNDROME (HUS)

Dr William Wong

Ongoing study started in January 1998

Key results for 2006 cohort

- 12 cases of HUS (10 Males) were reported, 10 had a diarrhoeal prodrome and 2 were atypical (1 pneumococcal associated)
- Geographic distribution – 8 in North Island, 4 South Island
- Incidence is 1.3 per 100,000 < age 15 years
- Mean and median age at presentation 3.5 and 3.1 years respectively, range 1.1 to 8.3years
- 50% of the diarrhoeal group had E coli 0157H7 isolated from their stools
- 75% needed acute peritoneal dialysis for an mean of 8.4 days (range 4-16) median 7 days
- There was no confirmed cases associated specific food ingestion
- All patients regained renal function to come off dialysis
- Cases of E coli 0157 in children has been relatively constant except for 2003 when there was a slight peak



CONGENITAL RUBELLA SYNDROME (CRS)

Professor Diana Lennon

Ongoing study started in January 1998

We have not provided a report for Congenital Rubella as there were no cases reported in 2006.

VITAMIN K DEFICIENCY BLEEDING (VKBD) 2006 REPORT

Professor Brian Darlow

Ongoing study started in January 1998

There was one notification of VKDB received in 2006. This was a valid report although the diagnosis of VKDB is only "probable".

- The case involved an infant born at 35 weeks gestation in a level II hospital. There was a verbal assurance that i.m. vitamin K had been administered but no written record of vitamin K having been given. A gastric haemorrhage occurred on day two of life. Coagulation studies were compatible with VKDB and these normalised after an i.m. dose of vitamin K. There has been no further follow-up. This pattern of bleeding would be extremely unusual after i.m. vitamin K and it is assumed that no vitamin K was given but because of uncertainties about this the case is considered as only "probable".

PERINATAL EXPOSURE TO HIV

Dr Nigel Dickson, Dr Lesley Voss

Ongoing study started January 1998

In 2006, there were 10 reports to the NZPSU of infants/children born to women infected with HIV. Of these:

- 2 were perinatally infected children born overseas
- 8 were infants born in New Zealand in 2006 to women with HIV diagnosed prior to giving birth. Of these:
    - 4 were born in Auckland, 1 each in Wellington, Hastings, Rotorua and Nelson
    - All 8 were born to mothers whose HIV had been diagnosed before her pregnancy
    - 6 of the mothers were African, and 2 were Maori
    - All of the mothers were given antiretroviral treatment during pregnancy, 6 gave birth by caesarean section, and none of the babies were breastfed
    - None of the children are believed to be infected with HIV (although some are still awaiting final confirmation).

These results provide valuable information on pregnant women with recognised HIV infection. There will however have been women with undiagnosed HIV who gave birth so paediatricians should always consider perinatally acquired HIV in children with a clinical problem that makes this a possibility.

INBORN ERRORS OF METABOLISM (IEM)
(Urea cycle, amino acid, organic acid disorder or fatty acid oxidation defect).

Dr Nikki Kerruish, Dr Dianne Webster, Dr Callum Wilson, Dr Esko Wiltshire

Ongoing study commenced January 2004

2006 cases

Disorder	Age at diagnosis	Sex	Region	Reason for diagnosis
Non-ketotic hyperglycinaemia	2 months	m	Auckland	Lethargy, hypotonia, apnoeas, myoclonic jerks and subdural haemorrhage. Typical amino acid profile (CSP and plasma).
Galactosaemia	1 week	f	Whangarei	Neonatal jaundice and positive newborn screening test.
Non-ketotic hyperglycinaemia	1 week	m	Taranaki	Hiccups, myoclonic jerks, apnoeas and lethargy. Typical amino acid profile (CSF and plasma).
Medium chain acyl dehydrogenase deficiency	9 months	f	Wellington	Brief, asymptomatic hypoglycaemia day 1 (NB maternal diabetes). Lethargy and hypoglycaemia during diarrhoeal illness. Resolved with oral therapy.
Medium chain acyl dehydrogenase deficiency	34 months	m	Christchurch	Hypoglycaemia associated with diorrheal illness.
Galactosaemia	5 days	m	Auckland	Feeding difficulty and weight loss. Positive newborn screen.

PNEUMOCOCCAL MENINGITIS IN NEW ZEALAND CHILDREN UNDER 15 YEARS OF AGE

Professor Diana Lennon, Dr Rachel Webb

2 year study started in May 2005

Full report for the period has been published. See details below.

Final Reports for Completed Studies

PNEUMOCOCCAL MENINGITIS
Professor Diana Lennon and Dr Rachel Webb

Co-investigator Dr Nigel Dickson, Professor Barry Taylor, Dr Diana Martin, Prof Keith Grimwood, Dr Pamela Jackson, Dr Teuila Percival, Dr Maude Meates-Dennis, Dr David Graham

Study commenced May 2005 *Study completed April 2007*

BACKGROUND
Streptococcus pneumoniae is a major infectious pathogen. Young children and the elderly are at greatest risk. Rates of invasive pneumococcal disease (IPD) and in particular meningitis are used as indicators of the overall burden of pneumococcal disease within a population. Currently in New Zealand IPD is monitored passively by referral of invasive isolates to the Environmental and Scientific Research Institute Laboratory (ESR) for serotyping and antimicrobial susceptibility testing however this system has limitations. The ESR does not have access to clinical or demographic information and cannot accurately assess meningitis rates as a proportion of meningitis cases have negative CSF cultures. Surveillance of IPD is an important public health issue as the 7 valent conjugate pneumococcal vaccine is being introduced to the routine New Zealand Immunisation Schedule in 2008.

AIMS
To describe the current epidemiology of pneumococcal meningitis in persons under the age of 15 years in New Zealand and to inform decision-making around the future surveillance of IPD in New Zealand.

METHODS

Prospective surveillance over two years from 1st May 2005 – 30th April 2007 by the New Zealand Paediatric Surveillance Unit (NZPSU). Paediatricians notifying a case of pneumococcal meningitis were sent a standardised questionnaire.

CASE DEFINITIONS FOR PNEUMOCOCCAL MENINGITIS

Definite case Culture of cerebrospinal fluid or subdural pus positive for *Streptococcus pneumoniae* and clinically compatible illness. Or Polymersase chain reaction test (PCR) on cerebrospinal fluid or subdural pus positive for *Streptococcus pneumoniae,* with clinically compatible illness. Or Blood culture positive for *Streptococcus pneumoniae* with cerebrospinal fluid white cell count > 100cell/mm^3, negative cerebrospinal fluid culture, and clinically compatible illness.
Possible case Blood culture positive for *Streptococcus pneumoniae* with cerebrospinal fluid white cell count < 100cell/mm^3 and cerebrospinal fluid culture negative, and clinically compatible illness.

RESULTS

1. Number of reported cases and annual incidence rate.

There was a total of 47 cases. 45 notifications of pneumococcal meningitis were made to the New Zealand Paediatric Surveillance Unit, and 2 further cases were found through laboratory surveillance in Auckland. A standardised questionnaire was completed for 44 of the 47 notified cases. 3 questionnaires were not returned. One of these cases could not be followed up as the notifying Paediatrician had left New Zealand.

3 cases were notified to the NPSU by more than one Paediatrician. In each of these cases the patient was referred to Starship Hospital from another centre, and within Starship Hospital the patient was cared for by a number of teams (Children's Emergency Dept, Paediatric Intensive Care Unit, Infectious Diseases).

38 cases fitted the case definition for definite pneumococcal meningitis. 34 of the definite cases were confirmed by culture and 4 by Polymerase Chain Reaction (PCR). 6 other cases were classified as possible cases and were excluded from further data analysis.

The national annual incidence rate in persons under 15 years was 2.2 cases/100,000/year. In children under two years of age the observed annual incidence rate was 15.7 cases/100,000/year.

2. Geographic distribution of cases

Almost three quarters of cases (28/38 or 73.7%) came from four district health boards (Auckland, Counties Manukau, Capital and Coast and Canterbury).

Table 1: **District Health Board of residence of pneumococcal meningitis cases reported to the NZPSU 2005–2007**

Patient's DHB of residence	*Definite cases*	*Possible cases*	*Questionnaire not returned*	*Total*
Auckland	9	2	0	11
Counties Manukau	10	2	0	12
Capital & Coast	6	0	0	6
Canterbury	5	0	1	6
Waitemata	2	0	0	2
Waikato	1	1	0	2
Bay of Plenty	2	1	1	4
Southland	1	0	0	1
Northland	1	0	0	1
Lakes	1	0	0	1
Hawkes Bay	0	0	1	1
Total	38	6	3	47

3. Gender

26.3% of cases (10/38) occurred in females and 73.7% of cases (28/38) occurred in males.

4. Age distribution

86.8% of definite cases (33/38) were under 24 months of age at they time they contracted pneumococcal meningitis.

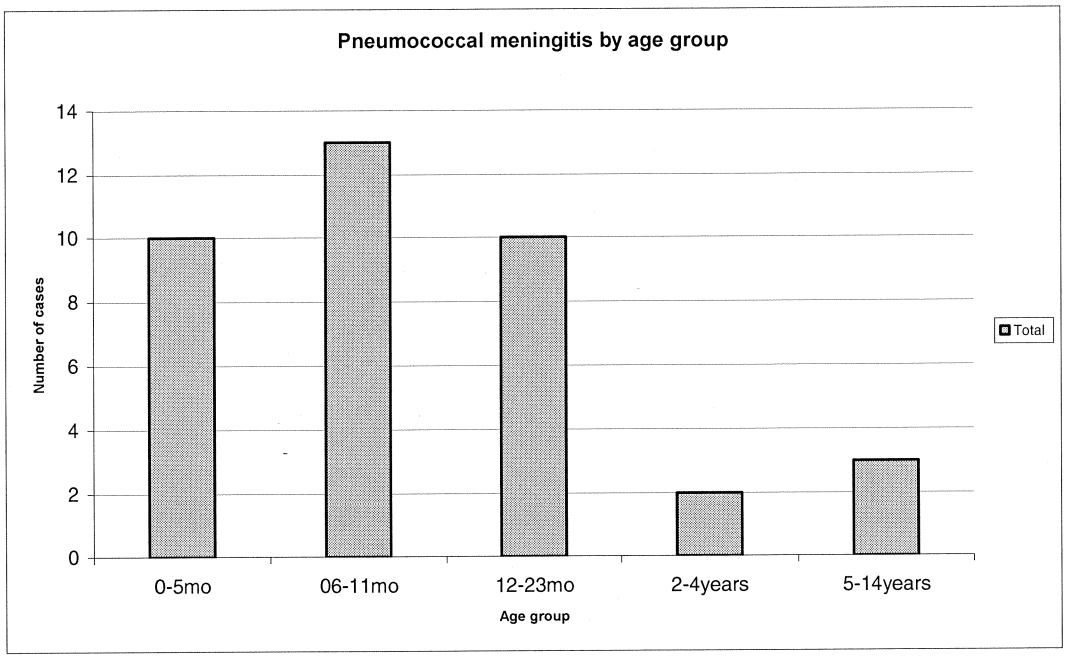


Figure 1: Pneumococcal meningitis cases according to age group. N = 38

5. Ethnicity

Of the 38 definite cases, 14 cases occurred in infants/children of NZ Maori ethnicity, 8 in infants/children from Pacific Island nations, and 16 cases occurred in European children. No cases occurred in children from other ethnic groups. Disproportionately high rates of pneumococcal meningitis were observed in Maori and Pacific children, particularly those under the age of two years.

Table 2: **Ethnic-specific annual incidence of pneumococcal meningitis in New Zealand children 2005–2007**

Ethnicity	0 < 2years		0 < 15years	
	Number of cases	Incidence per 100,000/year	Number of cases	Incidence per 100,000/year
Maori	13	23.6	14	3.5
Pacific	7	39.2	8	5.3
Other	13	13.6	16	1.4
NZ Total	**33**	**15.7**	**38**	**2.2**

6. Serotype distribution and predicted coverage of 7 valent conjugate pneumococcal vaccine

A causative serotype was identified in 31 of the 34 culture-positive cases. 25/31 (80.6%) of the identified serotypes were contained in the 7 valent conjugate pneumococcal vaccine.

7. Antimicrobial susceptibility trends

Information on antimicrobial susceptibility was available for the 34 cases which were culture positive. 8 isolates showed reduced penicillin susceptibility according to the Clinical and Laboratory Standards Institute (CLSI) criteria (MIC to penicillin ≥ 0.06mg/L), and four of the isolates with reduced penicillin susceptibility also demonstrated reduced susceptibility to third generation cephalosporins (MIC ≥ 0.5mg/L).

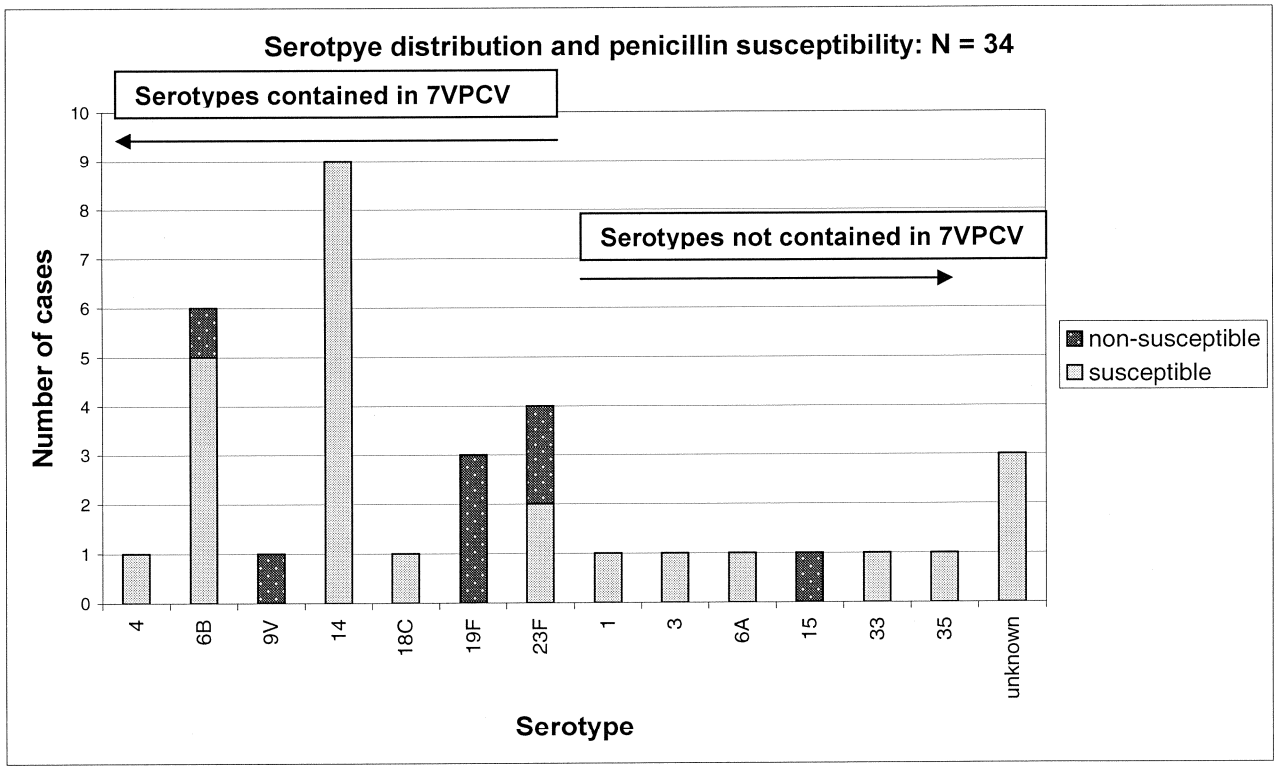


Figure 2: **Serotypes of pneumococcal meningitis isolates and penicillin susceptibility 2005–2007**

8. Outcomes

4 cases died. The observed case fatality rate was 10.5%. 3 children died in the Paediatric Intensive Care Unit at Starship Hospital and 1 infant died at Christchurch Hospital. 3 of the deaths occurred within 24 hours of arrival in hospital and 1 child died after 4 days in PICU. The median duration of hospital admission was 13.0 days (range 0 – 45 days). Seizures occurred in 14/38 cases. SIADH was reported in 10/38 cases. There were 10 admissions to an intensive care facility and 5 children underwent neurosurgical procedures Neuro-disability was observed in 6/34 (17.6%) of survivors and hearing impairment was reported in 9 of the 30 cases (30.0%) with documented audiology results.

CONCLUSIONS

Maori and Pacific children are over-represented in New Zealand's current pneumococcal meningitis statistics. The case fatality rate for pneumococcal meningitis remains high and the outcome for survivors is poor in approximately one third of cases. Expected coverage of 7VPCV is 80%.

RECOMMENDATIONS

Optimising uptake of the 7 valent conjugate vaccine is a top health priority both now and in 2008 when the vaccine is introduced to the routine New Zealand Immunisation Schedule. Particular emphasis needs to be placed on ensuring vaccination coverage is optimised in high risk Maori and Pacific infants. Further consideration needs to be given to the best methodology for the ongoing surveillance of Invasive Pneumococcal Disease in New Zealand.

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ACKNOWLEDGEMENTS

We thank Peter Reed, statistician at the Children's Research Centre, Starship Hospital, for his advice, and all the paediatricians who notified cases to the NZPSU.

Conditions Ever Monitored by NZPSU

All conditions ever monitored by the NZPSU.

Condition	Abb.	Commenced	Concluded
Acute flaccid paralysis	AFP	October 1997	Ongoing
Haemolytic nephritic syndrome	HUS	January 1998	Ongoing
Congenital rubella syndrome	CRS	January 1998	Ongoing
Perinatal HIV exposure	HIV	January 1998	Ongoing
Vitamin K deficiency bleeding	Vit K	January 1998	Ongoing
Neonatal herpes simplex infection	HSV	January 1998	December 2000
Subdural haemorrhage (<2 years)	SDH	January 1999	December 2002
Retinopathy of prematurity (stage III)	ROP	January 1999	December 2000
Diabetes mellitus	DM	January 1999	December 2000
Fetal alcohol syndrome	FAS	July 1999	December 2001
Kawasaki disease	KD	January 2001	December 2002
Bronchiectasis	BE	January 2001	December 2002
Idiopathic Nephritic syndrome	INS	July 2001	July 2003
Inflammatory bowel disease	IBD	January 2002	December 2003
Prolonged Infantile Cholestasis	PIC	January 2004	December 2005
Foregut and Hindgut Malformations	FHM	January 2004	December 2005
Pertussis	Pert	July 2004	July 2005
Inborn Errors of Metabolism	IEM	January 2004	Ongoing
Pneumococcal Meningitis	Pneu Meng	April 2005	Ongoing

Publications

Idiopathic nephrotic syndrome in New Zealand children, demographic, clinical features, initial management and outcome after twelve-month follow-up: Results of a three-year national surveillance study.
W Wong
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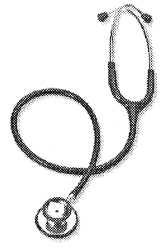
RESEARCH OPPORTUNITIES

CALL FOR NEW STUDIES



WANTED
Investigators to initiate new NZPSU studies.

THE PROGRAMME
Well-established, timely and cost-effective
Effective at monitoring low-high frequency, high-impact diseases and conditions.

TRACK RECORD
95% response from over 200 paediatricians.

If you are interested in these or other studies , or for more information about surveillance please contact NZPSU, phone: (03) 474-7825 or email: nzpsu@otago.ac.nz.

International Network of Paediatric Surveillance Units (INoPSU)

Establishment of INoPSU
The network was formed in August 1998 at a meeting of 10 Paediatric Surveillance Units expressing a desire to link with each other. This took place at the 22nd International Congress of Paediatrics in Amsterdam, The Netherlands. The first INoPSU conference was held in 2000 in Canada and was attended by representatives of the existing units. Subsequent meetings have been held in York, England in 2002 and Lisbon, Portugal in 2004. Dr Nigel Dickson has attended these recent meetings.

Mission
The mission of INoPSU is the advancement of knowledge of uncommon childhood infections and disorders, and the participation of paediatricians in surveillance on a national and international basis so as to achieve a series of benefits.

Aims

- facilitating communication and cooperation between existing national paediatric surveillance units;
- to assist in the development of new units;
- to facilitate sharing information and collaboration between researchers from different nations and scientific disciplines;
- to share information on current, past and anticipated studies and their protocols, and on conditions that have been nominated for surveillance but are not selected;
- to encourage the use of identical protocols to potentially enable simultaneous or sequential collection of data on rare paediatric disorders in two or more countries;
- to share and distribute information of educational benefit to constituent units, notably on study and surveillance methodologies;
- to share school techniques and models of evaluation for units;
- to peer review and evaluate existing and proposed units;
- to identify rare disorders of mutual interest and public health importance for co-operative surveys through each national unit;
- to collaborate with, and provide information to, other groups interested in rare childhood diseases such as parent support groups;
- to respond promptly to international emergencies relating to rare childhood conditions where national and international studies can make a contribution to science or public health.

Members of INoPSU

Founding members:

- Australian Paediatric Surveillance Unit (APSU)
- British Paediatric Surveillance Unit (BPSU)
- Canadian Paediatric Surveillance Programme (CPSP)
- German Paediatric Surveillance Unit (ESPED)
- Latvian Paediatric Surveillance Unit (LPSU)
- Malaysian Paediatric Surveillance Unit (MPSU)
- Netherlands Paediatric Surveillance Unit (NSCK)
- New Zealand Paediatric Surveillance Programme (NZPSU)
- Papua-New Guinea Paediatric Surveillance Unit (PNGSU)
- Swiss Paediatric Surveillance Unit (SPSU)

Additional Members

Welsh Paediatric Surveillance Unit (2000)

Portuguese Paediatric Surveillance Unit (2001)

Irish Paediatric Surveillance Unit (2001)

Greece and Cyprus Paediatric Surveillance Unit (2004)

Associate Members

Trinidad and Tobago Paediatric Surveillance Unit (2004)
British Ophthalmological Surveillance Unit

Administration of the Association

In order to carry out the aims and direct the activities of INoPSU a secretariat has been set up. From 2004 Professor Rudi von Kries (ESPED) has acted as convenor, Dr R Pereira (NSCK) has acted as deputy convenor and Richard Lynn (BPSU) has acted as communications liaison.

International Collaboration

New Zealand paediatricians who are interested in undertaking international studies, or compare the rates of uncommon disease between countries, are encouraged to consider using INoPSU for this purpose. Please contact Nigel Dickson for further information.

Table 6: **Members of INoPSU** INoPSU Website: www.inopsu.com

Country	Unit	Email	Website
Australia	APSU	apsu@chw.edu.au	http://apsu.inopsu.com
Britain	BPSU	bsu@rcpch.ac.uk	http://bpsu.inopsu.com
Canada	CPSP	cpsp@cps.ca	www.cps.ca/english/cpsp
Germany	ESPED	Prof.von.kries@gmx.de	www.esped.uni-duesseldorf.de
Ireland	IPSU	gilld@iol.ie	
Latvia	LPSU	aspedlat@com.latnet.lv	
Malaysia	MPSU	jho@pc.jaring.my	
Netherlands	NSCK	r.pereira@pg.tno.nl	www.nvk.pedianef.nl
New Zealand	NZPSU	nzpsu@otago.ac.nz	www.paediatrics.org.nz
Papua New Guinea	PNGPSU	hopepng@datec.com.pg	
Portugal	PPSU	uvp-spp@ptnetbiz.pt	www.spp.pf/ingl/index_17.html
Switzerland	SPSU	hans-peter.zimmermann@bag.admin.ch	www.bag.admin.ch/infekt/melde/spsu/d/index/.htm(German)
Wales	WPSU	John.Morgan@eglam-tr.wales.nhs.uk	
Trinidad and Tobago	T &TPSU		
Greece and Cyprus		xhatzi@med.uth.gr	n.persianis@cytanet.com.ay

Table 7: **Characteristics of the Paediatric Surveillance Units**

Country	Population ($x10^6$<15years)	Established	Approx. no respondents
Australia	3.98	1992	1000
Britain/Eire	12.8	1986	2500
Canada	7.5	1996	2400
Germany	12.0	1992	460*
Greece and Cyprus	1.6	2001	
Ireland	1.3	1996	150
Latvia	0.4	1996	22
Malaysia	7.6	1994	400
Netherlands	3.0	1992	640
Papua New Guinea	1.92	1996	40
Portugal	1.67	2000	300*
New Zealand	0.83	1997	205
Switzerland	1.3	1995	250
Trinidad & Tobago	0.5	2005	
Wales	0.65	1994	135*

* Heads of Paediatric Centres

List of Clinicians with 100% Return Rate 2006 (& 2005)

Clinicians who had a 100% return rate in both 2005 and 2006 are underlined

Thank you to those clinicians who returned all of their cards in 2006!

Aftimos	Salim
Aho	George
Aiken	Richard
Asher	Innes
Baker	Nicholas
Barry	John
Bates	Giles
Battin	Malcolm
Bhatia	Sat
Bourchier	David
Bowkett	Brendon
Bradley	Stephen
Broadbent	Roland
Brooks	Jeanine
Broomfield	Frank
Drake	Ross
Brown	Jeff
Brynes	Cass
Buchanan	Leo
Buckley	David
Calder	Louise
Campanella	Silvana
Caseley	Terry
Clarkson	John
Cole	Nyree
Corban	Jenny
Coulter	Belinda
Dalton	Marguerite
Daniel	Alison
Darlow	Brian
De Sylva	Tony
Denny	Simon
Dickson	Cameron
Dixon	Joanne
Doocey	Clare
Doran	John
Drage	Alan
Edwards	Liz
Elder	Dawn
Evans	Juliana
Farrell	Alan
Ferguson	Stuart
Ford	Rodney
Forster	Richard
Gangakhedhar	Arun
Gavin	Raewyn
Gapes	Stephanie
Gentles	Tom
Goldsmith	John
Grant	Cameron
Grimwood	Keith
Gunn	Alistair
Hall	Kate
Hewson	Michael
Harding	Jane
Hoare	Simon
Hassall	Ian
Hofman	Paul
Heron	Peter
Hornung	Tim
Hunter	Warwick
Jackson	Pam
Jamison	Sarah
Jacquemard	Raimond
Jankowitz	Peter
Jefferies	Craig
Jellyman	Timothy
Jones	David
Kushel	Carl
Kelly	Andrew
Langdana	Anu
Leadbitter	Philip
Lees	Hugh
Lennon	Diana
Leversha	Alison

Liang	Allen
Longchamp	Daniele
Lourens	Ralph
McArthur	John
Maikoo	Rajesh
Marks	Rosemary
Manikkam	Noel
Marshall	Andrew
Matas	Richard
Maxwell	Fraser
McCarthy	Karen
McCay	Hamish
McFarlene	Scott
McIlroy	Peter
Meates- Dennis	Maude
Meyer	Michael
Milledge	John
Mitchell	Anne
Mitchell	Ed
Mitic	Schuman
Moore	Philip
Morreau	Johan
Morris	Max
Morrison	Philip
Moyes	Chris
Mullane	Michelle
Nagel	Fred
Nair	Arun
Nel	Jaco
Neutze	Jocelyn
Newman	David
Nichols	Wayne
Nicholson	Ross
Nobbs	Peter
Nutthall	Gabrielle
Palmer	Penny
Parsons	Alan
Patel	Harshad
Pattemore	Philip
Percival	Teuila
Pereira	Nicola
Pinnock	Ralph
Pringle	Kevin
Radcliffe	Marlon
Ramadas	Ram
Reith	David
Richardson	Vaughan
Robertson	Stephen
Rowley	Simon
Shaw	Robyn
Shillito	Paul
Skeen	Jane
Skinner	Jon
Stanley	Thorsten
Smith	Warwick
Rudge	Susan
Russell	Glynn
Selby	Robyn
Shaw	Ian
Steinmann	Kai
Stonehouse	Mary
Swan	Catherine
Taylor	Barry
Taylor	Paul
Tomlinson	Paul
Teague	Lochie
Tuck	Roger
Tsang	Bobby
Twiss	Jacob
Vogel	Alison
Vetharanian	Shivani
Walker	Wendy
Watt	Mike
Wills	Russell
Wilson	Nigel
Wilson	Ross
Wilson	Callum
Wiltshire	Esko
Wilson	Toni
Wong	Maisie
Wong	William
Wong	Sharon

Congratulations to Kate Hall who was selected to win a $50 book token to be presented at the ASM of the Paediatric Society of New Zealand.