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NEW ZEALAND PAEDIATRIC SURVEILLANCE UNIT

Welcome to the 2013 Annual Report of the New Zealand Paediatric Surveillance Unit (NZPSU).

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.

INTRODUCTION

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 Organization (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 2013 included 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.

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 in most cases remains anonymous. Duplicate notification is recognised by a code derived from the child's initials and date of birth.

HOW THE SURVEILLANCE SYSTEM WORKS

A Scientific Review Panel (SRP) considers the applications 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 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)
- Of such a low incidence or prevalence as to require ascertainment of cases on a national scale in order to generate sufficient numbers for the study

The SRP may also consider inclusion of short-term or geographically limited studies of more common conditions.

It is important for the success of the scheme that the work load of the respondents 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) 2013**

Member	Institution
Professor Barry Taylor	NZPSU, University of Otago, Dunedin
Associate Professor Nigel Dickson	NZPSU University of Otago, Dunedin
Dr Pat Tuohy	Ministry of Health
Professor Elizabeth Elliott	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 2013

In 2013, 228 clinicians participated in the system. The average response rate to the monthly report card/email was 91%. The ongoing high response rate from the whole of the country is very pleasing. Minimising the extra workload that the system imposes on paediatricians is a key factor for its success. Table 2 shows the percentage of clinicians on the mailing list that reported between 2012 and 2013. The table shows that in 2013, 154 did not report any cases at all, with 1 reporting 5 or more.

In 2013, 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 2012 and 2013**

Notifications	2012		2013	
	No.	%	No.	%
None	150	64.7	154	67.5
One	43	18.5	55	24.1
2-4	35	15.0	18	7.8
5 or more	4	1.7	1	0.4

Table 3 **Conditions under surveillance in 2013**

Condition	Surveillance Started	Surveillance Ending	Principal Investigators
Acute Flaccid Paralysis	October 1997	Ongoing	A/Prof Nigel Dickson
Haemolytic Uraemic Syndrome	January 1998	Ongoing	Dr William Wong
Congenital Rubella Syndrome	January 1998	Ongoing	Professor Diana Lennon
Perinatal HIV Exposure	January 1998	Ongoing	A/Prof Nigel Dickson Dr Lesley Voss
Adverse Drug Reactions	May 2008	Ongoing	Dr Desiree Kunac
Vitamin D Deficiency Rickets	July 2011	June 2013	Dr Ben Wheeler
Severe Neonatal Hyperbilirubinaemia	March 2011	March 2013	Dr Roland Broadbent Prof Brian Darlow
Varicella and post varicella complications requiring hospitalisation	December 2011	December 2013	Dr Elizabeth Wilson Dr Emma Best

BRIEF REPORTS ON ONGOING STUDIES

ACUTE FLACCID PARALYSIS (AFP)

Associate Professor Nigel Dickson

Ongoing study started in January 1998

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 2013

- There were 12 cases notified to the NZPSU in 2013.
- Information has been obtained on all of these children including follow-up information two months after diagnosis.
- Eleven were from the North Island, one was from the South Island.
- Seven females, five males.
- Age range 6 months to 11 years, median age 2.4 years (range: 0.5 -11 years)
- No seasonal variation.
- The overall incidence was 1.3 per 100,000 children < 15 years.
- A diagnosis of Guillain Barré Syndrome (GBS) has been made in eight of these cases, transverse myelitis in two cases, and the other two were one each of acute demyelinating encephalomyelitis and a spinal infarct.
- All 12 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 six of the twelve children (62.5%).

These findings have been notified to the World Health Organization to fulfill New Zealand's obligation to report on its polio-free status.

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

Category	Stool samples	
	No.	%
2 stool samples within 14 days of onset of paralysis	6	50.0
2 stool samples, but one or both not within 14 days of onset of paralysis	3	25.0
1 stool sample	1	8.3
No stool samples	2	16.7

The required rate of (1.0 per 100,00) expected by WHO in a country without endemic polio was reached in 2013, however the rate of stool testing was 50%, less than the WHO target which is 80%.

We appreciate that this surveillance requirement is a challenge in the absence of endemic polio and wish to thank the paediatricians for vigilance in obtaining timely testing in most instances.

Even though the WHO believes polio to have been eradicated from the Western Pacific region, ongoing surveillance of AFP 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 Barré 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.

CONGENITAL RUBELLA SYNDROME (CRS)

Professor Diana Lennon
Study commenced January 1998

We have not provided a report for Congenital Rubella in 2013 and there were no reported cases

SERIOUS PAEDIATRIC ADVERSE DRUG REACTIONS (ADR)

Dr Desiree Kunac, Dr Michael Tatley, Associate Prof David Reith, Professor Keith Grimwood

Study commenced August 2007

There were 22 notifications made during 2013. For 5, no further details were provided, and one was notified in error. Therefore 16 reports were received; 2 were excluded, one was a duplicate report and the other was not considered serious. The remaining 14 reports are summarised in Table 5.

Nine of the 14 cases are new reports that were not previously notified to the Centre for Adverse Reactions Monitoring (CARM), highlighting the value of this active surveillance system.

Eight of these cases resulted in a medical danger or warning being entered for the child in the NZ Health Information Service database and are also now included in the CARM database to further enhance our understanding of serious ADRs in children.

Table 5 **Information on the 14 reports of Serious Paediatric Adverse Drug Reactions (ADR) notified through NZPSU in 2013.** **The column titled "Medical Warning" refers to that added to the Health Information Service database, and that titled CARM whether the adverse reaction had also been notified directly to the Centre for Adverse Reactions Monitoring.**

Suspect medicine	Reaction(s)	Age (Years)	Sex	Seriousness / Outcome	Medical Warning	CARM
carbamazepine	Hepatitis Maculo-papular rash	11	F	Hospitalised/ Recovered	Warning	Yes
phenytoin	Infusion site extravasation	2	F	Intervention to prevent permanent impairment/ Not yet recovered at time of report	Nil	Yes
trihexyphenidyl	Neuroleptic malignant syndrome	7	M	Hospitalised/ Not yet recovered at time of report	Danger	Yes
lamotrigine	Morbiliform rash	11	M	Hospitalised/ Recovered	Warning	Yes
sodium valproate	Foetal valproate syndrome	6	M	Persisting disability/ Not yet recovered at time of report	Nil	Yes
sodium valproate	Foetal valproate syndrome	2	F	Persisting disability/ Not yet recovered at time of report	Nil	No
sodium valproate	Hepatic failure	3	F	Intervention to prevent permanent impairment/ Not yet recovered at time of report	Danger	No
cefaclor	Acute generalised exanthematous pustulosis Fever Hepatic enzymes increased	3	M	Hospitalised/ Recovered	Danger	No
cefuroxime	Nausea Periorbital oedema Rash Hypoxia Cyanosis	3	M	Life threatening/ Recovered	Danger	No
aciclovir	Fatigue Abdominal pain	10	F	Medically significant/ Recovered	Warning	No
haloperidol	Dystonia	9	M	Medically significant/ Recovered	Warning	No
paracetamol	Hepatic failure Encephalopathy Haematemesis Haematuria INR increased	2	F	Hospitalised/ Recovered	Warning	No
Immunity boost Childrens kiwiherb echinature	Jaundice Hepatic function abnormal Coagulation disorder Hypoglycaemia	2	F	Hospitalised/ Not yet recovered at time of report	Warning	No
gaviscon	Anaphylactic reaction	14	F	Life-threatening/ recovered	Danger	No

PERINATAL EXPOSURE TO HIV

Associate Professor Nigel Dickson, Dr Lesley Voss
Study commenced January 1998

In 2013, there were eight reports to the NZPSU of infants born in New Zealand to women infected with HIV who were diagnosed prior to giving birth or during their pregnancy.

Of the eight infants:

- Five were born in Auckland, two in Wellington and one in Rotorua.
- Seven were born to mothers whose HIV had been diagnosed before their pregnancy. One infant was born to a mother diagnosed during pregnancy.
- Four of the mothers were African, three were Asian and one was Maori.
- All eight mothers were given antiretroviral treatment during pregnancy; three gave birth by caesarean section and five vaginally; none of the babies were breastfed.
- No child is believed to be infected with HIV (although most children are still too young to be confirmed).

HAEMOLYTIC URAEMIC SYNDROME (HUS)

Dr William Wong

Ongoing study started in January 1998

2013 represents the highest number of reported cases since the inception of the reporting scheme. Although there were no epidemic outbreaks in terms of geography and time, this high number is serious cause for concern. 40% had a farm contact noted, suggesting that there is a large reservoir of infection present in these locations. Significant short-term morbidity was noted.

- 21 cases of childhood HUS reported, in which 20 had a diarrhoeal prodrome (D+), one infant had atypical HUS confirmed by mutation analysis
- Geographic distribution of D(+) HUS – 16/20 from North Island
- Median age at presentation of D(+) HUS was 3.9 years, range 1.2 to 13 years
- 8/20 patients either lived on a farm or had visited a farm in the past 2 weeks
- 10/20 of the diarrhoeal group had E coli 0157H7 isolated from their stools, 1 patient had E coli 0179 H8 isolated
- Seizures were a prominent feature in the 2013 cohort
- 13/21 patients needed acute peritoneal dialysis a mean of 7.9 days, median 6.5days, range 0-28
- All patients regained renal function to come off dialysis, however, 3 have chronic kidney disease at initial follow up.

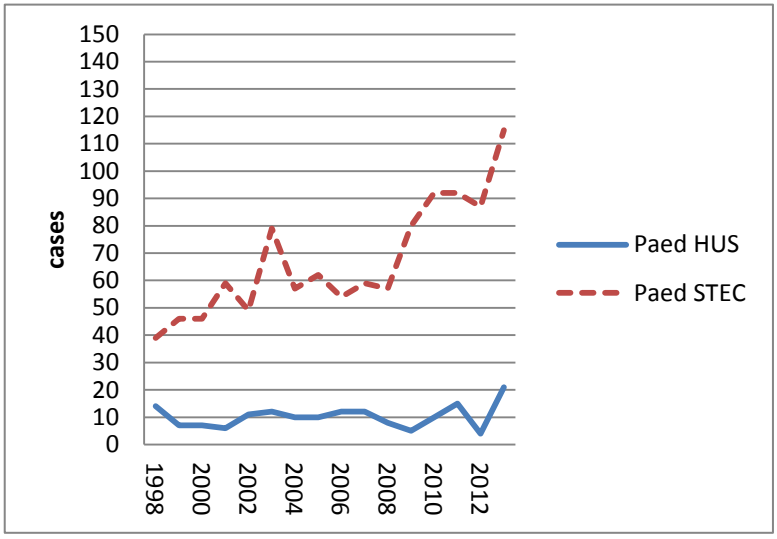

Figure 1 **Annual number of children reported with haemolytic uraemic syndrome (Paed HUS) to the NZPSU and of Shiga toxin associated E coli in children (Pead STEC) reported to the ESR enteric laboratory**

FINAL REPORTS

PROSPECTIVE SURVEILLANCE OF VITAMIN D DEFICIENCY RICKETS

Dr Ben Wheeler
Department of Women's and Children's Health, Dunedin School of Medicine, University of Otago, Dunedin, New Zealand
Three-year study from July 2010 – June 2013

Inclusion criteria were: Children and adolescents <15 years of age with vitamin D deficiency rickets (defined by low serum 25-hydroxyvitamin D and elevated alkaline phosphatase levels, and/or radiological rickets).

Fifty-eight children with confirmed vitamin D deficiency rickets were identified. Median age was 1.4 (range 0.3 – 11) years, 47% were male, and 95% of children were born in New Zealand, however the majority of the mothers (68%) were born outside New Zealand. Overall annual incidence of rickets in children aged <15 years was 2.2/100,000; with incidence in those < 3 years, 10.5/100,000.

Skeletal abnormalities, poor growth, and developmental delay were the most common presenting features, with hypocalcaemic convulsion in 16% of children.

Key risk factors identified were darker skin pigment, Indian and African ethnicity, age <3 years, exclusive breast feeding, and southern latitude, particularly when combined with season (winter/spring). Of the patients reported, none had received appropriate vitamin D supplementation.

This study concluded that vitamin D deficiency rickets remains a health problem for New Zealand children. Key risk factors remain similar to those identified in the international literature.

To reduce the incidence of this disease among those at high risk, increasing awareness and implementation of current public health policies for targeted maternal, infant, and child supplementation are required.

Current Ministry of Health guidelines on the vitamin D in pregnancy and infancy can be found at the following link:
http://www.health.govt.nz/system/files/documents/publications/companion-statement-vit-d-sun-exposure-pregnancy-infancy-v2.pdf

HOSPITALISATIONS ASSOCIATED WITH VARICELLA

Dr Sophie Wen, Dr Emma Best, Dr Elizabeth Wilson
Starship Children's Health, Auckland
Two-year study completed October 2013

Cases (aged 0-14 years) of varicella and post-varicella complications requiring hospitalisation (>3 hours), including stroke syndromes where varicella occurred in the preceding 6 months, were notified to NZPSU between 1/11/2011 and 31/10/2013. Herpes zoster cases were excluded.

178 notifications were received, of which 144 were non-duplicated confirmed cases. Overall incidence was 8.3/100,000 children/year. 52% were female with a median age of 2.4 years. Maori and Pacific Island (PI) children accounted for 74% of hospitalisations. 75% had infective complications present at admission. Other complications included respiratory (11%), neurological (11%), electrolyte disturbance (6%) and haemorrhagic varicella (4%). 9% were immunocompromised. Median duration of hospital admission was 4 days with 9% requiring intensive care admission (median stay of 4 days). There were no deaths however 19% of cases had ongoing problems at discharge.

Main Conclusions

- Varicella has more associated morbidity than commonly perceived in immunocompetent children.
- In NZ, Maori and PI children are more likely to have a complicated varicella illness than other ethnic groups.
- This surveillance gives support for inclusion of universal varicella vaccine in the NZ national immunisation schedule.

CONDITIONS EVER MONITORED BY NZPSU

Table 7 All conditions ever monitored by the NZPSU

Condition	Report Period	Findings Reported
Acute Flaccid Paralysis	1997 - ongoing	Grenier D, Elliott EJ, Zurynski Y, Rodrigues PR, Preece M, R Lynn, von Kries R, Zimmermann H, Dickson N, Virella, D, Beyond Counting cases: public health impacts of national Paediatric Surveillance Units, *Archives of Disease in Childhood* 2008; 92:527-533 ST Chambers, NP Dickson Global polio eradication: progress, but determination and vigilance still needed *Journal of New Zealand Medical Association*, 24-June-2013, Vol 124, No 1337
Haemolytic Uraemic Syndrome	1998 - ongoing	
Congenital Rubella Syndrome	1998 - ongoing	
Perinatal HIV Exposure	1998 - ongoing	Dickson N, Paul C, Wilkinson L, Voss L, Rowley S, Estimates of HIV prevalence among pregnant women in New Zealand, *New Zealand Public Health Report, 2002; 9:17-19*
Vitamin K Deficiency Bleeding	1998 - 2008	Darlow BA. Vitamin K deficiency bleeding (VKDB) in New Zealand infants: results of surveillance over five years (1998 to 2002). *Pediatric Research* 56; 474, 2004
Fetal Alcohol Syndrome	1999 - 2001	
Subdural Haemorrhage (<2 years)	1999 - 2002	Kelly P, Farrant, B, Shaken Baby Syndrome in New Zealand, *Journal of Paediatrics and Child Health*, 2008; 44: 99–107
Retinopathy of Prematurity (stage III)	1999 - 2000	
Diabetes Mellitus	1999 - 2000	Campbell-Stokes P, Taylor B, on behalf of The New Zealand Children's Diabetes Working Group Prospective incidence study of diabetes mellitus in New Zealand children aged 0 to 14 years, *Diabetologia* 2005; 48: 643–648
Kawasaki Disease	2001 - 2002	Heaton P, Wilson N, Nicholson R, Doran J, Parsons A, Aiken G, Kawasaki disease in New Zealand, *Journal of Paediatrics and Child Health* 2008; 42: 184–190

Idiopathic Nephrotic Syndrome	2001 - 2003	Wong, W 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, *Journal of Paediatrics and Child Health* 2008; 43: 337–341
Inflammatory Bowel Disease	2002 - 2003	
Prolonged Infantile Cholestasis	2004 - 2005	
Foregut and hindgut malformations	2004 - 2005	
Pertussis	2004 - 2005	R Somerville R , Grant C, Grimwood K, Murdoch D, Graham D, Jackson P, Meates-Dennis M, Nicholson R, Purvis D, Infants hospitalised with pertussis: Estimating the true disease burden *Journal of Paediatrics and Child Health* 2008; 43:617-622
Inborn Errors Of Metabolism	2004 - 2006	Wilson C, Kerruish N, Wilcken B, Wiltshire E, Webster D, The Failure to Diagnose Inborn Errors of Metabolism in New Zealand: The Case for Expanded Newborn Screening *New Zealand Medical Journal* 2008; 120: U2727
Pneumococcal meningitis	2005 - 2008	
Acute Post Streptococcal Glomerulonephritis	2007 - 2011	
Adverse Drug Reactions (ADR)	2008 - ongoing	Kunac D, Tatley M, Grimwood K, Reith D Active Surveillance of serious drug adverse reactions in New Zealand Children, *Arch Dis Child published online May 6, 2013*
Proven Neonatal Bacterial or Fungal Infection	2011-2013	
Severe Neonatal Hyperbilirubinaemia	2011-2013	
Moderate and Severe Neonatal Encephalopathy	2011 - 2013	
Vitamin D Deficiency Rickets	2011 - 2013	
Renal Stones	2011 - retrospective	Dickson N, Kara T, Tuohy P, Rapid National Survey of Renal Stones in New Zealand Infants, *Journal of Paediatrics and Child Health*; 2011 45, 633-635
Varicella and post-varicella complications	2011-2013	

INTERNATIONAL NETWORK OF PAEDIATRIC SURVEILLANCE UNITS

ESTABLISHMENT OF INOPSU

The network was formed in August 1998 at a meeting of 10 Pediatric 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, Lisbon, Portugal in 2004, Munich Germany 2008 and Melbourne 2013. Associate Professor Nigel Dickson has attended the meetings in Canada, England, Portugal and Melbourne.

MISSION

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

AIMS

- Facilitating communication and co-operation 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 and 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 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 interest groups interested in rare childhood diseases such as parent support groups; and
- To respond promptly to international emergencies relating to rare childhood conditions where national and international studies where national and international studies can make a contribution to science or public health.

There are currently 12 surveillance units from around the globe that form the INOPSU network.

Table 8 **Members of INoPSU**

Country	Unit	Email	Website
Australia	APSU	apsu@chw.edu.au	www.apsu.org.au
Belgium	BSU	*under development*	*under development*
Britain	BPSU		www.bpsu.inopsu.com
Canada	CPSP	danielleg@cps.ca	www.cps.ca/cpsp
Germany	ESPED	Prof.von.kries@gmx.de	www.esped.uni-duesseldorf.de
Greece and Cyprus	GCPSU	xhatzi@med.uth.gr	
Ireland	IPSU	robert.cunney@malix.hse.ie	
Netherlands	NSCK	rob.rodriguespereira@tno.nl	www.nvk.pedianef.nl
New Zealand	NZPSU	nzpsu@otago.ac.nz	www.otago.ac.nz/nzpsu
Portugal	PPSU	uvp-spp@ptnetbiz.pt	www.spp.pf/ingl/index_17.html
Switzerland	SPSU	mirjam.maeusezahl@bag.admin.ch	www.bag.admin.ch/infekt/melde/spsu/d/index/.htm(German)
Wales	WPSU	cerri.terrington@cardiffandvale.wales.nhs.uk	www.welsh-paediatrics.org

Source: INoPSU Website: www.inopsu.com

Table 9 **Characteristics of the Paediatric Surveillance Units**

Country	Population ($x10^6$<15 years)	Established	Approximate number of respondents
Australia	4.1	1992	1360
Belgium			
Britain	12.8	1986	3300
Canada	7.5	1996	2500
Germany	12.0	1992	460*
Greece and Cyprus	1.6	2001	
Ireland	1.3	1996	150
Netherlands	3.0	1992	780
Portugal	1.67	2000	1506
New Zealand	0.86	1997	225
Switzerland	1.3	1995	250
Wales	0.65	1994	135*

*Heads of Paediatric Centres

List of Clinicians with 100% Return Rate 2013

Clinicians who had 100% return rate in 2012 and 2013 are underlined

Aiken, Richard
Asher, Innes
Ayers, Rosemary
Baker, Nic
Bates, Giles
Battin, Malcolm
Best, Emma
Bishop, Jon
Blair, Nikki
Blakelock , Russell
Bloomfield, Frank
Bloomfield, Guy
Bond, David
Bourchier, David
Bradley, Stephen
Breen, Felicity
Bremner, Catherine
Broadbent, Roland
Brooks, Jeanine
Broomfield, Frank
Brown, Jeff
Buckley, David
Buskh, Mariam
Campanella, Silvana
Campbell, Moira
Campbell-Stokes, Priscilla
Carmicheal, Eleanor
Carter, Philippa
Chin, Simon
Clark, Philippa
Clarke, Rachel
Cole, Nyree
Corban, Jenny
Corbett, Rob
Coulter, Belinda
Craig, Angela
Craine. Karina
Cunningham, Vicky
Currie, Sarah
Dalton, Marguerite
Dalziel, Stuart
Daniel, Alison
Darlow, Brian
Day, Andrew
Dickson, Cameron
Dixon, Bronwyn
Dixon, Joanne
Doocey, Claire
Drage, Alan
Drake, Ross
Edmonds, Liza
Edward, Kathryn
Elder, Dawn
Evans, Helen
Ferguson, Janet
Fleming, John
Ford, Rodney
Forster, Richard
Gangakhedhar, Arun
Gapes, Stephanie
Garrett, John
Gavin, Raewyn
Gentles, Tom
Goldsmith, John
Goodwin, Mick
Graham, Dave
Grangaard, Erik
Grant, Cameron
Grant, Shaun
Grupp, Oliver
Gunn, Alistair
Hainsworth, Oliver
Harding, Jane
Hector-Taylor, James
Hegarty, Jo
Hewson, Michael
Hoare, Simon
Hofman, Paul
Hornung, Tim
Hunter, Warwick
Hunter, Wendy
Jackson, Pam
Jacquiery, Anne
Jefferies, Craig
Jellyman, Timothy
Jordan, Nicola
Kara, Tonya
Kelly, Andrew
Kelly, Patrick
Langdana, Anu
Laughton, Stephen
Leadbitter, Philip
Lear, Graham
Lees, Hugh
Lennon, Diana
Liang, Allen
Longchamp, Danielle
Lourens, Roelof
Lynn, Adrienne
Lynn, Adrienne
Lyver, Amanda
Maikoo, Rajesh
Marks, Rosemary
Marshall, Andrew
Matsas, Richard
Maxwell, Fraser
McArthur, John
McCarthy,Karen
McCay, Hamish
McFarlene, Scott
McIllroy, Peter
McKie, Jill
Meyer, Michael
Mildenhall, Lindsay
Miles, Fiona
Mitchell, Anne
Momsen, Tracey
Momsen, Tracey
Moore, Philip
Morris, Max
Moyes, Chris
Nair, Arun
Neas, Katherine
Nel, Jaco
Newman, David
Newman, David
Nicholson, Ross
Nobbs, Peter
Nolan, Melinda
Nutthal, Gabrielle
O'Donnell, Clare
Ostring, Genevieve
Pattemore, Philip
Perira, Nicola
Porteous, Louise
Prestige, Chanel
Pringle,Kevin
Purvis, Diana
Ramadas, Ram
Reith, David

Robertson, Stephen
Robertshaw, Kate
Rowley, Simon
Sadlier, Lynette
Sarah, Amit
Schmiti-Uli, Meia
Selby, Robyn
Sharpe, Cia
Shaw, Ian
Shaw, Robyn
Shepherd, Michael
Shillito, Paul
Shirani Vetharaniam
Sinclair, Jan
Siversten, Louise
Skeen, Jane
Skinner, Jon
Smiley, Richard
Smith, David
Smith, Warwick
St John, Martyn
Stanley, Thorsten
Steinmann, Kai
Stonehouse, Mary
Taylor, Barry
Thomson, Janine
Tomlinson, Paul
Townsend, Tom
Trenholme, Adrian
Tsang, Bobby
Tuck, Roger
Twiss, Jacob
Van de Boom, Jutta
Vogel, Alison
Walls, Tony
Walsh, Jonathon
Webster, Nicky
West, Clare
Weston, Phil
Whale, Janine
Wheeler, Ben
Wilde, Justin
Wills, Russell
Wilson, Callum
Wilson, Elizabeth
Wilson, Nigel
Wilson, Ross
Wilson, Toni
Wiltshire, Esko
Wong, Maisie
Wong, Sharon
Wong, William
Yan, Jacqui

Congratulations to

Jenny Corban

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