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NEW ZEALAND PAEDIATRIC SURVEILLANCE UNIT

Welcome to the 2011 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 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) requires such surveillance to confirm New Zealand is free of poliomyelitis as part of the global eradication process. Since the establishment of the NZPSU, the number of conditions under surveillance has increased and in 2011 includes eight high-impact childhood conditions.

The NZPSU is a member of the International Organization 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.

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 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 is (a) relatively uncommon (or an uncommon complication of a more common disease), (b) of high-impact, and (c) of such a low incidence or prevalence as to require ascertainment of cases on a national scale to generate sufficient numbers for 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) 2011**

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 2011

In 2011, 220 clinicians participated in the system. The average response rate to the monthly report card/email was 92%. 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 2010 and 2011. In 2011, 155 (70.5%) did not report any cases at all, and only 4 (1.8%) reporting 5 or more.

In 2011, 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 Unit.

***Table 2*: Respondents' Workload 2010 & 2011**

Notifications	2010		2011	
	No.	%	No.	%
None	139	66.2	155	70.5
One	45	21.5	51	23
2-4	22	10.4	10	4.5
5 or more	4	1.9	4	1.8

Table 3: **Conditions under surveillance in 2011**

Condition	Surveillance Started	Period	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
Serious Adverse Drug Reactions	May 2008	Ongoing	Dr Desiree Kunac
Vitamin D Deficiency Rickets	July 2010	2013	Dr Ben Wheeler
Moderate and Severe Encephalopathy	January 2010	2013	Dr Malcolm Battin
Severe Neonatal Hyperbilirubinaemia	March 2010	2013	Dr Roland Broadbent Prof Brian Darlow

BRIEF REPORTS ON STUDIES

ACUTE FLACCID PARALYSIS (AFP)

A/Prof 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 2011

- There were only three cases notified to the NZPSU in 2011.
- Information has been obtained on all of these children including follow-up information two months after diagnosis.
- Three were from the North Island, none from the South Island.
- One female, two males.
- Age range 7 months to 14 years, median age 11 years.
- No seasonal variation.
- The overall incidence was 0.35 per 100,000 children < 15 years.
- A diagnosis of Guillan-Barré Syndrome (GBS) has been made in one of these cases, paralysis due to an entrovirus in one, and the cause was unspecified but not due to polio in the remaining case.
- All three 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 only complete for one of the three children, (33%).

***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	1	33.3
2 stool samples, but one or both not within 14 days of onset of paralysis	1	33.3
1 stool sample	0	0
No stool samples	1	33.3

The system did not successfully capture the required rate of AFP in 2011 (1.0 per 100,000 children <15 years) as expected by WHO in the absence of endemic polio. In addition, the rate of stool testing was only 33%, less that the WHO criteria is 80%.

We have taken some steps to improve notification in 2012.

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, but hope that paediatricans will continue to report cases.

Even though WHO believes polio to have been eradicated from the Western Pacific Region, ongoing surveillance of AFO is likely to be required for some years. This will require the continued telephone notification of all cases of AFP.

CONGENITAL RUBELLA SYNDROME (CRS)

Professor Diana Lennon
Ongoing study started in January 1998

There were no cases on Congenital Rubella reported in 2011

HAEMOLYTIC URAEMIC SYNDROME (HUS)

Dr William Wong
Ongoing study started in January 1998

KEY RESULTS FOR 2011

Key results for 2011 cases:

- 15 cases of HUS reported, of which 13 had a diarrhoeal prodrome (D+)
- Of the 13 cases of diarrhoeal prodrome (D+)
  - 12 were from the North Island
  - The median age at presentation was 2.8 years, range 1.5 to 14.1 years
  - 4 children either lived on a farm or had been in contact with a farm
  - 6 children had E coli 0157H7 isolated from their stools
- Of all 15 children 9 needed acute peritoneal dialysis.
  - All patients regained renal function to come off dialysis.

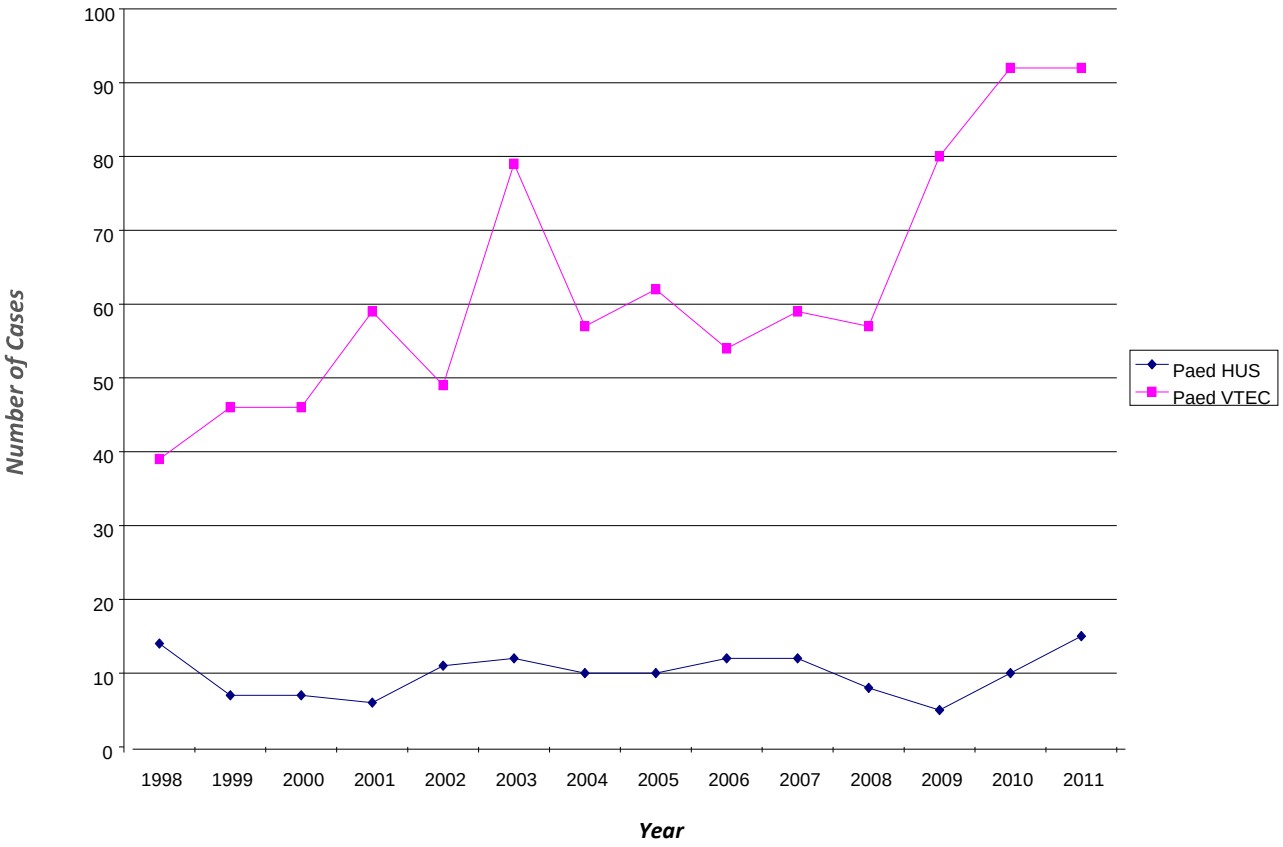

Figure 1: Childhood Haemolytic Uraemic Syndrome and VTEC* Isolates 1998-2011

*Verotoxigenic Escherichia Coli (VTEC) based on notifications to ESR

MODERATE AND SEVERE NEONATAL ENCEPHALOPATHY

Dr Malcolm Battin (on behalf of the Neonatal Encephalopathy Working Group of the Perinatal and Maternal Mortality Review Committee)
Study started in January 2010

In 2010, 82 infants were notified with moderate or severe neonatal encephalopathy (NE). The overall incidence was 1.26/1000 registered births, similar to published studies.

Umbilical gases were performed in 72% (59/82) cases. Resuscitation was required at birth in 89%. A small number (4%) received only free flow oxygen but positive pressure ventilation was required in the majority; this was delivered by mask in 51% and via an ETT in 63%. The use of cardiac massage was reported in 51% and drugs such as adrenaline in 23%.

Once admitted to the level 2 or 3 neonatal unit 74% of babies with NE received ongoing respiratory support with mechanical ventilation. Overall, 23% were treated with nitric oxide for pulmonary hypertension. Anticonvulsant use was common (72%), with phenobarbitone being the most commonly used agent.

Therapeutic hypothermia was performed in 67% of cases and was started prior to 6 hours of age in 46%.

Fifty-nine infants from the 82 cases survived the first 28 days of life. At discharge examination, 32 surviving infants (54%) were reported to be within normal limits, 12 (24 %) had mild/moderate abnormality, and 3 (5%) severe abnormality. For 6 infants (10%) examination was unknown/not documented.

Based on the findings so far the PMMRC recommends:

1. Cord gases should be performed on all babies born with an Apgar 7 at one minute.
2. If neonatal encephalopathy is clinically suspected in the immediate hours after birth, early consultation with a neonatal paediatrician is recommended to avoid a delay in commencing cooling.
3. All babies with moderate or severe neonatal encephalopathy should undergo a formal neurological examination and have the findings clearly documented prior to discharge.

Further analysis including the 2011 data is underway and will be reported in the Seventh Annual report of the PMMRC. Further information on NEWG can be found on the PMMRC's website: http://www.hqsc.govt.nz/our-programmes/mrc/pmmrc

PERINATAL EXPOSURE TO HIV

A/Prof Nigel Dickson, Dr Lesley Voss
Ongoing study started in January 1998

In 2011, there were eight reports to the NZPSU of infants/children born in New Zealand to women infected with HIV who were diagnosed prior to giving birth or during their pregnancy.

- Of the eight infants born in New Zealand in 2011:
    - 5 were born in Auckland, 1 in Wellington, 1 in Waikato, and 1 in Tauranga.
    - 6 were born to mothers whose HIV had been diagnosed before their pregnancy and 2 were diagnosed during their pregnancy.
    - 5 of the mothers were African, 1 European, 1 Asian, and 1 a Pacific islander.
    - All of the mothers were given antiretroviral treatment during pregnancy; 2 gave birth by caesarean section and 6 gave birth vaginally; none of the babies were breastfed.
    - None of the children are infected with HIV

SEVERE NEONATAL HYPERBILIRUBINAEMIA

Dr Roland Broadbent, Professor Brian Darlow
Ongoing study started January 2010

In 2011, there were 16 reports to the NZPSU of severe neonatal hyperbilirubinaemia and there were 14 completed datasets.

Of the 14 infants:

- 7 were male, 7 were female
- Ethnicity recorded was 5 Pacific, 1 Maori, 4 Asian, 2 other, 1 New Zealand European and 1 African
- 1 was born at home, the remaining in hospital
- 11 were exclusively breast feed and 3 were a combination of bottle and breast
- 12 were referred from community based midwives, 1 was self-referred and 1 referral source was unknown.
- The range of the highest bilirubin was from 486-664, with the median being 533
- 1 infant required 1 exchange transfusion

SERIOUS PAEDIATRIC ADVERSE DRUG REACTIONS (ADR)

Dr Desiree Kunac, Dr Michael Tatley, Assoc Prof David Reith, Prof Keith Grimwood
Study started August 2007

KEY RESULTS FOR 2011

There were 15 notifications made to the NZPSU during 2011 but for 4 notifications, no further details were received and 1 notification was made in error. A total of 10 reports were received but one case was excluded as it was subsequently determined that the reaction was not related to the medicine. The remaining 9 reports are summarised below:

Table 5: ADR notifications during 2011

Suspect medicine(s)	Adverse drug reaction	Age	Sex	Seriousness / Outcome	Medical Warning
Amoxicillin	Serum sickness-like disorder Angioedema	5 years	M	Hospitalised/ Recovered	✓ Danger
Amoxicillin	Serum sickness	2 years	M	Emergency Department Attendance/ Recovered	✓ Warning
Cotrimoxazole	Pruritic papular rash rash, Fever, Conjunctivitis	6 years	F	Medically significant/ Recovered	✓ Warning
MMR vaccine	Thrombocytopenia Purpura	19 months	M	Hospitalised/ Recovered	
Chlorpheniramine	Encephalopathy	3 years	F	Life-threatening/ Recovered	✓ Danger
Ethosuxamide	Hiccups	11 years	F	Not serious/ Recovered	
Lamotrigine	Nightmares Thoughts of self harm	15 years	F	Medically significant/ Recovered	✓ Warning
Lamotrigine	Rash maculo-papular	14 years	M	Medically significant/ Recovered	✓ Warning
Cyclopentolate eye drops	Convulsions	1 month	M	Medically significant/ Recovered	✓ Warning

Two of the 10 cases (which appear shaded in the table) are new reports that were not previously notified to CARM, highlighting the value of this active surveillance system. Importantly, these cases resulted in a medical warning being entered for the child in the NZ Health Information Service database and are now also entered into the CARM database to further enhance our understanding of serious ADRs in children.

VITAMIN D DEFICIENCY RICKETS (VDDR)

Dr Ben Wheeler, Associate Professor Nigel Dickson, Professor Barry Taylor
Study started July 2010

To August 2012 (inclusive), there were confirmed 41 reports to the NZPSU of infants/children with VDDR.

Of these, 32 cases, 5 were not cases or had missing significant data, and information from 4 is awaited.

- Of the 32 confirmed cases from July 2010 – August 2012
  - Cases have been reported from most provinces in New Zealand.
  - The majority are of Indian ethnicity, other ethnicities reported include European, Maori, Tongan, Samoan, Nigerian, Eritrean, Malaysian, Chinese ethnicity.
  - The majority were born in New Zealand.
  - Approximately 20% of mothers were born in New Zealand.
  - The mean age at diagnosis is approximately 2.0 years.
  - The majority have dark or intermediate skin colour.
  - >90% were breastfed (for mean duration of 0.8years).
  - Winter/Spring predominance of cases.
  - Approximately 75% have x-ray confirmation of rickets.
  - There is a strong association with Iron Deficiency.

We have extended the study till the end of June 2013 to get additional numbers approaching 50.

Clearly many cases are not being reported, with some provinces with less than expected numbers (based on expected numbers/population).

PNEUMOCOCCAL MENINGITIS

Professor Diana Lennon and Dr Rachel Webb
Updated report of 2 year study completed April 2007

This study aimed to describe the burden of pneumococcal meningitis in New Zealand children in order to inform future decision-making around the introduction of conjugate pneumococcal vaccination and surveillance of IPD in New Zealand. The study was conducted over a two year period between 2005 – 2007, prior to 2008 when 7valent conjugate pneumococcal vaccine (PCV7, Prevenar®) was introduced into the New Zealand childhood Immunisation Schedule, along with intensive national laboratory-based surveillance for Invasive Pneumococcal Disease (IPD) by the ESR.

45 cases were notified to the NZPSU, and a further two cases were identified through laboratory surveillance. After duplicates were excluded 38 cases met the case definition. Of these 87% occurred in children under 2 years of age. The annual incidence of pneumococcal meningitis in under 2 year olds was 15.7 cases/100,000; rates for Maori and Pacific under 2year olds were substantially higher (23.6 per 100,000/year and 39.2/100,00/year respectively). Serotyping was undertaken in 31 cases and 80% were PCV7 serotypes.

The 2010 ESR annual report on Invasive Pneumococcal Disease described a 70.9% reduction in all IPD in <2year olds, with a 90.5% reduction in PCV7 serotype disease, compared to data from the prePCV7 era. The annual meningitis rate in <1year olds was 7.8 cases/100,000, with no cases reported in 1- 2 year olds in 2009 or 2010. Additional decreases were reported in >65year old age group, presumably due to herd immunity.

In 2011, PCV10 (Synflorx) replaced PCV7 in the New Zealand Immunisation Schedule, providing coverage against additional serotypes 1, 5 and 7F.

As predicted, the introduction of conjugate pneumococcal vaccine has resulted in a significant reduction in invasive pneumococcal disease burden. Ongoing ESR surveillance is important to monitor for possible emergence of serotype replacement disease, particularly type 19A which is associated with high rates of antimicrobial resistance and is not included in PCV10.

Reference:
ESR 2010 Annual Report – Invasive Pneumococcal Disease in New Zealand. Accessed 4/10/12
http://www.surv.esr.cri.nz/surveillance/IPD.php?we_objectID=2799

PUBLISHED REPORTS ON CONDITIONS EVER MONITORED BY NZPSU

Table 6: Published reports on 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 *New Zealand Medical Journal*, 2011:124
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), 2004; *Pediatric Research* 56; 474
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
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
Pertussis	2004 - 2005	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
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, 2012*
Renal Stones	2010 - retrospective	Dickson N, Kara T, Tuohy P, Rapid National Survey of Renal Stones in New Zealand Infants, *Journal of Paediatrics and Child Health*; 2010, 45, 633-635

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 Amstersdam, 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 and Munich Germany 2008. Associate Professor Nigel Dickson has attended the meetings in Canada, England and Portugal.

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.

Table 7: **Members of INoPSU** INoPSU Website: www.inopsu.com

Country	Unit	Email	Website
Australia	APSU	apsu@chw.edu.au	www.apsu.org.au
Britain	BPSU	helen.friend@rcpch.ac.uk	www.bpsu.inopsu.com
Canada	CPSP	cpsp@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	
Latvia	LPSU	aspedlat@com.latnet.lv	
Netherlands	NSCK	rob.rodriguespereira@tno.nl	www.nvk.pedianef.nl
New Zealand	NZPSU	nzpsu@otago.ac.nz	www.otago.ac.nz/nzpsu
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/meld e/spsu/d/index/.htm(German)

Table 8: **Characteristics of the Paediatric Surveillance Units**

Country	Population (x10^6<15 years)	Established	Approximate number of respondents
Australia	4.1	1992	1360
Britain	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	780
Papua New Guinea	1.92	1996	40
Portugal	1.67	2000	1506
New Zealand	0.83	1997	210
Switzerland	1.3	1995	250
Trinidad & Tobago	0.5	2005	
Wales	0.65	1994	135*

*Heads of Paediatric Centres

REPORTING PAEDIATRICIANS 2011

Clinicians who had 100% return rate in 2010 and 2011 are underlined

Aftimos, Salim	Aiken, Richard	Armishaw, Jeremy	Asher, Innes
Ayers, Rosemary	Bach, Kitty	Baker, Nicholas	Baker, Heidi
Bates, Giles	Battin, Malcolm	Beard, Rachel	Beasley, Spencer
Blair, Nikki	Bourchier ,David	Bradley, Stephen	Broadbent, Roland
Broomfield, Frank	Brown, Jeff	Brynes, Cass	Buchanan, Leo
Bond, David	Buckley, David	Campbell-Stokes, Priscil	Chin, Simon
Clark, Philippa	Clarke, Rachel	Clarkson, John	Cole, Nyree
Corban, Jenny	Coulter, Belinda	Craig, Angela	Cunningham, Vicky
Dalton, Marguerite	Day, Andrew	De Lore, Danny	Daniel, Alison
Darlow, Brian	Denny, Simon	Dickson, Cameron	Dixon, Joanne
Doocey, Claire	Doran, John	Drage, Alan	Drake, Ross
Elder, Dawn	Emery, Diane	Evans, Juliana	Evans, Helen
Farrell, Alan	Fleming, John	Ford, Rodney	Forster, Richard
Gangakhedhar, Arun	Gapes, Stephanie	Gavin, Raewyn	Gentles, Tom
Gunn, Alistair	Goldsmith, John	Goodwin, Mick	Graham, Dave
Grangaard, Erik	Grant, Cameron	Gunn, Alistair	Hall, Anganette
Hall, Kate	Harding, Jane	Hector-Taylor, James	Heron, Peter
Hewson, Michael	Hoare, Simon	Hofman, Paul	Hobbs, Vivienne
Hornung, Tim	Hunter, Warwick	Hunter, Wendy	Jackson, Pam
Jankowitz, Peter	Jefferies, Craig	Jellyman, Timothy	Jordan, Nicola
Kara, Tony	Kelly, Andrew	Kelly, Patrick	Langdana, Anu
Laughton, Stephen	Leadbitter, Philip	Lear, Graham	Lees, Hugh
Lennon, Diana	Leversha, Alison	Liang, Allen	Longchamp, Danielle
Lyver, Amanda	Lynn, Adrienne	Maikoo, Rajesh	Marks, Rosemary
Marshall, Andrew	Matsas, Richard	Maxwell, Fraser	McArthur, John
McCarthy,Karen	McCay, Hamish	McFarlene, Scott	McIllroy, Peter
McLaren, Zoe	Meadows, Caroline	Meeks, Maggie	Meyer, Michael
Mildenhall, Lindsay	Miles, Fiona	Mitchell, Ed	Mitic, Schuman
Moore, Philip	Morris, Max	Morrison, Philip	Momsen, Tracey
Moyes, Chris	Nagel, Fred	Nair, Arun	Neas, Katherine
Nel, Jaco	Nelson, Nicola	Neutze, Jocelyn	Newman, David
Nicholson, Ross	Nobbs, Peter	Nolan, Melinda	Nutthal, Gabrielle
O'Donnell, Clare	Palmer, Penny	Pattemore, Philip	Percival, Teuila

Perira, Nicola	Pinnock, Ralph	Pringle, Kevin	Ramadas, Ram
Reith, David	Richardson, Vaughan	Robertshaw, Kate	Robertson, Stephen
Rowley, Simon	Russell, Glynn	Sadlier, Lynette	Sandhu, Jag
Shepherd, Michael	Sadowsky, Joel	Schmiti-Uli, Meia	Selby, Robyn
Shaw, Robyn	Shaw, Ian	Shillito, Paul	Sinclair, Jan
Skeen, Jane	Skinner, Jon	Smith, David	Smith, Warwick
St John, Martyn	Stanley, Thosten	Steinmann, Kai	Stonehouse, Mary
Sullivan, Michael	Swan, Catherine	Taylor, Barry	Teague, Lochie
Tomlinson, Paul	Trenholme, Adrian	Tsang, Adrian	Twiss, Jacob
Teague, Lochie	Van de Boom, Jutta	Walls, Tony	Wallace, Alexandra
Walker, Wendy	West, Clare	Weston, Phil	Whale, Janine
Wheeler, Ben	Wilde, Justin	Wills, Justin	Wills, Russell
Wilson, Nigel	Wilson, Ross	Wilson, Callum	Wilson, Toni
Wiltshire, Esko	Wong, Maisie	Wong, Sharon	Wong, William

Congratulations to

Philip Pattemore

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