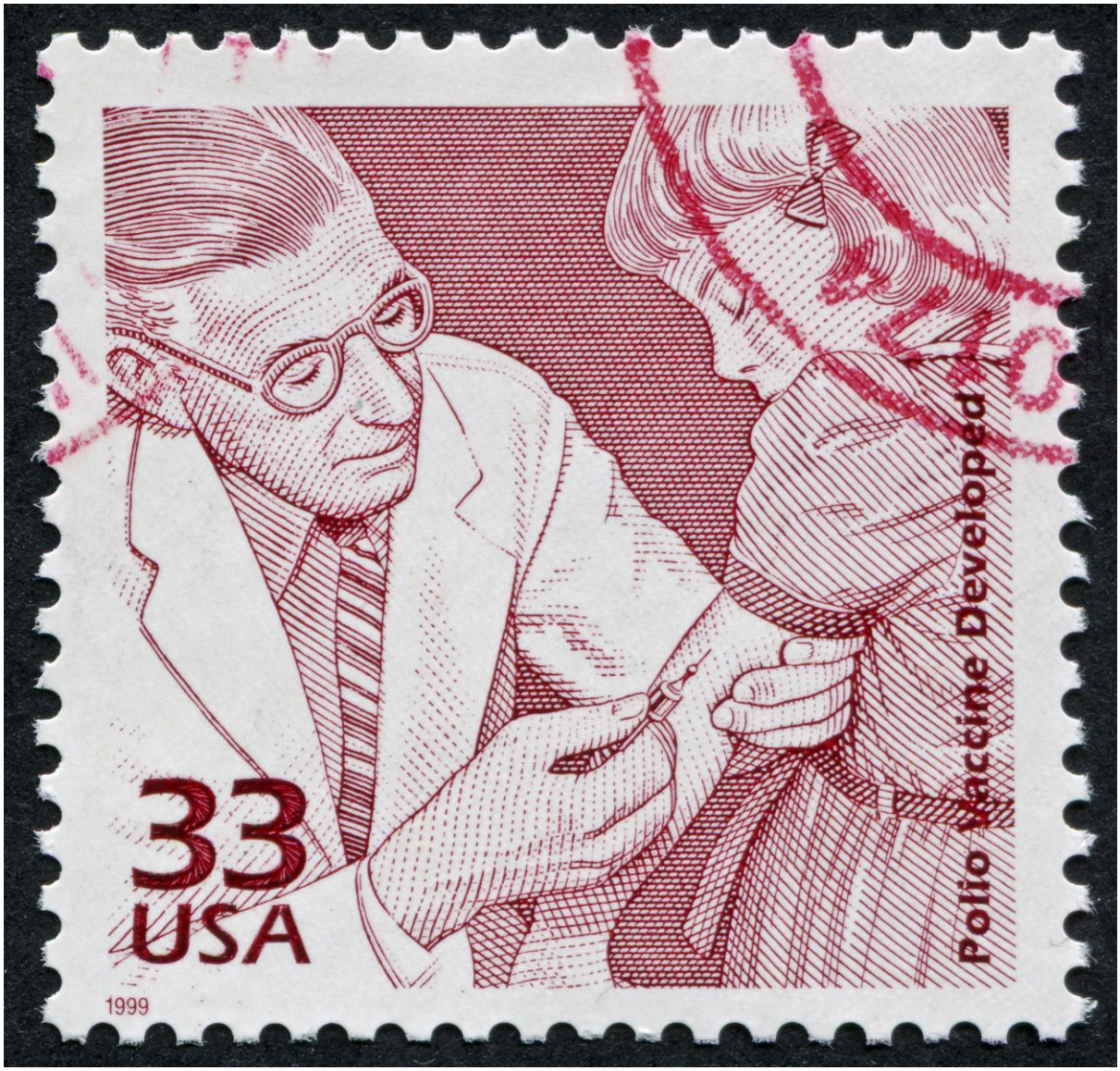

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PREFACE: NEW ZEALAND PAEDIATRIC SURVEILLANCE UNIT

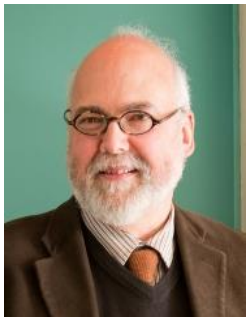
Welcome to the 2014 Annual Report of the New Zealand Paediatric Surveillance Unit (NZPSU).

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 NZPSU was established in 1997 to facilitate and improve the knowledge of uncommon high-impact childhood conditions in New Zealand. These are conditions 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 2014 included nine.

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

Update of Polio Eradication – October 2015 http://www.polioeradication.org/

- There are just two counties – Pakistan and Afghanistan - with endemic wild poliovirus type 1 (WPV1):
  - Pakistan has had significantly fewer cases to date in 2015 than in 2014, probably a result of improved access to vaccination in key regions
  - The most recent WPV1 case in Nigeria was in July 2014
  - All WPV1 outbreaks outside of endemic counties have been stopped
- Wild poliovirus type 2 (WPV2) has been declared eradicated:
  - The last case was in India in 1999
- There has been no cases of wild poliovirus type 3 (WPV3) for the past three years
- However cases of paralytic polio due to vaccine-derived poliovirus (VDPV), resulting from oral poliovirus vaccine (OPV) continue to occur:
  - These are most commonly from the OPV2 component of the tetravalent OPV (tOPV) in regions with relatively low immunisation coverage of OPV
  - Outbreaks (>1 case) have most recently occurred in Lao PDR, Ukraine, Madagascar, Guinea and South Sudan, with single events in several other countries
- The withdrawal of type 2 component of OPV is the main strategy to prevent VDPV2 emergence:
  - The worldwide switch from tOPV to bivalent (without OPV2) will take place over two weeks in April/May 2016 in countries still using OPV
- A consequence of eradication of poliomyelitis is that all polioviruses (wild and vaccine strains) in laboratory, research, and manufacturing facilities will have to be destroyed or securely contained:
  - The details of laboratory containment are provided in the *WHO Global Action Plan to minimize poliovirus facility-associated risk (GAPIII)*.

The introduction of WPV1 and VDPV is still a possibility so we urge paediatricians to make a telephone notification of any case of acute flaccid paralysis to the NZPSU, even when known to be caused by Guillain-Barre syndrome, transverse myelitis or other conditions so we can confirm to WHO that New Zealand remains polio-free.

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 using information received from the Medical Council of New Zealand.

How the Surveillance System Works

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.

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) 2014**

Member	Institution
Associate Professor Nigel Dickson (Chair)	NZPSU, University of Otago, Dunedin
Professor Barry Taylor	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 2014

In 2014, 235 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 2013 and 2014: in 2014, 157 did not report any cases at all, with 6 reporting 5 or more.

In 2014, the NZPSU monitored nine 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 2013 and 2014**

Notifications	2013		2014	
	No.	%	No.	%
None	154	67.5	157	66.5
One	55	24.1	53	22.0
2-4	18	7.8	19	9.4
5 or more	1	0.4	6	2.10

Table 3: **Conditions under surveillance in 2014**

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	Prof Diana Lennon
Perinatal HIV Exposure	January 1998	Ongoing	A/Prof Nigel Dickson Dr Lesley Voss
Adverse Drug Reactions	May 2008	Ongoing	Dr Desiree Kunac
Eosinophilic Oesophagitis	January 2014	Dec 2016	Dr Helen Evans
Supratherapeutic Paracetamol	January 2014	Dec 2015	Dr Jon Bishop
Pleural empyema	June 2014	May 2016	Dr Emma Best
Alcohol Ingestion	July 2014	June 2016	Dr Stuart Dalziel

BRIEF REPORTS ON ONGOING STUDIES

Acute Flaccid Paralysis

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 2014

- There were eight cases notified to the NZPSU in 2014.
- Information has been obtained on all of these children including follow-up information two months after diagnosis.
- Six were from the North Island, two were from the South Island.
- Three females, five males.
- Age range 1 year to 14 years; median age 4.7 years (range: 1-14 years)
- No seasonal variation.
- The overall incidence was 0.88 per 100,000 children < 15 years.
- A diagnosis of Guillaine - Barré Syndrome (GBS) has been made in six of these cases, and Transverse Myelitis in two cases.
- All eight cases have been discounted as Polio by the National Certification Committee for the Eradication of Polio (NCCEP).
- Complete and timely collection of stool samples, satisfying the WHO criteria of 2 samples at least 24 hours apart < 14 days after onset paralysis, was complete for three of the eight children (37.5%).

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

The required rate (of 1.0 per 100,000) expected by WHO in a country without endemic polio was nearly reached in 2014, however the rate of stool testing was 37.5%, less than the WHO target which is 80%.

***Table 4*: Percentage of AFP cases with adequate (or otherwise) stool samples: 2014**

Category	Stool samples	
	No.	**%**
2 stool samples within 14 days of onset of paralysis	3	37.5
2 stool samples, but one or both not within 14 days of onset of paralysis	1	12.5
1 stool sample	0	0.0
No stool samples	4	50.0

We appreciate that this surveillance requirement is a challenge, in the absence of endemic polio. We 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 Guillaine - Barré Syndrome (GBS).

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 diagnosis for children with such symptoms is likely to be made

Congenital Rubella Syndrome (CRS)

Professor Diana Lennon
Ongoing study started January 1998

There were no reported cases in 2014.

Haemolytic Uraemic Syndrome (HUS)

Dr William Wong
Ongoing study started in January 1998

Key Results for 2014

- 14 cases of childhood HUS were reported, of which 11 (78.6%) had a diarrhoeal prodrome (D+)
- Geographic distribution: 8/14 from the North Island
- Median age at presentation of D(+) HUS was 3.9 years, range 1.2 to 13 years
- 4/11 of D(+) HUS either lived on a farm or had visited a farm in the past 2 weeks
- 6/11 of D(+) HUS had E coli 0157H7 isolated from their stools
- 8/14 of all patients needed acute peritoneal dialysis a mean of 6 days, range 0-28
- In 2 patients unpasteurised milk was suspected
- 1 patient died of severe intracerebral haemorrhage whilst on acute dialysis

The 2014 cohort continue to highlight the significant morbidity and mortality associated with HUS. The death of one patient in 2014 reflects the potential severity of this disease.

There were 3 cases of streptococcus pnuemononiae related HUS. This is slightly surprising given the introduction of the pneumococcal vaccine, however in 2 patients, the serotype identified in the patients, were not covered in the vaccine.

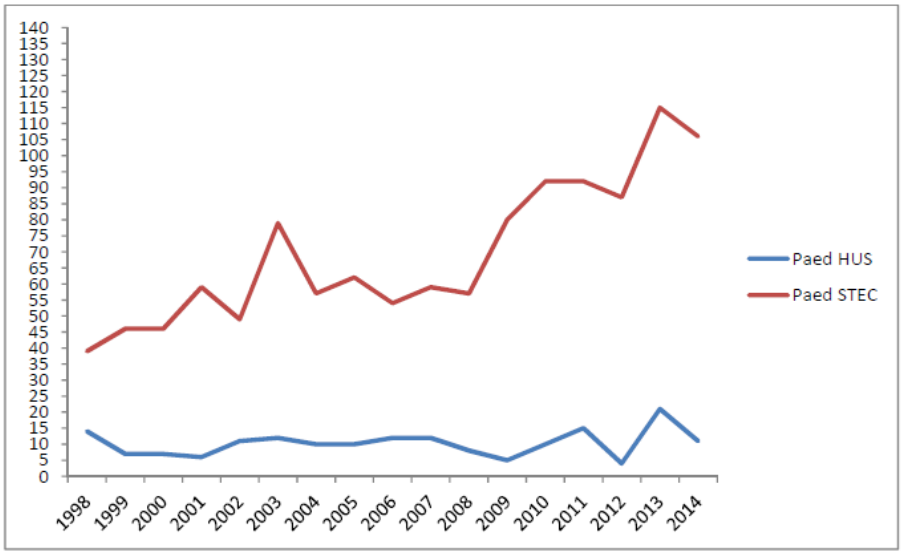


***Figure 1**: Annual number of children reported with haemolytic uraemic syndrome (Paed HUS) to the NZPSU and of Shiga toxin associated E coli in children (Pead STEC) reported the ESR enteric laboratory*

Perinatal HIV Exposure

Associate Professor Nigel Dickson and Dr Lesley Voss
Ongoing Study

Key Results for 2014

In 2014, there were six reports to the NZPSU of infants/children born in New Zealand to women infected with HIV who were diagnosed prior to or during their pregnancy.

Of these six:

- 3 were born in Auckland, 2 in Wellington and 1 in Hastings
- 6 were born to mothers whose HIV had been diagnosed before their pregnancy
- 4 of the mothers were of European and 2 of Pacific Islander ethnicity
- All of the mothers were given antiretroviral treatment during pregnancy; 3 gave birth by caesarean section and 3 gave birth vaginally; none of the babies were breastfed.

None of the children are believed to be infected with HIV (although most are still awaiting confirmation).

Serious Paediatric Adverse Drug Reactions (ADR)

Dr Desiree Kunac, Dr Michael Tatley, Associate Professor David Reith, Professor Keith Grimwood
Study commenced August 2007.

Key Results for 2014

There were 24 notifications made during 2014. For seven no further details were provided, and one was notified in error. Therefore 16 full reports were received; one was excluded as was not considered serious. The remaining 15 reports are summarised in Table 5.

Eight of the 15 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. Seven of these eight cases resulted in a medical danger or warning being entered for the child in the national Medical Warning System and are also now included in the CARM database to further enhance our understanding of serious ADRs in children.

Table 5: Serious Paediatric Adverse Drug Reactions (ADR): 2014. The column "Medical Warning" indicates those added to the national Medical Warning System, and the "CARM" indicates whether a notification was also made directly to the Centre for Adverse Reactions Monitoring (CARM)

Suspect medicine	**Reaction(s)**	**Age Age**	**Sex**	**Seriousness/ Outcome**	**Medical Warning**	**CARM**
Paracetamol *higher than Recommended dose	Hepatic failure	3y	M	Hospitalised / Recovered	Nil	No
Nutricia nutilis (thickening powder)	Diarrhoea	7y	F	Medically significant /Recovered	Warning	No
Carbamazepine and cotrimoxazole	Stevens Johnson Syndrome hepatic enzymes increased	9y	F	Hospitalised / Not yet recovered	Danger	No
Atomoxetine	Raynaud's phenomenon	10y	M	Emergency care / Recovered	Warning	No
Erythromycin	Stevens Johnson Syndrome	10y	M	Life threatening / Recovered	Danger	No
Diphenhydramine	Confusion/agitation/ Hallucinations/ mydriasis fever	11y	M	Medically significant /Recovered	Warning	No
Carbamazepine	DRESS syndrome	13y	F	Life threatening /Recovered	Danger	No
Methylphenidate SR	Skin rash	14y	M	Medically significant /Recovered	Warning	No
50% betamethasone valerate: 50% clotrimazole (topical) 1% hyrdrocortisone cream *higher than recommended dose	Cushings syndrome	10m	F	Medically significant/ Not yet recovered at time of report	Nil	Yes
DTaP-hexa vaccine	Injection site granuloma	13m	M	Medically significant / Not yet recovered	Nil	Yes
Sodium valproate	Fanconi syndrome	2y	F	Hospitalised/ Not yet recovered at time of report	Danger	Yes
MACA powder (contains peruvian ginseng, taken as supplement)	Hypertension	2y	M	Medically significant / Recovered	Nil	Yes
Inflilximab	Angioedema/pruritis chest tightness/ throat tightness/flushing	7y	M	Life threatening /Recovered	Warning pending	Yes
Infliximab	Thirst/agitation chest tightness tachycardia	7y	M	Life threatening / Recovered	Warning pending	Yes
Carbamazepine	DRESS syndrome	13y	M	Hospitalised / Recovered	Danger	Yes

BRIEF INTERIM REPORTS ON TIME-LIMITED STUDIES IN PROGRESS

Alcohol Ingestion by children ≤ 15 years

Dr Stuart Dalziel
Two-year study started July 2014

Very little is known about the effects of alcohol on the lives of young children in New Zealand children, nor is there any routinely collected information about the consumption of alcohol by minors.

This study is collecting information about children admitted to hospital due to alcohol ingestion, and replicates a similar study undertaken by the Canadian Paediatric Surveillance Unit, with minor adjustment has been made in the questionnaire to account for New Zealand local conditions. The study will identify the circumstances of this group in a way that enables international comparison and compiles valuable data for more effective public policy and medical intervention.

Key results for cases reported July 2014 to April 2015

28 cases were reported and entered in the first 10 months of the study

- Nine were male; 19 female
- Age range was two years to sixteen years: Median age 14 years
- DHB of child's domicile showed Auckland and Counties Manukau accounting for 16 of the 28 cases reported; the remaining 12 were from around New Zealand, including Hawkes Bay, Hutt Valley, Lakes, Southern, Tairawhiti, Waitemata and West Coast.

Empyema

Dr Katherine Rix-Trott and Dr Emma Best
Two year study commenced May 2014

Key Results for 2014

The aims of this study are to document (a) the burden of empyema in NZ children including the infectious aetiology, demographics and underlying conditions, and (b) both surgical and medical management of the disease, complications and short term outcomes.

There have been 55 notifications since the study started in May 2014, and so far complete data has been obtained on 80% of these cases.

- The notified cases came from a number of centres around the country with most from Auckland, Counties Manukau, Capital and Coast, Bay of Plenty and Lakes DHBs.
- The age ranged for less than one to 14 years, with a median of 3 years.
- The commonest organisms were *S. pneumonia* and methicillin-sensitive *S. aureus.*

We thank all the study group and notifying paediatricians for their ongoing vigilance and notifications.

Eosinophilic Oesophagitis

Dr Amin Sheikh, Professor Andrew Day, Dr Jan Sinclair, Dr Helen M Evans
Three year study started February 2014

Key Results for 2014

31 new diagnoses of Eosinophilic Oesophagitis (EoE) were reported to the NZPSU from January 2014 to August 2015. 28 (88%) were male, 23 (74%) of European descent, with a median age of 8 years (range 0.6-15 years).

The most commonly reported symptom was dysphagia followed by vomiting, food refusal, epigastric pain and weight loss. The median duration of symptoms prior to diagnosis was 1.6 years (range 0.5-11.8 years). 2 patients were asymptomatic and the diagnosis was made incidentally. 22 (71%) had a co-morbid history of atopy (most commonly eczema and IgE-mediated food allergy); 17 (55%) had at least one first degree relative with atopy or food allergy.

On endoscopy, 19 patients (61%) had abnormal findings, of which linear furrows and white plaques were the most common, and 12 (39%) had visually normal oesophageal mucosa.

11 patients (35%) had evidence of a peripheral eosinophilia at diagnosis with a median level of 2.48 x 10^9/L (range 0.2-2.66).

9 patients (29%) were initially managed with dietary manipulation alone (6 with an elimination diet, 2 with an elemental feed); 1 patient required a nasogastric tube feeding. 19 (61%) and 3 (10%) patients were treated with swallowed fluticasone propionate and oral prednisone respectively. Only 11 patients (35%) received a proton pump inhibitor (omeprazole) prior to endoscopy for a median of 27 weeks (range 2-52). Of these, 4 patients continued using it post-endoscopy. Leukotriene receptor antagonists and other immunosuppressive therapy were not used in any of the patients.

25 patients (81%) have a repeat endoscopy planned to monitor response to treatment.

CONDITIONS EVER MONITORED BY 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 Chambers ST, Dickson NP. Global polio eradication: progress, but determination and vigilance still needed *New Zealand Medical Journal*, 2013;124, 1337 Desai S, Smith T, Thorley BR, Grenier D, Dickson NP, Altpeter E & Zurynski Y. Performance of acute flaccid paralysis surveillance compared with World Health Organization standards. *Journal of Paediatrics & Child Health*, 2014;51:209-214
Haemolytic Uraemic Syndrome	1998 - ongoing	Prestidge P, Wong W. Ten years of pneumococcal-associated haemolytic uraemic syndrome in New Zealand children *Journal of Paediatrics & Child Health*, 2009;45:731-735
Congenital Rubella Syndrome	1998 - ongoing	
Perinatal HIV Exposure	1998 - ongoing	Dickson NP, 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
Fetal Alcohol Syndrome	1999 - 2001	Leversha AM, & Marks, RE (1995). The prevalence of fetal alcohol syndrome in New Zealand *New Zealand Medical Journal*, 1995;108:502-505.
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
General Surveillance		Grenier D, Ugnat AM, McCourt C, Scott J, Thibodeau, M. L, Davis, MA, Dickson NP.. *Journal of Paediatrics and Child Health*, 2009;, 285-286 D Grenier, E J Elliott, Y Zurynski, R Rodrigues Pereira, M Preece, R Lynn, R von Kries, H Zimmermann, N P Dickson and D Virella Beyond counting cases: public health impacts of national Paediatric Surveillance Units *Archives of Diseases of Childhood* 2007; 92:527–533. 2006
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	Yap J, Wesley A, Mouat S, Chin S Paediatric Inflammatory Bowel Disease in New Zealand *New Zealand Medical Journal,* 2008, 121, 19-34
Prolonged Infantile Cholestasis	2004 - 2005	
Bronchiectasis	2001 - 2002	Twiss J, Metcalfe R, Edwards E, Byrnes C New Zealand national incidence of bronchiectasis "too high" for a developed country *Archives of Disease in Childhood*, 2005, 90, 737-740

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	Safar A, Lennon D, Stewart J, Trenholme A, Drinkovic D, Peat B, Voss, L. Invasive group A streptococcal infection and vaccine complications, Auckland, New Zealand *Emerging Infectious Diseases,* 2011;17: 983-989
Acute Post Streptococcal Glomerulonephritis	2007 - 2011	Wong W, Lennon DR, Crone S, Neutze JM & Reed, PW Prospective population-bases study on the burden of disease from post-streptococcal glomerulonephritis of hospitalised children in New Zealand Epidemiology, clinical features and complications *Journal of Paediatrics and Child Health*, 2013;49, 850-855
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 *Archives of Diseases of Childhood* 2012; 97:761-762
Proven Neonatal Bacterial or Fungal Infection	2011-2013	Darlow B, Voss L, Lennon D, Grimwood K Early-onset group B streptococcus sepsis following national risk-based prevention guidelines *Australian and New Zealand Journal of Obstetrics and Gynaecology* Published online: 14 July 2015
Severe Neonatal Hyperbilirubinaemia	2011-2013	
Moderate and Severe Neonatal Encephalopathy	2011-2013	
Vitamin D Deficiency Rickets	2011 - 2013	Wheeler BJ, Dickson NP, Houghton LA, Ward LM, Taylor, BJ Incidence and characteristics of vitamin D deficiency rickets in New Zealand children: A New Zealand Paediatric Surveillance Unit study Australian & New Zealand Journal of Public Health, Published online: 29 June 2015

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	Wen SC, Best E. Dickson, NP, McCay H, Wilson, E (2015) Prospective surveillance of hospitalisations associated with varicella in New Zealand children *Journal of Paediatrics and Child Health*, 2015; 51:1078-1083
Vitamin K Deficiency Bleeding	1998-2008	Darlow BA, Phillips AA, & Dickson, N.P New Zealand surveillance of neonatal vitamin K deficiency, bleeding (VKDB): 1998–2008 *Journal of Paediatrics and Child Health,* 2011 47:460–464

INTERNATIONAL NETWORK OF PAEDIATRIC SURVEILLANCE UNITS

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, 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 facilitating communication and co-operation between existing national paediatric surveillance units;

Aims

- 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 6: **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

Table 7: **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 2014

Clinicians who had 100% return rate in 2013 and 2014 are underlined

Aiken, Richard	Asher, Innes	Ayers, Rosemary	Baker, Nic
Bates, Giles	Battin, Malcolm	Best, Emma	Bishop, Jon
Binfield, Alex	Blair, Nikki	Blakelock , Russell	Bloomfield, Frank
Bloomfield, Guy	Bond, David	Bradley, Stephen	Breen, Felicity
Broadbent, Roland	Brooks, Jeanine	Broomfield, Frank	Brown, Jeff
Brynes, Cass	Buckley, David	Buskh, Mariam	Campanella, Silvana
Campbell, Moira	Campbell-Stokes, P	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	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	Hewson, Michael
Hobbs, Vivienne	Hofman, Paul	Hornung, Tim	Hunter, Warwick
Hunter, Wendy	Jackson, Pam	Jefferies, Craig	Jellyman, Timothy
Jordan, Nicola	Kamphambe, Willie	Kelly, Andrew	Kelly, Patrick
Laughton, Stephen	Law, Michelle	Leadbitter, Philip	Lear, Graham
Lennon, Diana	Liang, Allen	Longchamp, Danielle	Lourens, Roelof
Lynn, Adrienne	Lyver, Amanda	Maikoo, Rajesh	Marks, Rosemary
Marshall, Andrew	Maxwell, Fraser	McArthur, John	McCarthy,Karen
McCay, Hamish	McFarlene, Scott	McIllroy, Peter	McKie, Jill
Meyer, Michael	Mildenhall, Lindsay	Miles, Fiona	Momsen, Tracey
Moore, Philip	Moyes, Chris	Munro, Karen	Nair, Arun
Neas, Katherine	Nel, Jaco	Neutze, Jocelyn	Newman, David
Nicholson, Ross	Nolan, Melinda	Nutthal, Gabrielle	Ostring, Genevieve
Pattemore, Philip	Perira, Nicola	Pringle, Kevin	Purvis, Diana
Ramadas, Ram	Reith, David	Robertson, Stephen	Robinson, Stephen
Robertshaw, Kate	Rowley, Simon	Sadlier, Lynette	Selby, Roslyn
Sharpe, Cia	Shaw, Ian	Shaw, Robyn	Shepherd, Michael
Shillito, Paul	Shirani Vetharaniam	Sinclair, Jan	Siversten, Louise
Skeen, Jane	Skinner, Jon	Smiley, Richard	Smith, David
St John, Martyn	Stanley, Thorsten	Steinmann, Kai	Stonehouse, Mary
Taylor, Barry	Thomson, Janine	Trani, Paul	Tomlinson, Paul
Townsend, Tom	Tsang, Bobby	Tuck, Roger	Twiss, Jacob
Van de Boom, Jutta	Voss, Lesley	Wallace, Alex	Walls, Tony
Walker, Wendy	Webster, Diane	Webster, Nicky	West, Clare
Weston, Phil	Wheeler, Ben	Wilde, Justin	Williams, Gregory
Wilson, Elizabeth	Wilson, Nigel	Wilson, Ross	Wilson, Toni
Wiltshire, Esko	Wong, Sharon	Wong, William	Yan, Jacqui

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