The Paediatric Society of New Zealand
Te Kāhui Mātai Arotamariki o Aotearoa

Annual report

2026

Te Hunga Aroturuki Mate Tamariki

New Zealand Paediatric Surveillance Unit

Ōtākou Whakaihu Waka
UNIVERSITY OF OTAGO

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Table of Contents

PREFACE: NEW ZEALAND PAEDIATRIC SURVEILLANCE UNIT 3

NZPSU SURVEILLANCE ACTIVITIES IN 2025 4

REPORTS ON ONGOING STUDIES 5

- Acute Flaccid Paralysis 5
- Congenital Rubella Syndrome (CRS) 6
- Perinatal HIV Exposure 6
- Serious Paediatric Adverse Drug Reactions (ADR) 7
- Potential Prenatal Exposure to Syphilis 7
- Acute Self-Harm seen by Paediatrician 10
- Severe Acute Hepatitis 10
- Vitamin D Deficiency Rickets 11
- Haemolytic Uremic Syndrome 13
- Reporting Period NZPSU Surveillance Publications 14

APPENDIX 1 15

- Introduction to NZPSU 15
- All NZPSU Surveillance Studies and Publications 17
- General Surveillance Publications 21
- International Network of Paediatric Surveillance Units (INoPSU) 22

APPENDIX 2 24

- Acute Flaccid Paralysis - case definition and specimen instructions. 24

APPENDIX 3 24

- QR Codes to NZPSU webforms 25

PREFACE: NEW ZEALAND PAEDIATRIC SURVEILLANCE UNIT

The New Zealand Paediatric Surveillance Unit, Te Hunga Aroturuki Mate Tamariki, (NZPSU) is pleased to present this annual report.

The NZPSU undertakes surveillance of acute flaccid paralysis (AFP) for the Ministry of Health / Manatū Hauora as part of a national programme to certify elimination of poliomyelitis. The data collected are reviewed by the National Certification Committee for the Eradication of Poliomyelitis (NCCEP) and contribute to the Global Polio Eradication Initiative in association with the World Health Organization and other partners. This report covers acute flaccid paralysis surveillance from 1 July 2025 to 30 June 2026.

In addition to AFP surveillance, the NZPSU undertakes important complementary surveillance of other rare conditions seen by paediatricians. In this report, communicable disease surveillance includes a range of conditions not fully captured by other laboratory or public health surveillance systems - congenital rubella, exposure to maternal HIV and syphilis infection, acute hepatitis and haemolytic uremic syndrome (HUS) - supporting the 2025-2030 national public health surveillance strategy[1]. Non-communicable diseases currently include serious paediatric adverse drug reactions, vitamin D- deficient rickets and acute self-harm. Conditions other than AFP are included in NZPSU surveillance at the request of The Ministry of Health / Manatū Hauora or if approved by the Scientific Review Panel (SRP) based on review of a study protocol from paediatric researchers. Unless otherwise stated, data in this report are for 2025 calendar year.

The ongoing success of the NZPSU relies on the voluntary participation of busy paediatricians who have taken the time to notify relevant cases and provide the additional information requested. We gratefully acknowledge their contribution and ongoing funding from The Ministry of Health / Manatū Hauora.



Professor Peter McIntyre
Co-director



Professor Ben Wheeler
Co-director



Dr Kate Sneddon
Research coordinator

[1] New Zealand Public Health Surveillance Strategy 2025-2030
https://www.health.govt.nz/publications/public-health-surveillance-strategy-2025-2030

NZPSU SURVEILLANCE ACTIVITIES IN 2025

In 2025, between 293 and 305 clinicians participated in the monthly surveillance programme with an average response rate of 76%. Following review and feedback in 2024, NZPSU worked to ensure that there is at least one participating paediatrician in each district of Health New Zealand / Te Whatu Ora and to promote real time notification via email as well as the monthly card. Participation is encouraged through regular communication with paediatricians and presentations at relevant conferences and scientific meetings. In 2025, 174 case notifications were received from 103 paediatricians with 70% reporting only one case.

From 1 January 2025–31 December 2025 the NZPSU monitored nine conditions (Table 1). Some protocols and questionnaires are adapted from those of the Australian or other Paediatric Surveillance Units

Table 1: Conditions under surveillance in 2025

Condition	Surveillance Started	Surveillance Ending	Principal Investigator(s)
Acute flaccid paralysis	October 1997	Ongoing	Dr Mavis Duncanson Professor Peter McIntyre Professor Ben Wheeler
Congenital rubella syndrome	January 1998	Ongoing	Dr Mavis Duncanson Professor Peter McIntyre Professor Ben Wheeler
Perinatal HIV exposure	January 1998	Ongoing	Dr Sue McAllister Ashleigh de Gouw
Serious paediatric adverse drug reactions	May 2008	Ongoing	Prof Michael Tatley Ass Prof David Reith Prof Keith Grimwood
Potential prenatal exposure to syphilis	April 2018	Ongoing	Prof Tony Walls Dr Leeyan Gilmour
Acute self-harm seen by Paediatrician	June 2020	June 30 2025	Dr Sarah Fortune Dr Gabrielle McDonald
Severe acute hepatitis	April 2022	July 2026	Dr Helen Evans Prof Andrew Day
Vitamin D Deficient Rickets	September 2024	August 2026	Prof. Ben Wheeler Dr. Emma McNamara
Haemolytic Uremic Syndrome	January 2025	Ongoing	Dr Chanel Prestidge

REPORTS ON ONGOING STUDIES

Acute Flaccid Paralysis



Dr Mavis Duncanson
(until March 2024)



Professor Peter McIntyre
(from March 2024)



Professor Ben Wheeler
(from December 2016)

Ongoing study started October 1997

Introduction

Acute flaccid paralysis (AFP) is the sudden onset of muscle weakness without spasticity or rigidity in any limb or facial muscles innervated by cranial nerves consistent with a polio presentation. Guillain-Barré syndrome and Transverse Myelitis are the most common conditions presenting as AFP in Aotearoa New Zealand are

Paediatricians and other child health clinicians are reminded that Ministry of Health / Manatū Hauora requires immediate notification of AFP cases, including those with a definitive diagnosis such as Guillain-Barré syndrome.

As part of the global initiative to eradicate polio, countries in the Western Pacific region of the World Health Organization (WHO) conduct active surveillance to confirm that any case of poliomyelitis would be detected. This requires capture of acute flaccid paralysis (AFP) not due to poliomyelitis, with an annual incidence of at least one case per 100,000 children aged under 15 years and laboratory testing negative for polio virus in a WHO-accredited laboratory two stool samples at least 24 hours apart within 14 days of AFP onset in at least 80% of cases. In NZ, AFP specimens should be sent to the **National Poliovirus Reference Laboratory**, PHF Science, Wallaceville, the WHO accredited laboratory for polio testing.

More guidance on APF specimens can be found in Appendix 2.

Key Results for July 2025 – June 2026

12 AFP cases were identified by the NZPSU with onset from 1 July 2025 to 30 June 2026, 9 via notification from paediatricians and 3 by audit of discharge codes for transverse myelitis and Guillain Barre syndrome.

- 9 cases were from the North Island
- All were older than one year of age
- 10 children were vaccinated for age against polio, 2 had unknown vaccination status.
- Two adequate stool samples were obtained for 5/9 (55%) of non-audit cases and one sample from one case, making 67% for at least 1 stool sample.
- All cases were classified as non-polio AFP by the National Certification Committee for the Eradication of Polio (NCCEP)

This AFP reporting rate met WHO requirements of one case per 100,000 age-specific person-years in 2025. Stool sample collection and timing which meets WHO criteria relies on timely notification of cases so that referral to the New Zealand Institute of Public Health and Forensic Science (PHF Science, formerly ESR) can be arranged in a timely manner.

Congenital Rubella Syndrome (CRS)



Dr Mavis Duncanson
(until March 2024)



Professor Peter McIntyre
(from March 2024)



Professor Ben Wheeler
(from March 2024)

Ongoing study started January 1998

There have been no cases of congenital rubella reported in newborn infants throughout the surveillance period. Notification of an historical case aged 5–9 years in 1998 remains the only case reported to the NZPSU, consistent with elimination of congenital rubella in New Zealand.

Perinatal HIV Exposure



Dr Sue McAllister



Ashleigh de Gouw

Ongoing Study started January 1998

Study Objectives

To determine the extent and outcome of recognised perinatal exposure to HIV infection in Aotearoa New Zealand.

Key Results for 2025

In 2025, 13 infants were reported to have been born in New Zealand to people living with HIV who were diagnosed prior to or during their pregnancy. Information has been received for all these infants.

Of these 13:

- Seven were born in Auckland, 1 in Hamilton, 1 in Wellington, and 4 in another part of New Zealand.
- Eleven born to birth parents with HIV infection diagnosed before pregnancy and 2 during pregnancy.
- No birth parents were of European ethnicity (1 Māori, 4 African, 5 Asian, 1 Pacific Island, 2 other)
- All birth parents were given antiretroviral treatment during pregnancy; 7 gave birth by caesarean section and 5 vaginally (1 unknown); 1 baby was breastfed.

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

Serious Paediatric Adverse Drug Reactions (ADR)



Professor David Reith



Professor Michael Tatley



Professor Keith Grimwood

Ongoing study started August 2007.

Study Objectives:

1. To understand serious paediatric adverse drug reactions (ADRs) in children below the age of 16 years.
2. To determine to what extent NZPSU active surveillance captures information about serious paediatric ADR's not captured by passive spontaneous reporting.

Key Results for 2025

From January to December 2025 there were six reports of serious ADR to the NZPSU.

Since 2023, the ADR reporting previously undertaken by CARM has been run by Medsafe., with paediatricians notifying NZPSU referred to Medsafe for further reporting details. This change has meant that NZPSU has no information about cases reported to Medsafe, such as age or drug involved.

NZPSU is working with Medsafe to improve tracking of serious ADR via current surveillance activities. Paediatricians notifying a severe adverse drug reaction are asked to submit a Centre for Adverse Reactions Monitoring (CARM) report and include the NZPSU case number and NZPSU email address in fields specified by Medsafe. Currently, Medsafe ADR reporting in children is limited to broad age groups and does not indicate whether reported cases in children have been hospitalised, which is presumed likely for NZPSU notifications.

Potential Prenatal Exposure to Syphilis



Professor Tony Walls



Dr Leeyan Gilmour

Ongoing study commenced April 2018

Investigators:

NZPSU – Dr Leeyan Gilmore, Dr Tony Walls, Dr Emma Best
ESR/PHF-Science – Putu Duff, Callum Thirkell, Dr. Julia Scott

Study Objectives:

Aim: To measure incidence and outcomes of infants exposed antenatally to syphilis. In addition to identifying confirmed or probable cases (as defined by the 2018 Ministry of Health Congenital Syphilis case definition[2]), we also capture data relating to cases of "potential" transmission of syphilis; that is, cases where maternal syphilis serology tested positive, but infection of the infant has not occurred. We work closely with the PHF Science team. Since 2024, our previously separate systems have been combined into a single questionnaire, simplifying the notification process, and enabling greater collaboration between our teams.

Between 2023 to 2025, an audit of women treated for syphilis in pregnancy in the greater Auckland region identified 17 exposed non-infected infants (16 live births, one stillbirth) in addition to the NZPSU reports[3]. These have been subsequently included in NZPSU data with amended notifications presented in Table 2.

Key results for 2025:

37 infants born in 2025 who met the criteria were reported.

- 15 cases identified through the NZPSU, the remainder through direct contact with investigators (including audit) and PHF science notifications. The response rate following notification was 100%.
- Of the 37 infants born in 2025, four had findings consistent with congenital syphilis, with three confirmed and one probable case. The remaining 33 cases had antenatal exposure only.

All but four cases in 2025 were from the North Island of New Zealand (Table 3: Number of cases by Region).

Of cases reported in 2025, most were of NZ Māori descent, with women of NZ Māori and Pacific Peoples disproportionally affected (Table 3: Number of cases by Maternal Ethnicity).

Of infants with confirmed or probable congenital syphilis born in 2025:

- All had clinical signs, which included anaemia, osteochondritis, skin rash, rhinitis, intrauterine growth restriction, hepatomegaly, and jaundice/hepatitis.
- Three infants had long bone changes visible on X-ray.
- One case had VRDL positive cerebrospinal fluid (CSF), one had elevated protein/white cell count (WCC) on CSF testing, one normal CSF, CSF unable to be obtained in one.
- Of the three confirmed cases, one had syphilis positive placental examination, and one positive on syphilis specific IgM, and one had both placental findings and positive syphilis specific IgM.
- No infants with probable or confirmed syphilis received adequate treatment during pregnancy:
  - Two did not receive antenatal care
  - Two received antenatal care but were not diagnosed with syphilis until late in the pregnancy
    - One was not tested for syphilis until the third trimester
    - One tested negative on initial antenatal screening bloods but was positive for syphilis at the third trimester screening bloods and subsequently treated - born preterm.
- All probable and confirmed cases were treated with penicillin for at least 10 days.

Infants with possible in utero syphilis exposure and confirmed and probable cases		
TABLE 2: NUMBER OF CASES BY YEAR[4]		
Year	**All cases**	**Confirmed and Probable cases**
2025	37	4
2024	36	5 (PHF 6)
2023	23	5 (PHF 3)
2022	24	7 (PHF 8)
2021	15	3 (PHF 2)
2020	22	7 (PHF 8)
2019	11	5
2018	13	4 (PHF 5)
TABLE 3: NUMBER OF CASES BY REGION (2025)		
Region	**All cases**	**Confirmed and Probable cases**
Northland	2	1
Auckland	3	0
Counties Manukau	10	1
Waitemata	5	0
Waikato	5	1
Hawkes Bay	1	0
Taranaki	1	0
Lakes	2	0

MidCentral	3	1
Hutt Valley	1	0
Canterbury	2	0
Southern	2	0

TABLE 3: NUMBER OF CASES BY MATERNAL ETHNICITY (2025)[5]

Ethnicity	**All cases**	**Confirmed and Probable cases**
NZ Māori	13	1
NZ European	8	0
Pacific Peoples	8	1
Other	7	2
Not disclosed	1	0

[2]Health New Zealand Te Whatu Ora (2026, May 21), Syphilis, *Communicable Disease Control Manual,* https://www.healthnz.govt.nz/health-professionals/guidance-standards/topic/conditions/communicable-disease-control-manual/syphilis.

[3]Acknowledgement to Dr Rose Forster Sexual Health Physician

[4]Since 2018 the Ministry of Health has contracted two separate congenital syphilis surveillance systems, via NZPSU and via the notifiable disease surveillance system administered by PHF Science (formerly ESR). While NZPSU and PHF Science have attempted to resolve discrepancies, there are some differences in case numbers reported between the two systems from 2018 to 2023. Data collection for the two systems was combined in 2024 to avoid further discrepancies in case numbers.

[5]Prioritised Ethnicity reported: Ministry of Health. 2017. HISO 10001:2017 Ethnicity Data Protocols. Wellington: Ministry of Health

Acute Self-Harm seen by Paediatrician



Dr Sarah Fortune



Dr Gabrielle McDonald



Linda Hobbs

Ongoing Study started June 2020

Study Objectives:

Surveillance by NZPSU contributes to a broader research study.
The primary objectives of this study are:

1) To establish multi-centre sentinel surveillance of SH patients at four large public hospitals
2) To establish and test robust data collection methods for sentinel surveillance of self-harm
3) Characterise presentations for SH or suicidal ideation by age, gender, ethnicity, methods of SH, alcohol misuse, prior history of SH, exposure to suicide, mental health assessments and discharge outcome
4) Identify patterns of repetition of non-fatal SH

Key Results for 2025

This ongoing four-year study is collecting sensitive data that will be reported on completion. In 2025, 32 cases of self-harm seen by a paediatrician in under-15-year-olds were reported to the NZPSU.

Severe Acute Hepatitis



Dr Helen Evans



Professor Andrew Day

Ongoing Study started April 2022

Study Objectives:

This is a rapid surveillance study in response to an emerging condition. The UK reported more cases than expected of Severe Acute Hepatitis of unknown origin in April 2022, and hundreds of cases have since been reported in multiple countries. A small cluster of up to 15 cases of Acute Hepatitis was detected in New Zealand children between May and September 2021. The study seeks to answer the research question: In New Zealand, what features are associated with acute hepatitis with aspartate transaminase (AST) or alanine transaminase (ALT) over 300 UL in children aged under 17 years, presenting after 1 January 2021.

Case definition:

An acute hepatitis, in a child aged 0–16 years (inclusive), with discrete or acute onset of symptoms (e.g. fever, jaundice, abdominal pain, fatigue, loss of appetite, dark urine, pale coloured stools, itchy skin, muscle or joint pain, nausea or vomiting); AND elevated serum transaminase (ALT) levels (>300U/L).

Key Results for 2025

25 cases of severe acute hepatitis reported to the NZPSU in 2025. Since surveillance commenced 96 cases notified to the NZPSU. Study report not received in time for the Annual report.

Vitamin D Deficiency Rickets (VDDR)



Dr Emily McNamara



Professor Ben Wheeler (from March 2024)



Associate Professor Craig Jefferies

Ongoing Study started September 2024

Study Objectives

Study started September 2024, planned completion of data collection August 2026

Objectives

1. To ascertain incidence of vitamin D deficiency rickets (VDDR) in NZ in children aged under 16 years
2. To obtain information on demographic and clinical characteristics of VDDR which will assist in the;
    - Ongoing identification of risk factors for development of the disease in Aotearoa
    - Evaluation of recently updated preventive strategies (ie, did cases and/or their mothers receive appropriate Vitamin D supplementation prior to diagnosis as per national guidelines, and have recently updated guidelines influenced the incidence and demographics?)
3. To supply data that will continue to help develop policies to prevent vitamin D deficiency rickets

Results

In 22 months of data collection to date, there have been 78 notifications of vitamin D deficiency rickets to the NZPSU. Nine were duplicates and 4 notifications did not have questionnaires completed and a further 11 cases were excluded as not meeting inclusion criteria, making 53 cases included for analysis

Interim results:

Overall incidence of VDDR was 3 per 100,000 per year for children 0-15 years of age. In children under 3 years of age, 15.7 per 100,000 per year overall and in children who resided in Otago/Southland, 59.9 per 100,000 per year. The median age of children at diagnosis of rickets was 1 year 6 months (range: 2 months – 14 years 10 months). There was an even spread of male and female cases (27 and 26 cases respectively).

Only one child with rickets was born overseas, but most mothers of cases were born overseas. More than half of children with rickets were of South Asian ethnicity (52.8%, 28 children), the majority of Indian (21 children, 39.6%). 4 children with rickets (7.5%) were Māori. Clinician-reported skin colour of the child was dark in 29 (54.7%) and intermediate in 17 (32.1%), making only 13% with fair skin.

There was a history of any breastfeeding (past/current) in 47 cases (88.7%). Only 6 (11%) were reported to have received any vitamin D supplementation prior to diagnosis and of children born in NZ, only 2/52 (3.8%) were reported to have been prescribed Vitamin D at birth as per current guidelines. In the mothers, 3 (5.5%) received any vitamin D during pregnancy, and one (1.8%) received vitamin D postnatally.

The most common symptoms of vitamin D deficiency rickets in the children were limb deformity, (28 children, 52.8%), poor growth (17 children, 32.1%), and motor delay (13 children, 24.5%). 43 children had radiological findings of rickets present at diagnosis (84%). Most cases were diagnosed in Spring months (27, 30.9%).

Key results

The incidence of VDDR in children under 16 years in NZ of 3 per 100,000 per year is a slight increase from the incidence of 2.2 per 100,000 per year reported in 2015[6].
Despite updated NZ guidelines in 2024 for supplementation for all partially or exclusively breastfed infants[7], VDDR persists, particularly in those with recognised risk factors for vitamin D deficiency, with only 2 children (3.8%) receiving vitamin D supplementation in line with current NZ guidelines.
Together, these findings raise concern about implementation of current NZ guidelines on vitamin D supplementation.

Publications:

McNamara E, Wheeler BJ, Hofman P, Grant C, Jefferies C. An upcoming prospective study on the incidence of vitamin D deficiency rickets (VDDR) in New Zealand children [poster]. Presented at: Paediatric Society of New Zealand Te Kāhui Mātai Arotamariki o Aotearoa 75th Annual Meeting; November 2024, Dunedin

References

[6]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. Aust N Z J Public Health. 2015 Aug;39(4):380–3. doi:10.1111/1753-6405.12390

[7]Health New Zealand, Te Whatu Ora. Companion statement on vitamin D and sun exposure in pregnancy and infancy in Aotearoa New Zealand [Internet]. Wellington, New Zealand (optional): Health New Zealand | Te Whatu Ora; 2024 [cited 2026 Jun 10]. Available from: https://static.info.content.health.nz/docs/health-pros/topics/maternity/national/companion-statement-vitamin-d-sun-exposure-pregnancy-infancy-nz.pdf

Haemolytic Uremic Syndrome



Dr Chanel Prestidge

Study Objectives

Study restarted January 2025.

Objectives

To study epidemiology of infection related Haemolytic Uraemic Syndrome (HUS) in New Zealand children;

1. To determine incidence of HUS, including diarrhoea-associated, pneumococcal sepsis-associated and other;
2. To determine the geographical location, age, sex and ethnicity of affected children;
3. To describe management features including fluid and surgical management.

We work closely with the PHF Science team to cross-check HUS notifications with STEC/VTEC results for cases notified via EpiSurv and vice versa.

Key results for 2025

31 cases of childhood HUS were reported to the NZPSU.

- 26 were diarrhoea associated, and 23 had STEC confirmed via PHF-Science
- 2 were invasive pneumococcal disease (IPD) associated. 1 was atypical HUS.
- 12 cases (39%) required dialysis.
- Average age was 4.2 years (SD 4) for PHF -Science confirmed STEC HUS. The two IPD-HUS cases were 3 months and 4 years old.
- The majority of diarrhoea associated HUS were not attributed to a clear environmental exposure.
- The median time from initial gastrointestinal illness to diagnosis of was 6.5 days (range 2-55).
- 11 of the 23 STEC confirmed HUS needed dialysis (48%) for a median of 8 days (range 3-18 days). Both IPD-associated HUS cases required dialysis. One fatality, all others recovered kidney function to stop dialysis.
- The one death was an infant with *Streptococcus pneumoniae* sepsis, HUS and cardiac arrest with severe neurological sequalae resulting in brain death.

Reporting Period NZPSU Surveillance Publications

Farrar DS, Knowles RL, Nunez C, Baynam G, Bitnun A, **Duncanson M**, Lynn RM, Moore Hepburn C, Morris A, Oeser C, Pebody R, Solebo AL, Elliott EJ, Morris SK. Etiology of Severe Microcephaly in Infants: A Multinational Surveillance Study. Pediatrics. 2026 Feb 1;157(2):e2025072700. doi: 10.1542/peds.2025-072700. PMID: 41562555.

APPENDIX 1

Introduction to NZPSU

The NZPSU was established in 1997 to facilitate and improve knowledge of rare childhood conditions in Aotearoa. 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 Canada.

Paediatricians in Aotearoa gave their support to the surveillance programme after the concept was discussed at several annual meetings of the Paediatric Society of Aotearoa. All paediatricians practising in Aotearoa are eligible to participate in the surveillance programme.

The core activities of the NZPSU are funded through a contract with Manatū Hauora to provide active surveillance of acute flaccid paralysis (AFP). The World Health Organization (WHO), as part of the global certification and surveillance process to document continued elimination of polio from New Zealand the Western Pacific and ultimately global eradication. Another eight conditions were under surveillance in 2025

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

Aims

The aim of the NZPSU is:

> **'To conduct surveillance for acute flaccid paralysis in children less than 15 years of age and facilitate national surveillance to improve knowledge of other important, rare childhood conditions.'**

The NZPSU maintains a database of paediatricians in Aotearoa New Zealand and audits this against publicly available data regarding specialist registration in paediatrics with Te Kaunihera Rata o Aotearoa (the Medical Council of New Zealand). There are participating paediatricians in every district of Te Whatu Ora and clinicians in each hospital are encouraged to invite colleagues to join.

Every month participants are sent an email with the link for a secure REDCap survey to report whether they have seen any children with the conditions under surveillance in the previous month. This reminder to complete the survey is sent out every 8 days to those who have not responded. In addition to the monthly surveillance survey, paediatricians email the NZPSU directly with case notifications.

Cases of AFP are required to be reported immediately to the NZPSU.

When a case is reported to NZPSU, the principal investigator for the specific study is advised and seeks further clinical information from the reporting clinician on the case. The identity of the cases remains anonymous. The child's NHI is used only to identify duplicate notifications but not linked to other health data.

Study protocols, which include definitions of the conditions under surveillance and specific reporting instructions are available on the NZPSU website www.otago.ac.nz/nzpsu. The process used by the NZPSU, and the conditions under surveillance, have been approved by the Health and Disability Ethics Committee OTA/95/10/113 | HDEC 2875.

Study selection

A Scientific Review Panel (SRP) considers applications for new conditions to be added into the surveillance programme. There were no finalised applications for new studies in 2025.

A study is eligible for consideration in the scheme if the condition in the scheme if the condition of interest is:

- A rare childhood disease or condition with high impact at personal or population level (or an uncommon complication of a more common disease)
- Of such a low incidence or prevalence that ascertainment of cases is needed on a national scale to generate adequate numbers for the study

The SRP may also consider inclusion of more common conditions on a short term or geographically limited basis. The SRP considers the scientific interest and public health importance of the proposed study, methodology, and suitability of the condition for ascertainment through NZPSU. The current SRP members are listed in Table 4.

Table 4. Members of the NZPSU Scientific Review Panel (September 2025).

Name	Institution
Professor Peter McIntyre (Chair)	University of Otago (Dunedin)
Professor Ben Wheeler	University of Otago (Dunedin) / Te Whatu Ora (Southern)
Dr Mavis Duncanson	University of Otago (Dunedin)
Dr Emma Heydon	University of Otago (Dunedin) / Te Whatu Ora (Southern)
Dr Erik Andersen	University of Otago (Wellington) / Te Whatu Ora (Capital and Coast)
Professor Tony Walls	University of Otago (Christchurch) / Te Whatu Ora (Canterbury)
Bex Joslin	Ministry of Health
Dr Alexandra Wallace	University of Auckland / Te Whatu Ora (Waikato)
Professor Cameron Grant	University of Auckland / Starship General Paediatrics
Dr Danny de Lore	University of Auckland / Te Whatu Ora (Lakes)
Dr Gergely Toldi	University of Auckland / Starship Neonatal
Dr Craig Jefferies	University of Auckland / Te Whatu Ora (Auckland)
Dr Anne Morris	Australian Paediatric Surveillance Unit
Professor Elizabeth Elliott	Australian Paediatric Surveillance Unit

After review by the SRP, additions to the surveillance programme are subject to approval by the Health and Disability Ethics Committee and must be agreed to by Manatū Hauora / Ministry of Health.

Manatū Hauora / Ministry of Health may request surveillance of emerging diseases or health conditions deemed to be of national or international significance.

All NZPSU Surveillance Studies and Publications

Condition	Report Period	Findings Reported
Acute Flaccid Paralysis	1997 ongoing	Dow N., Dickson N. & Taylor BJ. The New Zealand Paediatric Surveillance Unit: Establishment and first year of operation. New Zealand Public Health Report. 1999;6(6):41-44. Chambers ST & Dickson NP. Global polio eradication: progress, but determination and vigilance still needed. New Zealand Medical Journal. 2012;124(1337):100-104. Desai S, Smith T, Thorley BR, Grenier D, Dickson N, Altpeter E et al. Performance of acute flaccid paralysis surveillance compared with World Health Organization standards. Journal of Paediatrics and Child Health. 2015;51(2):209-214. Duncanson M & Wheeler B. Don't forget about polio. Update on local surveillance and international trends. Presentation at Paediatric Society of New Zealand 71st Annual Scientific Meeting – In our backyard, Albany, Auckland, November 2019.
Haemolytic Uraemic Syndrome	1998 ongoing	Prestidge C & Wong W. Ten years of pneumococcal-associated haemolytic uraemic syndrome in New Zealand children. Journal of Paediatrics and Child Health. 2009;45(12):731-735. Wong W, Morris MC, Kara T, Ronaldson JE. Haemolytic uraemic syndrome in New Zealand children. A nationwide surveillance study from 1998-2009. Poster presented at 15th Congress of International Pediatric Nephrology Association, New York, August–September 2010. Wong W, Prestidge CP, Ronaldson J. Shorter prodrome of symptoms is associated with an increased severity of diarrhoea associated HUS (D+HUS). Poster presented at 18th Congress of International Pediatric Nephrology Association, Venice, October 2019 Wong W, Prestidge CP, Ronaldson J, Dickens A. Atypical HUS in New Zealand children; outcomes without Eculizumab. Poster presented at 18th Congress of International Pediatric Nephrology Association, Venice, October 2019. Wong, W. Shiga Toxin Producing Escherichia coli Infections and Associated Haemolytic Uraemic Syndrome in New Zealand Children: Twenty Three Years of Epidemiology and Clinical Observations. International Journal of Pediatric Research. **https://doi.org/10.23937/2469-5769/1510085** Wong, W., Prestidge, C., Dickens, A. and Ronaldson, J. Diarrhoea-associated haemolytic uraemic syndrome and Shiga toxin-producing Escherichia coli infections in New Zealand children: Clinical features and short-term complications from a 23-year cohort study. Journal of Paediatrics and Child Health. **https://doi.org/10.1111/jpc.16332**
Congenital Rubella Syndrome	1998 ongoing	No cases
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.

Neonatal herpes simplex virus (HSV)	1998–2000	Discontinued
Proven neonatal bacterial or fungal infection in the first week of life	1998–2008	Darlow BA, Voss L, Lennon DR & Grimwood K. Early-onset neonatal group B streptococcus sepsis following national risk-based prevention guidelines. Australian and New Zealand Journal of Obstetrics and Gynaecology. 2017;56(1): 69-74.
Vitamin K deficiency bleeding (VKDB)	1998–2008	Darlow BA. Vitamin K deficiency bleeding (VKDB) in New Zealand infants: results of surveillance over five years (1998 to 2002). Pediatric Research. 2004;56 (3):474 Darlow BA, Phillips AA & Dickson NP. New Zealand surveillance of neonatal vitamin K deficiency bleeding (VKDB): 1998-2008. Journal of Paediatrics and Child Health. 2011;47(7):460-4.
Fetal Alcohol Syndrome	1999–2001	Leversha AM & Marks RE. The prevalence of fetal alcohol syndrome in New Zealand. New Zealand Medical Journal. 1995;108(1013):502–505.
Subdural Haemorrhage	1999–2002	Kelly P & Farrant B. Shaken Baby Syndrome in New Zealand, 2000–2002. Journal of Paediatrics and Child Health. 2008;44: 99–107.
Retinopathy of Prematurity (stage III)	1999–2000	
Diabetes Mellitus	1999–2000	Campbell-Stokes P L & Taylor BJ. Prospective incidence study of diabetes mellitus in New Zealand children aged 0 to 14 years. Diabetologia. 2005;48(4):643-648.
Kawasaki Disease	2001–2002	Heaton P, Wilson N, Nicholson R, Doran J, Parsons, A & Aiken, F. Kawasaki Disease in New Zealand. Journal of Paediatrics and Child Health. 2006;42:184–190
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. Twiss J. Childhood bronchiectasis: national incidence, disease progression and an evaluation of inhaled antibiotic therapy [PhD Thesis]. University of Auckland; 2008. http://hdl.handle.net/2292/5747
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. Paediatrics and Child Health. 2007;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(1283):19-34.
Prolonged Infantile Cholestasis	2004–2005	
Pertussis	2004–2005	Somerville R, Grant C, Grimwood K, Murdoch D, Graham D, Jackson P, Meates-DM, 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 Wilson C, Kerruish NJ, Wilcken B, Wiltshire E, Bendikson K & Webster D. Diagnosis of disorders of intermediary metabolism in New Zealand before and after expanded newborn screening: 2004–2009. New Zealand Medical Journal. 2012;125(1348):42-50.

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 implications, Auckland, New Zealand. Emerging Infectious Diseases. 2011;17(6):983-9.
Acute Post Streptococcal Glomerulonephritis	2007–2011	Wong W, Lennon DR, Crone S, Neutze JM & Reed PW. Prospective population-based 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(10):850-855.
Renal stones	2008	Dickson N, Kara T & Tuohy P. Rapid national survey of renal stones in New Zealand infants. Journal of Paediatrics and Child Health. 2009;45(11): 633-635.
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 Disease in Childhood. 2012;97(8):761-762.
Neonatal Bacterial or Fungal Infection	2011–2013	Darlow B A, Voss L, Lennon DR & Grimwood K. Early-onset neonatal group B streptococcus sepsis following national risk-based prevention guidelines. Australian and New Zealand Journal of Obstetrics and Gynaecology. 2017;56(1):69-74.
Severe Neonatal Hyperbilirubinaemia	2011–2013	
Moderate and Severe Neonatal Encephalopathy	2011–2013	Battin M, Sadler L, Masson V & Farquhar C. Neonatal encephalopathy in New Zealand: Demographics and clinical outcome. Journal of Paediatrics and Child Health. 2017; 52(6):632-636
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 and New Zealand Journal of Public Health. 2015;39(4):380-383. McNamara E, Wheeler BJ, Hofman P, Grant C, Jefferies C. An upcoming prospective study on the incidence of vitamin D deficiency rickets (VDDR) in New Zealand children [poster]. Presented at: Paediatric Society of New Zaland Te Kāhui Mātai Arotamariki o Aotearoa 75th Annual Meeting; November 2024, Dunedin
Varicella and post-varicella complications	2011–2013	Wen SCH, Best E, Walls T, Dickson N, McCay H & Wilson E. Prospective surveillance of hospitalisations associated with varicella in New Zealand children. Journal of Paediatrics and Child Health. 2015;51(11): 078-1083.
Supratherapeutic Paracetamol Ingestion	2014–2015	
Eosinophilic Oesophagitis	2014–2016	Roberts AJ, Day AS, Sinclair J, Dickson N, Porter J, Wellington G & Evans H. Paediatric eosinophilic oesophagitis in New Zealand: A 3-year prospective study. Journal of Paediatrics and Child Health. 2021;57(2):234-38.
Empyema	2014–2018	Rix-Trott K, Byrnes C, Twiss J, Matsas R, Hamill J, Evans S, Mahon C, Williamson D, Dickson N, Walls T, Voss L. & Best E. Nationwide surveillance of paediatric empyema in New Zealand 2014–2016. Presentation at Australasian Society of Infectious Diseases Annual Scientific Meeting, Leura NSW, March 2018 Rix-Trott K, Byrnes CA, Gilchrist CA, Matsas R, Walls T, Voss L, et al. Surveillance of pediatric parapneumonic effusion/empyema in New Zealand. Pediatric Pulmonology. 2021;56(9):2949-57.

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Tongue-Tie	2016–2018	Hale M, Mills N, Edmonds L, Dawes P, Dickson N, Barker D & Wheeler BJ. Complications following frenotomy for ankyloglossia: A 24-month prospective New Zealand Paediatric Surveillance Unit study. Journal of Paediatrics and Child Health. 2020;56,557-562.
Potential Prenatal Exposure to Syphilis	2018–2020 then ongoing	Gilmour LS, Best EJ, Duncanson MJ, Wheeler BJ, Sherwood J, Thirkell CE, Walls T. High Incidence of congenital syphilis in New Zealand. The Pediatric Infectious Disease Journal, 2022;41(1):66–71
Self-harm seen by paediatrician	2021–2024	Fortune S, Hetrick S, Sharma V, McDonald G, Scott K, Mulder RT, Hobbs L. Multisite sentinel surveillance of self-harm in New Zealand: protocol for an observational study. BMJ Open 2022;12(5):e054604.
Delay in paediatric care during COVID-19 response	2020	Duncanson M, Wheeler BJ, Jelleyman T, Dalziel SR, McIntyre P. Delayed access to care and late presentations in children during the COVID-19 pandemic New Zealand-wide lockdown: A New Zealand Paediatric Surveillance Unit study. Journal of Paediatrics and Child Health. 2021;57(10):1600-4. Duncanson M with acknowledgment of Ben Wheeler, Tim Jelleyman, Stuart R Dalziel, Peter McIntyre, Johann de Water Naude and Chris McKinlay. Perceived impact of COVID-19 pandemic response on paediatric hospitalisations in New Zealand. Presentation at Paediatric Society of New Zealand 72nd Virtual Conference (replacing 72nd Annual Scientific Meeting) November 2021.
Multisystem inflammatory syndrome associated with COVID-19	2021 - 2024	Taylor A, Duncanson M, Mitchelson B, Nuthall G, Voss L, Walls T, et al. Multisystem Inflammatory Syndrome in New Zealand Children. The Pediatric Infectious Disease Journal 42(7): e232–e234.2024. **http://dx.doi.org/10.1097/INF.0000000000003933**
X-linked hypophosphataemic rickets	2020	Sandy JL, Nunez C, Wheeler BJ, et al. Prevalence and characteristics of paediatric X-linked hypophosphataemia in Australia and New Zealand: Results from the Australian and the New Zealand Paediatric Surveillance Units survey. *Bone* 2024;173:116791. https://doi.org/10.1016/j.bone.2024.116791

General Surveillance Publications

Elliott EJ, Nicoll A, Lynn R et al. Rare disease surveillance: An international perspective. Paediatrics and Child Health. 2001 (5):251-60.

Grenier D, Elliott EJ, Zurynski Y et al. Beyond counting cases: Public health impacts of national Paediatric Surveillance Units. Archives of Disease in Childhood, 2007; 92(6), 527-533.

Grenier D, Ugnat AM, McCourt C et al. Can active surveillance provide a rapid response to an emerging child health issue? The melamine example. Journal of Paediatrics and Child Health, 2009;14(5), 285-286.

Dickson N., Duncanson M & Best, E. Twenty years of the New Zealand Paediatric Surveillance Unit and the future. Presentation at Paediatric Society of New Zealand 69th Annual Scientific Meeting – Strengthening our foundations, 16 November 2017, Christchurch

Maeusezahl M, Lynn R, Zurynski Y et al. (on behalf of the International Network of Paediatric Surveillance Units INoPSU). The power of surveillance data to change Public Health policy and practice in rare paediatric conditions. Poster presentation at European Society of Paediatric Infectious Disease conference 28 May 2018, Malmö, Sweden

Duncanson M, Wheeler B, McIntyre P, et al. Paediatricians in Aotearoa contribute to rare disease surveillance. Presentation at Paediatric Society of New Zealand Te Kāhui Mātai Arotamariki o Aotearoa 74th Annual Meeting; November 2024, Rotorua.

Elliott EJ, Teutsch S, Nunez C, et al. Improving knowledge of rare disorders since 1993: the Australian Paediatric Surveillance Unit. Archives of Disease in Childhood Published Online First: 13 May 2024. https://doi.org/10.1136/archdischild-2024-326116

Duncanson M, Wheeler B, McIntyre P, et al. Paediatricians in Aotearoa contribute to rare disease surveillance. Presentation at Paediatric Society of New Zealand Te Kāhui Mātai Arotamariki o Aotearoa 74th Annual Meeting; November 2024, Rotorua.

International Network of Paediatric Surveillance Units (INoPSU)

Establishment of INoPSU

The International Network of Paediatric Surveillance Units (INoPSU) is a collaborative organisation. Established in 1998, it currently joins eleven diverse countries which span the globe from Canada to New Zealand. More than 10,000 clinicians contribute and over 300 conditions have been studied so far.

INOPSU was accepted for membership in the International Paediatric Association (IPA) at their September 2011 meeting in Beijing.

INoPSU has held regular scientific meetings since 2000. The most recent meeting was held virtually in 2021. Members communicate regularly with each other and in recent years there has been increasing collaboration in developing surveillance studies.

Mission

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

Aims

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

There are currently 10 surveillance units that form the INoPSU network (Table 5). Services of the Netherlands Paediatric Surveillance Unit have been suspended since 1 January 2020.

Table 5: **Members of the International Network of Paediatric Surveillance Units**

Country	Acronym	Email	Website
Aotearoa	NZPSU	nzpsu@otago.ac.nz	www.otago.ac.nz/nzpsu
Australia	APSU	SCHN-APSU@health.nsw.gov.au	www.apsu.org.au
Belgium	PediSurv	pedisurv@sciensano.be	https://www.sciensano.be/en/projects/network-pediatric-infectious-disease-surveillance
Canada	CPSP	cpsp@cps.ca	https://cpsp.cps.ca/
Germany	ESPED	esped@uni-mainz.de.	https://www.unimedizin-mainz.de/esped/home/
Ireland	IPSU	robert.cunney@hse.ie	https://www.inopsu.com/
Netherlands	NVK	nvk@nvk.nl	www.nvk.nl/onderzoek/nsck
Switzerland	SPSU	spsu@bag.admin.ch	https://www.spsu.ch/en/home
UK	BPSU	bpsu@rcpch.ac.uk	https://www.rcpch.ac.uk/work-we-do/british-paediatric-surveillance-unit
Wales	WPSU	enquiries@welshpaediatrics.org.uk	https://www.welshpaediatrics.org.uk/

APPENDIX 2

Acute Flaccid Paralysis - case definition and specimen instructions.

Case definition

Any child aged under 15 years with acute onset of flaccid paralysis in one or more limbs or acute onset of bulbar paralysis.

To streamline the process of investigation for polio virus **we require all cases of AFP be notified immediately**. This should be done by emailing the NZPSU directly, nzpsu@otago.ac.nz

On receipt of a case notification, the NZPSU will inform the National Poliovirus Reference Laboratory (PHF Science) to expect your samples.

Specimens for AFP cases:

Children with AFP need to have two stool samples collected within 14 days of the onset of the paralysis, at least 24 hours apart, and sent to **WHO National Poliovirus Reference Laboratory,** Institute of Public Health and Forensic Science (formerly ESR) who will test for poliovirus. If the child is not passing faeces a rectal swab can be collected.

A nasopharyngeal swab should be obtained to test for Enteroviruses.

Faecal samples and NP swab are to be sent to PHF Science via your local laboratory or sent to:
WHO National Poliovirus Reference Laboratory
Institute of Public Health and Forensic Science
NCBID
66 Ward St
Wallaceville Science Centre
Upper Hutt 5018

For specimen advice email virology@phfscience.nz. This testing is funded by the Ministry of Health

APPENDIX 3

QR Codes to NZPSU webforms

Membership Management Database
Join or update your details.

Real-time reporting webform
Used in addition to monthly surveillance (Report Card)

A special thank you to all of the paediatricians and health professionals who contribute every month to the activities of the Aotearoa New Zealand's Paediatric Surveillance Unit.

Your contribution is valued and appreciated.

Ngā mihi nui ki a koutou!

