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Australian Paediatric Surveillance Unit (APSU) Annual Surveillance Report 2025

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Context

For over 30 years, the Australian Paediatric Surveillance Unit (APSU) has conducted national prospective surveillance of rare conditions in children, including communicable diseases and complications, providing data that has informed changes to policy and clinical practice. In 2025, the APSU monitored seven rare communicable diseases and complications: acute flaccid paralysis (AFP); perinatal exposure to human immunodeficiency virus (HIV); paediatric HIV infection; juvenile-onset recurrent respiratory papillomatosis (JoRRP); congenital rubella infection/syndrome; congenital varicella syndrome (CVS); and neonatal varicella infection (NVI). An average of 1,313 paediatricians and other relevant clinical specialists received a report card each month listing rare conditions under APSU surveillance (including the seven described in this report), and completed a case report form for any child(ren) seen with one or more of these conditions, detailing demographics, clinical features, treatment/management, risk factors and short-term outcomes. There were 134 notifications, of which 105 were confirmed as cases, after excluding duplicate reports or errors. The annual response rate to the report card was 78.4%. The non-polio AFP incidence of 1.58 per 100,000 children aged < 15 years exceeded the World Health Organization requirement to maintain Australia's polio-free status. Incidence of perinatal exposure to HIV remained stable, but new paediatric HIV infections increased. While there were no cases of congenital rubella or CVS, three cases of NVI and one case of JoRRP were reported, indicating ongoing gaps in vaccination despite two decades of universal vaccination in Australia. Continued APSU surveillance remains essential to assess the prevention of disease occurrence and adverse outcomes.

Keywords: adolescent; Australia; child; communicable diseases; infant; public health surveillance; rare diseases

Introduction

The Australian Paediatric Surveillance Unit (APSU) has conducted national prospective surveillance of rare and uncommon conditions in children and adolescents since 1993, which has included surveillance of communicable diseases and their complications, genetic diseases, neurological and psychological disorders, injuries, allergies, and adverse reactions to medications.[1]

In this report, we describe APSU surveillance conducted in 2025 of the following seven rare communicable diseases and complications: acute flaccid paralysis (AFP); perinatal exposure to human immunodeficiency virus (HIV); paediatric HIV infection; juvenile-onset recurrent respiratory papillomatosis (JoRRP); congenital rubella infection/syndrome (RUB); congenital varicella syndrome (CVS) and neonatal varicella infection (NVI). We present surveillance results for each of these conditions, including incidence or birth prevalence estimates, and summaries of case characteristics, including clinical and laboratory features, risk factors, treatment or management, and disease outcomes for each condition.

Surveillance method

In 2025, a report card listing up to 15 rare and uncommon conditions under APSU surveillance, including the seven conditions described in this report (please refer to Appendix A, Table A.1 for the detailed case definitions), was distributed each month to an average of 1,313 paediatricians and other relevant clinical specialists registered with the APSU ('APSU Contributors'), either electronically via email (97%) or as a paper-based card (3%). APSU Contributors were asked to notify any child(ren) they had seen in the previous month with one or more of the conditions listed on the report card and to return each report card, whether or not they had seen a child(ren), so that a measure of annual clinician reporting could be calculated.

If APSU Contributors indicated they had seen a child(ren) with one or more of the conditions listed, they were asked to complete a case report form (CRF) for each child. Individual CRFs were available online on the APSU website,[i] via a link to the REDCap data capture system,[2,3] for perinatal exposure to HIV and paediatric HIV infection, JoRRP, RUB, CVS and NVI, or available as a paper-based form, which could be printed, completed and returned to the APSU. All CRF data completed on paper-forms for the six aforementioned conditions were entered into REDCap by APSU staff and exported to MS-Excel files for data cleaning and analysis. A separate online CRF for AFP was available on the APSU website via a link to the Fuzee Pty Ltd (Melbourne, Australia) software and data system;[ii] AFP data were transferred to the National Enterovirus Reference Laboratory (NERL) for collation, and combined with additional AFP cases and data ascertained at eight Australian paediatric hospitals by the Paediatric Active Enhanced Disease Surveillance system (PAEDS).[4,5] AFP data recorded on the paper-based APSU CRF were also transferred to NERL for data entry. Data cleaning and analysis of all AFP case data were conducted by NERL.

The CRF for each condition under APSU surveillance requested details of the child's demographics, including age, sex, postcode (to determine geographic remoteness), country of birth and ethnicity; symptoms and clinical features; laboratory test results; disease management/treatment; vaccination history (where a vaccine was available); risk factors and disease outcomes. APSU Contributors were asked to record only minimal patient identifiers (first two initials of first name and surname, and date of birth) on the CRF, in order to identify duplicate reports. These identifiers were removed prior to data analysis and reporting.

AFP surveillance also required reporting clinicians to arrange the collection of 'adequate' stool samples (i.e., two faecal specimens collected > 24 hours apart within 14 days of the onset of paralysis), according to World Health Organization (WHO) criteria,[6] for NERL testing for poliovirus and other non-polio enteroviruses implicated in AFP.[4]

All cases reported to the APSU were classified as: confirmed (definite or probable), duplicate, or reporting error (e.g., outside of the case definition, or missing or insufficient data to classify) by individual study investigators for: perinatal exposure to HIV, paediatric HIV, JoRRP, RUB, CVS and NVI cases, and by the Polio Expert Panel (PEP) for AFP. AFP cases were additionally classified by the PEP according to WHO criteria as: 'polio' (either due to wild-type or vaccine-derived poliovirus, or vaccine associated paralytic poliomyelitis); 'polio-compatible' (if there was insufficient evidence to exclude polio); 'non-polio AFP'; or 'non-AFP'.[4,6]

Ethics approval for APSU surveillance of AFP, JoRRP, RUB, CVS, and NVI was obtained from the Sydney Children's Hospitals Human Research Ethics Committee (reference number 2020/ETH03310). Ethics approval for surveillance of perinatal exposure to HIV and paediatric HIV infection was obtained from the University of New South Wales Human Research Ethics Committee (reference number: HC210300).

i https://www.apsu.org.au.

ii https://my.fuzee.com/apsu-vidrl/afpquestionnaire.html.

Calculation of incidence and birth prevalence estimates

Incidence or birth prevalence was calculated for each condition under surveillance for the 2025 calendar year in which cases were diagnosed (except for AFP, where 2025 was the year in which symptom onset occurred, in line with NERL reporting of AFP cases to WHO),[7] and for the total study period, using standard formulae only for case numbers ≥ 10. Population denominators were obtained from the Australian Bureau of Statistics (ABS)[8] to calculate incidence estimates for AFP and JoRRP (children aged < 15 years) and paediatric HIV (children < 16 years), and from the Australian Institute for Health and Welfare (AIHW)[9] to calculate birth prevalence estimates for perinatal exposure to HIV, RUB, CVS and NVI (live births). It is to be noted that population denominators for live births were only available from AIHW up to and including 2023,[9] so the 2023 population denominator was used when calculating birth prevalence estimates for 2025 and for the total surveillance period.

Results

Representativeness of clinician reporting and response rates

An average of 1,313 APSU Contributors received the APSU report card each month in 2025. Contributors were located in each Australian state and territory, in both metropolitan and regional locations. The proportion of Contributors in each state and territory was approximately equal to the proportion of children aged < 15 years residing in those states and territories (data not shown). The annual 2025 response rate to the monthly report card by APSU Contributors was 78.4%, which was similar to the 2024 response rate of 78.0%.[10]

Summary of notifications, confirmed cases and annual incidence or birth prevalence estimates

A total of 134 notifications were received for the seven communicable diseases and complications under APSU surveillance in 2025, 105 of which were confirmed as definite or probable cases (aggregated). There were 17 duplicates, four reporting errors and eight historical (prevalent) cases not previously reported to the APSU (see Appendix A, Table A.2).

A summary of confirmed cases and incidence or birth prevalence estimates for each communicable disease and complication in 2025 are presented in Table 1.

Summary of demographic, clinical, management, risk and outcome data on communicable diseases and complications

Data on demographic, clinical, management, risks and disease outcomes obtained from CRFs in 2025 for each communicable disease and complication are presented in Table 2.

Table 1: Confirmed cases identified by Australian Paediatric Surveillance Unit (APSU) surveillance during the period 1 January – 31 December 2025 and for the total study period, and estimated incidence or birth prevalence per 100,000 children of the relevant population/age per annum, by communicable disease or complication

Communicable disease or disease complication	Surveillance study date of commencement	Confirmed (incident) cases for 1 January – 31 December 2025	Incidence or birth prevalence estimate per 100,000 per annum and 95% CI for 2025[a,b]	Confirmed cases for the whole study period to 31 December 2025	Incidence or birth prevalence estimate per 100,000 per annum and 95% CI for the whole study period to 31 December 2025[a,b]
Acute flaccid paralysis	March 1995	76[c,d]	1.58 [1.26–1.98][e]	1,566[c,d]	1.17 [1.12–1.23][e]
Perinatal exposure to HIV	May 1993	20	7.07 [4.56–10.96][f]	1,057	11.72 [11.03–12.45][f]
Paediatric HIV infection	May 1993	5	—	111	0.08 [0.06–0.09][g]
Juvenile-onset recurrent respiratory papillomatosis	Sep 2011	1[h]	—	25[h]	0.04 [0.02–0.05][e]
Congenital rubella infection/syndrome	May 1993	0	—	54[h]	0.60 [0.46–0.78][f]
Congenital varicella syndrome	May 2006	0	—	4[h]	—
Neonatal varicella	May 2006	3	—	36	0.60 [0.44–0.84][f]

a Incidence estimate or birth prevalence was not calculated for case numbers < 10, as they were considered unreliable.

b 95% CI: 95% confidence interval.

c Includes all cases of acute flaccid paralysis (AFP) reported via the APSU and Paediatric Active Enhanced Disease Surveillance (PAEDS) surveillance systems. All cases were classified by the Polio Expert Panel as 'non-polio AFP' according to World Health Organization (WHO) criteria.[4,6]

d Note: the reporting period for AFP case notifications was that the date of symptom onset occurred between 1 January and 31 December 2025, in line with National Enterovirus Reference Laboratory reporting of AFP cases ascertained by APSU and PAEDS surveillance systems to WHO.[7]

e Based on population of children aged < 15 years.[8]

f Based on number of live births.[9]

g Based on population of children aged < 16 years.[8]

h Includes both definite and probable cases.

Table 2: Demographic, clinical, management characteristics, risk factors and outcomes of confirmed cases reported to the Australian Paediatric Surveillance Unit (APSU) during the period 1 January – 31 December 2025, by communicable disease and complication of communicable disease

Communicable disease or complication	Case definition (in brief)	Demographics, clinical features, management, risk factors and outcomes
Acute flaccid paralysis[a,b]	Any child aged < 15 years with acute flaccid paralysis in one or more limbs or acute onset of bulbar paralysis	• Of 94 notifications, 76 children were confirmed as non-polio acute flaccid paralysis (AFP) incident cases;[a] 16 were duplicate reports; and two were reporting errors outside of case definition (age ≥ 15 years). Confirmed AFP cases were reported from: Victoria (30); New South Wales (20); Queensland (13); Western Australia (5); Northern Territory (4); South Australia (2); and Tasmania (2). No cases were reported from the Australian Capital Territory. Six children were Indigenous. • The most common diagnoses assigned by the Polio Expert Panel (PEP)[a] for the 76 non-polio AFP cases were: Guillain-Barré syndrome in 33 children (43%); transverse myelitis in 13 (17%); acute disseminated encephalomyelitis (ADEM) in six (8%); and functional neurological disorder in four children (5%). • 'Adequate' stool samples, which the World Health Organization (WHO) defines as two faecal specimens collected at least 24 hours apart and within 14 days of onset of paralysis in ≥ 80% of cases,[4,6] were collected from 46/76 (61%) children with confirmed non-polio AFP.
Perinatal exposure to human immunodeficiency virus (HIV)	Any infant born to a woman with diagnosed HIV infection, including by *in utero* exposure or through breastfeeding	• Of 26 notifications, 20 infants were confirmed as incident cases born in 2025; four were historical (prevalent) cases born before 2025; one was a duplicate report; and one was a reporting error (the mother had a false positive HIV test result). Incident cases born in 2025 were reported from: New South Wales (11); Queensland (7); Victoria (1); and the Australian Capital Territory (1). One infant was Indigenous. • All children were born in Australia. At their most recent test, all infants had an HIV negative test result. Follow-up of these infants at 18 months will be conducted to obtain further HIV test results, in accordance with clinical recommendations.[11] • Ten infants received antiretroviral therapy, eight received prophylactic antiviral treatment, two received both antiretroviral therapy and prophylactic antiviral treatment after birth, and these data were not available for one infant. • A separate case report form was completed for 12 mothers of the 20 infants confirmed as incident cases. Two mothers were born outside Australia. Seven mothers were diagnosed with HIV antenatally, and the date of HIV diagnosis was not recorded for five mothers, but presumed to be antenatal. Of the mothers, 11/12 received antiretroviral therapy during pregnancy. Of the infants, four were delivered by elective caesarean section, four were delivered by emergency caesarean, and four were delivered vaginally. Breastfeeding was avoided for 9/12 infants.

Communicable disease or complication	Case definition (in brief)	Demographics, clinical features, management, risk factors and outcomes
Paediatric HIV infection	Any child aged < 16 years at diagnosis of HIV infection in Australia	• Of nine notifications, five children were confirmed as incident cases of paediatric HIV infection diagnosed in 2025; and four were historical (prevalent) cases. Incident cases were reported from Queensland (3) and New South Wales (2); none were Indigenous. The majority of incident cases (4/5) were born outside Australia in countries known to have a high prevalence of HIV infection. The age at diagnosis ranged from 4 to 15 years. • All five children had a confirmed laboratory diagnosis of HIV infection. Four had HIV-1; genotyping data was not available for one child. • One child had clinical symptoms of HIV at the time of diagnosis, including pneumonia, cervical lymphadenopathy, chronic cough and night sweats, and had a history of symptoms consistent with seroconversion illness. Four children were asymptomatic. All children were alive at the time of reporting. • Four children were reported to have never taken pre-exposure prophylaxis (PrEP), but data were unavailable for one child. • The source of HIV infection was perinatal exposure and mother-to-child transmission in four children, and was suspected but not confirmed in one child.
Juvenile-onset recurrent respiratory papillomatosis (JoRRP)	Any infant or child aged < 15 years diagnosed JoRRP confirmed by endoscopy of the larynx and by histology. *Probable case*: as above but without histological confirmation	• There were two notifications, of which one child was confirmed as a definite incident case, and one as a reporting error outside of case definition (age ≥ 15 years). • The confirmed case was reported from Queensland and was not Indigenous. The child was born in Australia. • Clinical symptoms at presentation included nasal papillomas and nasal bleeding. Diagnosis of JoRRP was made by histology. Human papillomavirus (HPV) genotypes 6 and 11 were detected but could not be differentiated by the laboratory test used. • The child was treated with debulking surgery and symptoms had not resolved at the time of reporting. • The child's mother was reported to have received an HPV vaccine outside of Australia, but the type of vaccine and number of doses received were unknown.
Congenital rubella infection/ syndrome	*Confirmed case*: any infant with laboratory definitive evidence (fetal or infant) AND clinical evidence (live or stillborn infant) with or without compatible defects. *Probable case*: epidemiological evidence of infection in pregnancy AND laboratory suggestive evidence (in an infant).	• There were no notifications of congenital rubella infection or syndrome during the 2025 reporting period.

Communicable disease or complication	Case definition (in brief)	Demographics, clinical features, management, risk factors and outcomes
Congenital varicella syndrome	Any stillbirth, newborn infant, or child up to the age of two years, who has definite or suspected congenital varicella infection, with or without defects	• There were no notifications of congenital varicella syndrome during the 2025 reporting period.
Neonatal varicella	Any infant who has neonatal varicella based on history, clinical and/or laboratory findings in the first month of life (without features of congenital varicella syndrome).	• There were three notifications of neonatal varicella infection, which were all confirmed as incident cases. Two cases were reported from Victoria and one from Queensland. All infants were born in Australia and were not Indigenous. • All infants were diagnosed with varicella infection via polymerase chain reaction (PCR) testing and presented with skin lesions. Two infants also presented with hepatitis. • Two of the three infants were hospitalised, and neither were admitted to intensive care units. All infants received aciclovir antiviral therapy and none received varicella zoster immunoglobulin. All infants were discharged alive and one infant had ongoing problems at the time of reporting with continued development of skin lesions. • Two infants had a history of postnatal contact: one with a household family member and one with an external family relative, both of whom had apparent varicella infection, but the varicella vaccination status of both contacts was unknown.

a Includes all cases of AFP reported via the APSU and Paediatric Active Enhanced Disease Surveillance (PAEDS) surveillance systems. All cases have been classified by the Polio Expert Panel (PEP) as 'non-polio AFP' according to World Health Organization (WHO) criteria.

b Note: the reporting period for AFP case notifications was that the date of symptom onset occurred between 1 January and 31 December 2025, in line with National Enterovirus Reference Laboratory reporting of AFP cases ascertained by APSU and PAEDS surveillance systems to WHO.[7]

Summaries of the significance of findings for each communicable disease and complication and outputs generated in 2025 are presented as follows:

Acute flaccid paralysis

The APSU has conducted AFP surveillance since 1995, and in conjunction with the Paediatric Active Enhanced Disease Surveillance system (PAEDS) since 2007, in order to maintain Australia's 'polio-free' status.[5] The reporting of 76 confirmed non-polio AFP cases in 2025 once again exceeded the WHO target incidence estimate of ≥ 1 non-polio AFP cases per 100,000 children aged < 15 years, a target which was first achieved in 2008,[12] and has been achieved each consecutive year since.[4] Seven cases were uniquely identified through APSU surveillance, six from hospitals where PAEDS does not operate, and would otherwise have been missed entirely without APSU as a complementary surveillance source. The reporting of 16 duplicate notifications by APSU/PAEDs confirms the robustness of these surveillance systems to ascertain cases. However, the rate of adequate stool specimen collections in 2025 was only 61% (compared to 70% in 2024), which did not meet the WHO recommended target of ≥ 80%.[6] This is despite efforts by PAEDS nurses to collect stools during hospitalisation and reminders to clinicians by APSU to send stool specimens to NERL.

In 2025, AFP data collected by the APSU were routinely published in the annual NERL report for the Australian Centre for Disease Control;[4] in monthly bulletins of the WHO Western Pacific region;[7] and contributed to Australia's annual polio-free status by the WHO.[4,5] Furthermore, an editorial on the importance of maintaining polio surveillance in Australia was submitted for publication by AFP study investigators and published in early 2026 in the *Internal Medicine Journal* of the Royal Australasian College of Physicians.[5]

Perinatal exposure to HIV and paediatric HIV infection

The reporting in 2025 of 20 new cases of perinatal exposure to HIV was consistent with numbers reported in previous years,[10,13–14] with a total of 1,057 cases reported since surveillance commenced in 1993. Interventions known to reduce HIV mother-to-child-transmission (MTCT), such as administration of maternal antenatal antiretroviral therapy, elective caesarean delivery, and avoidance of breastfeeding,[15–17] were used for the majority of infants and their mothers. There were no cases of HIV MTCT among ten infants who were tested in 2025 at 18 months after their initial antenatal HIV test result.

The number of paediatric HIV infection cases reported to the APSU in 2025, of five newly diagnosed and four historical (prevalent) cases, was the highest since 2020.[18] The majority of the newly diagnosed cases (80%) were imported from countries with a high prevalence or incidence of HIV, with perinatal exposure to HIV and MTCT identified as the most likely source of infection.

APSU surveillance data of perinatal exposure to HIV and paediatric HIV are routinely reported in the Australian Annual Surveillance Report on HIV, viral hepatitis and sexually transmissible infections,[19] and a manuscript describing 30 years of APSU surveillance of perinatal exposure to HIV and reduction in MTCT over time is currently in progress.

Juvenile-onset recurrent respiratory papillomatosis

One confirmed case of JoRRP, reported in 2025, brought to 25 the total number of cases reported since surveillance commenced in 2011. JoRRP case numbers reported to the APSU since 2011 have steadily declined from a peak in 2012,[20] indicating ongoing success of the government-funded human papillomavirus (HPV) vaccination under the National Immunisation Program for adolescents and women of child-bearing age since its development and roll-out in 2007.[21]

A manuscript describing extended surveillance of JoRRP and long-term follow-up of confirmed JoRRP study cases is currently in progress.

Congenital rubella infection and syndrome

No notifications of congenital rubella infection or syndrome were again reported to the APSU in 2025 (which concurred with the reporting of no rubella infections to the National Notifiable Disease Surveillance System),[22] with a total of 54 cases reported since APSU surveillance commenced in 1993. The last case of confirmed congenital rubella reported to the APSU was in 2015.[23] The implementation and uptake of government-funded measles, mumps, rubella (MMR) vaccination under the National Immunisation Program since 1989,[24] as well as previous school-based rubella vaccination programs since 1971,[24] are credited for the observed substantial and sustained reduction,[25] and elimination,[26,27] of congenital rubella in Australia.

Congenital varicella syndrome and neonatal varicella infection

There were no notifications of CVS reported to the APSU again in 2025, with a total of four cases reported to the APSU since surveillance commenced in 2006. However, three cases of NVI were reported in 2025, with a total of 36 cases reported since surveillance commenced in 2006, indicating a persistence of varicella infection despite the availability of government-funded varicella vaccination under the National Immunisation Program since 2005,[28] which has substantially reduced the incidence of CVS and NVI in Australia.[29,30]

Discussion and conclusions

Since 1993, the APSU has conducted prospective surveillance of rare communicable diseases and complications of national concern in Australian newborns, children and adolescents.[1] APSU data collected, for example on haemolytic uraemic syndrome caused by *Escherichia coli* Shiga toxin contamination of fermented meats,[1,31] intussusception from rotavirus vaccinations,[1,32] and congenital cytomegalovirus infection,[1,33] have previously informed changes to policy and clinical guidelines for disease prevention.[1]

The annual response rate to the monthly APSU report card of 78.4% was lower than response rates prior to 2021,[18] possibly due to ongoing clinician fatigue. Also, increasing cyber security measures by hospitals and local health districts around incoming email traffic have resulted in some of our bulk emails being relegated to junk or quarantined by recipients' institutions. Nevertheless, the current response rate represents good engagement with the APSU surveillance system.

In 2025, the Global Polio Eradication Initiative of the WHO launched the Global Polio Surveillance Action Plan 2025–2026, to identify and strengthen current surveillance methods and priorities in each member country and WHO region (including in Australia and the Western Pacific region) required to monitor ongoing global efforts to eradicate polio.[34] Maintaining ongoing AFP surveillance in Australia by APSU/PAEDS is therefore imperative. Although no cases of locally acquired or imported wild-type poliovirus have been detected in Australia since 1986,[35] and 2007,[36] respectively, Australia continues to exceed the WHO surveillance target of ≥ 1 non-polio AFP cases per 100,000 children and to confirm that these cases are non-polio AFP. Australia nonetheless remains at risk of polio importation while wild-type and vaccine-derived polioviruses circulate globally[5] and outbreaks of vaccine-derived polio occur in neighbouring countries, most recently in Papua New Guinea in April–May 2025.[37] Moreover, polio vaccination rates in Australian children have been steadily declining since 2020,[38] as have vaccination rates in other high-income countries such as the United States of America,[39] placing local children at increased risk of polio.

APSU data continue to show a persistence of neonatal varicella infection, especially in infants whose parents and family members have originated from countries where universal varicella vaccination programs similar to those in Australia may not exist. Varicella vaccination rates in Australian children have been steadily declining since 2020,[38] placing newborn infants at increased risk of varicella infection and severe disease complications.[40]

Although no cases of congenital rubella have been reported to the APSU for ten years, rubella infection is still endemic in many countries in close proximity to Australia, e.g., South-East Asia,[41] and Australia is at risk of importing cases. The WHO launched a five-year strategic plan in 2024 for the elimination of measles and rubella in South-East Asia, which emphasises widespread immunisation uptake, sensitive surveillance, robust laboratory testing and effective responses to outbreaks as key pillars for the elimination of rubella infection, and thus congenital rubella in this global region;[42] however, significant challenges in implementing this strategy have recently been highlighted.[41] Australia has also shown a steady decline in MMR vaccination coverage in infants and young children since 2020,[38] which has also been observed internationally,[43] placing unborn and newborn children at potential risk of rubella infections and severe disease complications.[43]

APSU data in 2025 have shown a persistence of JoRRP cases, highlighting gaps in HPV vaccination despite being available free to adolescents and women of child-bearing age for almost two decades.[21] Concerningly, Australian vaccination coverage data has shown a steady decline in HPV vaccine uptake since 2020,[38] placing newborn infants potentially at risk of acquiring HPV infections and developing JoRRP.[44]

The WHO launched a strategy in 2020 for the global elimination of HIV, hepatitis B and syphilis MTCT by 2030,[45] and released a framework for its implementation in 2024.[46] In 2025, to further support this goal, a practical guidance document was launched for individual countries.[47] This supports the need for ongoing surveillance of these conditions in Australia, including HIV surveillance by APSU. Although the number of new perinatal exposure to HIV cases was stable in 2025, with no new HIV MTCT infections, an increase in newly diagnosed paediatric HIV infections occurred, the majority in children born overseas with previously undiagnosed MTCT. An increase in the rate of congenital syphilis in Australian children has been reported,[48] while vaccination at birth and in infancy has substantially reduced perinatal transmission of hepatitis B,[49] indicating that Australian surveillance of these conditions is also important.

Implications

APSU surveillance provides a critical early-warning system for rare and emerging communicable diseases in children, enabling timely public health responses and targeted interventions. By capturing otherwise scattered cases across distant hospitals, APSU helps detect changes in disease patterns, vaccine-preventable outbreaks, and gaps in immunisation coverage that might be missed by routine reporting. The data generated directly inform policy, vaccine strategies, and clinical guidelines, strengthening Australia's capacity to prevent transmission and reduce complications, and maintaining high-impact communicable disease control over time. APSU data on AFP continue to contribute to the maintenance of Australia's polio-free status. Cases of vaccine-preventable neonatal varicella and JoRRP persist, indicating ongoing gaps in vaccination uptake. In Australia, decreases in vaccination uptake have been evident since the COVID-19 pandemic, and ongoing efforts are being made to lift vaccination rates in infants and young children. Efforts are also being made to lift vaccination in immigrant women of child-bearing age from countries where similar universal vaccination programs do not exist, to further prevent congenital and newborn infections and severe complications. Case numbers for perinatal exposure to HIV have remained stable; however, ongoing vigilance is required to maintain the use of routine interventions to prevent HIV MTCT. With the majority of new paediatric HIV cases imported from countries with a high prevalence or incidence of HIV infection, prompt diagnosis of these cases and appropriate management are required to prevent mortality and severe morbidity in affected children.

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Appendix A

Table A.1: Case definitions of Australian Paediatric Surveillance Unit (APSU) communicable diseases and disease complications under surveillance in 2025

Surveillance study	Case definition
Acute flaccid paralysis (AFP)	• Any child aged < 15 years with AFP in one or more limbs or acute onset of bulbar paralysis • All cases reported through APSU, National Enterovirus Reference Laboratory (NERL) and Paediatric Active Enhanced Disease Surveillance (PAEDS) are reviewed by the polio expert panel (PEP) and classified as: confirmed poliomyelitis; non-polio AFP, polio-compatible or non-AFP. The NERL determines whether there is an infectious cause of AFP including enteroviruses. • The PEP secretariat reports all Australian cases to the World Health Organization (WHO)
Perinatal exposure to human immunodeficiency virus (HIV)	• Any infant born to a woman with diagnosed HIV infection. Children born to women with HIV infection and who are known to have been exposed to HIV perinatally, by *in utero* exposure or through breastfeeding, should be notified, even if they are subsequently confirmed as HIV antibody negative
Paediatric HIV infection	• Any child aged < 16 years at diagnosis of HIV infection in Australia
Juvenile onset recurrent respiratory papillomatosis (JoRRP)	• Any infant or child aged < 15 years diagnosed with JoRRP confirmed by endoscopy of the larynx and by histology • *Probable case*: any infant or child aged < 15 years diagnosed with JoRRP but without confirmation by histology
Congenital rubella infection/ syndrome	*Confirmed case*: a confirmed case requires laboratory definitive evidence (fetal) OR laboratory definitive evidence (infant) AND epidemiological evidence: Laboratory definitive evidence: • Fetal: isolation or detection of rubella virus from an appropriate clinical sample (i.e. fetal blood or tissue, amniotic fluid, chorionic villus sample) by culture or nucleic acid testing. • Infant: isolation or detection of rubella virus from an appropriate clinical sample in an infant, by culture or nucleic acid testing OR detection of rubella-specific immunoglobulin M (IgM) antibody in the serum of the infant. • Epidemiological evidence: the mother has confirmed rubella infection during pregnancy *Probable case*: epidemiological evidence (first trimester infection) OR epidemiological evidence (second and third trimester infection) AND laboratory suggestive evidence (infant): Laboratory suggestive evidence: • Infant: high / rising rubella-specific IgG level in first year of life.

Surveillance study	Case definition
Congenital rubella infection/ syndrome (continued)	*Congenital rubella syndrome*: a confirmed case requires laboratory definitive evidence (fetal or infant), as described above AND clinical evidence: Clinical evidence: A live or stillborn infant with ANY of the following compatible defects: • Cataracts • Congenital glaucoma • Congenital heart disease • Hearing defects • Microcephaly • Pigmentary retinopathy • Development delay • Purpura • Hepatosplenomegaly • Meninigoencephalitis • Radioluscent bone disease • Other defect not better explained by an alternative diagnosis
Congenital varicella syndrome (CVS)	Any stillbirth, newborn infant, or child up to the age of 2 years, who has definite or suspected congenital varicella infection, with or without defects and meets at least one of the following criteria: • Cicatricial skin lesions in a dermatomal distribution and/or pox-like skin scars and/ or limb hypoplasia • Development of herpes zoster in the first year of life • Spontaneous abortion, termination, stillbirth or early death following varicella infection during pregnancy Confirm varicella infection by one or more of the following: • Detection of varicella-specific IgM antibodies in cord blood or in serum specimen taken in the first 3 months of life (only 25% of cases are positive) • Persistence of varicella specific IgG antibody in a child aged beyond 6 months of age • Identification of varicella virus in skin lesions or autopsy tissue • History of maternal varicella during pregnancy or maternal contact with varicella in pregnancy in the mother of an infant with congenital abnormalities The following clinical signs may also be present in cases of CVS: • Microcephaly, hydrocephalus, cerebellar hypoplasia, motor or sensory deficits, sphincter dysfunction and peripheral nervous system defects • Microphthalmia, cataracts, Horner's syndrome, chorioretinitis, nystagmus, retinal scars, optic atrophy • Gastrointestinal abnormalities including colonic atresia, hepatitis, liver failure • Genito-urinary abnormalities • Cardiovascular abnormalities • Intrauterine growth retardation

Surveillance study	Case definition
Neonatal varicella infection (NVI)	Any infant who has neonatal varicella based on history, clinical and/or laboratory findings in the first month of life without features of CVS. Features of neonatal varicella infection include: • Pox-like rash which may be papulovesicular, vesiculopustular or haemorrhagic, and fever • Other systemic symptoms may be present Complications of neonatal varicella include: • Bacterial superinfection • Neurological and haematological problems and general visceral involvement The diagnosis of neonatal varicella can be made when an infant in the first month of life presents with clinical features of varicella infection. There may be a history of maternal varicella infection in the last 1–4 weeks of pregnancy or contact with a varicella infected person after birth. The diagnosis can be confirmed by laboratory tests to detect: • Viral antigen/viral isolate from scrapings of the skin lesions or viral DNA from lesion fluid • Varicella specific IgM in a serum sample from the infant (or from the contact)

Table A.2: Table of notifications received during the period 1 January – 31 December 2025 of communicable diseases and complications of communicable diseases under surveillance by the Australian Paediatric Surveillance Unit (APSU), and their categorisation

Disease or complication under surveillance	Total notifications	Confirmed cases	Duplicates	Errors[a]	Other[b]
Acute flaccid paralysis[c]	94[d]	76[d]	16	2	0
Perinatal exposure to HIV	26	20	1	1	4
Paediatric HIV infection	9	5	0	0	4
Juvenile-onset recurrent respiratory papillomatosis	2	1[e]	0	1	0
Congenital rubella syndrome	0	0	0	0	0
Congenital varicella syndrome	0	0	0	0	0
Neonatal varicella infection	3	3	0	0	0
	134	**105**	**17**	**4**	**8**

a Includes administrative errors, cases outside of study definition, missing case report forms or insufficient data provided to confirm.

b Historical (prevalent) cases not previously reported.

c Includes all cases of acute flaccid paralysis (AFP) reported via the APSU/National Enterovirus Reference Laboratory (NERL) and Paediatric Active Enhanced Disease Surveillance (PAEDS) surveillance systems. All confirmed cases have been classified by the Polio Expert Panel (PEP) as 'non-polio AFP' according to World Health Organization (WHO) criteria.[6] Twenty-four cases were reported using the APSU case report form, with seven of these cases confirmed and 16 cases duplicated by APSU and/or PAEDS surveillance.

d Note: the reporting period for AFP case notifications was that symptom onset occurred between 1 January and 31 December 2025, in line with PEP classification and reporting of AFP cases ascertained by APSU and PAEDS surveillance systems to WHO.[7]

e Includes both definite and probable cases.