



From coverage to concern

A policy analysis of Australia's
immunisation decline

Executive summary

Immunisation is the most successful and cost-effective health intervention globally.¹ The World Health Organization (WHO) has identified that immunisation prevents between two and three million deaths a year.² Since the introduction of vaccines to Australia in 1932, there has been a 99 per cent decrease in the number of deaths caused by vaccine-preventable diseases (VPDs).³ Australia has consistently maintained a strong record of high immunisation coverage, reaching the national target of 95 per cent for key childhood vaccinations in 2020. However, since the COVID-19 pandemic, vaccination rates have steadily declined, posing significant risks to public health and the resilience of the healthcare system. The NCIRS Annual Immunisation Coverage Report 2024 shows that coverage for one-year-olds has dropped to 91.6 per cent, and to 92.7 per cent for five-year-olds, with downward trends continuing.⁴ The re-emergence of VPDs has the potential to significantly strain healthcare systems by redirecting critical resources away from other pressing health priorities. These include managing Australia's ageing population, addressing the increasing prevalence of chronic diseases, and mitigating the rising costs associated with this type of healthcare delivery.

Concerningly, declining vaccination uptake is also evident for respiratory VPDs, including respiratory syncytial virus (RSV), influenza, and COVID-19, across all age groups and identified 'at-risk' populations. This trend poses significant challenges for the healthcare system, particularly during the winter months when the incidence of these illnesses typically peaks. Reduced vaccination coverage during this period contributes to increased hospital admissions, placing substantial pressure on emergency departments and the health system as a whole. As a result, hospitals often reach or exceed capacity, leading to system congestion and compromised patient care.

Australian hospitals are currently in logjam, operating at or near capacity, with a significant portion of admissions attributed to conditions that could have been prevented through timely vaccination and primary care. In 2023–24, nearly 10 per cent of all potentially preventable hospitalisations were attributed to VPDs.⁵ Declining immunisation rates across the board will further exacerbate the number of preventable hospital admissions. The growing burden on the healthcare system highlights the urgent need to strengthen public health initiatives and improve vaccine coverage across all age groups.

Australia is already facing significant public health risks, which are likely to worsen if declining vaccination rates are not effectively addressed. These risks include:

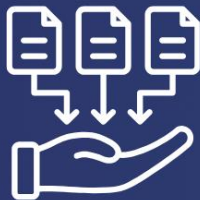
- decreased herd immunity
- re-emergence of dangerous vaccine-preventable diseases
- increased strain on the healthcare system
- avoidable loss of life and increased healthcare costs
- broader social and economic disruption
- lower global immunity rates, presenting risks related to immigration, emigration, and international travel.

Vaccine hesitancy and fatigue stemming from the pandemic have been identified as major contributors to declining uptake. To reverse this trend, our report recommends several government levers which are outlined in Box 1.

Our research report provides a comprehensive analysis of current immunisation coverage across a range of VPDs, including human papillomavirus (HPV), and respiratory diseases such as RSV, influenza, and COVID-19. Declines in immunisation not only present an unnecessary risk to health but also result in a significant economic burden. We analysed the financial impact of influenza on the workplace and demonstrate the substantial cost-saving potential of improved community vaccination and workplace initiatives, such as on-site immunisation sessions to enhance convenience.

Box 1

Summary of proposed areas of reform to boost immunisation rates in Australia



Up-to-date data collections

- Enhancing data integrity in the Australian Immunisation Register (AIR)
- Developing a real-time, interactive immunisation dashboard covering multiple diseases and all age groups.



Targeting at-risk groups through partnership

- Partnering with communities and trusted champions to promote inclusive immunisation



Promoting team-based care

- An appropriately designed blended funding model is essential to support the integration of nurses and other health professionals into GP-led teams



A modern Medicare to recognise the changing nature of general practice

- GPs are uniquely positioned to play a pivotal role in reversing this immunisation decline. With longstanding, trusted relationships with their patients, GPs are often the most influential voices in encouraging vaccination. GPs are best placed to have conversations with patients who are confused or hesitant about vaccinations.

We need to attract more GPs and support them in treating people at all stages of their lives, incorporating vaccination with child development milestones and protecting the elderly with seasonal vaccinations. This would lead to a reduction in avoidable hospital admissions.

Australia's vaccination history

Australia has a long history of high vaccination rates, underpinned by robust public health infrastructure and widespread community trust in governments and immunisation programs. The introduction of the National Immunisation Program (NIP) by the Australian Government in 1997 marked a pivotal moment in the nation's public health strategy.⁶ This initiative was part of the broader *Immunise Australia Program*, which was underpinned by a comprehensive 'Seven Point Plan' aimed at improving immunisation rates across the country.⁷ Key components of this strategy included financial incentives for both healthcare providers and parents, targeted public awareness campaigns, and the systematic collection and dissemination of local immunisation data to identify and address regional disparities. The Australian Immunisation Register (AIR) was established in 1996 as the Australian Childhood Immunisation Register (ACIR), initially for children under seven. It was expanded to become a whole-of-life register in 2016, incorporating data for people of all ages. Mandatory reporting for certain NIP and COVID-19 vaccines was gradually implemented in 2021, with additional legislative updates occurring in 2024 and 2025.⁸ Until recently, there had been no regular, nationally consistent source of data to estimate vaccination coverage among adolescents and adults.¹⁹

As a result of these coordinated efforts, dramatic improvements in childhood vaccination rates were reported. Coverage for one-year-olds increased from about 52 per cent in 1995 to 95 per cent by 2020, with similar gains observed among five-year-olds.¹⁰ Achieving 95 per cent immunisation coverage leads to herd immunity, also known as community immunity, which confers a natural decrease in the transmission of infectious diseases due to the high proportion of individuals who are immune. When more than 95 per cent of the population is protected through vaccination, disease transmission is disrupted, making it difficult for infections to spread from person to person. Over time, this can lead to the elimination of the disease within the community.¹¹ This collective protection is particularly critical for preventing the spread of highly contagious pathogens, such as the measles virus, thereby protecting both the vaccinated and unvaccinated.

Disparities in vaccination coverage between regions and communities also improved over time. In 1999, the Northern Territory recorded the lowest immunisation rate for one-year-old children in Australia, trailing the national average by six percentage points.¹² However, by 2020, this gap had been effectively eliminated, highlighting the success of targeted public health interventions and sustained efforts to promote equitable access to immunisation services across all jurisdictions. These outcomes demonstrate the effectiveness of policy-driven strategies and underscore the importance of sustained investment in immunisation infrastructure and community engagement.

At the time of writing, Australia maintains relatively high vaccination rates by global standards.¹³ However, there has been a steady decline in coverage since the COVID-19 pandemic. From a 95 per cent vaccination coverage against VPDs recorded in 2020 for children under five years of age¹⁴, coverage has dropped to 92 per cent for all one-year-olds and 93 per cent for all five-year-olds — with rates continuing to decline.¹⁵

The AMA acknowledges Australia's immunisation landscape is rapidly shifting. A concerted effort must be made to rebuild community trust in vaccines and improve immunisation rates across Australia.

Vaccination regulation and approval (health technology assessment)

In Australia, a vaccine must receive approval from both the Therapeutic Goods Administration (TGA) and the Pharmaceutical Benefits Advisory Committee (PBAC) before it can be supplied through the National Immunisation Program (NIP). The TGA is responsible for evaluating the safety, quality, and efficacy of vaccines, ensuring they meet rigorous regulatory standards before registration. Once approved by the TGA, the vaccine must be assessed by the PBAC, which evaluates its clinical effectiveness, cost-effectiveness, and public health impact. Only after a positive recommendation from the PBAC can the vaccine be listed on the NIP and free for eligible people, provided they have a Medicare card.

At-risk populations

The impact of COVID-19 restrictions over multiple years has led to a general complacency around immunisation, which is reflected in global vaccine coverage. In 2024, there were 14.3 million children missing out on any vaccination (referred to as zero dose children).¹⁶ Global data is highlighting a troubling trajectory in progress toward key targets outlined in the global Immunisation Agenda 2030.¹⁷ Defunding of critical WHO global immunisation programs may have devastating consequences for equitable access to immunisation and healthcare.

In Australia there are populations at greater risk of infection and ill-health, including pregnant people, older adults, young children, people with disabilities, people with immune deficiencies, and Aboriginal and Torres Strait Islander communities. Continued prioritisation and greater advocacy efforts targeted at these groups is required for protection from VPDs.

Older people

Immunisations play a vital role in protecting older people from serious and potentially life-threatening diseases. As individuals age, their immune system changes, leaving them more susceptible to infections and complications. Vaccines help prevent illnesses such as influenza, RSV, pneumococcal disease, shingles, and COVID-19, all of which can have severe impacts on older adults — especially those with chronic health conditions. In Australia, some of these vaccines are provided free under the NIP, ensuring older people have access to essential protection and can continue contributing to their families and communities safely.

Residential aged care

COVID-19 vaccination rates in residential aged care are concerningly low, with less than half of aged care residents over 75 years of age having received a COVID-19 vaccination in the past six months (according to records: August 2025), despite recommendations from the Australian Technical Advisory Group on Immunisation (ATAGI). While influenza vaccination rates in residential aged care are, on average, 75 per cent,¹⁸ a recent report from the Aged Care Quality and Safety Commission revealed that some residential aged care facilities (RACFs) have less than 10 per cent of their residents vaccinated against influenza.¹⁹

People with disabilities

Generally, individuals with disability face a higher risk of acquiring VPDs than those without disability, due to a combination of clinical and non-clinical factors. Similarly, once infected, they are more likely to experience severe health outcomes and increased mortality.²⁰ The COVID-19 pandemic exacerbated existing health inequities experienced by people with disability. Double-dose COVID-19 vaccination rates among people with disability may be as low as 50 per cent in some regional and remote local government areas, according to data reported by the Department of Health, Disability and Ageing.²¹ The *Royal Commission into Violence, Abuse, Neglect and Exploitation of People with Disability* called for urgent reforms to boost vaccination rates for people with a disability,²² particularly in its recommendations outlined in the [Public Hearing Report: Public hearing 12 — The experiences of people with disability, in the context of the Australian Government's approach to the COVID 19 vaccine rollout](#).²³

Pregnant people

Pregnant people are considered an at-risk population due to physiological changes in the immune and respiratory systems during pregnancy. However, the nature of the risk can vary depending on whether the illness primarily affects the mother, the baby, or both. For example, pregnant people are particularly vulnerable to influenza, as these physiological changes increase the risk of severe illness and complications for both the mother and the developing baby. In contrast, vaccines like those for pertussis and RSV are primarily aimed at protecting the unborn baby before they are able to receive their own vaccinations—making the fetus the primary target of protection in these cases.

Global vaccination rates among pregnant people have shifted notably before and after the COVID-19 pandemic, shaped by both the rollout of COVID-19 vaccines and disruptions to routine immunisation services. During pregnancy, individuals are recommended to receive the influenza vaccine at any stage, the whooping cough (pertussis) vaccine between 20 and 32 weeks, and the RSV vaccine between 28 and 36 weeks.²⁴ COVID-19 vaccination may also be offered during pregnancy, based on guidance from their healthcare provider. Vaccination rates among pregnant people in Australia declined in the post COVID-19 period, with only 70.7 per cent of pregnant people in Queensland receiving the whooping cough vaccine in 2023, compared to 77.2 per cent in 2020.²⁵

Furthermore, a national survey examining COVID-19 vaccination prevalence and factors associated with vaccination intention and hesitancy among pregnant and postnatal women found that approximately one in 10 pregnant women and just over one in 13 postnatal women reported vaccine hesitancy. Hesitancy was notably higher during the final three-month period of pregnancy in the study.²⁶

Immunocompromised people

Immunisation is especially important for people who are immunocompromised, as they face a significantly higher risk of severe illness or death from many VPDs. Their immune systems may be weakened due to congenital conditions, medical treatments, or underlying diseases, making them more vulnerable to infections. While live vaccines may be contraindicated due to safety concerns, non-live vaccines are generally safe and may in fact require additional doses to ensure adequate protection for individuals who are immunocompromised. Vaccination plans should be tailored to each patient's level and type of immunosuppression, with the overarching goal of maximising protection while minimising risks.²⁷ Herd immunity also plays a vital role in protecting individuals who are unable to be vaccinated, such as those who are immunocompromised.

Aboriginal and Torres Strait Islander people

Aboriginal and Torres Strait Islander people experience higher rates of certain VPDs compared to non-Indigenous people, partly due to lower uptake or delayed administration of immunisations.²⁸ Encouragingly, vaccination rates for Aboriginal and Torres Strait Islander five-year-olds are higher than those of the wider population. However, this contrasts with immunisation rates among one-year-olds and two-year-olds, which fall below the national average. Concerningly, between 2021 and 2023, Indigenous people accounted for more than 15 per cent of invasive pneumococcal disease notifications, 17 per cent of invasive meningococcal disease notifications, and 60 per cent of diphtheria notifications — despite representing just 3.8 per cent of the Australian population in 2021.²⁹

Relationship-building, which is essential in Indigenous communities, was severely disrupted during the pandemic due to restrictions to face-to-face contact. This significantly reduced opportunities for early engagement with families through trusted Indigenous staff or community health organisations. The pandemic also increased caregiver stress and disrupted routines, making it even harder to complete and return consent forms — already a major barrier due to low health literacy levels, complex family dynamics, and overwhelming school communications.

Box 2.

Access to culturally safe healthcare and culturally appropriate educational resources is essential for ensuring equitable immunisation coverage and combatting VPDs among Aboriginal and Torres Strait Islander communities.

During the height of the COVID-19 pandemic, community-led immunisation programs run by the National Aboriginal Community Controlled Health Organisation (NACCHO) showed monumental success in stopping the spread of infection.

Creative solutions adopted by communities included repurposing existing resources, leveraging influence of community leaders, sharing information with community members in a meaningful way and promoting vaccination. High uptake of additional doses of COVID-19 vaccines were observed in communities across the country and in all levels of remoteness. Aboriginal and Torres Strait Islander leadership was critical for developing local solutions to the population, even under severely restricted and unprecedented circumstances¹

Support for the Aboriginal and Torres Strait Islander health workforce, as well as for programs led by communities themselves, is vital to ensuring improved immunisation rates.

Current state of Australia's vaccination rates

Vaccination rates in children under five years of age

Childhood immunisation is not only a cornerstone of disease prevention, but also a critical enabler of healthy development. In Australia, childhood immunisation schedules are guided nationally by the National Immunisation Program (NIP), although delivery may vary slightly across states and territories. High childhood immunisation coverage is a foundational enabler of the learning outcomes outlined in Australia's Early Years Learning Framework (EYLF v.2.0) and the National Children's Mental Health and Wellbeing Strategy. By preventing illness, it safeguards children's physical and emotional wellbeing, reduces learning disruptions, and supports equitable participation and development throughout the early years.

The recommended vaccinations are listed in Table 1, with additional vaccinations funded by specific states and territories for at-risk populations.

Table 1: Summary of vaccine schedules in Australia

Immunisation age	National (NIP)	Jurisdictional additions/ variations
Childhood vaccinations		
Birth	Hepatitis B (usually offered in hospitals)	State and Territory-funded nirsevimab for infants program in conjunction with the National RSV Mother and Infant Protection Program (RSV-MIPP)
From 6 weeks of age	4CMenB (eligibility Aboriginal and Torres Strait Islander infants from 6 weeks to 2 years; Aboriginal and Torres Strait Islander people with specified medical conditions; all non-indigenous people with certain specified medical risk conditions)	
2, 4, 6 months	DTPa-polio-HepB-Hib, pneumococcal, rotavirus (at two and four months of age),	

6 months- < 5 years	Annual Influenza	
12 months	MMR, MenACWY, pneumococcal, 4CMenB (Indigenous)	
18 months	Hib booster, MMRV, DTPa booster	Hep A (Indigenous WA/NT/SA/QLD)
4 years	DTPa/IPV booster	Pneumococcal & Hep A (Indigenous in WA/NT/SA/QLD)
Adolescent vaccination		
All ages	Influenza (adolescents with specified medical risk conditions) Influenza (Aboriginal and Torres Strait Islander adolescents) Pneumococcal (adolescents with specified medical risk conditions)	Meningococcal B (Qld, NT, SA)
12-13 years (Year 7 or age equivalent)	Human papillomavirus (HPV) Diphtheria, tetanus, pertussis (whooping cough)	
14-16 years (Year 10 or age equivalent)	Meningococcal ACWY	
Adult vaccination		
All ages	Influenza (adults with specified medical risk conditions) Influenza (Aboriginal and Torres Strait Islander adults) Pneumococcal (adults with specified medical risk conditions) Shingles (herpes zoster) (adults with specified medical risk conditions)	Hep A (post-exposure) (NSW) Hep B (NSW, Vic, Tas, Qld, ACT) Japanese encephalitis viral vaccination (NSW, Tas, Qld, ACT) Mpox (NSW, Tas, Qld, ACT) Vaccines for Bone Marrow Transplant (BMT) recipients (NSW) Influenza (Qld) Post-exposure rabies (Vic, ACT) Influenza for people aged 5-64 who are not eligible under NIP (WA)
50 years and over	Pneumococcal (Aboriginal and Torres Strait Islander adults) Shingles (herpes zoster) (Aboriginal and Torres Strait Islander adults)	
65 years and over	Influenza (annually) (non-Aboriginal and Torres Strait Islander adults) Shingles (herpes zoster) (non-Aboriginal and Torres Strait Islander adults)	
70 years and over	Pneumococcal (non-Aboriginal and Torres Strait Islander adults)	
Pregnant women	Pertussis (whooping cough) Influenza Respiratory Syncytial Virus (RSV)	
Ongoing	Catch-up Immunisations Eligible people can get catch-up vaccines for free up to age 20, except for the HPV vaccine which is available free up to and including age 25.	MMR catch-up (Tas, Qld, ACT, NSW)

Abbreviations: MMR: Measles, Mumps, Rubella; Men B: Meningitis B; HiB: Haemophilus influenzae type b; MMRV: Measles, Mumps, Rubella, Varicella (chickenpox); DTPa: Diphtheria, Tetanus, Pertussis (acellular); IPV: Inactivated Poliovirus; Hep A: Hepatitis

Immunisation rates for children under the age of five have declined significantly when comparing data from 2020 to 2024. Full vaccination coverage for one-year-olds — defined as the percentage of children who have received all age-recommended vaccines (hepatitis B, diphtheria, tetanus, pertussis [whooping cough], polio, Haemophilus influenzae type b [Hib] and pneumococcal disease³⁰) — has dropped from 94.8 per cent in 2020 to 91.6 per cent in 2024 (Figure 1). Coverage rates for two-year-olds have also declined, from 92.1 per cent to 89.4 per cent (Figure 1).³¹ The proportion of five-year-old children who are fully immunised has fallen from 94.8 per cent in 2020 to 92.7 per cent (Figure 1).³²

Full vaccination coverage for Aboriginal and Torres Strait Islander one-year-olds has dropped from 93.1 per cent in 2020 to 89.2 per cent in 2024 (Figure 2), while coverage for two-year olds declined from 91.2 per cent to 86.7 per cent over the same period (Figure 2).³³ Similar trends were observed for five-year olds, with immunisation rates falling from 97.0 per cent in 2020 to 94.4 per cent in 2024 (Figure 2).³⁴

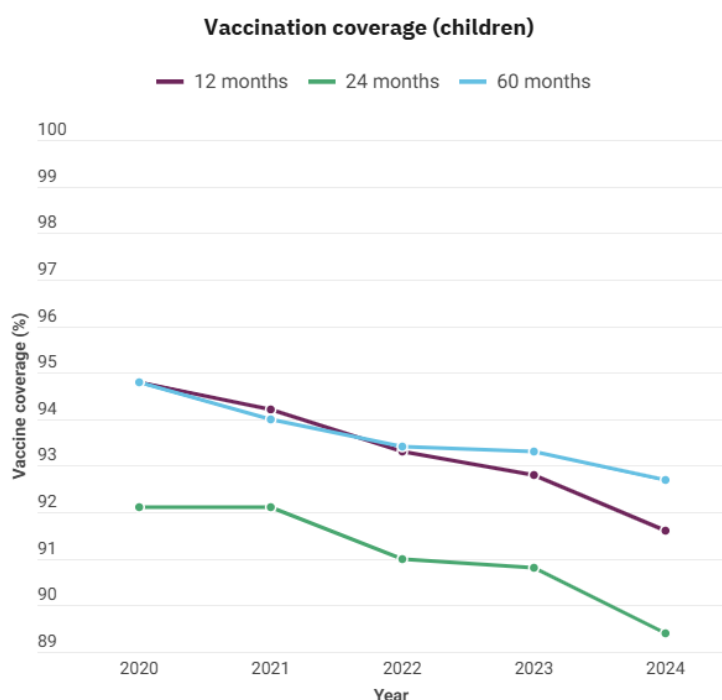


Figure 1: Vaccination coverage among children aged 12, 24, and 60 months in Australia, 2020–2024

The graph illustrates annual vaccination coverage rates for three age groups: 12 months (purple line), 24 months (green line), and 60 months (blue line). The y-axis shows coverage rates ranging from 89 per cent to 100 per cent, while the x-axis spans the years 2020 to 2024. All groups show a gradual decline in coverage over this five-year period.

Data sourced from the National Centre for Immunisation Research and Surveillance Australia, 2025.

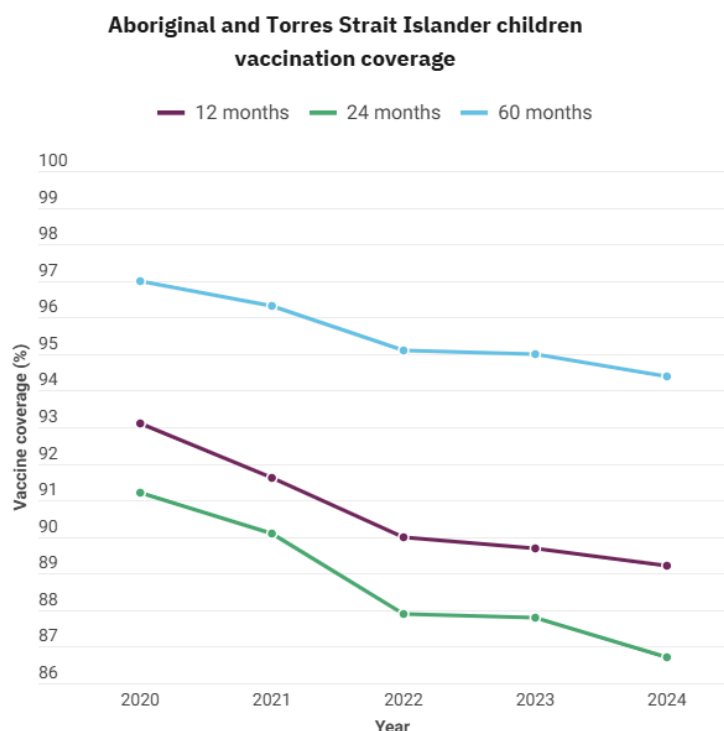


Figure 2: Vaccination coverage among Aboriginal and Torres Strait Islander children by age group, 2020–2024

The graph presents annual vaccination coverage percentages for children aged 12 months (purple line), 24 months (green line), and 60 months (blue line). The y-axis shows coverage rates ranging from 86 per cent to 100 per cent, while the x-axis spans the years 2020 to 2024. A downward trend in coverage is observed across all age groups over this five-year period.

Data sourced from the National Centre for Immunisation Research and Surveillance Australia, 2025.

School-based vaccination programs

All Australian states and territories have school-based immunisation programs. These programs are run by state/territory health departments and delivered either by local councils, Public Health Units, or contracted providers. Table 2 outlines the vaccinations.

Table 2: Summary of school-based vaccination programs in Australia

Age/ Year level	Vaccines offered	Notes
Year 7/8 (ages 11–13 years)	HPV (2-dose schedule), dTpa booster, meningococcal ACWY	Most states deliver through school-based programs; with catch-up options available for absent students.
Year 10/11 (ages 15–16 years)	Catch-up HPV doses (if incomplete), Men ACWY booster (in some states)	Optional catch-up or consent-based programs.

Human Papillomavirus (HPV) is one of the most common sexually transmitted infections in Australia, with certain high-risk strains linked to cervical, anal, and oropharyngeal cancers.³⁵ The HPV vaccine, currently administered as Gardasil®9, provides protection against nine HPV types, including those responsible for the majority of HPV-related cancers and genital warts.³⁶ The HPV vaccine is provided free of charge to all Australian children through the Secondary School Immunisation Program.³⁷ All students in Years 7 and 10 at government and non-government schools across Australia, including homestay students, are eligible to receive the HPV vaccine. Children who are

home-schooled can access the free vaccine through their family doctor or a participating pharmacy (note: a consultation fee may apply).³⁸

The 2024 NCIRS Immunisation Report shows concerning HPV vaccination coverage, with only 81.1 per cent of girls and 77.9 per cent of boys vaccinated (Figure 3) by their 15th birthday — the World Health Organization’s standard assessment milestone age.³⁹ In 2020, 86.6 per cent of girls and 84.9 per cent of boys were vaccinated (Figure 3).⁴⁰ This slightly decreased in 2021 to 86.2 per cent for girls and 84.4 per cent for boys (Figure 3).⁴¹ In 2022, coverage for girls dropped further to 85.3 per cent, while boys saw a slight decrease to 83.1 per cent (Figure 3).⁴² The downward trend continued in 2023, with 84.2 per cent of girls and 81.8 per cent of boys receiving the vaccine (Figure 3).⁴³ This data represents a decline from 2020, with coverage dropping by 5.5 percentage points for girls and 7.0 points for boys being well below the target of 90 per cent HPV vaccination coverage for both boys and girls set out in the Australian Government’s National Strategy for the Elimination of Cervical Cancer.⁴⁴

HPV vaccination coverage also fell among Aboriginal and Torres Strait Islander adolescents — 11.1 percentage points (from 87.8 per cent to 76.7 per cent among girls) and 13.8 percentage points (among boys from 83.0 per cent to 69.2 per cent) for the same time period (Figure 4).⁴⁵ Of concern, the report’s data also showed that 15-year-olds living in socio-economically disadvantaged and remote areas are 5 -10 percentage points less likely to have received one dose of HPV vaccine compared to those living in socioeconomically advantaged areas and major cities — indicating equity is an issue.⁴⁶

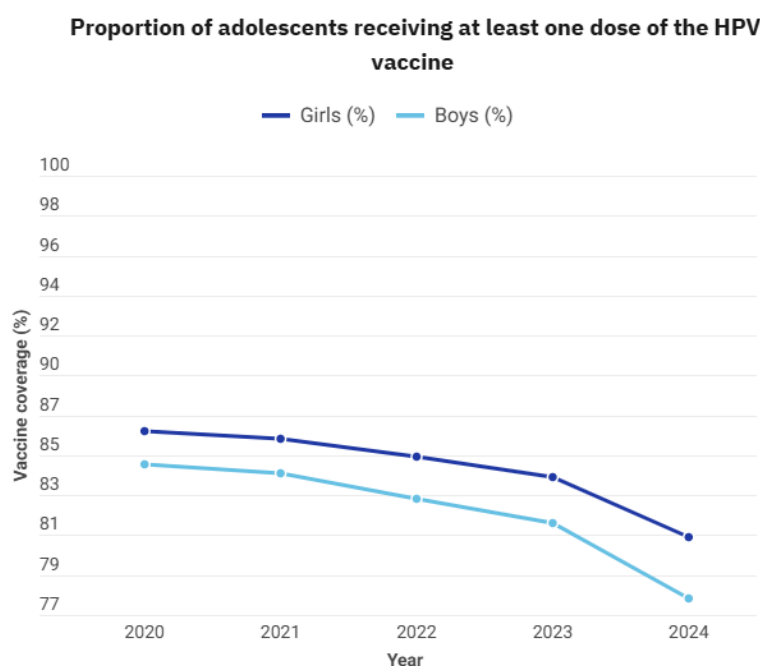


Figure 3: HPV vaccine coverage among adolescents by gender, 2020–2024

The graph illustrates the percentage of adolescents who received at least one dose of the HPV vaccine over a five-year period. Coverage is shown separately for girls (dark blue line) and boys (light blue line). The y-axis represents vaccine coverage rates, ranging from 77 per cent to 87 per cent, while the x-axis spans the years 2020 to 2024. Both groups exhibited a downward trend in vaccine coverage over time.

Data sourced from the National Centre for Immunisation Research and Surveillance Australia, 2025.

Proportion of Aboriginal and Torres Strait Islander adolescents receiving at least one dose of the HPV

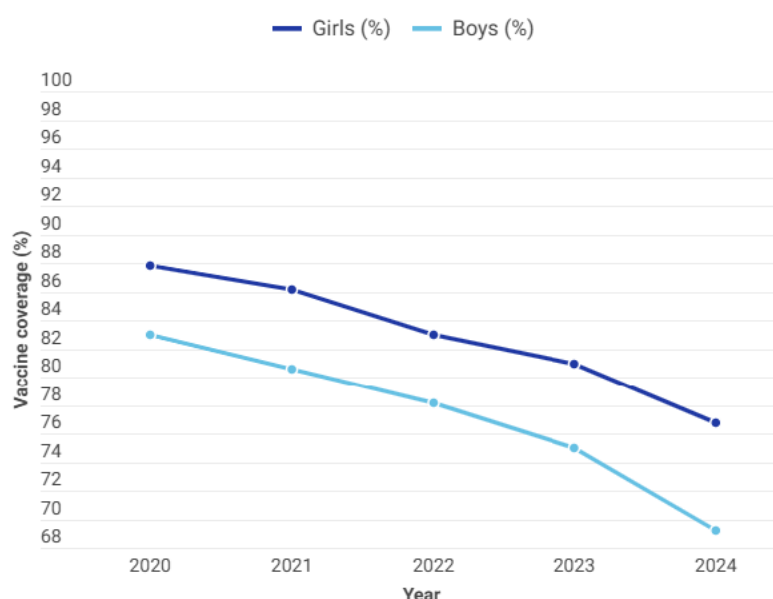


Figure 4: HPV vaccine coverage among Aboriginal and Torres Strait Islander adolescents by gender, 2020–2024.

The graph illustrates the percentage of Aboriginal and Torres Strait Islander adolescents who received at least one dose of the HPV vaccine over a five-year period. Coverage is shown separately for girls (dark blue line) and boys (light blue line). The y-axis represents vaccine coverage, ranging from 68 per cent to 87 per cent, while the x-axis spans the years 2020 to 2024. Both groups exhibited a downward trend in vaccine coverage over time. *Data sourced from the National Centre for Immunisation Research and Surveillance Australia, 2025.*

HPV vaccination uptake among Aboriginal and Torres Strait Islander students is influenced by a complex interplay of cultural, systemic, and logistical barriers — many of which were intensified by the COVID-19 pandemic and further compounded by vaccine hesitancy. The current school-based vaccination program is not fully meet the needs of Aboriginal and Torres Strait Islander communities, as it lacks the flexibility and cultural responsiveness necessary to build trust and engagement. It is further hindered by logistical challenges that make participation difficult.⁴⁷

Whole of life vaccination programs

Respiratory syncytial virus (RSV):

Respiratory syncytial virus (RSV) is a highly contagious respiratory virus that causes acute respiratory infections of the lungs and airways.⁴⁸ RSV can lead to severe illness in babies and young children; however, adults can also become seriously ill from the virus.⁴⁹ As of 2025, three main types of RSV immunisations are available and recommended for different population groups. These are outlined in Table 3, below.

Table 3: Population specific RSV vaccinations

Vaccine	Company	Recommended for	Approval	Accessible through NIP	Price of vaccination
AREXVY	GSK	People aged 75 years and over, First Nations people aged 60 years and over, and adults aged 60 years and over with conditions that increase their risk of severe RSV disease. ⁵⁰	By TGA on 8 January 2024. Approved for: AREXVY is indicated for active immunisation of individuals 60 years and older for the prevention of lower respiratory tract disease caused by respiratory syncytial virus (RSV). ⁵¹ Positive recommendation by PBAC for listing on NIP Nov, 2025	No	\$280-\$300 per dose ⁵²
Abrysvo	Pfizer	Pregnant people between 28–36 weeks of pregnancy (prior to 37 weeks) to protect their baby. ⁵³	By TGA in March of 2024. Approved for: Pregnant people between 24- and 36-weeks' gestation to prevent RSV in infants. Approved by PBAC March 2024.	Yes (pregnant women) No (older patients but PBAC awaiting cost-benefit analysis and data on protection duration)	NIP funded
Beyfortus (nirsevimab) Monoclonal Antibody	Sanofi-Aventis	Infants less than eight months and young children (aged less than 24 months) with high-risk medical conditions. Or infants born to mothers who did not receive	By TGA in November 2023. Approved for: Neonates and infants born during or entering their first RSV season. Children up to 24 months of age who remain	No	Beyfortus (nirsevimab) is available for free to eligible infants and young children through state and territory-funded programs in Australia. ⁵⁶

		a maternal RSV vaccine. ⁵⁴	vulnerable to severe RSV disease through their second RSV season. ⁵⁵		
			PBAC decision deferred (June, 2025)		

Australia recorded 175,923 cases of RSV in 2024 — the highest annual total since the disease became notifiable in 2021.⁵⁷ As at 21 November 2025, alarmingly, 275,060 notifications of RSV were recorded in children under four years of age.⁵⁸ Between 1 January and 21 November 2025, a total of 94,460 persons over the age of 65 years have been diagnosed with RSV.⁵⁹ This number could be significantly reduced when AREXVY becomes available on the NIP.

From 3 February 2025, Abrysvo was listed on the NIP for pregnant people in Australia between 28- and 36-weeks' gestation, with the aim of protecting newborns from severe RSV infection through passive immunity. National data is still being collected and analysed to inform future evaluations.⁶⁰ In contrast, Western Australia's nation-leading RSV immunisation program began on 2 April 2024, making it the first in Australia to offer widespread protection for infants using the antibody nirsevimab (Beyfortus).⁶¹ Recent data from Western Australia highlights the significant benefits of this initiative, with the program leading to a 57 per cent reduction in infant hospitalisations and saving the WA health system an estimated \$6.2 to \$6.9 million in hospital expenses.⁶² With the new Abrysvo immunisation program now in effect, it is hoped rates of RSV in babies will significantly decline in the coming years.

With the launch of Australia's national RSV prevention programs in 2025 — including free maternal vaccination with Abrysvo and targeted infant protection with nirsevimab (Beyfortus) — the integration of vaccination data into surveillance systems has become increasingly important. This combined data will support the evaluation of vaccine effectiveness, help identify gaps in coverage, and inform future policy decisions.

Covid-19 vaccinations

The COVID-19 pandemic was one of the greatest global public health challenges of recent times. While the National COVID-19 Vaccine Program was highly successful — with more than 90 per cent of the population vaccinated with at least two doses of a COVID-19 vaccine by the end of 2021⁶³ — the scale and time pressures involved were immense. The rollout also highlighted disparities in vaccine knowledge, many of which still persist. COVID-19 has remained the leading cause of mortality related to acute respiratory infection from 2023–2025.⁶⁴

Box 3.

The Australian Immunisation Handbook makes the following recommendations for COVID-19 vaccinations:¹

- **Adults aged 18–64 years** without severe immunocompromise are recommended to receive a single primary dose of COVID-19 vaccine. They may consider a further dose every 12 months based on individual preference and a risk-benefit assessment. The risk of severe illness from COVID-19 is low in previously vaccinated, healthy adults.
- **Adults aged 65–74 years** without severe immunocompromise are recommended to receive a single primary dose of COVID-19 vaccine, with further doses every 12 months. They may also consider doses every six months based on a risk-benefit assessment. A dose every six months is most likely to benefit people with medical risk conditions and/or those living in residential care facilities.
- **All adults aged ≥75 years**, including aged care residents, are recommended to receive a single primary dose of COVID-19 vaccine, followed by further doses every six months. The risk of severe illness increases significantly with advancing age.

Despite national recommendations (Box 3), as at 30 September 2025, only 667,300 individuals aged 75 and over (32.1 per cent) had received a COVID-19 vaccination within the previous six months.⁶⁵ This reflects a significant

shortfall in vaccine uptake among older Australians (70+) — who remain the most at risk from COVID-19 — with 42,997 cases reported in this age group between 1 January and 27 July 2025.⁶⁶ Evidence suggests some older Australians harboured concerns about vaccine safety due to underlying comorbidities.⁶⁷ This was especially true for individuals with allergies, likely influenced by early reports of anaphylactic reactions to the Pfizer vaccine.⁶⁸ In such cases, reassurance from medical professionals would have been the most effective means of addressing these concerns and encouraging vaccination.

Patients with a history of incomplete COVID-19 vaccination who were admitted to hospital with COVID-19 infection have been shown to have more Intensive Care Unit (ICU) admissions and higher rates of endotracheal intubation, mechanical ventilation, and mortality.⁶⁹ A comparison of clinical outcomes from other studies involving individuals fully vaccinated from COVID-19 showed these patients required less supplemental oxygen and mechanical ventilation.⁷⁰ They also experienced fewer hospitalisations, milder forms of the disease, and lower mortality rates^{71,72} — with one study reporting complete vaccination was associated with a 70 per cent reduction in the mortality rate among hospitalised COVID-19 patients.⁷³

Influenza vaccinations

At the time of writing, declining influenza vaccination rates are raising significant public health concerns, with high hospitalisation rates observed among unvaccinated individuals. From late June to early July 2025 national hospital admissions for influenza increased by 50 per cent in just two weeks — placing considerable strain on healthcare facilities.⁷⁴ Queensland alone has reported 43,975 cases, with 90 per cent of confirmed cases occurring in individuals who were not vaccinated.⁷⁵ Sadly, children under five have recorded the highest per capita influenza rate in the state, with more than 440 hospitalisations this year.⁷⁶ From the start of the year to August 2025 there were 1,057 deaths involving influenza, compared to 882 in 2024 and 423 in 2023, and 1,005 in 2019.⁷⁷

Historical influenza vaccine coverage (%) at end of year, by age group, Australia, 2020–2024

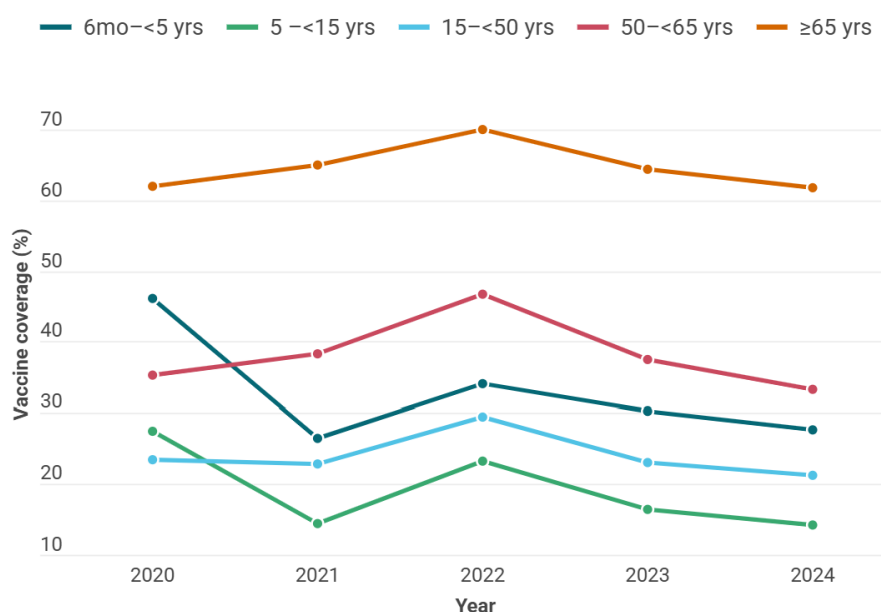


Figure 5: Influenza vaccination coverage in Australia by age group, 2020–2024

The graph presents end-of-year vaccination coverage percentages across five age groups: six months to <5 years (dark green), five to <15 years (light green), 15 to <50 years (blue), 50 to <65 years (red), and ≥65 years (orange). Coverage trends are shown annually from 2020 to 2024.

Data sourced from the National Centre for Immunisation Research and Surveillance (NCIRS), Australia, 2025.

Between 2020 and 2024, influenza vaccination rates declined across all age groups, with the most significant drops observed among younger populations. Among children aged six months to under five years, the vaccination rate fell from 46.1 per cent in 2020 to 27.6 per cent in 2024⁷⁸ — a substantial decrease of 18.5 percentage points (Figure 5). Similarly, the five to under 15 years age group saw a 13.1 percentage point drop, from 27.4 per cent in 2020 to 14.3 per cent in 2024 (Figure 5).⁷⁹ Among individuals aged 15 to under 50 years, the decline was more modest, with rates decreasing by 2.2 percentage points over the same period, from 23.4 per cent to 21.2 per cent (Figure 5).⁸⁰ Adults aged 50 to under 65 years experienced a 1.9 percentage point drop, from 35.2 per cent in 2020 to 33.3 per cent in 2024 (Figure 5).⁸¹ The smallest decline occurred in the ≥65 years age group, where vaccination rates decreased only slightly — from 61.9 per cent in 2020 to 61.7 per cent in 2024⁸² — indicating relatively stable uptake among older adults (Figure 5). These trends highlight a concerning reduction in flu vaccination coverage, particularly among children and adolescents.

A similar decline in influenza vaccination rates is evident among Aboriginal and Torres Strait Islander people; however, the trend is more pronounced. For children aged six months to under five years, vaccination coverage dropped from 43 per cent in 2020 to 21 per cent in 2024 — a steep decline of 22 percentage points (Figure 6).⁸³ Among those aged five to under 15 years, rates fell by 19.9 percentage points, from 33.1 per cent to 13.2 per cent (Figure 6).⁸⁴ The 15 to under 50 age group saw a 13.9 percentage point decrease, with coverage dropping from 33.3 per cent to 19.4 per cent (Figure 6).⁸⁵ Adults aged 50 to under 65 experienced a 17.3 percentage point decline, from 56.3 per cent to 39.0 per cent, while those aged 65 and over saw a 10 percentage point drop, from 71.9 per cent to 61.9 per cent (Figure 6).⁸⁶ These figures highlight a more extreme and concerning downward trend in influenza vaccination uptake among Aboriginal and Torres Strait Islander communities across all age groups.

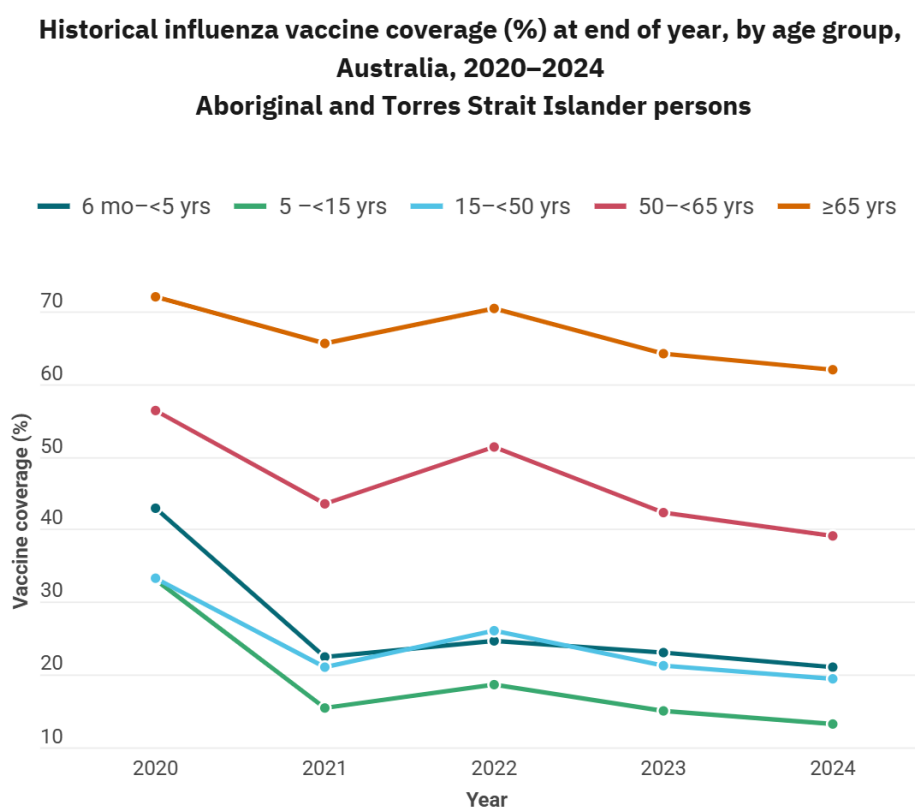


Figure 6: Influenza vaccine coverage among Aboriginal and Torres Strait Islander persons in Australia by age group, 2020–2024

The graph presents end-of-year vaccination coverage percentages across five age groups: six months to <5 years (dark green), five to <15 years (light green), 15 to <50 years (blue), 50 to <65 years (red), and ≥65 years (orange). Coverage trends are shown annually from 2020 to 2024.

Data sourced from the National Centre for Immunisation Research and Surveillance (NCIRS), Australia, 2025.

Preliminary data from 2025 suggest the downward trend in influenza vaccination rates is continuing. As at September 7, 2025, 25.7 per cent of children under five years of age have been vaccinated⁸⁷ — a drop of 1.9 percentage points from 2024 (Figure 7). Among those aged five to under 15, the rate has increased by 0.2 per cent from 2024 to 14.5 per cent,⁸⁸ while the 15 to under 50 age group has seen a 0.4 percentage point decrease, now sitting at 20.8 per cent (Figure 7).⁸⁹ For adults aged 50 to under 65, coverage has declined by 1 percentage point to 32.3 per cent,⁹⁰ and for those aged 65 and over, the rate has dropped by 1.2 percentage points to 60.5 per cent (Figure 7).⁹¹ Similarly, preliminary 2025 data for Aboriginal and Torres Strait Islander people suggests this downward trend is continuing, with vaccination rates as at September 7, 2025, being 17.8 per cent for children under 5, 11.6 per cent for those aged 5 to under 15,⁹² 17.7 per cent for the 15 to under 50 group,⁹³ 36.4 per cent for those aged 50 to under 65,⁹⁴ and 59.6 per cent for those aged 65 and over (Figure 8).⁹⁵ While these figures indicate a further decline across all age groups, it is important to note 2025 data is still being collected and may not reflect the final vaccination coverage for this year.

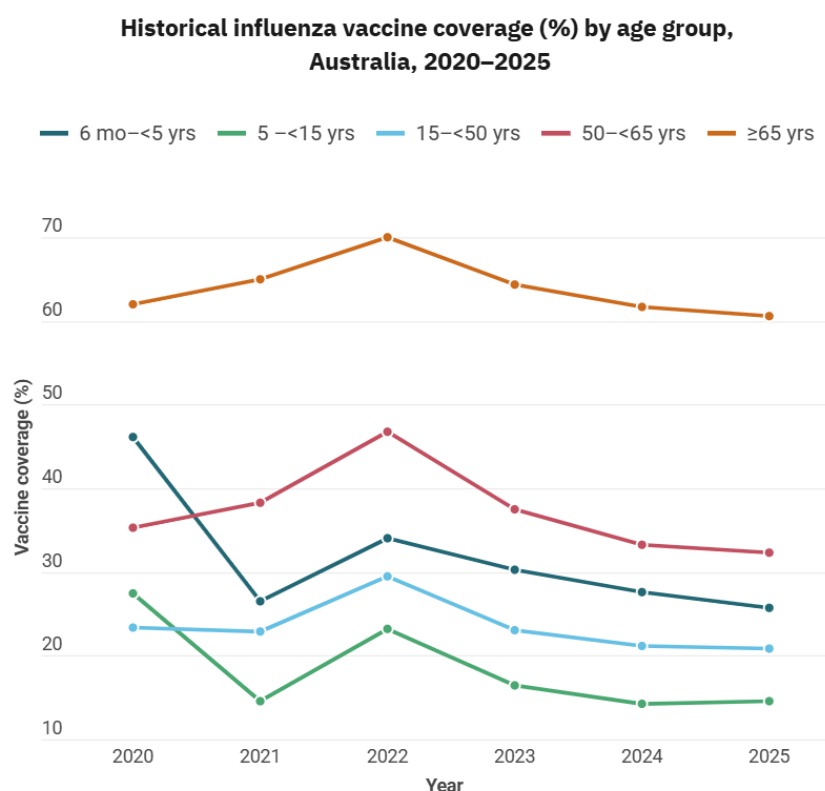


Figure 7: Influenza vaccine coverage by age group in Australia, 2020–2025

The graph displays annual end-of-year vaccine coverage percentages across five age groups: six months to <5 years (dark green), five to <15 years (light green), 15 to <50 years (light blue), 50 to <65 years (red), and ≥65 years (orange). Coverage trends show a general decline over time, with the highest uptake consistently among those aged ≥65 years and the lowest among children aged five to <15 years.

Data sourced from the National Centre for Immunisation Research and Surveillance (NCIRS), Australia, 2025.

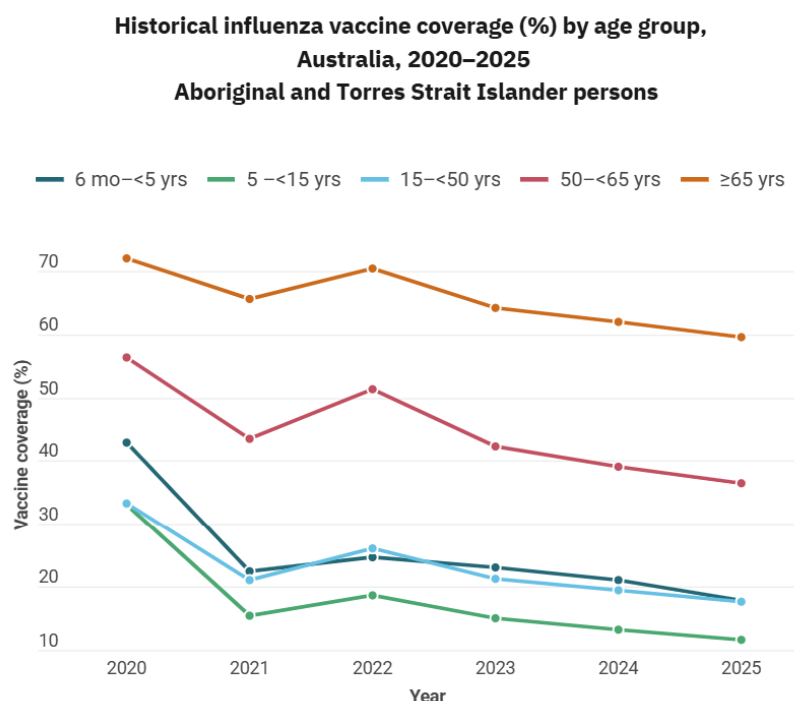


Figure 8: Influenza vaccine coverage among Aboriginal and Torres Strait Islander persons by age group in Australia, 2020–2025

The graph displays annual end-of-year vaccine coverage percentages across five age groups: six months to <5 years (dark green), five to <15 years (light green), 15 to <50 years (light blue), 50 to <65 years (red), and ≥65 years (orange). Coverage trends show a general decline over time, with the highest uptake consistently among those aged ≥65 years and the lowest among children aged six months to <5 years.

Data sourced from the National Centre for Immunisation Research and Surveillance (NCIRS), Australia, 2025.

The drop in vaccination rates is particularly concerning given that, this year, influenza cases have reached their highest level in almost a quarter of a century.⁹⁶ Between 1 January 2025 to 21 November 2025, there were 447,041 laboratory-confirmed influenza cases reported in Australia, with over 100,000 additional cases compared to 2024 (365,634).⁹⁷ From 1 January 2025 to 30 April 2025 there has been a 58.6 per cent increase in influenza cases (70,279) compared with same period of 2024 (44,320 cases) and more than at the same point of any year since the NNDSS began collecting data in 1991.⁹⁸

Geographic clustering

Geographic clustering refers to describe trends that occur in concentrated pockets or focal areas. Given Australia's vast geography, these pockets within the population pose a significant community risk for disease outbreaks. Measles and pertussis (whooping cough) outbreaks in Australia continue to emerge in geographically clustered areas, largely reflecting regions with lower vaccination coverage. Furthermore, this leaves the community vulnerable to the resurgence of extremely dangerous VPDs, including measles, whooping cough, and mumps. For example, measles requires very high vaccination coverage to prevent outbreaks, and even small declines can result in significant occurrences.⁹⁹ Although Australia officially eliminated measles in March 2014, outbreaks have occurred in multiple states and territories this year. Between 1 January and 22 November 2025, 158 people have been diagnosed with measles in Australia.¹⁰⁰ Most were young adults aged 20 to 49 years who were either unvaccinated, unsure of their vaccination status, or had recently travelled overseas.¹⁰¹ This exceeds the total number of cases for all of 2024 by more than 100.¹⁰²

Low vaccination rates significantly increase the risk of both epidemic and pandemic outbreaks. When fewer individuals are immunised, contagious diseases can spread more easily within communities, allowing pathogens to persist and circulate over time, potentially leading to endemic conditions. Moreover, the lack of widespread

immunity creates ideal conditions for new variants to emerge and spread rapidly, which may escalate into epidemics. This not only endangers public health but also places immense strain on economies and healthcare systems.

In 2024, more than 57,000 cases of whooping cough were reported in Australia — the highest yearly total since 1991.¹⁰³ This upward trend has continued into 2025, with more than 23,000 cases already recorded.¹⁰⁴ Lower vaccination rates are directly linked to higher rates of illness, hospitalisation, and death from preventable diseases. Health experts warn that if current trends continue, fatalities from illnesses such as measles and meningococcal infections may become inevitable.¹⁰⁵

While national immunisation rates may be high overall, gaps in community uptake leave certain populations vulnerable to localised transmission and focal outbreaks. These patterns underscore the importance of addressing vaccine hesitancy, improving equitable access to immunisation services, and ensuring consistent coverage across all regions to prevent the resurgence of VPDs.

Between 2021 and 2024, several regions in Queensland experienced a steady decline in the vaccination among two-year-olds, with varying degrees of change. The Gold Coast Hinterland saw a steady decrease from 82.2 per cent¹⁰⁶ in 2021 to 76.4 per cent in 2024, marking a total drop of nearly six percentage points (Figure 9).¹⁰⁷ Noosa followed a similar downward trend, falling from 85.5 per cent to 77.3 per cent over the same period (Figure 9).¹⁰⁸¹⁰⁹ Maroochy experienced a pronounced decline, dropping more than five percentage points from 87.8 per cent in 2021¹¹⁰ to 82.6 per cent in 2024 (Figure 9).¹¹¹ Gold Coast North maintained the highest levels throughout; however, it also decreased by more than three percentage points, from 89.6 per cent¹¹² to 86.4 per cent (Figure 9).¹¹³ Broadbeach and Coolangatta also showed consistent declines in vaccination coverage, with Broadbeach falling from 87.6 per cent to 83.1 per cent¹¹⁴, and Coolangatta from 89.0 per cent to 82.7 per cent (Figure 9).¹¹⁵

Similarly, Northern NSW recorded some of the lowest childhood vaccination rates in Australia across all age groups (one-, two-, and five-year-olds). Specifically, vaccination rates are 81.8 per cent for one-year-olds, 79.2 per cent for two-year-olds, and 83.7 per cent for five-year-olds.¹¹⁶ Furthermore, in the Byron Shire, only 68.2 per cent of one-year-olds are fully immunised against COVID-19.¹¹⁷

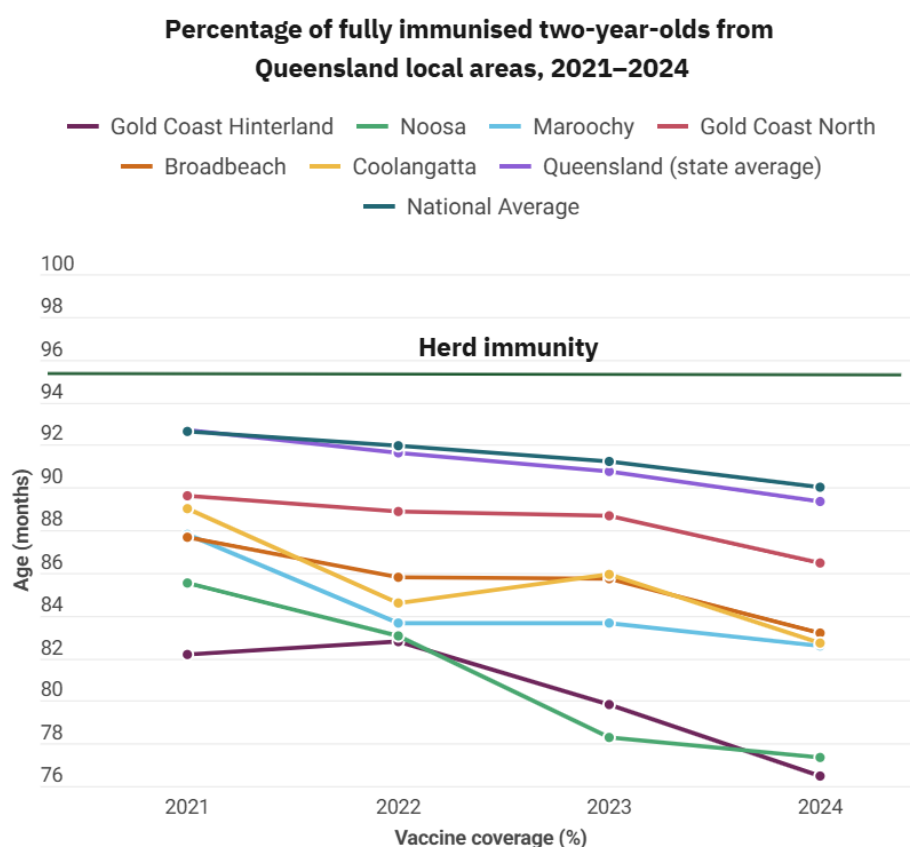


Figure 9: Vaccination coverage among two-year-olds across selected Queensland local areas (2021–2024)

The graph illustrates the percentage of fully immunised children by age (in months) across several Queensland regions: Gold Coast Hinterland (dark purple), Noosa (green), Maroochy (light blue), Gold Coast North (red), Broadbeach (orange), Coolangatta (yellow), along with the Queensland state average (light purple) and the national average (teal). The x-axis represents vaccine coverage (%), while the y-axis indicates age in months. A horizontal line at 96 per cent marks the herd immunity threshold.

Data sourced from the Australian Immunisation Register Coverage reports, 2021 and 2024.

This is a significant concern for these regions, as they all fall considerably below both the national and state averages — figures that are themselves below the vaccination coverage required to maintain herd immunity. This significant lag in meeting national targets has been attributed, in part, to the prevalence of alternative lifestyle choices, where vaccine hesitancy is often rooted in philosophical or natural health beliefs.¹¹⁸ These communities may follow non-standard approaches to healthcare and expressing scepticism toward pharmaceutical interventions, including routine childhood immunisations.

Compounding this issue is the phenomenon of vaccine fatigue — a growing sense of burnout and disengagement following the intense and prolonged COVID-19 vaccination campaigns.¹¹⁹ Many individuals report feeling overwhelmed by the volume of information, repeated messaging, and the perceived pressure to comply with evolving vaccine schedules. This fatigue has led to a decline in motivation to maintain routine immunisations, especially among those who are already somewhat ambivalent or mistrustful of mainstream health directives. Together, these factors have created a complex public health challenge in the region, requiring targeted outreach and culturally sensitive engagement strategies to rebuild trust and improve vaccination uptake.

Box 4.

Case study: the economic impact of influenza

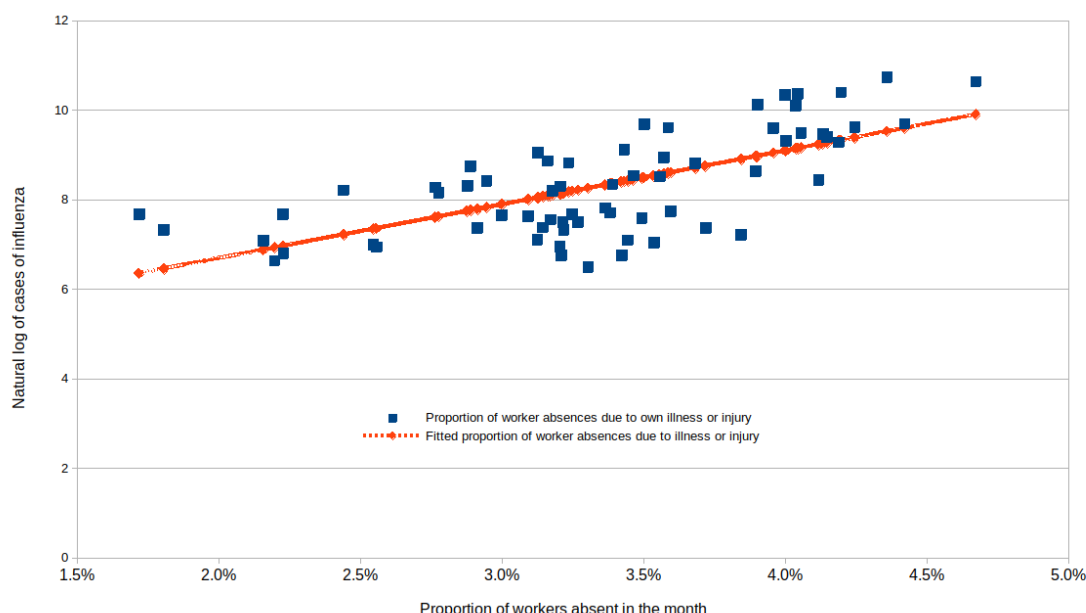
Influenza is a major contributor to illness and workplace absenteeism within the Australian population. Despite ongoing public health efforts, the complete eradication of influenza remains unlikely, and it is expected to persist as a significant health concern for the foreseeable future. However, the severity and spread of influenza can vary considerably from year to year. The COVID-19 pandemic — and the control measures implemented to mitigate its effects — had a profound impact on influenza circulation, as well as on most other respiratory viruses, nearly halting their transmission altogether. More recently, however, fatigue has set in regarding both basic hygiene practices and the willingness to isolate from workplaces and social gatherings when unwell.

Widespread vaccination uptake has been shown to reduce transmission, lessen the severity of illness, and alleviate the overall burden on individuals and the healthcare system.

An important question to consider is: to what extent does influenza affect the Australian economy? To explore this, the AMA conducted a regression model analysis examining the proportion of workers reporting absences from work due to personal illness or injury on a monthly basis. By comparing these trends with the number of laboratory-confirmed influenza cases, it is possible to estimate the economic and productivity impact of influenza-related work absenteeism. For this analysis, we compared 'baseline influenza years' to 'bad influenza years'. Baseline years were defined as those with fewer than 50,000 recorded influenza cases, while bad influenza years were defined as those with more than 125,000 laboratory-confirmed cases among the primary working-age population (15–69 years). In a typical baseline year, 3.15 per cent of workers take sick leave each month. In a bad influenza year, this rises to about 3.74 per cent — an increase of 0.59 percentage points. This increase is equivalent to about 135,000 working-age individuals confirmed to have influenza, although this is likely an underestimate due to limited testing and case confirmation. Our modelling also showed influenza is a consistent driver of sick leave. Over the past decade (excluding the pandemic years), there were no months with high sick leave and low flu cases — or vice versa.

Overall, the analysis demonstrated that although influenza is not the only reason people take sick leave, it plays a statistically significant role ($p\text{-value} < 0.001$), particularly during severe outbreaks. This has a significant economic impact. Using average weekly earnings for ordinary time¹ to estimate the daily average wage lost, the total additional wages lost in a 'bad year' are about \$948 million — compared to maintaining influenza cases within a reasonable 'baseline year'.

Based on the analysis performed, this is a conservative estimate. For example, we know many workers also take leave to care for others. These figures reflect known lost workdays for individuals with access to sick leave; however, casual workers — who are also likely to be impacted — are not included in these results. Furthermore, it is likely many of the days taken as carers leave would also be influenced by influenza cases. Carers leave accounts for about half the number of days taken for personal injury or illness. If influenza cases were to equally affect those with caring responsibilities, then casual workers and carers combined could contribute an additional estimated \$500 million per year in lost



Economic modelling of the impact of worker absenteeism due to personal illness or injury

Figure 10: A regression model analysis examining the proportion of workers reporting absences from work due to personal illness or injury on a monthly basis.

Why are vaccine rates declining, and what can governments do to boost coverage?

Overcoming vaccine hesitancy

Vaccine hesitancy has been identified by the World Health Organization (WHO) as one of the top ten threats to global health, due to its potential to undermine progress in controlling VPDs.¹²⁰ The COVID-19 pandemic disrupted many areas of healthcare and had a profound impact on how vaccines were delivered and received. Moreover, it presented significant challenges to public trust in health authorities, government institutions, and science.¹²¹ This distrust has contributed to confusion, the spread of misinformation, and, ultimately, increased vaccine hesitancy.¹²² Vaccine hesitancy, which surged during the COVID-19 pandemic, continues to impact public health by undermining confidence in vaccines for other diseases. A major contributor to this hesitancy is concern over vaccine safety, fuelled by the rapid development and emergency rollout of COVID-19 vaccines, and often amplified by conflicting media narratives. This has led to a broader erosion of trust in health authorities and government institutions. Trust in healthcare was further undermined by the perceived closeness between healthcare professionals and government decision-making during the pandemic, raising concerns about transparency and the independence of medical advice — concerns which persist to this day. This was especially evident during the daily reporting of COVID-19 case numbers, when the constant messaging around isolation and staying indoors contributed to a pervasive atmosphere of fear. Similarly, the widespread circulation of misinformation and disinformation about vaccinations on social media is a major concern, as it exacerbates vaccine hesitancy and undermines public trust in health professionals. An example of this is the widely debunked claim that the measles, mumps, and rubella (MMR) vaccine causes autism — a claim that has been repeatedly and thoroughly refuted by scientific evidence yet continues to be a major concern for some parents.¹²³

Many individuals question the necessity of vaccines altogether, noting that people still contracted COVID-19 despite being vaccinated — misunderstanding the role of vaccines in reducing severity rather than preventing all infections. Furthermore, vaccine fatigue has emerged as a significant barrier: repeated calls for boosters and ongoing public health campaigns during the pandemic have left many feeling overwhelmed and disengaged from vaccination efforts. Additionally, barriers such as limited access to vaccination services and logistical challenges have further discouraged uptake. For some, vaccination has simply fallen off the list of priorities amid competing life demands —

especially in the absence of immediate threats. For many parents — particularly single parents, those working multiple jobs, or households where both parents are employed — the cost of a vaccination appointment, limited clinic hours, and the need to take time off work present significant obstacles to accessing immunisation services. Together, these factors have created a ripple effect, reducing immunisation rates for diseases such as measles, influenza, and HPV, and posing a renewed risk of outbreaks that were once under control.

Prioritising prevention and protection in health technology assessments

Relationship between vaccination and antimicrobial resistance

Vaccination is the most effective tool in reducing vaccine-preventable illness. As coverage declines, infection rates rise, leading to increased and often inappropriate antibiotic use and, consequently, a higher risk of resistance development. This underscores the urgent need to maintain and expand vaccination programs as a key strategy in the fight against antimicrobial resistance.

Scientific advancements have led to the development of new vaccine technologies. These encompass various methods for creating vaccines that primarily focus on how they stimulate an immune response.¹²⁴ As these innovations emerge, appropriate regulations and recommendations are needed to guide their integration into the Australian healthcare system. Vaccination approvals for COVID-19 were accelerated to ensure rapid public access through unprecedented approaches, including the deliberate bypassing of the usual pathway of Pharmaceutical Benefits Advisory Committee (PBAC) consideration, PBS approval, and listing onto the NIP. The TGA introduced provisional approval during the pandemic to enable early access to promising vaccines based on preliminary efficacy and safety data, with a requirement for the ongoing submission of longer-term data. Notably, in the post-pandemic period, both Pfizer and Moderna expressed frustration over difficulties in getting their vaccines listed on the NIP. The slow pace of approvals also affected their applications for anti-viral medications.

The Accelerating Access to the Best Medicines for Australians Now and into the Future Review¹²⁵ highlights the importance of flexible financing and purchasing approaches in health technology. The final report emphasises the need to support diverse strategies that enhance the speed and accessibility of health technologies for patients, while also adopting a more balanced stance on risk and uncertainty. The review notes that, in some cases, moving beyond the traditional ‘cost per unit’ model may better reflect the value and benefits of health technologies and meet the needs of various stakeholders.¹²⁶ It also acknowledges that decisions to fund new health technologies are made within the broader context of the government’s overall healthcare and non-healthcare budget priorities.

Accelerating new vaccine listings on the NIP

Australia’s NIP has played a valuable role in protecting individuals from VPDs, reducing disease transmission within the community, and — importantly — promoting equitable access to vaccines across all age groups. However, partially due to sponsor-PBS pricing negotiations, there is often a time lapse between PBS approval and NIP listing. Unfortunately, this delay contributes to vaccine inequity. A case in point is the RSV vaccine AREXVY. While AREXVY (sponsor: GSK) was supported by the PBAC in 2024, the vaccine has only now (at the November 2025 PBAC meeting) been recommended for NIP listing. ATAGI recommended the vaccine for over 75-year-olds; however, it is currently available to older patients at a cost of at least \$280. For many pensioners, this price is out of reach. In some cases, state and territories have allocated budgets to purchase vaccines that are not listed on the NIP. This greatly assists in managing localised outbreaks; however, it has also led to inequities and, in some cases, a “borrowing” system between jurisdictions to ensure community access. There is hope for improvement as the NIP takes a life-course approach to vaccination.

Future policy considerations for governments

Improving data integrity in the Australian immunisation register

The Australian Immunisation Register (AIR) is a national database that records vaccines administered to all individuals in Australia.¹²⁷ The register has faced criticism over concerns regarding the reliability and completeness of its data. Research has highlighted cases in which vaccination records were incorrectly categorised, resulting in children being mistakenly flagged as overdue for immunisations, despite having received them on time.¹²⁸ A critical

lever for boosting Australian vaccination rates is enhancing the accuracy, timeliness, and transparency of data within AIR to ensure high-quality, reliable information. Accurate AIR data is essential for enabling health authorities to monitor vaccination coverage, assess the effectiveness of immunisation programs, and respond swiftly to outbreaks by identifying geographic areas or population groups at risk. Any inaccuracies or gaps in the register can lead to misclassification of vaccination status, delays in care, and misinformed policy decisions — ultimately undermining the effectiveness of Australia's immunisation strategies. Therefore, ensuring the integrity of AIR data is essential for safeguarding individual health and supporting national disease prevention efforts. In addition, as the Australian Centre for Disease Control (CDC) comes to the fore on 1 January 2026, data interoperability will be critical. The Australian CDC will serve as a critical lynchpin in helping Australia prepare for public health emergencies through a national public health surveillance system and strengthened capabilities in One Health and health security.

The development of a real time interactive immunisation dashboard

To support informed decision-making and enhance public health outcomes, it is essential to progress the development of a comprehensive, real-time, interactive dashboard that tracks immunisation coverage across all Australian Government-funded vaccines (as listed on the NIP), including childhood immunisations and seasonal vaccinations such as influenza and COVID-19 boosters. Such a dashboard would provide timely and transparent insights into vaccination uptake across different demographics and regions, enabling health authorities to identify gaps in coverage and respond proactively. This dashboard would serve as a critical tool for identifying regions and population groups where vaccination coverage is particularly low, enabling health authorities to pinpoint areas of concern and take immediate, targeted action. By providing granular, up-to-date data, the dashboard would support rapid responses to emerging gaps in coverage, help prevent outbreaks of VPDs, and ensure that immunisation programs are equitable, efficient, and responsive to community needs. For hospitals, access to this timely and granular data would support better resource planning, reduce the risk of VPD outbreaks, and help anticipate seasonal surges in patient demand. By integrating data from various sources and presenting it in an accessible format, the dashboard would empower policymakers, healthcare providers, and the public with actionable information to improve immunisation strategies and ensure equitable access to vaccines nationwide.

Partnering with communities and trusted champions to drive inclusive immunisation efforts

The importance of collaboration with communities and priority groups in boosting vaccination efforts is a central focus of the [National Immunisation Strategy](#) and aligns with shared policy priorities of the AMA. In particular, the strategy highlights the need for inclusive, community-led approaches to improve immunisation outcomes. The strategy also emphasises the importance of working closely with trusted local champions, as this has proven to be more effective than broad media campaigns — particularly in building trust, encouraging vaccine acceptance, and reducing vaccine hesitancy. This is especially crucial in culturally diverse communities, and Aboriginal and Torres Strait Islander communities. Additionally, consultation with peak bodies and advocacy groups, including those representing the disability sector, professional organisations, and consumer groups, further strengthens immunisation strategies and policy development. The AMA supports working closely with community and local champions,^{129,130} as well as community-led health organisation such as National Aboriginal Community Controlled Health Organisation (NACCHO). It is essential the government collaborates with these organisations and trusted local champions to boost vaccination rates through coordinated, community-driven efforts.

Optimising vaccination delivery through funding reform and team-based care

The National Immunisation Program Vaccinations in Pharmacy (NIPVIP) Program is an Australian Government initiative that allows eligible individuals (aged five years and over) to receive NIP vaccines at pharmacies with no out-of-pocket costs. Under the NIPVIP, pharmacies currently receive \$20.05 for each NIP vaccine administered. However, as the scheme is indexed, this amount continues to increase.¹³¹ For NIP vaccines administered at a GP clinic, a standard consultation fee — typically either a Standard Level A (\$19.60) or Standard Level B (\$41.40) consultation — is applied. This fee is time-based and does not vary with the number of vaccines given during the visit. In contrast, pharmacies charge a separate fee for each vaccination administered. This fee is paid directly to the pharmacy and is not based on consultation time.

Practice nurses working in general practice are not permitted to administer NIP vaccinations without the direct involvement of a GP. This arrangement creates inefficiencies in workflow, complicates appointment availability, and underutilises the skills of qualified nurses who are trained and certified to deliver vaccinations safely. The restriction

also increases operational costs by tying up GP time that could be better spent on complex care and may hinder public health efforts by reducing timely access to immunisations.

Practice nurses are a trusted and consistent presence in general practice, often forming the foundation of long-term patient relationships. While fee-for-service remains the foundation of general practice funding, the AMA supports the introduction of blended funding arrangements that incentivise collaborative care through nurse and allied health MBS items linked to practices for specific activities such as immunisation and preventive health checks. These models allow practices to tailor services to local community needs while improving financial stability and flexibility. An appropriately designed blended funding model is essential to support the integration of nurses and other health professionals into GP-led teams. While GPs currently operate under a blended model that leans heavily on MBS income, a reversed model for nurses, anchored in block funding through the Workforce Incentive Program (WIP), complemented by targeted MBS items could better reflect their role in team-based care. This would provide practices the financial stability to employ nurses at a competitive hourly rate, while enabling flexibility through claimable services for immunisation.

The AMA makes the following recommendations to improve the role of practice nurses in general practice immunisation:

- (1) Align the funding model in general practice clinics so the benefit is provided on a per-vaccine basis, as is currently the case in pharmacies
- (2) Support GP practice nurses to administer vaccinations with appropriate authorisation without requiring simultaneous GP review. Note that on-site GP presence remains for management of adverse reactions.
- (3) Establish a standard Medicare billing item for vaccinations administered to individuals over the age of six. This item should be accessible to all qualified immunisation providers — including doctors, nurses, and pharmacists — across all healthcare settings.

Boosting immunisation rates through the AMA's Modernising Medicare

Until recently, the current basic GP item structure — Level A, Level B, Level C, and Level D — had barely changed since the advent of Medicare. The only minor change was the recent addition of Level E for consultations of more than 60 minutes in length. A modern Medicare needs to recognise the changing nature of general practice and the need to have conversations with patients who are confused or hesitant about vaccinations. We also need to attract more GPs and support them in treating people at all stages of their lives, incorporating vaccination with child development milestones and protecting the elderly with seasonal vaccinations. This would lead to a reduction in avoidable hospital admissions. Read the [AMA's plan to Modernise Medicare](#).

Vaccinations for under five-year-olds must remain in general practice

In Australia, children aged five years and older can access influenza vaccinations at their local community pharmacy. However, in Queensland — and from 7 July 2025, in South Australia — infants and children aged six months and older can also be vaccinated at community pharmacies.^{132,133}

It is the AMA's position that vaccination for children under five years of age must remain a core function of general practice, which is uniquely positioned to deliver comprehensive, child-centred care. Vaccination is not an isolated intervention but a vital component of whole-of-child development and is therefore best delivered in a setting that understands and supports the broader health and wellbeing of the child. The AMA believes that a core policy priority for all governments should be a strong focus on the first 2,000 days of a child's life, to ensure optimal developmental health and give every child the best start in life. A key part of this foundation is ensuring that childhood immunisation remains within general practice.

General practice is the only setting where essential early childhood health checks — such as developmental assessments, growth monitoring, and family health support — can be conducted alongside immunisation and continuity of care. Importantly, childhood immunisation appointments enable GPs to provide other services alongside vaccination. These include addressing parental concerns, conducting developmental assessments and management, offering nutritional guidance, and providing parenting assessment and education — services that cannot be delivered in a pharmacy setting. Moreover, GPs play a pivotal role in the early recognition of health issues

and the identification of at-risk children and young people. If vaccinations are moved out of general practice, these critical opportunities for early detection and intervention may be lost.

Additionally, the AMA is concerned that broadening access to childhood immunisation locations would dilute the accountability for ensuring population immunisation is up to date. General practice has a strong track record, and in fact is accredited according to its ability to provide recalls and reminders for activities such as immunisation. Diluting this through broader streams of access would have a negative impact on rates of immunisation.

The power of primary care

In addition to the benefits of delivering vaccinations to children, GPs provide the vast majority of vaccinations to adults¹³⁴ — often identified opportunistically during consultations for other health concerns. This situation allows GPs to identify missed vaccines, assess individual risk factors, and initiate timely protection. This approach supports a holistic health conversation, where immunisation is discussed alongside lifestyle, chronic disease management, and screening. Unlike pharmacies, which typically offer vaccinations as a transactional service, general practices provide continuity of care and a trusted clinical relationship. This environment fosters informed decision-making, addresses vaccine hesitancy, and ensures that immunisation is part of a comprehensive strategy to maintain long-term health. In 2020, GPs delivered 67 per cent of all influenza vaccines,¹³⁵ with the number of influenza vaccinations in March and April of that year being three times higher than during the same period in the previous year, and almost nine times higher than in 2018.¹³⁶

The AMA notes the National Immunisation Strategy 2025–2030 focuses on expanding the immunisation workforce, including through community pharmacies — an initiative that is already underway. Despite expanded access to immunisation services in Australia, including the growing role of pharmacists in administering vaccines, national vaccination coverage (as described above) has continued to decline across all groups in recent years. These trends suggest the current challenge is not one of access or convenience, but of confidence — underscoring the importance of targeted efforts to overcome vaccine hesitancy and misinformation. Pharmacies are not equipped to address the nuanced concerns that hesitant individuals may have. In contrast, GPs are uniquely positioned to play a pivotal role in reversing this decline. With longstanding, trusted relationships with their patients, GPs are often the most influential voices in encouraging vaccination.^{137,138} They have the clinical expertise and the time — when adequately supported — to engage in meaningful, evidence-based conversations that address fears, misinformation, and vaccine fatigue.¹³⁹ Furthermore, unlike pharmacies, general practice offers the continuity and depth of care needed to engage hesitant parents and support informed decision-making. As such, strengthening the role of GPs in immunisation efforts is essential — not only to improve coverage, but also to rebuild the public's confidence in vaccines.

Vaccine injury compensation systems

As a direct result of AMA advocacy, the Australian Government established a no-fault vaccine claim system: the COVID-19 Vaccine Claim Scheme. Unfortunately, this was not made permanent. A vaccine claims scheme provides an extra layer of confidence for patients who are vaccine hesitant. Numerous countries — including the UK, New Zealand, the US, Japan, and South Korea — have broad vaccine injury compensation systems in place to address very rare, serious adverse events that cannot be detected in Phase III clinical trials. Such schemes protect the broader community, offer reciprocity for those who receive vaccines for both personal and public benefit, and enhances vaccine confidence. Transparency supports good immunisation governance, public trust, and confidence, and requires clear communication with stakeholders about program decisions. While a vaccine claims scheme has been considered, a clear plan forward was absent in the National Immunisation Strategy for Australia 2025–30.

Conclusion

Australia stands at a critical juncture in its immunisation trajectory. Once a global leader in vaccine coverage, the nation is now seeing sustained declines across childhood, adolescent, and adult programs, with serious implications for public health, health-system capacity, and economic productivity. The evidence presented in this report demonstrates that falling vaccination rates are being driven by a complex interplay of vaccine hesitancy, fatigue, access barriers, inequities, and fragmented data systems. Reversing these trends requires a coordinated, national response that strengthens data integrity, accelerates vaccine assessment and listing processes, invests in community-led engagement, and modernises funding to support team-based preventive care — particularly within

general practice, where trusted relationships remain central to vaccine confidence. By prioritising prevention, improving system coordination, and reinforcing the essential role of primary care, governments can rebuild community trust, lift immunisation coverage, and reduce avoidable disease burden. Sustained, targeted action now is essential to protect Australians from vaccine-preventable diseases, strengthen health system resilience, and ensure equitable, lifelong access to vaccination.

References:

- ¹ World Health Organization. (2025). *Immunisation coverage*. Retrieved 14/8/2025 at: <https://www.who.int/news-room/fact-sheets/detail/immunization-coverage>
- ² World Health Organization. (2025). *Ten threats to global health in 2019*. Retrieved 14/8/2025 at: <https://www.who.int/news-room/spotlight/ten-threats-to-global-health-in-2019>
- ³ Immunisation Foundation of Australia. (2025). *Immunisation — How Immunisation Protects Us*. Retrieved 14/8/2025 at: <https://www.ifa.org.au/immunisation>
- ⁴ National Centre for Immunisation Research and Surveillance Australia. (2025). *Annual Immunisation Coverage Report 2024*. Retrieved 6/11/2025 at: https://ncirs.org.au/immunisation-coverage-data-and-reports/annual-immunisation-coverage-report-2024-summary#all_children.
- ⁵ Australian Government. Australian Institute of Health and Welfare. (2025). *Potentially preventable hospitalisations*. Retrieved 5/6/2025 at: <https://www.aihw.gov.au/hospitals/topics/admitted-patient-safety-and-quality/potentially-preventable-hospitalisations>
- ⁶ National Centre for Immunisation Research and Surveillance Australia. (2023). *Our History*. Retrieved 29/05/2025 from: <https://ncirs.org.au/about-us/our-history>
- ⁷ National Centre for Immunisation Research and Surveillance Australia. (2023). *Our History*. Retrieved 29/05/2025 from: <https://ncirs.org.au/about-us/our-history>
- ⁸ Australian Government. Services Australia. *Australian Immunisation Register*. Retrieved 1/9/2025 at: <https://www.servicesaustralia.gov.au/australian-immunisation-register>.
- ⁹ Australian Government. Australian Institute of Health and Welfare. *Immunisation and vaccine*. Retrieved 29/7/2025 at: <https://www.aihw.gov.au/reports/australias-health/immunisation-and-vaccination>
- ¹⁰ Bredon, P., Hu, W. (2025). Child Vaccination in Australia is Falling. *Grattan Institute*. Retrieved 29/05/2025 from: <https://grattan.edu.au/news/child-vaccination-in-australia-is-falling/#:~:text=Childper cent20vaccinationper cent20hasper cent20beenper cent20aper cent20triumph&text=Whatper cent20followedper cent20wasper cent20aper cent20public,andper cent20fiveper cent20Dyearper cent20Dolds>
- ¹¹ Australian Government. Department of Health, Disability, and Ageing. (2025). *About Immunisation*. Retrieved 4/6/2025 at: <https://www.health.gov.au/topics/immunisation/about-immunisation#:~:text=Herdper cent20immunity&text=Theper cent20diseaseper cent20canper cent20dieper cent20out,immunityper cent20forper cent20manyper cent20infectiousper cent20diseases>
- ¹² Australian Government. Department of Health, Disability and Ageing. (2025). *Historical coverage data tables for all children*. Retrieved 29/05/2025 at: <https://www.health.gov.au/topics/immunisation/immunisation-data/childhood-immunisation-coverage/historical-coverage-data-tables-for-all-children>
- ¹³ Organisation for Economic Co-operation and Development. (2025). *Child vaccination rates*. Retrieved 7/7/2025 from: <https://www.oecd.org/en/data/indicators/child-vaccination-rates.html>
- ¹⁴ Australian Government. Department of Health, Disability and Ageing. (2025). *Historical coverage data tables for all children*. Retrieved 29/05/2025 at: <https://www.health.gov.au/topics/immunisation/immunisation-data/childhood-immunisation-coverage/historical-coverage-data-tables-for-all-children>.
- ¹⁵ Australian Government. Department of Health, Disability and Ageing. (2025). *Childhood immunisation coverage*. Retrieved 19/8/2025 at: <https://www.health.gov.au/topics/immunisation/immunisation-data/childhood-immunisation-coverage?language=en>
- ¹⁶ World Health Organisation. (2025). *Immunization coverage*. Retrieved 21/11/2025 at: <https://www.who.int/news-room/fact-sheets/detail/immunization-coverage>.

¹⁷ World Health Organisation. (2025). *Immunization coverage*. Retrieved 21/11/2025 at: <https://www.who.int/news-room/fact-sheets/detail/immunization-coverage>.

¹⁸ Australian Government. Department of Health and Aged Care and the Aged Care Quality and Safety Commission. (2025). Retrieved 8/8/2025 at: <https://www.agedcarequality.gov.au/sites/default/files/media/joint-letter-from-cmo-and-commissioner-to-board-chairs-on-winter-preparedness-2025.pdf>.

¹⁹ Australian College of Nursing. (2024). *Alarming drop in influenza vaccination rates in aged care homes*. Retrieved 8/8/2025 at: <https://www.acn.edu.au/nurseclick/alarming-drop-in-influenza-vaccination-rates-in-aged-care-homes>

²⁰ Australian Government. National Health and Medical Research Council. (2021). *National COVID-19 Health and Research Advisory Committee*. Retrieved 7/8/2025 from: https://www.nhmrc.gov.au/sites/default/files/2023-02/NCHAC-Advice-27-Impact_of_COVID-19_on_people_with_disability.pdf

²¹ *The Guardian*. (2022). Vaccine rate for people with disability at about 50% in some regional areas, leaked data reveals. Retrieved 8/8/2025 from: <https://www.theguardian.com/australia-news/2022/jan/15/vaccine-rate-for-people-with-disability-at-about-50-in-some-regional-areas-leaked-data-reveals>

²² Royal Commission into Violence, Abuse, Neglect and Exploitation of People with a Disability. (2024). Retrieved 8/8/2025 at: <https://disability.royalcommission.gov.au/publications/final-report>

²³ Royal Commission into Violence, Abuse, Neglect and Exploitation of People with a Disability. (2021). *Report — Public hearing 12 — The experiences of people with disability, in the context of the Australian Government's approach to the COVID-19 vaccine rollout*. Retrieved 8/8/2025 at: <https://disability.royalcommission.gov.au/publications/report-public-hearing-12-experiences-people-disability-context-australian-governments-approach-covid-19-vaccine-rollout>

²⁴ Australian Government. Department of Health, Disability, and Ageing. (2023). *Maternal vaccinations consumer brochure*. Retrieved 7/08/2025 from: <https://www.health.gov.au/maternal-vaccinations/resources/publications/maternal-vaccinations-consumer-brochure?language=en>

²⁵ Queensland Government. Queensland Health. (2024). *Declining vaccination, rising whooping cough risk*. Retrieved 7/8/2025 from: <https://www.health.qld.gov.au/newsroom/doh-media-releases/declining-vaccination,-rising-whooping-cough-risk>

²⁶ Dahlen HG, Homer C, Boyle J, Lequertier B, Kildea S, Agho KE. Vaccine intention and hesitancy among Australian women who are currently pregnant or have recently given birth: the Birth in the Time of COVID-19 (BITTOC) national online survey. *BMJ Open*. 2023 Apr 11;13(4):e063632. doi: 10.1136/bmjopen-2022-063632. PMID: 37041048; PMCID: PMC10111185.

²⁷ Australian Government. (2025). *Vaccination for people who are immunocompromised*. Retrieved 19/8/2025 at: <https://immunisationhandbook.health.gov.au/contents/vaccination-for-special-risk-groups/vaccination-for-people-who-are-immunocompromised>

²⁸ Australian Government. Australian Institute of Health and Welfare. (2025). *Vaccine preventable disease among First Nations people*. Retrieved 19/8/2025 at: https://www.aihw.gov.au/getmedia/a26a1c03-84dc-4d7d-b7b8-6223bade8493/aihw-phe-236_first-nation_2025.pdf

²⁹ Australian Government. Australian Institute of Health and Welfare. (2025). *Vaccine preventable disease among First Nations people*. Retrieved 19/8/2025 at: https://www.aihw.gov.au/getmedia/a26a1c03-84dc-4d7d-b7b8-6223bade8493/aihw-phe-236_first-nation_2025.pdf

³⁰ Australian Government. Australian Institute of Health and Welfare. (2025). *Immunisation and vaccination*. Retrieved 19/8/2025 at: <https://www.aihw.gov.au/reports/australias-health/immunisation-and-vaccination>

³¹ National Centre for Immunisation Research and Surveillance Australia. (2025). *Annual Immunisation Coverage Report 2024 — interim data release*. Retrieved 19/8/2025 at: <https://ncirs.org.au/immunisation-coverage-data-and-reports/annual-immunisation-coverage-report-2024-interim-data>

-
- ³² National Centre for Immunisation Research and Surveillance Australia. (2025). *Annual Immunisation Coverage Report 2024 — interim data release*. Retrieved 19/8/2025 at: <https://ncirs.org.au/immunisation-coverage-data-and-reports/annual-immunisation-coverage-report-2024-interim-data>
- ³³ National Centre for Immunisation Research and Surveillance Australia. (2025). *Annual Immunisation Coverage Report 2024 — interim data release*. Retrieved 19/8/2025 at: <https://ncirs.org.au/immunisation-coverage-data-and-reports/annual-immunisation-coverage-report-2024-interim-data>
- ³⁴ National Centre for Immunisation Research and Surveillance Australia. (2025). *Annual Immunisation Coverage Report 2024 — interim data release*. Retrieved 19/8/2025 at: <https://ncirs.org.au/immunisation-coverage-data-and-reports/annual-immunisation-coverage-report-2024-interim-data>
- ³⁵ Cancer Council. (2025). HPV. Retrieved 14/8/2025 at: <https://www.cancer.org.au/what-is-hpv>
- ³⁶ Cancer Council. (2025). HPV. Retrieved 14/8/2025 at: <https://www.cancer.org.au/what-is-hpv>
- ³⁷ Cancer Council. (2025). *About the HPV vaccine*. Retrieved 16/6/2025 from: <https://www.hpvvaccine.org.au/hpv-vaccine/about-the-hpv-vaccine#:~:text=Theper cent20HPVper cent20vaccineper cent20isper cent20offered,significantlyper cent20immunocompromisedper cent20groups>
- ³⁸ Australian Government. Department of Health, Disability, and Ageing. (2025). *School based vaccinations for teens*. Retrieved 12/6/2025 from: <https://www.health.gov.au/news/school-based-vaccinations-for-teens>
- ³⁹ National Centre for Immunisation Research and Surveillance Australia. (2025). *Annual Immunisation Coverage Report*. Retrieved 6/11/2025 from: <https://ncirs.org.au/sites/default/files/2025-10/Annual%20Immunisation%20Coverage%20Report%202024.pdf>
- ⁴⁰ National Centre for Immunisation Research and Surveillance Australia. (2025). *Annual Immunisation Coverage Report 2024 — interim data release*. Retrieved 19/8/2025 at: <https://ncirs.org.au/immunisation-coverage-data-and-reports/annual-immunisation-coverage-report-2024-interim-data>

[reports/annual-immunisation-coverage-report-2024-interim-data](https://ncirs.org.au/immunisation-coverage-data-and-reports/annual-immunisation-coverage-report-2024-interim-data)

- ⁴¹ National Centre for Immunisation Research and Surveillance Australia. (2025). *Annual Immunisation Coverage Report 2024 — interim data release*. Retrieved 19/8/2025 at: <https://ncirs.org.au/immunisation-coverage-data-and-reports/annual-immunisation-coverage-report-2024-interim-data>
- ⁴² National Centre for Immunisation Research and Surveillance Australia. (2025). *Annual Immunisation Coverage Report 2024 — interim data release*. Retrieved 19/8/2025 at: <https://ncirs.org.au/immunisation-coverage-data-and-reports/annual-immunisation-coverage-report-2024-interim-data>
- ⁴³ National Centre for Immunisation Research and Surveillance Australia. (2025). *Annual Immunisation Coverage Report 2024 — interim data release*. Retrieved 19/8/2025 at: <https://ncirs.org.au/immunisation-coverage-data-and-reports/annual-immunisation-coverage-report-2024-interim-data>
- ⁴⁴ Australian Government. Department of Health, Disability, and Ageing. (2025). *National Strategy for the Elimination of Cervical Cancer in Australia*. Retrieved 18/11/2025 at: <https://www.health.gov.au/resources/publications/national-strategy-for-the-elimination-of-cervical-cancer-in-australia?language=en>
- ⁴⁵ National Centre for Immunisation Research and Surveillance Australia. (2025). *Annual Immunisation Coverage Report*. Retrieved 6/11/2025 at: <https://ncirs.org.au/sites/default/files/2025-10/Annual%20Immunisation%20Coverage%20Report%202024.pdf>
- ⁴⁶ National Centre for Immunisation Research and Surveillance Australia. (2025). *Annual Immunisation Coverage Report 2024*. Retrieved 6/11/2025 at: <https://ncirs.org.au/sites/default/files/2025-10/Annual%20Immunisation%20Coverage%20Report%202024.pdf>
- ⁴⁷ National Centre for Immunisation Research and Surveillance Australia. (2025). *Study reinforces need for culturally tailored, Aboriginal-led immunisation education*. Retrieved 8/8/2025 at: <https://ncirs.org.au/study-reinforces-need-culturally-tailored-aboriginal-led-immunisation-education>

⁴⁸ Healthdirect. (2025). *Respiratory syncytial virus (RSV)*. Retrieved 27/5/2025 at: <https://www.healthdirect.gov.au/respiratory-syncytial-virus-rsv>

⁴⁹ Healthdirect. (2025). *Respiratory syncytial virus (RSV)*. Retrieved 27/5/2025 at: <https://www.healthdirect.gov.au/respiratory-syncytial-virus-rsv>

⁵⁰ National Centre for Immunisation Research and Surveillance Australia. (2025). *Respiratory syncytial virus (RSV): Frequently asked questions (FAQs)*. Retrieved 28/7/2025 at: <https://ncirs.org.au/ncirs-fact-sheets-faqs-and-other-resources/respiratory-syncytial-virus-rsv-frequently-asked>

⁵¹ Australian Government. Department of Health, Disability, and Ageing, Therapeutic Goods Administration. (2025). *Arexvy*. Retrieved 28/7/2025 at: <https://www.tga.gov.au/resources/auspmd/arexvy>

⁵² Hunter Medical Research Institute. (2025). *Everything you need to know about the new RSV vaccines*. Retrieved 8/8/2025 at: <https://hmri.org.au/news-and-stories/everything-you-need-know-about-new-rsv-vaccines/>

⁵³ Australian Government. Department of Health, Disability, and Ageing. (2025). *Respiratory syncytial virus (RSV) vaccine*. Retrieved 24/7/2025 at: <https://www.health.gov.au/topics/immunisation/vaccines/respiratory-syncytial-virus-rsv-vaccine>

⁵⁴ National Centre for Immunisation Research and Surveillance Australia. (2025). *Who is recommended to receive the long-acting RSV monoclonal antibody Beyfortus (nirsevimab)?* Retrieved 24/7/2025 at: [https://ncirs.org.au/ncirs-fact-sheets-faqs-and-other-resources/respiratory-syncytial-virus-rsv-frequently-asked#:~:text=Beyfortus%20\(nirsevimab\)%20is%20recommended%20for,received%20a%20maternal%20RSV%20vaccine](https://ncirs.org.au/ncirs-fact-sheets-faqs-and-other-resources/respiratory-syncytial-virus-rsv-frequently-asked#:~:text=Beyfortus%20(nirsevimab)%20is%20recommended%20for,received%20a%20maternal%20RSV%20vaccine)

⁵⁵ Australian Government. Department of Health, Disability, and Ageing. *Therapeutic Goods Administration* (2025). *Beyfortus*. Retrieved 8/8/2025 at: <https://www.tga.gov.au/resources/auspmd/beyfortus>

⁵⁶ National Centre for Immunisation Research and Surveillance Australia. (2025). *Respiratory syncytial virus (RSV): Frequently asked questions (FAQs)*. Retrieved 8/8/2025 at: <https://ncirs.org.au/ncirs-fact-sheets-faqs-and-other-resources/respiratory-syncytial-virus-rsv-frequently-asked>

⁵⁷ Australian Government. Department of Health, Disability, and Ageing. (2025). *National Notifiable Disease Surveillance System*. Retrieved 27/6/2025 at: <https://nindss.health.gov.au/pbi-dashboard/>

⁵⁸ Australian Government. Department of Health, Disability, and Ageing. (2025). *National Notifiable Disease Surveillance System*. Retrieved 21/11/2025 at: <https://nindss.health.gov.au/pbi-dashboard/>

⁵⁹ Australian Government. Department of Health, Disability, and Ageing. (2025). *National Notifiable Disease Surveillance System*. Retrieved 21/11/2025 at: <https://nindss.health.gov.au/pbi-dashboard/>

⁶⁰ Australian Government. Department of Health, Disability, and Ageing. (2025). *National Immunisation Program update — maternal respiratory syncytial virus (RSV) vaccine*. Retrieved 2/7/2025 at: <https://www.health.gov.au/news/national-immunisation-program-update-maternal-respiratory-syncytial-virus-rsv-vaccine>

⁶¹ Government of Western Australia. (2025). *\$7.6 million to protect WA babies from RSV*. Retrieved 12/6/2025 at: [https://www.wa.gov.au/government/media-statements/Cookper-cent20Laborper-cent20Government/\\$7.6-million-to-protect-WA-babies-from-RSV-20250601](https://www.wa.gov.au/government/media-statements/Cookper-cent20Laborper-cent20Government/$7.6-million-to-protect-WA-babies-from-RSV-20250601)

⁶² Government of Western Australia. (2025). *\$7.6 million to protect WA babies from RSV*. Retrieved 12/6/2025 at: [https://www.wa.gov.au/government/media-statements/Cookper-cent20Laborper-cent20Government/\\$7.6-million-to-protect-WA-babies-from-RSV-20250601](https://www.wa.gov.au/government/media-statements/Cookper-cent20Laborper-cent20Government/$7.6-million-to-protect-WA-babies-from-RSV-20250601)

⁶³ Australian National Audit Office. *Australia's COVID-19 vaccine rollout*. August 2022. Retrieved 12/6/2025 at: <https://www.anao.gov.au/work/performance-audit/australia-covid-19-vaccine-rollout>

⁶⁴ Australian Bureau of Statistics. (2025). *Deaths due to COVID-19, influenza and RSV in Australia — 2023 — May 2025*. Retrieved 27/6/2025 at: <https://www.abs.gov.au/articles/deaths-due-covid-19-influenza-and-rsv-australia-2023-may-2025>

⁶⁵ Australian Government. Department of Health, Disability, and Ageing. (2025). *COVID-19 Vaccine Program*. Retrieved 21/11/2025 at: <chrome-extension://efaidnbmnnnibpcajpcglclefindmkaj/https://www.health.gov.au/sites/default/files/2025-10/covid-19-vaccine-rollout-update-1-october-2025.pdf>

⁶⁶ Australian Government. Department of Health, Disability, and Ageing. (2025). *Australian Respiratory Surveillance Report*. Retrieved 18/8/2025 at: <https://www.health.gov.au/sites/default/files/2025-08/australian-respiratory-surveillance-report-14-july-to-27-july-2025.pdf>

⁶⁷ National Seniors Australia. (2021). *Older Australians' COVID-19 vaccination likelihood and sentiment*. Retrieved 13/08/2025 at: <https://nationalseniors.com.au/uploads/FINAL-Vaccination-likelihood-and-sentiment14.12.pdf>

⁶⁸ Teufelberger AR, Dan AR, Irmeler L, Wolf P, Kränke B. COVID-19 vaccines: anaphylaxis and anxiety : A case study from an allergy unit. *Wien Klin Wochenschr*. 2024 Nov;136(21-22):590-597. doi: 10.1007/s00508-024-02435-0. Epub 2024 Sep 11. PMID: 39259224; PMCID: PMC11534977.

⁶⁹ Gholinataj Jelodar M, Mirzaei S, Saghafi F, Rafieian S, Rezaei S, Saatchi A, Dehghani Avare Z, Dehghan Niri M. Impact of vaccination status on clinical outcomes of hospitalized COVID-19 patients. *BMC Infect Dis*. 2024 Feb 23;24(1):254. doi: 10.1186/s12879-024-09139-w. PMID: 38395855; PMCID: PMC10893624.

⁷⁰ Sagiraju HKR, Elavarasi A, Gupta N, Garg RK, Paul SS, Vig S, Sirohiya P, Ratre B, Garg R, Pandit A, et al. The effectiveness of SARS-CoV-2 vaccination in preventing severe illness and death — real-world data from a cohort of patients hospitalized with COVID-19. *Indian J Community Med*. 2022;47(4):510–6. doi: 10.4103/ijcm.ijcm_1388_21.

⁷¹ Bahl A, Johnson S, Maine G, Garcia MH, Nimmagadda S, Qu L, Chen N-W. Vaccination reduces need for emergency care in breakthrough COVID-19 infections: a multicenter cohort study. *Lancet Reg Health-Americas*. 2021;4:100065. doi: 10.1016/j.lana.2021.100065.

⁷² Bobdey S, Kaushik S, Sahu R, Naithani N, Vaidya R, Sharma M, Vashishtha K, Yadav A, Sen S, Karade S. Effectiveness of ChAdOx1 nCoV-19 vaccine: experience of a tertiary care institute. *Med J Armed Forces India*. 2021;77:271–S277. doi: 10.1016/j.mjafi.2021.06.006.

⁷³ Muthukrishnan J, Vardhan V, Mangalesh S, Koley M, Shankar S, Yadav AK, Khera A. Vaccination status and COVID-19 related mortality: a hospital based cross sectional study. *Med J Armed Forces India*. 2021;77:278–S282. doi: 10.1016/j.mjafi.2021.06.034

⁷⁴ ABCNews.(2025). *Winter flu surge across the country sees 50 per cent rise in hospital admissions amid low vaccination rates*. Retrieved 21/7/2025 at:

<https://www.abc.net.au/news/2025-07-18/covid-flu-rsv-health-data/105543560>

⁷⁵ Queensland Government, Queensland Health. (2025). *Queensland respiratory infection update - 1 August 2025*. Retrieved 19/11/2025 at: <https://www.health.qld.gov.au/newsroom/doh-media-releases/queensland-respiratory-infection-update4>

⁷⁶ NineNEWS. (2025). *Hundreds of children hospitalised as flu cases soar in Queensland*. Retrieved 19/8/2025 at: <https://www.9news.com.au/national/queensland-flu-spike-kids-have-highest-rate-of-flu-per-capita-as-cases-soar-health-news/0d4a4cdd-3b38-44bb-9dbe-690f171658f9>

⁷⁷ Australian Bureau of Statistics. (2025). *Deaths due to acute respiratory infections in Australia*. Retrieved 19/11/2025 at: <https://www.abs.gov.au/statistics/health/causes-death/deaths-due-acute-respiratory-infections-australia/latest-release#:~:text=Deaths%20involving%20influenza%20feil%20slightly,in%20August%202023%20or%202024.>

⁷⁸ National Centre for Immunisation Research and Surveillance Australia. (2025). *All persons: 2020–2025 (YTD) influenza vaccination coverage*. Retrieved 10/06/2025 at: <https://ncirs.org.au/influenza-vaccination-coverage-data/all-persons-2020-2025-ytd-influenza-vaccination-coverage>

⁷⁹ National Centre for Immunisation Research and Surveillance Australia. (2025). *All persons: 2020–2025 (YTD) influenza vaccination coverage*. Retrieved 10/06/2025 at: <https://ncirs.org.au/influenza-vaccination-coverage-data/all-persons-2020-2025-ytd-influenza-vaccination-coverage>.

⁸⁰ National Centre for Immunisation Research and Surveillance Australia. (2025). *All persons: 2020–2025 (YTD) influenza vaccination coverage*. Retrieved 10/06/2025 at: <https://ncirs.org.au/influenza-vaccination-coverage-data/all-persons-2020-2025-ytd-influenza-vaccination-coverage>

⁸¹ National Centre for Immunisation Research and Surveillance Australia. (2025). *All persons: 2020–2025 (YTD) influenza vaccination coverage*. Retrieved 10/06/2025 at: <https://ncirs.org.au/influenza-vaccination-coverage-data/all-persons-2020-2025-ytd-influenza-vaccination-coverage>

⁸² National Centre for Immunisation Research and Surveillance Australia. (2025). *All persons: 2020–2025 (YTD) influenza vaccination coverage*. Retrieved 10/06/2025 at <https://ncirs.org.au/influenza->

[vaccination-coverage-data/all-persons-2020-2025-ytd-influenza-vaccination-coverage](https://ncirs.org.au/influenza-vaccination-coverage-data/all-persons-2020-2025-ytd-influenza-vaccination-coverage)

⁸³ National Centre for Immunisation Research and Surveillance Australia. (2025). *Aboriginal and Torres Strait Islander persons: 2020–2025 (YTD) influenza vaccination coverage*. Retrieved 19/8/2025 at: <https://ncirs.org.au/influenza-vaccination-coverage-data/aboriginal-and-torres-strait-islander-persons-2020-2025-ytd>.

⁸⁴ National Centre for Immunisation Research and Surveillance Australia. (2025). *Aboriginal and Torres Strait Islander persons: 2020–2025 (YTD) influenza vaccination coverage*. Retrieved 19/8/2025 at: <https://ncirs.org.au/influenza-vaccination-coverage-data/aboriginal-and-torres-strait-islander-persons-2020-2025-ytd>

⁸⁵ National Centre for Immunisation Research and Surveillance Australia. (2025). *Aboriginal and Torres Strait Islander persons: 2020–2025 (YTD) influenza vaccination coverage*. Retrieved 19/8/2025 at: <https://ncirs.org.au/influenza-vaccination-coverage-data/aboriginal-and-torres-strait-islander-persons-2020-2025-ytd>

⁸⁶ National Centre for Immunisation Research and Surveillance Australia. (2025). *Aboriginal and Torres Strait Islander persons: 2020–2025 (YTD) influenza vaccination coverage*. Retrieved 19/8/2025 at: <https://ncirs.org.au/influenza-vaccination-coverage-data/aboriginal-and-torres-strait-islander-persons-2020-2025-ytd>

⁸⁷ National Centre for Immunisation Research and Surveillance Australia. (2025). *All persons: 2025 (YTD) influenza vaccination coverage by age group and state/territory*. Retrieved 10/06/2025 at: <https://ncirs.org.au/influenza-vaccination-coverage-data/all-persons-2025-ytd-influenza-vaccination-coverage-age-group>

⁸⁸ National Centre for Immunisation Research and Surveillance Australia. (2025). *All persons: 2025 (YTD) influenza vaccination coverage by age group and state/territory*. Retrieved 10/06/2025 at: <https://ncirs.org.au/influenza-vaccination-coverage-data/all-persons-2025-ytd-influenza-vaccination-coverage-age-group>

⁸⁹ National Centre for Immunisation Research and Surveillance Australia. (2025). *All persons: 2025 (YTD) influenza vaccination coverage by age group and state/territory*. Retrieved 10/06/2025 at: <https://ncirs.org.au/influenza-vaccination-coverage-data/all-persons-2025-ytd-influenza-vaccination-coverage-age-group>

[data/all-persons-2025-ytd-influenza-vaccination-coverage-age-group](https://ncirs.org.au/influenza-vaccination-coverage-data/all-persons-2025-ytd-influenza-vaccination-coverage-age-group)

⁹⁰ National Centre for Immunisation Research and Surveillance Australia. (2025). *All persons: 2025 (YTD) influenza vaccination coverage by age group and state/territory*. Retrieved 10/06/2025 at: <https://ncirs.org.au/influenza-vaccination-coverage-data/all-persons-2025-ytd-influenza-vaccination-coverage-age-group>

⁹¹ National Centre for Immunisation Research and Surveillance Australia. (2025). *All persons: 2025 (YTD) influenza vaccination coverage by age group and state/territory*. Retrieved 10/06/2025 at: <https://ncirs.org.au/influenza-vaccination-coverage-data/all-persons-2025-ytd-influenza-vaccination-coverage-age-group>

⁹² National Centre for Immunisation Research and Surveillance Australia. (2025). *Aboriginal and Torres Strait Islander persons: 2025 (YTD) influenza vaccination coverage by age group and state/territory*. Retrieved 11/06/2025 at: <https://ncirs.org.au/influenza-vaccination-coverage-data/aboriginal-and-torres-strait-islander-persons-2025-ytd>

⁹³ National Centre for Immunisation Research and Surveillance Australia. (2025). *Aboriginal and Torres Strait Islander persons: 2025 (YTD) influenza vaccination coverage by age group and state/territory*. Retrieved 11/06/2025 at: <https://ncirs.org.au/influenza-vaccination-coverage-data/aboriginal-and-torres-strait-islander-persons-2025-ytd>

⁹⁴ National Centre for Immunisation Research and Surveillance Australia. (2025). *Aboriginal and Torres Strait Islander persons: 2025 (YTD) influenza vaccination coverage by age group and state/territory*. Retrieved 11/06/2025 at: <https://ncirs.org.au/influenza-vaccination-coverage-data/aboriginal-and-torres-strait-islander-persons-2025-ytd>.

⁹⁵ National Centre for Immunisation Research and Surveillance Australia. (2025). *Aboriginal and Torres Strait Islander persons: 2025 (YTD) influenza vaccination coverage by age group and state/territory*. Retrieved 11/06/2025 at: <https://ncirs.org.au/influenza-vaccination-coverage-data/aboriginal-and-torres-strait-islander-persons-2025-ytd>

-
- ⁹⁶ Hava, C. (2025). *Australian Pharmacists*. Flu cases surge to record highs as vaccination rates stall. Retrieved 12/6/2025 at: <https://www.australianpharmacist.com.au/flu-cases-surge-to-record-highs-as-vaccination-rates-stall/>
- ⁹⁷ Australian Government. Department of Health, Disability, and Ageing. (2025). *National Notifiable Disease Surveillance System*. Retrieved 20/11/2025 at: <https://nindss.health.gov.au/pbi-dashboard/>.
- ⁹⁸ AusVaxSafety. (2025). *2025 Australian flu season: Who should get a flu shot, which vaccines are available and what to expect in the days following your vaccination*. Retrieved 5/6/2025 at: <https://www.ausvaxsafety.org.au/2025-australian-flu-season-who-should-get-flu-shot-which-vaccines-are-available-and-what-expect>
- ⁹⁹ Australian Government. National Critical Care and Trauma Response Centre. (2025). *Measles — global outbreaks stemming from a decline in routine vaccine coverage*. Retrieved 5/6/2025 at: <https://nationaltraumacentre.gov.au/news/measles-global-outbreaks-stemming-from-a-decline-in-routine-vaccine-coverage/>
- ¹⁰⁰ Australian Government. Department of Health, Disability, and Ageing. (2025). *National Notifiable Disease Surveillance System*. Retrieved 20/11/2025 from: <https://nindss.health.gov.au/pbi-dashboard/>.
- ¹⁰¹ Australian Government. Department of Health, Disability, and Ageing. (2025). *National Notifiable Disease Surveillance System*. Retrieved 20/11/2025 from: <https://nindss.health.gov.au/pbi-dashboard/>.
- ¹⁰² Wisbey, M. (2025). Warning issued as measles cases surge. *NewsGP*. Retrieved 5/6/2025 from: <https://www1.racgp.org.au/news/gp/clinical/warning-issued-as-measles-cases-surge>
- ¹⁰³ Australian Government. Department of Health, Disability, and Ageing. (2025). *National Notifiable Disease Surveillance System*. Retrieved 20/11/2025 from: <https://nindss.health.gov.au/pbi-dashboard/>.
- ¹⁰⁴ Australian Government. Department of Health, Disability, and Ageing. (2025). *National Notifiable Disease Surveillance System*. Retrieved 20/11/2025 from: <https://nindss.health.gov.au/pbi-dashboard/>.
- ¹⁰⁵ Branley, A. (2025). Australia's childhood vaccination rates are declining, sparking fears about risk to herd immunity. *ABC NEWS*. Retrieved 21/5/2025 at: [https://www.abc.net.au/news/2025-05-16/childhood-](https://www.abc.net.au/news/2025-05-16/childhood-vaccination-rates-falling-in-australia-since-covid/105296020)

[vaccination-rates-falling-in-australia-since-covid/105296020](https://www.abc.net.au/news/2025-05-16/childhood-vaccination-rates-falling-in-australia-since-covid/105296020)

- ¹⁰⁶ Australian Immunisation Register — *Coverage Report (2021)*. Retrieved 19/8/2025 at: <https://www.health.gov.au/sites/default/files/documents/2022/05/qld-childhood-immunisation-coverage-data-by-sa3-march-2022-annualised-data---all-children.pdf>
- ¹⁰⁷ Australian Immunisation Register — *Coverage Report (2024)*. Retrieved 19/8/2025 at: <https://www.health.gov.au/sites/default/files/2025-06/qld-childhood-immunisation-coverage-data-by-sa3.pdf>
- ¹⁰⁸ Australian Immunisation Register — *Coverage Report (2021)*. Retrieved 19/8/2025 at: <https://www.health.gov.au/sites/default/files/documents/2022/05/qld-childhood-immunisation-coverage-data-by-sa3-march-2022-annualised-data---all-children.pdf>
- ¹⁰⁹ Australian Immunisation Register — *Coverage Report (2024)*. Retrieved 19/8/2025 at: <https://www.health.gov.au/sites/default/files/2025-06/qld-childhood-immunisation-coverage-data-by-sa3.pdf>
- ¹¹⁰ Australian Immunisation Register — *Coverage Report (2021)*. Retrieved 19/8/2025 at: <https://www.health.gov.au/sites/default/files/documents/2022/05/qld-childhood-immunisation-coverage-data-by-sa3-march-2022-annualised-data---all-children.pdf>
- ¹¹¹ Australian Immunisation Register — *Coverage Report (2024)*. Retrieved 19/8/2025 at: <https://www.health.gov.au/sites/default/files/2025-06/qld-childhood-immunisation-coverage-data-by-sa3.pdf>
- ¹¹² Australian Immunisation Register — *Coverage Report (2021)*. Retrieved 19/8/2025 at: <https://www.health.gov.au/sites/default/files/documents/2022/05/qld-childhood-immunisation-coverage-data-by-sa3-march-2022-annualised-data---all-children.pdf>
- ¹¹³ Australian Immunisation Register — *Coverage Report (2024)*. Retrieved 19/8/2025 at: <https://www.health.gov.au/sites/default/files/2025-06/qld-childhood-immunisation-coverage-data-by-sa3.pdf>
- ¹¹⁴ Australian Immunisation Register — *Coverage Report (2021)*. Retrieved 19/8/2025 at:

<https://www.health.gov.au/sites/default/files/documents/2022/05/qld-childhood-immunisation-coverage-data-by-sa3-march-2022-annualised-data---all-children.pdf>

¹¹⁵ Australian Immunisation Register — *Coverage Report (2024)*. Retrieved 19/8/2025 at: <https://www.health.gov.au/sites/default/files/2025-06/qld-childhood-immunisation-coverage-data-by-sa3.pdf>

¹¹⁶ NSW Health. (2025). *Children in NSW fully immunised by local health district 2025*. Retrieved 20/11/2025 at: <https://www.health.nsw.gov.au/immunisation/Pages/coverage-by-lhd.aspx#nsw-age1>.

¹¹⁷ The Guardian. (2021). *When Covid came to the anti-vax capital of Australia*. Retrieved 8/8/2025 at: <https://www.theguardian.com/australia-news/2021/aug/14/when-covid-came-to-the-anti-vax-capital-of-australia>

¹¹⁸ Kalichman, S. C., & Eaton, L. A. (2023). The Emergence and Persistence of the Anti-Vaccination Movement. *Health Psychology*, 42(8), 516–520. <https://doi.org/10.1037/hea0001273>

¹¹⁹ newsGP. *Australia child vaccination rates continue to fall*. (2024). Retrieved 7/8/2025 from: <https://www1.racgp.org.au/news/gp/clinical/australian-child-vaccination-rates-continue-to-fall>

¹²⁰ World Health Organisation. (2025). *Ten Threats to global health in 2019*. Retrieved 12/6/2025 from: <https://www.who.int/news-room/spotlight/ten-threats-to-global-health-in-2019>

¹²¹ Lazarus JV, White TM, Wyka K, Ratzan SC, Rabin K, Larson HJ, Martinon-Torres F, Kuchar E, Abdool Karim SS, Giles-Vernick T, Müller S, Batista C, Myburgh N, Kampmann B, El-Mohandes A. Influence of COVID-19 on trust in routine immunization, health information sources and pandemic preparedness in 23 countries in 2023. *Nat Med*. 2024 Jun;30(6):1559-1563. doi: 10.1038/s41591-024-02939-2. Epub 2024 Apr 29. PMID: 38684861; PMCID: PMC11186753.

¹²² Lazarus JV, White TM, Wyka K, Ratzan SC, Rabin K, Larson HJ, Martinon-Torres F, Kuchar E, Abdool Karim SS, Giles-Vernick T, Müller S, Batista C, Myburgh N, Kampmann B, El-Mohandes A. Influence of COVID-19 on trust in routine immunization, health information sources and pandemic preparedness in 23 countries in 2023. *Nat Med*. 2024 Jun;30(6):1559-1563. doi:

10.1038/s41591-024-02939-2. Epub 2024 Apr 29. PMID: 38684861; PMCID: PMC11186753.

¹²³ Skafle I, Nordahl-Hansen A, Quintana DS, Wynn R, Gabarron E. Misinformation About COVID-19 Vaccines on Social Media: Rapid Review. *J Med Internet Res*. 2022 Aug 4;24(8):e37367. doi: 10.2196/37367. PMID: 35816685; PMCID: PMC9359307.

¹²⁴ Pfizer. (2025). *Understanding Six Types of Vaccine Technologies*. Retrieved 12/8/2025 from: https://www.pfizer.com/news/articles/understanding_six_types_of_vaccine_technologies

¹²⁵ Australian Government. Department of Health, Disability, and Ageing. (2024). *Health Technology Assessment Policy and Methods Review – Final report*. Retrieved 21/11/2025 at: <https://www.health.gov.au/resources/publications/health-technology-assessment-policy-and-methods-review-final-report?language=en>.

¹²⁶ Medicines Australia. (2024). *Accelerating Access to the Best Medicines for Australians Now and into the Future Review*. Retrieved 12/8/2025 from: https://www.pfizer.com/news/articles/understanding_six_types_of_vaccine_technologies

¹²⁷ Australian Government. (2022). *What the register is. Services Australia*. Retrieved 2/7/2025 at: <https://www.servicesaustralia.gov.au/what-australian-immunisation-register?context=22436>

¹²⁸ Dalton LG, Meder KN, Beard FH, Dey A, Hull BP, Macartney KK, McIntyre PB. How accurately does the Australian Immunisation Register identify children overdue for vaccine doses? A national cross-sectional study. *Commun Dis Intell* (2018). 2022 May 19;46. doi: 10.33321/cdi.2022.46.10. PMID: 35591747.

¹²⁹ Harwood E, Taylor K, Clark K, Murray P, Stephenson J, Bolsewicz K, Leask J, Crooks K. Yarning about vaccinations: Empowering individuals to have supportive conversations with Aboriginal peoples about vaccinations, using a community-engaged approach. *Aust N Z J Public Health*. 2025 Feb;49(1):100206. doi: 10.1016/j.anzjph.2024.100206. Epub 2025 Jan 20. PMID: 39833015.

¹³⁰ The Royal Australian College of General Practitioners. (2024). *Community-led vaccination programs: Getting the fundamentals right*. Retrieved 12/8/2025 at: <https://www1.racgp.org.au/ajgp/coronavirus/community-led-vaccination-programs>

¹³¹ Pharmacy Programs Administrator. (2025). *National Immunisation Program Vaccinations in Pharmacy (NIPVIP) Program*. Retrieved 12/6/2025 at: <https://www.ppaonline.com.au/programs/national-immunisation-program-vaccinations-in-pharmacy-program>

¹³² Queensland Government. (2025). *2025 Free Flu Vaccination Program*. Retrieved 27/6/2025 from: <https://www.health.qld.gov.au/clinical-practice/guidelines-procedures/diseases-infection/immunisation/service-providers/2025-free-flu-vaccination-program>

¹³³ South Australia. Government of South Australia. (2025). *Immediate authorisation for pharmacists to vaccinate young kids amid flu surge*. Retrieved 19/8/2025 at: <https://www.premier.sa.gov.au/media-releases/news-items/immediate-authorisation-for-pharmacists-to-vaccinate-young-kids-amid-flu-surge>

¹³⁴ Australian Medical Association. (2021). *AMA Position on Vaccination Outside of General Practice — 2021*. Retrieved 26/6/2025 from: <https://www.ama.com.au/sites/default/files/2021-12/Vaccinationsper cent20outsideper cent20generalper cent20practice 2021.pdf>

¹³⁵ Department of Health. *Influenza (flu) vaccines reported to the Australian Immunisation Register (AIR) as at close of business 26 August 2021*. Retrieved 26/6/2025.

¹³⁶ Department of Health and Aged Care. (2020). *Record 16.5 million flu vaccines to protect Australians*. Retrieved 26/6/2025 from: <https://www.health.gov.au/ministers/the-hon-greg-hunt-mp/media/record-165-million-flu-vaccines-to-protect-australians>

¹³⁷ Australian Medical Association. (2024). *AMA submission to National Immunisation Strategy 2025–2030 — Public consultation*. Retrieved 26/6/2025 from: <https://www.ama.com.au/articles/ama-submission-national-immunisation-strategy-2025-2030-public-consultation>

¹³⁸ RACGP. (2024). *GPs best placed to fight vaccine fatigue, resurgence in preventable disease in Australia*. Retrieved 26/6/25 from: <https://www.racgp.org.au/gp-news/media-releases/2024-media-releases/july-2024/gps-best-placed-to-fight-vaccine-fatigue-resurgence>

¹³⁹ Roberts, J. (2025). *GPs remain the frontline in vaccination*. News GP. Retrieved 26/6/25 from: <https://www1.racgp.org.au/newsgp/professional/gps-remain-the-frontline-in-vaccination>