Australian Government
Department of Health

National Immunisation Strategy

for Australia 2019–2024

National Immunisation Program

A joint Australian, State and Territory Government Initiative

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National Immunisation Strategy

for Australia

2019–2024

Acronyms

ATAGI	Australian Technical Advisory Group on Immunisation
HPV	human papillomavirus
NIC	National Immunisation Committee
NIP	National Immunisation Program
NPEV	National Partnership on Essential Vaccines
TGA	Therapeutic Goods Administration
UNICEF	United Nations Children's Fund
VPD	vaccine-preventable disease
WHO	World Health Organization
WPRO	Western Pacific Regional Office

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Executive summary

Immunisation is one of the most significant public health interventions of the past 200 years, and the National Immunisation Program (NIP) is one of Australia's great health success stories. The NIP is a collaborative initiative involving all levels of government (Australian, state and territory, and local), healthcare providers, administrators and researchers. The program positively affects the health of all Australians at some point in their lives – either directly through vaccination or indirectly through reduced transmission of infectious diseases (community immunity).

This National Immunisation Strategy builds on the success of the previous 5-year strategy (2013–2018), and aims to expand and improve the NIP. The strategy is consistent with the World Health Organization's Global Vaccine Action Plan. It is also consistent with Australian, state and territory government efforts to reform the health system by encouraging a greater focus on health rather than illness, and improving Australia's preventive health system. Its aim is to prevent disease and severe outcomes of disease by maximising immunisation coverage in people of all ages.

The strategy comprises eight strategic priority areas to complement and strengthen the NIP:

- Improve immunisation coverage.
- Ensure effective governance of the National Immunisation Program.
- Ensure secure vaccine supply and efficient use of vaccines for the National Immunisation Program.
- Continue to enhance vaccine safety monitoring systems.
- Maintain and ensure community confidence in the National Immunisation Program through effective communication strategies.

- Strengthen monitoring and evaluation of the National Immunisation Program through assessment and analysis of immunisation register data and vaccine-preventable disease surveillance.
- Ensure an adequately skilled immunisation workforce through promoting effective training for immunisation providers.
- Maintain Australia's strong contribution to the region.

This strategy document addresses each of these strategic priorities and the key actions to be undertaken in each area.

Introduction

The National Immunisation Program

'Immunisation is one of the most successful and cost effective health interventions ever.'[1] The low incidence of vaccine-preventable diseases (VPDs) in Australia attests to the effectiveness of our immunisation services, programs and policies. Since the introduction of routine immunisations in Australia in the 1950s, death or disability from many once-common infectious diseases is now rare.

Australia's high-quality immunisation system is internationally recognised.[2] Routine immunisation of infants in Australia began in the 1950s, and the first nationally funded infant program for diphtheria, tetanus and polio started in 1975. Since then, the immunisation program has grown to be a major public program funded by the state, territory and Australian governments. Coinciding with the introduction of immunisation in Australia, the incidence of VPDs has dramatically declined.

Some of the successful outcomes of the National Immunisation Program (NIP) to date include high immunisation coverage rates (Figure 1), good control of VPDs, access to all World Health Organization (WHO)–recommended vaccines,[3] a contemporary national schedule for vaccinations and a whole-of-life national register for immunisation.

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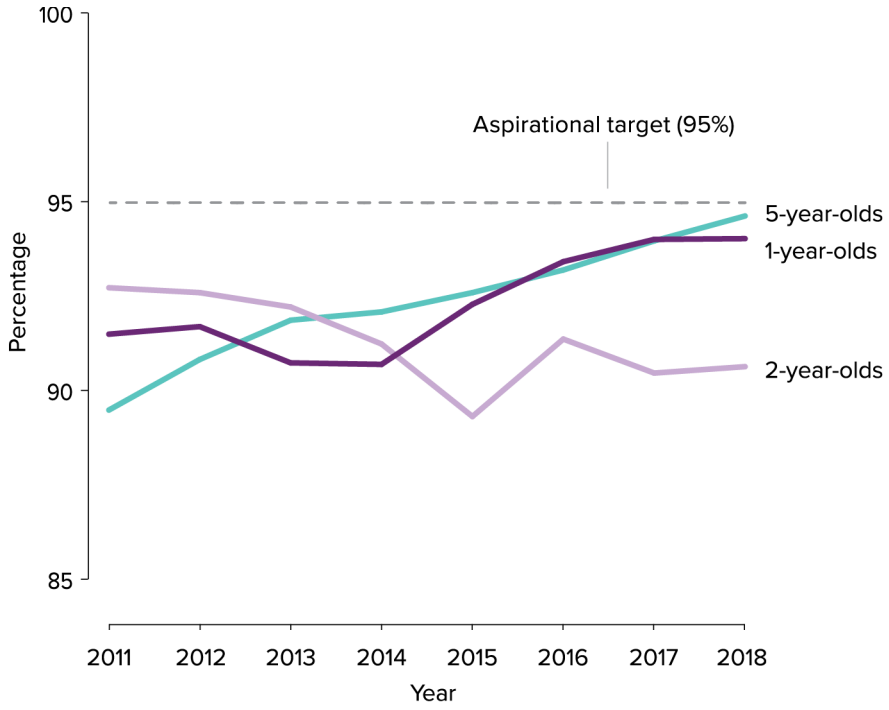
1 World Health Organization 2006, *Global immunization vision and strategy 2006–2015*, WHO, Geneva.

2 Ruff, T, Taylor, K & Nolan, T 2012, 'Australia's contribution to global immunisation', *Australian and New Zealand Journal of Public Health,* vol. 36, pp. 564–9.

3 World Health Organization 2018, *WHO recommendations for routine immunization*, WHO, Geneva, www.who.int/immunization/policy/immunization_tables/en.

Figure 1 Childhood immunisation coverage in Australia, 2008–18



Source: Data from the Australian Immunisation Register, prepared by the Australian Government Department of Health; 2018 data based on annualised data from 1 April 2017 to 30 September 2018

The current NIP consists of a schedule (the NIP Schedule) of recommended vaccines by age group and/or medical risk, made available free of charge to Australians in those age groups and risk groups. To date, the NIP Schedule includes vaccines against 17 diseases: hepatitis B, diphtheria, tetanus, pertussis (whooping cough), *Haemophilus influenzae* type b (Hib) disease, polio, pneumococcal, rotavirus, measles, mumps, rubella, meningococcal, varicella (chickenpox), hepatitis A, human papillomavirus (HPV), influenza and herpes zoster (Appendix A). As a result of the success of the NIP, many diseases – such as rubella, tetanus, diphtheria, Hib and measles – are now

extremely rare in Australia. However, the lack of visibility of these diseases in the community has its own challenges – it can lead to complacency among consumers and healthcare providers.

The appropriate administration of vaccines is underpinned by the *Australian Immunisation Handbook*,[4] which is developed by the Australian Technical Advisory Group on Immunisation (ATAGI). The Handbook is an essential resource for those involved in the delivery of immunisation services throughout Australia. It provides comprehensive information about all vaccines approved for use in Australia, including routine vaccination of infants, young children, adolescents and older people; vaccination for special-risk groups (e.g. Aboriginal and Torres Strait Islander people); vaccination for international travellers; and groups with special vaccination requirements (e.g. pregnant women, people who are immunocompromised).

Historical context

Immunisation, as a public health issue, was traditionally the responsibility of the states and territories, in line with the federal system in Australia. As demand for immunisation and its availability increased in the latter half of the 20th century, a range of disparities in funding for, and access to, vaccines appeared between states and territories. National surveys in the 1980s suggested that only about 53% of Australian children were adequately immunised.[5] This gave rise to the first National Immunisation Strategy in 1993; the establishment of the Australian Childhood Immunisation Register (ACIR) in 1994, initially as a pilot, and adopted in 1996; and the introduction of the Immunise Australia Program, also known as the NIP, in 1997.[6]

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4 Australian Technical Advisory Group on Immunisation 2018, *Australian Immunisation Handbook*, Australian Government Department of Health, Canberra, https://immunisationhandbook.health.gov.au.

5 Australian Bureau of Statistics 1992, *1989–90 National Health Survey, Children's Immunisation, Australia*, cat. no. 4379.0, ABS, Canberra.

6 Ruff, T, Taylor, K & Nolan, T 2012, 'Australia's contribution to global immunisation', *Australian and New Zealand Journal of Public Health*, vol. 36, pp. 564–9.

The data held in the ACIR and now the Australian Immunisation Register have enabled detailed tracking of immunisation coverage, issuing of reminders for overdue immunisation, and provision of consolidated immunisation histories for parents and providers.

The Immunise Australia Program outlined a Seven Point Plan to improve immunisation coverage across the nation. Since the introduction of the NIP, childhood immunisation coverage has increased dramatically: 94.0% of 1-year-olds, 90.6% of 2-year-olds and 94.6% of 5-year-olds are now fully vaccinated (Figure 1).

Various arrangements for the funding and management of the NIP have been in place since its inception in 1997. Coordination between the Australian and state and territory governments has increased, leading to consistent funding for all vaccines on the NIP. Funding was initally agreed under the Public Health Outcome Funding Agreements and subsequently the Australian Immunisation Agreements.

Following changes to the federal financial arrangements between the Australian Government and the states and territories as a result of the Intergovernmental Agreement on Federal Financial Relations and the *Federal Financial Relations Act 2009*, the Australian Immunisation Agreements were replaced with the National Partnership on Essential Vaccines (NPEV) in 2009. The second NPEV commenced in 2017.

The NPEV describes the arrangements for the funding and delivery of a national, coordinated and integrated approach to maintaining and improving effective immunisation coverage for VPDs covered by the NIP.[7] It delineates the roles and responsibilities of the Australian Government, and states and territories, and provides the framework for payments to states and territories for achieving performance indicators.

7 www.federalfinancialrelations.gov.au/content/npa/health/national-partnership/essential_vaccines_2017-1.pdf

Funding for vaccine purchasing and services to support immunisation uptake has increased from $10 million per year in the mid-1970s to more than $460 million in 2017–18.

National Immunisation Program Schedule

When the NIP was established in 1997, it provided vaccines against nine childhood diseases. Today, the NIP Schedule is much more complex, reflecting the life-course approach of contemporary population health policy, and covering 17 diseases for infants, children, young adults, vulnerable adults (such as Aboriginal and Torres Strait Islander people, and pregnant women) and older people.[8]

Aboriginal and Torres Strait Islander people are an important population group for whom immunisation rates could still be improved. This objective is reflected in the performance indicators of the NPEV. Ensuring high immunisation coverage rates for Aboriginal and Torres Strait Islander people is also an important contribution to Closing the Gap in Indigenous health outcomes.

Governance

The current governance arrangements for the NIP reflect the collaborative, whole-of-government approach between the Australian, state and territory governments that has characterised the program since its introduction in 1997.

The National Immunisation Committee (NIC)[9] was established in 1992 with goals of achieving national consistency in the availability and pricing

8 Australian Technical Advisory Group on Immunisation 2018, *Australian Immunisation Handbook*, Australian Government Department of Health, Canberra, https://immunisationhandbook.health.gov.au.

9 Terms of reference and further information are available at https://beta.health.gov.au/health-topics/immunisation.

of vaccines, and developing national policies. The NIC leads policy development and evaluation of the implementation of the NIP, and provides advice on strategic directions. The NIC reports to the Australian Health Protection Principal Committee of the Australian Health Ministers' Advisory Council through the Communicable Diseases Network Australia. In line with the importance of collaborative and cooperative relationships to the success of the NIP, the NIC has members from all the key stakeholder groups in immunisation, including health professionals, consumers and researchers, as well as representatives from the Australian Government, state and territory governments, and local government.[10]

Technical advice on the operation of the NIP is provided by ATAGI,[11] which was also established in 1997. ATAGI provides technical advice to the Australian Government Minister for Health on the medical administration of vaccines available in Australia, including those on the NIP. In addition to technical experts, ATAGI's membership includes a consumer and general practitioners.

Strong relationships between the groups involved in immunisation policy, and program development and implementation are critical for the success of immunisation in Australia.

The NIP is consistent with the objectives of the National Medicines Policy, which are:

- timely access to the medicines that Australians need, at a cost individuals and the community can afford
- medicines meeting appropriate standards of quality, safety and efficacy
- quality use of medicines
- maintaining a responsible and viable medicines industry.[12]

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10 https://beta.health.gov.au/committees-and-groups/national-immunisation-committee

11 Terms of reference and further information are available at https://beta.health.gov.au/health-topics/immunisation.

12 Australian Government Department of Health 2000, *National Medicines Policy*, Department of Health, Canberra, www.health.gov.au/internet/main/publishing.nsf/Content/B2FFBF72029EEAC8CA257BF0001BAF3F/$File/NMP2000.pdf.

In 2005, the *National Heath Act 1953* was amended to provide for the evaluation of cost-effectiveness of vaccines by the Pharmaceutical Benefits Advisory Committee (PBAC), to provide a more consistent and transparent process for recommending vaccines for Australian Government funding.

Under these arrangements, the *National Health Act 1953* requires that, before a medicine (such as a vaccine) is provided for free through the NIP or subsidised under the Pharmaceutical Benefits Scheme, the PBAC must undertake a thorough and objective assessment of its clinical efficacy and cost-effectiveness (value for money), in comparison with other available treatments. The PBAC then provides advice to the Minister for Health. The Act does not allow for ministerial or departmental discretion to list a vaccine on the NIP in the absence of this recommendation. As part of the legislative changes in 2005, existing vaccines on the NIP were listed on the National Health (Immunisation Program – Designated Vaccines) Determination. PBAC recommendations are given in response to vaccine sponsor submissions. With these legislative changes, ATAGI was given a strengthened role in providing technical advice to the PBAC on new vaccines, and specific vaccines expertise was added to the PBAC.

International focus on immunisation

Immunisation has been a specific focus globally during the past decade, particularly for organisations such as the United Nations Children's Fund (UNICEF) and WHO. In 2012, the World Health Assembly endorsed the Global Vaccine Action Plan, which outlines a commitment to ensure that no-one misses out on vital immunisation by 2020. Its strategic objectives are:

1. All countries commit to immunization as a priority.
2. Individuals and communities understand the value of vaccines and demand immunization as both their right and responsibility.
3. The benefits of immunization are equitably extended to all people.
4. Strong immunization systems are an integral part of a well functioning health system.

5. Immunization programmes have sustainable access to predictable funding, quality supply and innovative technologies.
6. Country, regional and global research and development innovations maximize the benefits of immunization.

As a result of work already started or undertaken through the NIP, and the key action areas outlined in the National Immunisation Strategy, Australia is well placed to achieve the strategic objectives of the Global Vaccine Action Plan.

Australia is an active partner in the WHO Western Pacific Regional Office (WPRO) Expanded Programme on Immunization, and contributes to strengthening the WPRO's efforts to control hepatitis B through immunisation, eliminate measles in the region, and continue to maintain WPRO polio free status through a range of efforts within Australia and with our partners in the region. In 2012, Australia was declared by the WPRO as having achieved the regional goal of reducing chronic hepatitis B infection rates to less than 1% among children of at least 5 years of age.

In 2014, Australia was verified by WHO as having eliminated endemic measles transmission. Australia is currently working towards providing evidence to WHO to verify the elimination of endemic rubella transmission.

Development of the current National Immunisation Strategy

At the Australian Health Ministers' Conference on 22 July 2008, it was agreed that a new National Immunisation Strategy be developed. The NIC was given responsibility for overseeing the development of the strategy, which was finally agreed in 2013.

In mid-2017, all Australian health ministers agreed to review the strategy and tasked Jurisdictional Immunisation Coordinators with refreshing the strategy,

noting the significant efforts undertaken to develop it, and that the key strategies and actions were still contemporary.

The strategy has been endorsed by the NIC, and agreed by the Australian, state and territory health ministers.

Strategic priorities

The consultation process identified the following eight strategic priorities for inclusion in the strategy:

- Improve immunisation coverage.
- Ensure effective governance of the National Immunisation Program.
- Ensure secure vaccine supply and efficient use of vaccines for the National Immunisation Program.
- Continue to enhance vaccine safety monitoring systems.
- Maintain and ensure community confidence in the National Immunisation Program through effective communication strategies.
- Strengthen monitoring and evaluation of the National Immunisation Program through assessment and analysis of immunisation register data and vaccine-preventable disease surveillance.
- Ensure an adequately skilled immunisation workforce through promoting effective training for immunisation providers.
- Maintain Australia's strong contribution to the region.

Key achievements from the National Immunisation Strategy 2013–2018

Significant gains were made during the period of the National Immunisation Strategy 2013–2018. Immunisation coverage is now above 90% for all monitored age groups, and 94.6% among 5-year-old children. Aboriginal and Torres Strait Islander children were the first to achieve the 95% coverage target, an important gain that will generate improved health outcomes for years to come. HPV vaccination rates are now higher than ever, with 80.2% of females turning 15 in 2017 and 75.9% of males turning 15 in 2017 fully vaccinated.

New vaccines have been made available through the NIP, including HPV vaccine for boys, herpes zoster (shingles) vaccine for 70–79-year-olds, pertussis vaccines for pregnant women and meningococcal ACWY vaccines for infants and adolescents. In July 2017, the NIP was expanded to enable catch-up for all individuals up to the age of 19 years, and refugees and humanitarian entrants of all ages. Some states have also introduced vaccines for influenza for young children.

Australia was one of the first countries in the world to implement a whole-of-life immunisation register when the Australian Immunisation Register was implemented in September 2016.

A new NPEV commenced in July 2017, introducing stronger incentives for states to achieve higher immunisation coverage rates, and to support program sustainability through targets for wastage (loss of vaccines due to cold chain breach or other damage) and leakage (unauthorised use of vaccines).

The Australian Health Protection Principal Committee maintained oversight of immunisation, including through the Communicable Diseases Network Australia, the NIC and Jurisdictional Immunisation Coordinators.

Centralised procurement for essential vaccines has now been embedded in the NIP, to support efficiencies in administration and value for money. The Australian Government works closely with states and territories, and pharmaceutical companies to support continuous supply of essential vaccines for Australia.

In addition to implementing the vaccine safety recommendations in Professor John Horvath's review of the management of adverse events associated with the influenza vaccines Panvax and Fluvax, the Australian Government has funded the establishment of the AusVaxSafety national surveillance network. AusVaxSafety is a world-leading active monitoring system that enables near real-time tracking of vaccine adverse events in Australians. The Advisory Committee on Vaccines plays an integral role by providing advice to support the registration of vaccines and their introduction into the Australian market, and providing advice on ongoing monitoring of, and technical input into, investigations of adverse events following immunisation. All stakeholders continue to play an important role in monitoring for adverse events and reporting them to the Therapeutic Goods Administration (TGA).

From 2017, the 'Get the facts about immunisation' campaign was the first national immunisation campaign in more than 20 years, providing parents with evidence-based information to support decision making on vaccination. States and territories also implement a range of innovative campaigns, including 'Immunise to 95' and 'Save the date to vaccinate'.

The Australian Government's No Jab, No Pay policy, and No Jab, No Play policies implemented in some states, have supported vaccination uptake and improved immunisation coverage rates.

The Australian Health Protection Principal Committee endorsed the National Immunisation Education Framework for Health Professionals in October 2017 and was tasked by the Council of Australian Governments' Health Council with its implementation.

Australia was verified by WHO as having eliminated endemic measles in 2014. In 2018, WHO declared that rubella had been eliminated in Australia, according to its official threshold. Rubella remains endemic in many other countries, meaning that the virus can still be imported by travellers from these countries. Therefore, we will continue to work to maintain this elimination status in Australian and the region. In addition, Australia has maintained its poliomyelitis (polio)-free status, and works closely with the WPRO and WHO headquarters towards achieving the global eradication of polio. Australia also actively supports other National Immunisation Technical Advisory Groups (NITAGs) through its own NITAG: ATAGI.

Further information on state and territory initiatives under the National Immunisation Strategy 2013–2018 is provided in Appendix B.

Summary of strategic priorities and key actions

STRATEGIC PRIORITY 1:
Improve immunisation coverage

Key actions

- Maintain or improve immunisation coverage in accordance with the NIP Schedule.
- Work towards achieving immunisation coverage rates of 95% for children aged 1, 2 and 5 years.
- Work towards achieving and maintaining immunisation coverage rates of 95% for Aboriginal and Torres Strait Islander children aged 1, 2 and 5 years.
- Improve immunisation coverage for population groups at higher risk.
- Continue implementing strategies to improve immunisation coverage in areas where coverage is low.
- Facilitate access to immunisation services for all Australians, regardless of financial or geographical barriers.
- Implement strategies to improve and better understand adolescent immunisation coverage.
- Improve monitoring and uptake of influenza, pneumococcal and herpes zoster vaccination.

STRATEGIC PRIORITY 2:
Ensure effective governance of the National Immunisation Program

Key actions

- Ensure that governance arrangements for vaccination in Australia are clearly defined, accountable and effective, with regular processes in place to monitor and evaluate performance and provide feedback.
- Prepare regular reports of the NIP that provide a summary of key activities, achievements and challenges.

STRATEGIC PRIORITY 3:
Ensure secure vaccine supply and efficient use of vaccines for the National Immunisation Program

Key actions

- Efficient and effective procurement of essential vaccines for the NIP.
- Ensure that key guidelines support program objectives (e.g. *National Vaccine Storage Guidelines* and the development of an Australian standard for purpose-built vaccine refrigerators).
- Review the factors that impact on vaccine wastage and leakage to better understand, identify and implement best-practice models to minimise wastage and leakage.

STRATEGIC PRIORITY 4:

Continue to enhance vaccine safety monitoring systems

Key actions

- Continue to improve vaccine safety arrangements to align with international best practice, including policies, monitoring, surveillance and responsiveness.
- Continue to work with key stakeholders to improve the timeliness and completeness of surveillance and reporting of adverse events following immunisation, with guidance from the Advisory Committee on Vaccines.
- Assess the need for, and implement where required, a specific vaccine safety plan for the release of each new vaccine or existing vaccine to a new cohort for the NIP.
- Raise community and health professional awareness of vaccine safety systems to improve confidence in the program and reporting of adverse events.
- Facilitate opportunities for linkages between the national immunisation registers and other data collections, to better assess and ensure vaccine safety.

STRATEGIC PRIORITY 5:

Maintain and ensure community confidence in the National Immunisation Program through effective communication strategies

Key actions

- Identify and implement ways to strengthen the current communications strategy, particularly for population groups with low and/or delayed immunisation coverage.
- Monitor and revise communication resources and campaigns nationally to improve the reach of immunisation awareness and confidence for key target groups.
- Identify and implement ways to use current and emerging social marketing tools/technology to reach target audiences.
- Maintain and monitor the effectiveness of childhood vaccination awareness and promotion campaigns and incentives.
- Implement communication activities to promote community confidence in the process of monitoring and responding to vaccine safety events.

STRATEGIC PRIORITY 6:

Strengthen monitoring and evaluation of the National Immunisation Program through assessment and analysis of immunisation register data and vaccine-preventable disease surveillance

Key actions

- Use monitoring and surveillance systems to identify emerging VPD trends and patterns, to inform vaccine policy and identify priorities for the NIP.
- Use immunisation registers to support the achievement of high immunisation coverage rates by identifying groups at risk of delayed immunisation and/or gaps in immunisation coverage compared with the NIP Schedule.
- Undertake activities that contribute to continuous improvement of the integrity, accuracy and timeliness of data held in immunisation registers.
- Facilitate opportunities for linkages between national immunisation registers and other data collections, to better assess program outcomes, vaccine safety and vaccine effectiveness.
- Investigate and implement ways to optimise and incorporate new surveillance technologies, to improve timeliness, effectiveness and efficiency of current VPD surveillance systems.
- Use advanced laboratory techniques to support high-quality surveillance via VPD detection and characterisation.
- Monitor potential opportunities to improve and strengthen the immunisation system using e-health and other technological initiatives.
- Through disease surveillance, identify the risks posed by unvaccinated cohorts in the population.

STRATEGIC PRIORITY 7:

Ensure an adequately skilled immunisation workforce through promoting effective training for immunisation providers

Key actions

- Undertake ongoing review and enhancement of the *Australian Immunisation Handbook* and communication resources for providers to ensure that their immunisation education needs are met.
- Support immunisation service providers through effective communication, education and training.
- Implement the National Immunisation Education Framework for Health Professionals.
- Support an appropriately qualified immunisation workforce, including new entrants into the workforce.
- Continue national harmonisation of the credentialing and recognition of immunisation providers, and transferability of skills and qualifications between jurisdictions.

STRATEGIC PRIORITY 8:

Maintain Australia's strong contribution to the region

Key actions

- Continue to be an active participant in the WHO WPRO Expanded Programme on Immunization, and other regional and globally relevant immunisation initiatives, particularly in relation to:
  - maintaining rubella elimination
  - supporting regional efforts towards the elimination of measles
  - maintaining polio eradication
  - strengthening hepatitis B control
  - continuing to contribute to National Immunisation Technical Advisory Groups.

STRATEGIC PRIORITY 1:

Improve immunisation coverage

The continued success of the NIP is dependent on maintenance and improvement of vaccination rates for all eligible Australians. Governments have a role to play through the funding and delivery of vaccines, implementation and management of registers and surveillance systems, and communication strategies to promote immunisation to specific population groups and more broadly.

General practitioners and other healthcare professionals also have an important role to play in both promoting and delivering immunisation to their patients.

Achieving 95% immunisation coverage

Consistent with the WHO target for the western Pacific region, Australian governments have agreed to a target of 95% immunisation coverage for children aged 1, 2 and 5 years by 2020.[13]

This target is reflected in the second NPEV, in which the Australian, state and territory governments have agreed to improve vaccination coverage rates among 5-year-old children to the target of 95%.

13 World Health Organization 2015, *Regional framework for implementation of the Global Vaccine Action Plan in the western Pacific*, WHO, Geneva, http://iris.wpro.who.int/bitstream/handle/10665.1/10921/9789290617099_eng.pdf.

Childhood vaccination

Australia has an excellent record in childhood immunisation coverage, achieving national vaccination coverage rates of at least 90% for children at 12 months, 24 months and 60 months of age in 2018. However, a high national coverage rate can mask geographic areas and population groups that have low coverage. It will continue to be important to maintain and improve these rates over the next 5 years. Many countries in the world report coverage rates at around 95%.

The proportion of the population that has to be immune to interrupt disease transmission differs for each VPD. For measles, which is the most contagious of the VPDs, the proportion is 95%. This emphasises the need to ensure that high coverage rates are achieved not only at a national level but also locally. Recent outbreaks of measles illustrate the importance of achieving high vaccination coverage rates. Tetanus vaccination provides only individual protection, so coverage as high as possible is desirable.

The success of the NIP in decreasing VPDs in Australia has embedded within it the risk of complacency as people become unfamiliar with these diseases. There has been a growing trend of parents who hesitate to have their children vaccinated or delay vaccination. Recent research suggests that as many as 3% of parents delay having their children vaccinated at the appropriate time.[14] Such delay, if short, may not be apparent in coverage rates assessed some months after immunisations are due. However, delay may be placing some children at risk of contracting VPDs.

The ‘Get the facts about immunisation’ campaign, and state and territory initiatives such as 'Vaccidate' and 'Save the date to vaccinate', provide parents with evidence-based information about immunisation to support immunisation uptake and improve confidence in vaccination.

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14 Hull, B, Deeks, S, Menzies, R & McIntyre, P 2007, *Immunisation coverage annual report*, National Centre for Immunisation Research & Surveillance, Sydney.

The Australian Government has introduced reforms to Australia's childhood immunisation arrangements that aim to increase the immunisation rates of Australian children. From 1 January 2016, No Jab, No Pay removed conscientious and religious objections as valid reasons for exemption from the immunisation requirements for family payments. The Australian Government also extended the immunisation requirements for Family Tax Benefit Part A Supplement to all individuals under the age of 20 years.

Building on efforts in New South Wales, Queensland and Victoria to introduce immunisation requirements for childcare and preschool enrolments, the Prime Minister called on all states and territories to implement a nationally consistent No Jab, No Play policy. The Council of Australian Governments' Health and Education councils are developing options for improving immunisation coverage rates in early childhood settings.

Adolescent vaccination

Adolescent vaccination is delivered in high-school-based programs conducted by states and territories. The current schedule provides for diphtheria-tetanus-pertussis and HPV. With the exception of HPV vaccination, accurate data on national immunisation coverage rates for adolescent vaccines are not available.

HPV immunisation rates are at a high level, reaching about 80.2% among females turning 15 in 2017 and 75.9% among males turning 15 in 2017.[15]

Since the HPV vaccine was introduced in Australia, the number of new cases of genital warts[16] and high-grade cervical abnormalities[17] has declined.

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15 National HPV Program Register (www.hpvregister.org.au).

16 Ali, H, Donovan, B, Wand, H, Read, TRH, Regan, DG, Grulich, AE, Fairley, CK & Guy, RJ 2013, 'Genital warts in young Australians five years into national human papillomavirus vaccination programme: national surveillance data', *BMJ*, vol. 346, f2032.

17 Brotherton, JML, Fridman, M, May, C, Chappell, G, Saville, AM & Gertig, DM 2011, 'Early impact of the HPV vaccination program on cervical abnormalities in Victoria, Australia: an ecological study', *Lancet*, vol. 377, pp. 2085–92.

The introduction of the 9-valent HPV vaccine onto the NIP from 2018 is expected to lead to further improvements.

Catch-up vaccination

Catch-up vaccination is now available through the NIP to provide eligible individuals with vaccines they would normally have received during childhood. Ensuring that eligible individuals take up these opportunities is important for reducing the risk of VPDs.

Vaccination for older Australians

Vaccination rates for Australians aged 65 years and over for influenza and pneumococcal disease have improved over time. The 2009 Adult Vaccination Survey estimated that, for the population aged ≥65 years, 74.6% were vaccinated against seasonal influenza and 54.4% against pneumococcal disease.[18] Vaccination uptake among at-risk adults (e.g. those with chronic conditions) is not optimal.[19] There was very high demand for the shingles vaccine when it was introduced onto the NIP in November 2016. It is important to better monitor vaccination uptake in older Australians and consider ways to improve vaccination rates in this important population group.

Population groups at higher risk from vaccine-preventable diseases

One of the key challenges in improving immunisation coverage is to target immunisation to population groups that are at increased risk from VPDs. In Australia, these include Aboriginal and Torres Strait Islander people,

18 https://beta.health.gov.au/resources/publications/national-immunisation-research-qualitative-2016-and-quantitative-2017

19 Menzies, RI, Leask, J, Royle, J & MacIntyre, CR 2017, 'Vaccine myopia: adult vaccination also needs attention', *Medical Journal of Australia*, vol. 206, no. 6, pp. 238–9.

pregnant women and specific age cohorts. In some cases, people working in areas with a high risk of transmission, such as health care, aged care or child care, are also at higher risk. Employers are responsible for workplace vaccination through workplace health and safety programs.[20]

Key actions

- Maintain or improve immunisation coverage in accordance with the NIP Schedule.
- Work towards achieving immunisation coverage rates of 95% for children aged 1, 2 and 5 years.
- Work towards achieving and maintaining immunisation coverage rates of 95% for Aboriginal and Torres Strait Islander children aged 1, 2 and 5 years.
- Improve immunisation coverage for population groups at higher risk.
- Continue implementing strategies to improve immunisation coverage in areas where coverage is low.
- Facilitate access to immunisation services for all Australians, regardless of financial or geographical barriers.
- Implement strategies to improve and better understand adolescent immunisation coverage.
- Improve monitoring and uptake of influenza, pneumococcal and herpes zoster vaccination.

20 www.federalfinancialrelations.gov.au/content/npa/health/national-partnership/essential_vaccines_2017-1.pdf

STRATEGIC PRIORITY 2:

Ensure effective governance of the National Immunisation Program

The governance arrangements for immunisation in Australia are complex, reflecting the range of responsibilities of the Australian, state, territory and local governments, as well as the roles of many other stakeholders involved in the design, delivery and uptake of immunisation.

National, state and territory arrangements for immunisation are articulated in the NPEV. The Australian Health Protection Principal Committee has overall responsibility for immunisation within the health advisory arrangements, and delegates responsibility to the Communicable Diseases Network Australia, the NIC and Jurisdictional Immunisation Coordinators. The Advisory Committee on Vaccines advises the TGA on pre-market and post-market regulatory and program aspects of immunisation in Australia.

Strong relationships between these groups are critical to the success of immunisation in Australia. For instance, the NIC plays a key role in implementing the NIP by bringing together professional organisations of immunisation providers at the national level with government system managers and experts. These arrangements are shown in Appendix C.

A number of legislative frameworks govern the operation of immunisation in Australia: *National Health Act 1953*, *A New Tax System (Family Assistance) Act 1999*, *Australian Immunisation Register Act 2015*, public health Acts in states and territories, and poisons Acts in states and territories.

Reports about immunisation and the NIP are made available throughout the year in various publications, including:

- quarterly immunisation coverage data from the Australian Immunisation Register[21]
- immunisation coverage reports, evaluations, VPD surveillance and reviews of adverse events
- updates to the vaccine schedule and the digital *Australian Immunisation Handbook*
- results of ad hoc adult vaccination surveys
- HPV vaccination coverage reports.

Key actions

- Ensure that governance arrangements for vaccination in Australia are clearly defined, accountable and effective, with regular processes in place to monitor and evaluate performance and provide feedback.
- Prepare regular reports of the NIP that provide a summary of key activities, achievements and challenges.

21 Australian Government Department of Health 2018, Childhood immunisation coverage, Department of Health, Canberra, https://beta.health.gov.au/topics/immunisation/childhood-immunisation-coverage.

STRATEGIC PRIORITY 3:

Ensure secure vaccine supply and efficient use of vaccines for the National Immunisation Program

National procurement of essential vaccines

Since July 2017, the Australian Government has procured all essential vaccines for the NIP on behalf of the states and territories. Centralisation of procurement is designed to achieve value for money, and improve the efficiency and effectiveness of vaccine-purchasing arrangements.

Governments continue to monitor vaccine supply trends and issues globally to understand potential impacts locally.

Vaccine wastage and cold chain maintenance

Through the NPEV, states and territories have agreed to work to ensure the cost-effective delivery of vaccination services, including the minimisation of wastage (loss of vaccines due to cold chain breach or other damage) and leakage (unauthorised use of vaccines), in return for performance payments.

One of the key risks associated with the NIP is the maintenance of the cold chain, and the safe transport and storage of vaccines. The *National Vaccine Storage Guidelines*, released in 2005, were targeted at vaccine providers and encouraged them to 'Strive for 5' (degrees) to maintain the

safety and viability of vaccines.[22] Accreditation of general practices includes compliance with Strive for 5 guidelines. Strive for 5, with its accompanying tools and resources, is well accepted and used by immunisation providers. The development and implementation of an Australian standard for purpose-built vaccine refrigerators will support program objectives.

Given the value of vaccines, there is an ongoing need to monitor and continually reduce vaccine wastage. The NPEV aims for vaccine wastage below 5% (down from 10%) and now includes a broader range of vaccines given in early childhood.

Key actions

- Efficient and effective procurement of essential vaccines for the NIP.
- Ensure that key guidelines support program objectives (e.g. *National Vaccine Storage Guidelines* and the development of an Australian standard for purpose-built vaccine refrigerators).
- Review the factors that impact on vaccine wastage and leakage to better understand, identify and implement best-practice models to minimise wastage and leakage.

22 Australian Government Department of Health 2013, *National vaccine storage guidelines: Strive for 5*, 2nd edn, Department of Health, Canberra, https://beta.health.gov.au/resources/publications/national-vaccine-storage-guidelines-strive-for-5-2nd-edition.

STRATEGIC PRIORITY 4:

Continue to enhance vaccine safety monitoring systems

An area of concern for the public is the safety of vaccines and minimising adverse events following immunisation. Assessment of vaccine safety considers the balance between the benefits and the risks of the vaccine. Although no vaccine or medicine is completely without side effects, the delivery of immunisation to well population groups means that vaccine safety considerations are paramount.

The Horvath Review of the Management of Adverse Events Associated with Panvax and Fluvax (the Horvath Review) examined the vaccine safety system in Australia following adverse events associated with seasonal influenza vaccine in children in 2010.[23] The review made seven recommendations to improve and strengthen the safety of immunisation in Australia. These recommendations have been implemented and continue to support a strong system of vaccine safety.

The Advisory Committee on Vaccines advises the TGA and the Office of Health Protection on pre-market and post-market regulatory and program aspects of vaccine safety.

In addition to passive monitoring of adverse events following immunisation overseen by the TGA (the Database of Adverse Event Notifications and the Australian Adverse Drug Reaction Reporting System), the Australian Government has funded the AusVaxSafety national surveillance network. AusVaxSafety is the world's first national active surveillance system for

23 Horvath, J 2011, *Review of the management of adverse events associated with Panvax and Fluvax*, Australian Government Department of Health and Ageing, Canberra.

adverse events following immunisation and uses sentinel sites across Australia.

Annual national reports are published using data from both surveillance systems, providing the community with information about vaccine safety.

National protocols for program action have been agreed with the states and territories to ensure a nationally consistent response to safety issues involving an NIP vaccine.

Key actions

- Continue to improve vaccine safety arrangements to align with international best practice, including policies, monitoring, surveillance and responsiveness.
- Continue to work with key stakeholders to improve the timeliness and completeness of surveillance and reporting of adverse events following immunisation, with guidance from the Advisory Committee on Vaccines.
- Assess the need for, and implement where required, a specific vaccine safety plan for the release of each new vaccine or existing vaccine to a new cohort for the NIP.
- Raise community and health professional awareness of vaccine safety systems to improve confidence in the program and reporting of adverse events.
- Facilitate opportunities for linkages between the national immunisation registers and other data collections, to better assess and ensure vaccine safety.

STRATEGIC PRIORITY 5:

Maintain and ensure community confidence in the National Immunisation Program

through effective communication strategies

The ongoing success of the NIP depends on a high level of community confidence in immunisation, among both consumers and health professionals. As immunisation coverage rates remain high, and outbreaks of VPDs are rare, it becomes more and more important to ensure community support to maintain sufficiently high levels of immunisation coverage to protect the whole population.

Childhood immunisation

Parents who delay immunising their children at the recommended time may need to be reassured about the safety of childhood vaccines, and of the measures in place to prevent, monitor and respond to vaccine safety concerns.

There is an ongoing need for up-to-date information, resources and tools to assist healthcare professionals to sensitively and respectfully discuss issues of concern about immunisation with parents. These resources should provide ready access to scientific information about the risks, benefits and safety of specific childhood vaccines.

Vaccine safety

A key communications challenge is to ensure community confidence in the methods for identifying and responding to vaccine safety issues. Coordinated and proactive communication to all stakeholders is needed to improve awareness of, and confidence in, Australia's vaccine safety assessment and monitoring system.

Specific target groups

The NIP has a strong communications program to promote immunisation to target groups, such as carers and their children, Aboriginal and Torres Strait Islander people, and health professionals. Promotional materials associated with the existing communications program are available for each target population and in various languages. Current and emerging concerns and other barriers need to be identified so that appropriate communication strategies can be developed to promote immunisation to these and other target groups, such as adolescents and older Australians. Social media and other technological opportunities are now available to improve communication with groups that are hard to reach.

Key actions

- Identify and implement ways to strengthen the current communications strategy, particularly for population groups with low and/or delayed immunisation coverage.
- Monitor and revise communication resources and campaigns nationally to improve the reach of immunisation awareness and confidence for key target groups.
- Identify and implement ways to use current and emerging social marketing tools/technology to reach target audiences.
- Maintain and monitor the effectiveness of childhood vaccination awareness and promotion campaigns and incentives.
- Implement communication activities to promote community confidence in the process of monitoring and responding to vaccine safety events.

STRATEGIC PRIORITY 6:

Strengthen monitoring and evaluation of the National Immunisation Program

through assessment and analysis of immunisation register data and vaccine-preventable disease surveillance

National Framework for Communicable Disease Control

Under the auspices of the Communicable Diseases Network Australia, the Australian, state and territory governments have developed a joint National Framework for Communicable Disease Control, which spans the prevention of, detection of, surveillance of, response to, and control of, communicable diseases – including VPDs – in Australia. One of the key outcomes for the framework is to strengthen the National Notifiable Diseases Surveillance System, and other surveillance systems that support national data collection and reporting. This National Immunisation Strategy will ensure that the NIP is consistent with the vision and key directions of the framework, and particularly that a comprehensive monitoring plan is in place when a new vaccine is introduced.

Surveillance systems for vaccine-preventable diseases in Australia

Australia has well-established and comprehensive systems for the surveillance of VPDs, which include:

- a serosurveillance program to measure population immunity over time
- case-based surveillance of incident cases through the National Notifiable Diseases Surveillance System to monitor disease in the community and the impact of prevention strategies; this is complemented by additional, enhanced surveillance activities for invasive pneumococcal and meningococcal diseases, and hepatitis B to monitor risk factors for disease and disease outcomes
- laboratory surveillance programs, including those to monitor circulating influenza, rotavirus, and invasive pneumococcal and meningococcal types; these are an integral component used to inform vaccination strategies and the development of candidate vaccines
- sentinel surveillance systems, including those used to monitor the impact of the National HPV Vaccination Program on targeted HPV genotypes, and general practice and hospital-based sentinel systems to characterise the severity of seasonal influenza and serious childhood infections
- secondary use of administrative datasets such as hospitalisation data from the Australian Institute of Health and Welfare's National Hospital Morbidity Database, and cause-of-death data from the Australian Bureau of Statistics.

Other national and state-based surveillance systems capture additional surveillance data, such as:

- severe cases of selected VPDs or their complications in children through the Australian Paediatric Surveillance Unit and the Paediatric Active Enhanced Disease Surveillance program
- sentinel information on influenza

- sentinel information on the circulating genotypes of rotavirus causing hospitalisation in children through the Australian Rotavirus Surveillance Program
- antibiotic resistance patterns in meningococcal disease isolates through the Australian Meningococcal Surveillance Program.

Better use of immunisation coverage data

One of the key areas for action in this strategy is to improve the quality of data held in the national immunisation registers, and consider the potential advantages and opportunities afforded by linking these data with other health datasets. Data linkage and better use of data held in the national immunisation registers have a range of potential benefits, including improved program evaluation, better understanding and quantification of adverse events, and assessment of vaccine efficacy in a national program setting.

e-health developments

Rapid technological advances in information communications systems are occurring throughout the world, and health systems technology is one area that is reaping benefits from these advances. The Australian Immunisation Register is already able to provide vaccination information to the My Health Record system, which provides individuals and their healthcare providers with information about vaccines administered and those overdue. Over time, there may be further opportunities to improve and strengthen the immunisation system using e-health and other technological advances.

Laboratory testing for vaccine-preventable diseases

Appropriate specimen collection, transport and laboratory testing are essential for accurate diagnosis. Effective surveillance of VPDs requires close

collaboration of clinicians, public health professionals and laboratories to create a coordinated public health laboratory network. Laboratory testing also supports enhanced surveillance processes through monitoring of strains and the ability to compare circulating strains with the components of the vaccine.

Key actions

- Use monitoring and surveillance systems to identify emerging VPD trends and patterns, to inform vaccine policy and identify priorities for the NIP.
- Use immunisation registers to support the achievement of high immunisation coverage rates by identifying groups at risk of delayed immunisation and/or gaps in immunisation coverage compared with the NIP Schedule.
- Undertake activities that contribute to continuous improvement of the integrity, accuracy and timeliness of data held in immunisation registers.
- Facilitate opportunities for linkages between national immunisation registers and other data collections, to better assess program outcomes, vaccine safety and vaccine effectiveness.
- Investigate and implement ways to optimise and incorporate new surveillance technologies, to improve timeliness, effectiveness and efficiency of current VPD surveillance systems.
- Use advanced laboratory techniques to support high-quality surveillance via VPD detection and characterisation.
- Monitor potential opportunities to improve and strengthen the immunisation system using e-health and other technological initiatives.
- Through disease surveillance, identify the risks posed by unvaccinated cohorts in the population.

STRATEGIC PRIORITY 7:

Ensure an adequately skilled immunisation workforce

through promoting effective training for immunisation providers

Immunisation in Australia is provided by a range of healthcare professionals working in different healthcare settings, including general practitioners, nurses, local government workers, pharmacists, and Aboriginal and Torres Strait Islander health practitioners. The availability of a diverse network of providers helps to ensure that immunisation services are widely accessible and enables consumers to select their preferred immunisation provider.

Immunisation providers have a key role in ensuring that their patients are well informed about the benefits of immunisation. The *Australian Immunisation Handbook* provides evidence-based clinical practice guidelines for health professionals on the safe and effective use of all vaccines available in Australia. It also helps immunisation providers to explain the benefits of immunisation to their patients. The new digital version has made it easier for providers to stay up to date with the latest evidence and recommendations.

Specialised training and credentialing are required in most states and territories to demonstrate a healthcare professional's capacity to administer vaccines safely and effectively without a medical order; the requirements depend on the jurisdiction's legislation. The Australian, state and territory governments have agreed on the National Immunisation Education Framework for Health Professionals as the benchmark for immunisation education programs to be recognised throughout Australia. This strategy will see the framework implemented in all states and territories.

The mix of providers who administer vaccines in Australia varies between jurisdictions. A better understanding of vaccine providers and their roles in different settings will improve the targeting of communication messages and identification of training needs.

Key actions

- Undertake ongoing review and enhancement of the *Australian Immunisation Handbook* and communication resources for providers to ensure that their immunisation education needs are met.
- Support immunisation service providers through effective communication, education and training.
- Implement the National Immunisation Education Framework for Health Professionals.
- Support an appropriately qualified immunisation workforce, including new entrants into the workforce.
- Continue national harmonisation of the credentialing and recognition of immunisation providers, and transferability of skills and qualifications between jurisdictions.

STRATEGIC PRIORITY 8:

Maintain Australia's strong contribution to the region

Prevention and control of VPDs is a global issue, and Australia is an active partner with the WHO WPRO. This includes the Expanded Programme on Immunization, which contributes to:

- strengthening the WPRO's efforts to control hepatitis B, rotavirus and bacterial meningitis through immunisation
- eliminating measles and rubella in the region
- continuing to maintain the WPRO's polio free status through a range of efforts in Australia and with our partners in the region.

In addition, Australia contributes funds to the Gavi Alliance.[24] Gavi is a public–private partnership that works in collaboration with other international organisations, donor governments, developing countries, financing institutions and vaccine manufacturers that are committed to protecting people's health through increasing access to immunisation. Gavi support helped countries immunise 277 million children between 2011 and 2015.[25]

The Australian Government Department of Foreign Affairs and Trade also contributes funds to UNICEF, which supports child health, including immunisation. In 2016, UNICEF procured and delivered more than 235 million doses of measles-containing vaccines on behalf of 76 countries.[26]

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24 Further information is available at Gavi – the Vaccine Alliance (www.gavi.org).

25 Gavi 2016, *Gavi progress report 2015*, Gavi, Geneva, https://www.gavi.org/results/gavi-progress-reports.

26 Measles & Rubella Initiative 2016, *2016 annual summary,* https://measlesrubellainitiative.org/wp-content/uploads/2017/10/2016-MRI-Annual-Summary.pdf.

This support reflects Australia's commitment to minimising the incidence of VPDs in the Asia–Pacific region. The Australian Government's contribution to immunisation programs has helped achieve remarkable improvement in vaccination rates, and health and development outcomes in countries in the region. It is important for Australia to be part of the global effort to prevent and control VPDs in an increasingly mobile world, where international travel and trade have become the norm for most countries and a large proportion of the world's population.

As part of the Expanded Programme on Immunization, Australia has met the regional 2012 targets for:

- reducing chronic hepatitis B infection to less than 1% among children at least 5 years of age
- eliminating endemic measles and establishing an Australian National Verification Committee for the elimination of measles
- contributing to polio eradication by ensuring that Australia has adequate surveillance for wild and vaccine-derived polioviruses, and undertaking a regular risk assessment for the transmission of wild poliovirus in Australia.

Key actions

- Continue to be an active participant in the WHO WPRO Expanded Programme on Immunization, and other regional and globally relevant immunisation initiatives, particularly in relation to:
  - maintaining rubella elimination
  - supporting regional efforts towards the elimination of measles
  - maintaining polio eradication
  - strengthening hepatitis B control
  - continuing to contribute to National Immunisation Technical Advisory Groups.

APPENDIX A

Key dates when vaccines first came into widespread use in Australia

Year	Vaccine
1945	Tetanus toxoid
1953	Diphtheria-tetanus-pertussis, whole-cell (DTPw)
1956	Poliomyelitis (Salk) (inactivated poliomyelitis vaccine [IPV])
1966	Poliomyelitis (Sabin) (live attenuated oral poliomyelitis vaccine [OPV])
1970	Measles
1971	Rubella
1975	Child diphtheria-tetanus (CDT)
1982	Adult diphtheria-tetanus (ADT)
1982	Measles-mumps
1982	Hepatitis B (hepB) (serum-derived vaccine)
1987	HepB (recombinant vaccine)
1989	Measles-mumps-rubella (MMR)
1993	*Haemophilus influenzae* type b (Hib)
1994	Hepatitis A
1997	Diphtheria-tetanus-pertussis, acellular (DTPa)

Year	Vaccine
1999	Influenza
1999	23-valent pneumococcal polysaccharide (23vPPV)
2000	DTPa-hepB
2000	Hib (PRP-OMP)-hepB
2001	7-valent pneumococcal conjugate (7vPCV)
2003	Varicella
2003	Meningococcal C conjugate
2004	Diphtheria-tetanus-pertussis, acellular; reduced antigen content formulations (dTpa and dTpa-IPV)
2005	Pentavalent and hexavalent combination DTPa vaccines (DTPa-hepB-IPV-Hib, DTPa-IPV, DTPa-hepB-IPV, DTPa-IPV-Hib)
2007	4-valent human papillomavirus (HPV)
2007	Rotavirus
2009	10-valent pneumococcal conjugate (10vPCV)
2011	13-valent pneumococcal conjugate (13vPCV)
2013	Measles-mumps-rubella-varicella (MMRV)
2013	Hib (PRP-T)-meningococcal C
2016	Herpes zoster
2018	9-valent HPV; meningococcal ACWY

Note: This table (from the *Australian Immunisation Handbook)* provides only some dates; for specific details on vaccine registration, funding, recommendations and program use, please see complete information in the vaccination history tables that are available from the website of the National Centre for Immunisation Research & Surveillance (www.ncirs.edu.au/provider-resources/vaccination-history).

APPENDIX B

Achievements under the National Immunisation Strategy 2013–2018

A range of initiatives have been undertaken across states and territories to promote immunisation and follow-up of children who appear in Australian Immunisation Register reports as overdue for vaccination. Some examples are:

- active promotion of immunisation and follow-up of any children who are not fully immunised
- specific follow-up programs for Aboriginal and Torres Strait Islander children to encourage and maintain up-to-date and on-time vaccinations.

All states and territories support members of the public with information about immunisation – for example, by:

- providing information and support to immunisation providers and members of the public through online and enquiry line mechanisms
- promoting immunisation through marketing campaigns and smart phone apps
- developing culturally appropriate resources for Aboriginal and Torres Strait Islander people, and people from culturally and linguistically diverse backgrounds
- attending community events, such as baby expos, to raise awareness of early childhood immunisation.

Each jurisdiction supports immunisation providers with education and updates on NIP changes and commitments. Initiatives include:

- holding regular education events, and producing educational material for immunisation providers
- maintaining a telephone advice line for immunisation providers (in some states)
- developing online education modules, such as
  - general immunisation information for immunisation and practice staff
  - resources to improve pertussis vaccination in pregnant women
  - resources to improve compliance with cold chain requirements.

Several states and territories have introduced or amended legislation to support immunisation:

- Queensland amended legislation relating to immunisation requirements for enrolment in child care.
- New South Wales strengthened immunisation requirements for enrolment in child care.
- Victoria introduced the No Jab, No Play legislation relating to vaccination requirements for enrolment in child care and kindergarten.

New South Wales and Queensland established specialist immunisation services at their primary children's hospitals to provide evidence-based advice and immunisation recommendations for children with complex medical needs, and for children who have experienced, or are at risk of, an adverse event following immunisation. This expands the network across the country of similar services.

New South Wales began employing Aboriginal Immunisation Health Workers in all local health districts to follow up Aboriginal children due and overdue for vaccination.

Most states and territories have introduced state/territory-funded vaccination programs targeting high-risk groups – for example, maternal pertussis vaccination, hepatitis B vaccination for at-risk individuals, meningococcal ACWY vaccination for adolescents, and vaccination of refugees (in addition to the NIP vaccines).

All states and territories provide resources for school immunisation programs. Tasmania and Queensland transitioned vaccinations to Year 7 to align with program delivery in the first year of secondary school.

Most states and territories amended legislation to enable appropriately trained pharmacists to administer vaccines in the community pharmacy setting.

APPENDIX C

Immunisation landscape in Australia