



Australian Government
Department of Health

COMMUNICABLE DISEASES INTELLIGENCE

2021 Volume 45
<https://doi.org/10.33321/cdi.2021.45.60>

ATAGI 2021 annual statement on immunisation

Last updated: 19 September 2021

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Communicable Diseases Intelligence

ISSN: 2209-6051 Online

This journal is indexed by Index Medicus and Medline.

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Communicable Diseases Intelligence (CDI) is a peer-reviewed scientific journal published by the Office of Health Protection and Response, Department of Health. The journal aims to disseminate information on the epidemiology, surveillance, prevention and control of communicable diseases of relevance to Australia.

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ATAGI 2021 annual statement on immunisation

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Catherine Tran, Clayton Chiu, Allen C Cheng, Nigel W Crawford, Michelle L Giles, Kristine K Macartney, Christopher C Blyth, on behalf of the Australian Technical Advisory Group on Immunisation

The Australian Technical Advisory Group on Immunisation (ATAGI) 2021 Annual Statement on Immunisation is the first publication in this series. It highlights the key successes, trends and challenges in the use of vaccines and control of vaccine preventable diseases (VPDs) in Australia in 2020. It also signals ATAGI's priority actions for addressing key issues for 2021 and beyond.

Summary

In 2020, many immunisation issues were shaped by the coronavirus disease 2019 (COVID-19) pandemic. COVID-19 control measures contributed to lower rates of many VPDs in Australia. Preparation also began for Australia's COVID-19 immunisation program, which commenced in February 2021.

Key successes in immunisation in 2020

- Rates of many VPDs, including influenza, measles, meningococcal disease, pneumococcal disease and pertussis, were much lower than usual. Control measures for COVID-19 (such as border closures, physical distancing and hand hygiene) likely contributed to this.
- A record high number of Australians had a seasonal influenza vaccine.
- Australia's National Immunisation Program (NIP) was expanded to include more vaccines and doses for people at higher risk of disease.
- Australians kept having their routine immunisations. Immunisation coverage was high even during COVID-19 restrictions.
- The Australian Immunisation Handbook (the Handbook) had several updates to recommendations, including important updates to the chapters on pneumococcal disease and zoster (shingles). A new catch-up calculator, and a Handbook app, were also introduced.

Key challenges and priorities for immunisation in Australia in 2021 and beyond

- Implementing a national COVID-19 immunisation program, monitoring safety and effectiveness of COVID-19 vaccines, and evaluating the COVID-19 immunisation program.
- Maintaining community confidence in the NIP and in the national COVID-19 immunisation program.
- Maintaining routine vaccination under the NIP to protect against VPDs, especially if Australia has more outbreaks of COVID-19 that disrupt the way society functions.

- Maintaining successful control or elimination of some VPDs, especially when international travel restrictions are lifted.
- Ensuring vaccine safety, particularly for live vaccines such as Zostavax (shingles vaccine).
- Ensuring equitable access to NIP-funded vaccines for people at risk of disease.
- Closing the gap in VPD incidence in Aboriginal and Torres Strait Islander populations.

Immunisation issues in Australia in 2020

Prevention and control of vaccine-preventable diseases

Rates of many vaccine-preventable diseases (VPDs) were lower in 2020, especially those that spread by the respiratory route. Control measures for coronavirus disease 2019 (COVID-19)—such as border closures, physical distancing and hand hygiene—have likely contributed to this. Disruption to the standard health care systems and practices may also have contributed to lower VPD notifications.

For influenza, disease rates were much lower throughout 2020 than in previous years. There was also a much lower rate of influenza-associated hospitalisations than in the previous 5 years, with no notable increase in cases during the usual peak winter season. With so few cases of influenza in 2020, it was difficult to assess the effectiveness of the year's influenza vaccines. More details are in the national 2020 influenza season summary¹ and in a study on the impact of COVID-19 on influenza circulation.²

For measles, 2020 saw a 91% decrease in notifications compared to 2019, with no cases reported after March 2020. Measles cases in Australia are acquired overseas or linked to overseas travel. The decrease in cases was likely related to border closures from March 2020.

There were 90 notifications of meningococcal disease in 2020, much lower than in 2019 (207 notifications) and lower than the 5-year mean. Similar decreases in notifications were seen in

2020 for invasive pneumococcal disease (48% fewer notifications than in 2019, and 41% fewer than the 5-year mean) and pertussis (with a 71% decrease in notifications in 2020 compared to 2019).

National immunisation policy and practice

Australian COVID-19 Vaccination Policy

The Australian COVID-19 Vaccination Policy was published in November 2020 and last updated in February 2021.³ It outlined the approach to providing COVID-19 vaccines in Australia. The policy describes the shared and separate responsibilities of the Australian Government and state and territory governments, as well as other key stakeholders in the COVID-19 vaccine rollout strategy.⁴

On 22 February 2021, the first doses of COVID-19 vaccines were made available for frontline health care workers, quarantine and border workers, and aged care and disability care residents and workers. Comirnaty (Pfizer/BioNTech)⁵ and Vaxzevria (Oxford/AstraZeneca)⁶ COVID-19 vaccines are now being administered nationally.

Changes to the National Immunisation Program

The National Immunisation Program (NIP) was expanded in 2020 to make some vaccines more readily available, and to further improve protection for people at higher risk of some diseases.

Changes included:

- influenza vaccine for all children aged 6 months to 5 years;⁷
- pneumococcal vaccines (13-valent conjugate and 23-valent polysaccharide) for people with increased risk of disease,⁸ as well as changes to use these vaccines more effectively in people with medical conditions;
- meningococcal vaccines (for ACWY and B, respectively) for people with certain medical conditions,⁹ and meningococcal B vaccine for Aboriginal and Torres Strait Islander children;¹⁰ and
- *Haemophilus influenzae* type b (Hib) vaccine for people with risk conditions for this disease.¹¹

The impact of these changes will be measured in future evaluations and will inform any further changes to the NIP to prevent these diseases.

Immunisation coverage

Influenza

A record high number of 17.6 million influenza vaccine doses were distributed for use in Australia in 2020.

Data in the Australian Immunisation Register (AIR) has underestimated vaccine coverage for adult vaccines (ie, the actual number of doses given) during 2016–2020 because of under-reporting.

In 2020, AIR data showed:

- the number of influenza vaccine doses recorded as given was higher in all age groups in 2020 than in previous years. This may be because of strong public health messaging for people to receive influenza vaccine during the COVID-19 pandemic;
- 32.5% of the population (8.6 million people) were reported as having received an influenza vaccine by 31 July 2020, compared with 25.2% at the same time in 2019; and
- 42.6% of children under 5 years old were reported as having received an influenza vaccine by 31 July 2020, compared with 38.2% at the same time in 2019. Influenza vaccine was also free for children under 5 years old for the first time in 2020.

Other National Immunisation Program vaccines

COVID-19 control measures have not substantially affected the coverage of routine NIP vaccines in children.¹² Even in Victoria, which had the longest period of COVID-19 restrictions in Australia during 2020, there was no impact on coverage rates in children.¹³

Important changes to the Australian Immunisation Handbook

Changes to the Handbook included:¹⁴

- the pneumococcal disease chapter had major updates,ⁱ with new recommendations for older adults, people with risk conditions, and Aboriginal and Torres Strait Islander people, and an updated list of risk conditions for pneumococcal disease;ⁱⁱ
- the zoster chapter was updated to help providers decide whether to give the live zoster vaccine (Zostavax) to people who are immunocompromised or on immunosuppressive therapy,ⁱⁱⁱ with new guidance on pre-vaccination screening and when it is safe to give live zoster vaccine to people on immunosuppressive therapy;¹⁵
- the hepatitis A chapter was updated,^{iv} with a new recommendation on the timing of the second dose for Aboriginal and Torres Strait Islander children in some states and territories;
- the chapter on vaccination for special risk groups was updated in line with changes to disease chapters;^v
- an online catch-up calculator was released,^{vi} to assist immunisation providers in planning catch-up schedules for NIP vaccines for children under 10 years old; and

i <https://immunisationhandbook.health.gov.au/vaccine-preventable-diseases/pneumococcal-disease>.

ii <https://immunisationhandbook.health.gov.au/resources/handbook-tables/list-risk-conditions-for-pneumococcal-disease>.

iii <https://immunisationhandbook.health.gov.au/vaccine-preventable-diseases/zoster-herpes-zoster>.

iv <https://immunisationhandbook.health.gov.au/vaccine-preventable-diseases/hepatitis-a>.

v <https://immunisationhandbook.health.gov.au/vaccination-for-special-risk-groups>.

vi <https://immunisationhandbook.health.gov.au/catch-up-calculator/calculator>.

- a Handbook mobile app was released,^{vii} allowing providers to access up-to-date Handbook content on their smartphone or tablet, even when offline.

Mandatory reporting to the Australian Immunisation Register

In February 2021, the *Australian Immunisation Register Amendment (Reporting) Act 2021* came into force.¹⁶ This Act makes it mandatory for all immunisation providers to report all administered doses of vaccines to the AIR.

This change will help ensure everyone has a complete record of the vaccines they have received throughout their life. This is important to inform individual vaccination decisions, as well as in national management of VPD outbreaks.

This change will apply to all immunisation providers, including pharmacists. Pharmacists have had a growing role in providing vaccinations in recent years. This improves access to vaccination and expands the workforce of immunisation providers. However, a study in 2020 found that many pharmacists were not reporting vaccinations to the AIR.¹⁷

‘No Jab, No Pay’ policy

The Australian Government’s ‘No Jab, No Pay’ policy was introduced in 2016. It aims to increase immunisation coverage in children. Children must be fully immunised before a family can receive family assistance payments from the government.

A study in 2020 found that the ‘No Jab, No Pay’ policy and associated program improvements have helped to increase catch-up vaccination,¹⁸ particularly in families of lower socioeconomic status.

vii <https://immunisationhandbook.health.gov.au/about-the-handbook/mobile-app>.

Table 1: Vaccines newly registered with the TGA in 2020

Vaccine brand name	Description	Protects against	Registered for use in ages
Fluzone High-Dose Quadrivalent	Inactivated quadrivalent influenza vaccine	Influenza	≥ 65 years
Flucelvax Quad	Quadrivalent influenza vaccine (surface antigen, inactivated)	Influenza	≥ 9 years
MenQuadfi	Meningococcal ACWY tetanus toxoid conjugate vaccine	Meningococcal disease	≥ 12 months

New vaccines

Several new vaccines were registered with Australia's Therapeutic Goods Administration (TGA) in 2020 (Table 1).

ATAGI monitors new vaccines for their potential to be included on the NIP. Vaccines recommended for the NIP need to show benefits for the Australian population or for high-risk groups. They also need to be cost-effective.

Vaccine safety

The TGA has overall responsibility for vaccine safety surveillance in Australia. Vaccine safety surveillance is conducted both passively and actively. Passive surveillance allows those vaccinated (and/or their carers) to report any vaccine side effects they have experienced.^{viii} Reports can be made directly to the TGA or through a healthcare provider. Active surveillance involves effecting direct contact with those vaccinated (and/or their carers) to ask whether they have experienced any vaccine side effects. The current active vaccine safety surveillance is known as the AusVaxSafety system.¹⁹

ATAGI continues to work closely with the TGA to advise on and promote the safe use of all vaccines, including COVID-19 vaccines.

Safe use of Zostavax

Zostavax is a vaccine that protects older Australians from shingles (herpes zoster) and its complications.

In July 2020, the TGA published a safety advisory about Zostavax because of a serious adverse event.²⁰ Another TGA safety advisory²¹ and a safety alert from the Chief Medical Officer²² were published in December 2020 after another serious adverse event.

As a result of these adverse events, ATAGI updated the zoster chapter in the Handbook,^{ix} and added the zoster screening tool to the Handbook website,¹⁵ to support providers to use Zostavax safely. Providers should advise people to see a doctor as soon as possible if they develop a chickenpox-like rash after receiving Zostavax.

Influenza vaccines

AusVaxSafety data show that 2020 seasonal influenza vaccines were very safe.¹⁹ The safety survey in 2020 had 289,513 participants, with 94.5% reporting no adverse events.

viii <https://www.tga.gov.au/reporting-problems>.

ix <https://immunisationhandbook.health.gov.au/vaccine-preventable-diseases/zoster-herpes-zoster>.

Challenges and priorities for immunisation in Australia in 2021 and beyond

This document highlights the key successes, trends and challenges in the use of vaccines and control of VPDs in Australia in 2020. Many immunisation issues were shaped by the COVID-19 pandemic, including how COVID-19 control measures contributed to lower rates of many VPDs in Australia. Reassuringly, immunisation coverage was high even during COVID-19 restrictions and a record high number of Australians had a seasonal influenza vaccine.

A key success of 2020 was the expansion of Australia's NIP to include more vaccines and doses for people at higher risk of disease.

This document also signals key challenges for prevention and control of VPDs through immunisation for 2021 and beyond (Table 2). These

challenges include those relating to COVID-19 and to the implementation of a national COVID-19 immunisation program, as well as maintaining a strong NIP in Australia for prevention of other VPDs in the face of changing epidemiology.

ATAGI's priority actions for 2021 and beyond (Table 3) include providing evidence-based advice to the Minister for Health and other key policymakers on strategies to implement a safe and effective national COVID-19 immunisation program, as well as advising on how to maintain on-time vaccinations according to the NIP schedule for all Australians in a COVID-safe way and on equitable access to NIP-funded vaccines for population groups with increased risks of some VPDs. Additional priority actions of ATAGI include advising on the safe use of all vaccines, and the need to evaluate existing immunisation programs.

Table 2: Key challenges for prevention and control of vaccine-preventable diseases through immunisation

For COVID-19
Implementing a national COVID-19 immunisation program. Specific challenges will include: • immunising a large part of the Australian population; • ensuring that only safe and effective vaccines are used; • using multiple vaccines in the program; • involving a range of immunisation providers in different settings; and • delivering the program in a short timeframe.
Ensuring confidence in the COVID-19 immunisation program through effective communication strategies.
Monitoring the safety and effectiveness of each vaccine used in the Australian COVID-19 immunisation program, including among specific subpopulations, using a robust and functional system. This is an ongoing process undertaken in conjunction with the TGA.
Ensuring preparedness to respond to any safety signals or issues that arise from use of COVID-19 vaccines.
Evaluating the COVID-19 immunisation program.
For other vaccine-preventable diseases
Maintaining a strong NIP in Australia in the face of changing epidemiology of VPDs. COVID-19 control measures may also disrupt immunisation programs.
Monitoring the changing epidemiology of measles, polio, diphtheria and other VPDs in the Western Pacific region due to disrupted immunisation programs.
Preventing a surge in VPDs in Australia and our region when international travel restrictions are lifted.
Increasing uptake of vaccines for population groups with a higher risk of some VPDs, and ensuring a reliable data system that captures this.
Maintaining community confidence in Australia's NIP through effective communication strategies.

Table 3: ATAGI's priority actions for 2021

COVID-19 immunisation program
Providing technical advice to ensure delivery of a safe and effective national COVID-19 immunisation program, with public confidence and equitable access for priority populations. This is a key action to improve control of COVID-19 in 2021 and beyond.
Advising on the ongoing evaluation of the COVID-19 immunisation program, and any issues with data and information sources on disease, vaccination uptake and vaccine safety. This will enable program monitoring and evaluation.
Routine vaccination in Australia and our region
Advising on how to maintain on-time vaccinations according to the NIP schedule for all Australians in a COVID-safe way. This is essential to protect individuals and the community from VPDs.
Advising on how to maintain a high proportion of the Australian population being vaccinated against influenza. This will reduce the risk of serious influenza-related disease, especially during the COVID-19 pandemic.
Advising on how to prevent a potential surge in measles, diphtheria and polio in Australia as international travel restrictions are relaxed. COVID-19 has disrupted immunisation programs in many countries, and there is a risk of reintroducing these VPDs into Australia.
Advising on immunisation policies that enable equitable access to NIP-funded vaccines for population groups with increased risks of some VPDs, as well as reliable systems to capture uptake in these groups. Priorities for consideration are: • hepatitis B vaccination for non-immune Aboriginal and Torres Strait Islander adults; • pneumococcal vaccination for younger Aboriginal and Torres Strait Islander adults (age < 50 years); • expansion of eligible medical risk conditions for receiving NIP-funded influenza vaccines; and • catch-up measles vaccination for non-immune people born since 1966.
Scoping new influenza and pneumococcal vaccines on the horizon for potential NIP consideration. The vaccines must show benefits to the Australian population or high-risk population groups, and be cost-effective.
Vaccine safety
Advising on and promote the safe use of all vaccines, including live vaccines such as Zostavax, and COVID-19 vaccines.
Advising on and promote support to immunisation providers on the safe and appropriate use of live vaccines, especially the live zoster vaccine (Zostavax).
Monitoring and evaluation
Advising on the need to set up an end-to-end system that can track and record every dose of distributed and administered vaccines in national and state immunisation programs. This will improve vaccine allocation, minimise wastage and help the assessment of vaccine effectiveness.
Advising on the need to evaluate existing immunisation programs, such as for zoster and influenza.
Evidence-based advice
Strengthening the evaluation of evidence by using GRADE (Grading of Recommendations, Assessment, Development and Evaluations – a framework for making recommendations about best clinical practice that are informed by evidence). Continue publishing evidence-based immunisation recommendations through the Handbook. ¹⁴
Continuing to monitor the development of new vaccines that may be considered for the NIP. These may include pneumococcal vaccines that cover more serotypes, and vaccines against respiratory syncytial virus and group A <i>Streptococcus</i> .

Acknowledgements

The authors wish to thank the following additional ATAGI members for their contributions: Ms Karen Bellamy, Ms Kristy Cooper, Prof. Katie Flanagan, Dr Katherine Gibney, Prof. Cheryl Jones, A/Prof. Tony Korman, A/Prof. Bette Liu, Ms Debra Petrys, Dr Nicholas Silberstein, Prof. Tom Snelling, Dr James Wood and Ms Diane Walsh.

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References

1. Australian Government Department of Health. Australian Influenza Surveillance Report - 2020 National Influenza Season Summary. [Internet.] Canberra: Australian Government Department of Health; 18 December 2020. Available from: <https://www1.health.gov.au/internet/main/publishing.nsf/Content/ozflu-surveil-season-summary-2020.htm>.
2. Sullivan SG, Carlson S, Cheng AC, Chilver MBN, Dwyer DE, Irwin M et al. Where has all the influenza gone? The impact of COVID-19 on the circulation of influenza and other respiratory viruses, Australia, March to September 2020. *Euro Surveill*. 2020;25(47). doi: <https://doi.org/10.2807/1560-7917.ES.2020.25.47.2001847>.
3. Australian Government Department of Health. COVID-19 vaccination – Australian COVID-19 Vaccination Policy. [Internet.] Canberra: Australian Government Department of Health; 17 February 2021. Available from: <https://www.health.gov.au/resources/publications/covid-19-vaccination-australian-covid-19-vaccination-policy>.
4. Australian Government Department of Health. COVID-19 vaccination – Australia's COVID-19 vaccine national roll-out strategy. [Internet.] Canberra: Australian Government Department of Health; 17 February 2021. Available from: <https://www.health.gov.au/resources/publications/covid-19-vaccination-australias-covid-19-vaccine-national-roll-out-strategy>.
5. Australian Government Department of Health. About the Pfizer/BioNTech COVID-19 vaccine. [Internet.] Canberra: Australian Government Department of Health; 6 May 2021. Available from: <https://www.health.gov.au/initiatives-and-programs/covid-19-vaccines/learn-about-covid-19-vaccines/about-the-pfizerbiontech-covid-19-vaccine>.
6. Australian Government Department of Health. About the AstraZeneca COVID-19 vaccine. [Internet.] Canberra: Australian Government Department of Health; 25 May 2021. Available from: <https://www.health.gov.au/initiatives-and-programs/covid-19-vaccines/learn-about-covid-19-vaccines/about-the-astrazeneca-covid-19-vaccine>.
7. Australian Technical Advisory Group on Immunisation (ATAGI). ATAGI advice on seasonal influenza vaccines in 2020. [Internet.] Canberra: Australian Government Department of Health; 2 March 2020. Available from: <https://www.health.gov.au/resources/publications/atagi-advice-on-seasonal-influenza-vaccines-in-2020>.
8. ATAGI. ATAGI clinical advice on changes to recommendations for pneumococcal vaccines from 1 July 2020. [Internet.] Canberra: Australian Government Department of Health; 3 June 2020. Available from: <https://www.health.gov.au/resources/publications/atagi-clinical-advice-on-changes-to-recommendations-for-pneumococcal-vaccines-from-1-july-2020>.
9. ATAGI. ATAGI clinical advice on changes to recommendations for meningococcal vaccines from 1 July 2020. [Internet.] Canberra: Australian Government Department of Health; 3 June 2020. Available from: <https://www.health.gov.au/resources/publications/atagi-clinical-advice-on-changes-to-recommendations-for-meningococcal-vaccines-from-1-july-2020>.
10. ATAGI. ATAGI clinical advice on vaccination recommendations for Aboriginal and Torres Strait Islander people from 1 July 2020. [Internet.] Canberra: Australian Government Department of Health; 3 June 2020. Available from: <https://www.health.gov.au/resources/publications/atagi-clinical-advice-on-vaccination-recommendations-for-aboriginal-and-torres-strait-islander-people>.

from-1-july-2020.

11. ATAGI. ATAGI clinical advice on vaccination recommendations for people with risk conditions from 1 July 2020. [Internet.] Canberra: Australian Government Department of Health; 3 June 2020. Available from: <https://www.health.gov.au/resources/publications/atagi-clinical-advice-on-vaccination-recommendations-for-people-with-risk-conditions-from-1-july-2020>.
12. National Centre for Immunisation Research and Surveillance (NCIRS). Little impact of COVID-19 pandemic on routine childhood vaccination in Australia. [Internet.] Sydney: NCIRS; 19 November 2020. Available from: <https://www.ncirs.org.au/little-impact-covid-19-pandemic-routine-childhood-vaccination-australia>.
13. Hull BP, Hendry AJ, Dey A, Bryant K, Radkowski C, Pellissier S et al. The impact of the COVID-19 pandemic on routine vaccinations in Victoria. *Med J Aust.* 2021;215(2):83–4. doi: <https://doi.org/10.5694/mja2.51145>.
14. Australian Government Department of Health. Australian Immunisation Handbook. [Website.] Canberra: Australian Government Department of Health, ATAGI. Available from: <https://immunisationhandbook.health.gov.au/>.
15. Australian Government Department of Health, Australian Immunisation Handbook. Table. Live shingles vaccine (Zostavax) screening for contraindications. [Webpage.] Canberra: Australian Government Department of Health, ATAGI; 13 January 2021. Available from: <https://immunisationhandbook.health.gov.au/resources/handbook-tables/table-live-shingles-vaccine-zostavax-screening-for-contraindications>.
16. Federal Register of Legislation. *Australian Immunisation Register Amendment (Reporting) Act 2021. No. 1, 2021.* [Legislation.] Canberra: Australian Government, Federal Register of Legislation; 15 February 2021. Available from: <https://www.legislation.gov.au/Details/C2021A00001>.
17. NCIRS. Pharmacies giving more vaccines but real number unknown. [Internet.] Sydney: NCIRS; 14 June 2020. Available from: <https://www.ncirs.org.au/pharmacies-giving-more-vaccines-real-number-unknown>.
18. Hull BP, Beard FH, Hendry AJ, Dey A, Macartney K. “No jab, no pay”: catch-up vaccination activity during its first two years. *Med J Aust.* 2020;213(8):364–9. doi: <https://doi.org/10.5694/mja2.50780>.
19. NCIRS. AusVaxSafety: an NCIRS led collaboration. [Website.] Sydney: NCIRS; 2021. Available from: <https://www.ausvaxsafety.org.au/>.
20. Therapeutic Goods Administration (TGA). Zostavax vaccine. Safety advisory - not to be used in people with compromised immune function. [Internet.] Canberra: Australian Government Department of Health, TGA; 6 July 2020. Available from: <https://www.tga.gov.au/alert/zostavax-vaccine-0>.
21. TGA. Zostavax vaccine. Safety advisory - risk of infection with the vaccine virus. [Internet.] Canberra: Australian Government Department of Health, TGA; 22 December 2020. Available from: <https://www.tga.gov.au/alert/zostavax-vaccine-1>.
22. Australasian Society of Clinical Immunology and Allergy (ASCIA). Information updates. Safety Alert: Zostavax Vaccine – NOT to be used in people with compromised immune function. [Internet.] Sydney: ASCIA; 23 December 2020. Available from: <https://www.allergy.org.au/about-ascia/info-updates/safety-alert-zostavax-vaccine-not-to-be-used-in-people-with-compromised-immune-function>.
23. Australian Government Department of

Health. Australian Technical Advisory Group on Immunisation (ATAGI). [Internet.] Canberra: Australian Government Department of Health; 2021. Available from: <https://www.health.gov.au/committees-and-groups/australian-technical-advisory-group-on-immunisation-atagi>.

24. Australian Government Department of Health. *ATAGI strategic intent*. Canberra: Australian Government Department of Health; 10 September 2020. Available from: <https://www.health.gov.au/resources/publications/atagi-strategic-intent>.

Appendix A: about ATAGI

The Australian Technical Advisory Group on Immunisation (ATAGI)²³ advises the Minister for Health on the National Immunisation Program and other immunisation issues.

ATAGI's vision is to protect the Australian population from vaccine-preventable diseases (VPDs). This is shown in ATAGI's strategic intent.²⁴

ATAGI's purpose is to provide evidence-based advice to the Minister for Health and other key policymakers on immunisation policies, immunisation programs, and future research priorities. This includes identifying and prioritising gaps in the immunisation landscape to improve the impact of immunisation programs; to raise confidence in immunisation programs, as well as the vaccines used in the programs; and to boost equity in access to, and outcomes of, immunisation programs.

ATAGI also develops and publishes the Australian Immunisation Handbook.¹⁴