

Immunisation Toolkit for General Practices



August 2020

NSW Ministry of Health
1 Reserve Road
ST LEONARDS NSW 2065
Tel. (02) 9391 9000
Fax. (02) 9391 9101
TTY. (02) 9391 9900
www.health.nsw.gov.au

Produced by: NSW Ministry of Health

This work is copyright. It may be reproduced in whole or in part for study or training purposes subject to the inclusion of an acknowledgement of the source. It may not be reproduced for commercial usage or sale. Reproduction for purposes other than those indicated above requires written permission from the NSW Ministry of Health.

© NSW Ministry of Health 2020

SHPN (HP NSW) 200177
ISBN 978-1-76081-387-1

Further copies of this document can be downloaded from the NSW Health website
www.health.nsw.gov.au

August 2020

Contents

What the kit contains	4	7 Other vaccines	27
1 The NSW Immunisation Program	5	7.1 Q Fever	27
1.1 Roles and responsibilities	5	7.2 Yellow Fever	28
1.2 Staying up to date	6	8 Pharmacist Vaccinations	29
2 The NSW Immunisation Schedule	9	8.1 Vaccinations provided by pharmacists	29
2.1 Recent changes to the immunisation schedule	10	9 NSW Occupational Assessment, Screening & Vaccination Policy (Health Care Worker Policy)	30
3 Recording Vaccinations	13	10 Vaccine Storage and Cold Chain Management	31
3.1 The Blue Book	13	10.1 National Vaccine Storage Guidelines 'Strive for 5'	31
3.2 The Australian Immunisation Register	13	10.2 NSW Health Cold Chain Toolkit	31
4 Vaccination Programs	17	10.3 Safe Vaccine Storage Requirements	32
4.1 Childhood Vaccines	17	10.4 Private Vaccine Scripts	32
4.2 Adolescent Vaccines	17	10.5 Managing cold chain breaches	32
4.3 Catch-up Program for Individuals 10-19 years	17	11 NSW State Vaccine Centre	34
4.4 Catch up vaccines for refugees and humanitarian entrants aged 20 years and over	18	11.1 Applying for a Vaccine Account	34
4.5 Influenza Vaccination Program	20	11.2 Routine Vaccine Orders	34
5 Vaccines for Specific Groups	21	11.3 Authorised Provider Declaration	35
5.1 Aboriginal and Torres Strait Islander Populations	21	11.4 Vaccine Deliveries	35
5.2 Asplenic Patients	22	11.5 Change of address	36
5.3 Preterm Infants	22	11.6 Ordering rabies vaccine for post- exposure prophylaxis	36
5.4 Women Who Are Planning Pregnancy and Pregnant Women	23	12 Vaccine Safety	37
5.5 Individuals with Medical Risk Factors and/or Immunocompromised	23	12.1 Talking to patients about vaccine safety	37
5.6 People at occupational risk	23	12.2 Vaccine safety surveillance	37
6 Specific Vaccines	24	12.3 What is an Adverse Event Following Immunisation (AEFI)?	38
6.1 Diphtheria, Tetanus and Pertussis Vaccine (DTPa/dTpa)	24	12.4 How to minimise the risk of an AEFI	39
6.2 Pneumococcal vaccine (Prevenar 13 and Pneumovax 23)	24	12.5 Reporting an AEFI	39
6.3 Measles, Mumps Rubella (MMR)	25	12.6 Specialist Immunisation Services NSW	39
6.4 Zoster (shingles) vaccine	25	12.7 Vaccination Administration Errors	40
6.5 Hepatitis B	26	12.8 Vaccine Safety Resources	40
13 Other resources	41		

What the kit contains

This Toolkit has been developed to support general practices to implement the NSW Immunisation Program. The Toolkit includes information about:

- the NSW Immunisation Program
- the NSW Immunisation schedule and recent changes
- reporting to the Australian Immunisation Register(AIR)
- vaccine recommendations
- cold chain management
- vaccine safety and adverse event reporting
- vaccine ordering and management.

Over 90% of all childhood vaccinations in NSW are given in general practices. Primary health care professionals should take every opportunity to vaccinate children, adolescents and adults on time and at the recommended intervals to ensure they are protected against serious vaccine preventable diseases. Health workers play a critical role in shaping attitudes towards immunisation and maintaining high vaccination coverage. It is essential that immunisation providers stay up to date with current issues in immunisation to provide accurate information to patients, and discuss the risks and benefits of vaccination during the consent process.



1 The NSW Immunisation Program

The NSW Immunisation Program provides the community with protection against vaccine preventable diseases through initiatives targeting infants, adolescents, adults and at risk persons in line with the National Immunisation Program.

1.1 Roles and responsibilities

Organisation/s	Responsibilities
NSW Ministry of Health	Manages the NSW Immunisation Program, develops strategy and policy and provides surveillance and analysis of vaccine preventable diseases. Website: www.health.nsw.gov.au/immunisation
Public Health Units	Assists with state and National Immunisation Program (NIP) funded vaccine management queries including breaches in cold chain, adverse events following immunisation, the school-based vaccination program, and requests for immunisation related information and advice. Phone: 1300 066 055 Website: www.health.nsw.gov.au/Infectious/Pages/phus.aspx
National Centre for Immunisation Research and Surveillance (NCIRS)	Provides policy and planning advice, supports initiatives including disease surveillance, vaccine coverage and immunisation adverse events. NCIRS also conducts an extensive program of clinical trials and epidemiologic research funded by diverse sources. Website: www.ncirs.org.au
State Vaccine Centre	Stores and distributes vaccines available under the National Immunisation Program (NIP) to immunisation providers in NSW. Phone: 1300 656 132 Website: https://nsw.tollhealthcare.com
Primary Health Networks (NSW)	Not for profit organisation funded by the Australian Government that provides direct support to general practices and allied health providers in NSW across a range of issues including to support the quality of vaccination services in general practice. If you are not sure which Primary Health Network you belong to: Email: phn@health.gov.au Website: www1.health.gov.au/internet/main/publishing.nsf/Content/phn-maps-nsw

1.2 Staying up to date

1.2.1 Key Immunisation Resources

Resource	Description
NSW Health Immunisation webpage	Up to date immunisation information and resources, alerts and advice about the NSW Immunisation Program. Website: www.health.nsw.gov.au/immunisation
The Australian Immunisation Handbook (digital version or phone app)	A comprehensive guide developed by the Australian Technical Advisory Group on Immunisation (ATAGI) providing clinical advice for health professionals on the safest and most effective use of vaccines in their practice. Website: https://immunisationhandbook.health.gov.au Handbook App: The mobile application is known as the Australian Immunisation Handbook App (or the Handbook App for short) and can be downloaded from the Apple App Store or Google Play Store.
National Vaccine Storage Guidelines ‘Strive for 5’ (3rd edition)	Outlines the basic principles for safe and effective vaccine management within cold chain (+2°-+8° C). Website: www.health.gov.au/resources/publications/national-vaccine-storage-guidelines-strive-for-5
NSW Cold Chain Toolkit	Practical guidance on mandatory vaccine storage and cold chain requirements in NSW. Website: www.health.nsw.gov.au/immunisation/Documents/cold-chain-toolkit.pdf
Save the Date to Vaccinate—immunisation app	The Save the Date to Vaccinate app allows parents to stay up to date with their child’s vaccinations. Once the app is downloaded, the app will create the recommended immunisation schedules, along with reminders for when vaccines are due. Website: www.health.nsw.gov.au/immunisation/app/pages/default.aspx

1.2.2 Useful Links

Resource	Contact Details
Australian Immunisation Register (AIR)	Phone: 1800 653 809 Website: https://www.servicesaustralia.gov.au/individuals/services/medicare/australian-immunisation-register
Better Health Centre (for ordering publications)	Immunisation resources including the NSW Health cold chain labels can be ordered from the Better Health Centre (BHC) via email. A list of resources that can be ordered from the BHC can be found at the website below. Phone: (02) 9816 0452 Website: www.health.nsw.gov.au/immunisation/Documents/immunisation-order-form.pdf Email: nsldh-bhc@health.nsw.gov.au
National Immunisation Catch-up Calculator (NICC)	The National Immunisation Catch-up Calculator (NICC V1.0) developed by the Australian Government Department of Health assists in the development of a vaccination catch up schedule when vaccine doses are delayed or missed. Website: https://immunisationhandbook.health.gov.au/catch-up-calculator/calculator
Document translation Services	Free document translation service from the Department of Home Affairs Phone: 1800 962 100 Website: https://translating.homeaffairs.gov.au/en
National Adverse Events Following Immunisation (AEFI) reporting form	All serious AEFI must be reported and any event felt to be significant following immunisation should be reported to your local public health unit using the national AEFI reporting form Website: the form is available at the following link, www.health.nsw.gov.au/immunisation/Pages/aeafi.aspx
National Centre for Immunisation Research and Surveillance (NCIRS) MMR Catch Up Decision tool	Website: http://ncirs.org.au/measles-vaccination-catch-up-guide
NSW Immunisation Schedule	Website: www.health.nsw.gov.au/immunisation/Publications/nsw-immunisation-schedule.pdf

Resource	Contact Details
NSW Immunisation Specialist Service (NSWISS)	This service provides specialised immunisation advice to clinician and families which includes a 1800 telephone advice service, a drop-in immunisation clinic at Westmead Children's Hospital, an immunisation specialist clinic and telehealth consultations. Phone: 1800 679 477
NSW Vaccine Centre	Phone: 1300 656 132 Fax: 1800 041 528 Website: https://nsw.tollhealthcare.com
PHN Immunisation Support Program	Website: www.phnimmunise.org.au
Pneumococcal Vaccination Decision Tool	Website: www.immunisationcoalition.org.au/resources/pneumococcal-vaccination-tool
Sharing Knowledge About Immunisation (SKAI)	Credible resources for parents and providers about immunisations. Website: www.ncirs.org.au/health-professionals/skai-supporting-health-professionals
SKAI Online Education Module	Provides information and resources to assist healthcare professionals in responding to parents/carers concerns and questions about immunisation. Website: www.ncirs.org.au/health-professionals/skai-supporting-health-professionals
Spleen Australia Vaccine Decision Tool	Website: https://spleen.org.au/wp-content/uploads/2020/03/RECOMMENDATIONS_Spleen_Registry.pdf

2 The NSW Immunisation Schedule

[The National Immunisation Program](#)¹ (NIP), underpinned by the [National Immunisation Strategy \(2019–2024\)](#),² is funded by the Australian Government and implemented by state and territory departments of health. The National Immunisation Program funds many of the vaccines recommended in childhood and throughout the life course for medically at risk groups. State and territory health departments also fund some additional vaccines.

The National Immunisation Program (NIP) Schedule is a series of recommended vaccines by age group and/or medical risk. The schedule is developed by the Australian Government Department of Health in consultation with the Australian Technical Advisory Group on Immunisation (ATAGI).

The NIP was established in 1997 and provided vaccines against nine childhood diseases. The NIP Schedule now covers 17 diseases for infants, children, young adults, vulnerable adults (such as Aboriginal and Torres Strait Islander people, and pregnant women) and older people. Vaccines on the NIP schedule are made available free of charge to Australians in those age groups and risk groups.

The [NSW Immunisation Schedule](#)³ is a schedule of vaccines that are provided under the National Immunisation Program. Providers in NSW should refer to the [NSW Immunisation Schedule](#) to ensure any additional vaccines funded in NSW are administered to eligible patients.

Other vaccines are also recommended but they are not funded through the national, state or territory immunisation programs. For example, vaccines for people who have an occupational risk of a disease, travellers or people with medical conditions that put them at increased risk of contracting a vaccine preventable disease. These vaccines are available for purchase privately on prescription if required.

Immunisation providers should refer to the [Australian Immunisation Handbook](#)⁴ (digital version or phone app) for 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 travelers; and groups with special vaccination requirements (e.g. pregnant women, people who are immunocompromised).

2.1 Recent changes to the immunisation schedule

Immunisation providers are encouraged to refer to the Australian Immunisation Handbook (digital version or phone app) for the most up to date vaccine recommendation particularly for medically at risk groups. For further information refer to the immunisation history tables at www.ncirs.org.au/health-professionals/history-immunisation-australia

Vaccine	Group	When	What's changed
Pneumococcal: Prevenar 13 (13vPCV) and Pneumovax 23 (23vPPV)	All ages	1 July 2020	<p>The list of conditions associated with an increased risk of invasive pneumococcal disease have been consolidated into one list i.e. there are no longer category A and category B lists. The list of conditions vaccination is recommended for is available in the online Australian Immunisation Handbook.</p> <p>A list of at risk groups that the vaccines are funded for is available from the Australian Department of Health⁵ webpage.</p> <p>The number of lifetime doses of 23vPPV is now limited to 2 doses.</p>
	Children diagnosed with an at risk condition at ≤ 12 months of age	1 July 2020	<p>In addition to the standard childhood schedule, children with an at risk condition are recommended to receive additional pneumococcal vaccines:</p> <ul style="list-style-type: none"> • 6 Months: an additional dose of 13vPCV (or at diagnosis if diagnosed 6–11 months) • 4 years: A dose of 23vPPV • At least 5 years later: A dose 23vPPV
	Children and adults diagnosed with an at risk condition > 12 months of age	1 July 2020	<p>People diagnosed with an at risk condition are recommended to receive:</p> <ul style="list-style-type: none"> • 13vPCV: at diagnosis • 23vPPV: 2–12 months later or ≥ 4 years whichever is later • 23vPPV: at least 5 years later

Vaccine	Group	When	What's changed
	Aboriginal people aged ≥ 50 years without an at risk condition	1 July 2020	<p>Now recommended and funded to receive:</p> <ul style="list-style-type: none"> • A dose of 13vPCV: ≥ 50 years of age • 2-12 months later: a dose of 23vPPV • At least 5 years later: a dose of 23vPPV <p>If someone has previously received a dose of 23vPPV, wait 12 months before giving 13vPCV.</p> <p>Give an additional dose of 23vPPV: 12 months after Prevenar 13 or 5 years after the previous dose of 23vPPV—whichever is later.</p> <p>The number of doses of 23vPPV required should be calculated with consideration that 23vPPV is now limited to 2 lifetime doses.</p>
	Non-Aboriginal adults aged ≥ 70 years without an at risk condition	1 July 2020	<p>Now recommended and funded to receive a single dose of 13vPCV ≥ 70 years of age (the single dose of 23vPPV at 65 years is no longer recommended or funded). This is an ongoing program with no time limited catch up.</p> <p>Those already 70 years of age or older on 1 July 2020 are eligible for a single funded dose of Prevenar 13 which can be given opportunistically at a suitable clinical encounter.</p> <p>If someone has received a 23vPPV in the last 12 months allow 12 months before 13vPCV is administered.</p>

Vaccine	Group	When	What's changed
Meningococcal B: Bexsero	All Aboriginal children < 2 years of age	1 July 2020	<p>Recommended and funded to receive three doses of Bexsero at 6 weeks, 4 months and 12 months of age.</p> <p>Catch up is available for Aboriginal children less than 2 years of age until 30 June 2023—The number of doses required is based on age. Refer to the online Australian Immunisation Handbook.</p> <p>An additional dose for Aboriginal children < 2 years of age with certain at risk conditions may be required. These conditions include asplenia and hyposplenia, complement deficiency, treatment with Eculizumab, HIV and Haematopoietic stem cell transplant—see online Australian Immunisation handbook.</p>
	<p>People with specified risk conditions including:</p> <ul style="list-style-type: none"> • Asplenia and hyposplenia • Complement deficiency • Treatment with Eculizumab 	1 July 2020	<p>Recommended and funded to receive Bexsero. The number of doses required are based on age. Refer to the online Australian Immunisation Handbook.</p>
Meningococcal ACWY: Nimenrix	<p>People with specified risk conditions including:</p> <ul style="list-style-type: none"> • Asplenia and hyposplenia • Complement deficiency • Treatment with Eculizumab 	1 July 2020	<p>Recommended and funded to receive Nimenrix. The number of doses required are based on age. Refer to the online Australian Immunisation Handbook.</p> <p>Booster doses are also available for people with these conditions with ongoing risk.</p> <p>Refer to the online Australian Immunisation Handbook for dosing requirements.</p>
Haemophilus influenzae type b (Hib): Act-HIB	All people > 5 years of age with asplenia or hyposplenia	1 July 2020	<p>All people greater than 5 years with asplenia or hyposplenia that were incompletely vaccinated or not vaccinated during childhood are recommended and funded to receive one dose of Act-HIB.</p>

3 Recording Vaccinations

3.1 The Blue Book

NSW Health provides the parents of each newborn with a Personal Health Record (“The Blue Book”) that includes background information on immunisation and a table to record the vaccinations given to the child.

The Blue Book is a useful reference for immunisation providers to confirm that children are up to date with their vaccinations or to arrange a catch-up vaccination schedule, if needed. The person’s immunisation history should also be checked on the Australian Immunisation Register (AIR) to ensure all vaccinations have been provided to AIR.

Additional copies of The Blue Book are available from the Better Health Centre on 9887 5450 or nsldh-bhc@health.nsw.gov.au

3.2 The Australian Immunisation Register

The Australian Immunisation Register (AIR) is a national register for recording vaccines given to people of all ages who live in Australia. The AIR commenced on 1 January 1996 under its previous name of Australian Childhood Immunisation Register (ACIR). It was expanded to a whole-of-life register in 2016 and is administered by Services Australia. The AIR provides detailed reports on immunisation coverage, overdue immunisations and personal immunisation history statements.

The AIR can be used as a tool to track immunisation uptake levels and identify low coverage areas. The accuracy of the register is dependent upon immunisation providers reporting data to the AIR in a timely manner.

An eLearning module on using AIR is available for vaccination providers at: www.servicesaustralia.gov.au/organisations/health-professionals/services/medicare/australian-immunisation-register-health-professionals/resources/education-modules

3.2.1 Accessing the AIR

Medical practitioners, midwives and nurse practitioners with a Medicare provider number are automatically recognised as an immunisation provider and authorised to record or access immunisation data on the AIR.

You can find further information on obtaining access to AIR at www.servicesaustralia.gov.au/organisations/health-professionals/services/medicare/australian-immunisation-register-health-professionals

Providers must obtain electronic access to AIR to review their patient’s immunisation histories, record immunisations given overseas and record immunisation encounters for immunisations provided in Australia.

3.2.2 Registering Patients on the AIR

People who are enrolled in Medicare are automatically registered on the AIR. People who are not eligible to enroll in Medicare are registered on the AIR when a recognised vaccination provider records immunisation details for them.

To learn how to record overseas immunisations on the AIR refer to the following education module www.servicesaustralia.gov.au/organisations/health-professionals/subjects/air-education-vaccination-providers

3.2.3 Reporting Immunisation Encounters to the AIR

AIR relies on immunisation providers to submit accurate and timely data to monitor vaccine coverage in Australia and inform public health management and research of vaccine preventable diseases. Patients also rely on immunisation providers to report accurate and timely data to the AIR to access personal immunisation records, enroll in child care and school and receive family assistance payments on time.

Did you know?

In 2018, the number of influenza vaccine doses recorded in AIR for people 65 years and over was 44%, lower than the total doses distributed under the NIP. True adult vaccination coverage is underreported. Make sure you report all vaccination encounters to the AIR.

There are two ways to record information on the AIR:

1. Use your **practice management software (PMS)**. The details you enter will be transferred from your PMS to the AIR.
 - Make sure you are using the latest version of your PMS so you have up to date vaccine codes (contact your software vendor for further information or your primary health network for advice).
 - Ensure you select the correct vaccine and dose number that has been given to the patient.

2. Use the AIR site to manually record immunisation encounters by using the *Identify Individual* and *Record Encounter* functions.
 - Refer to the Australian Immunisation Register (AIR) education resources to help you access and record information on the AIR at: www.servicesaustralia.gov.au/organisations/health-professionals/subjects/air-education-vaccination-providers

The PHN Support Program has developed a resource '[Enhancing data quality of vaccination encounters recorded in practice software and on AIR - tips and tricks](#)' to help immunisation providers minimise and identify errors in vaccination recording to ensure the information held on patient's records and on the Australian Immunisation Register (AIR) is accurate.

3.2.4 AIR History Statements

An immunisation history statement issued by the AIR is required by child care services and schools as evidence of immunisation status for enrolment under the *NSW Public Health Act 2010*.

Parents can obtain an Immunisation History Statement for children aged less than 14 years by:

- using their Medicare online account through [myGov](#)⁶
- using the [Medicare Express Plus App](#)⁷
- by asking their vaccination provider to print it (including non-Medicare eligible patients with an immunisation history in AIR)
- by calling the AIR General Enquiries Line on 1800 653 809
- For non-Medicare eligible patients, visiting a Medicare office

For privacy reasons, anyone aged over 14 years can access their own immunisation history statement. Parents with children over 14 years, must obtain consent from the child before the Immunisation History Statement can be released to the parent. Consent must be obtained each time a request for an Immunisation History Statement is made.

3.2.5 AIR Coverage Rates

Australian Immunisation Register (AIR) coverage rates are provided to the NSW Ministry of Health quarterly. The data (by Local Health District) are available on the NSW Health website: www.health.nsw.gov.au/immunisation

Did you know?

In 2019, vaccination coverage in NSW was higher in Aboriginal children (97.9%) compared to non-Aboriginal children (94.5%) aged 5 years.

3.2.6 Childcare Enrolment

All children presenting for enrolment with a childcare provider are required to provide proof of vaccination status on enrolment. Documentation that can be provided by the parents/carers are:

- [AIR Immunisation History Statement](#)⁸ demonstrating that they are fully immunised
- [AIR Immunisation Medical Exemption Form](#)⁹ noting that the child has a medical reason not to be vaccinated including natural immunity
- [AIR Immunisation History Form](#)¹⁰ noting that the child is on a recognised catch-up schedule

Please note that children unvaccinated due to parental conscientious objection to vaccination cannot be enrolled in childcare.

More information regarding the requirements for enrolment in childcare can be found at www.health.nsw.gov.au/immunisation/Pages/childcare_qa.aspx

3.2.7 Primary and Secondary School enrolment

Since April 2018 [immunisation requirements](#)¹¹ for enrolment have been extended to primary and secondary schools and require that school principals:

- request an immunisation history statement at enrolment
- record each child's immunisation status in a register and retain copies of approved immunisation certificates for a period of 3 years after the child has ceased to attend the school
- provide a copy of a child's immunisation certificate to another school that the child has transferred to (upon request)
- notify the public health unit if an enrolled child has a vaccine preventable disease, or if they reasonably believe that an unimmunised enrolled child has come into contact with someone who has a vaccine preventable disease
- exclude unimmunised children at risk of contracting a disease from attending school on the direction of a public health officer.

3.2.8 Recording Immunisation Encounters

Immunisation encounters will be recorded in the patient's medical record and then the information is transferred to AIR (refer to Section [3.2.3 Reporting Immunisation Encounters to the AIR](#)).

For children the encounter is also recorded in the child's [blue book](#) including vaccine brand name, batch number, dose number, date and time of vaccination, site of administration, name of the person who provided the vaccination and the date the next vaccination is due.

Health care worker immunisations should be recorded on AIR and additionally on the Vaccination Record Card for Health Care Workers and Students (if requested).

Vaccination Record Card for Health Care Workers and Students and a Vaccine Administration Record Card for Adults—available from the Better Health Centre publications warehouse (refer to Section [1.2.2 Useful Links](#)).

Parents of children from overseas should consult their local doctor to have their child's immunisation status reviewed. The doctor can also administer any vaccinations that are required and transfer the information to the AIR (refer to Section [3.2.2 Registering Patients on the AIR](#)).

4 Vaccination Programs

4.1 Childhood Vaccines

Childhood vaccines are administered as per the schedule of vaccines recommended by the [NSW Immunisation Schedule](#).¹²

4.2 Adolescent Vaccines

NSW Health works in partnership with education authorities to offer the vaccines recommended and funded for adolescents under the National Immunisation Program in a school-based vaccination program. The program is implemented in two settings:

- **in secondary schools**,¹³ students are offered diphtheria-tetanus-pertussis (dTpa) and human papillomavirus (HPV) in Year 7 and Meningococcal ACWY in Year 10,
- **In Intensive English Centres**,¹⁴ where catch-up vaccination is offered to newly-arrived migrants transitioning to mainstream schooling, including human papillomavirus, hepatitis B, varicella, polio, diphtheria-tetanus-pertussis, meningococcal ACWY and measles-mumps-rubella.

Students who miss vaccine doses in the school-based vaccination program are offered these vaccines as catch up doses at subsequent visits or are referred to their local doctor if they miss the school clinics. Students who are home schooled or attend distance education should complete their immunisations with their doctor or other immunisation provider.

Records for vaccines given in schools are progressively uploaded to the AIR and linked to existing childhood records to provide a complete vaccination history.

Before administering any school based vaccinations to adolescents presenting to your practice check their AIR record.

If the vaccination is not on the AIR contact your local public health unit on 1300 066 055. The public health unit has a record of all vaccinations administered in the school based vaccination program that may still be uploading to the AIR.

TIP

Check the AIR before giving any vaccines offered in the school based program to avoid double dosing. If it is not on AIR and you suspect the dose is missing contact your local public health unit on 1300 066 055.

GPs are encouraged to opportunistically check the vaccination status of adolescents as part of routine clinical practice.

Information on the vaccines offered is available on the NSW Health website at www.health.nsw.gov.au/immunisation/Pages/schoolvaccination.aspx

4.3 Catch-up Program for Individuals 10-19 years

The National Immunisation Program provides free catch-up vaccines for individuals aged 10 to 19 years. **Catch-up vaccines are free as long as the catch up schedule is commenced before the age of 20 years.** The Australian Government Department of Health has prepared a table with detailed information about the funded vaccines, doses required, minimum intervals and any additional considerations that immunisation providers should be aware of (refer to [Figure 1 on page 19](#)).

4.4 Catch up vaccines for refugees and humanitarian entrants aged 20 years and over

The Australian Government provides free catch-up vaccines for refugees and humanitarian entrants aged 20 years or over through the National Immunisation Program. Detailed information is available on the Australian Government Department of Health [Vaccination Provider Factsheet \(refugee catch up\)](#)¹⁵

Table 1: Nationally funded catch-up vaccines for refugees and other humanitarian entrants aged 20 years and over

Antigen	Total doses needed	Minimal interval between doses	Notes
Diphtheria, tetanus	3 doses	Between doses 1 and 2: 4 weeks Between doses 2 and 3: 4 weeks	People should receive 1 of the doses as dTpa-containing vaccine to provide the catch-up dose for pertussis. The course can be completed with dT. If dT is not available, use dTpa or dTpa-IPV for all 3 primary doses.
Pertussis	1 dose	Not required	People ≥10 years of age who did not receive all the pertussis vaccine doses recommended before the age of 10 years only need 1 dose to be considered up to date. This is regardless of the number of previous doses they received before the age of 10 years.
Poliomyelitis	3 doses	Between doses 1 and 2: 4 weeks Between doses 2 and 3: 4 weeks	None
Measles, mumps and rubella	2 doses	4 weeks	None
Hepatitis B Aged ≥20 years	3 adult doses	Between doses 1 and 2: 1 month Between doses 2 and 3: 2 months	Minimum interval between dose 1 and dose 3 is 4 months.
Varicella	2 doses	4 weeks	MMRV is not recommended for use in people ≥14 years of age.

Source: Department of Health, National Immunisation Program <https://www.health.gov.au/resources/publications/free-catch-up-vaccines-for-refugees-and-humanitarian-entrants-aged-20-years-and-over-fact-sheet>

Figure 1—Catch up vaccines for children 10–19 years

Table 1: Nationally funded catch-up vaccines for children aged 10–19 years

Antigen	Total doses needed	Minimal interval between doses	Notes
Diphtheria, tetanus	3 doses	Between doses 1 and 2: 4 weeks Between doses 2 and 3: 4 weeks	People should receive 1 of the doses as dTpa-containing vaccine and complete the course with dT. This dose would also provide the catch-up dose for pertussis. If dT is not available, use dTpa or dTpa-IPV for all 3 primary doses.
Pertussis	1 dose	Not required	People ≥10 years of age who did not receive all the pertussis vaccine doses recommended before the age of 10 years only need 1 dose to be considered up to date. This is regardless of the number of previous doses they received before the age of 10 years. A booster dose of pertussis-containing vaccine is routinely recommended for all adolescents aged 11–13 years. Take this into account when planning catch-up for pertussis.
Poliomyelitis	3 doses	Between doses 1 and 2: 4 weeks Between doses 2 and 3: 4 weeks	None
Measles, mumps and rubella	2 doses	4 weeks	None
Hepatitis B <small>Note the age groups overlap and this is an either/or, not both</small>	3 paediatric doses aged 10–19 years	Between doses 1 and 2: 1 month Between doses 2 and 3: 2 months	Minimum interval between dose 1 and dose 3 is 4 months.
	2 adult doses aged 11–15 years only	4 months	None
Meningococcal	1 dose of meningococcal C vaccine aged 10-14 years	Not required	None
	1 dose of meningococcal ACWY vaccine aged 15-19 years	Not required	None
Varicella	At least 1 dose if aged <14 years	Between doses 1 and 2: 4 weeks (if 2nd dose is given)	Recommended for all non-immune people. People aged <14 years are recommended to receive at least 1 and preferably 2 doses (only one dose is funded). Children aged under 14 years can receive MMRV.
	2 doses if aged ≥14 years	4 weeks	2 doses are recommended for all non-immune people aged ≥14 years. MMRV is not recommended for use in people ≥14 years of age.
Human papillomavirus	2 doses if started at 9–14 years of age	6 months	If there is an interval of <5 months between doses 1 and 2, a 3rd dose is needed at least 12 weeks after the 2nd dose. (Note only two doses are funded). If there is an interval of <6 months but ≥5 months between doses 1 and 2, a 3rd dose is not needed. People who are immunocompromised need a 3-dose schedule, regardless of age when they start vaccination.
	3 doses if started at ≥15 years of age	Between doses 1 and 2: 4 weeks Between doses 2 and 3: 12 weeks	Minimum interval between dose 1 and dose 3 is 5 months. (Note only two doses are funded).

State and territory health department contact numbers:

ACT	02 6205 2300	SA	1300 232 272
NSW	1300 066 055	TAS	1800 671 738
NT	08 8922 8044	VIC	1300 882 008
WA	08 9321 1312	QLD	13 HEALTH (13 432 584)



Source: Department of Health, National Immunisation Program <https://www.health.gov.au/resources/publications/free-catch-up-vaccines-for-10-to-19-year-olds-fact-sheet>

4.5 Influenza Vaccination Program

Annual seasonal influenza vaccination is recommended for any person aged 6 months and over who wishes to reduce the likelihood of becoming ill with influenza.

The annual influenza vaccine is available free of charge under the National Immunisation Program from April/May each year to:

- All children aged 6 months to less than 5 years
- pregnant women: can be given at any stage of pregnancy
- people aged 65 years and over: should receive the enhanced vaccine specially formulated to produce a higher immune response in this group
- Aboriginal people 6 months and older
- Persons who have identified medical risk conditions:
 - cardiac disease, including cyanotic congenital heart disease, coronary artery disease and congestive heart failure
 - chronic respiratory conditions, including suppurative lung disease, chronic obstructive pulmonary disease and severe asthma
 - other chronic illnesses requiring regular medical follow up or hospitalisation in the previous year, including diabetes mellitus, chronic metabolic diseases, chronic renal failure, and haemoglobinopathies
 - chronic neurological conditions that impact on respiratory function, including multiple sclerosis, spinal cord injuries, and seizure disorders
 - impaired immunity, including HIV, malignancy and chronic steroid use
 - children aged 6 months to 10 years on long term aspirin therapy.

A number of resources are available on the NSW Health website—including the [Influenza Vaccination Provider Toolkit](#).¹⁶ This kit is updated each influenza season with advice to assist immunisation providers to manage roll-out and implementation of their flu vaccination program. The toolkit contains advice about influenza vaccine composition, vaccine ordering and delivery timeframes to assist in program planning. Refer to www.health.nsw.gov.au/immunisation/Publications/flu-provider-toolkit.pdf

5 Vaccines for Specific Groups

The Australian Government funds free vaccines for a range of specific groups at high risk from vaccine preventable diseases, including Aboriginal and Torres Strait Islander populations, children, adolescents, young adults and older Australians in order to protect the most vulnerable from vaccine preventable diseases.

5.1 Aboriginal and Torres Strait Islander Populations

Aboriginal and Torres Strait Islander populations have a higher burden of disease overall compared to non-Aboriginal and Torres Strait Islander populations including vaccine preventable diseases. Data from the Australian Immunisation Register (AIR) indicate that Aboriginal children have historically been vaccinated at lower rates, and experienced greater delays in vaccination, than non-Aboriginal children. As a result, Aboriginal children are at increased risk of morbidity and mortality associated with vaccine preventable diseases.

Did you know?

Due to the success of the AIHCW program in NSW, vaccination coverage at 5 years of age in 2019 was higher in Aboriginal children (97.9%) compared to non-Aboriginal children (94.5%). Let's keep working together to ensure the gap remains closed.

The impacts of these gaps in vaccine uptake and timeliness are seen in notifiable diseases data where Aboriginal children have higher rates of vaccine preventable conditions such as *Haemophilus influenzae* type b, invasive meningococcal disease, whooping cough, invasive pneumococcal disease and rotavirus infection.

NSW Health has implemented a number of strategies to improve immunisation coverage for Aboriginal and Torres Strait Islander people following the introduction of the NSW Aboriginal Immunisation Health Care Worker (AIHCW) Program.

GPs are encouraged to ask all patients “Are you of Aboriginal or Torres Strait Islander origin?” as part of routine clinical practice to ensure they receive appropriate primary health care services. The RACGP has a range of resources (refer to useful links below) to ensure your practice provides culturally safe primary health care.

Please refer to the digital version of the [Australian Immunisation Handbook](#)¹⁷ for specific requirements for patients in these at-risk groups.

Useful links:

- RACGP Guidelines: Identification of Aboriginal and Torres Strait Islander people in Australian general practice www.racgp.org.au/FSDEDEV/media/documents/Faculties/ATSI/Identification-of-Aboriginal-and-Torres-Strait-Islander-people-in-Australian-general-practice.pdf
- RACGP webinar series: Providing effective, culturally safe primary health care www.racgp.org.au/cultural-safety

5.2 Asplenic Patients

Patients who have been identified as being asplenic or who may be scheduled to have a splenectomy have specific requirements for vaccination. People with functional or anatomical asplenia should be up to date with all routinely recommended vaccines and are also recommended to receive the following vaccines which are funded under the National Immunisation Program:

- Hib vaccine
- influenza vaccine
- meningococcal vaccine
- pneumococcal vaccine

Specific vaccine recommendations for people with elective or unplanned asplenia are available in the [Australian Immunisation Handbook](#)¹⁸ (digital version). [Spleen Australia](#)¹⁹ has also developed 'medical recommendations for vaccines recommended for adults and children with asplenia' that take into consideration an individual's previous vaccination history. The recommendations can be accessed at the spleen Australia webpage.

Vaccines recommended for people with asplenia in the Australian Immunisation Handbook are funded under the National Immunisation Program.

Useful links:

- Australian Immunisation Handbook
<https://immunisationhandbook.health.gov.au/vaccination-for-special-risk-groups/vaccination-for-people-who-are-immunocompromised>
- Spleen Australia
https://spleen.org.au/wp-content/uploads/2020/03/RECOMMENDATIONS_Spleen_Registry.pdf

5.3 Preterm Infants

Preterm (premature) infants (according to The Australian Immunisation Handbook) are those babies born at less than 37 weeks gestation. Extremely preterm infants are those born at less than 28 weeks gestation.

Prematurity can increase the child's risk of vaccine-preventable diseases. Infants identified as preterm should receive vaccines according to the recommended schedule at their chronological age, without correction for prematurity. Consideration should be given to the child's birth weight, the precise gestational age and the presence of any chronic medical condition(s) before giving vaccines.

Specific requirements for Hepatitis B and pneumococcal vaccine may be necessary. Please refer to the [Australian Immunisation Handbook](#)²⁰ (digital version).

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

5.4 Women Who Are Planning Pregnancy and Pregnant Women

Women planning pregnancy should have their vaccination needs assessed as part of any pre-conception health check. In particular, consider vaccines for:

- hepatitis B
- measles, mumps, rubella
- varicella

It is also important to ask women of child-bearing age who present for vaccination about the possibility of pregnancy as part of routine pre-vaccination screening. This is so that they are not given any vaccines that are not recommended in pregnancy. Advise women who receive live vaccines to avoid pregnancy within 28 days of vaccination.

Pregnant women are routinely recommended to receive free (government funded):

- influenza vaccine: can be administered at any time during pregnancy
- Pertussis-containing vaccine: usually given to pregnant women at 28 weeks but can be given anytime between 20–32 weeks of each pregnancy. The vaccine should be given as early as possible (from 20 weeks) to women who are identified as being at high risk of preterm birth, or who are unlikely to attend a 28 week visit for any reason.

Refer to the digital version of the Australian Immunisation Handbook for specific advice: <https://immunisationhandbook.health.gov.au/vaccination-for-special-risk-groups/vaccination-for-women-who-are-planning-pregnancy-pregnant-or>

5.5 Individuals with Medical Risk Factors and/or Immunocompromised

Individuals with certain medical conditions and/or immunocompromising conditions that place them at increased risk of contracting disease or who are more likely to experience severe morbidity or mortality may have additional immunisation requirements.

Refer to the digital version of the Australian Immunisation Handbook for specific advice: <https://immunisationhandbook.health.gov.au/vaccination-for-special-risk-groups/vaccination-for-people-at-occupational-risk>

5.6 People at occupational risk

Certain occupations place individuals at greater risk of exposure to vaccine preventable diseases. You should consider the work activities, rather than the job title, for each person to ensure that they are appropriately protected. You should consider the occupational needs of people employed in the following roles:

- Healthcare workers
- People who work in childhood education and care
- Carers
- Emergency and essential services workers
- Laboratory workers
- People who work with animals
- Other people exposed to human tissue, blood, body fluids or sewage

6 Specific Vaccines

6.1 Diphtheria, Tetanus and Pertussis Vaccine (DTPa/dTpa)

The routine schedule for pertussis vaccination is 6 weeks, 4 months, 6 months, 18 months and 4 years of age. Booster doses are offered in Year 7 (12 years of age) and then at 50 years of age (not funded at 50 years).

Pregnant women are advised to receive a free booster dose of pertussis containing vaccine. This is usually given to pregnant women at 28 weeks but can be given anytime between 20–32 weeks of each pregnancy. The vaccine should be given as early as possible (from 20 weeks) to women who are identified as being at high risk of preterm birth, or who are unlikely to attend a 28 week visit for any reason.

Pertussis containing vaccine is also recommended (but not funded) for all people who will care for, or have close contact with a baby in the first weeks of life.

For more information and resources refer to the NSW Health webpage Protect Your Newborn From Whooping Cough and [Section 5.4](#) of the toolkit.

www.health.nsw.gov.au/immunisation/pages/wc-newborns.aspx

6.2 Pneumococcal vaccine (Prevenar 13 and Pneumovax 23)

Information related to those people with at risk conditions which require additional pneumococcal vaccinations can be found in the Australian Immunisation Handbook (digital version).

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

A useful pneumococcal vaccination tool is also available on the Immunisation Coalition webpage:

www.immunisationcoalition.org.au/resources/pneumococcal-vaccination-tool

From 1 July 2020 the National Immunisation Program schedule has been updated to reflect changes to pneumococcal vaccine recommendations. For more information refer to:

- [Section 2.1](#) for a summary of changes
- the Australian Immunisation Handbook (digital or app version) and
- FAQs on the NSW Health webpage.

6.3 Measles, Mumps Rubella (MMR)

The measles, mumps rubella vaccine (MMR) is routinely provided to children at 12 months and Measles, Mumps, Rubella and Varicella (MMRV) at 18 months.

- Children as young as 6 months of age can receive MMR vaccine in certain circumstances, including travel to highly endemic areas and during outbreaks. If an infant receives MMR vaccine at <11 months of age, they still need to receive the 2 recommended vaccine doses at ≥12 months of age, usually received at 12 and 18 months.

NSW Health funds doses for:

- People who are born during or after 1966 and have not received 2 doses of the MMR vaccine are eligible for 2 free doses of the vaccine, 4 weeks apart.
- Post-natal women who are seronegative for rubella

An MMR Catch Up Decision tool has been developed by the National Centre for Immunisation Research and Surveillance (NCIRS) and is available at <http://ncirs.org.au/measles-vaccination-catch-up-guide>

6.4 Zoster (shingles) vaccine

A single dose of zoster (Zostavax®) vaccine is recommended and funded for adults at 70 years of age.

Adults 71-79 years of age are also eligible under a five-year catch up program until 31 October 2021.

6.4.1 Contraindications

Zostavax® is contraindicated in people who are immunocompromised. The Australian Government Department of Health has developed a [pre-vaccination checklist](#)²¹ to assist immunisation providers in screening for contraindications to zoster vaccination. Authorised nurse immunisers are not authorised to administer Zostavax® without a doctors order. GPs are responsible for conducting the pre-vaccination checklist to avoid serious and preventable vaccine administration errors. Zostavax® should be administered subcutaneously into the deltoid area (not abdomen).

If an immunocompromised person is inadvertently vaccinated with zoster vaccine immediately:

- assess them, they should be advised to seek immediate medical advice if they develop any symptoms
- discuss their appropriate management with an infectious diseases and/or immunisation expert
- notify your local public health unit on 1300 066 055 (refer to [Section 12.7](#) for further information).

6.4.2 Adverse events

The most common adverse event following Zostavax® immunisation are injection site reactions. Serious reactions, such as disseminated varicella zoster virus (Oka strain) infection are rare however patients should be advised of the risk and to seek **immediate medical attention** if they develop:

- Chickenpox-like rash within 3 to 4 weeks after vaccine administration
- feeling unwell
- fever

If a patient presents with these symptoms following Zostavax® vaccination, disseminated varicella zoster virus (Oka strain) infection should be considered in the differential diagnosis. Immunisation providers should initiate early and appropriate testing, treatment and management.

6.5 Hepatitis B

Hepatitis B vaccine is routinely funded for children under the childhood vaccination program at birth, 6 weeks, 4 and 6 months. Post vaccination serology should be performed on babies born to mothers with a high viral load >200,000IU/ml. It is also funded by NSW Health for additional groups who are at increased risk of contracting this disease. A course of the vaccination is available for:

- Aboriginal people
- Household and sexual contacts of acute and chronic hepatitis B cases
- Immunosuppressed people
- People with HIV or hepatitis C
- Men who have sex with men
- Injecting drug users
- Sex workers
- Clients of sexual health clinics

7 Other vaccines

7.1 Q Fever

Q fever vaccination is contraindicated in people who have been previously infected with the Q fever organism. People who have previously been infected with Q fever are likely to have adverse reactions to the vaccine and should not be vaccinated. Immunisation providers are responsible for conducting appropriate pre-vaccination screening to identify patients who may not be aware that they have been previously infected with Q fever. Authorised nurse immunisers are not authorised to administer Q Fever vaccine without a doctors order.

The manufacturer (Seqirus) and the Australian College of Rural and Remote Medicine (ACCRM) both provide online education on Q fever vaccination and skin testing.

- Seqirus has developed the www.qfeverfacts.com.au website. Health professionals can log in to access educational resources. Please contact Seqirus Pty Ltd on 1800 008 275 for log-in details to access these resources.
- ACCRM has developed an accredited '[Q fever—early diagnosis and vaccination](#)'²² education module (worth 2 CPD points, link below). The module is a two hour course that includes advice on testing, diagnosis and management of Q fever and guidance on vaccination and pre-vaccination skin testing. It is available for free for ACCRM members. NSW GPs can access the course at no cost using the code NSWGP18 (places are limited).

The Australian Q Fever Register holds information on the Q Fever immune status of individuals, accessible to registered organisations (primarily meat processors and medical practitioners). The register holds details of Q Fever vaccination providers in a number of Australian states.

Further information about the management of persons with Q fever and their contacts is available in the Q fever control guidelines or by contacting your local public health unit on 1300 066 055.

Useful links:

- Seqirus Q fever facts website—www.qfeverfacts.com.au
- ACCRM Q fever module—<https://mycollege.acrrm.org.au/search/find-online-learning/details?id=11347&title=Q+Fever+-+Early+Diagnosis+and+Vaccination>
- Australian Q Fever Register—www.qfever.org
- NSW Health Q fever control guidelines www.health.nsw.gov.au/Infectious/controlguideline/Pages/qfever.aspx

7.2 Yellow Fever

The yellow fever vaccine can only be administered by accredited providers at an approved Yellow Fever Vaccination Centre. Immunisation providers seeking to become an approved yellow fever vaccination clinic must complete the [Yellow Fever Vaccination Centre application package](#)²³ and contact their local Public Health Unit on 1300 066 055.

Further information regarding Yellow Fever vaccination including a list of accredited yellow fever vaccination centres in NSW is available on the NSW Health website www.health.nsw.gov.au/immunisation/Pages/yellow_fever.aspx

8 Pharmacist Vaccinations

8.1 Vaccinations provided by pharmacists

Appropriately trained NSW pharmacists can provide the following privately funded vaccines to the following age ranges:

- Influenza—10 years and over
- diphtheria, tetanus and pertussis (dTpa)—16 years and over
- measles, mumps, and rubella (MMR)—16 years and over

Appropriately trained pharmacists can administer authorised vaccines in the following settings:

- Retail pharmacy
- General Practice
- Aboriginal Medical Services
- Local Council Clinics
- Private Hospitals
- Public Hospitals and health services
- Community Health Centres
- Aged Care Facilities
- Staff Occupational Health Clinics

Appropriately trained pharmacists must comply with the [NSW Pharmacist Vaccination Standards](#)²⁴ including:

- advising all individuals who are eligible for funded vaccines of their eligibility, and of how to access funded vaccines e.g people over 65 years of age requesting influenza vaccine.
- checking an individual's vaccination status on AIR prior to administering a vaccine and subsequently recording any vaccines they administer.

Information regarding pharmacist vaccination including the process for pharmacists to register as a vaccination provider with the AIR can be found on the NSW Health website www.health.nsw.gov.au/immunisation/Pages/immunisation-providers.aspx

9 NSW Occupational Assessment, Screening & Vaccination Policy (Health Care Worker Policy)

NSW Health Policy Directive (PD) [Occupational Assessment Screening and Vaccination against Specified Infectious Diseases \(PD2020_017\)](#),²⁵ provides a framework for the assessment, screening and vaccination of health care workers employed in NSW Health facilities.

Health care workers, including students, are required to provide evidence of protection against the specified diseases listed in the policy. The Vaccination Record Card for Health Care Workers and Students can be used to record these vaccinations in addition to the AIR history statement and is available from the Better Health Centre on 9887 5450 or nslhd-bhc@health.nsw.gov.au

For more information and Frequently Asked Questions (FAQs) please visit the NSW Health Immunisation website at www.health.nsw.gov.au/immunisation/Pages/default.aspx and go to the Health care worker vaccination section

A learning module that provides training on the requirements of this policy is available from: <https://www.health.nsw.gov.au/immunisation/OASV/index.html>

10 Vaccine Storage and Cold Chain Management

Vaccines are sensitive to temperature and light and must be stored in their original cardboard packaging between the recommended temperature range of +2°C to +8°C. This section provides an overview of resources available to support vaccine storage and cold chain management and outlines mandatory requirements for NSW immunisation providers. More detailed information is available in the NSW Cold Chain Toolkit for Immunisation Providers (Refer to Section 10.2)

10.1 National Vaccine Storage Guidelines ‘Strive for 5’

All immunisation providers should have access to the updated [National Vaccine Storage Guidelines ‘Strive for 5’ \(3rd edition\)](#),²⁶ released in June 2019. These guidelines provide best practice guidelines for storing vaccines and managing the cold chain. The guidelines include additional cold chain resources such as:

- minimum/maximum vaccine refrigerator temperature chart
- posters e.g. cold chain breach protocol and stickers
- self audit tool

Copies and additional resources are available to be downloaded from the Australian Government’s Department of Health webpage. These resources include the ordering ID required to order hard copies. Hardcopies can be ordered by contacting National Mailing and Marketing by:

- Email—health@nationalmailing.com.au
- Phone—02 6269 1080

Website: <https://www.health.gov.au/resources/collections/national-vaccine-storage-guidelines-resource-collection>

10.2 NSW Health Cold Chain Toolkit

NSW Health has also developed a Cold Chain Toolkit for Immunisation Providers (link below) and Safe Vaccine Storage Checklist (link below) to support immunisation providers in general practice. The Cold Chain Toolkit includes additional information about vaccine storage and cold chain requirements in NSW including mandatory training requirements and random audits conducted by NSW Health.



Useful links:

NSW Health Cold Chain Toolkit for Immunisation Providers—
www.health.nsw.gov.au/immunisation/Documents/cold-chain-toolkit.pdf

Safe Vaccine Storage Checklist—
www.health.nsw.gov.au/immunisation/Documents/safe-vaccine-storage-checklist.pdf

10.3 Safe Vaccine Storage Requirements

All immunisation providers in NSW must comply with the National Vaccine Storage Guidelines 'Strive for 5' (3rd edition) and mandatory NSW Health vaccine storage and cold chain requirements before accessing government funded vaccines.

Providers must:

- **Store vaccines in a purpose built vaccine specific refrigerator** (PBVR). Domestic fridges and bar fridges are NOT to be used for vaccine storage.
- **Continuously monitor vaccine refrigerator temperatures using a data logger**, set at 5 minute intervals and downloaded and reviewed at least weekly.
- **Manually measure and record the current, minimum and maximum temperatures twice daily** when facility open on the minimum/maximum vaccine refrigerator temperature chart.
- Ensure at least one staff member and ideally all staff have successfully **completed the NSW Health Vaccine Storage and Cold Chain Management online learning module**. The Cold Chain Learning module is available from https://nswhealth.seerightsolutions.com.au/public_content/HETICP/HETI/CCMWebv3/story_html5.html under the **Cold chain section**.
- Complete a vaccine storage self-audit every 12 months or more frequently if there have been problems with equipment or following a cold chain breach.

Immunisation providers must retain evidence of meeting the above requirements. NSW Health will be conducting **random audits** of practice compliance.

This will include checking that all vaccine doses administered in the practice are notified to the Australian Immunisation Register, as well as verification of the vaccine storage and staff training requirements

10.4 Private Vaccine Scripts

When providing patients with a script to purchase a vaccine from a pharmacy the patient should be advised on the process for cold chain management of the vaccine, including:

- Purchasing the vaccine immediately before attending the GP practice for administration of the vaccine
- Advising practice staff on arrival to the practice that they have a vaccine and request that it be refrigerated in a cold chain monitored fridge

Immunisation providers should not administer vaccines if there are concerns that the cold chain has not been maintained.

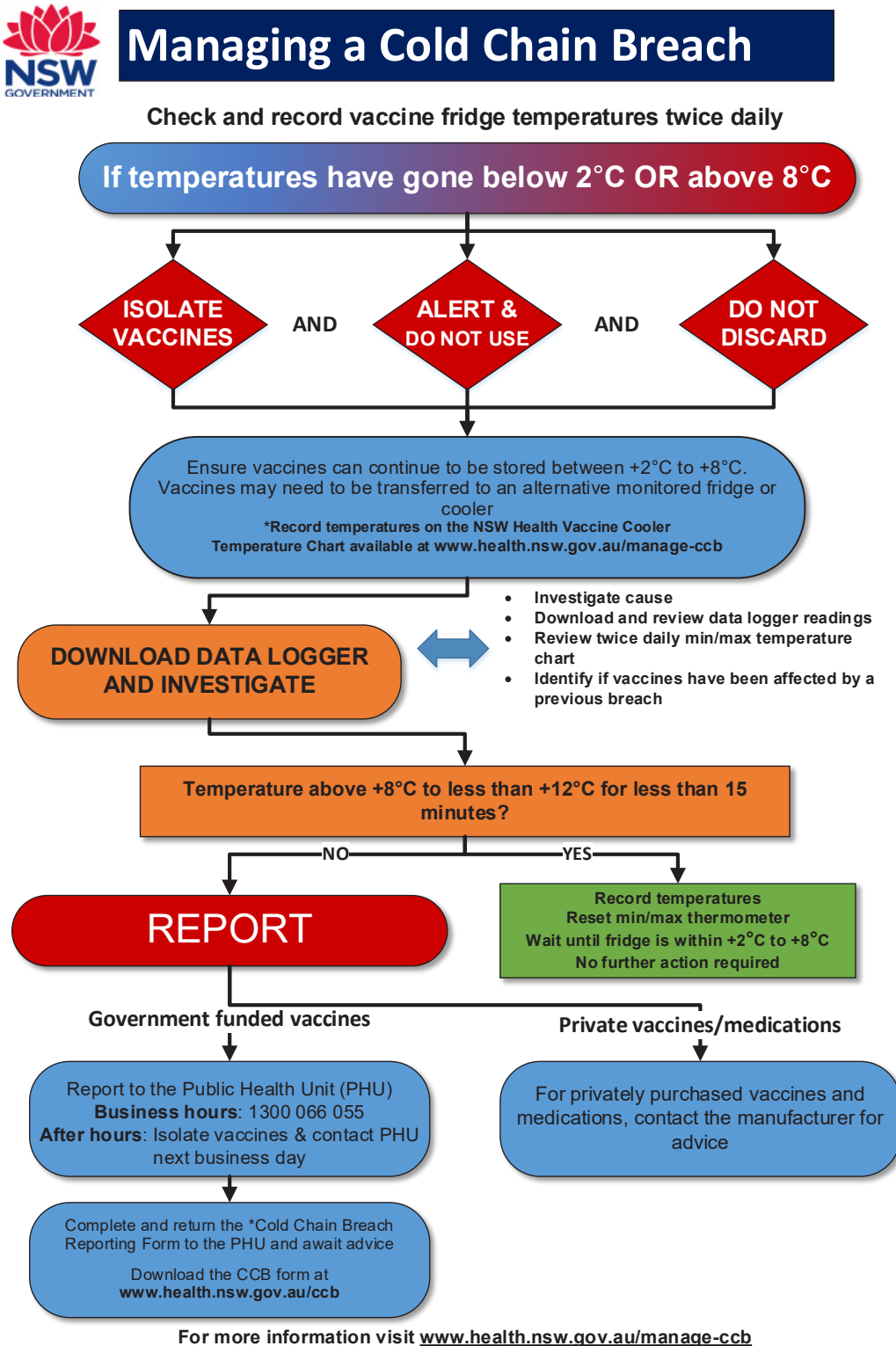
10.5 Managing cold chain breaches

A cold chain breach occurs when vaccine storage temperatures have been outside of the recommended range of +2°C to +8°C during storage or transport. Excursions of >8°C to up to 12°C for no longer than 15 minutes e.g. during restocking are acceptable.

Immunisation providers must follow the NSW Cold Chain Breach Protocol (Figure 2) and report all cold chain breaches to their local public health unit 1300 066 055. Please refer to the [NSW Health Cold Chain Toolkit²⁷](#) for Immunisation Providers for more detailed information including advice on managing power failures.

When managing a power failure or refrigerator malfunction, if there is no suitable alternative monitored storage option, isolate the vaccines and leave them in the refrigerator with the door closed for the duration of the power outage/malfunction and follow the NSW Cold Chain Breach Protocol.

Figure 2—NSW Cold Chain Breach Protocol



11 NSW State Vaccine Centre

The NSW State Vaccine Centre is responsible for the storage and delivery of vaccines in NSW. Immunisation providers in NSW must order vaccines on the NSW Vaccine Centre vaccine online ordering system at <https://nsw.tollhealthcare.com>

Messages regarding changes to vaccine stock availability, particularly during the flu season, and any ordering restrictions will be regularly posted on the online vaccine ordering webpage notice board.

It is important to regularly check for new messages and keep your contact details up to date.

Did you know?

Contact details registered with the NSW State Vaccine Centre are used by NSW Health to communicate important immunisation program alerts and updates to immunisation providers. It is important that you keep your contact information up to date.

11.1 Applying for a Vaccine Account

To be able to order funded vaccines from the NSW State Vaccine Centre you will need to obtain a Vaccine Account Number (or VAN). This can be done by contacting your local Public Health Unit on 1300 066 055 who will provide you with information regarding cold chain storage requirements and arrange a time to visit your practice and ensure that you meet the necessary requirements for vaccine storage.

11.2 Routine Vaccine Orders

Once you have an approved VAN you will be given access to the online vaccine ordering system webpage <https://nsw.tollhealthcare.com>

When placing a vaccine order you are responsible for:

- taking into account current stock levels in your refrigerator and maintaining appropriate levels of stock to meet practice immunisation program requirements while not exceeding the capacity of the refrigerator.
- Ensuring that stock is rotated when receiving new stock to prevent wastage of vaccines nearing expiry.

You should aim for **one order per month, per practice/clinic**, but can order up to twice per month. If you require more than two orders per month please contact your local public health unit on 1300 066 055.

Stock control

It is important to have an adequate supply of vaccines in the practice fridge, but it is also important not to over stock the fridge. This can lead to wastage because vaccines reach their expiry date must be discarded and reported to NSW Health. It may also lead to cold chain problems, as an over full fridge will not allow air to circulate freely around the vaccines, allowing warm or cold areas to develop. When placing stock in the fridge, put new stock behind stock already in the fridge, so that vaccines with an earlier expiry date are used first.

Vaccines must not be removed from their original cardboard packaging to save space in the fridge as light can affect vaccine potency and cause the vaccine to be ineffective.

How to calculate monthly vaccine ordering requirements

There is a simple formula that can help you assess how much vaccine you order from month to month:

Quantity to be ordered = Quantity used since last delivery – Quantity left over since last delivery + 10% of Quantity used since last delivery

For example, if you had 40 doses of DTPa delivered one month ago and only 35 were used, (that is, there are 5 left in the fridge):

**Quantity to be ordered = 35 used
– 5 left over + 10% of used (3.5)
= 35 – 5 + 3.5
= 33.5 doses**

You should therefore order 34 doses (or the nearest number if ordering multiple packs).

This formula is based on international best practice. The additional 10% is a buffer, which allows for unexpected variation in demand.

Additional points to consider:

- If special immunisation campaigns are underway, you may need to order additional supplies on top of the number given in the formula
- During the influenza vaccination season use the [influenza vaccine ordering worksheet](#)²⁸ available in the [influenza vaccination provider toolkit](#)²⁹ and NSW Health webpage.

11.3 Authorised Provider Declaration

In order to access government funded vaccines, immunisation providers are required to electronically sign a declaration on the online vaccine ordering system.

It is important to ensure that the person ordering the vaccines and signing the declaration on behalf of the authorised AHPRA practitioner understands that they are responsible for ensuring that the practice complies with the requirements of the 'authorised practice providers declaration'.

The declaration includes a number of criteria including:

- compliance with cold chain recommendations in the 'National Vaccine Storage Guidelines: Strive for 5' (3rd edition)
- that the vaccine fridge temperature has been maintained within the required temperature range of 2°C to 8°C and,
- that staff have undertaken the [NSW Health Vaccine Storage and Cold Chain online training module](#).³⁰

11.4 Vaccine Deliveries

Routine vaccine orders are delivered within 2–3 business days of placing an order (Refer to the NSW Health Influenza Vaccination Provider Toolkit for advice regarding timelines for the delivery of influenza vaccines).

www.health.nsw.gov.au/immunisation/Publications/flu-provider-toolkit.pdf

When receiving a vaccine delivery, it is important to confirm that the cold chain has been maintained during transport and the integrity of the vaccines has not been compromised.

Before accepting the delivery and transferring the vaccines to a dedicated vaccine refrigerator, check the cold chain monitors and record the check on the back of the vaccine minimum/maximum temperature chart. Please refer to the NSW Health Cold Chain Toolkit for Immunisation Providers for more detailed information.

www.health.nsw.gov.au/immunisation/Documents/cold-chain-toolkit.pdf

If the cold chain monitor(s) has activated or if there is damage to the cooler contact the NSW Vaccine Centre immediately on 1300 656 132.

While awaiting advice, the vaccines **MUST** be:

- placed in the refrigerator
- isolated and
- labelled 'DO NOT USE'
- Record the breach on the back of the vaccine temperature chart

For privately purchased vaccines, any concerns identified during transport including damage to the cooler should be directed to the manufacturer.

11.5 Change of address

Any change of details or address must be updated on the online vaccine ordering system. You will be required to submit 24 hours stable data logging to your local public health unit following a change of address to continue to order vaccines.

Refer to The National Vaccine Storage Guidelines: Strive for 5 (Appendix 8), checklist for emergency storage of vaccines, to ensure your vaccines are transported within the recommended temperature range.

11.6 Ordering rabies vaccine for post-exposure prophylaxis

Information regarding rabies immunisation and post exposure prophylaxis for both Australian Bat Lyssavirus and Rabies can be found on the NSW Health site

www.health.nsw.gov.au/Infectious/controlguideline/Pages/rabies.aspx

If you have a patient who has been exposed to these viruses—either in Australia or overseas contact your local public health unit on 1300 066 055 for further information and to order rabies vaccines and rabies immunoglobulin

12 Vaccine Safety

All vaccines registered for use in Australia and included in the NIP are thoroughly tested before they are approved and are continuously monitored for safety. Parents who have concerns about vaccine safety may be reluctant to have their children vaccinated. In the age of social media parents have unprecedented access to vaccine misinformation. Healthcare providers play a critical role in shaping attitudes towards immunisation and are consistently identified as the most trusted source of vaccine information by parents and patients. Immunisation providers should be prepared to discuss the benefits and risks of vaccines using credible sources of information.

The Australian Government Department of Health has developed a range of resources including the resource 'Questions about Vaccination' and a fact sheet series 'Are vaccines safe?' including:

- Vaccine testing
- Vaccine ingredients
- Vaccine side effects
- Vaccine safety monitoring
- Mercury and vaccines
- Vaccines and autism

The resources can be accessed at the following link and should be used when discussing vaccine safety concerns with parents:

- Questions about vaccination
www.health.gov.au/resources/publications/questions-about-vaccination
- Are vaccines safe?
www.health.gov.au/health-topics/immunisation/about-immunisation/are-vaccines-safe

12.1 Talking to patients about vaccine safety

Effective communication is key to discussing vaccine safety with concerned parents.

The Sharing Knowledge About Immunisation (SKAI) website is a useful tool for parents and healthcare providers. The website for parents provide credible information about vaccination including common reactions and vaccine safety. The website for healthcare professionals is designed to help clinicians adapt their clinical communication skills to meet the needs of all parents at any point of their vaccination journey.

- Website for parents
<http://talkingaboutimmunisation.org.au/common-reactions>
- Websites for healthcare professionals
<https://learn.nps.org.au/mod/page/view.php?id=11018>

12.2 Vaccine safety surveillance

Vaccine safety surveillance in Australia aims to monitor vaccine and immunisation program safety and to detect potential serious adverse events that may not be identified in pre-licensure vaccine trials. Immunisation providers play an important role in vaccine safety surveillance by reporting serious adverse events to the local public health unit (passive surveillance) and participating in active surveillance systems such as AusVaxSafety.

AusVaxSafety uses two software programs SmartVax and Vaxtracker to monitor the safety of vaccines. These programs are run by general practitioners and immunisation clinics that send an SMS or email to patients or parents following a vaccination. De-identified information from SmartVax and

Vaxtracker are combined and monitored by AusVaxSafety to detect possible safety signals for vaccines.

AusVaxSafety data relating to a range of vaccines including influenza, pertussis (including pertussis in pregnancy), HPV and zoster vaccine is available through the AusVaxSafety vaccine safety surveillance system at the following link <http://ausvaxsafety.org.au/safety-data>

Annual reports on surveillance of AEFIs in NSW are published and available on the NSW Health webpage at: <https://www.health.nsw.gov.au/immunisation/Pages/aefi.aspx>

12.3 What is an Adverse Event Following Immunisation (AEFI)?

An adverse event following immunisation (AEFI) is an unwanted or unexpected event following the administration of vaccine(s) and which does not necessarily have a causal relationship with the use of the vaccine. Most vaccines cause minor adverse events such as low grade fever, pain or redness at the injection site, and these should be expected.

The Australian Immunisation Handbook (digital version) has useful information about common side effects following immunisation which should be discussed with patient's during the consent process, including:

- [Common side effects following immunisation for vaccines used in the National Immunisation Program schedule](#),³¹ and
- [Comparison of the effects of diseases and the side effects of vaccines on the National Immunisation Program](#)³²

To ensure patients are aware of what to expect following vaccination, immunisation providers should provide patients

with the information sheet 'Following vaccination— what to expect and what to do' after vaccinating a patient.

The information sheet was developed by the Australian Government Department of Health, pads of these free sheets are available for order by emailing NationalMailingandMarketing@health.gov.au, quote order ID IT0258, quantity and delivery address.

Following vaccination— what to expect and what to do

All vaccinations may cause the following reactions:

- Mild fever that doesn't last long <math>< 38.5^{\circ}\text{C}</math>
- Where the needle was given: Sore, red, burning, itching or swelling for 1–2 days and/or small, hard lump for a few weeks
- Grizzly, unsettled, unhappy and sleepy
- Teenagers/adults fainting and muscle aches

SEE BACK PAGE FOR ADDITIONAL COMMON REACTIONS SPECIFIC TO EACH VACCINE

What to do at home:

- If baby/child is hot don't have too many clothes or blankets on
- Breast feed more frequently and/or give extra fluids
- Put a cold wet cloth on the injection site if it is sore
- For fever or pain give paracetamol. Follow instructions on the packaging

When to seek medical advice:

See your doctor or immunisation provider, or go to hospital if:

- Pain and fever are not relieved by paracetamol (eg. Panadol[®])
- The reactions are bad, not going away or getting worse or if you are worried at all
- Any of the rare reactions below are experienced

How to report an adverse reaction:

Significant events that occur following immunisation should be reported to your doctor or vaccination provider. Alternatively you can report directly to the Therapeutic Goods Administration (www.tga.gov.au) or by phone to a pharmacist from NPS MedicineWise on 1300 134 237. You can also report adverse events following immunisation to your state or territory health services.

Rare reactions requiring immediate medical attention

As with any medication, on rare occasions, an individual may experience a severe reaction.

Anaphylaxis

- A severe allergic reaction which occurs suddenly, usually within 15 minutes, however anaphylaxis can occur within hours of vaccine administration. Early signs of anaphylaxis include: redness and/or itching of the skin, swelling (tongue), breathing difficulties, persistent cough, hoarse voice and a sense of distress.

Intussusception (relates to rotavirus vaccine)

- This is an uncommon form of bowel obstruction where one segment of the bowel slides into the next, much like the pieces of a telescope.
- There is a very small risk of this occurring in a baby in the first week after receiving the first dose of rotavirus vaccine, and a smaller risk after the second vaccine dose.
- The baby has bouts of crying, looks pale, gets very irritable and pulls the legs up to the abdomen because of pain.

Seizure

- Some young children (especially aged 1–3 years) are more prone to seizures when experiencing a high fever from any source (with an infection or after a vaccine). The seizure usually lasts approximately 20 seconds and very rarely more than 2 minutes.

Where can I get more information?

Contact your immunisation provider
Visit health.gov.au/immunisation
Contact your state or territory health service

Practice contact details:

<https://www.health.gov.au/resources/publications/following-vaccination-what-to-expect-and-what-to-do>

12.4 How to minimise the risk of an AEFI

Immunisation providers can minimise the risk of serious AEFIs by performing the pre-vaccination screening checklist for all patients prior to vaccination. The checklist identifies any person with a condition which increases the risk of an adverse event or is a contraindication to vaccination. Previous AEFI which are reported at the time of the pre-vaccination screening should be investigated. It is also important for immunisation providers:

- to use the correct injection technique to minimize the risk of serious adverse events such as Shoulder Injury Related to Vaccine Administration (SIRVA) and,
- review disease specific chapters in the Australian Immunisation Handbook for specific advice.

A pre-vaccination screening checklist is available in the [Australian Immunisation Handbook](#)³³ and advice for avoiding shoulder injury related to vaccine administration is available [here](#).³⁴

The Australian Government Department of Health has also developed a [pre-vaccination checklist](#)³⁵ to assist immunisation providers in screening for contraindications to shingles (zoster) vaccination.

12.5 Reporting an AEFI

AEFI are notifiable conditions under the *NSW Public Health Act 2010*, and must be notified to your local Public Health Unit.

Any serious or unexpected AEFI or any event felt to be significant following immunisation should be reported. To report a suspected AEFI:

1. Please download and complete the National Adverse Events Following Immunisation (AEFI) Reporting Form available at www.health.nsw.gov.au/immunisation/Pages/aeafi.aspx
2. Contact your local Public Health Unit (PHU) on 1300 066 055.
3. Following a report of a suspected AEFI, vaccination providers may be advised by the PHU to obtain advice from the NSW Immunisation Specialist Service (NSWISS) at Westmead Children's Hospital. If necessary children can attend the Specialist Immunisation Clinic (GP referral required) or for those in more remote areas tele-consultations are available (refer to Section 12.6).

NSW Health forwards AEFI notifications to the *Therapeutics Goods Administration (TGA)* safety monitoring surveillance program. TGA Reports are available from the publically accessible [Database of Adverse Event Notifications—medicines](#)³⁶ 90 days after they have been reported to the TGA.

12.6 Specialist Immunisation Services NSW

The New South Wales Immunisation Specialist Service (NSWISS) located within the Children's Hospital at Westmead provides specialised immunisation care and advice to clinicians and families. Services include:

- **NSWISS telephone advice line** (1800 679 477) that provides specific clinical guidance for immunisation providers. General immunisation queries should be referred to your local Public Health Unit first on 1300 066 055. The advice line is open between 9:00 am and 5:00 pm, Monday to Friday.

- **Drop In Immunisation Clinic** run by specialist immunisation nurses for **children 16 years and under** with chronic medical conditions. Bookings are not required, and appointments are free of charge for Medicare cardholders. The clinic is located on Level 1 of The Children's Hospital at Westmead next to the Book Bunker, Monday to Friday, 8.30 am to 3.30 pm.
- **Specialist Immunisation Clinic including telehealth** for in-depth consultations and vaccination under observation for **children 16 years and under** who have had an adverse event following immunisation or who have complex medical needs. The clinic is free of charge for Medicare cardholders with a referral letter from a general practitioner. To arrange an appointment, please contact the Specialist Immunisation Clinic on (02) 9845 1414. Referrals can be faxed to (02) 9845 1418 or emailed to SCHN-NSWISS@health.nsw.gov.au

The Australian Society of Clinical Immunology and Allergy (ASCIA) has useful information for adults who have had an adverse event following immunisation and require specialist consultation including guidelines for the Vaccination of the Egg Allergic Individual.

Useful links:

- ASCIA: www.allergy.org.au/patients
- Guidelines for the Vaccination of the Egg Allergic Individual: www.allergy.org.au/hp/papers/vaccination-of-the-egg-allergic-individual

12.7 Vaccination Administration Errors

Vaccination administration errors can occur during vaccine preparation, handling, storage or administration. Vaccination errors that may pose a safety risk to the patient or have resulted in an adverse event should be reported to the public health unit on 1300 066 055, particularly:

- Inadvertent administration of a vaccine contraindicated in pregnancy or giving a live attenuated viral vaccine during pregnancy or shortly before pregnancy, and
- Inadvertent administration of zoster vaccine or any live vaccine to an immunocompromised patient, and
- Administration of expired vaccines
 - For NIP funded vaccines contact your local public health unit with the patients de-identified details i.e. initials and birth date, vaccine name, batch number, expiry date. For private vaccines please contact the manufacturer for advice.

12.8 Vaccine Safety Resources

12.8.1 Fact Sheets

The **National Centre for Immunisation Research and Surveillance** has developed a range of vaccine safety fact sheets and clinical resources to support immunisation providers including:

- [Influenza vaccination post GBS guidelines](#)³⁷
- [Injection site reactions](#)³⁸

The resources are available on the NCIRS webpage <http://ncirs.org.au/health-professionals/ncirs-fact-sheets-faqs>

13 Other resources

Public Health Units

The Public Health Immunisation Unit is available to support immunisation providers with clinical immunisation queries, school vaccination program enquiries and cold chain management. In NSW calling 1300 066 055 will direct you to your local Public Health Unit.

Resource order form

There are a number of pamphlets and posters which you can order for no cost to promote immunisation in your practice. A list of these is available on the NSW Immunisation Resource Order Form available from: www.health.nsw.gov.au/immunisation/Documents/immunisation-order-form.pdf

'Pregnancy—Protection and vaccination from preconception to birth' and 'Hepatitis B—For your newborn baby' brochures are also available to print from the NSW Immunisation webpage in a number of community languages: <https://www.health.nsw.gov.au/immunisation/Pages/Campaign-brochures-and-posters.aspx>

Commonwealth Department of Health Immunisation Resources

www.health.gov.au/resources

Translating overseas immunisation records

The Centre for Disease Control and Prevention (CDC) has developed the 'Foreign Language Terms: Aids to Translating Foreign Immunization Records' to assist immunisation providers assessing overseas vaccination records when developing vaccination catch up plans. The guide is available at:

www.cdc.gov/vaccines/pubs/pinkbook/downloads/appendices/b/foreign-products-tables.pdf

National Centre for Immunisation Research and Surveillance (NCIRS) fact sheets

A range of fact sheets and resources are available on the NCIRS webpage <http://ncirs.org.au/health-professionals/ncirs-fact-sheets-faqs>

Travel Vaccination

For travel vaccination advice please contact a travel clinic or refer to travel health resources for advice. Public health units cannot provide routine travel vaccination advice.

Endnotes

- 1 <https://www.health.gov.au/health-topics/immunisation/immunisation-throughout-life/national-immunisation-program-schedule>
- 2 https://www.health.gov.au/sites/default/files/national-immunisation-strategy-for-australia-2019-2024_0.pdf
- 3 <https://www.health.nsw.gov.au/immunisation/Publications/nsw-immunisation-schedule.pdf>
- 4 <https://immunisationhandbook.health.gov.au/contents>
- 5 <https://www.health.gov.au/sites/default/files/documents/2020/06/national-immunisation-program-pneumococcal-vaccination-schedule-from-1-july-2020-clinical-decision-tree-for-vaccination-providers-national-immunisation-program-pneumococcal-vaccination-schedule-from-1-july-2020-clinical-de.pdf>
- 6 <https://my.gov.au/LoginServices/main/login?execution=e1s1>
- 7 <https://www.servicesaustralia.gov.au/individuals/services/medicare/express-plus-medicare-mobile-app>
- 8 <https://www.servicesaustralia.gov.au/individuals/services/medicare/australian-immunisation-register/how-get-immunisation-history-statement>
- 9 <https://www.servicesaustralia.gov.au/organisations/health-professionals/forms/im011>
- 10 <https://www.servicesaustralia.gov.au/organisations/health-professionals/forms/im013>
- 11 <https://www.health.nsw.gov.au/immunisation/Pages/Immunisation-in-schools.aspx>
- 12 <https://www.health.nsw.gov.au/immunisation/Publications/nsw-immunisation-schedule.pdf>
- 13 <https://www.health.nsw.gov.au/immunisation/Pages/schoolvaccination.aspx>
- 14 <https://www.health.nsw.gov.au/immunisation/Pages/schoolvaccination.aspx>
- 15 <https://www.health.gov.au/resources/publications/free-catch-up-vaccines-for-refugees-and-humanitarian-entrants-aged-20-years-and-over-fact-sheet>
- 16 <https://www.health.nsw.gov.au/immunisation/Publications/flu-provider-toolkit.pdf>
- 17 <https://immunisationhandbook.health.gov.au/fundamentals-of-immunisation>
- 18 https://spleen.org.au/wp-content/uploads/2020/03/RECOMMENDATIONS_Spleen_Registry.pdf
- 19 <https://spleen.org.au/VSR/information.html>
- 20 <https://immunisationhandbook.health.gov.au/vaccination-for-special-risk-groups/vaccination-for-preterm-infants>
- 21 <https://www.health.gov.au/news/clinical-update-pre-vaccination-checklist-for-zostavax-administration>
- 22 <https://mycollege.acrrm.org.au/search/find-online-learning/details?id=11347&title=Q+Fever+-+Early+Diagnosis+and+Vaccination>
- 23 https://www.health.nsw.gov.au/immunisation/Pages/yellow_fever.aspx
- 24 <https://www.health.nsw.gov.au/immunisation/Documents/pharmacist-new-standard.pdf>
- 25 https://www1.health.nsw.gov.au/pds/Pages/doc.aspx?dn=PD2020_017
- 26 <https://www.health.gov.au/resources/publications/national-vaccine-storage-guidelines-strive-for-5>
- 27 <https://www.health.nsw.gov.au/immunisation/Documents/cold-chain-toolkit.pdf>
- 28 <https://www.health.nsw.gov.au/immunisation/Documents/flu-worksheet.xls>
- 29 <https://www.health.nsw.gov.au/immunisation/Publications/flu-provider-toolkit.pdf>
- 30 https://nswhealth.seertechsolutions.com.au/public_content/HETICP/HETI/CCMWebv3/story_flash.html
- 31 <https://immunisationhandbook.health.gov.au/resources/handbook-tables/table-common-side-effects-following-immunisation-for-vaccines-used-in-the>
- 32 <https://immunisationhandbook.health.gov.au/resources/handbook-tables/table-comparison-of-the-effects-of-diseases-and-the-side-effects-of>
- 33 <https://immunisationhandbook.health.gov.au/resources/handbook-tables/table-pre-vaccination-screening-checklist>
- 34 <https://immunisationhandbook.health.gov.au/resources/publications/avoiding-shoulder-injury-related-to-vaccine-administration>
- 35 <https://www.health.gov.au/news/clinical-update-pre-vaccination-checklist-for-zostavax-administration>
- 36 <http://apps.tga.gov.au/Prod/daen/daen-entry.aspx>
- 37 http://ausvaxsafety.org.au/sites/default/files/2019-06/GBS%20Clinical%20Pathway_final.pdf
- 38 http://ncirs.org.au/sites/default/files/2019-07/NCIRS%20Information%20sheet%20-%20Injection%20site%20reactions_July%202019.pdf

