




# Immunisation Schedule

## Changes

### 1 JULY 2020

### National Immunisation Program (NSW) Schedule

Funded July 2020



CHILDHOOD VACCINES			
AGE	DISEASE	VACCINE	INFORMATION
Birth	Hepatitis B	H-B-VAX B OR ENGENIX B (IM)	Within 7 days of birth (ideally within 24 hours)
6 weeks	Diphtheria, tetanus, pertussis, <i>Aeromonas hydrophila</i>	INFANRIX-HEXA (IM)	ROTARIX: Dose 1 limited to 0-14 weeks of age ROTISOL: Prophylactic paracetamol recommended. Catch-up available for Aboriginal children <2 until 30/06/2023
	Influenza type b, hepatitis b, polio	PREVENAR 12 (IM)	
	Rotavirus	ROTARIX (oral) MUNICIPAL (IM)	
4 months	Meningococcal B (Aboriginal children only)	BEKXERO (IM)	ROTARIX: Dose 2 limited to 10-24 weeks ROTISOL: Prophylactic paracetamol recommended. Catch-up available for Aboriginal children <2 until 30/06/2023
	Diphtheria, tetanus, pertussis, <i>Aeromonas hydrophila</i> type b, hepatitis b, polio	INFANRIX-HEXA (IM)	
	Pneumococcal	PREVENAR 12 (IM) ROTARIX (oral)	
6 months	Meningococcal B (Aboriginal children only)	BEKXERO (IM)	Children with at risk conditions for IPD are recommended to receive an additional dose of PREVENAR 12 - see A1* Aboriginal children with certain at risk conditions require an additional dose of Bekxero - see A1* Disease: Prophylactic paracetamol recommended. Catch-up available for Aboriginal children <2 until 30/06/2023
	Diphtheria, tetanus, pertussis, <i>Aeromonas hydrophila</i> type b, hepatitis b, polio	INFANRIX-HEXA (IM)	
12 months	Meningococcal ACWY	NIMENRIX (IM)	Disease: Prophylactic paracetamol recommended. Catch-up available for Aboriginal children <2 until 30/06/2023
	Pneumococcal	PREVENAR 12 (IM)	
	Measles, mumps, rubella	MMR II OR PRIORIX (IM or SC)	
18 months	Meningococcal B	BEKXERO (IM)	Children with at risk conditions for IPD are recommended to receive an additional dose of PREVENAR 12 - see A1*
	Diphtheria, tetanus, pertussis, polio	INFANRIX OR TRIPACEL (IM)	
4 years	Measles, mumps, rubella, varicella	PRIORIX TETRA OR PROQUAD (IM or SC)	Children with at risk conditions for IPD are recommended to receive an additional dose of PREVENAR 12 - see A1*
	<i>Aeromonas hydrophila</i> type b	INFANRIX-IPV OR QUADRACEL (IM)	

AT RISK GROUPS, ADOLESCENTS AND ADULTS			
AGE/GROUP	DISEASE	VACCINE	INFORMATION
All people with asplenia, hypoplasia, complement deficiency and treatment with splenectomy	Meningococcal ACWY	NIMENRIX (IM)	Additional groups are recommended to receive these vaccines but not funded
	Meningococcal B	BEKXERO (IM)	
25 years with asplenia or hypoplasia	<i>Aeromonas hydrophila</i> type b	ACT-412 (IM or SC)	
Year 7	Diphtheria, tetanus, pertussis	BOOSTRIX (IM)	Pertussis: each pregnancy between 20-32 weeks Prevacar B: 250 years Pneumovax 23: 15-30 years later
	Human papillomavirus	GAARDASIL 9 (IM)	
Year 10	Meningococcal ACWY	NIMENRIX (IM)	Prevacar B: 250 years Pneumovax 23: 15-30 years later
	Influenza	INFLUENZA (oral)	
Pregnant	Pertussis	BOOSTRIX OR ADACCEL (IM)	Pertussis: each pregnancy between 20-32 weeks Prevacar B: 250 years Pneumovax 23: 15-30 years later
	Pneumococcal	PREVENAR 12 (IM) then PNEUMOVAX 23 (IM)	
Aboriginal people >50 years	Pneumococcal	PREVENAR 12 (IM) then PNEUMOVAX 23 (IM)	Prevacar B: 250 years Pneumovax 23: 15-30 years later Zoster: Catch-up available for 70-79 year olds until 30/06/2023
70 years	Pneumococcal	PREVENAR 12 (IM) then PNEUMOVAX 23 (IM)	
People with at risk conditions for IPD	See the online A1* for conditions recommended to receive PREVENAR 12 and PNEUMOVAX 23		

INFLUENZA		
AGE/AT RISK CONDITION	RECOMMENDATION	INFORMATION
All children <6 months <5 years	ANNUAL INFLUENZA VACCINATION	For vaccine brands and eligibility see: <a href="http://www.health.nsw.gov.au/immunisation/Pages/flu.aspx">www.health.nsw.gov.au/immunisation/Pages/flu.aspx</a>
Aboriginal people >6 months	ANNUAL INFLUENZA VACCINATION	
People with at risk conditions <65 years	ANNUAL INFLUENZA VACCINATION	
>65 years	ANNUAL INFLUENZA VACCINATION	
Pregnant women	ANNUAL INFLUENZA VACCINATION	

1800 Invoke (pneumococcal disease). \* The term Aboriginal is inclusive of Aboriginal and Torres Strait Islander people. \*AR: Australian Immunisation Handbook.

### NSW Childhood Immunisation Schedule

Primary and Community Health



6 WEEKS AND 4 MONTHS	<b>DIPHTHERIA-TETANUS-PTUSSIS-HAEMOPHILUS INFLUENZAE TYPE B-HEPATITIS B-POLIO</b> Infanrix Hexa	<b>PNEUMOCOCCAL</b> Prevacar 12	<b>ROTAVIRUS</b> Rotarix	<b>MENINGOCOCCAL B (ABORIGINAL CHILDREN ONLY)</b> Bekxero
	<b>DIPHTHERIA-TETANUS-PTUSSIS-HAEMOPHILUS INFLUENZAE TYPE B-HEPATITIS B-POLIO</b> Infanrix Hexa * All risk children require an additional dose of Prevacar 12 (pneumococcal) * Aboriginal children with certain medical conditions require an additional dose of meningococcal B			
6 MONTHS	<b>MENINGOCOCCAL ACWY</b> Nimenrix			
12 MONTHS	<b>MENINGOCOCCAL ACWY</b> Nimenrix	<b>PNEUMOCOCCAL</b> Prevacar 12	<b>MEASLES-MUMPS-RUBELLA</b> Priorix OR MMR I	<b>MENINGOCOCCAL B (ABORIGINAL CHILDREN ONLY)</b> Bekxero
	<b>MEASLES-MUMPS-RUBELLA-VARICELLA</b> Priorix Tetra OR ProQuad			
18 MONTHS	<b>HAEMOPHILUS INFLUENZAE TYPE B</b> Act-HIB		<b>DIPHTHERIA-TETANUS-PTUSSIS</b> Infanrix OR Tripacel	
	<b>DIPHTHERIA-TETANUS-PTUSSIS-POLIO</b> Quadracel OR Infanrix IPV * At risk children require a dose of Prevacar 12 (pneumococcal) at 24 months after Prevacar 12 or at age 4 years whichever is later.			



# NSW Immunisation Schedule

Funded July 2020



CHILDHOOD VACCINES			
AGE	DISEASE	VACCINE	INFORMATION
Birth	Hepatitis B	H-B-VAX II OR ENGERIX B (IM)	Within 7 days of birth (ideally within 24 hours)
6 weeks	Diphtheria, tetanus, pertussis, <i>Haemophilus influenzae</i> type b, hepatitis B, polio	INFANRIX HEXA (IM)	ROTARIX: Dose 1 limited to 6-14 weeks of age BEXSERO: Prophylactic paracetamol recommended. Catch up available for Aboriginal children <2 until 30/06/2023
	Pneumococcal	PREVENAR 13 (IM)	
	Rotavirus	ROTARIX (Oral)	
	Meningococcal B (Aboriginal* children only)	BEXSERO (IM)	
4 months	Diphtheria, tetanus, pertussis, <i>Haemophilus influenzae</i> type b, hepatitis B, polio	INFANRIX HEXA (IM)	ROTARIX: Dose 2 limited to 10-24 weeks BEXSERO: Prophylactic paracetamol recommended. Catch up available for Aboriginal children <2 until 30/06/2023
	Pneumococcal	PREVENAR 13 (IM)	
	Rotavirus	ROTARIX (Oral)	
	Meningococcal B (Aboriginal children only)	BEXSERO (IM)	
6 months	Diphtheria, tetanus, pertussis, <i>Haemophilus influenzae</i> type b, hepatitis B, polio	INFANRIX HEXA (IM)	Children ≥6 months with at risk conditions for IPD <sup>‡</sup> are recommended to receive an additional dose of PREVENAR 13 – see AIH* Aboriginal children ≥6 months with certain at risk conditions may require an additional dose of Bexsero – see AIH*
12 months	Meningococcal ACWY	NIMENRIX (IM)	Bexsero: Prophylactic paracetamol recommended. Catch up available for Aboriginal children <2 until 30/06/2023
	Pneumococcal	PREVENAR 13 (IM)	
	Measles, mumps, rubella	MMR II OR PRIORIX (IM or SC)	
	Meningococcal B (Aboriginal children only)	BEXSERO (IM)	
18 months	Diphtheria, tetanus, pertussis	INFANRIX OR TRIPACEL (IM)	
	Measles, mumps, rubella, varicella	PRIORIX TETRA OR PROQUAD (IM or SC)	
	<i>Haemophilus influenzae</i> type b	ACT-HIB (IM OR SC)	
4 years	Diphtheria, tetanus, pertussis, polio	INFANRIX-IPV OR QUADRACEL (IM)	Children with at risk conditions for IPD <sup>‡</sup> are recommended to receive an additional dose of PNEUMOVAX 23 – see AIH*

AT RISK GROUPS, ADOLESCENTS AND ADULTS			
AGE/GROUP	DISEASE	VACCINE	INFORMATION
All people with asplenia, hyposplenia, complement deficiency and treatment with eculizumab	Meningococcal ACWY	NIMENRIX (IM)	See AIH* for required doses and timing Additional groups are recommended to receive these vaccines but these are not funded
	Meningococcal B	BEXSERO (IM)	
>5 years with asplenia or hyposplenia	<i>Haemophilus influenzae</i> type b	ACT-HIB (IM or SC)	If incompletely vaccinated or not vaccinated in childhood
Year 7	Diphtheria, tetanus, pertussis	BOOSTRIX (IM)	
	Human papillomavirus	GARDASIL 9 (IM)	
Year 10	Meningococcal ACWY	NIMENRIX (IM)	
Pregnant	Influenza	INFLUENZA	Influenza: Any trimester Pertussis: each pregnancy between 20-32 weeks
	Pertussis	BOOSTRIX OR ADACEL (IM)	
Aboriginal people ≥50 years	Pneumococcal	PREVENAR 13 (IM) then PNEUMOVAX 23 (IM)	Prevenar 13: ≥50 years Pneumovax 23: 2-12 months later Pneumovax 23: at least 5 years later
70 years	Pneumococcal	PREVENAR 13 (IM)	Pneumococcal funded for people ≥70 Zoster: Catch up available for 71-79 year olds until 31/10/2021
	Zoster	ZOSTAVAX (SC)	
People with at risk conditions for IPD <sup>‡</sup>	See the online AIH* for conditions recommended to receive PREVENAR 13 and PNEUMOVAX 23		

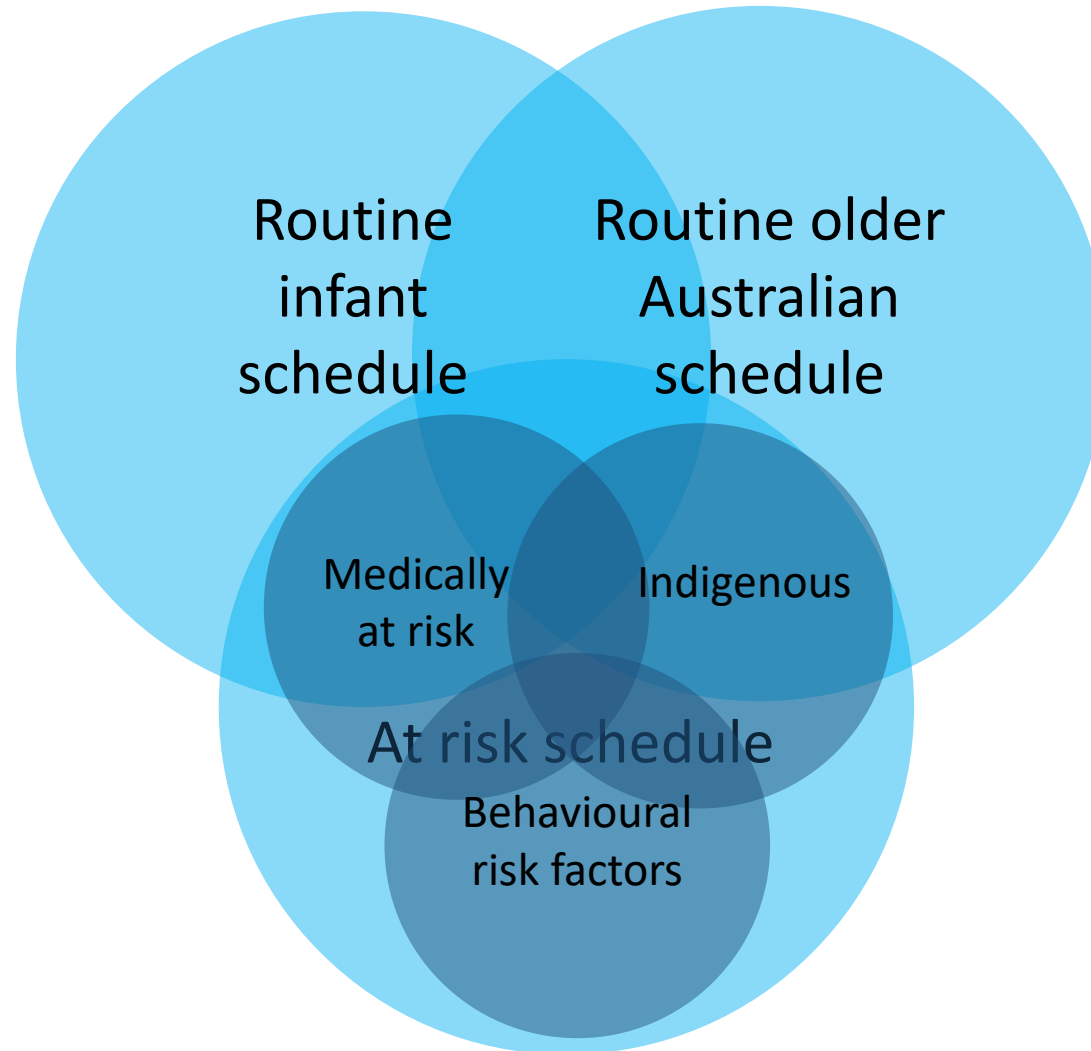
INFLUENZA		
AGE/AT RISK CONDITION	RECOMMENDATION	INFORMATION
All children 6 months <5 years		
Aboriginal people ≥ 6 months	ANNUAL INFLUENZA VACCINATION	For vaccine brands and eligibility see: <a href="http://www.health.nsw.gov.au/Immunisation/Pages/flu.aspx">www.health.nsw.gov.au/Immunisation/Pages/flu.aspx</a>
People with at risk conditions ≥6 months		
≥65 years		
Pregnant women		

<sup>‡</sup> The term Aboriginal is inclusive of Aboriginal and Torres Strait Islander people. <sup>‡</sup> IPD: Invasive pneumococcal disease. \*AIH: Online Australian Immunisation Handbook.

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# Pneumococcal program



# Overview of changes in vaccine recommendations and NIP-funded doses from July 2020



Disease	Specific vaccine	Non-Indigenous older adults without pneumococcal risk conditions	People with some medical at risk conditions			Aboriginal and Torres Strait Islander people		
			Complement deficiency/ eculizumab treatment	Functional or anatomical asplenia	Pneumococcal at risk medical conditions	Infants (with catch-up for age <2 years)	Young children in NT, Qld, SA, WA	Age ≥50 years
Pneumococcal	13vPCV	New recommendation NIP-funded		New recommendation NIP-funded	New single list New recommendation NIP-funded for some conditions		New recommendation NIP-funded	New recommendation NIP-funded
	23vPPV	No longer recommended						
Meningococcal	MenB		Newly NIP-funded	Newly NIP-funded		Newly NIP-funded		
	MenACWY							
Hib (if required)	Hib vaccine (if required)			Newly NIP-funded				
Hepatitis A	HepA vaccine						Schedule point change	

# Changes to the at-risk schedule

**Feedback from providers were that previous recommendations were too complex**

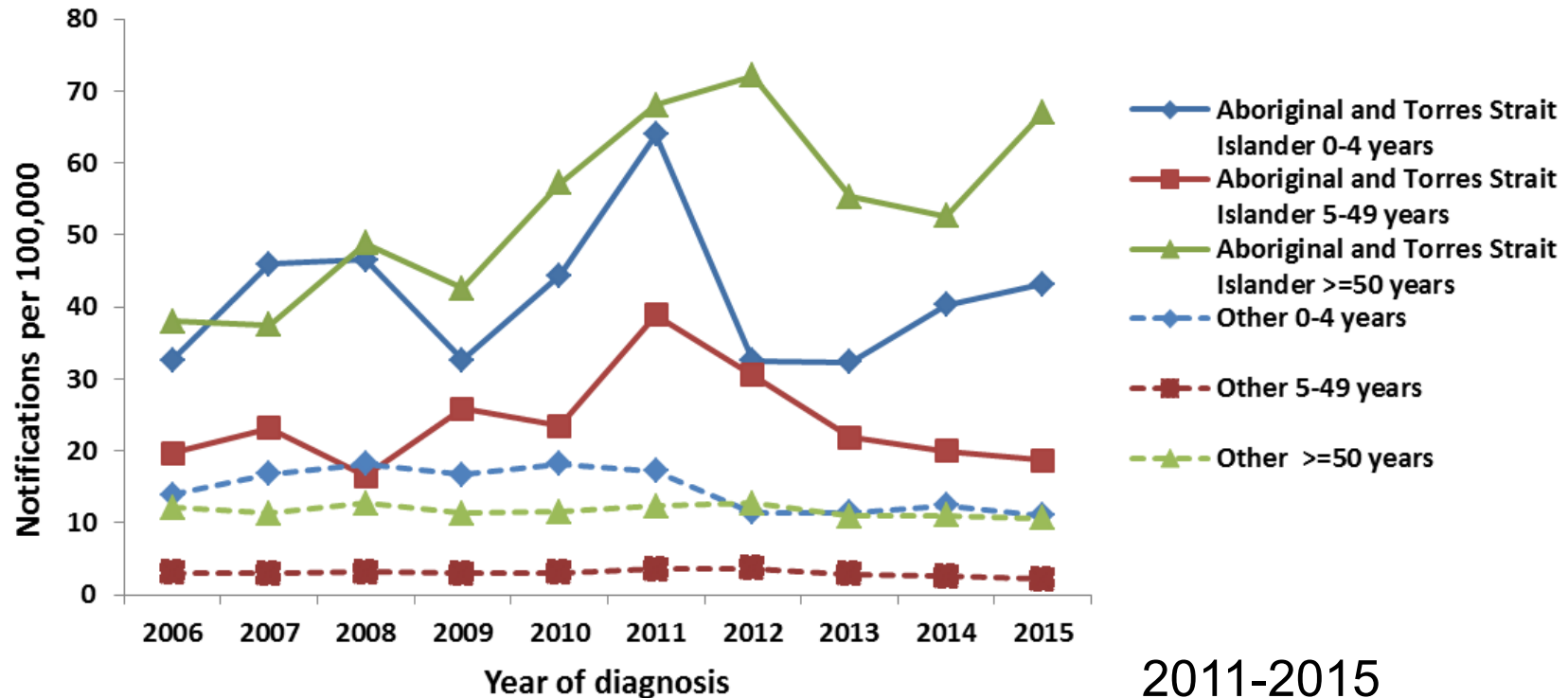
Extensive literature review to inform creation of a “single” at risk table

- **PCV13 + PPV23 + PPV23 funded for many very high risk patients previously unable to access funded pneumococcal vaccine**

At risk

- Previous episode of invasive pneumococcal disease
- Functional or anatomical asplenia, including sickle cell disease or other haemoglobinopathies, congenital or acquired asplenia or hyposplenia
- Immunocompromising conditions, including
  - congenital or acquired immune deficiency, including symptomatic IgG subclass or isolated IgA deficiency
  - haematological malignancies
  - solid organ and haematopoietic stem cell transplant
  - HIV infection
  - immunosuppressive therapy, where sufficient immune reconstitution for vaccine response is expected
  - non-haematological malignancies receiving chemo or radiotherapy
- Proven or presumptive CSF leak, including cochlear implants and intracranial shunts
- Chronic respiratory disease, including suppurative lung disease, bronchiectasis, cystic fibrosis, severe asthma and chronic lung disease in preterm infants
- Chronic renal disease, including relapsing or persistent nephrotic syndrome and chronic renal impairment (eGFR <30 mL/min)
- Cardiac disease, including congenital heart disease, coronary artery disease and heart failure
- Children born less than 28 weeks gestation
- Trisomy 21
- Chronic liver disease, including chronic hepatitis, cirrhosis, biliary atresia
- Diabetes
- Smoking (current or in the immediate past)
- Harmful use of alcohol

# Invasive pneumococcal disease notifications by age and Indigenous status, Australia, 2006-2015



## 2011-2015

- 3x higher in <5yrs
- 10x higher in 5-49yrs
- 6x higher in ≥50yrs

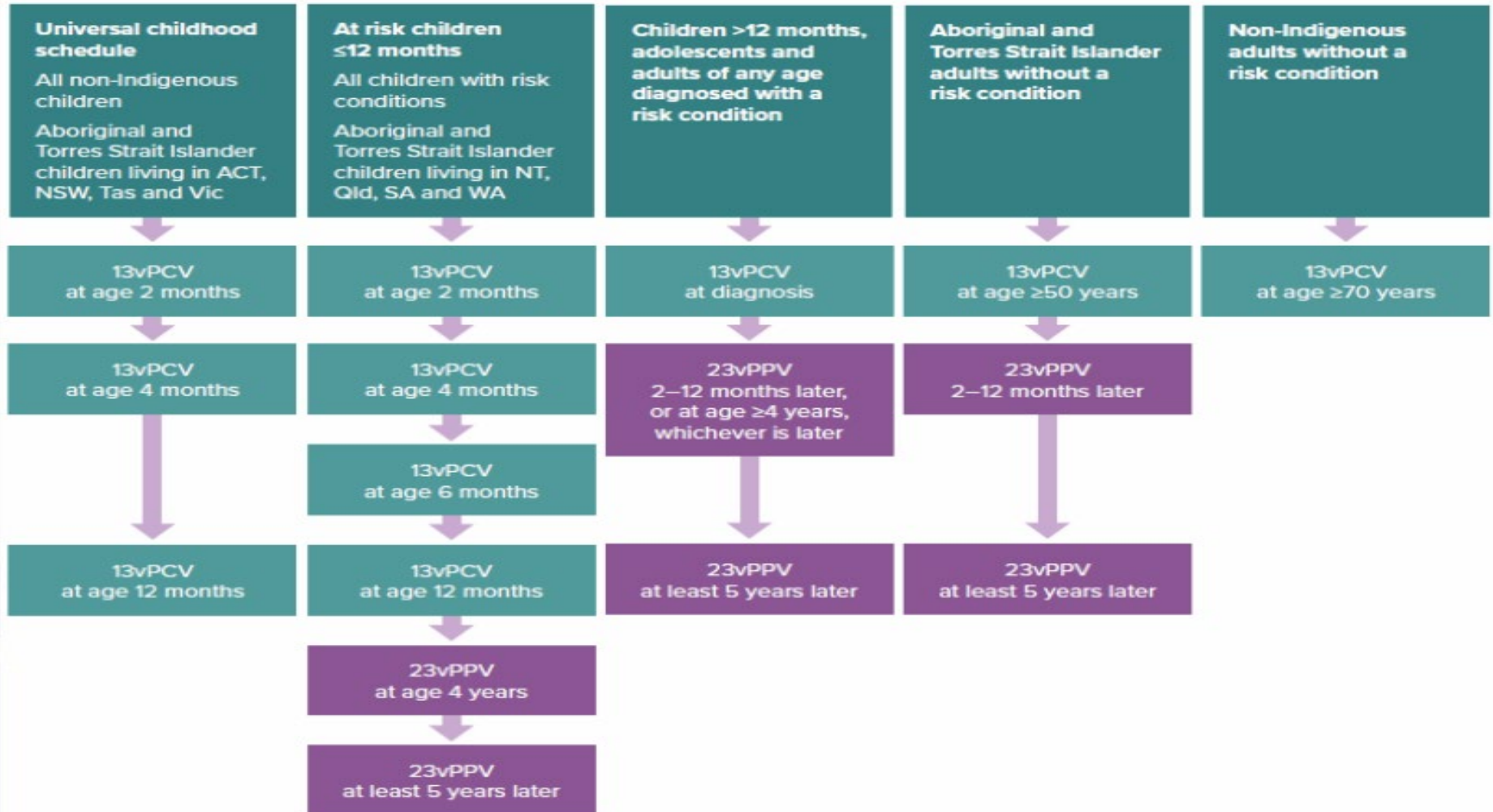


# New chart



**Figure 1. NIP funded pneumococcal vaccine schedule from 1 July 2020**

The list of risk conditions is set out in **Table 1** over the page. Some of these conditions are eligible for NIP funded doses of pneumococcal vaccine.





## Pneumococcal vaccination for children <5 years old



Pneumococcal disease is a rare but serious condition that can cause significant illness, disability and death.

### Australia-wide



#### Routine schedule

##### 13vPCV

- ▶ dose 1 at age 2 months
- ▶ dose 2 at age 4 months
- ▶ dose 3 at age 12 months

#### Children with a risk condition for pneumococcal disease

##### 13vPCV

- ▶ dose 1 at age 2 months
- ▶ dose 2 at age 4 months
- ▶ dose 3 at age 6 months
- ▶ dose 4 at age 12 months



##### 23vPPV

- ▶ dose 1 at age 4 years
- ▶ dose 2 at least 5 years later

### Northern Territory, Queensland, South Australia and Western Australia



#### Aboriginal and Torres Strait Islander children living in these states and territories

##### 13vPCV

- ▶ dose 1 at age 2 months
- ▶ dose 2 at age 4 months
- ▶ dose 3 at age 6 months
- ▶ dose 4 at age 12 months



##### 23vPPV

- ▶ dose 1 at age 4 years
- ▶ dose 2 at least 5 years later

These vaccines are funded under the National Immunisation Program. See the Australian Immunisation Handbook for the list of risk conditions.

See the Australian Immunisation Handbook for more details.

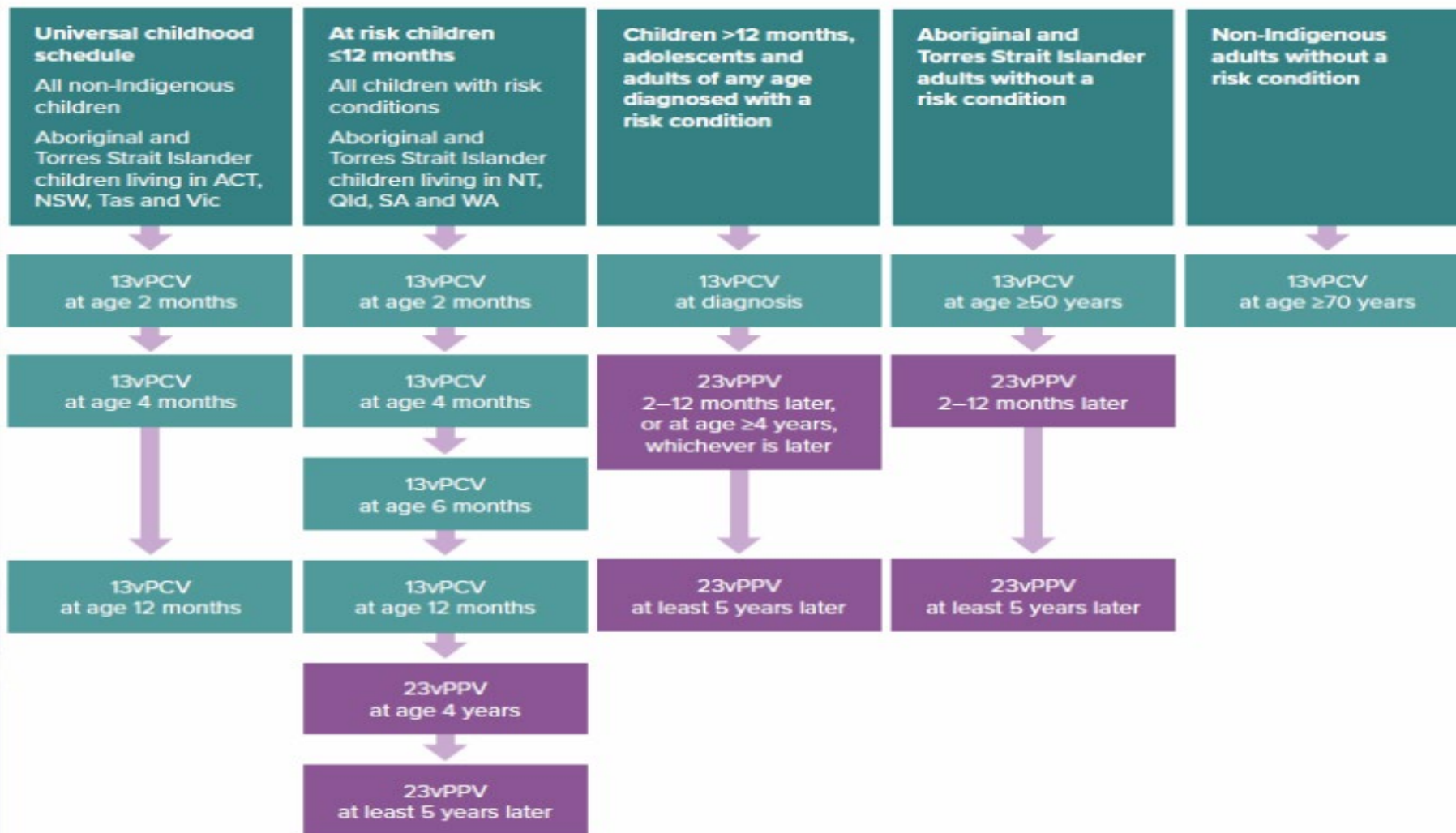


# New chart



**Figure 1. NIP funded pneumococcal vaccine schedule from 1 July 2020**

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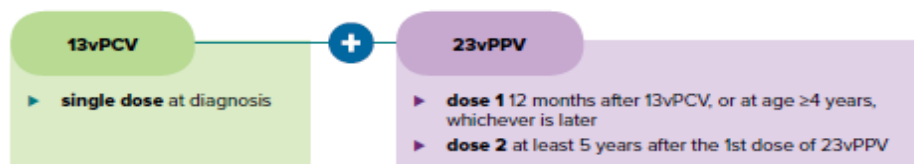




## Pneumococcal vaccination for people with risk conditions for pneumococcal disease

People with certain conditions have an increased risk of pneumococcal disease. They need extra doses of vaccines to optimise protection.

Anyone over 12 months of age who is diagnosed with a **risk condition** should receive:



Risk conditions for pneumococcal disease include:

- ▶ previous episode of invasive pneumococcal disease
- ▶ immunocompromising conditions, including asplenia
- ▶ CSF leak
- ▶ chronic respiratory disease
- ▶ chronic kidney disease
- ▶ chronic liver disease
- ▶ cardiac disease
- ▶ extremely premature birth
- ▶ trisomy 21
- ▶ diabetes
- ▶ smoking
- ▶ harmful use of alcohol

See the Australian Immunisation Handbook for the full list of risk conditions, including which conditions are funded under the National Immunisation Program.

Many children and adults with these risk conditions are eligible for funded doses of pneumococcal vaccines under the National Immunisation Program

See the Australian Immunisation Handbook for more details.

# Pneumococcal Changes



## Pneumococcal Changes

- List of at risk conditions condensed into 1 list i.e. there is no longer category A and category B lists
- All conditions are recommended to receive pneumococcal vaccination but it is only funded for some
- Now limited to 2 lifetime doses of Pneumovax 23

List. Updated list of risk conditions for pneumococcal vaccine recommendations and their eligibility for funding under the national immunisation program (NIP)

Risk condition	Eligibility for NIP funding	
	<5 years of age	≥5 years of age
Previous episode of invasive pneumococcal disease	✓	✓
<b>Functional or anatomical asplenia, including</b>		
– sickle cell disease or other haemoglobinopathies	✓	✓
– congenital or acquired asplenia (for example, splenectomy) or hyposplenia	✓	✓
<b>Immunocompromising conditions, including</b>		
– congenital or acquired immune deficiency, including symptomatic IgG subclass or isolated IgA deficiency	✓	✓
– haematological malignancies	✓	✓
– solid organ transplant	✓	✓
– haematopoietic stem cell transplant	✓	✓
– HIV infection	✓	✓
– immunosuppressive therapy, where sufficient immune reconstitution for vaccine response is expected; this includes those with underlying conditions requiring but not yet receiving immunosuppressive therapy		
– non-haematological malignancies receiving chemotherapy or radiotherapy (currently or anticipated)		
<b>Proven or presumptive cerebrospinal fluid (CSF) leak, including</b>		
– cochlear implants	✓	✓
– intracranial shunts	✓	✓
<b>Chronic respiratory disease, including</b>		
– suppurative lung disease, bronchiectasis and cystic fibrosis	✓	✓
– chronic lung disease in preterm infants	✓	✓
– chronic obstructive pulmonary disease (COPD) and chronic emphysema		
– severe asthma (defined as requiring frequent hospital visits or the use of multiple medications)		
– interstitial and fibrotic lung disease		
<b>Chronic renal disease</b>		
– relapsing or persistent nephrotic syndrome	✓	✓
– chronic renal impairment – eGFR <30 mL/min (stage 4 or 5 disease)	✓*	✓*
<b>Cardiac disease, including</b>		
– congenital heart disease	✓	
– coronary artery disease	✓	
– heart failure	✓	
Children born less than 28 weeks gestation	✓	
Trisomy 21	✓	
<b>Chronic liver disease, including</b>		
– chronic hepatitis		
– cirrhosis		
– biliary atresia		
Diabetes		
Smoking (current or in the immediate past)		
Hamful use of alcohol (Defined as consuming on average ≥60 g of alcohol (6 Australian standard drinks) per day for males and ≥40 g of alcohol (4 Australian standard drinks) per day for females)		

\* Funded under the NIP for eGFR <15 mL/min only (including patients on dialysis)

† Individual conditions listed beneath or those that are similar based on clinical judgment

**Note:** All children and adults with above conditions are recommended to receive additional pneumococcal vaccine doses but they are funded under the NIP for those with the shaded conditions









Health

Hunter New England  
Local Health District




<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>



**Prevenar 13 recommended and NIP-funded (at diagnosis)<sup>1,2</sup>**

 <p><b>Previous episode of IPD</b></p>	 <p><b>Proven or presumptive CSF leak, including:</b></p> <ul style="list-style-type: none"> <li>• Cochlear implants</li> <li>• Intracranial shunts</li> </ul>
 <p><b>Functional or anatomical asplenia, including:</b></p> <ul style="list-style-type: none"> <li>• Sickle cell disease or other haemoglobinopathies</li> <li>• Congenital / acquired asplenia (for e.g. splenectomy) or hyposplenia</li> </ul>	 <p><b>Selected chronic respiratory disease, including:</b></p> <ul style="list-style-type: none"> <li>• Suppurative lung disease, bronchiectasis and cystic fibrosis</li> <li>• Chronic lung disease in preterm infants</li> </ul> <p><i>Other chronic respiratory disease where Prevenar 13 is recommended but only available on private script including:</i></p> <ul style="list-style-type: none"> <li>• COPD and chronic emphysema</li> <li>• Severe asthma requiring frequent hospital visits or the use of multiple medications</li> <li>• Interstitial and fibrotic lung disease</li> </ul>
 <p><b>Immunocompromising conditions, including:</b></p> <ul style="list-style-type: none"> <li>• Congenital or acquired immune deficiency (including symptomatic IgG subclass or isolated IgA deficiency)</li> <li>• Haematological malignancies</li> <li>• Solid organ transplant</li> <li>• Haematopoietic stem cell transplant (&gt;1 dose is needed)</li> <li>• HIV infection</li> </ul>	 <p><b>Chronic renal disease, including:</b></p> <ul style="list-style-type: none"> <li>• Relapsing or persistent nephrotic syndrome</li> <li>• Chronic renal impairment – eGFR &lt;15 mL/min, including patients on dialysis (stage 5 disease)</li> </ul>

**Prevenar 13 recommended and NIP-funded for children <5 years of age only (at diagnosis)<sup>1,2</sup>**

 <p><b>Cardiac disease, including:</b></p> <ul style="list-style-type: none"> <li>• Congenital heart disease</li> <li>• Coronary artery disease</li> <li>• Heart failure</li> </ul>	 <p><b>Children born less than 28 weeks gestation</b></p>
	 <p><b>Trisomy 21</b></p>

All patients with these medical conditions should receive a 23vPPV dose 2-12 months after Prevenar 13, or at 4 years of age, whichever is later. A second dose of 23vPPV should be given 5-10 years later (two lifetime doses of 23vPPV).<sup>2</sup>

Recommendations and NIP funding status applies to both 13vPCV and 23vPPV.<sup>2</sup>

Full details of the recommendations including a full list of risk conditions where pneumococcal vaccines are recommended but available on private script are shown in the Australian Immunisation Handbook.<sup>3</sup>

# Polysaccharides bacterial virulence



- **Streptococcus pneumoniae** is an encapsulated bacteria
- Capsular polysaccharides
- Slime polysaccharides,
- Penicillin binding proteins

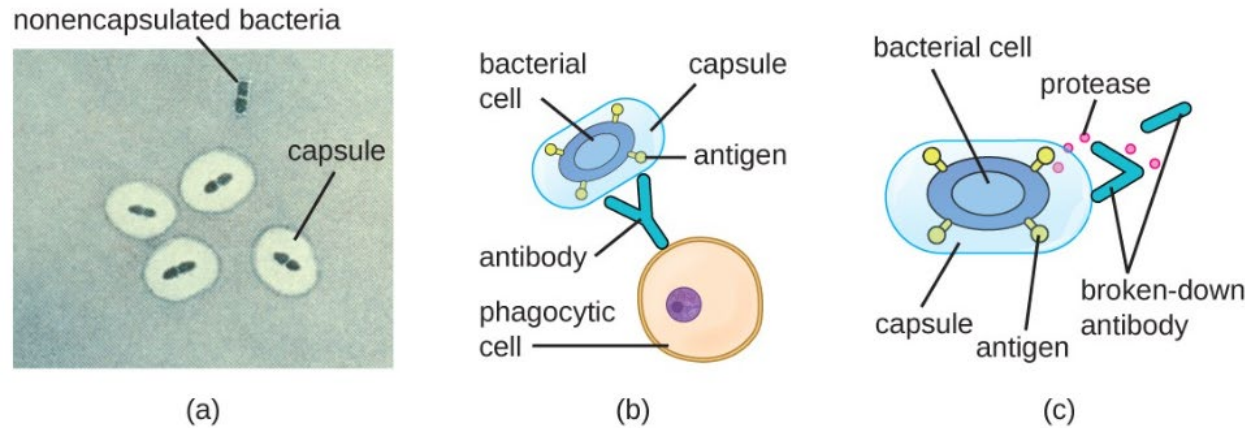
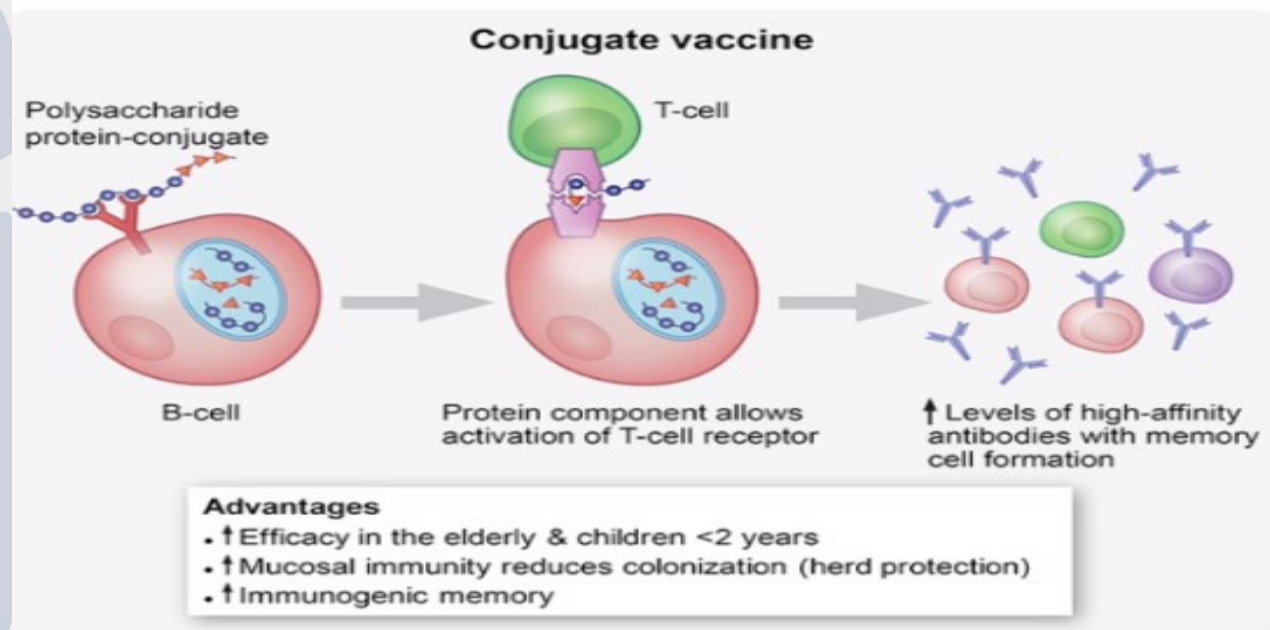
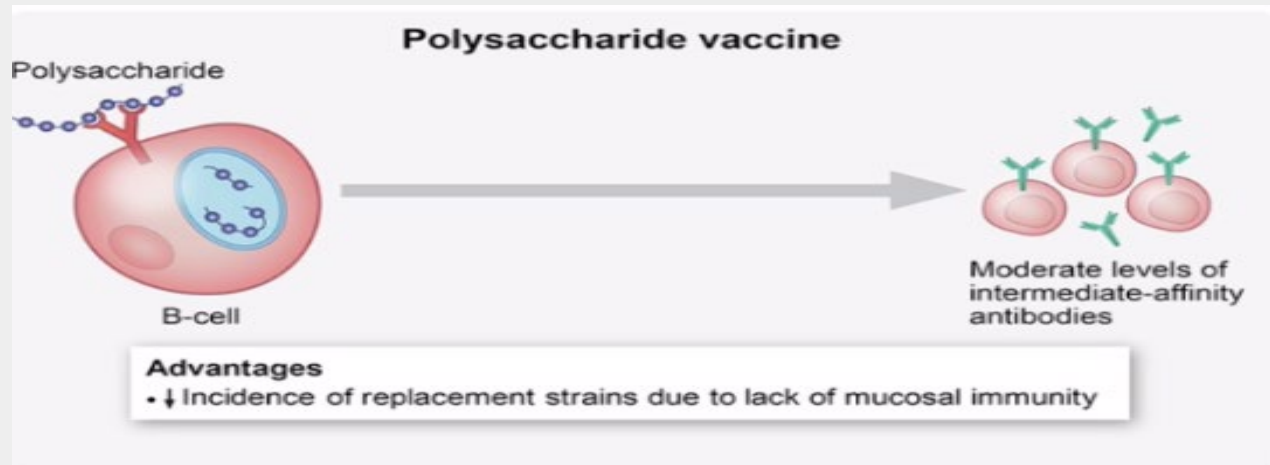


Figure 8. (a) A micrograph of capsules around bacterial cells. (b) Antibodies normally function by binding to antigens, molecules on the surface of pathogenic bacteria. Phagocytes then bind to the antibody, initiating phagocytosis. (c) Some bacteria also produce proteases, virulence factors that break down host antibodies to evade phagocytosis. (credit a: modification of work by Centers for Disease Control and Prevention)



# Conjugate vaccines

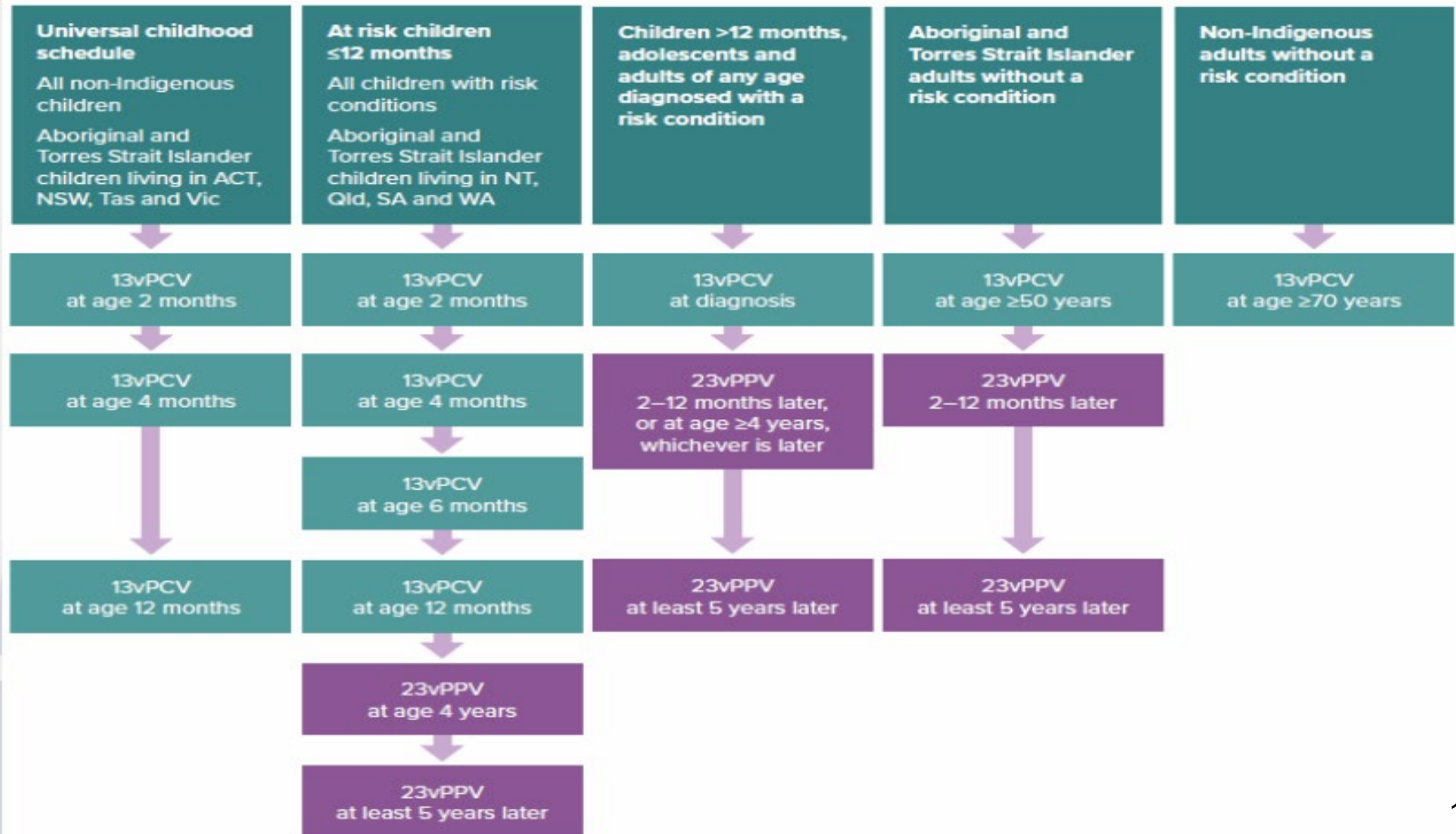


# New chart



**Figure 1. NIP funded pneumococcal vaccine schedule from 1 July 2020**

The list of risk conditions is set out in **Table 1** over the page. Some of these conditions are eligible for NIP funded doses of pneumococcal vaccine.



# Changes for older Australians

The role of PCV13, PPV23 or mixed schedules in older populations

Routine older Australian

**Pfizer PCV13 application to replace a dose of PPV23 with PCV13 in older Australians based primarily on data from the CAPiTA trial (PCV13 vs placebo against pneumococcal CAP)  
PBAC commissioned independent review of the cost effectiveness of PPV23**

## **Conclusions of the PBAC**

Replacing one dose of PPV23 with PCV13 was likely to be cost effective in older Australians. PPV23 is unlikely to be cost-effective when provided to the total population  $\geq 65$  years.

## **Upon further consideration by the PBAC**

PCV13 followed by up to two doses of PPV23 is likely to be cost-effective in Indigenous Australians  $\geq 50$  years given low opportunity cost and overall cost to government. The same schedule is expected to be cost effective in specific at-risk populations.



- The recommended vaccines and number of doses — 1 extra dose of *13vPCV* and 2 doses of *23vPPV* — are now the same for all people with risk conditions.
- The number of lifetime doses of *23vPPV* recommended for people with risk conditions is now limited to 2 doses.

# No Spleen – vaccines now funded!





# Overview of changes in vaccine recommendations and NIP-funded doses from July 2020



Disease	Specific vaccine	Non-Indigenous older adults without pneumococcal risk conditions	People with some medical at risk conditions			Aboriginal and Torres Strait Islander people		
			Complement deficiency/ eculizumab treatment	Functional or anatomical asplenia	Pneumococcal at risk medical conditions	Infants (with catch-up for age <2 years)	Young children in NT, Qld, SA, WA	Age ≥50 years
Pneumococcal	13vPCV	New recommendation NIP-funded		New recommendation NIP-funded	New single list New recommendation NIP-funded for some conditions		New recommendation NIP-funded	New recommendation NIP-funded
	23vPPV	No longer recommended						
Meningococcal	MenB		Newly NIP-funded	Newly NIP-funded		Newly NIP-funded		
	MenACWY							
Hib (if required)	Hib vaccine (if required)			Newly NIP-funded				
Hepatitis A	HepA vaccine						Schedule point change	

# Meningococcal B –Aboriginal children

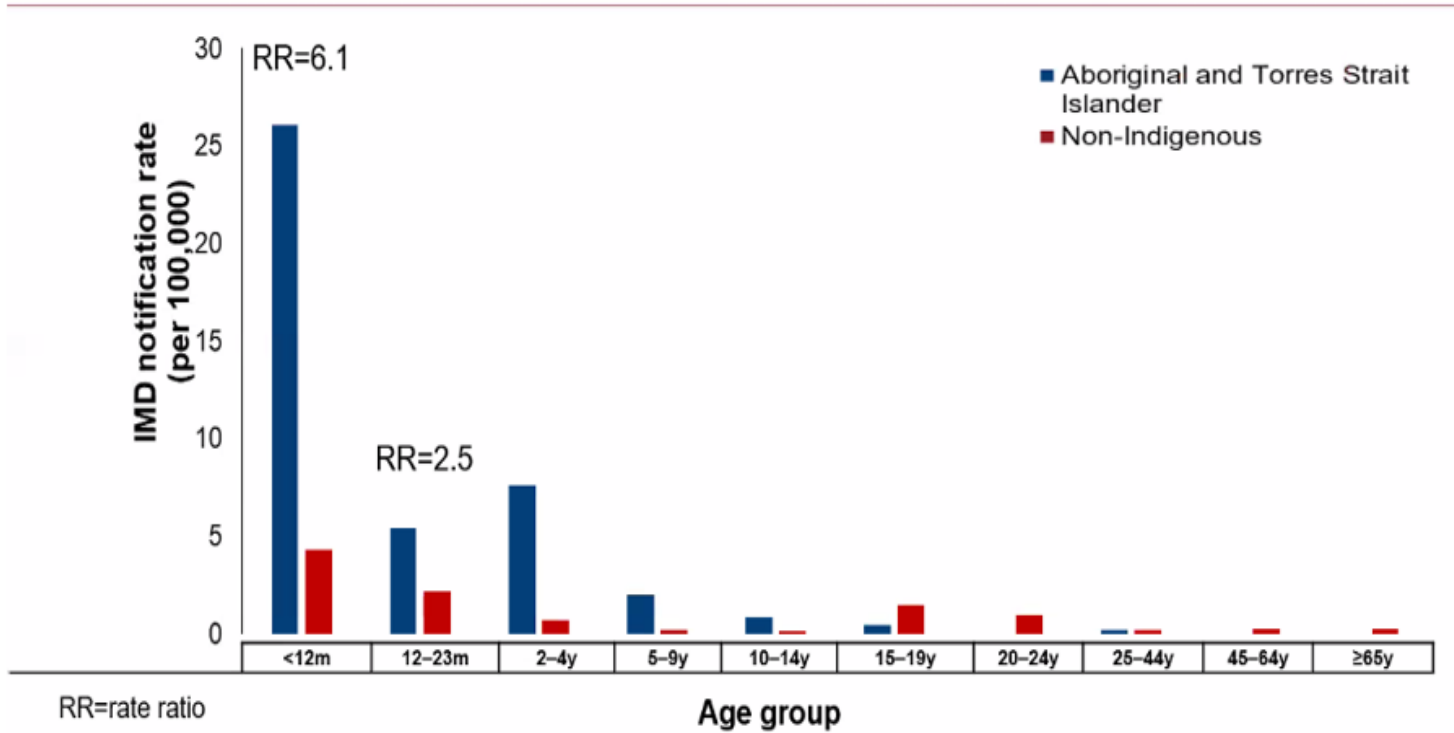


- Bexsero will now be included on the routine childhood schedule for Aboriginal children at 6 weeks, 4 months and 12 months
- Catch up funded for children <2 years of age until 30 June 2023, number of doses required is age specific, see online Australian Immunisationhandbook for age appropriate course
- Paracetamol is recommended for children less than 2 years of age prior to and post vaccination
- Not included in “up to date” calculations for purposes of payments i.e. “No Jab, No Pay”

# Men B Increased risk



## MenB invasive meningococcal disease (IMD) notification rates by age group Aboriginal and Torres Strait Islander vs non-Indigenous people, 2016–2018



Tran C, et al. PHAA Communicable Disease Control Conference 2019

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## Meningococcal B vaccine for Aboriginal and Torres Strait Islander children



No changes to handbook recommendations, but new NIP funding for MenB vaccine:

- Meningococcal B vaccine (Bexsero®) will be NIP funded for Aboriginal and Torres Strait Islander infants.
  - 2, 4 and 12 months of age with no medical risk conditions (3 doses)
  - 2, 4, 6 and 12 months of age with risk conditions for IMD (4 doses)

### List 1. Risk conditions for invasive meningococcal disease that are eligible for both MenACWY and MenB NIP-funded\* vaccines

- Defects in, or deficiency of, complement components, including factor H, factor D or properdin deficiency
- Current or future treatment with eculizumab (a monoclonal antibody directed against complement component C5)
- Functional or anatomical asplenia, including sickle cell disease or other haemoglobinopathies, and congenital or acquired asplenia

\* Please refer to The Australian Immunisation Handbook available at [immunisationhandbook.health.gov.au](http://immunisationhandbook.health.gov.au) for advice on persons who are strongly recommended to receive meningococcal vaccination but not eligible for NIP funded MenB and MenACWY vaccines

# Bexsero schedule for children aged <2 years



The number and spacing of doses required depend on:

- the age when vaccination starts and
- the presence of risk conditions

Age at start of vaccination	Presence of at-risk medical conditions	Number of doses required for primary series	Schedule
6 weeks to 5 months	Yes	4	'3+1'
6 weeks to 5 months	No	3	'2+1'
6–11 months	regardless	3	'2+1'
≥12 months	regardless	2	2 doses (8 weeks apart)

Prophylactic paracetamol with each dose of Meningococcal B Vaccination for children aged <2 years

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



# Meningococcal B –At risk groups



- People with the following at risk conditions are now funded to receive Meningococcal B (Bexsero) vaccine
- Asplenia / Hyposplenia
- Complement deficiency
- Treatment with Eculizumab

## Clinical case example – non Indigenous adult with medical condition



- Date of appointment: 10 July 2020
- Male, Age 35 years, non-Indigenous, NSW
- Emergency surgical splenectomy 3 weeks ago
- Otherwise healthy
- Tetanus-containing vaccine at hospital ED; No history of Hib vaccine or meningococcal vaccines; Had influenza vaccine in 2020

### Vaccination schedule plan:

MMR funded by NSW state; All other doses funded by NIP

Vaccine	Brand product	Now 10 Jul 2020	15 Sep 2020	Jul 2021	....	17 Sep 2025	Jul 2026	....
Pneumococcal	Prevenar 13®	✓						
	Pneumovax 23®			✓			✓	
Meningococcal ACWY	Nimenrix®	✓	✓			✓		✓
Meningococcal B	Bexsero®	✓	✓					
Haemophilus influenzae type b	ActHIB®	✓						



## Handbook recommendations infographics



**Vaccination for healthy ageing**

Australian Government Department of Health | Australian Immunisation Handbook

**Meningococcal vaccination for children and adolescents without risk factors**

Australian Government Department of Health | Australian Immunisation Handbook

Meningococcal disease is a rare but serious disease that can cause illness, disability and death. Vaccination for certain groups of people is a routine immunisation program and is free.

**Pneumococcal vaccination for children <5 years old**

Australian Government Department of Health | Australian Immunisation Handbook

Pneumococcal disease is a rare but serious condition that can cause significant illness, disability and death.

**Vaccination for Aboriginal and Torres Strait Islander children**

Australian Government Department of Health | Australian Immunisation Handbook

**Meningococcal vaccination for people in a special risk group**

Australian Government Department of Health | Australian Immunisation Handbook

Meningococcal disease is a rare but serious disease that can cause illness and death. Some people are at increased risk of meningococcal disease. Vaccines are recommended for these people.

No single vaccine protects against all serogroups

- 3 vaccines protect against serogroups A, C, W and Y
- 2 vaccines protect against serogroup B only
- 2 vaccines protect against serogroup C only

**Risk group**

People with medical conditions that increase their risk of invasive meningococcal disease include those:

- with a complement deficiency
- being treated with splenectomy
- with functional or anatomical asplenia
- with HIV
- who have had a hematopoietic stem cell transplant

**Recommendation**

- MentD and MentD/SH

Number of doses depends on the vaccine brand and person's age when they start the vaccination course.

**Vaccination for Aboriginal and Torres Strait Islander adolescents and adults**

Australian Government Department of Health | Australian Immunisation Handbook

**Pneumococcal vaccination for people with risk conditions for pneumococcal disease**

Australian Government Department of Health | Australian Immunisation Handbook

People with certain conditions have an increased risk of pneumococcal disease. They need extra doses of vaccines to optimise protection.

Anyone over 12 months of age who is diagnosed with a risk condition should receive:

- 13vPPV**
  - single dose at diagnosis
- 23vPPV**
  - dose 1 12 months after 13vPPV or at age of 65 years, whichever is later
  - dose 2 at least 5 years after the first dose of 23vPPV

**Vaccination for people who are immunocompromised**

Australian Government Department of Health | Australian Immunisation Handbook

People who are immunocompromised have an increased risk of disease. They may need extra doses of some vaccines to optimise protection. Some vaccines are contraindicated in these people.

Immunosuppression can be caused by:

<https://immunisationhandbook.health.gov.au/resources/publications>

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Development of potential COVID-19 vaccines continues to accelerate

Scientists are racing to develop a vaccine for COVID-19, the coronavirus disease caused by the novel coronavirus SARS-CoV-2. The race is on to develop a vaccine that can prevent infection or reduce the severity of the disease. Several vaccine candidates are in phase 1, 2, and 3 trials, while other promising candidates are in pre-clinical testing. The search for a safe and effective vaccine is proceeding fast. The World Health Organization (WHO) has announced that it will accept emergency use of COVID-19 vaccines that meet certain criteria. The WHO is also working with governments and vaccine manufacturers to ensure that vaccines are distributed equitably. The WHO is also working with governments and vaccine manufacturers to ensure that vaccines are distributed equitably. The WHO is also working with governments and vaccine manufacturers to ensure that vaccines are distributed equitably. The WHO is also working with governments and vaccine manufacturers to ensure that vaccines are distributed equitably.

# Development of potential COVID-19 vaccines continues to accelerate

- UQ – Phase 1 trial
- Oxford & AstraZeneca AZD12222 – Phase 2/3 trials in UK
- Imperial College London – Phase 1/2 trial
- Moderna - Phase 2 (announced phase 3 with 30,000)
- Novavax (USA) – Phase 1 of 130 Australian volunteers



# More Info on Bastille Day



- **SAVE the DATE**
- **Tuesday 14 July 2020 at 6:30 to 8:00 pm**