

Maternal immunisation and infant immunisation: core business for GPs What's new in 2017?

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Recommended vaccines - Free and user pays

Children:

- **Free – National Immunisation Program (Commonwealth)**
 - 18 month pertussis
 - Influenza for children with increased risk of severe disease
- **Free - funded by State Governments**
 - Meningococcal ACWY – adolescents
- **User pays - Recommended in Handbook, not in NIP**
 - Meningococcal B
 - Influenza for all children especially those < 5 years
 - 2nd dose varicella

Maternal – in pregnancy

- **Free - NIP (Commonwealth) – influenza**
- **Free - funded by State Governments – pertussis**

Overview

1. Screening, catch up and medical contraindications
2. Pertussis
3. Influenza
4. Meningococcal disease - was B, now W and why?

No conflicts of interest

2 policies: No Jab No Pay



No Jab, No Pay –
New Immunisation Requirements for
Family Assistance Payments

- Australian Government policy change from 1 Jan 2016
- Parents of incompletely immunised children <20 years not eligible for tax and child care benefits unless
 - Medical contraindication
 - Natural immunity
 - On recognised catch-up schedule
- Free catch-up <10 yrs (ongoing) & 10-19 yrs (to end 2017)

No Jab No Play

- Victorian – “no jab no play” policy
 - Exclusion from child care if not fully immunised
 - Not all states have this – NSW and Qld vary

Table 1: Standard vaccination catch-up recommendations for children aged 10 to 19 years
[adapted from the Australian Immunisation Handbook 10th edition (updated 2015 online)]

Vaccine (10-19 yr olds)	Clinically recommended (Funded)	Linked to family payments (10-19 yr olds)	Doses required	Min interval between dose 1 and 2	Min interval between dose 2 and 3
dT (dTpa*)	✓	✓	3 doses	4 weeks	4 weeks
Poliomyelitis (IPV)	✓	✓	3 doses	4 weeks	4 weeks
MMR	✓	✓	2 doses	4 weeks	Not required
Hepatitis B	✓	✓ but only those born on or after 1 May 2000	3 paediatric doses	1 month	2 months [†]
			2 adult doses	4 months	Not required
MenCCV	✓	✗	1 dose	Not required	Not required
Varicella vaccine ^{††}	✓	✗	At least 1 dose if aged <14 years	If 2nd dose given, a 4-week interval is required [†]	Not required
			2 doses if aged ≥14 years	4 weeks	Not required
Pneumococcal	✗	✗	–	–	–
Hib	✗	✗	–	–	–
Rotavirus	✗	✗	–	–	–

www.immunise.health.gov.au

medicare

Australian Childhood Immunisation Register Immunisation medical exemption

Purpose of this form

Use this form if you are a General Practitioner and would like to notify the Australian Government Department of Human Services of an individual (under 20 years of age) who has a vaccine exemption due to a medical contraindication or natural immunity.

For more information

For more information about the Australian Childhood Immunisation Register (ACIR), go to humanservices.gov.au/acir or call 1800 653 809 Monday to Friday, between 8.00 am and 5.00 pm, Australian Eastern Standard Time.

Note: Call charges apply from mobile phones.

Filling in this form

Vaccines exempt due to medical contraindication

The medical basis for vaccine exemption is to be based on guidance in *The Australian Immunisation Handbook*. Advice on what constitutes a valid medical exemption to vaccination is provided on page 3 of this form.

6 The individual identified on this form has a:

permanent vaccine exemption due to medical contraindication because of the following:

previous anaphylaxis (to vaccine/vaccine component)

/ /

significant immunocompromise (live attenuated vaccines only)

When can I submit exemption due to natural immunity?

Antigens exempt due to natural immunity

Natural immunity to a disease is a valid exemption to vaccination for the antigens listed below. Exemption to a combination vaccine(s) on the basis of natural immunity is only valid if immunity is confirmed for all vaccine antigens. Advice on what constitutes acceptable evidence of natural immunity is provided on page 3 of this form.

8 The child has a natural immunity to:

Hepatitis B Mumps Varicella
Measles Rubella

This has been confirmed by:

Laboratory testing / /

OR

Physician-based clinical diagnosis / /

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Immunity – tricks of the trade

- Partial immunity to “MMR”
 - eg measles and mumps immune, rubella – non immune
 - ?equivocal serology – tests ‘calibrated’ to detect antibody from natural infection, not vaccine derived ab
- Measurement of diphtheria and tetanus antibody reliable
- but NOT pertussis....
 - So not useful for dTpa
- Waning immunity – general principles
 - Best to measure antibody – 1-2 month post vaccine
 - If measured years later – circulating antibody may wane, but memory response may still be protective eg Hep B

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What are the medical contraindications – Very few!

- Anaphylaxis to
 - Prior dose
 - Vaccine component
- Defer vaccination
 - Acutely unwell not URTI
 - Immunosuppressed and live viral vaccines

See Immunisation Handbook Table 2.1.4: False Contraindications to vaccination + reverse side of medical contraindication form

NOT contraindications:

- Egg allergy
 - MMR or MMRV vaccines can be given (no ovalbumin)
 - Influenza vaccines (negligible ovalbumin) – most OK by GP (if h/o egg anaphylaxis refer to do at clinic)
- Other food allergy
 - Most vaccines do not contain food allergens.
 - No traces of dairy, peanut, tree nuts, wheat, soy, seeds or seafood

Resources to support hesitant parents

- SKAI resources
<http://www.immunise.health.gov.au/internet/immunise/public/shing.nsf/Content/fact-sheets-concerns-vaccination>
- NCIRS fact sheets
<http://www.ncirs.edu.au/provider-resources/ncirs-fact-sheets/>

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What about autism?

Many large studies have found vaccines do not cause autism

How do we know?

A number of large, costly studies have compared the health of large numbers of vaccinated and unvaccinated children over many years. The largest study included 557,000 children in Denmark and found that unvaccinated children were just as likely to develop autism as vaccinated children when the results of this study were combined with the results of other major studies to include medical information from nearly 2.5 million children living all around the world; researchers were able to conclude that vaccination could not be causing autism!

Then, what causes autism?

It is not known exactly why some children develop autism. The idea that vaccination caused autism was disproven by other people who reported to find a clear cause. However, this idea arose from a few studies that were badly conducted and have since been proven wrong! Current research suggests that autism cannot be explained by a single cause, but is probably due to a combination of developmental, genetic, and environmental factors.

So, where did the misunderstanding come from?

In 1998, a research group in the UK, led by Andrew Wakefield, suggested that some children who had autism might have been given a vaccine called MMR (measles, mumps and rubella) and that the vaccine caused autism. This was published in a medical journal. However, the authors later admitted that there were no reasonable reasons for their claims and that the paper was withdrawn from the journal in 2001 after the General Medical Council found that Wakefield had falsified data.

After it became clear that MMR vaccine was not the problem, some people suggested a connection between autism and other factors, such as diet, genetics, and environment. In fact, the majority of research on autism, including the largest study in Denmark, has found that unvaccinated children were just as likely to develop autism as vaccinated children. In fact, the majority of research on autism, including the largest study in Denmark, has found that unvaccinated children were just as likely to develop autism as vaccinated children. In fact, the majority of research on autism, including the largest study in Denmark, has found that unvaccinated children were just as likely to develop autism as vaccinated children.

Pertussis

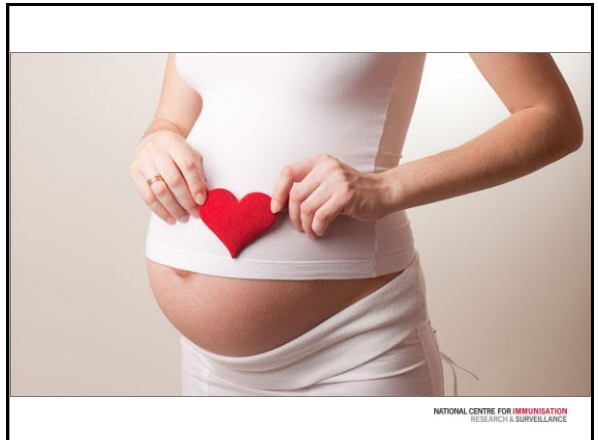
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Pertussis deaths and ICU with ventilation:

80% < 6 weeks

Source: AIHW National Hospital Morbidity Database

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Section 4.12 Pertussis

- Dose of dTpa **each** pregnancy
- Optimal time early in the third trimester (*28 to 32 weeks*) BUT
- Can be given at any time up to delivery & pre 28 weeks (no repeat dose required)
- **92% effective against pertussis in < 3 months, especially severe pertussis**

IMMUNISATION

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Safety of ante-natal pertussis vaccination

Reassuring data – studies of 20,000 pregnancies (UK) and 120,000 (US)

UK pertussis deaths post program – no “herd” protection for infants of non-immunised mothers

Public Health England

Reconciled deaths from pertussis in infants, England

Year	<3M	<3M mum vaccinated	<3M mum not vaccinated	3-5M	6-11M
2001	5	3	0	0	0
2002	2	2	0	0	0
2003	3	0	0	0	0
2004	2	0	0	0	0
2005	6	1	0	0	0
2006	4	1	0	0	0
2007	4	0	0	0	0
2008	5	1	0	0	0
2009	2	0	0	0	0
2010	1	0	0	0	0
2011	5	0	0	0	0
2012	14	0	0	0	0
2013	3	0	0	0	0
2014	1	1	0	5	0
2015*	1	1	0	2	0

Sources: lab confirmed cases, certified deaths, Hospital episode statistics, GP registration details, HPZone

*reported by 21/9/2015

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18 m dose

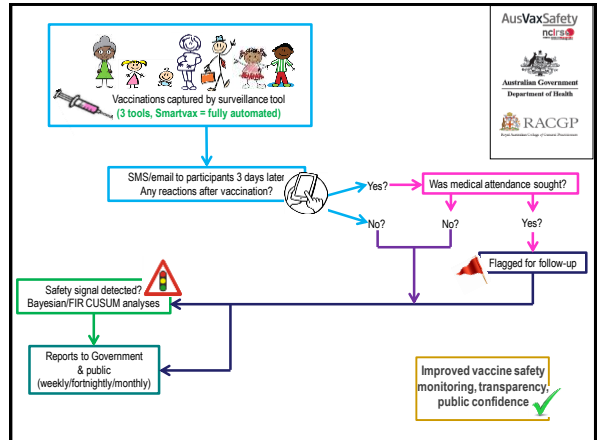
Recommended in Handbook since 2010
Funded from April 2016 (and required for no job, no pay)

- Reduce sibling infections
- Should eliminate any concern about lower infant antibodies post maternal immunisation

Extensive limb swelling reactions after DTPa boosters



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Pertussis booster dose safety profile – example

Table 1. Summary of key variables describing participants, AEFI and medical advice sought for the 18 month booster

	Variable	Results (%)*
Descriptive	Male	3067/6036 (50.8%)
	Median age (range)	18 months (12–35.6 months)
	Aboriginal or Torres Strait Islander	205/4891 (4.2%)
AEFI	Any reaction	1068/6041 (17.7%)
	Pain at injection site	203/5641 (3.6%)
	Swelling and/or redness at injection site	414/5641 (7.3%)
	Fever	250/5641 (4.4%)
	Seizure	1/5641 (0.02%)
	Other	430/5641 (7.6%)
Telephone advice or medical attendance sought	Telephone advice ¹ sought for reaction	58/5641 (1.0%)
	Medical attendance sought for reaction	104/6035 (1.7%)

www.ausvaxsafety.org.au

www.smartvax.com.au

see short video explanation
Sign up via SmartVax website



Influenza

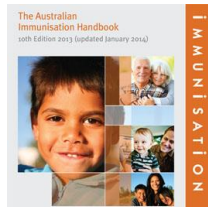


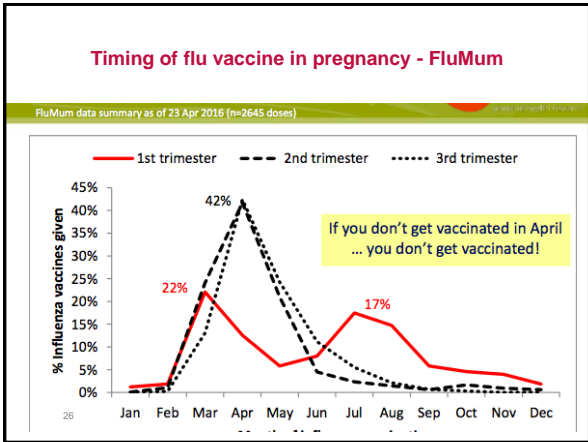
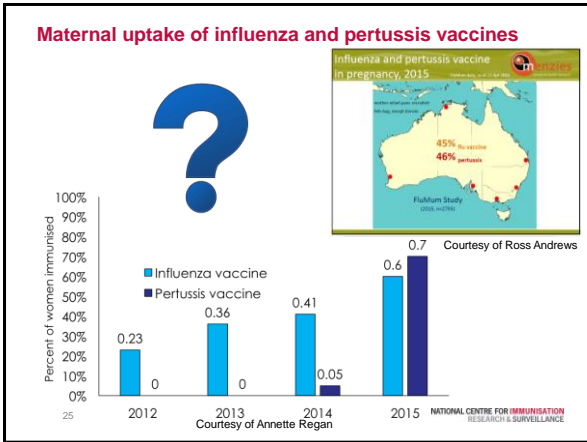
ANNUAL ONLINE UPDATE + ATAGI statement
www.immunise.health.gov.au

Section 4.7 Influenza

- Recommended - all pregnant
- Timing depends on influenza season/vaccine availability relative to pregnancy
- Transplacental Ab transfer!!

- PROTECTS Mum
- PROTECTS Bub





Evidence – is it safe?

Influenza

- “Excellent and robust safety profile of multiple inactivated influenza vaccine preparations over many decades”

Pertussis

- “widespread use of TT-containing vaccines in many countries has not produced any signal of possible harm to pregnant women or their foetuses. The safety of widespread tetanus toxoid vaccine use over the past 40 years...supports vaccine use.”

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Most common barriers/reasons for not having vaccine

- Reasons:**
 - Not recommended by HCP
 - Safety concerns for baby and mother
 - Efficacy concerns
- Barriers:**
 - Live in rural area or Low SES
 - Mother not aware of recommendation
 - HCP was not aware of recommendation
 - Aboriginal or Torres Strait Islander
 - NESB/CALD populations
 - Lack of opportunistic vaccination
 - Conflicting advice
 - Never had flu vaccine before

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FactSheet

Vaccinations during pregnancy protect expectant mothers and their babies

Vaccination against pertussis (whooping cough) and influenza is strongly recommended during pregnancy to protect expectant mothers and their babies against these serious infections. Other inactivated vaccines are not routinely recommended during pregnancy but may be considered in special circumstances. Live attenuated vaccines are the only types of vaccines that are not to be given during pregnancy. Some vaccines, like rubella, may be needed when planning pregnancy so the mother is immune before she becomes pregnant.

Pertussis vaccine and pregnancy

Pertussis is a highly contagious infection which is most severe in young babies

Pertussis (whooping cough) is a highly contagious respiratory infection. In Australia, pertussis is most

Pertussis vaccine is not funded for pregnant women under the National Immunisation Program (NIP) but is currently free under state and territory initiatives. For detailed information on pertussis vaccines and

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Influenza immunisation for children

- Free on NIP for children from 6 months with pre-disposing illness
 - In these children, especially important for all household members to also receive vaccine
- High hospitalisations < 2 years
 - < 6 months only preventable by maternal vaccination
 - Need 2 doses in first year
 - Vaccine effectiveness higher in children

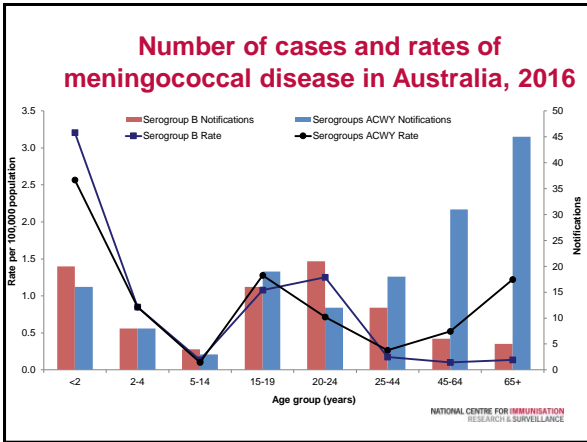
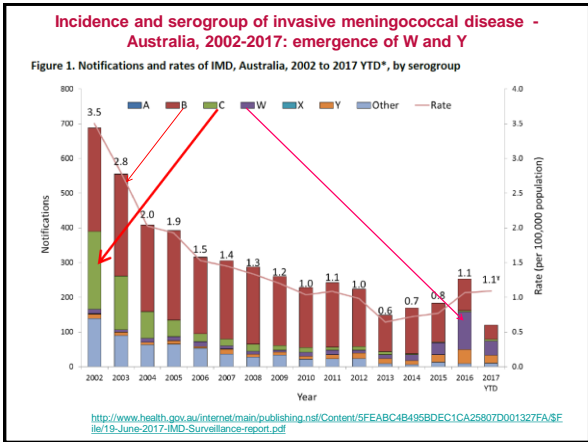
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Meningococcal disease



Rare but dreaded disease
(around 1 case per in 100,000 population overall)
~5-10% mortality

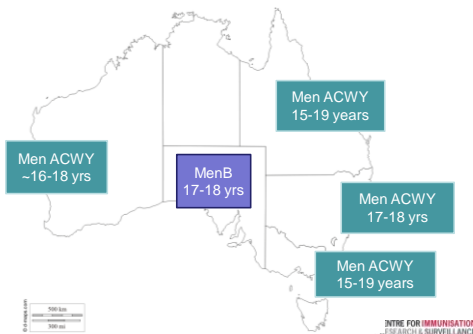


Who should be vaccinated against meningococcal disease?

Population	MenC	MenB	MenACWY
Healthy infants and children	Required for 12 month olds	Recommended for <2 year olds	Optional
Healthy adolescents	Catch up only (if required)	Recommended for 15-19 year olds*	State programs [#]
Persons with high risk medical conditions [†]	Additional doses not required	Recommended	Recommended
Lab personnel who handle <i>Neisseria meningitidis</i>	Additional doses not required	Recommended	Recommended
Travellers to areas where meningococcal disease is endemic	Additional doses not required	Recommended	Recommended [§]

*Particularly recommended for those living in close conditions e.g. military recruits or those in residential accommodation
[#] Available to adolescents in NSW, Qld, Tas, Vic and WA through state-funded programs; available through private prescription elsewhere
[†] Conditions include inherited defects or deficiency of properdin or complement components, current or future treatment with eculizumab, functional or anatomical asplenia, HIV infection, and haematopoietic stem cell transplant
[§] Required for pilgrims attending the annual Hajj in Mecca

State based meningococcal vaccination programs commencing in 2017, predominantly school-based.

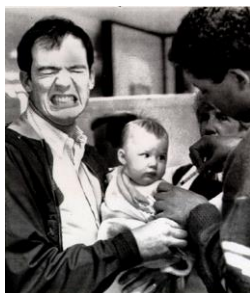


Men ACWY ~16-18 yrs (NSW, SA, WA)
Men B 17-18 yrs (VIC)
Men ACWY 15-19 years (QLD, NT, ACT, TAS)

SUMMARY: Take home messages

- Few medical contraindications to vaccination
 - Past infection rarely warrants exemption (and safe to vaccinate)
- Importance of GPs in maximising vaccination in pregnancy
 - Influenza vaccine – not just in “flu season”
 - Align with pertussis @ 28-30 weeks is ok
- Changes in meningococcal strains – W+Y now > B
 - B still predominates in infants (2 + 1 schedule)
 - ACWY vaccine other age groups – State programs

Thank you.
www.ncirs.edu.au



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