

South Australian Perinatal Practice Guideline

Vaccines Recommended in Pregnancy

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Note:

This guideline provides advice of a general nature. This statewide guideline has been prepared to promote and facilitate standardisation and consistency of practice, using a multidisciplinary approach. The guideline is based on a review of published evidence and expert opinion.

Information in this statewide guideline is current at the time of publication.

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Health practitioners in the South Australian public health sector are expected to review specific details of each patient and professionally assess the applicability of the relevant guideline to that clinical situation.

If for good clinical reasons, a decision is made to depart from the guideline, the responsible clinician must document in the patient's medical record, the decision made, by whom, and detailed reasons for the departure from the guideline.

This statewide guideline does not address all the elements of clinical practice and assumes that the individual clinicians are responsible for discussing care with consumers in an environment that is culturally appropriate and which enables respectful confidential discussion. This includes:

- The use of interpreter services where necessary,
- Advising consumers of their choice and ensuring informed consent is obtained,
- Providing care within scope of practice, meeting all legislative requirements and maintaining standards of professional conduct, and
- Documenting all care in accordance with mandatory and local requirements

Explanation of the aboriginal artwork:

The aboriginal artwork used symbolises the connection to country and the circle shape shows the strong relationships amongst families and the aboriginal culture. The horse shoe shape design shown in front of the generic statement symbolises a woman and those enclosing a smaller horse shoe shape depicts a pregnant women. The smaller horse shoe shape in this instance represents the unborn child. The artwork shown before the specific statements within the document symbolises a footprint and demonstrates the need to move forward together in unison.



Australian Aboriginal Culture is the oldest living culture in the world yet Aboriginal people continue to experience the poorest health outcomes when compared to non-Aboriginal Australians. In South Australia, Aboriginal women are 2-5 times more likely to die in childbirth and their babies are 2-3 times more likely to be of low birth weight. The accumulative effects of stress, low socio economic status, exposure to violence, historical trauma, culturally unsafe and discriminatory health services and health systems are all major contributors to the disparities in Aboriginal maternal and birthing outcomes. Despite these unacceptable statistics the birth of an Aboriginal baby is a celebration of life and an important cultural event bringing family together in celebration, obligation and responsibility. The diversity between Aboriginal cultures, language and practices differ greatly and so it is imperative that perinatal services prepare to respectively manage Aboriginal protocol and provide a culturally positive health care experience for Aboriginal people to ensure the best maternal, neonatal and child health outcomes.

Purpose and Scope of Perinatal Practice Guideline (PPG)

The purpose of this guideline is to provide clinicians with information on the timing and safe administration of the two (2) vaccines recommended in pregnancy – influenza and pertussis.

Vaccination advice and recommendations for women planning a pregnancy is contained in the *Preconception Advice* PPG and therefore not included.



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Summary of Practice Recommendations

Influenza vaccine and Pertussis vaccine are routinely recommended in pregnancy.

Timing of the influenza vaccination should be considered in relation to the influenza season and vaccine availability.

Optimal timing of the pertussis vaccination is between 20 and 32 weeks gestation.

Women who recently gave birth and did not receive pertussis-containing vaccine during pregnancy are recommended to receive the vaccine as soon as possible.

Other inactivated vaccines (e.g. Pneumococcal, Hepatitis A) may be clinically indicated where the benefits of the vaccine during pregnancy outweigh potential risks to the mother/baby.

Live vaccines are contraindicated in pregnancy (e.g. MMR, Varicella).

People with egg allergy, including a history of anaphylaxis, can be safely vaccinated with influenza vaccines.



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Abbreviations

ACIP	Advisory Committee on Immunization Practices
CDC	Centers for Disease Control
dTpa	Diphtheria tetanus and pertussis vaccine
MMR	Measles Mumps and Rubella
PPG	Perinatal Practice Guideline
RANZCOG	Royal Australian and New Zealand College of Obstetricians and Gynaecologists
SAGE	Strategic Advisory Group of Experts
WHO	World Health Organisation

Introduction

Vaccination of pregnant women for certain diseases has now been shown to be effective in not only protecting the mother but also the fetus / newborn via transplacental transfer of antibodies.

Whilst some vaccines e.g. MMR, Varicella (live vaccines) are contraindicated in pregnancy, some vaccines are routinely recommended in pregnancy (influenza, pertussis).

Although some vaccines e.g. inactivated vaccines (Pneumococcal, Hepatitis A and others) are not routinely recommended during pregnancy, in some circumstances the benefits of the vaccine during pregnancy outweigh potential risks to the mother and / or fetus^{1,2}

Consideration of the benefits and risks of vaccination for the mother and fetus should always form part of the clinical assessment.

Eliminating the risk of exposure to vaccine-preventable diseases during pregnancy (e.g. by changing travel plans, avoiding high-risk behaviours or occupational exposures) is both an alternative and complementary strategy to vaccination^{1,2}.

Vaccines routinely recommended during pregnancy

Currently two vaccines are routinely recommended during pregnancy: **Influenza vaccine** and **Pertussis vaccine**¹.

Influenza and pregnancy

Pregnant women are at high risk of severe consequences of influenza infection. This is because there are a number of physiological and immunological changes that occur to a woman's body during pregnancy which put pregnant women at higher risk of complications from the flu (e.g. changes to lung function, increased cardiac output, increased oxygen consumption, and changes to the immune response)³.

The World Health Organization (WHO) Strategic Advisory Group of Experts (SAGE) has identified pregnant women as the most important risk group for seasonal influenza vaccination. They are at particularly high risk of severe complications and death from influenza and the risk is exacerbated by co-morbidities and later trimester of pregnancy⁴.

Complications for the fetus/baby include the risk of preterm birth, sub-optimal fetal growth and stillbirth⁵.

Influenza vaccination is considered safe to administer during any stage of pregnancy. There is no evidence the vaccine causes any harm to mother or fetus¹.

Influenza vaccine is effective in reducing maternal morbidity due to respiratory disease. There is growing evidence that influenza vaccination during pregnancy particularly in the second and third trimester provides passive immunity to the infant for the first 6 months of life^{1,4}. This is particularly important as infants less than 6 months of age cannot be vaccinated against influenza.



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Influenza vaccine recommendation

Inactivated Influenza vaccine is recommended annually for all pregnant women and is funded under the National Immunisation Program.

Timing of vaccination

The timing of vaccination should be considered in relation to the influenza season and vaccine availability.

If a pregnant woman has received the current season influenza vaccine prior to becoming pregnant, there is no recommendation to revaccinate during pregnancy.

Women who are in their first trimester in the first quarter of the year may wish to wait until the current year's seasonal influenza vaccine becomes available, rather than receiving the previous year's influenza vaccine.

Vaccine administration

Funded influenza vaccines available to pregnant women through the National Immunisation Program can all be given intramuscularly; some can be given subcutaneously.

Contraindications

The only absolute contraindications to influenza vaccine are:

- Anaphylaxis after a previous dose of any influenza vaccine **or**
- Anaphylaxis after receipt of any component of the influenza vaccine

Precautions

Egg allergy

Women with egg allergy (excluding anaphylaxis) can be safely vaccinated with an age-appropriate full dose of vaccine in any immunisation setting¹.

Anaphylaxis egg allergy

Pregnant women with known anaphylaxis egg allergy should:

- Receive their influenza vaccine in a medical facility with staff experienced in recognising and treating anaphylaxis
- Remain under supervision in the clinic for at least 30 minutes after vaccination
- Receive a full age-appropriate vaccine dose; do not split the dose into multiple injections (for example, a test and then the rest of the dose).

History of Guillain-Barre syndrome

Pregnant women with a history of Guillain–Barré syndrome whose first episode was not after influenza vaccination, have an extremely low risk of recurrence of Guillain–Barré syndrome after vaccination. Influenza vaccination is recommended for these women.

Influenza vaccination is generally not recommended for pregnant women with a history of Guillain–Barré syndrome whose first episode occurred within 6 weeks of receiving an influenza vaccine. There is limited data on the risk of recurrence of Guillain–Barré syndrome in people where the first episode occurred within 6 weeks of influenza vaccination (i.e. the first episode was possibly triggered by the vaccine). In these women, discuss the potential for recurrence if vaccinated, the potential for exacerbation following influenza infection, and other protective strategies (e.g. vaccination of household members). Vaccination can be considered in special circumstances, such as when an alternative cause for Guillain–Barré syndrome, such as *Campylobacter jejuni* infection was found or the risk of influenza disease is considered high¹.



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Adverse events following vaccination

Fever, malaise and myalgia occur commonly and can last for up to 2 days. Induration, swelling, redness and pain at injection site are also common.

Pertussis and pregnancy

Despite a long-standing immunisation program, pertussis remains highly prevalent in Australia and the least well controlled of all vaccine preventable diseases. The maximal risk of infection and severe morbidity is before infants are old enough to have received at least two vaccine doses. In infant pertussis cases, family members, particularly parents, are the source of infection in more than 50% of cases where a primary case can be identified and the presumed source in a higher proportion¹

Pertussis vaccine recommendations

The prevention of severe pertussis morbidity, particularly in infants < 3 months of age is a major goal in Australia.

Vaccination during pregnancy reduces the risk of pertussis in pregnant women and their young infants by 90%. This results from direct passive protection by transplacental transfer of pertussis antibodies from the mother to the fetus during pregnancy¹.

Vaccination during pregnancy has been shown to be more effective in reducing the risk of pertussis in young infants than vaccination of the mother post-partum⁶. There has been no evidence to date of an increased risk of adverse events related to pertussis vaccination in pregnancy; in particular there has been no evidence of increased risk of stillbirth⁷.

Inactivated Pertussis vaccine is recommended for all pregnant women and is funded under the National Immunisation Program.

Timing of Vaccination

Optimal timing for vaccination is between **20 and 32 weeks**¹.

If pregnant women have not been vaccinated by 32 weeks, they should receive pertussis-containing vaccine as soon as possible and at any time up until birth¹.

If pregnant women receive the vaccine earlier than 20 weeks, they do not need a repeat dose during the same pregnancy.

Vaccination is recommended with each pregnancy to provide maximal protection to every infant; this includes pregnancies which are closely spaced (e.g. <2 years)¹.

If pertussis-containing vaccine has not been provided during pregnancy, maternal vaccination is recommended as soon as possible following birth (prior to hospital discharge if possible)¹. There may still be some benefit in the mother being vaccinated at any time until the infant is 6 months old when he/she has received all infant doses of pertussis-containing vaccine (cocooning strategy).

Vaccine administration

0.5mL pertussis-containing vaccine administered intramuscularly. Adult pertussis vaccine is only available in combination with diphtheria and tetanus vaccine (dTpa) and compared to childhood vaccine (DTPa) it has reduced diphtheria, tetanus and pertussis antigen. Vaccines available include Boostrix (GSK) and Adacel (sanofi pasteur).

It is safe to co-administer influenza vaccine and pertussis containing vaccine to pregnant women.

Contraindications

The only absolute contraindications to acellular pertussis-containing vaccine are:

- Anaphylaxis after a previous dose of any acellular pertussis-containing vaccine **or**
- Anaphylaxis after receipt of any component of an acellular pertussis-containing vaccine

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Adverse events following vaccination

The adult pertussis vaccine is safe and well-tolerated although there is a small risk that significant injection site reactions following subsequent doses might occur in some women who receive the vaccine during successive closely spaced pregnancies. This low risk is considered to be balanced by the benefit to each infant of protection against pertussis¹.

Vaccination for women who are planning pregnancy

Women planning a pregnancy should have their immunisation status assessed and those at risk of other vaccine preventable disease should be offered vaccination in accordance with advice contained in the *Preconception Advice* PPG in the A to Z index at www.sahealth.sa.gov.au/perinatal or the [Australian Immunisation Handbook](#).



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Useful websites

SA Health website: Immunisation

section <https://www.sahealth.sa.gov.au/wps/wcm/connect/public+content/sa+health+internet/health+topics/health+conditions+prevention+and+treatment/immunisation>

Immunise Australia Program.

<http://www.immunise.health.gov.au/>

National Centre for Immunisation Research & Surveillance

<http://www.ncirs.edu.au/>

Influenza Specialist Group

<http://www.isg.org.au/>



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Write Group Lead

Noel Lally

Previous Version Write Group

Breda MacDonald
Dr Louise Flood
Maureen Watson

Other contributors

A/Prof Rosalie Grivell
Dr Anupam Parange
Rebecca Smith
Rachael Yates

SAPPG Management Group Members

Sonia Angus
Lyn Bastian
Elizabeth Bennett
Corey Borg
Dr Feisal Chenia
John Coombas
Prof Jodie Dodd
Dr Vanessa Ellison
A/Prof Rosalie Grivell
Dr Sue Kennedy-Andrews
Jackie Kitschke
Dr Anupam Parange
Rebecca Smith
Dr Laura Willington



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Contact:	HealthCYWHSPerinatalProtocol@sa.gov.au
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