

South Australian Perinatal Practice Guideline

Measles and measles contacts in pregnancy

© Department for Health and Wellbeing, Government of South Australia. All rights reserved.

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.

SA Health does not accept responsibility for the quality or accuracy of material on websites linked from this site and does not sponsor, approve or endorse materials on such links.

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 PPG

The purpose of this guideline is to provide clinicians with information on the management of pregnant and postnatal women following exposure to measles. It includes details on vaccination, infection prevention and control and management of contacts. Management of staff exposed, suspected or proven to have measles is also covered.



Measles and measles contacts in pregnancy

Table of Contents

[Purpose and Scope of PPG](#)

[Summary of Practice Recommendations](#)

[Abbreviations](#)

[Measles](#)

[Clinical features](#)

[Route of transmission](#)

[Incubation period](#)

[Infection precautions](#)

[Literature review](#)

[Maternal exposure](#)

[Contact](#)

[Immunity](#)

[Prevention](#)

[Maternal management](#)

[Postnatal care](#)

[Management of contacts](#)

[Neonates or infants less than 12 months of age](#)

[Non-immunosuppressed and non-vaccinated people over 1 year of age](#)

[Individuals in whom protection is desirable, but live vaccination is contraindicated](#)

[Care of in-hospital contacts](#)

[Management of staff with suspected or proven measles](#)

[Exposure to measles](#)

[Known immunity to measles](#)

[Measles non-immune staff](#)

[References](#)

[Acknowledgements](#)



Measles and measles contacts in pregnancy

Summary of Practice Recommendations

Measles is a notifiable disease and notification should be made to the Communicable Disease Control Branch (CDCB) as soon as practicable

Standard precautions, as well as transmission-based precautions should be used when caring for a woman / baby suspected of measles infection

Perform serology for measles antibody before vaccination or administration of NHIG

Administer NHIG to measles antibody negative women up to 6 days following contact

Pregnant women and immuno-compromised children (or adults) should not be administered live vaccine

Abbreviations

CDNA	Communicable Diseases Network Australia
i.e.	That is
kg	Kilogram(s)
mg	Milligram(s)
mL	Millilitre(s)
MMR	Measles Mumps Rubella
NHIG	Normal human immunoglobulin
%	Percent
RNA	Ribonucleic acid
WHS	Worker health and safety



Measles and measles contacts in pregnancy

Measles

- > The measles (rubeola) virus is a single-stranded RNA virus of the family Paramyxoviridae. Humans and monkeys are the only known hosts. There are no carrier states
- > Measles is a highly infectious, acute viral illness that is [notifiable](#)¹
- > The appropriate notification form for report of notifiable disease or related death in South Australia may be downloaded and is available from URL:
- > <http://www.sahealth.sa.gov.au/wps/wcm/connect/public+content/sa+health+internet/resources/report+of+notifiable+disease+or+related+death+form?contentIDR=bb31bd00491a1c48995afd7675638bd8&useDefaultText=1&useDefaultDesc=1>
- > This form is not to be sent by email for reasons of confidentiality
- > Under the South Australian Public Health Act 2011, notification should be made to the Communicable Disease Control Branch (CDCB) as soon as practicable. Measles requires **urgent** telephone notification to the CDCB: Telephone 1300 232 272

Clinical features

Initially:

- > Fever
- > Malaise
- > Cough
- > Coryza (inflammation of the mucous membranes of the nose)
- > Conjunctivitis
- > Koplik's spots (white spots, each surrounded by a red ring, found on the buccal mucosa)

2 - 4 days later:

- > Maculopapular rash initially on face and upper neck, then becomes generalised¹. The woman usually looks and feels unwell

Route of transmission

- > Respiratory airborne droplet transmission
- > Rarely by means of articles soiled with respiratory secretions

Incubation period

- > The usual interval between exposure to measles and onset of first symptoms (prodrome) is 10 to 14 days, with the rash occurring 2 to 4 days later²

Period of infectivity

- > Measles is infectious from the beginning of the prodromal period until 4 days after the onset of the rash²

Infection precautions

- > Standard precautions, as well as transmission-based precautions (single negative pressure room with own toilet facilities, dedicated equipment, high filtration, fit checked respiratory [N95] mask) should be used when caring for a woman / baby suspected of measles infection. For further information see '[Infection prevention and control in perinatal practice](#)' in the A to Z index
- > Only staff with known measles immunity should care for women / babies with suspected or proven measles



Measles and measles contacts in pregnancy

Literature review

- > Measles is the most communicable disease of childhood, which led to high levels of immunity in women of reproductive age in the pre-immunisation era
- > Widespread childhood immunization programs (in 1999, 91 % of the general population aged between 12 – 18 years were immune) in Australia have further reduced the incidence of measles during pregnancy²
- > Women who contract measles during pregnancy have increased rates of:
 - > Preterm labour
 - > Spontaneous abortion
 - > Fetal / neonatal loss
 - > Maternal complications
 - > Maternal mortality^{3,4}
- > Measles is often a severe disease and may be complicated by otitis media (7 %) or bronchopneumonia (6 %) in the general population²
- > Acute encephalitis occurs in between 2 and 10 per 10,000 reported cases in the general population, with an associated mortality rate of 10 – 15 %. Around 15 – 40 % of survivors will have permanent brain damage²

Maternal exposure

- > The measles virus can survive for up to 2 hours in air, but is rapidly inactivated by heat, light and extremes of pH²
- > Exposure to measles includes any contact with someone with measles during the contagious interval

Contact ^{6,7}

- > **Contact** is defined as anyone who has shared the same airspace for any length of time with an infectious person OR who has been in a waiting area or consulting room previously occupied by the infectious person for a period of up to 30 minutes after the infectious person has departed⁷
 - > The Communicable Diseases Network Australia (CDNA)⁷ have reduced the transmission risk from 2 hours to 30 minutes, following recognition that normal room ventilation systems ensure that levels of airborne viruses are rapidly dissipated

Immunity

- > Any non-immunocompromised individual with a definite positive history of measles disease, documented evidence of having received two doses of a measles-containing vaccine (MMR) administered at least four weeks apart and with both doses administered \geq 12 months of age, or positive measles antibody test is considered to be immune

Prevention

- > Since immunisation with live vaccines such as the Measles Mumps Rubella (MMR) vaccine is usually contraindicated in pregnancy, normal human immunoglobulin (NHIG) in a dose of 0.2 mL / kg may be administered by intramuscular injection to non-immune women exposed to measles up to 6 days (144 hours) following contact with measles⁶



Measles and measles contacts in pregnancy

Maternal management

- > Serology for measles antibody (perform before vaccination or administration of NHIG)
- > Administer NHIG to measles antibody negative women who are immuno-compromised following the CDNA guidelines for dosages. If antibody testing is not available for 72 hours (weekend), administer before results are received
- > Testing for measles antibody in immuno-compromised individuals should not be used to guide decisions, since neither previous vaccination nor probably previous infection guarantees immunity to measles. These individuals should be given NHIG following the CDNA guidelines for dosages

Postnatal care

Standard precautions as well as transmission-based precautions including as per the Australian Guidelines for the Prevention and Control of Infection in Healthcare

(<https://www.nhmrc.gov.au/book/html-australian-guidelines-prevention-and-control-infection-healthcare-2010>)

- > A single negative pressure room with own toilet facilities
- > Dedicated equipment
- > All staff should wear a high filtration, fit checked respiratory (N95) mask
- > Only measles immune staff should enter the room
- > Babies of women who develop measles in the postpartum period should be isolated separately and given prophylactic NHIG

Management of contacts

Neonates or infants less than 12 months of age

- > This group is at high risk of developing complications from measles infection if they have not acquired maternal antibodies from a measles-immune mother
- > NHIG should be administered to infants of non-immune mothers as early as possible, and at the latest within 6 days (144 hours) of potential exposure⁶
- > NHIG should be administered to pre-term neonates (< 37 weeks) or immune suppressed infants regardless of maternal history or antibody status
- > Infants 6-8 months of age exposed within 144 hours should receive NHIG (irrespective of mother's immune status)
- > If exposure within 72 hours, immune competent infants 9-11 months should receive MMR now then second dose at 12 months or 4 weeks later (whichever is later). If exposure within 73-144 hours, give NHIG

Non-immunosuppressed non-vaccinated people over 1 year of age

- > Consider MMR vaccination within 72 hours of exposure for all non-immune in-patient contacts

Individuals in whom protection is desirable, but live vaccination is contraindicated

- > Pregnant women and immuno-compromised children (or adults) should not be administered live vaccine. Administer NHIG as early as possible and at least within 6 days (144 hours) of exposure⁶



Measles and measles contacts in pregnancy

Care of in-hospital contacts

- > Any contact not known to be immune, who is admitted or within the hospital during the potentially contagious period of measles (i.e. 10 to 14 days after exposure) should be cared for in single-room isolation
- > NHIG may not always prevent measles but instead decrease the severity of the disease, and increase the incubation period to 21 days. Therefore contacts given NHIG should be isolated from day 10 to day 21 if still within the hospital

Management of staff with suspected or proven measles

- > Contact Risk Management or Worker Health and Safety (WHS) services (where available), who will advise the period of time staff should be excluded from work (until they are no longer contagious, i.e. 4 days after the onset of the rash)

Exposure to Measles

- > Staff should advise Infection Control and Risk Management or WHS (where available) as soon as possible after exposure
- > Ascertain the immune status of the staff member. A staff member is immune if she / he has a definite history of measles disease or of MMR vaccination, or is known to be positive for measles antibody
- > If the immune status is unknown or uncertain, serology for measles antibody (IgG) should be obtained. No vaccination is required for persons born before 1966 (unless serological evidence indicates otherwise)

Known immunity to measles

- > No action is required

Measles non-immune staff

- > Measles non-immune staff should be excluded from work for the potentially contagious period of measles (i.e. 10 to 14 days after exposure), and should advise risk management or WHS if they develop measles
- > Follow the CDNA guidelines for post exposure prophylaxis



Measles and measles contacts in pregnancy

References

1. SA Health. Notifiable conditions. South Australian Public Health Act 2011. Government of South Australia. SA Health. Available from URL: <http://www.sahealth.sa.gov.au/wps/wcm/connect/public+content/sa+health+internet/clinical+resources/health+notifications/notifiable+disease+reporting>
2. National Health and Medical Research Council (NHMRC). The Australian Immunisation Handbook, 10th ed. Canberra: Australian Government Publishing Service; 2013. Available at URL: <http://www.health.gov.au/internet/immunise/publishing.nsf/content/Handbook10-home>
3. Walling AD. Seroprevalence of the rubeola antibody in pregnant women. Am Family Physician 1998; 57: 2233-34 (Level III-3).
4. Chiba ME, Saito M, Suzuki N, Honda Y, Yaegashi N. Measles infection in pregnancy 2003; 47: 40-44 (Level IV).
5. The Communicable Diseases Network Australia (CDNA). Measles National Guidelines for Public Health Units, 2009. Available from URL: <http://www.health.gov.au/cdna>
The Communicable Diseases Network Australia (CDNA). Measles National Guidelines for Public Health Units. CDNA interim guideline: amendment to contact management, 2014. Available from URL: <http://www.health.gov.au/internet/main/publishing.nsf/Content/cdna-song-measles.htm>

Useful web sites:

SA Department of Health: Measles available at URL:

<http://www.sahealth.sa.gov.au/wps/wcm/connect/public+content/sa+health+internet/clinical+resources/clinical+topics/infectious+disease+control/measles+for+health+professionals>

Centers for disease control and prevention (CDC).

Available from URL: <https://www.cdc.gov/measles/about/index.html>



Measles and measles contacts in pregnancy

Acknowledgements

The South Australian Perinatal Practice Guidelines gratefully acknowledge the contribution of clinicians and other stakeholders who participated throughout the guideline development process particularly:

Write Group Lead

Dr Brett Ritchie
Allison Rogers

Other major contributors

David Gordon
Celia Cooper
Linda Henderson
Catherine Leggett
Rosina Gergis
June Leschke
Louise Flood
Breda McDonald
Cassis Poulton
Helen Marshall

SAPPG Management Group Members

Sonia Angus
Dr Kris Bascomb
Lyn Bastian
Elizabeth Bennett
Dr Feisal Chenia
John Coombas
A/Prof Rosalie Grivell
Dr Sue Kennedy-Andrews
Jackie Kitschke
Catherine Leggett
Dr Anupam Parange
Dr Andrew McPhee
Rebecca Smith
A/Prof John Svigos
Dr Laura Willington



Measles and measles contacts in pregnancy

Document Ownership & History

Developed by: SA Maternal, Neonatal & Gynaecology Community of Practice
Contact: HealthCYWHSPerinatalProtocol@sa.gov.au
Endorsed by: SA Health Safety and Quality Strategic Governance Committee
Next review due: 19 December 2019
ISBN number: 978-1-74243-099-7
PDS reference: CG176
Policy history: Is this a new policy (V1)? **N**
Does this policy amend or update an existing policy? **Y**
If so, which version? **V4**
Does this policy replace another policy with a different title? **N**
If so, which policy (title)?

Approval Date	Version	Who approved New/Revised Version	Reason for Change
15 Jun 2018	V4.1	SA Health Safety and Quality Strategic Governance Committee	Review date extended to 5 years following risk assessment. New template.
19 Dec 2014	V4	SA Health Safety and Quality Strategic Governance Committee	Reviewed
29 Apr 2013	V3	SA Health Safety and Quality Strategic Governance Committee	Reviewed in line with scheduled review date
03 Mar 2009	V2	Maternal and Neonatal Clinical Network	Reviewed in line with scheduled review date
26 July 2004	V1	Maternal and Neonatal Clinical Network	Original approved version.

