Clinical Guideline
Measles and measles contacts in pregnancy

Policy developed by: SA Maternal & Neonatal Clinical Network
Approved SA Health Safety & Quality Strategic Governance Committee on:
19 December 2014
Next review due: 31 December 2017

Summary
Clinical practice guideline on measles and measles contacts in pregnancy

Keywords
Rubeola, measles, Paramyxoviridae, Koplik’s spots, maculopapular rash, otitis media, MMR vaccine, normal human immunoglobulin, NHIG, clinical guideline

Policy history
Is this a new policy? N
Does this policy amend or update an existing policy? Y
Does this policy replace an existing policy? Y
If so, which policies? Measles and measles contacts in pregnancy

Applies to
All SA Health Portfolio
All Department for Health and Ageing Divisions
All Health Networks
CALHN, SALHN, NALHN, CHSALHN, WCHN, SAAS

Staff impact
All Staff, Management, Admin, Students, Volunteers
All Clinical, Medical, Nursing, Allied Health, Emergency, Dental, Mental Health, Pathology

PDS reference
CG176

Version control and change history

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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

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
- The appropriate notification form for report of notifiable disease or related death in South Australia may be downloaded and is available from URL:


> 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 generalised. 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 (prodome) is 10 to 14 days, with the rash occurring 2 to 4 days later

Period of infectivity

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

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
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 pregnancy\(^1\)

> Women who contract measles during pregnancy have increased rates of:
  > Preterm labour
  > Spontaneous abortion
  > Fetal / neonatal loss
  > Maternal complications
  > Maternal mortality\(^2,4\)

> Measles is often a severe disease and may be complicated by otitis media (7%) or bronchopneumonia (6%) in the general population\(^1\)

> 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 damage\(^1\)

Maternal exposure

> The measles virus can survive for up to 2 hours in air, but is rapidly inactivated by heat, light and extremes of pH\(^1\)

> 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 departed\(^7\)

  > 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 ≥ 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 measles.

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 per ‘Infection prevention and control in perinatal practice’, as well as transmission-based precautions including:
  > 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 exposure
> 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 exposure.

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


Useful web sites:

SA Department of Health: Measles

Centers for disease control and prevention (CDC). Available from URL: http://www.cdc.gov/measles/about/overview.html
Abbreviations

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<td>CDNA</td>
<td>Communicable Diseases Network Australia</td>
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<tr>
<td>kg</td>
<td>Kilogram(s)</td>
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<td>mg</td>
<td>Milligram(s)</td>
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<td>mL</td>
<td>Millilitre(s)</td>
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<tr>
<td>MMR</td>
<td>Measles Mumps Rubella</td>
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<td>NHIG</td>
<td>Normal human immunoglobulin</td>
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<td>%</td>
<td>Percent</td>
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<tr>
<td>RNA</td>
<td>Ribonucleic acid</td>
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