RUBELLA (German measles)

RESPONSE PROTOCOL FOR NSW PUBLIC HEALTH UNITS

Response summary

Public health priority
Routine.

PHU response time
Respond to probable and confirmed cases within 1 working day of notification for congenital rubella infection / syndrome.

Enter probable and confirmed cases on NCIMS within 5 working days.

Case management
Recommend exclusion from work, school, preschool, child care for ≥4 days from the onset of rash.

Contact management
Pregnant contacts should seek medical advice.

Revision History

Version	Date	Revised by	Changes	Approval
1.1	1/1/2016	CDWG	Case definitions for congenital rubella infection and congenital rubella syndrome	CDNA

1 Reason for surveillance

To monitor the epidemiology of the disease to inform the development of better prevention strategies.

2 Case definitions

Rubella (non-congenital)

A **confirmed rubella case** requires laboratory definitive evidence only.

Laboratory definitive evidence *
- Isolation of rubella virus, **or**
- Detection of rubella virus by NAT, **or**
- IgG seroconversion or a significant increase in antibody level or a fourfold, or greater rise in titre to rubella virus in the absence of recent rubella vaccination. The results must be established by the testing of paired sera in parallel, **or**
- Detection of rubella-specific IgM, in the absence of recent rubella vaccination.

* **Note** that in pregnant women, the result needs to be confirmed in a reference laboratory.

A **probable rubella case** requires:
- Clinical evidence, and
- Laboratory suggestive evidence (pregnant women only) OR epidemiological evidence.

Laboratory suggestive evidence (pregnant women only)

In a pregnant patient, detection of rubella specific IgM that has not been confirmed in a reference laboratory, in the absence of recent rubella vaccination.

Clinical evidence
- A generalised maculopapular rash, **and**
- Fever, **and**
- Arthralgia/arthritis, or lymphadenopathy, or conjunctivitis.

Epidemiological evidence

An epidemiological link is established when there is contact between two people involving a plausible mode of transmission at a time when:

- One of them is likely to be infectious (from about one week before to at least four days after appearance of rash), **and**
- The other has an illness which starts within 14 and 23 days after this contact, **and**
- At least one case in the chain of epidemiologically linked cases is laboratory confirmed.

Congenital Rubella Infection (CRI)

Congenital rubella infection (CRI) is reported based on relevant evidence from a live or stillborn infant, miscarriage or pregnancy termination. **Congenital rubella syndrome (CRS)** is reported as a subset of congenital rubella infection.

A **confirmed case (CRI)** requires:
- laboratory definitive evidence (fetal), **or**
- Laboratory definitive evidence (infant) **and** epidemiological evidence

Laboratory definitive evidence (fetal CRI)
- Isolation or detection of rubella virus from an appropriate clinical sample (i.e. fetal blood or tissue, amniotic fluid, chorionic villus sample) by culture or nucleic acid testing

Laboratory definitive evidence (infant CRI)
- Isolation or detection of rubella virus from an appropriate clinical sample in an infant, by culture or nucleic acid testing, **or**
- Detection of rubella-specific IgM antibody in the serum of the infant.

Epidemiological evidence (CRI)

The mother has confirmed rubella infection during pregnancy (see definition for Rubella – non-congenital).

A **probable case (CRI)** requires:
- Epidemiological evidence (1st trimester infection), **or**
- Epidemiological evidence (2nd and 3rd trimester infection) AND laboratory suggestive evidence (infant)

Laboratory suggestive evidence (infant)
- High / rising rubella-specific IgG level in first year of life

Congenital Rubella Syndrome (CRS)

A **confirmed case (CRS)** requires:
- Laboratory definitive evidence (fetal or infant CRI), as described above, **and**
- Clinical evidence.

Clinical evidence
- A live or stillborn infant with ANY of the following compatible defects: cataract, congenital glaucoma, congenital heart disease, hearing defect, microcephaly, pigmentary retinopathy, developmental delay, **or**
- purpura, hepatosplenomegaly, meningoencephalitis, radiolucent bone disease **or**
- other defect not better explained by an alternative diagnosis.

A **probable case (CRS)** requires:

- Laboratory suggestive evidence (infant) OR epidemiological evidence, as described above, **and**
- Clinical evidence (as for confirmed CRS case).

3 Notification criteria and procedure

Rubella is to be notified by:

- Laboratories on microbiological confirmation (ideal reporting by routine mail)
- School principals and directors of child care facilities (ideal reporting by telephone on same day of notification).

Probable and **confirmed cases** should be entered onto NCIMS.

4 The disease

Infectious agent

The rubella virus.

Mode of transmission

Rubella is transmitted by droplet infection and direct contact with nasopharyngeal secretions of infectious cases.

Timeline

- The typical incubation period is 14 to 17 days, up to 21 days.
- Rubella is communicable for about 7 days before and at least 4 days after rash onset.
- Infants with congenital rubella syndrome may shed the virus for months after birth.

Clinical presentation

The usual clinical presentation is a mild febrile illness with a diffuse punctate and maculopapular rash. The rash typically starts on the face, becoming generalised over 24 hours and lasts 3 days.

Children usually present with few or no constitutional symptoms, but adolescents and adults may have a 1 to 5 day prodrome of low-grade fever, headache, malaise, anorexia, mild coryza and conjunctivitis. Cervical lymphadenopathy (typically posterior auricular, posterior cervical, and suboccipital lymph nodes) is characteristic and precedes the rash by 5 to 10 days. Asymptomatic infection is common.

Adolescents and adults (especially females) can sometimes develop transient polyarthralgia of fingers, wrists and knees.

Encephalitis and thromobocytopenia are rare complications.

Infection in pregnancy can result in congenital rubella syndrome (see below), miscarriage or stillbirth. The risk of CRS is up to 90% if maternal infection occurs during the first 10 weeks of gestation. Defects are rare when maternal infection occurs after the 20th week of gestation.

Congenital rubella syndrome is characterised by:

- Ophthalmological: cataracts, pigmentary retinopathy, microphthalmos, and congenital glaucoma
- Auditory: sensorineural hearing impairment
- Neurological: behavioural disorders, meningoencephalitis, microcephaly and developmental delay.
- Cardiac: patent ductus arteriosus, pulmonary artery stenosis
- Other: growth retardation, interstitial pneumonitis, radiolucent bone disease, hepatosplenomegaly, thrombocytopenia.

5 Managing single notifications

Response time

Investigation

Within 1 working day of notification of a case of congenital rubella syndrome, begin follow-up investigation. Follow up other cases at the discretion of the PHU Director.

Data entry

Within 5 working days of notification enter probable and confirmed cases on NCIMS.

Response procedure

The response to a notification will normally be carried out in collaboration with the case's health carers. But regardless of who does the follow-up, PHU staff should ensure that action has been taken to:

- Confirm the onset date and symptoms of the illness
- Confirm results of relevant pathology tests, or recommend the tests be done

- Find out if the case or relevant care-giver has been told what the diagnosis is before beginning the interview
- Seek the doctor's permission to contact the case or relevant care-giver
- Review case management.
- For congenital rubella, determine whether the woman was offered appropriate antenatal screening for rubella.
- Determine the case's immunisation history and in particular whether there is any evidence of immunisation with MMR vaccine.
- Determine if the case has had any contact with pregnant women during their infectious period. Women most likely to be susceptible include those born overseas (especially Asia, Pacific Islands, sub-Saharan Africa, South America), non-English speaking women and older women who were not offered rubella vaccination routinely.

Case management

Investigation and treatment

Supportive only.

Education

The case or relevant care-giver should be informed about the nature of the infection and the mode of transmission. Emphasis should be placed on the importance of following the recommended immunisation schedule.

Isolation and restriction

Recommend exclusion from work, school, preschool, child care or other settings where there are susceptible individuals, especially young children, infants and pregnant women, for at least 4 days from the onset of rash.

Only people who are immune to rubella should have contact with an infant with congenital rubella syndrome. These children should be presumed infectious at least through to 1 year of age unless nasopharyngeal and urine cultures are negative for rubella virus after 3 months of age.

Environmental evaluation

None.

Contact Management

Identification of contacts

Direct contact with respiratory secretions from the case is generally considered significant. Contacts include people living in the same household, or who are in the same class, at the same social function, or work in the same area as the case.

Investigation and treatment

Passive Immunisation

Immunoglobulin given after exposure to an infectious case is not effective in preventing rubella infection.

Active Immunisation

MMR should be offered to susceptible contacts if they have no contraindications to vaccination. While MMR will not avert disease in those already infected and incubating infection, it may be effective in preventing subsequent infection if there is likely to be ongoing exposure.

All pregnant women with exposure to an infectious case should be offered urgent serological testing, irrespective of their history of previous vaccination, or history of past clinical infection or a positive rubella antibody result. Refer to Australian Immunisation Handbook for additional details.

Antibiotic Prophylaxis

None.

Education

Susceptible contacts (or parents/guardians) can be alerted to the risk of infection through distribution of a factsheet through the school or workplace and they should watch for signs or symptoms of rubella occurring within 21 days of exposure. They should not have contact with pregnant women during this period.

Pregnant contacts should seek medical advice from their clinician for assessment of immunity and further counselling.

Exposed health care workers without adequate proof of immunity should be excluded from work for 21 days after exposure to an infectious case.