

Rubella (German measles) and Congenital Rubella Syndrome

CDNA National Guidelines for Public Health Units

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1. Summary

Public health priority

High.

Respond to a suspected, probable and confirmed case of rubella immediately on notification, and commence identification of contacts within one working day.

Data entry should be completed within three working days.

Case management

Laboratory confirmation should be sought in all suspected cases of rubella. Appropriate specimens for genotyping should be collected from at least one case in each chain of rubella transmission and all sporadic cases where possible. Laboratory confirmation should also be sought in all suspected cases of congenital rubella syndrome (CRS).

Cases of rubella, including suspected cases, should be excluded from work, early childhood services or school until fully recovered and for 7 days after the appearance of the rash (1-3). Cases should stay home (unless isolated in hospital), and should also avoid contact with susceptible persons, especially children <1 year old, non-immune pregnant people, and immunocompromised persons. Suspected cases that are 'discarded' i.e. do not meet criteria for a probable or confirmed case of rubella, no longer require isolation.

Infants with CRS should be excluded from childcare and avoid contact with pregnant people, other infants and immunocompromised people for the first 12 months of life, unless urine and pharyngeal specimens are negative for rubella virus either by culture or by Nucleic Acid Tests (NAT) after three months of age.

Contact management

- Identify people who share a household with the case, people who are in the same class at school or in the same room at childcare as the case, and people who work or have social contact with the case.
- Advise contacts check their rubella immune status and recommend vaccine for all nonimmune nonpregnant contacts. In settings with a large number of contacts e.g. schools, a letter sent to contacts is adequate.
- Identify all pregnant people who might have been exposed to the case, and refer to their obstetrician / clinician for immediate serological testing and counselling about the risk of intrauterine infection and the risks and benefits of passive immunisation if indicated. Follow up to document pregnancy outcome if possible.

2. The disease

Infectious agent

Rubella virus is an enveloped, positive-stranded RNA virus classified as a *Rubivirus* in the *Togaviridae* family (5).

Reservoir

Humans are the only natural reservoir for rubella (6).

Mode of transmission

Rubella is transmitted primarily through direct or droplet contact from nasopharyngeal secretions of infectious cases (7).

A pregnant person can spread the infection to her unborn baby.

Infants with CRS may shed the virus in their pharyngeal secretions and urine for up to one year after birth and should be considered infectious during this period (7) unless urine and pharyngeal specimens are negative for rubella virus either by culture or by Nucleic Acid Tests (NAT) after three months of age.

Incubation period

Ranges from 12-23 days (1, 2).

Infectious period

Rubella is highly communicable. The period of communicability¹ is approximately 7 days before and 7 days after the onset of rash. People with rubella are most infectious when the rash is erupting.

Infants with CRS shed virus in their pharyngeal secretions and urine for up to one year after birth and can therefore transmit the virus to susceptible people in close contact.

Clinical presentation and outcome

Clinical rubella is a mild febrile viral disease with a diffuse, punctate and maculopapular rash that occurs in 50-80% of rubella infected persons. Up to 50% of rubella virus infections are subclinical or asymptomatic. Many rubella infections are not recognized because the rash is usually indistinguishable from those due to measles, dengue, parvovirus B19, human herpesvirus 6, coxsackie virus, echovirus, adenovirus and scarlet fever. The rash is mostly

¹ Discrepancy exists as to the infectious period of rubella among different international guidelines. This guideline adopts the infectious period as published by the [World Health Organization](#) in 2024 ([Eliminating measles and rubella in the WHO European Region: integrated guidance for surveillance, outbreak response and verification of elimination](#)).

seen behind the ears and on the face and neck; it becomes generalised within 24 hours, and lasts a median of 3 days.

Children usually develop few or no constitutional symptoms, but adults may experience a 1 to 5-day prodrome of low-grade fever, headache, malaise, coryza, and mild conjunctivitis. Lymphadenopathy involving post-auricular and occipital glands is the most characteristic clinical feature and precedes the rash by 5-10 days.

Arthritis (any abnormality of a joint caused by inflammation) or arthralgia (pain in a joint caused by inflammation) may occur in up to 70% of adult women who contract rubella, but is rare in children and adult males. Fingers, knees and wrists are often affected. Joint symptoms tend to occur about the same time or shortly after appearance of the rash and may last for up to 1 month; chronic arthritis is rare.

Complications of rubella are rare and include encephalitis (1 in 6,000 cases) and haemorrhagic manifestations (1 in 3,000 cases). Rubella encephalitis occurs more frequently in adults than children, and mortality rates vary from 0 to 50%. Haemorrhagic manifestations occur more frequently in children and may be secondary to low platelets and vascular damage, with thrombocytopenic purpura being the most common manifestation (8, 9). Gastrointestinal, cerebral, or intracranial hemorrhage may occur. Effects may last from days to months, and most patients recover (8). Additional complications include orchitis, neuritis, and a rare late syndrome of progressive panencephalitis (10).

When a non-immune person acquires rubella infection, particularly within the first 12 weeks of pregnancy this can lead to serious and sometimes fatal complications in the fetus, called Congenital Rubella Syndrome (CRS) (11).

Congenital Rubella Syndrome (CRS) and Congenital Rubella Infection (CRI)

CRI encompasses all intrauterine rubella infection, and specific outcomes associated with it, including miscarriage, stillbirth, combinations of birth defects and asymptomatic infection (12).

CRS refers to variable birth defects resulting from embryonic / fetal rubella virus infection. It includes hearing impairment, congenital heart defects, cataracts / congenital glaucoma and pigmentary retinopathy (12).

CRS occurs in up to 90% of infants born to people who are infected with rubella in the first 10 weeks of pregnancy. Infection early in pregnancy conveys the greatest risk of intrauterine death, spontaneous abortion and congenital malformations of major organ systems. The risk of defects declines when infection occurs after the 12th week of pregnancy and defects are rare when infection occurs after the 20th week of pregnancy (13, 14).

Some manifestations of CRS are present at birth e.g. low birth weight, while others may only become apparent as the infant develops e.g. myopia. Common manifestations include: deafness, cataracts, microphthalmia, congenital glaucoma, microcephaly, meningoencephalitis, developmental delay, patent ductus arteriosus, atrial or ventricular septal defects, purpura, hepatosplenomegaly, jaundice, and radiolucent bone disease. Moderate and severe CRS is usually recognisable at birth. Mild CRS with only slight cardiac involvement or hearing impairment may not be detected for months or even years after

birth. Diabetes mellitus in late childhood has been observed 50 times more frequently in children with CRS than without it (15).

Other conditions which may develop later in life in children born with CRS include: overactive or underactive thyroid, and neurological conditions (loss of cognitive and motor functions).

Persons at increased risk of disease

People who have not received two doses of rubella containing vaccine (RCV) are at increased risk of rubella infection, particularly:

- travellers to or from areas where rubella remains endemic, or outbreaks are occurring
- people who work in healthcare settings such as hospitals.

While there are high levels of rubella immunity in the Australian population in general, Aboriginal and Torres Strait Islander people and people born overseas in countries with low coverage or no rubella-containing vaccination programs in childhood have been identified as having lower rubella immunity and therefore being at higher risk of infection in pregnancy (16).

Disease occurrence and public health significance

Rubella transmission, outbreaks and CRS cases continue to occur in some countries and areas in the Asia-Pacific region. As of 2016, all countries and areas in the Western Pacific and South East Asian Regions had introduced rubella-containing vaccine into their national immunisation programs. (17).

RCV was introduced in Australia in 1970, and progressive routine immunisation beginning with mass vaccination of schoolchildren and non-pregnant seronegative people commenced in 1971. A second dose of RCV has been recommended and funded since 1992. For more information refer to the [National Centre for Immunisation Research and Surveillance](#). Following the introduction of the funded second dose of RCV in the 1990's, notifications for rubella declined significantly, falling from 14 per 100,000 per year in 1996 to 1.2 per 100,000 per year in 2002. Since 2003 notification rates for rubella have remained below 1.0 per 100,000 population per year, indicating that endemic transmission of rubella has been interrupted in Australia for many years. In 2018 the WHO verified that Australia had achieved rubella elimination, defined as the absence of endemic transmission of rubella within a defined geographical area for ≥ 12 months, in the presence of a robust and sensitive surveillance system (18).

In 2019, the annual notification rate of rubella in Australia was 0.08 notifications per 100,000 population. During the COVID-19 pandemic, notifications decreased and the annual notification rate in Australia fell to a record low of 0.01 notifications per 100,000 population in 2020, remaining stable until 2023. Australia continues to sustain rubella elimination in 2023.

3. Routine prevention activities

Vaccination

Maintaining high rates of immunity in the population, through vaccination, is the most effective way to prevent rubella. Achieving and maintaining widespread, high level coverage with RCV limits the potential for rubella transmission, reduces the risk of rubella-related fatalities and complications, and contributes to Australia's efforts to maintain rubella elimination status under the WHO Global Strategy (20).

Rubella vaccination (given in the combined measles-mumps-rubella [MMR] or measles-mumps-rubella-varicella [MMRV] vaccine) is provided under the [National Immunisation Program](#) (NIP) for children at 12 and 18 months of age (21). It is also recommended that all Australians over the age of 18 months and born during or after 1966 should have two documented doses of rubella-containing vaccine. This is especially important for people of child bearing age. Pregnant people who are non-immune to rubella should be offered vaccination against rubella (MMR vaccine) post-partum.

See the current [Australian Immunisation Handbook](#) (4) for further details.

4. Surveillance objectives

- To identify cases and outbreaks of rubella to enable appropriate public health responses.
- To monitor the epidemiology of rubella and congenital rubella syndrome to inform public health initiatives.
- To monitor the elimination status of rubella and CRS in Australia in line with the WHO Global Measles and Rubella Strategic Plan (20).

5. Data management

- Probable and confirmed cases of rubella, CRI and CRS should be entered onto the notifiable diseases database within 3 working days following notification.
- Enter viral genotype (where determined) on notifiable diseases database within 3 working days of receipt of results.
- In order to verify elimination status, information on suspected cases subsequently shown not to have rubella (discarded cases) should be retained for national monitoring purposes, in accordance with jurisdictional protocols and data systems.
- As per NNDSS requirements, all cases of rubella should have place of acquisition recorded.

Reinfection

Reinfection with rubella, leading to CRS, has been reported after both a primary rubella infection and after successful immunisation (i.e. in pregnant people with detectable antibodies to rubella). Subsequent studies showed that reinfection was most likely in people whose antibody titers had declined to a low level since vaccination (22, 23). Reinfection should be recorded as a confirmed case for the purposes of surveillance.

6. Communications

Laboratory-confirmed and probable cases of rubella, CRS and CRI should be entered into jurisdictional notification databases usually within 3 working days and relayed to the NNDSS through routine processes.

Cases are counted in the jurisdiction of the case's usual residence. The established CDNA protocol for cross-border notification should be used when appropriate.

7. Case definition

The rubella case definition was last updated in May 2019. Please check the case definitions webpage on the Australian Department of Health's website ([Rubella – Surveillance case definition | Australian Government Department of Health and Aged Care](#)) for the latest version.

Rubella

Reporting

Both confirmed cases and probable cases should be notified.

Confirmed case

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

Laboratory definitive evidence

1. Isolation of rubella virus.

OR

2. Detection of rubella virus by nucleic acid testing.

OR

3. IgG seroconversion or a significant increase in antibody level, such as a fourfold or greater rise in titre to rubella virus EXCEPT if the case has received a rubella-containing vaccine eight days to eight weeks prior to convalescent specimen collection (NOTE: paired sera must be tested in parallel).

Probable case

A probable case requires:

Laboratory suggestive evidence AND clinical evidence.

OR

Clinical evidence AND epidemiological evidence. *

Laboratory suggestive evidence

- Detection of rubella-specific IgM antibody, EXCEPT
- If ruled out by more specific rubella IgM serology testing at a jurisdictional public health laboratory.

OR

- If the case has received a rubella-containing vaccine eight days to eight weeks before testing.

Clinical evidence

- A generalised maculopapular rash.

AND

- Fever

AND

- Arthralgia/arthritis OR lymphadenopathy OR conjunctivitis.

**Where rubella vaccine has been given in the 3 weeks prior to illness onset and wild-type virus is not detected, or unable to be detected, a case may be considered “Probable” only if the criteria for clinical and epidemiological evidence can also be met, suggesting wild-type infection. Vaccine-associated rubella illness (genotype 1A) is not notifiable but rather should be reported as an adverse event following immunisation.*

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 (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 (which may involve many cases) is laboratory confirmed.

Congenital Rubella Infection

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

Reporting

Both **confirmed cases** and **probable cases** should be notified.

Confirmed case

A confirmed case requires **laboratory definitive evidence (fetal)**.

OR

Laboratory definitive evidence (infant) AND epidemiological evidence.

Laboratory definitive evidence

Fetal

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.

Infant

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

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

Probable case

A probable case 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

Reporting

Both confirmed cases and probable cases should be reported.

Confirmed case

A confirmed case requires **laboratory definitive evidence (fetal or infant)**, 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, purpura, hepatosplenomegaly, meningoencephalitis, radiolucent bone disease or other defect not better explained by an alternative diagnosis.

Probable case

A probable case requires **laboratory suggestive evidence (infant)** OR **epidemiological evidence**, as described above.

AND **clinical evidence**

Clinical evidence

(as for confirmed CRS case).

8. Laboratory testing

Definitive laboratory evidence, preferably by nucleic acid testing where available, should be sought for all suspected rubella cases, as other fever and rash illnesses are common, particularly in young children, and are potentially due to other causes.

Immunoglobulin M (IgM) is produced early after vaccination, reaching a peak at one month, but may persist for longer at low levels. In acute infection, IgM usually becomes detectable shortly after the rash onset, peaks approximately 7 days after rash onset and remains detectable for 4-12 weeks.

Because rubella incidence in Australia is low, a high proportion of IgM-positive tests will likely be false positive. False-positive serum rubella IgM tests may occur due to the presence of rheumatoid factors (indicating rheumatologic disease) cross-reacting IgM, or infection with other viruses.

Testing repeat serum samples in parallel and detection of wild-type rubella virus by nucleic acid testing can be used to resolve uncertainties in the serologic evaluation of suspected cases. The best specimens for nucleic acid testing are throat or nasopharyngeal swab or urine. Blood can be used for nucleic acid testing but has not been validated.

Particular care should be taken when rubella IgM is detected in a pregnant person with no history of illness or contact with a rubella-like illness. Although this is not recommended, many pregnant people with no known exposure to rubella are tested for rubella IgM as part of their antenatal care. If rubella test results are IgM-positive for persons who have no or low risk of exposure to rubella, additional laboratory evaluation should be conducted. Laboratory evaluation is similar to that described in the IgM-positive section of [Appendix D](#) - Serologic evaluation of pregnant people exposed to rubella.

9. Case management

Response times

Within one working day of notification, begin follow-up investigation using the Rubella Investigation Form ([Appendix C](#)).

Response procedure

Case investigation

Follow up all notifications to determine if there is clinical suspicion of rubella and/or known exposure to rubella. Further public health action is only required if one or both of these conditions is met.

In instances of clinical suspicion or known exposure, the response to a notification will normally be carried out in collaboration with the treating doctor. Public Health Unit (PHU) staff should ensure that action has been taken to ([Appendix B](#)):

- confirm the onset date and symptoms of the illness
- confirm results of relevant pathology tests, and/or recommend that tests be done
- find out if the case or relevant care-giver has been made aware of the results / the diagnosis and seek the doctor's permission to contact the case or relevant care-giver (where possible) before beginning the interview. Although this may not always be practicable it is included as a courtesy to the treating doctor
- interview the case or relevant care-giver and obtain history (including: possible exposures e.g. recent travel; vaccination status with respect to rubella; and identify contacts)
- review case and contact management ensuring relevant exclusions have been made

Pregnant cases

If the patient is pregnant, obtain information regarding number of weeks of gestation at onset of illness. Refer the case promptly to their obstetrician/clinician for counselling regarding the risks of intrauterine rubella infection and appropriate follow-up. Follow up with the referring clinician for pregnancy outcome is recommended.

Case treatment

There is no specific treatment for rubella or CRS/CRI.

Education

The case should be provided with the Rubella Factsheet ([Appendix A](#)) which contains information about the nature of the infection including the mode of transmission and the infectious period, with dates specific to the patient. If other vaccinations are incomplete, recommend catch up once recovered (or if pregnant, once delivered).

Isolation and restriction

Exclude rubella cases from school/childcare/work until 7 days after onset of rash or until fully recovered, whichever is longer. Cases should avoid contact with people of childbearing age and pregnant people.

Hospitalised patients with suspected or proven rubella should be managed with contact and droplet precautions until 7 days after onset of rash or until fully recovered, whichever is longer. Contact isolation precautions should be applied to infants less than 12 months of age with CRS unless urine and pharyngeal cultures are negative for rubella virus.

Infants with CRS should be excluded from childcare and avoid contact with pregnant people for the first 12 months of life unless urine and pharyngeal specimens are negative for rubella virus either by culture or by nucleic acid testing after three months of age.

Active case finding

Active case finding is usually not necessary for rubella. It may be undertaken in the event of an outbreak in a defined population.

10. Environmental evaluation

None routinely required.

11. Contact management

Identification of contacts

Prioritise contact follow up based on the probability of transmission. First priority should be people who share a household with the case, people who attend the same class at school or childcare as the case and people who are work or social contacts of the case. Particular effort should be made to identify all pregnant people who might have been exposed and ensure they are reviewed by their clinician for assessment of immunity and consideration of the need for normal human immunoglobulin.

Contact definition

Anyone who is likely to have been exposed to the nose or throat secretions of a person with rubella during their infectious period (7 days before to 7 days after rash onset) is a contact. Although rubella transmission is usually associated with repeated exposure, transmission has been documented after a single exposure. Any contact who does not have adequate proof of immunity is a susceptible contact.

Adequate proof of immunity to rubella includes:

- Persons born in Australia before 1966 (unless serological evidence is already available and indicates they are non-immune)
- Persons born in Australia during or since 1966 who have documented evidence (including GP confirmation, AIR or personal record) of receiving 2 doses of a rubella-containing vaccine, with both doses given at ≥ 12 months of age and at least 4 weeks apart
- Persons born outside Australia who have documented evidence of receiving 2 doses of a rubella-containing vaccine given at least 4 weeks apart
- Documented evidence of immunity (i.e. a rubella-specific IgG greater than or equal to 10 IU/mL)

Pregnant people and people who are planning a pregnancy should be serologically tested (rubella-specific IgG) to establish immune status.

Follow up of pregnant contacts

Refer pregnant contacts to their clinicians for serologic evaluation of rubella-specific IgM and IgG antibodies ([Appendix D](#)) and counselling regarding the risks for intrauterine rubella infection and consideration of passive immunisation (See Section 11- Contact Management: [Prophylaxis](#)). If the pregnant person has an IgG antibody titre below the protective level, or is IgG negative, does not receive NHIG and remains asymptomatic, a second blood specimen should be collected 28 days after the exposure and tested in parallel with the first to detect subclinical infection. If the pregnant person has an IgG antibody titre below the protective level, or is IgG negative, receives NHIG and remains asymptomatic, blood should be drawn for rubella IgM once every two weeks for two months after last contact with the case to establish whether delayed or subclinical infection occurs. If the pregnant person develops symptoms, specimens (such as a throat swab) for rubella NAT and blood for rubella and

other viral serology should be collected and tested as soon as possible to confirm diagnosis of rubella and exclude other relevant viral illnesses.

Surveillance for rubella and CRS should be increased (for example, by alerting local clinicians) when confirmed or probable rubella cases are documented in a setting where pregnant people might have been exposed.

Prophylaxis

Non-pregnant contacts

All susceptible non-pregnant contacts aged 12 months and older should be offered a first (and, if indicated, subsequent) dose of RCV, provided there are no contraindications to vaccination as soon as is practical. This will not prevent disease if the contact is already infected but will provide protection against future exposures. In settings with a large number of contacts e.g. schools, a letter sent to contacts is adequate. People who are planning a pregnancy should be advised not to become pregnant for 28 days after receiving the vaccine (4).

Pregnant contacts

MMR (and MMRV) vaccine is contra-indicated during pregnancy.

Post-exposure passive immunisation:

Passive immunisation using NHIG (0.5mL up to 160kg; and 1mL 160kg+) is recommended for non-immune pregnant people whose first exposure to rubella was within the last 5 days (24). Consideration may be given to administering NHIG beyond 5 days after first exposure if further exposures are anticipated (for example in an outbreak setting or in the setting of a confirmed case among an unvaccinated household).

Serological follow up of recipients of NHIG is essential. IgM should be done, by a reference laboratory, once every two weeks for two months after last contact with the case to establish whether delayed or subclinical infection occurs. Note that IgG will be transiently positive after the receipt of NHIG.

Rationale: Post-exposure prophylaxis with normal human immunoglobulin (NHIG) was concluded to be efficacious in preventing rubella among susceptible adults and/or children up to 5 days after exposure in a recent Cochrane review (25). However, there was insufficient evidence to make direct conclusions about the efficacy of this intervention in pregnant people for the prevention of CRS.

In the 1960s there were numerous failures of gamma-globulin to prevent congenital foetal abnormality in actual practice. In one study of CRS patients, up to 6% of birthing parents gave histories of receipt of gamma-globulin after exposure to rubella. The timing and dose of rubella-antibodies received is however unknown.

Studies examining the concentration of rubella antibodies in Australian NHIG (26) and then modelling the volume required to reach and maintain the correlate of protection for an incubation period suggest that 0.5mL of NHIG should be efficacious for preventing rubella in a woman up to 160kg in weight (24). Above this weight, it was suggested 1mL be used.

While there is uncertainty about the ability of passive immunisation to prevent CRS, the intervention has a very low risk of adverse events and so the benefit: risk ratio is favourable in the absence of contraindication to normal human immunoglobulin (NHIG).

Administration of NHIG

NHIG is available from the Red Cross Blood Bank. The PHU is responsible for notifying the obstetrician/treating clinician on the process for accessing NHIG for their patient if required. (See the following webpage for order form and contact details for CSL: [Normal human immunoglobulin \(NHlg\) | National Blood Authority](#) last updated 27 March 2024).

NHIG should be given by deep intramuscular injection, using an appropriately sized needle. The NHIG should be introduced slowly into the muscle, to reduce pain. This product must not be administered intravenously because of possible severe adverse events, and hence an attempt to draw back on the syringe after IM insertion of the needle should be made to ensure that the needle is not in a small vessel.

Education

Non-pregnant contacts

Advise susceptible contacts (or parents/guardians) of the risk of infection and counsel them to watch for signs or symptoms from 14 to 23 days after the first contact with an infectious case. They should avoid further contact with the case until at least 7 days after the onset of the case's rash.

Pregnant contacts

Susceptible pregnant contacts should be referred to their obstetrician / clinician for counselling regarding the risks for intrauterine rubella infection and consideration of passive immunisation (See Section 11- Contact Management: [Prophylaxis](#)). They should avoid further contact with the case for at least 7 days after the onset of the case's rash. In the instance of an outbreak among a defined population, non-immune pregnant people should avoid the outbreak setting until 46 days (two incubation periods) after the onset of symptoms of rubella in the last case.

Isolation and restriction

Asymptomatic contacts (with the exception of health care workers) are not excluded.

Susceptible contacts should avoid contact with pregnant people for 23 days post exposure to an infectious case.

Any exposed health care worker who does not have adequate evidence of immunity should be excluded from duty beginning 5 days after exposure to rubella and continuing until either

a) 23 days after last exposure

OR

b) 7 days after the onset of rash if rubella is confirmed or probable or until fully recovered, whichever is longer.

12. Special situations

Management of Outbreaks

- Identify potentially susceptible groups and high-risk settings to promote awareness and vaccination.
- Alert GPs, Emergency Departments early childhood education and care facilities and any other relevant settings to enhance surveillance and case reporting.
- Exclude non-immune pregnant people or where possible all pregnant people in the first trimester from workplaces or other settings with identified transmission.
- Alert hospital infection control practitioners so they can implement the recommendations in health care settings e.g. antenatal clinics.

Cases among travellers on aeroplanes

In the absence of any existing evidence in the literature that rubella has been transmitted during plane travel, follow up of passengers on a plane where an infectious rubella case has been identified is not routinely recommended.

If the timing of notification has occurred such that it is practicable that any potentially non-immune pregnant contacts on a plane may be able to access passive immunisation prior to the completion of 7 days since exposure, follow up of contacts in the adjacent seats and the row in front may be undertaken. Ascertain if they are pregnant or may be pregnant and if so, proceed with contact management for pregnant people ([Section 11](#) - Contact Management).

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Appendix A: Rubella fact sheet

What is rubella?

- Rubella (or German measles) is an infectious viral disease of humans.
- It is usually a mild illness in most people but an infection in early pregnancy can cause a miscarriage or serious birth defects in the developing baby (congenital rubella syndrome or CRS).

What is congenital rubella syndrome (CRS)?

- CRS occurs in up to 90% of babies born to people who are infected with the rubella virus during the first 10 weeks of their pregnancy.
- Babies who have CRS may suffer from birth defects including heart defects, deafness, brain damage, and eye problems including cataracts.

What are the symptoms?

- The symptoms of rubella may include a mild fever, rash (usually lasting 3 days or less), runny nose, conjunctivitis and often swollen lymph glands, especially behind the ears and at the back of the neck. Aching joints are also common, especially in women.
- In rare cases, rubella infection can be complicated by lowering of the platelet count (thrombocytopenia) which can cause bleeding, or by encephalitis (inflammation of the brain).

How soon do symptoms appear?

Symptoms appear within 14 to 23 days (usually 16-17 days) after someone has been exposed to an infected person. Rubella can be a mild illness or have no symptoms.

How is it spread?

- Rubella is spread from an infected person by airborne droplets from the nose or mouth or by direct contact with infected nose and mouth secretions.
- A person with rubella can spread the infection to others from 7 days BEFORE to 5 days AFTER the rash first appears

How is it treated?

- There is no specific treatment for rubella. Most children and adults completely recover from rubella

Who is at risk?

- Anyone who is not immune (either from past infection or vaccination) is at risk of rubella
- It is very important for all people planning a pregnancy to know whether they are immune to rubella. People planning a pregnancy should have a blood test, which can be ordered by their local doctor, to check that they are protected against rubella.

How is it prevented?

The best protection against rubella is through vaccination.

- Every child should get the measles-mumps-rubella (MMR) vaccine at 12 months of age and the measles-mumps-rubella-varicella (MMRV) vaccine 18 months of age. These are provided under the National Immunisation Program
- People of childbearing age who haven't had rubella or rubella vaccine should get vaccinated with rubella vaccine at least a month before they become pregnant
- A RCV should not be given to pregnant people, and pregnancy should be avoided for one month following vaccination
- Pregnant people who haven't had rubella or rubella vaccine should get vaccinated with rubella vaccine following childbirth
- People born during or after 1966 who have not received two doses of RCV can get vaccinated through their local GP. People who are unsure if they have received two doses of a RCV in the past can safely be given another dose.
- To prevent spread to others, people with rubella should stay at home for at least 5 days after the onset of rash, and avoid contact with non-immune people

For further information please contact your local public health unit.

Appendix B: Rubella – Public Health Unit checklist

Contact the patient's doctor to:

- Obtain the patient's history
- Confirm the results of relevant pathology tests and/or advise tests be done
- Determine if others were exposed in the clinic

Contact the patient (or care giver) to:

- Identify the likely source of infection, including any overseas travel
- Review vaccination status, including dates of rubella vaccinations
- Confirm onset date and symptoms of illness
- Recommend exclusions and restrictions
- Identify contacts and obtain contact details
- Complete rubella investigation form
- Provide with rubella factsheet

Contact laboratory to:

- Obtain any outstanding results
- Refer lab specimens for genotyping

Confirm case:

- Assess information against case definition

Contact patient's contacts to:

- Assess risk of rubella (susceptibility, exposure history)
- Determine current symptoms
- Recommend intervention (vaccine, NHIG, or no intervention)
- Explain symptoms and restrictions
- Provide with Rubella factsheet

Other issues:

- Assess and arrange best method for delivering intervention to contacts as required
- Where defined groups of people have been exposed (eg childcare, workplace), contact the person in charge to explain the situation and make arrangement to provide letters and / or factsheets to exposed people

Enter case onto notifiable diseases database

Appendix C: Rubella Case Investigation Form

..... Public Health Unit Outbreak ID:

Completed by: Date entered into database :/...../.....

Telephone: Fax:

NOTIFICATION:

Date PHU notified:/...../..... Date initial response:/...../.....

Notifier: Organisation:

Telephone: Fax: Email:

Treating Dr:

Telephone: Fax: Email:

CASE DETAILS: UR No:

Name:

First name

Surname

Date of birth:/...../..... Age: Years Months Sex: ☐ Male ☐ Female

Name of parent/carer:

☐ Aboriginal ☐ Torres Strait Islander ☐ Aboriginal & Torres Strait Islander ☐ Non-Indigenous
☐ Unknown

English preferred language: ☐ Yes ☐ No - *specify* Ethnicity - *specify*

Country of birth.....

Permanent address:

Postcode:

Telephone: Mob: Email:

Occupation: Work telephone:

Temporary address (*if different from permanent address*) :

Postcode:

General Practitioner: Dr

Address: Postcode:

Telephone: Fax: Email:

CLINICAL DETAILS:

Onset first symptoms /...../..... ☐ Unknown Date of rash onset
...../...../.....

Site of onset of rash ☐ Head ☐ Trunk ☐ Extremities ☐ Unknown

Fever: ☐ Yes ☐ No ☐ Unknown Measured temperature °C

Headache: ☐ Yes ☐ No ☐ Unknown Conjunctivitis: ☐ Yes ☐ No ☐ Unknown

Coryza: ☐ Yes ☐ No ☐ Unknown Malaise: ☐ Yes ☐ No ☐ Unknown

Arthralgia: ☐ Yes ☐ No ☐ Unknown Lymphadenopathy: ☐ Yes ☐ No ☐ Unknown

Hospitalised: ☐ Yes ☐ No ☐ Unknown Hospital: Date:/...../..... to/...../.....

Pregnant: ☐ Yes ☐ No ☐ Unknown Gestation week at time of test:

Pregnancy outcome: ☐ Livebirth at term ☐ Premature delivery ☐ Termination
☐ Stillbirth ☐ Unknown ☐ Not followed up

Complications: ☐ Encephalitis ☐ Thrombocytopenic purpura

Congenital rubella infection: ☐ Yes - NID: Comments:

Congenital rubella syndrome: ☐ Yes - NID: Comments:

☐ complications identified ☐ Other - *specify* ☐ Unknown

Outcome: ☐ Survived ☐ Died of condition ☐ Died - Date of death:/...../.....
☐ Unknown

LABORATORY: Laboratory: First collection date:/...../.....

Rubella PCR positive: Urine / Throat Swab / NP swab / Blood: ☐ Yes ☐ No ☐ Not done
 Genotype:

Rubella Cultured positive: Urine / Throat Swab / NP swab / Blood: ☐ Yes ☐ No ☐ Not done

Rubella IgM positive: ☐ Yes ☐ No ☐ Not done

Rubella IgG seroconversion / fourfold / greater rise: ☐ Yes ☐ No ☐ Not done

RUBELLA VACCINATION DETAILS:

Dose	Date	Type
1/...../.....	
2/...../.....	

Vaccination status: ☐ Age-appropriate ☐ Incomplete ☐ Not vaccinated ☐ Unknown

Source of vaccination history: ☐ ACIR/VIVAS ☐ Health record ☐ Self reported ☐ Not applicable

EXPOSURE PERIOD:

Date:/...../..... to Date:/...../.....

(Onset of symptoms - 23 days)

(Onset of symptoms - 14 days)

Did case attend any of the following during their exposure period?

- ☐ Childcare - *specify* Telephone: Dates attended:
- ☐ Preschool/school - *specify* Telephone: Dates attended:
- ☐ Educational/residential facility - *specify* Telephone: Dates attended:
- ☐ Hosp/healthcare facility - *specify* Telephone: Dates attended:
- ☐ Other risk setting(s) - *specify*

Travel History (if relevant):

Was the case interstate or overseas in exposure period? ☐ Yes ☐ No ☐ Unknown

Date of travel:/...../..... to/...../..... Places visited:

During this time was there contact with confirmed/suspected case(s)? ☐ Yes ☐ No ☐ Unknown

Name / NID: Telephone: Contact type:

Name / NID: Telephone: Contact type:

PLACE ACQUIRED:

- ☐ Australian state/territory - *specify*.....
- ☐ Unknown ☐ Other country - *specify*

INFECTIOUS PERIOD:

Date:/...../..... to Date:/...../.....

(Onset of rash -7 days)

(Onset of rash +5 days)

Did case attend any of the following during their infectious period?

- ☐ Childcare - *specify* Telephone: Dates attended:
- ☐ Preschool/school - *specify* Telephone: Dates attended:
- ☐ Educational/residential facility - *specify* Telephone: Dates attended:
- ☐ Hosp/healthcare facility - *specify* Telephone: Dates attended:
- ☐ Other risk setting(s) - *specify*

Was the case excluded from childcare/school/other high-risk setting: ☐ Yes ☐ No ☐ Unknown

Dates:

NOTIFICATION DECISION: ☐ Confirmed - Rubella case ☐ Probable - Rubella case

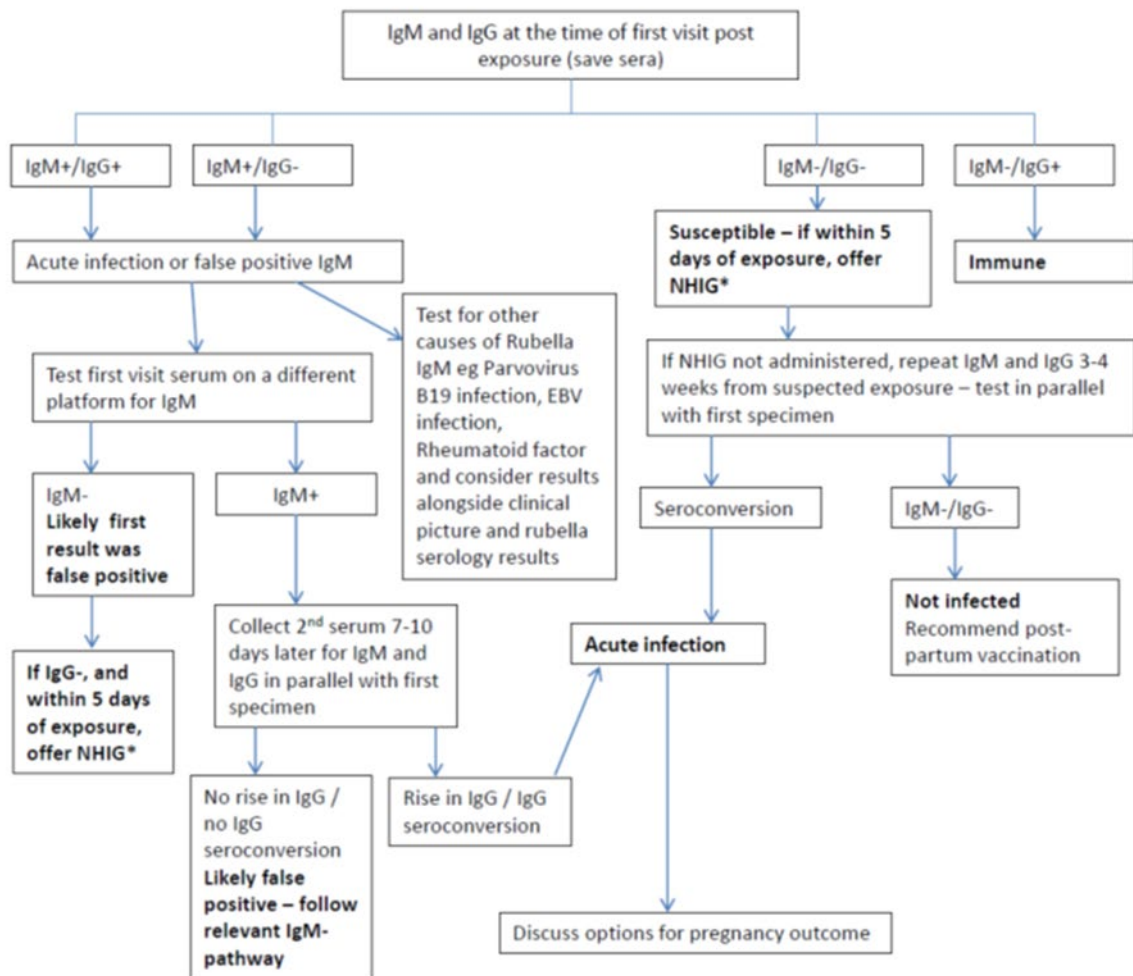
COMMENTS:

CONTACT DETAILS (PHU use only)

Name	Type of contact	Age/DOB	Telephone	Immune status	Intervention

COMMENTS:

Appendix D: Serologic evaluation of asymptomatic pregnant people exposed to rubella*



*To note: If a pregnant person receives NHIG, there is likely to be a transitory rise in rubella IgG. Assessment of serology results after receipt of NHIG should take this into consideration. After receipt of NHIG, it is recommended rubella IgM be measured, by a reference laboratory, once every two weeks for two months after last contact with the case to establish whether delayed or subclinical infection occurs.

