RUBELLA

Disease Overview

Rubella, also known as "German Measles", is caused by the Rubella virus. Rubella is a vaccine preventable disease.

Symptoms

For most people Rubella usually causes a mild illness. Rubella infection can present as transient maculopapular rash, post-auricular or suboccipital lymphadenopathy, arthralgia, and low-grade fever. Adults may also experience transient polyarthralgia and polyarthritis. Up to 50% of people are either without rash or subclinical.

Rubella is mainly a concern for pregnant women and their fetus. The greatest risk of fetal malformation occurs during the first trimester of pregnancy. Rubella can lead to a miscarriage, stillbirth, or fetal infection resulting in fetal malformations (i.e., Congenital Rubella Syndrome or CRS). Manifestations of CRS include one or more of the following: hearing impairment, cataracts, microphthalmia, congenital glaucoma, microcephaly, meningoencephalitis, developmental delays, heart defects, purpura, hepatosplenomegaly, jaundice, and bone abnormalities. Congenital infection can lead to diabetes mellitus and panencephalitis later in life.

Reservoir

Humans.

Mode of Transmission

Rubella can be spread through contact with nasopharyngeal secretions of infected individuals either by droplet exposure or direct contact. Congenital Rubella Syndrome (CRS) positive infants shed large amounts of the virus in their pharyngeal secretions and urine.

Incubation period

Incubation period for Rubella is generally 14 to 17 days with a range of 14 to 21 days.

Period Communicability

Approximately 1 week prior and at least 4 days after onset of rash. Infants with CRS may shed virus for months following birth.

Risk Factors

Those individuals who have not been previously infected or vaccinated. Pregnant women and their fetus are at highest risk for complications from Rubella infection.

Surveillance Case Definition

Confirmed case

Laboratory confirmation of infection in the absence of recent immunization with rubella containing vaccine:

- Isolation of rubella virus from an appropriate clinical specimen.

OR

- Detection of rubella virus RNA.

OR

- Seroconversion or a significant (e.g., fourfold, or greater) rise in rubella IgG titre by any standard serologic assay between acute and convalescent sera.

OR

- Positive serologic test for rubella IgM antibody using a recommended assay in a person with an epidemiologic link to a laboratory-confirmed case or who has recently travelled to an area of known rubella activity.

OR

Clinical illness (characterized by fever and rash, and at least one of the following: arthralgia/arthritis; lymphadenopathy; conjunctivitis) in a person with an epidemiologic link to a laboratory-confirmed case.

Probable Case

Clinical illness:

- In the absence of appropriate laboratory tests.

OR

- In the absence of an epidemiologic link to a laboratory-confirmed case.

OR

- In a person who has recently travelled to an area of known rubella activity.

Diagnosis and Laboratory Guidelines

IgM serology has the potential for false-positive findings. If the clinical presentation is inconsistent with a diagnosis of rubella or in the absence of recent travel/exposure history, IgM results must be confirmed by the other listed confirmatory methods. Rubella avidity serology is recommended for IgM positive results in pregnant women.

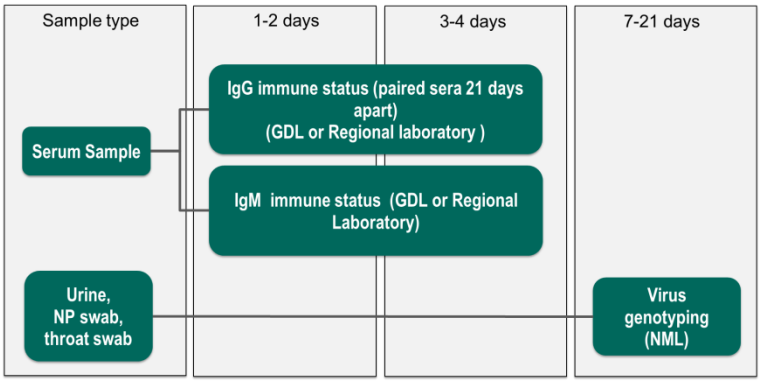
Most acute rubella cases develop IgM after 5 days post rash onset. Therefore, a suspected rubella case in which serum collected < 5 days after rash onset initially tests IgM negative should have a second serum collected > 5 days after onset for retesting for IgM.

IgG serology level may vary depending on patient history or vaccination status. Recent infection is confirmed if a significant rise in antibody levels is observed between acute and convalescent sera.

Further strain characterization like virus genotyping is indicated for epidemiologic, public health and control purposes.

In New Brunswick, Rubella IgG status and IgM status tests are offered in some regional laboratories and at the Dr. Georges-L.-Dumont University Hospital Centre microbiology laboratory. Virus genotyping is done at the National Microbiology Laboratory in Winnipeg.

Figure 1: Timeline for receipt of results for Rubella laboratory tests in New Brunswick.



Reporting

Per Policy 2.2 Disease and Event Notification to OCMOH and Disease and Event Reporting section.

- Routine Surveillance (RDSS) for all confirmed cases.

Case Management

Education

Educate cases on the following:

- Disease, symptoms, and transmission.
- Importance of isolating from others especially pregnant women.

Investigation

- Investigation should begin immediately.
- Confirm the diagnosis and obtain appropriate information to contact the case.

Exclusion/Social Distancing:

- Exclude children from daycare/school and adults from work for 7 days after onset of rash if there are susceptible or high risk (i.e., pregnant) individuals within the setting.
- Children with congenital rubella should be considered contagious until they are at least one year old, unless nasopharyngeal and urine cultures are repeatedly negative for rubella virus. Mothers of these infants should be made aware of the potential hazard of their infants to susceptible pregnant contacts.

Treatment

- Refer pregnant women to a physician.
- There is no specific treatment for rubella infection.

Immunization

Natural infection usually provides life-long immunity; therefore, there is no need to vaccinate individuals who have diagnosed disease.

Contact Management

Rubella control is focused on preventing defects in children born from women who acquire the disease during early pregnancy.

Education

Provide information on:

- Signs and symptoms of the disease.
- Modes of transmission.
- The importance of immunization.

Investigation

- Identify all individuals who have had direct contact with the case during the period of communicability (from 7days before to 7 days following onset of rash).
- Conduct contact tracing to identify those:
    - Non-immune pregnant women.
    - Unimmunized susceptible individuals.

Identify and prioritize pregnant female contacts, particularly those in the first trimester. These contacts need to be tested serologically for susceptibility or early infection and advised accordingly.

Exclusion/Social Distancing

Contacts should be excluded from activities (e.g., work or school) that present the possibility of exposing susceptible pregnant women.

Prophylaxis

Immunoprophylaxis

Vaccinate all susceptible contacts, unless contraindicated. (Immunization of susceptible contacts within 3 days of exposure, although not proven to prevent infection or illness, theoretically may provide protection). Since rubella vaccine is a live virus vaccine, it is contraindicated for certain groups such as pregnant women and immunocompromised.

Outbreak Management

Activate the local outbreak plan when an outbreak is declared.