MARCH 2024

RUBELLA QUICKSHEET

Kentucky Public Health
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SYMPTOMS

- Children usually develop few or no symptoms, but adults may experience a 1 to 5 day prodrome of low-grade fever, headache, malaise, mild coryza, and conjunctivitis.
- 50%–80% of infected persons develop a maculo-papular rash (fainter than a measles rash) that starts on the face and progresses from head to feet, becomes generalized in 24 hours and lasts a median of 3 days.
- Lymphadenopathy is characteristic and precedes the rash by 5–8 days.
- Arthralgia or arthritis may occur in up to 70% of adult women, rarely in children or males.

COMPLICATIONS

- Encephalitis 1 in 6000 cases
- Hemorrhagic manifestations (e.g., thrombocytopenic purpura) 1 in 3000 cases
- Other rare complications
  - granulomas
  - orchitis
  - neuritis
  - progressive panencephalitis

ETIOLOGIC AGENT

Rubella virus from genus Rubivirus

TRANSMISSION

Person-to-person via droplets

COMMUNICABILITY

7 days before to 7 days after rash onset

INCUBATION

14 days (range, 12 to 23 days)

DIFFERENTIAL

Rubella rash may be confused or mistaken to be parvovirus B19 (Fifth's disease) because the rashes are similar in appearance.

TREATMENT

Supportive

No postexposure prophylaxis available

RUBELLA VACCINES

MMR (MMR-II)

MMRV (ProQuad)

KENTUCKY RUBELLA OCCURRENCE

MMWR Year	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022
Confirmed Case Count	0	0	0	0	0	0	0	1	0	0	0	0

KENTUCKY DEPARTMENT OF PUBLIC HEALTH
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CASE CLASSIFICATION

SUSPECTED CASE

Any generalized rash illness of acute onset that does not meet the criteria for probable or confirmed rubella or any other illness.

PROBABLE CASE

- In the absence of a more likely diagnosis, an illness characterized by all of the following:
- Acute onset of generalized maculopapular rash; **AND**
- Temperature greater than 99.0° F or 37.2° C, if measured; **AND**
- Arthralgia, arthritis, lymphadenopathy, or conjunctivitis; **AND**
- Lack of epidemiologic linkage to a laboratory-confirmed case of rubella; **AND**
- Noncontributory or no serologic or virologic testing.

‡Rubella IgG levels can wane over time resulting in falsely negative rubella IgG laboratory results. Evidence suggests that persons with 1 documented dose of MMR are likely protected against rubella infection regardless of serologic testing results.

CONFIRMED CASE

A case with or without symptoms who has laboratory evidence of rubella infection confirmed by one or more of the following laboratory tests:

- Isolation of rubella virus; **OR**
- Detection of rubella-virus specific nucleic acid by polymerase chain reaction; **OR**
- IgG seroconversion† or a significant rise between acute- and convalescent-phase titers in serum rubella IgG antibody level by any standard serologic assay; **OR**
- Positive serologic test for rubella IgM antibody†*

OR

An illness characterized by all of the following:

- Acute onset of generalized maculopapular rash; **AND**
- Temperature greater than 99.0°F or 37.2°C; **AND**
- Arthralgia, arthritis, lymphadenopathy, or conjunctivitis; **AND**
- Epidemiologic linkage to a laboratory-confirmed case of rubella.

† Not explained by MMR vaccination during the previous 6-45 days.

*Not otherwise ruled out by more specific testing in a public health laboratory.

Because rubella has been eliminated in the United States, consider 1 case a potential outbreak.

EPIDEMIOLOGICAL EVIDENCE

At least ONE of the following:

- Contact of a confirmed rubella case.
- Belonging to a defined risk group during an outbreak.
- Residence in a geographic area of the US where an outbreak of rubella is occurring.
- Travel during the 21 days before illness onset to a geographic area where an outbreak of rubella is occurring.

DEFINITION OF IMMUNITY

- Documentation of vaccination with at least one dose of MMR or other live rubella-containing vaccine administered on or after the first birthday;
- Serologic evidence of immunity‡ (rubella IgG positive);
- History of laboratory-confirmed rubella disease; **OR**
- Birth before 1957.§

Persons who have an “equivocal” serologic test result and no documented doses of MMR should be considered rubella-susceptible.

§Birth before 1957 provides only presumptive evidence of rubella immunity and does not guarantee that a person is immune to rubella. In premenopausal persons who can become pregnant, only a positive serologic test for rubella antibody or documentation of appropriate vaccination should be accepted as evidence of immunity. Healthcare personnel born before 1957 also should not be presumed to be immune. Healthcare facilities should consider recommending at least one dose of MMR vaccine to unvaccinated healthcare personnel born before 1957 who do not have laboratory evidence of rubella immunity.

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CASE INVESTIGATION

1. Confirm the clinical presentation of the patient.
2. Collect the following information:
    a. Demographic information
    b. Reporting source
    c. Clinical information
        i. Hospitalization
        ii. If female, pregnancy history
    d. Laboratory
    e. Vaccine information
        i. In settings with high immunization coverage, most mumps cases occur in fully vaccinated people
    f. Epidemiologic
        i. Transmission setting (e.g., infection acquired at home, healthcare setting, in daycare, school, or workplace)
        ii. Relationship to outbreak (Is case part of an outbreak or is it sporadic?)
        iii. Source of exposure
        iv. Travel history (countries, dates)

The Rubella Surveillance Worksheet can serve as a guide for data collection during investigation of reported cases.

SPECIMEN COLLECTION FOR LABORATORY TESTING

Test Name	Specimens to take	Timing for specimen collection	Transport requirements
Culture/PCR **Preferred specimen*	Nasopharyngeal swab/wash, throat swab, urine	ASAP (best within 3 days of rash onset and no later than 10 days post onset)	Viral transport media; ship frozen or on ice
IgM antibody	Serum	Collect at same time as other samples and repeat 96 hours after onset if first negative	Maintain at 4°C and ship on ice

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MANAGEMENT

PREGNANT PEOPLE

The primary goals of rubella case investigations are to prevent exposure of susceptible pregnant people to rubella (and thereby prevent congenital rubella cases), assess the immune status of exposed pregnant people, and identify rubella infections, particularly infections in pregnant people. Every effort should be made to identify all pregnant people who might have been exposed to a case and evaluate these contacts serologically for rubella-specific IgG antibodies if their immune status is not known, (e.g., no prior serologic testing for rubella during prenatal or healthcare worker testing). In addition, all women of childbearing age who are contacts to a suspected or confirmed case should be asked about the possibility of being pregnant. If an unvaccinated pregnant person is IgG-negative, precautions should be taken to prevent any type of exposure to persons infected with rubella; these precautions may include, restricting such pregnant persons from settings where rubella infection has been identified, and advising against travel to areas where rubella is circulating.

HEALTHCARE

- Exposed healthcare personnel without adequate evidence of immunity should be excluded from duty beginning 7 days after first exposure to rubella through either 23 days after last exposure or 7 days after rash appears
- Exposed healthcare personnel who are vaccinated as part of control measures for a rubella exposure should be excluded from direct patient care for 23 days after the last exposure to rubella because effectiveness of postexposure vaccination in preventing rubella infection has not been shown
- Birth before 1957 does not guarantee rubella immunity, if an exposure occurs in a healthcare setting, healthcare facilities should recommend one dose of MMR vaccine for unvaccinated personnel born before 1957 who lack laboratory evidence of rubella immunity or laboratory confirmation of infection or disease
- Exposed susceptible patients should be discharged <7 days after exposure, if possible. If they cannot be discharged, they should be isolated in Droplet Precautions for 23 days after last exposure to rubella

SCHOOL

- In schools and childcare settings, exclusion of persons without acceptable evidence of rubella immunity may limit disease transmission
- All persons who have been exempted from rubella vaccination for medical reasons or personal beliefs should also be excluded from attendance
- Exclusion should continue until 23 days after the onset of rash of the last reported case-patient in the setting
- Unvaccinated persons who receive MMR vaccine may be immediately readmitted to school provided all persons without documentation of immunity have been excluded