

# **Rubella (German Measles), Including Congenital Rubella Syndrome Investigation Guideline**

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# **Rubella (German Measles), Including Congenital Rubella Syndrome Disease Management and Investigative Guidelines**

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## **CASE DEFINITION, Rubella (CDC 2009)**

### **A. Clinical Description for Public Health Surveillance:**

- An illness that has all the following characteristics: an acute onset of generalized maculopapular rash, a temperature greater than 99.0°F (37.2°C), if measured and arthralgia/arthritis, lymphadenopathy, or conjunctivitis.

### **B. Laboratory Criteria for Case Classification:**

- Isolation of rubella virus from a clinical specimen, or
- Detection of rubella-virus-specific nucleic acid by polymerase chain reaction, or
- Significant rise in serum rubella immunoglobulin G antibody level between acute- and convalescent-phase specimens, by any standard serologic assay, or
- Positive serologic test for rubella immunoglobulin M (IgM) antibody.

### **C. Case Classification:**

- Confirmed: A case that is laboratory confirmed or that meets the clinical case definition and is epidemiologically linked to a laboratory-confirmed case.
- Probable: A case that meets the clinical case definition, has no or noncontributory serologic or virologic testing, and is not epidemiologically linked to a laboratory-confirmed case.
- Suspected: Any generalized rash illness of acute onset.

**Note:** Patients with laboratory evidence of recent measles infection are excluded.

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## **CASE DEFINITION, Rubella, Congenital Syndrome (CDC 1999)**

### **A. Clinical Description for Public Health Surveillance**

- An illness, usually manifesting in infancy, resulting from rubella infection in utero and characterized by signs or symptoms from the following:
  - a) Cataracts/congenital glaucoma, congenital heart disease (most commonly patent ductus arteriosus or peripheral pulmonary artery stenosis), hearing impairment, pigmentary retinopathy.
  - b) Purpura, hepatosplenomegaly, jaundice, microcephaly, developmental delay, meningoencephalitis, radiolucent bone disease.

### **B. Laboratory Criteria for Case Classification:**

- Isolation of rubella virus, or
- Demonstration of rubella-specific immunoglobulin M (IgM) antibody, or
- Infant rubella antibody level that persists at a higher level and for a longer period than expected from passive transfer of maternal antibody (i.e., rubella titer does not drop at the expected rate of a twofold dilution / month).
- PCR positive rubella virus.

### C. Case Classification:

- Confirmed: A clinically consistent case that is laboratory confirmed.
- Probable: A case that is not laboratory confirmed and that has any two complications listed in paragraph “a” of the clinical case definition or one complication from paragraph “a” and one from paragraph “b”, and lacks evidence of any other etiology.
- Suspected: A case with some compatible clinical findings but not meeting the criteria for a probable case.
- Unknown: A case with laboratory evidence of infection but without any clinical symptoms; considered only an “infection-only” case.

**Note:** In probable cases, either or both of the eye-related findings (cataracts and congenital glaucoma) count as a single complication.

In unknown (infection-only) cases, if any compatible signs or symptoms (e.g. hearing loss) are defined later, the case is reclassified as confirmed.

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### D. Laboratory Testing:

- Collection: For serology, KHEL Serology kit with yellow top blood tubes or any other red topped, clot separator blood tubes. For virus isolation, use Viral Transport Media (VTM) and sterile swabs for throat (nasopharyngeal) specimens or a sterile, screw top containers for urine or CSF.
- Specimen: Blood, 3-5 ml collected in clot separator tubes or the serum. Virus isolation (to allow for viral typing at the CDC) should be attempted on all sporadic cases and at least on some cases during an outbreak situation. Throat swabs are preferred to urine for virus isolation. Reserve collection of CSF specimens for encephalitis cases only.
- Timing of collection for serology:
  - Rubella, diagnostic: Acute within 7-10 days after onset of illness; convalescent should be collect 14-21 days (minimum 7 days) later.  
**Note:** IgM may not be detectable before day 5 after rash onset.
  - Rubella, congenital: Serum (**not** cord blood) collected from mother and infant within one week of birth. With positive or equivalent results, second serum collected from the baby at age 4 to 6 months.  
**Note:** IgM may not be detectable before 1 month of age and may persist until 6-12 months of age. IgM at >6 months of age may also indicate a postnatal infection that would require further evaluation.
- Timing of collection for cultures: Virus may be isolated from 1 week before to 2 weeks after rash onset. However, maximum viral shedding occurs up to day 4 after rash onset.
- False-positive rubella IgM tests have been reported in persons with other viral infections (e.g., measles, acute Epstein-Barr virus [infectious mono], recent cytomegalovirus infection, and parvovirus infection), or in the presence of rheumatoid factor. When a false-positive rubella IgM is suspected, consider the following to rule out a false-positive result:
  - Rheumatoid factor, parvovirus IgM, and heterophile testing.
  - Other confirmatory rubella testing (i.e., avidity tests or cultures)

- Specimens are not required to be sent to the Kansas Health and Environment Laboratory (KHEL); but they are equipped to test for rubella if requested.
- For additional information and/or questions call (785) 296-1620 or refer to online guidance at [http://www.kdheks.gov/labs/lab\\_ref\\_guide.htm](http://www.kdheks.gov/labs/lab_ref_guide.htm) or <http://www.cdc.gov/vaccines/pubs/surv-manual/appx/appendix15-rubella-508.pdf> .

**E. Bioterrorism Potential:** None.

**F. Outbreak Definition:**

- An outbreak is one or more case(s) of confirmed rubella in a community. The situation should be treated as a public health emergency with appropriate resources allocated until additional cases have been ruled out.

## **INVESTIGATOR RESPONSIBILITIES**

**A. Investigation Related Tasks and Activities:**

- 1) Confirm diagnosis with appropriate medical provider.
  - Before contacting the patient or family, first determine what information has been released about the patient’s diagnosis.
  - Obtain information that supports clinical findings in the case definition and information on the onset date of the symptoms.
  - Obtain information on any laboratory tests performed and results.
    - If laboratory tests have not been ordered to test for rubella immunoglobulin, coordinate testing to confirm the case.
    - Make a note of the laboratory (location and contact information) performing the test and the expected turn-around time for testing.
  - For hospitalization, obtain medical records, including admission notes, progress notes, lab report(s), and discharge summary.
- 2) Conduct case investigation to identify potential source of infection.
- 3) Conduct contact investigation to locate additional cases and/or contacts.
  - Determine if case is involved in a high-risk occupation or if another special situation is involved (i.e. contact with pregnant women).
  - Identify primary contacts within 24 hours so effective prophylactic measures can be taken.
- 4) Initiate control and prevention measures to prevent spread of disease.
  - Assure prophylactic measures were received by contact(s).
  - Ensure appropriate medical management has occurred for exposed pregnant women.
  - Identify and exclude susceptible (i.e., unimmunized children and staff) when rubella has been identified in a school or daycare facility.
  - Follow up with case(s) and contacts to assure compliance with work and/or school restrictions.
- 5) Report all confirmed, probable and suspect cases to the KDHE Office of Surveillance and Epidemiology at (1-877-427-7317) within 4 hours of the initial report.

**B. Notifications:**

- 1) Report all cases by telephone to the Local Health Officer, the local on-call epidemiologist and KDHE (1-877-427-7317) within 4 hours of initial report.
- 2) Alert physicians, hospital emergency rooms, student infirmaries, and local officials of the potential for additional cases; encourage them to consider rubella in persons with a rash illness. This includes making special arrangements for patient flow to minimize transmission between cases and susceptible contacts. Health care workers should be advised to immediately report any suspected case of rubella or congenital rubella syndrome.
- 3) As appropriate, use the notification letter(s) and the disease fact sheet to notify the case, contacts and other individuals or groups.

**EPIDEMIOLOGY**

Rubella occurs worldwide. In the United States cases peak in the late winter and early spring. Most cases occur in young, unvaccinated adults in college and occupational settings. Serologic surveys indicate that approximately 10% of the US-born population older than 5 may be susceptible to rubella. Most reported rubella cases in the US since the mid-1990s have occurred among young Hispanic adults who were born in areas where rubella vaccine is routinely not given. The risk of CRS is highest in infants of foreign-born women who are not immunized.

**DISEASE OVERVIEW****A. Agent:**

Rubella virus causes rubella.

**B. Clinical Description:**

Rubella is characterized as a mild febrile disease commonly associated with an erythematous maculopapular rash. Other common symptoms include: headache, malaise, mild coryza, and conjunctivitis. Transitory polyarthralgia and polyarthritis occasionally occur in children but is more common in adolescents and adults, especially females. Between 25-50% of all cases are subclinical or inapparent. It should be noted that rubeola (measles), scarlet fever, and other childhood rashes are part of a differential diagnosis.

The public health significance of rubella is not from acute disease but rather the damaging effects of an in utero infection. A fetus infected early in pregnancy has a high probability of developing congenital rubella syndrome (CRS), a syndrome characterized by: low birth weight, eye defects, deafness, cardiac and CNS defects, hepatitis, hepatomegaly, thrombocytopenic purpura, splenomegaly, and bone lesions.

**C. Reservoirs:**

Humans.

**D. Mode(s) of Transmission:**

Rubella is transmitted person-to-person by direct contact with infectious nasopharyngeal secretions and droplets. It may also be transmitted through urine and transplacentally from mother to fetus.

**E. Incubation Period:**

Range 14-21 days; average 14-17 days.

**F. Period of Communicability:**

The infectious period is usually from 7 days before to 7 days after rash onset. Cases are most contagious just before and for a few days after rash onset. Infants with CRS may shed the virus for several months.

**G. Susceptibility and Resistance:**

Universal susceptibility. Disease gives lifelong immunity. Current data suggest that a single dose of a rubella vaccine gives lifelong immunity.

**H. Treatment:** No specific treatment is available.

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## STANDARD CASE INVESTIGATION AND CONTROL METHODS

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**Rubella** standard investigation activities include the following:

- 1) Confirmation of diagnosis using case definition.
  - Clinical diagnosis of rubella is unreliable, cases must be laboratory confirmed, especially if they are not epi-linked to a lab confirmed case.
- 2) Collection of demographic data (birth date, county, sex, race/ethnicity)
  - Length of time in U.S.
- 3) Collection of clinical and vaccine status data:
  - Date of illness onset and duration of rash.
  - Symptoms, including fever, arthralgia, lymphadenopathy and conjunctivitis.
  - Complications: encephalitis, arthralgia or arthritis, or thrombocytopenia.
  - Hospitalizations and duration of stay.
  - Outcomes: survived or date of death:
  - If pregnant, pregnancy status
    - Number of weeks gestation at onset of illness
    - Prior evidence of immunity,
      - (1) Date and specific titer result of prior serum rubella IgG titer; and/or
      - (2) Diagnosis and date of previous rubella infection
    - Number and dates of previous pregnancies and location (e.g., state or country) of these pregnancies
    - Pregnancy outcome, when available (e.g., normal, termination, CRS)
  - Rubella vaccine: dates of vaccination and number of doses or why not vaccinated.
- 4) Determination of risk factors and transmission settings
- 5) Investigation of epi-links among cases (cluster, household, co-workers, etc).

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**Rubella Congenital Syndrome** investigation activities include the following:

- 1) Confirmation of diagnosis using case definition.
- 2) Collection of demographic data (birth date, county, sex, race/ethnicity)
  - Length of time mother has been in U.S.

- 3) Collection of clinical and vaccine status data:
    - Symptoms/syndromes: Cataracts, hearing impairment, developmental delay, type of congenital heart defect, purpura, radiolucent bone disease, hepatosplenomegaly, meningoencephalitis, and microrcephaly
    - Outcome: survived or date of death with postmortem exam results, death certificate diagnoses
    - Maternal history:
      - Rubella vaccine: dates of vaccination and number of doses or why not vaccinated
      - History of documentation of rubella infection during pregnancy
      - Histories of pregnancies within and outside US (including country, year)
  - 4) Determination of risk factors and transmission settings
- 

Standard investigation for both rubella and congenital rubella cases **includes** the completion of the General Investigation Form and Rubella Supplemental form. Further investigative activity should include:

**A. Case Investigation - Identify Potential Source of Infection:**

Focus within the incubation period of 3 weeks prior to symptom onset for:

- History of exposure(s), note association to:
  - Any rubella activity in community;
  - Colleges or universities, workplaces, and communities where unvaccinated persons congregate;
  - Contact with any visitors born outside the U.S.
- Travel history, with dates of exit from and reentry into Kansas.
  - Include travel history with dates of travel to other counties.
- Case finding and transmission setting:
  - Identify rash illnesses among household members and guests, neighbors, schoolmates, and other possible transmission setting(s).
  - Evaluate the immune status of household and other close contacts.

**B. Contact Investigation – Identify Exposed Individuals / Populations:**

Focus on those in contact with case from 7 days before to 7 days after rash onset.

- For each transmission setting, maintain a contact listing which notes the date evaluated and any symptoms, the immunization status and the potential risks of exposure, including type and period of contact.
  - All females of child-bearing age should be evaluated for pregnancy.
- Exposure is defined as direct contact to a case's secretions. (e.g., an explosive sneeze or cough in the face, sharing food, sharing eating utensils during a meal, kissing, changing urine soaked diapers or bedding, mouth-to-mouth resuscitation, or performing a full medical exam with the examination of the nose and throat). Sharing a confined space in close proximity to an infectious case for a prolonged period of time, such as >1 hour, may increase the risk for exposure to secretions.
- Susceptible contacts: Do not have laboratory evidence of immunity or a documented history of vaccination on or after their first birthday.

- Consider the following contacts during a rubella investigation:
  - Household: Contacts who frequently slept or ate in same dwelling as case during infectious period.
  - Close: Social contacts who engaged in activities that potentially exposed them to the case's infectious secretions.
  - Daycare: All direct caregivers and classmates of a case.
  - School: All close personal contacts, educators and classmates of a case.
  - Pregnant women: All pregnant women, especially those in their 1st trimester. (See the Managing Special Situations section.)
- Follow-up symptomatic contacts as suspect cases.

### **C. Isolation, Work and Daycare Restrictions:**

- K.A.R 28-1-6 for Rubella:
  - Each infected person shall remain in respiratory isolation for seven days after the onset of rash.
  - Each susceptible contact of an infected person in a school, day care facility, or family day care home shall be vaccinated within 24 hours of notification to the secretary or excluded from the school, child care facility, or family day care home until 21 days after the onset of the last reported illness in the school, child care facility, or family day care home.
- Restrict individuals with confirmed, probable, or suspected rubella from attendance at school or daycare centers for 7 days following onset of rash.
- Hospital infection control precautions:
  - Postnatal rubella cases should be placed on droplet precautions and respiratory isolation for 7 days following onset of rash.
  - With children < 1 year of age, initiate contact isolation at first suspicion of CRS, unless 2 sets of nasopharyngeal and urine culture results after 3 months of age are consecutively negative for rubella virus.
  - Infection control precautions should be considered in children up to 3 years of age who are hospitalized for congenital cataract extraction.
- Postnatal rubella cases should be confined to home until 7 days after rash onset. Restrictions should be in place to prevent participation in any activities at schools, daycare and healthcare facilities or in any situation that could result in contact with susceptible pregnant females during the communicable period.

### **D. Case Management, Including Follow-up of cases:**

- Cases should be followed to determine compliance of control measures.

### **E. Contact Management, Including Protection of Contacts:**

- The value of immune globulin (IG) has not been established. IG prophylaxis is not indicated; except possibly for susceptible pregnant women where the termination of the pregnancy is not an option.
- Immunization may not prevent infection but is recommended to provide protection against subsequent exposures.
  - All people at risk of exposure who are consider susceptible should be vaccinated unless a contraindication exists to vaccination.

- Exclude susceptible individuals who are not vaccinated from potential exposures.
- Note any actions taken (i.e., vaccination or exclusion) on contact listing.
- Maintain active surveillance for 2 incubation periods (i.e., 46 days) after the last case's infectious period.
- Children with CRS are considered contagious until at least 1 year of age, unless nasopharyngeal and urine cultures are repeatedly negative for rubella virus.
  - Caregivers of these infants should be aware of the potential hazard the infants present to susceptible contacts, especially pregnant females.

**F. Environmental Measures:** None.

**G. Education:**

- Advise the case to avoid potentially susceptible women who are, or may be, pregnant, observed until 7 days after rash onset.

## **MANAGING SPECIAL SITUATIONS**

**A. Outbreak Investigation:**

- Notify KDHE immediately, 1-877-427-7317.
- Implement active surveillance:
  - Maintain for two incubation periods (46 days) following rash onset of the last case to identify any transmission from a subclinical case.
  - In settings where pregnant women may have been exposed, maintain CRS surveillance for one year following last reported case.
- Define at-risk population by who is being infected (age, gender and immunity); where are they being infected; and time period of outbreak.
- Implement control measures as soon as possible when at least one case of rubella is confirmed in a community.
  - In settings where pregnant women may be exposed, control measures should begin as soon as rubella is suspected, not just confirmed.
- Modify of control measures as the situation changes.

**B. School or Child Care Settings:**

- Coordinate activities with school nurse and/or administration.
- If a case is reported at a school, the health department will exclude from school any children on medical or personal religious exemptions.
- These children will be excluded until 21 days after the onset of the last reported illness in the school or child care setting; unless the child is immunized or shows proof of immunization within 24 hours of notification to the secretary.

**C. Medical Settings:**

- Minimize exposure of susceptible patients by placing potential cases under droplet precautions and planning patient flow to minimize transmission.
- Vaccinate or exclude susceptible adults during rubella outbreaks. Exclusion should continue until 3 weeks after the onset of rash of the last reported case-patient in the setting.

#### **D. Pregnancy and Rubella Infection:**

- The effects of rubella infection on the fetus depends on gestational age:
  - Infection during the 1st trimester results in congenital rubella syndrome in 20-25% of infants born. The actual risk may be considerably higher.
  - By the 16th week of gestation, the risk of congenital rubella syndrome decreases to between 10-20% of infants born.
  - Defects rarely occur following infection beyond 20 weeks of gestation.
- Refer patient to her OB/GYN or primary care provider for specific questions and/or medical options. Such contacts should be tested serologically for susceptibility or early infection (IgM antibody) and advised accordingly.
- Testing required when a pregnant woman is exposed to rubella:
  - A blood specimen should be obtained as soon as possible to test for rubella antibody (IgG and IgM) with an aliquot frozen for later testing.
  - Later testing of the frozen aliquot and the collection of second and third specimens will depend upon the IgM and IgG results obtained.
  - Only results that are positive for IgG and negative for IgM indicate immunity and do not require further testing.
  - IgM positive results may indicate recent or acute infection **or** a false-positive IgM. Follow-up testing is needed.
  - Refer to the “Algorithm for Serologic Evaluation of Pregnant Women Exposed to Rubella” under Additional Information and References on page 12 .
- The use of IG as postexposure prophylaxis of rubella-susceptible women exposed to confirmed rubella early in pregnancy:
  - IG is considered only when termination of the pregnancy is not an option for rubella-susceptible women exposed early in pregnancy.
  - Infants with congenital rubella can be born to mothers who were given IG shortly after exposure and did not exhibit clinical signs of infection.
  - Administration of IG eliminates the value of IgG antibody testing to detect maternal infection. Immunoglobulin M antibody should be used to detect maternal infection after receipt of IG.

## DATA MANAGEMENT AND REPORTING TO THE KDHE

- A. Organize, collect and report data with the “General Investigation Form(s)” and “Rubella Supplemental Form”.
- B. Report data electronically via KS-EDSS or by fax, include:
- At a minimum, data that was collected during the investigation that helps to confirm or classify a case. (For epi-linked cases, please include the KS-EDSS investigation ID of the related case.)
  - All information collected on the General Investigation and supplemental forms.

**Note:** Laboratory reports supporting Rubella infection in an infant  $\leq 12$  months of age are initially reported in the KS-EDSS as “Rubella, Congenital Syndrome” with the case classification “Unknown”. It is crucial that the local investigation determine what if any clinical syndromes or symptoms are present to allow the case to be classified as “Confirmed”.

For an “Unknown” Rubella, Congenital Syndrome case, it is possible that the local investigation may determine that symptoms are clinically consistent with postnatal rubella; such a case will be reclassified as “Rubella (German Measles)” with the case classification as “Confirmed”.

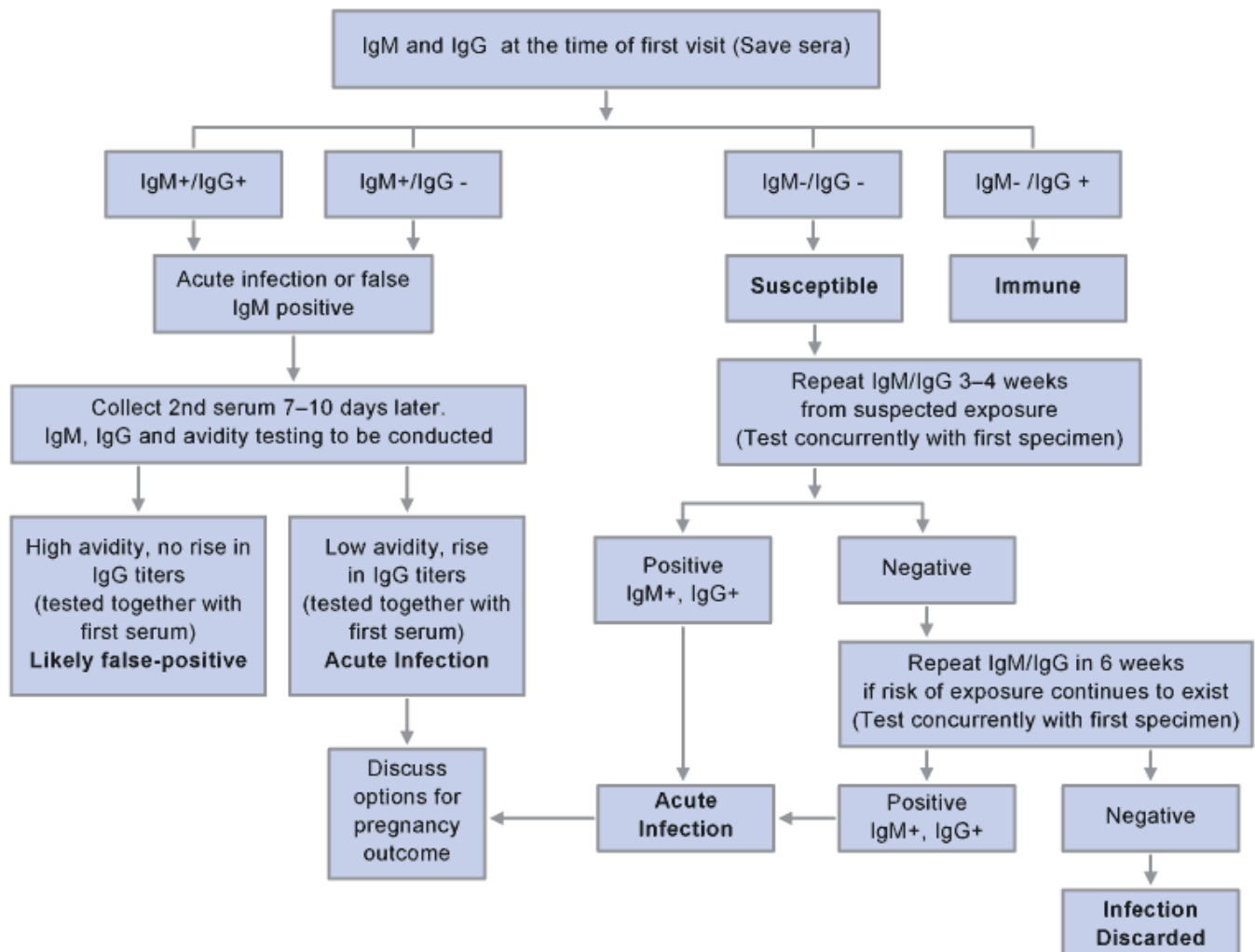
Laboratory reports supporting Rubella infection in a case  $> 12$  months of age that has never been reported to the state or local entities is initially reported in the KS-EDSS as “Rubella (German Measles)” with the case classified as “Not a Case”. The local investigators will be called up on to identify if any symptoms compatible with rubella are present allowing the case to be reclassified as “Confirmed”.

## ADDITIONAL INFORMATION / REFERENCES

- A. **Treatment / Differential Diagnosis:** American Academy of Pediatrics. 2006 Red Book: Report of the Committee on Infectious Disease, 27th Edition. Illinois, Academy of Pediatrics, 2006.
- B. **Epidemiology, Investigation and Control:** Heymann. D., ed., Control of Communicable Diseases Manual, 18th Edition. Washington, DC, American Public Health Association, 2004.
- C. **Case Definitions:** CDC Division of Public Health Surveillance and Informatics, Available at: [http://www.cdc.gov/ncphi/diss/nndss/casedef/case\\_definitions.htm](http://www.cdc.gov/ncphi/diss/nndss/casedef/case_definitions.htm)
- D. **Quarantine and Isolation:** Kansas Community Containment Isolation/ Quarantine Toolbox Section III, Guidelines and Sample Legal Orders <http://www.waldcenter.org/Quarantine%20and%20Isolation%20Information%20for%20Health%20Officers.pdf>
- E. **Kansas Regulations/Statutes Related to Infectious Disease:** <http://www.kdheks.gov/epi/regulations.htm>
- F. **Pink Book:** Epidemiology and Prevention of Vaccine-Preventable Diseases. Available at: <http://www.cdc.gov/vaccines/pubs/pinkbook/default.htm>
- G. **Manual for the Surveillance of Vaccine-Preventable Diseases:** Available at: <http://www.cdc.gov/vaccines/pubs/surv-manual/default.htm>.
- H. **Additional Information (CDC):** <http://www.cdc.gov/health/default.htm>
- I. **Algorithm for Serologic Evaluation of Pregnant Women.** *Source:* Manual for the Surveillance of Vaccine-Preventable Diseases. Refer to page 12.

## Algorithm for Serologic Evaluation of Pregnant Women Exposed to Rubella

(Source: *Manual for the Surveillance of Vaccine-Preventable Diseases, Chapter 14 – Rubella*)



# Kansas Disease Investigation Guidelines

## General Investigation Form

Investigation Information		
<b>Case Type:</b> <input type="checkbox"/> Human Case <input type="checkbox"/> Non-human Case	<b>Disease Name:</b> _____	
<b>Classification:</b> <input type="checkbox"/> Suspect <input type="checkbox"/> Probable <input type="checkbox"/> Confirmed	<b>KS-EDSS Investigation ID:</b> _____	
<b>Outbreak:</b> <input type="checkbox"/> Yes <input type="checkbox"/> No	<b>Outbreak Name:</b> _____	<b>Outbreak #:</b> _____
<b>Onset Date:</b> _____	<b>Diagnosis Date:</b> _____	<b>Report Date:</b> _____
<b>Assigned to (Investigator):</b> _____	<b>Patient Died:</b> <input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Unknown	
Patient Information		
<b>Name Type:</b> <input type="checkbox"/> Default/Common <input type="checkbox"/> Legal <input type="checkbox"/> Maiden <input type="checkbox"/> Nickname		
<b>Last:</b> _____	<b>First:</b> _____	<b>Middle:</b> _____
<b>Street:</b> _____	<b>City/State:</b> _____	<b>Zip:</b> _____
<b>Evening Phone #:</b> _____	<b>Daytime Phone #:</b> _____	
<b>Sex:</b> <input type="checkbox"/> Failure to Report <input type="checkbox"/> Female <input type="checkbox"/> Male <input type="checkbox"/> Other <input type="checkbox"/> Transexual <input type="checkbox"/> Unknown		
<b>Race:</b> <input type="checkbox"/> American Indian or Alaska Native <input type="checkbox"/> Asian <input type="checkbox"/> Black or African American <input type="checkbox"/> Native Hawaiian or Other Pacific Islander <input type="checkbox"/> White <input type="checkbox"/> Unknown		
<b>Hispanic / Latino Ethnicity:</b> <input type="checkbox"/> Yes <input type="checkbox"/> No		
<b>Date of Birth:</b> _____	<b>Age:</b> _____	<b>Age Unit:</b> <input type="checkbox"/> Days <input type="checkbox"/> Weeks <input type="checkbox"/> Months <input type="checkbox"/> Years
Parent Information (if under 18)		
<b>Last:</b> _____	<b>First:</b> _____	<b>Middle:</b> _____
<b>Street:</b> _____	<b>City/State:</b> _____	<b>Zip:</b> _____
<b>Evening Phone #:</b> _____	<b>Daytime Phone #:</b> _____	
Work / Occupation or School / Grade		
<b>Worksites / School:</b> _____		
<b>Occupations / Grade:</b> _____		
Travel History		
<b>1<sup>st</sup></b>	<b>Destination:</b> _____	<b>Depart Date:</b> _____ <b>Return Date:</b> _____
<b>2<sup>nd</sup></b>	<b>Destination:</b> _____	<b>Depart Date:</b> _____ <b>Return Date:</b> _____
<b>3<sup>rd</sup></b>	<b>Destination:</b> _____	<b>Depart Date:</b> _____ <b>Return Date:</b> _____
<b>4<sup>th</sup></b>	<b>Destination:</b> _____	<b>Depart Date:</b> _____ <b>Return Date:</b> _____



# Supplemental Laboratory Report Form

**Lab Reports**

Laboratory Name: \_\_\_\_\_

Lab Report Date: \_\_\_\_\_

Ordering Provider Name: \_\_\_\_\_

Phone: \_\_\_\_\_

Facility: \_\_\_\_\_

Specimen Accession Number: \_\_\_\_\_

Specimen Collection Date: \_\_\_\_\_

Organism Name: \_\_\_\_\_

Organism Species: \_\_\_\_\_

Organism Serogroup: \_\_\_\_\_

Organism Serotype: \_\_\_\_\_

**PFGE Results**

Pattern 1      KS: \_\_\_\_\_

Other State: \_\_\_\_\_

CDC: \_\_\_\_\_

Pattern 2      KS: \_\_\_\_\_

Other State: \_\_\_\_\_

CDC: \_\_\_\_\_

Pattern 3      KS: \_\_\_\_\_

Other State: \_\_\_\_\_

CDC: \_\_\_\_\_

**Additional Results Information**

Reported Test Name:

Coded Result:

Text Result:

Numeric Result:

Comments:

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# Supplemental Contact Form

**Contacts**

**Last:** \_\_\_\_\_ **First:** \_\_\_\_\_ **Middle:** \_\_\_\_\_

**Street:** \_\_\_\_\_ **City/State:** \_\_\_\_\_ **Zip:** \_\_\_\_\_

**Evening Phone #:** \_\_\_\_\_ **Daytime Phone #:** \_\_\_\_\_ **E-mail:** \_\_\_\_\_

**Sex:**  Failure to Report  Female  Male  Other  Transexual  Unknown

**Race:**  American Indian or Alaska Native  Asian  Black or African American  Native Hawaiian or Other Pacific Islander  White  Unknown

**Hispanic / Latino Ethnicity:**  Yes  No

**Date of Birth:** \_\_\_\_\_ **Age:** \_\_\_\_\_ **Age Unit:**  Days  Weeks  Months  Years

**Worksites / School:** \_\_\_\_\_

**Occupations / Grade:** \_\_\_\_\_

**Exposure Information**

**Contact Type:**  Household  Sexual  Other: \_\_\_\_\_ **Partner / Cluster Code:** \_\_\_\_\_

**Date of First Exposure:** \_\_\_\_\_ **Date of Last Exposure:** \_\_\_\_\_ **Frequency:** \_\_\_\_\_

**Nature of Exposure:** \_\_\_\_\_ **Comments:** \_\_\_\_\_

**Testing and Treatment Information**

**Clinic Code:** \_\_\_\_\_ **Examination Date:** \_\_\_\_\_

**Examination Test:** \_\_\_\_\_ **Examination Result:** \_\_\_\_\_

**Prophylaxis/empiric treatment date:** \_\_\_\_\_ **Drug / Dosage:** \_\_\_\_\_

**Provider (Name / Facility):** \_\_\_\_\_

**Disposition and Diagnosis Information**

**Initiation Date:** \_\_\_\_\_ **Disposition Date:** \_\_\_\_\_ **Disposition:** \_\_\_\_\_

**Diagnosis:** \_\_\_\_\_ **Referral Type:**  Patient  Provider **Post-test Counseled :**  Yes  No

**Currently Assigned To:** \_\_\_\_\_ **Follow-up Date:** \_\_\_\_\_

**Risk Factors**

**Pregnant:**  Yes  No **If Yes, # of Weeks:** \_\_\_\_\_

**Risk factors for complications in contact:**  None  Pregnant Woman  HIV Seropositive  Unimmunized  Index case is a super-spreader

Child younger than 5  Age > 65  Otherwise immunosuppressed (s/p transplant, high dose steroids, etc)

# Rubella Supplemental Form

## Appendix 16

Kansas Department of Health and Environment

### Epidemiologic Case History

\* indicates required fields

<b>Case Type*</b> <i>Human Case    Non Human Case</i>	<b>Classification*</b> <i>Confirmed    Not a Case    Probable    Suspect    Deleted    Unknown</i>
--	---

<b>Supplemental Form Status</b> <i>Not Done    Form Complete    Form in Progress    Form Approved    Form Sent to CDC</i>
--

<b>Report Date*</b> <small>mm/dd/yyyy</small>
--

<b>Date Investigation Started</b> <small>mm/dd/yyyy</small>
--

### Patient Demographic Information

\* indicates required fields

<b>Last Name*</b>	<b>First Name*</b>	<b>Middle Name</b>	<b>Name Type*</b>	<b>Age</b>
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<b>Age Unit</b> <i>Days    Weeks    Months    Years</i>	<b>Date of Birth</b> <small>mm/dd/yyyy</small>
--	---

<b>Race*</b> <small>(Check all that apply)</small> <i>American Indian or Alaska Native    Asian    Black or African American Native Hawaiian or Other Pacific Islander    White    Unknown</i>
--

<b>Ethnicity*</b> <i>Hispanic or Latino    Not Hispanic or Latino    Unknown</i>
---

<b>Sex*</b> <i>Failure to Report    Female    Male    Other    Transexual    Unknown</i>
---

<b>Street Address</b>
-----------------------

<b>City</b>	<b>County</b>	<b>State</b>	<b>Zip</b>
-------------	---------------	--------------	------------

<b>Evening Phone</b> <small>###-###-####</small>	<b>Daytime Phone</b> <small>###-###-####</small>
---	---

<b>Occupation</b>
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### Person Providing Report

<b>Name of Reporting Facility*</b>
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## Clinical Data

<b>Any Rash</b> <i>Yes No Unknown</i>	<b>Rash Onset</b> <small>mm/dd/yyyy</small>	<b>Rash Duration</b> <small>(0-30 Days; 99=Unknown)</small>
<b>Fever?</b> <i>Yes No Unknown</i>	<b>If Yes, Highest Recorded Temp.</b> <small>(36-110.0 degrees; 999.9=Unknown)</small>	<b>Cough</b> <i>Yes No Unknown</i>
<b>Coryza</b> <i>Yes No Unknown</i>	<b>Conjunctivitis</b> <i>Yes No Unknown</i>	

## Complications

<b>Encephalitis</b> <i>Yes No Unknown</i>	<b>Thrombocytopenia</b> <i>Yes No Unknown</i>	<b>Days Hospitalized</b> <small>0-998, 999-Unknown</small>
<b>Other complications</b> <i>Yes No Unknown</i>		

**If Yes, Please Specify:**

<b>Death</b> <i>Yes No Unknown</i>	<b>If Death, Date</b> <small>mm/dd/yyyy</small>	<b>Was patient hospitalized?</b> <i>Yes No Unknown</i>
---------------------------------------	--	---

## Vaccine History

	Vaccination Date	Vaccine Type	Vaccine Manufacturer	Lot Number
<b>Vaccinated?</b>	<small>mm/dd/yyyy</small>	Select One	Select One	
(Received rubella-containing vaccine?)				

**If Not Vaccinated, What was The Reason?**

<i>Religious Exemption</i>	<i>Medical Contraindication</i>	<i>Philosophical Objection</i>
<i>Lab Evidence of Previous Disease</i>	<i>MD Diagnosis of Previous Disease</i>	<i>Under Age For Vaccination</i>
<i>Parental Refusal</i>	<i>Other, Specify _____</i>	<i>Unknown</i>

**Number of doses recieved ON or AFTER 1st birthday**

# Epidemiologic Information

<b>Transmission Setting</b> <small>(Where did this case acquire rubella?)</small> <table style="width: 100%; border: none;"> <tr> <td style="padding: 2px 10px;"><i>Daycare</i></td> <td style="padding: 2px 10px;"><i>School</i></td> <td style="padding: 2px 10px;"><i>Doctor's Office</i></td> <td style="padding: 2px 10px;"><i>Hospital Ward</i></td> <td style="padding: 2px 10px;"><i>Hospital ER</i></td> </tr> <tr> <td style="padding: 2px 10px;"><i>Hosp. outpatient clinic</i></td> <td style="padding: 2px 10px;"><i>Home</i></td> <td style="padding: 2px 10px;"><i>Work</i></td> <td style="padding: 2px 10px;"><i>Unknown</i></td> <td style="padding: 2px 10px;"><i>College</i></td> </tr> <tr> <td style="padding: 2px 10px;"><i>Military</i></td> <td style="padding: 2px 10px;"><i>Correctional Facility</i></td> <td style="padding: 2px 10px;"><i>Church</i></td> <td style="padding: 2px 10px;"><i>International Travel</i></td> <td style="padding: 2px 10px;"><i>Other</i></td> </tr> </table>	<i>Daycare</i>	<i>School</i>	<i>Doctor's Office</i>	<i>Hospital Ward</i>	<i>Hospital ER</i>	<i>Hosp. outpatient clinic</i>	<i>Home</i>	<i>Work</i>	<i>Unknown</i>	<i>College</i>	<i>Military</i>	<i>Correctional Facility</i>	<i>Church</i>	<i>International Travel</i>	<i>Other</i>	<b>Specify Site</b>
<i>Daycare</i>	<i>School</i>	<i>Doctor's Office</i>	<i>Hospital Ward</i>	<i>Hospital ER</i>												
<i>Hosp. outpatient clinic</i>	<i>Home</i>	<i>Work</i>	<i>Unknown</i>	<i>College</i>												
<i>Military</i>	<i>Correctional Facility</i>	<i>Church</i>	<i>International Travel</i>	<i>Other</i>												

<b>Specify Other Transmission Setting.</b> <small>(If transmission setting not listed, provide here)</small>
---

<b>Spread Setting</b> <small>(Check all that apply)</small> <table style="width: 100%; border: none;"> <tr> <td style="padding: 2px 10px;"><i>Daycare</i></td> <td style="padding: 2px 10px;"><i>School</i></td> <td style="padding: 2px 10px;"><i>Doctor's Office</i></td> <td style="padding: 2px 10px;"><i>Hospital Ward</i></td> <td style="padding: 2px 10px;"><i>Hospital ER</i></td> </tr> <tr> <td style="padding: 2px 10px;"><i>Hosp. outpatient clinic</i></td> <td style="padding: 2px 10px;"><i>Home</i></td> <td style="padding: 2px 10px;"><i>Work</i></td> <td style="padding: 2px 10px;"><i>Unknown</i></td> <td style="padding: 2px 10px;"><i>College</i></td> </tr> <tr> <td style="padding: 2px 10px;"><i>Military</i></td> <td style="padding: 2px 10px;"><i>Correctional Facility</i></td> <td style="padding: 2px 10px;"><i>Church</i></td> <td style="padding: 2px 10px;"><i>International Travel</i></td> <td style="padding: 2px 10px;"><i>Other</i></td> </tr> </table>	<i>Daycare</i>	<i>School</i>	<i>Doctor's Office</i>	<i>Hospital Ward</i>	<i>Hospital ER</i>	<i>Hosp. outpatient clinic</i>	<i>Home</i>	<i>Work</i>	<i>Unknown</i>	<i>College</i>	<i>Military</i>	<i>Correctional Facility</i>	<i>Church</i>	<i>International Travel</i>	<i>Other</i>
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<i>Military</i>	<i>Correctional Facility</i>	<i>Church</i>	<i>International Travel</i>	<i>Other</i>											

<b>Source of Exposure For Current Case</b> <small>(Enter State ID if source was an in-state case; Enter State if source was out-of-state; Enter Country if source was out of US.)</small>	<b>Epi-linked to Another Confirmed or Probable Case</b>  <div style="text-align: center;"> <i>Yes</i>    <i>No</i>    <i>Unknown</i> </div>
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<b>Case ID of epi-linked case</b>	
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## Pregnant Women

<b>Was The Case Pregnant</b> <i>Yes</i> <i>No</i> <i>Unknown</i>	<b>Number of Trimester at Onset of Illness</b> <i>First</i> <i>Second</i> <i>Third</i>	<b>OR</b>
---	---	-----------

<b>Number of Gestation Weeks at Onset of Illness</b> <small>(1=1 Week, 2=2 Weeks, 3=3 Weeks, Etc.-continuting up to 45 weeks)</small>	<b>Prior Evidence of Serological Immunity?</b>  <div style="text-align: center;"> <i>Yes</i>    <i>No</i>    <i>Unknown</i> </div>	<b>Year of Test</b> <small>(YYYY)</small>
--	--	--

<b>Age of Patient at Time of Test</b> <small>(0-50; 99-Unknown)</small>	<b>Was Previous Rubella Serologically Confirmed</b>  <div style="text-align: center;"> <i>Yes</i>    <i>No</i>    <i>Unknown</i> </div>	<b>Year of Disease</b> <small>(YYYY)</small>
--	---	---

<b>Age of Patient at Time of Disease</b> <small>(0-50; 99-Unknown)</small>	
---	--

Date:

To the parent of children at \_\_\_\_\_.

Dear Parent:

A child who attends the above named facility has been diagnosed as having rubella. The disease, while mild in children, is very serious for unborn babies if contracted by a pregnant woman.

We are recommending all children to be up-to-date on their MMR vaccinations. A review of your child's immunization records has determined that your child

does\_\_\_\_\_ does not\_\_\_\_\_ need to receive MMR.

All children that are not up-to-date on their immunization will be exclude from the facility from 7 days after first exposure to 23 days after onset of rash in the last reported case unless the parent or guardian can demonstrate proof of rubella immunity.

If you have additional questions, please contact your physician or the Health Department.

Sincerely,

Investigator Name, Title

Phone #

Address Line 1

Address Line 2

City, State Zip Code

Date:

Dear Dr. \_\_\_\_\_,

A case of Rubella has been diagnosed in a child at the\_\_\_\_\_.

We are also recommending that children be up-to-date with their MMR immunization(s).

Please be alert to the presence of this disease in our community and report any confirmed and/or suspect cases to the health department. If necessary, remember to plan your patient flow to minimize transmission between potential cases and susceptible individuals.

If you have any questions, please contact the Health Department.

Sincerely,

Investigator Name, Title

Phone #

Address Line 1

Address Line 2

City, State Zip Code

# Public Health Fact Sheet

## Rubella

### What is rubella?

Rubella, also known as the German measles, is a highly contagious viral disease that causes fever and rash.

### How serious is rubella?

Rubella is usually a mild disease in children; adults tend to have more complications. The main concern with rubella disease, however, is Congenital Rubella Syndrome (CRS), the result when the rubella virus infects a pregnant woman and attacks the developing fetus. Rubella infection in the first trimester of pregnancy can lead to fetal death, premature delivery, and serious birth defects.

### What are the symptoms?

Common symptoms include: mild fever, headache, swelling of the lymph glands and a rash that lasts about 3 days. About 50% of all people who get the disease do not get the rash. Some people may experience swollen and painful joints. The disease may also cause swelling of the brain (encephalitis), but this is very rare.

### How is rubella spread?

The rubella virus is found in the noses and throats of infected people. Direct contact with these secretions or exposure to the cough or sneeze of an infected person can spread the disease. The first symptoms usually appear between 16-18 days after a person is exposed.

### How long is a person with rubella contagious?

The disease is most contagious when the rash is erupting, but the virus can be spread from seven days before to seven days after the rash begins.

### Who gets rubella?

Due to good immunization coverage, rubella and CRS are rare in the United States at the present time. However, outbreaks continue to occur in groups of susceptible individuals who refuse immunization for religious or philosophic reasons and among some foreign-born immigrants, who come from areas where rubella vaccine is not routinely used. Rubella can be imported into the United States at any time.

Groups who are at high-risk include:

- Anyone who has never had rubella and has never been vaccinated.
- Infants  $\leq$  12 months old, because they are too young to be vaccinated.
- Adults who were vaccinated before 1968 since some early vaccines do not provide life long immunity.

*This fact sheet is for information only and is not intended for self-diagnosis or as a substitute for consultation. If you have any questions about the disease described above or think that you may have an infection, consult with your healthcare provider. This fact sheet is based on the Centers for Disease Control and Prevention's topic fact sheets.*

**How is rubella diagnosed?**

Since the symptoms and rash associated with rubella often look like other diseases the only sure test for rubella is a blood test.

**How is rubella treated?**

There is no specific treatment for rubella.

**How can you prevent rubella?**

Protect your children by having them vaccinated when they are 12-15 months old. Rubella vaccine is usually given in an immunization called MMR that also protects against mumps and measles. Women who plan to have children and who are not immune should get MMR vaccine at least 3 months before getting pregnant.

**Are there any health regulations for people with rubella?**

People with rubella should be kept away from people who are not immune until they are well again. Anyone infected with rubella should be isolated for 7 days after the rash appears. That means they must be kept away from public places like daycare centers, school and work. State regulations also require every student enrolled or enrolling in a Kansas school to have proof of 2 doses of rubella vaccine (MMR). If a case is reported at a school or childcare setting, any persons at risk of becoming ill from rubella, including those children with immunization exemptions, will be excluded from the school or childcare setting until 21 days after the onset of the last reported illness in the setting. If the person at risk for rubella is immunized or shows proof of immunization within 24 hours of a case being reported, the exclusion will not be needed.

**Where can I get more information?**

- Your Local Health Department
- Kansas Department of Health and Environment, Epidemiologic Services Section (877) 427-7317
- <http://www.cdc.gov/health/default.htm>
- Your doctor, nurse, or local health center

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