

GRANT COUNTY

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HEALTH DISTRICT

1038 W. Ivy Avenue
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Developed by Washington State Department of Health
Guidelines for MEASLES (RUBEOLA) PREVENTION AND CONTROL
RECOMMENDATIONS FOR HEALTH CARE PROVIDERS AND FACILITIES
April, 2008

LABORATORY CONFIRMATION OF MEASLES

Laboratory confirmation of suspected measles cases is essential. Since laboratory results may not be available for several days to several weeks, but prophylaxis of susceptible contacts **has to occur within 6 days of exposure**, outbreak control activity has to proceed while laboratory tests are processed.

Whenever laboratory specimens to confirm measles are collected, please call Grant County Health District at 509-766-7960 to report a suspect measles case. They will expedite testing through the Washington State Department of Health laboratory. Often same, or next day results are available, and there is no charge to the patient.

Serology

Draw at least 4-5 ml blood (8-10 ml is best) in a red or tiger top tube (tubes without anticoagulants or preservatives). **Please notify your laboratory that the serologic specimens MUST go to the Public Health Laboratory for testing. The test results may be delayed or inaccurate if the specimen is sent to a private laboratory.** The state laboratory routinely performs rubella IgM and IgG testing on all specimens submitted for measles testing.

Measles IgM: This antibody test measures IgM antibody, an indicator of acute infection. For the best results, draw samples for measles IgM testing 3 or more days after rash onset. Serologic specimens can be drawn sooner than this as 70-85% of true measles cases will demonstrate IgM antibody by the day of rash onset, however *if the test result is negative, the patient should know that another specimen may be required.* By the third day after rash onset, 99% of true measles cases will demonstrate IgM antibody.

Measles IgG: Both acute and convalescent sera are necessary to determine whether there has been a four-fold or greater rise in total measles antibody. Draw the first sample during the acute illness and the second (convalescent specimen) 2 to 3 weeks later. The laboratory should determine the antibody results of both specimens in the same laboratory run.

Viral Culture

Viral isolation by culture can help understand the origin of the virus and relatedness of measles cases. If possible, please collect the following specimens in addition to the blood for serology:

Nasal wash: Use 3 to 5 mls of sterile non-bacteriostatic saline and a bulb aspirator or syringe to rinse the nasal passage. Place all of the recovered wash solution in a tube of viral transport medium. Nasal wash must be collected as soon as possible, and within one week after rash onset.

Urine - This is the preferred viral culture technique. Collect 50 to 100 ml of clean voided urine in a sterile container. Urine must be collected as soon as possible and no later than one week after rash onset.

Blood - Collect 5 to 10 ml of blood in a heparinized tube. Please note that heparinized tubes are used for culture while measles antibody tests require the use of tubes that do not contain anticoagulants.

Laboratory Tests to Rule Out Other Causes

It is also valuable to conduct laboratory tests appropriate to rule out other potential causes. An example would be a throat culture to look for evidence of streptococcal infection.

MEASLES IMMUNIZATION

Routine Measles, Mumps and Rubella (MMR) Immunization Recommendations:

- All children ages 12 to 15 months and older, and adults born in or after 1957, should be immunized against measles.
- Two doses of vaccine are recommended: the first at age 12 to 15 months and the second at entry to kindergarten or 6th grade (depending on year of birth).
- Older children and college entrants who have had only one dose of MMR should be given a second dose. (The minimum interval between doses is 28 days.)
- Immunizations given before the first birthday or before 1968 should not be counted as valid and should be repeated.
- Children between 12 to 15 months and 5 years of age without documentation of prior MMR who present to medical facilities for any reason should be immunized. In previous measles outbreaks, many children with measles had missed opportunities for immunization at prior office visits.

Contraindications to Receipt of MMR Vaccination

The only valid contraindications to MMR are:

- moderate to severe acute illness,
- severe allergic reaction to vaccine component or following prior dose of vaccine
- anaphylactic allergy to eggs or neomycin,
- significant immunosuppression.
- recent receipt of immune globulin products
- pregnancy

Persons with asymptomatic or mildly symptomatic HIV infection, and persons with leukemia in remission who have not received chemotherapy for at least 3 months can be given MMR.

Assessing Measles Immunity of Healthcare Workers (HCW)

HCW who have patient contact and were born in 1957 or later should have either two documented live measles vaccinations, the first given on or after the first birthday and after 1968 (some vaccines given prior to 1968 were ineffective) or evidence of serologic immunity. It is not necessary to check immune status prior to immunization, however, as persons already immune should experience no significant side effects from additional MMR doses. Staff born prior to 1957 usually do not require an immunization nor serologic testing as they are probably immune due to a disease exposure in childhood.

Preventing Transmission of Measles in Healthcare Facilities

Contact between other patients and HCW and suspected measles cases should be minimized. Medical facilities should promptly screen walk-in patients for fever and rash. Every effort should be made to rapidly isolate persons with suspected measles. Airborne infection isolation rooms are recommended, when available.

Other options include having the patient stay in the car for the evaluation, using a separate entrance or room, and having the patient wear a surgical or procedure mask when going to the lab, etc. Note that airborne

transmission via aerosolized droplet nuclei has been documented in closed areas (e.g., exam rooms) for up to 2 hours after a person with measles occupied the area.

Recommendations for Managing Measles Exposures in Healthcare Facilities:

- Identify susceptible patients, staff, and visitors exposed to the case. Cases are infectious up to 5 days before through 4 days after rash onset.
- Measures to prevent infection spread cannot wait for lab results but should be undertaken based on clinical diagnosis.
- Potential exposures: those who were in the same room as a case within 2 hours of the room being last occupied by the case.
- Presumed susceptible: persons born in 1957 or later
- without either documented evidence of two doses of valid measles vaccine or evidence of seroimmunity; persons born before 1957 without either documented evidence of one dose of valid vaccine or seroimmunity. Note: measles vaccine given before one year of age or before 1968 should not be counted as valid doses.
- Immunoprophylaxis of exposed susceptible contacts:

Measles vaccine given within 3 days after first exposure is sometimes successful in preventing infection. Immune globulin (IG) is effective in preventing or modifying illness if given within 6 days after first exposure. Protection lasts up to 5 months. IG is recommended primarily for the following exposed persons:

- Infants under 1 year of age without previous measles vaccination
- Susceptible pregnant women
- Immunocompromised persons

Dosage of IG:

- 0.11 ml/lb (0.25ml/kg) of body weight, IM. Maximum dose=15 ml. Give no more than 5 ml in one site.
 - Immunocompromised persons: 0.22 ml/lb (0.5 ml/kg) of body weight. Maximum dose=15 ml.
 - MMR should be given 5 or more months later (when passively acquired antibodies should have disappeared) to confer long term protection.
- Notify all exposed persons (even if immunized or given IG) that they may develop measles within the next 3 weeks and to be alert for onset of prodromal symptoms and febrile illness. Administration of IG may prolong the incubation period and attenuate the clinical illness.
 - If an exposed person develops prodromal symptoms (fever, cough, coryza, photophobia, conjunctivitis), they should isolate themselves and contact their employer and Public Health immediately. If they need medical attention, they should call ahead to alert medical staff so as to avoid exposing other patients.

Exposed susceptible staff:

- If a specimen drawn within 6 days after exposure is positive for measles IgG, or total antibody, consider the person immune.
- If the HCW has had 1 dose of measles vaccine given in 1968 or later and after the first birthday, give an additional dose of vaccine. If the 2nd vaccine dose can be given within 72 hours of exposure, consider the person immune. If vaccine cannot be administered within 72 hours, send measles serology, and consider the person immune if the test shows antibody.
- If a staff member has had 2 doses of measles vaccine given after 1968 and after the first birthday, consider the staff person immune.

- Whenever possible, exposed susceptible HCW should be relieved of direct patient contact from the 6th to the 20th day after exposure, even if they were given vaccine or IG after exposure. If not possible, staff should have their temperatures taken and be asked about prodromal symptoms as they come to work from days 6 through 20 after exposure, and should immediately be sent home if temperature is over 99.6°F or prodromal symptoms are present.
- HCW who develop measles should avoid patient contact until at least 4 full days after rash onset. **This screening procedure must be followed rigorously to prevent staff members with prodromal phase measles from infecting others.**
- During community-wide outbreaks, consider triage upon arrival at medical facilities to identify and separate possible measles cases from other patients. Signs should be posted at the door advising possible cases not to enter without special arrangements being made. When isolation measures are impossible, consider disposable face masks for the patients with possible measles.
- If admitted, patients should remain in respiratory isolation until at least the end of the fourth day after rash onset.
- Immunocompromised patients should be in isolation for the duration of their illness.

Report known and suspected measles cases immediately to the Grant County Health District 509-766-7960 or 509-754-6060.