

Spots and Pox: Contact Tracing and Follow-Up for Measles and Chickenpox

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Chickenpox

- Caused by the Varicella Zoster Virus (VZV)
- VZV causes chickenpox and shingles
 - Primary infection: chickenpox
 - Reactivation: shingles
- Chickenpox is reportable within 24 hours
- Shingles is currently not reportable



When is a Person Contagious?

- Infectious period: 2 days before onset of rash until all lesions have crusted
 - In vaccinated persons, there can be an atypical rash that does not crust. These persons would be considered infectious until no new lesions appear within a 24-hour period, usually by the 5th day.
- Incubation period: 10 from first exposure through 21 days after exposure

Case Definition

- An illness with acute onset of diffuse (generalized) maculo-papulovesicular rash without other apparent cause
- Outbreak definition: 5 or more cases of chickenpox in a particular setting that are epidemiologically linked

Investigation Steps

- Verify the diagnosis
- Interview the patient and others who may be able to provide pertinent information
- Consider the need to identify and contact all those exposed
- Institute disease control measures

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Exposure

- Exposure to chickenpox is defined as contact with nasopharyngeal secretions or lesions, face-to-face interaction, or sharing indoor airspace with an infectious person

Proof of Immunity to Chickenpox

- Documentation of age-appropriate vaccination
 - Preschool-aged children (12 months of age through 3 years): 1 dose
 - School-aged children, adolescents, and adults: 2 doses
- Laboratory evidence of immunity or laboratory confirmation of disease
- Born in the United States before 1980
 - For healthcare workers and pregnant women, birth before 1980 should not be considered evidence of immunity
- A healthcare provider diagnosis of varicella or verification of history of varicella disease
- History of herpes zoster based on healthcare provider diagnosis

Contact Tracing

- Identify all persons exposed
 - Consider household members, daycare/school attendees and staff, staff or patients in healthcare facilities the patient visited, workplace contacts, friends, etc.
 - If exposed persons do not have proof of immunity, vaccination can be recommended (best within 3 days of 1st exposure)
- Identify high-risk susceptibles among the exposed
 - Immunocompromised persons
 - Susceptible pregnant women
 - Newborns

*Some high-risk susceptibles are eligible for varicella immunoglobulin (VarizIG)

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Contact Tracing (con't.)

- Supply potentially exposed individuals (or their guardians) with written or verbal notification
 - Encourage consultation with medical provider to consider vaccination if unvaccinated
 - Reiterate infection control practices such as good hand-washing and covering cough
- Conduct surveillance in exposed persons for 21 days from final contact

Exclusions

- Exclusions not recommended for most sporadic cases of chickenpox
 - Exceptions: Neonates born to mothers with active varicella and healthcare workers
- In outbreak settings, please consult with NJDOH before instituting control measures or exclusions
 - Generally, exclusions of non-immune persons would begin when an outbreak is declared
 - Exclude through day 21 following last exposure
 - People who develop chickenpox can be readmitted once their symptoms resolve

Managing Exposed Healthcare Personnel

- Same steps as above to identify and notify contacts of a case
- Healthcare facilities should ensure their employees have documented proof of immunity upon hire
 - If 2 documented doses, or positive titers, monitor for symptoms for 21 days
 - If 1 documented dose, administer 2nd dose and monitor like a 2 dose recipient
 - If unvaccinated, or negative titers, furlough or temporarily reassign to a remote location away from patient care from day 8 through day 21 from exposure

*Birth before 1980 is not considered proof of immunity for healthcare workers

Measles

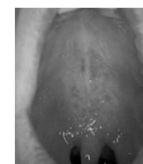
Measles

- Also known as Rubeola (NOT Rubella)
- Highly contagious
 - Attack rate in susceptible household contacts: 75%-90%
- Transmitted via respiratory droplets and aerosol
 - Spread by coughing and sneezing, close personal contact or direct contact with infected nasal or throat secretions
 - Remains up to 2 hours after person with measles occupied an area



Clinical Presentation

- Prodrome (a few days before rash)
 - Fever (greater than 101)
 - The “three C’s”
 - Cough
 - Coryza
 - Conjunctivitis
 - Koplik spots
- Rash
 - Maculopapular
 - Begins on face and head, and progresses downward and outward, fades in same order
 - Persists 5-6 days



When is a Person Contagious?

- Contagious from 4 days before through 4 days after rash onset (day 0)
- Incubation period: 7-21 days (average 10-12)

When a Provider Suspects Measles

- Suspect case should be reported to LHD immediately
- Things to consider to help determine how suspicious a reported suspect case is:
 - Vaccination status
 - Travel or exposure to travelers or persons with rash illness
 - All symptoms (does presentation fit?)
 - Any other causes (antibiotics, vaccine, other rash illnesses at school/daycare)
 - Laboratory testing

Public Health Response

- Isolation of case
- Collection of appropriate specimens for laboratory testing
- Notification to LHD/NJDOH
- Contact investigations and other response efforts

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Isolation of Case

- If measles is suspected, isolate patient immediately
- Airborne isolation room if available, otherwise private room with door closed and patient masked if feasible
 - Do not use private room for at least 2 hours after patient leaves
- Ensure healthcare workers have evidence of immunity
 - Recommend that facility starts compiling this information as soon as they notify LHD of the suspected case
- Respiratory precautions for healthcare workers, even with proof of immunity

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Laboratory Testing

- Viral specimen for PCR/viral isolation
 - Collect ASAP (most successful within 3 days of rash onset)
 - Nasopharyngeal/nasal swab preferred
 - Urine samples may also contain virus
 - Commercial labs don't do PCR testing currently (we send to CDC through the state lab)
 - Documents available on NJDOH website with information on collection and materials:
<http://www.nj.gov/health/cd/measles/techinfo.shtml>
 - Serology for IgM & IgG
 - Collect ASAP
 - 30% false negatives for IgM when collected within 72 hours of rash onset
 - If negative and high index of suspicion remains repeat ≥72 hours of rash onset
- * Serology may be difficult to interpret in those previously vaccinated

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Contact Investigation

- Compile list of all places suspect case visited during infectious period (4 days before rash onset through 4 days after rash onset)
- Identify persons exposed during case's infectious period
 - Includes exposure area up to 2 hours after case left
- Establish presumptive evidence of immunity for contacts

Measles Proof of Immunity

- Written documentation of adequate vaccination:
 - 1 or more doses of a measles-containing vaccine administered on or after the first birthday for preschool-age children and adults not at high risk
 - 2 doses of measles-containing vaccine for school-age children and adults at high risk, including college students, healthcare personnel, and international travelers
- Laboratory evidence of immunity
- Laboratory confirmation of measles
- Birth before 1957

Healthcare providers should not accept verbal reports of vaccination without written documentation as presumptive evidence of immunity. <http://www.cdc.gov/measles/hcp/>

Contact Investigation (con't.)

- Quarantine of contacts without presumptive evidence of immunity
 - Starting day 5 from first exposure through 21 days after last exposure
 - Consult with NJDOH before recommending quarantine
- Post-exposure prophylaxis (PEP)
 - Vaccine (within 72 hours from 1st exposure) or Immune globulin (IG -within 6 days from 1st exposure)
 - Note: healthcare workers who receive PEP can NOT return to healthcare setting

<http://www.cdc.gov/measles/hcp/>

Thank you!

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