

Health Alerts

Health Advisory #174 - Erie County Measles Update - June 9, 2006

SUMMARY

- The Erie County Department of Health has notified the New York State Department of Health (NYSDOH) of one laboratory-confirmed measles case in an unvaccinated 14-month-old male from Yemen and 1 suspected measles case in unvaccinated 3 ½-year-old female from Yemen, both residing in Lackawanna, New York.
- Case #1: On May 9, 2006, Child A and his parents traveled by airplane from Yemen to New York City (NYC) for the purpose of relocating to the United States. Child A was evaluated at the emergency department (ED) of a NYC hospital on May 13 and again on May 14 for a febrile illness and was diagnosed with otitis media and pharyngitis. Child A and his parents flew from NYC to Erie County on May 15 where he resided in Lackawanna, New York. He was admitted to an Erie County hospital with cough, coryza, conjunctivitis, fever, and rash on May 17. Child A had no measles immunization history. A nasopharyngeal specimen viral culture was positive for wild-type measles virus.
- Case #2: On June 1, 2006, Child B, who lived in the same house as Child A in Lackawanna, New York, developed a fever. Child B was evaluated at a community clinic and discharged after receiving a dose of ceftriaxone. On June 3, 2006 Child B developed a generalized descending rash that began on the face, cough, coryza, and conjunctivitis. Child B had emigrated from Yemen 3 years ago and had no measles immunization history. On June 4, 2006 Child B was evaluated at a community hospital ED and admitted to the pediatric ward. On June 5 serum was collected and was shipped to Wadsworth for measles IgM titers and a nasal pharyngeal swab and a urine specimen was sent to the local virology lab for a measles viral culture.
- Both cases have been admitted to a local hospital with isolation precautions.
- Hospitals should increase their index of suspicion for measles in clinically compatible cases and report these numbers to MERS with the daily ED surveillance information.
- Community providers should increase their index of suspicion for measles in clinically compatible cases.
- Any suspected cases of measles should be reported immediately to the Erie County Department of Health at (716) 858-7697 (Monday - Friday, 8:30 AM - 4:30 PM) or (716) 898-4225 (Evenings, weekends, and holidays).
- Serum for measles IgM and IgG titers should be shipped to Wadsworth Center Diagnostic Immunology Laboratory and nasal pharyngeal swabs, respiratory samples, or urine for viral cultures should be shipped to Erie County Medical Center Virology Laboratory or Wadsworth Center Virology Laboratory.
- All contacts should be immune or fully vaccinated according to age as recommended by the Advisory Committee on Immunization Practices.

SUMMARY OF THE INVESTIGATION

Case #1: The NYSDOH has been notified of a case of measles in a 14-month-old male who relocated to the United States with his parents from Yemen on May 9, 2006. The child and his parents reportedly flew nonstop from Yemen to NYC. He and his parents resided with a family

in NYC until May 15. On May 13, the child was evaluated at a NYC hospital for fever, diagnosed with otitis media and pharyngitis, and treated with an antibiotic. On May 14, the child returned to the ED with fever. Though a rash was not seen at that time, a history of rash was obtained later from the patient's mother. He was again given a diagnosis of acute otitis media. On May 15, the child flew from NYC to Buffalo in Erie County, New York. On May 17, the child was evaluated at an Erie County hospital and was admitted to the pediatric unit. Serology collected on May 18 was positive for measles IgM and IgG, and a nasopharyngeal swab collected on May 19 grew measles virus. The child was treated with supportive care, improved clinically, and was discharged from the hospital on May 23, 2006.

Case #2: The ECDOH was notified of a case of suspected measles in a 3 ½ year old, unvaccinated female, who relocated to the United States with her parents from Yemen 3 years ago and lived in the same house as the first reported measles case. On June 1, 2006, the child developed a fever. The child was evaluated at a community clinic and discharged after a dose of ceftriaxone. On June 3, 2006 the child developed a generalized descending rash that began on the face, cough, coryza, and conjunctivitis. The child had emigrated from Yemen 2 years ago and had no measles immunization history. On June 4, 2006 the child was evaluated at a community hospital ED and admitted to the pediatric ward. On June 5 serum was collected and is being shipped to Wadsworth for measles IgM titers and a nasal pharyngeal swab and a urine specimen was sent to the local virology lab for measles culture.

MEASLES OUTBREAK CONTROL MEASURES

The ECDOH will be conducting a measles immunization clinic at Our Lady of Victory Family Care Center on Friday, June 9 at 2:00 PM - 8:00 PM, Saturday, June 10 at 9:00 AM - 1:00 PM, and Sunday, June 11 at 9:00 AM - 1:00 PM for all persons residing or working in the First Ward who may have been exposed.

MEASLES CASE DEFINITIONS

Clinical Case Definition:

- A generalized maculopapular rash lasting ≥ 3 days
- A temperature $> 101^{\circ}$ F (38.3° C)
- Cough, coryza, or conjunctivitis

Laboratory Criteria for Diagnosis:

- Positive serology test for measles IgM antibody
- Significant rise in serum antibody level by any standard serologic assay
- Isolation of measles virus from a clinical specimen

REPORTING SUSPECT MEASLES CASES

The ECDOH is working closely with the NYSDOH and the hospitals at which the cases were evaluated to identify susceptible individuals and notify those who may have been exposed to the case. Providers should increase their index of suspicion for measles in clinically compatible

cases. The Erie County Health Department should be notified immediately of any suspect case at (716) 858-7697 (Monday - Friday 8:30 AM - 4:30 PM) or (716) 898-4225 (Evenings, weekends, and holidays). It is important to obtain a history of any travel from the patient and family members, as well as all close contacts. In a patient with prodromal symptoms consistent with measles, but who has not yet developed a rash (and who also has had contact with the case), follow-up should be arranged to determine if the patient develops a rash. The patient and patient's family must be educated about measles and cautioned to notify all other providers they may see so that the patient is properly isolated when seeking additional medical care.

MEASLES DIAGNOSTIC TESTS

Measles serology:

The diagnosis is confirmed by serologic testing (ELISA or EIA) of a blood sample for measles-specific IgM antibody. Previously susceptible persons who are exposed to measles via the vaccine or wild-type measles virus will first develop IgM then IgG antibodies in response to the virus. Because IgM may be negative in the first 72 hours after rash onset, patients with a negative IgM result during this period should have the IgM test repeated after 72 hours of rash illness. The IgM response is detectable for approximately one month after rash onset. The IgG response persists for years.

Serological specimens:

- Acute samples should be forwarded to Wadsworth Center Diagnostic Immunology (David Axelrod Institute)
- Efforts to batch should NOT be made if shipment will be delayed (even one day), except to save packages that would arrive over a weekend. Confirmation is essential to prevention and prophylaxis; the sooner results are known, the better.
- Orders should include measles IgM, IgG, and to hold left over sera
- The standard Diagnostic Immunology form (DOH 2118 below) should be included for all samples (see attached)
- Contact name and number should include an ECDOH Communicable Diseases representative (Jack Schwartz or Gale Burstein)
- Ship serum and request form overnight (Monday - Thursday) in a double mailing container, with a cold pack, to:
Diagnostic Immunology
David Axelrod Institute
New York State Department of Health
120 New Scotland Ave
Albany, NY 12209
Attention: Carol Franchell (518) 486-3845

Measles Culture:

It is recommended that clinical samples (10-50 ml of urine; throat or nasopharyngeal swabs or nasal aspirates) for measles virus isolation be collected as soon after rash as possible. The sample should be collected at the first contact with a suspected case of measles when the serum sample

for diagnosis is drawn. Measles virus isolation is most successful when samples are collected the first day of rash through the 3 days following onset of rash; however, virus is still present at least through day 7 following rash.

Measles virus is sensitive to heat, and infectivity decreases markedly when samples are not kept cold. It is important to transport samples with cold packs as soon as possible following sample collection.

Urine samples

Measles virus is present in acute cases of measles in the cells that have been sloughed off in the urinary tract. First-voided morning urine usually contains the highest concentration of these cells, but clean catch is not necessary. Virus can be present in the urine even a few days before rash appears and begins to diminish a few days following rash.

For optimal virus preservation, centrifuge the urine sample and re-suspend the sediment in 2-3 ml of sterile transport medium, tissue culture medium or phosphate-buffered saline and then hold at -70 C. Otherwise, keep the urine sample at 4 C and ship on cold packs as soon as possible to a laboratory that is able to perform viral isolation. Do not freeze large volumes (> 5 ml) of urine that have not been centrifuged- just keep them cold.

Respiratory samples

For throat or nasal washes or swabs that are in very little fluid (1-4ml), the entire sample can be frozen at -70 C (but not dry; if needed add 2- 3 ml of the fluid mentioned above and rinse/ream swab to collect cells) or if low temperature freezers are not available, keep the sample at 4 C until shipment.

Primary specimens will be forwarded to Erie County Medical Center-Virology Laboratory for standard viral culture. The NYSDOH Virus Detection History form (available at: www.wadsworth.org/divisions/infdis/virology/forms/VRSLPatientHistoryFormDOH-1795.pdf) should be included. Contact name and number should include an ECDOH Communicable Diseases representative (Jack Schwartz or Gale Burstein).

Laboratories:

Erie County Medical Center-Virology Laboratory

Contact: Jean Myers

(716) 898-4209

Viral Isolation performed. Preferred specimen: respiratory swab with Viral Transport Media (VTM). Transport refrigerated/wet ice.

Serology for IgG only.

ADDITIONAL INFORMATION

For additional information, please call ECDOH at (716) 858-7697 (Monday - Friday 8:30 AM - 4:30 PM) or (716) 898-4225 (Evenings, weekends, and holidays) or the NYSDOH Immunization

Program at 518-473-4437. More information can also be obtained at the CDC's National Immunization Program website at www.cdc.gov/NIP.

[Diagnostic Immunology History Form](#) 