NEW YORK CITY DEPARTMENT OF HEALTH AND MENTAL HYGIENE
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Commissioner

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ALERT # 9: Increase in Measles Cases and Hospital Exposures

1) **Thirteen cases of measles have been reported in New York City (NYC) since January 1, 2011. Five had no travel history or known exposure; eight traveled internationally to Europe and Asia.**
2) **Consider measles in all patients with clinically compatible febrile rash illness.**
3) **Institute immediate airborne precautions for patients with febrile rash illness.**
4) **Immediately report clinically suspect cases of measles, prior to laboratory confirmation to the NYC Department of Health and Mental Hygiene (DOHMH) at 212-676-2288 (weekdays 9-5 pm) or Poison Control at 212-764-7667 after hours.**
5) **Collect specimens for diagnostic testing. Contact NYC DOHMH to make arrangements for laboratory testing.**
6) **Ensure that patients are immune to measles prior to international travel. Vaccinate children aged 6-12 months with measles-mumps-rubella (MMR) vaccine prior to international travel.**
7) **Ensure all health care workers are immune to measles.**

Distribute to All Primary Care, Infectious Disease, Emergency Medicine, Internal Medicine, Pediatrics, Family Medicine, Laboratory and Infection Control Staff

Dear Colleagues,

Thirteen cases of measles have now been reported in NYC since January 1, 2011; this is three additional confirmed cases since the previous alert was issued. These new cases do not have a travel history, and do not have identified links to each other or to a known measles case. Two of the new cases are adults and one is an 8-month old child. To date, no clusters or continued chains of measles transmission have been identified but the working hypothesis is that these cases had exposures to unrecognized or unreported cases and represent secondary spread in NYC.

Twelve of the 13 cases presented to health care facilities where delays in consideration of a measles diagnosis and delays in placing the patients on immediate airborne isolation occurred. This has led to exposures of over 1,600 additional people in NYC. Failure to immediately isolate the most recent infant case resulted in the exposure of over 300 people in the emergency room and wards, including 35 infants too young to have been vaccinated, who required post-exposure prophylaxis with immune globulin. The confirmation of measles in persons without a compatible travel history means that the diagnosis of measles must be more broadly considered in **ALL** persons with a febrile rash illness. **Clinically compatible cases must be placed on airborne isolation immediately to prevent unnecessary exposure to others.**

Transmission and Infection Control

Measles is transmitted via airborne droplets and through direct contact with respiratory secretions of an infected person. Infected individuals are contagious from four days prior to rash onset through the

fourth day after rash appearance. Suspect cases should be placed on airborne isolation immediately. If a negative pressure room is not available, place the suspect case exam room with a mask. No susceptible individuals should be allowed in the room for 2 hours after the patient has left.

Current Measles Epidemiology

Nationally, 140 measles case have been reported to the Centers for Disease Control and Prevention (CDC) as of June 3, 2010; 125 cases are considered to be import-associated. Measles is still endemic in most parts of the world including Asia, Europe, Middle East and Africa. Nearly half (47%) of imported cases were acquired in Europe where large outbreaks are occurring. Of the 140 cases, 123 (88%) were unvaccinated or had undocumented vaccination status: 107 were United States (US) residents, highlighting the importance of making sure people are vaccinated prior to international travel. In NYC, of the 13 cases, 10 were adults and 3 were children. All three children were unvaccinated; one was too young to have been vaccinated, one was aged <1 year but should have received MMR prior to travel, and the third had not received the first MMR due to medical error. Among the adults, 2 were unvaccinated due to religious and personal beliefs; 1 was fully vaccinated with 2 doses of MMR and the remaining 7 believed they had received their childhood vaccinations but had no documentation and were found to be non-immune.

Clinical Presentation

Measles presents clinically, in both adults and children, as an acute viral illness characterized by fever (>101°F) and generalized macular papular rash. The prodrome may include fever, cough, coryza, and conjunctivitis. The rash lasts 5-6 days, usually starts on the face and proceeds down the body, including the palms and soles, and is usually discrete but may become confluent. Complications include diarrhea, otitis media and pneumonia and encephalitis, and may lead to death.

Reporting

Immediately report suspected cases of measles as soon as the diagnosis considered. Do not wait for laboratory confirmation. Report suspect cases to the NYC DOHMH at 212 676-2288 (weekdays 9 am to 5 pm) or to Poison Control: 212-764-7667 (after hours and weekends).

Laboratory Testing

Collect laboratory specimens for measles serology and viral specimens. A positive IgM titer is sufficient for confirming the diagnosis. Most measles IgM testing in NYC is sent to outside laboratories and may take up to a week to receive results. Reporting suspected cases of measles enables access to rapid testing through the NYC Public Health Laboratory. Collect blood in red, red-speckled or gold-top blood collection tubes. Blood can be refrigerated overnight. If blood will not be collected the following day, then specimens should be centrifuged and the serum separated and refrigerated. Specimens collected within the first 72 hours after rash onset may be falsely negative for measles IgM and should be repeated prior to excluding the diagnosis. The IgM remains positive for about one month after rash onset; the IgG response persists for years. In clinically compatible cases the NYC Health Department can arrange for PCR and viral culture testing from nasopharyngeal aspirates, naspopharyngeal swabs, or throat swabs. Swabs should be synthetic (non-cotton) in liquid viral transport media. Refrigerate specimens after collection and transport on ice.

Post-Exposure Prophylaxis

For non-immune individuals who are eligible for vaccination, Measles-Mumps-Rubella vaccine (MMR) should be administered within 72 hours of exposure as post-exposure prophylaxis to prevent disease. Susceptible individuals exposed to measles that are at high-risk for complications (children less than 1 year of age, pregnant women and immunocompromised persons) should be given immune globulin (IG) rather than vaccine as post-exposure prophylaxis. IG may be given within 6 days of

exposure, to prevent or modify measles. The recommended dose for IG is 0.25mL/kg of body weight intramuscularly; immunocompromised people should be given 0.50 mL/kg. The maximum dose is 15mL. Use of IG may require a delay in vaccination of infants when they reach 1 year of age. Those who received 1 dose of a measles-containing vaccine prior to exposure should receive a second dose of MMR, provided it has been at least 28 days since the previous dose.

MMR Vaccine Recommendations Evidence of Immunity

MMR is routinely recommended to children at 12 months of age with a second dose at 4-6 years of age. A second dose can be administered as early as 28 days after a previous dose. MMR is contraindicated in immune compromised individuals and pregnant women as well as those who have a history of previous severe allergic reaction to a previous dose of MMR or its vaccine components.

Only persons with two documented measles-containing vaccines, a positive measles IgG titer, or birth prior to 1957 should be considered immune to measles. Cases of measles have been reported in persons who received 2 documented MMR vaccines. Vaccination does not preclude considerations of the diagnosis. Self-reported vaccination does not constitute evidence of immunity.

All health-care providers are required to have documented evidence of immunity to measles. Although not required, DOHMH recommends administering 2 doses of MMR to unvaccinated healthcare workers born prior to 1957 who lack laboratory evidence of measles immunity.

Travel recommendations

Providers should assure that adults and children aged greater than 12 months who are traveling outside the US have documented immunity to measles. Adults who believe they received their childhood vaccinations but who don't have documented immunity to measles should be vaccinated against measles prior to travel. Children between six and twelve months of age who will be travelling internationally are also recommended to receive a dose of MMR vaccine prior to travel, although this dose does not count towards completion of the routine schedule.

In summary, consider measles as a diagnosis when evaluating patients with febrile rash illness; institute immediate airborne precautions to prevent exposure to others. Immediately report suspect measles cases immediately to the NYC DOHMH: 212-676-2288 or after hours to Poison Control 212-764-7667. Do not wait for laboratory confirmation. The Health Department will provide assistance with laboratory testing and identifying exposed contacts that may require measles post-exposure prophylaxis.

Please call the NYC Department of Health and Mental Hygiene if you have questions (business hours: 212-676-2288; after hours, contact the Poison Control Center at 212-764-7667). As always, your cooperation is appreciated.

Sincerely,

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