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Increase in Invasive *Haemophilus influenzae*
type b (Hib) Disease in Minnesota:
Implications for Orange County
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On January 23, 2009, the federal Centers for Disease Control and Prevention (CDC) and the Minnesota Department of Health announced an increase in invasive *Haemophilus influenzae* type b (Hib) disease in Minnesota (MN). Five cases of invasive Hib disease in children under four years of age, including one death, were reported in MN in 2008; this is the largest number of cases in children aged < 5 years reported in MN since 1992. Three of the five cases, including the death, occurred in children who were unimmunized because of parent or guardian refusal or deferral. One case occurred in a five month old child who had received two doses of vaccine, but was too young to have completed the primary series. Another case occurred in a child who had received the primary series, but was later found to have hypogammaglobulinemia. To date, an increase in invasive Hib disease has not been identified in Orange County, California, or other states in the U.S.

A national shortage of Hib vaccine has existed since December 2007 when Merck recalled its Hib vaccines [PedvaxHIB® (monovalent Hib vaccine) and COMVAX® (Hib/hepatitis B)] because of concerns for bacterial contamination. **Because of the vaccine shortage, CDC recommended that healthcare providers temporarily defer giving the booster dose of Hib vaccine to toddlers 12-15 months of age not at increased risk* for Hib disease so that as many infants as possible could complete the primary series with available Hib-containing vaccines.** The shortage is expected to last into mid-2009 but supply of the available Hib-containing vaccines [ActHIB® (monovalent Hib vaccine), TriHIBit® (DTaP/Hib), and Pentacel® (DTaP/IPV/Hib)] manufactured by Sanofi Pasteur is currently thought to be sufficient to ensure completion of the primary series for all infants.

However, MN found that in addition to deferral of the Hib booster dose, many infants had not received their third dose of the primary series. A review of MN vaccination data found that among children aged 7 months, 3-dose primary Hib series coverage was 46.5%, 18% less than among those who had received age-appropriate pneumococcal conjugate or DTaP vaccination. The increase in the number of Hib cases in MN likely reflects increasing carriage in the community in the setting of decreased Hib immunization and herd immunity. An initial review of immunization rates in California (CA) by the CA Department of Public Health indicates that the rates of infants receiving three doses of Hib vaccine were also somewhat lower than those for pneumococcal conjugate or DTaP vaccines. **It is critical that all infants complete the primary Hib immunization series to protect them against this serious disease.**

Recommendations during the Hib vaccine shortage:

- 1) Ensure all infants complete the primary series of Hib-containing vaccine. The primary series for available Hib-containing products consists of three (3) doses (one dose each at 2, 4, and 6 months of age).
- 2) Temporarily defer the booster 12-15 month dose in children not at increased risk* of Hib disease. Ensure system in place to recall children for booster dose once supply is adequate.
- 3) Report invasive Hib cases to Orange County Public Health by phone 714-834-8180 or fax 714-834-8196 within one (1) working day.
- 4) Ensure all isolates of *Haemophilus influenzae* from sterile sites in children less than five (5) years of age are serotyped. The Orange County Public Health Laboratory can perform *H. influenzae* serotyping on sterile site isolates if the private or hospital laboratory is unable; please report all cases as above in #3.

*Children at increased risk for Hib disease include: American Indian and Alaskan Native (AI/AN) children, and children with sickle cell disease, HIV infection, anatomic or functional asplenia, malignancies or other immunocompromising conditions. These children should continue to receive the booster dose on schedule. For additional recommendations for AI/AN children, see <http://www.cdc.gov/mmwr/preview/mmwrhtml/mm56d1219a1.htm>.

For more information on Hib see <http://www.cdc.gov/vaccines/vpd-vac/hib/providers-parents.htm>.