

**Summary of Invasive *Haemophilus influenzae***  
**Investigation and Control Guidelines**  
Colorado Department of Public Health and Environment (CDPHE)  
Communicable Disease Epidemiology Program

**Invasive *Haemophilus influenzae* (*H. flu*) should be reported by telephone within 24 hours of diagnosis.** (CDPHE: business hours 303-692-2700, after hours 303-370-9395.) Investigation of a probable or confirmed case should be started right away, as prophylaxis of eligible contacts should begin as soon as possible (see Prophylaxis section).

**Investigation Summary**

1. Determine if reported case is probable or confirmed.
2. Determine if contacts need prophylaxis.
3. Recommend prophylaxis if indicated.
4. Recommend *H. flu* serotype b (Hib) vaccination of unimmunized or incompletely immunized childcare contacts.
5. Complete report form.
6. Enter information into CEDRS or send completed form to CDPHE.

**Case Definition**

**Clinical description**

Invasive disease caused by *Haemophilus influenzae* may produce any of several clinical syndromes, including meningitis, bacteremia, epiglottitis, or pneumonia.

**Laboratory confirmation**

Isolation of *Haemophilus influenzae* from a normally sterile site (e.g., blood or cerebrospinal fluid [CSF] or, less commonly, joint, pleural, or pericardial fluid). Isolates from all invasive *H. influenzae* cases should be sent to CDPHE Lab for serotyping.

**Case classification**

**Probable:** a clinically compatible case with detection of *H. influenzae* type b antigen in CSF. (Positive antigen test results from urine or serum samples are unreliable for diagnosing *H. influenzae* disease.)

**Confirmed:** a clinically compatible case that is laboratory confirmed (positive culture from a normally sterile site).

When investigating a possible case with meningitis symptoms, use the “Suspect Bacterial Meningitis (Meningococcal) Information Collection Form” to collect additional laboratory and clinical information. This information may help differentiate between possible viral and bacterial meningitis (see table on back of form).

**Prophylaxis**

Rifampin prophylaxis is only recommended for household contacts and possibly childcare contacts of confirmed and probable *H. flu* serotype b (Hib) cases in certain circumstances. Do not wait for serotype information to begin the investigation of contacts. Prophylaxis is not recommended for contacts of nontypeable *H. flu* or nontype b *H. flu*. Regardless of serotype,

testing of contacts is not recommended. When indicated, prophylaxis should be started as soon as possible, since the risk of secondary cases is greatest during the first week after illness onset in the index case.

**Determining need for prophylaxis:**

- a. Is serotype known? Is it type b? When will serotype information be available?
- b. Are there exposed household contacts less than 48 months of age? If yes, are they unimmunized or incompletely immunized for Hib?
- c. Are there household contacts < 12 months of age? If yes, have they completed the Hib primary series<sup>1</sup>?
- d. Are there any immunocompromised children in the household?
- e. Does the case attend childcare?
- f. What are the ages of the children in the childcare classroom or childcare home?
- g. If there are children < 36 months of age in the classroom or childcare home, what is their Hib immunization status?
- h. Are there immunocompromised children in the childcare classroom or childcare home?

**Prophylaxis for Household Contacts<sup>1</sup>**

Prophylaxis is recommended for all household contacts of confirmed and probable *H. flu* **serotype b cases** (Hib), except pregnant women, if any of the following criteria are met:

- 1. any household contact is under 48 months of age and unimmunized or incompletely immunized for Hib,
- OR**
- 2. any household contact is less than 12 months of age and has not completed the Hib primary vaccine series<sup>2</sup>,
- OR**
- 3. any household contact is an immunocompromised child, regardless of Hib immunization status.

**If a delay of more than 1 or 2 days is anticipated in obtaining serotype information, prophylaxis of household contacts may be started without serotype information in situations with significant concern for Hib disease.**

**Prophylaxis for Childcare Contacts**

Prophylaxis of all childcare classroom or home childcare contacts (including staff) of confirmed and probable *H. flu* **serotype b cases** is recommended if either of the following criteria are met:

- 1. any childcare classroom or home child care contact is less than 12 months of age and has not completed the Hib primary vaccine series<sup>2</sup>
- OR**
- 2. any childcare classroom or home childcare contact is 12 to 35 months of age and unimmunized or incompletely immunized for Hib.

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<sup>1</sup> Household contacts – persons residing with the index patient or nonresidents who spent 4 or more hours with index case for at least 5 of the 7 days preceding the day of hospital admission of the index case.

<sup>2</sup> Number of doses in a Hib primary series depends on the vaccine brand and the age of the child when the first Hib vaccine dose was administered.

**There may be occasions when prophylaxis of childcare contacts is indicated prior to obtaining serotype information. Consult your CDPHE Epidemiologist for guidance.**

Generally, prophylaxis of childcare contacts is not needed if all childcare classroom or home childcare contacts are  $\geq 36$  months of age. If there are immunocompromised children in the childcare classroom or home childcare, recommend antibiotic prophylaxis of the immunocompromised children, and contact your CDPHE Epidemiologist to discuss antibiotic prophylaxis of all the childcare classroom or childcare home contacts.

Childcare classroom contacts  $< 5$  years of age, who are unimmunized or incompletely immunized for *Haemophilus influenzae* type b (Hib), should receive Hib vaccine. CDPHE Regional Epidemiologists have sample letters that may be used to notify parents of the occurrence of a case of *H. flu* disease in a childcare facility, to educate them about signs and symptoms of the disease, and recommend prophylaxis if necessary.

Contacts needing prophylaxis should be referred to their family doctor. In rare situations, a local health department or CDPHE physician may call in a prescription to a pharmacy.

### **Rifampin Dosage**

Rifampin is the drug of choice for Hib prophylaxis. The rifampin dosage for children is 20mg/kg orally once daily for 4 days (maximum daily dose is 600mg). Adult dosage is 600mg once daily for 4 days. Infants  $< 1$  month of age should be given a dose of 10mg/kg once daily for 4 days.

### **Report forms**

Complete the Active Bacterial Core Surveillance (ABCs) Case Report for confirmed and probable cases. Only the following sections of the form need to be completed; 1-5, 8-11, 14,17, 18a, 19, 20, 23, and 24. All information from completed ABCs report forms should be entered into CEDRS or mailed or faxed (303-782-0338) to CDPHE.

### **Resources**

- Colorado Communicable Disease Manual, *Haemophilus influenzae* chapter
- “Flowchart to Determine Need for Prophylaxis and Hib Vaccination of *H. flu* Close Contacts 6 Weeks – 4 Years of Age”
- “Detailed Vaccination Schedule for *Haemophilus influenzae* type b Conjugate Vaccines”
- “Hib In-Short,” <http://www.cdc.gov/vaccines/vpd-vac/hib/in-short-adult.htm>

*Please contact your CDPHE Regional Epidemiology Consultant or the Communicable Disease Epidemiology Program (303-692-2700) for further guidance.*