

Haemophilus influenzae invasive disease Investigation Overview

The following guidelines provide a brief overview of the steps of a *Haemophilus influenzae* investigation. *Haemophilus influenzae*, or "H. flu", can cause a variety of clinical syndromes, including invasive diseases like bacteremia, pneumonia, meningitis, and epiglottitis. H. flu organisms are divided into serotypes a, b, c, d, e, and f, based on proteins found in the capsule that surrounds the organism. Strains without a capsule are called non-typeable.

All serotypes, including non-typeable serotypes, can cause invasive disease and are reportable in North Carolina. *Haemophilus influenzae* serotype b (Hib) is the most virulent and is the only serotype for which there is a vaccine. H. flu is often part of the normal respiratory flora. Carriage of Hib has dramatically decreased due to vaccination, but non-type b strains can be found in the nose and throat of up to 80% of the population so control measures are not indicated for serotypes other than serotype b.

The large majority of H. flu cases in North Carolina are caused by nontypeable strains. H. flu is not carried by animals and does not persist for long in the environment. Hib meningitis and other invasive Hib infections are now rare in the North Carolina and the United States since the introduction of Hib vaccine into the routine childhood immunization series.

Basic Steps of a *Haemophilus influenzae* invasive disease Investigation

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| 1. Determine clinical syndromes and date of onset | <ul style="list-style-type: none">Use information collected from lab reports and the medical record to determine which clinical syndromes are present. It is usually not necessary to interview the patient. |
| 2. Review the lab report | <ul style="list-style-type: none">Verify that the isolate is from a normally sterile site. Infections of a non-sterile site are not reportable.Assure the isolate has been sent to the State Laboratory of Public Health for further serotype identification, as required by law. Serotyping results are not usually available when a case is first identified. |
| 3. Contact Investigation | <ul style="list-style-type: none">A contact investigation and control measures are usually <u>not</u> necessary. Since Hib is now rare in N.C. and the U.S., we generally <u>do not</u> assume the infection is caused by <u>type b</u> unless the patient is at increased risk for type b.Examples of patients at increased risk for Hib might include<ul style="list-style-type: none">contacts to known Hib casestravelers to highly endemic areasunvaccinated childrenIn neonates, infection is acquired intrapartum by aspiration of amniotic fluid or by contact with genital secretions containing the organism. |
| ➤ Contacts to <u>non-type b</u> | <ul style="list-style-type: none">Control measures for contacts are not usually indicated.For cases of invasive <i>H. influenzae</i> type a disease, the <u>American Academy of Pediatrics Red Book 2024–2027</u> states that clinicians may consider using a similar chemoprophylaxis approach as for invasive Hib disease. |
| ➤ Contacts to Hib | <ul style="list-style-type: none">Antibiotic prophylaxis is only recommended for type b disease. Even for Hib cases, prophylaxis is only recommended for household contacts with an under-immunized child under 4 years of age or an immunocompromised child in the home, and in childcare settings when two or more cases of invasive Hib disease have occurred within 60 days.Refer symptomatic contacts to healthcare provider for appropriate testing and treatment. |

Resources

- North Carolina Vaccine Preventable Disease Annual Reports are available at <https://epi.dph.ncdhhs.gov/cd/figures.html>
- Haemophilus influenzae* laboratory requirements: [10A NCAC 41A .0209](#)
- Red Book, Report of the Committee on Infectious Diseases of the American Academy of Pediatrics, 2024-2027
- CDC Manual for the Surveillance of Vaccine-Preventable Diseases <https://www.cdc.gov/surv-manual/php/table-of-contents/chapter-2-haemophilus-influenzae.html>