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**Lab Dept:** Microbiology/Virology

**Test Name:** BORDETELLA PERTUSSIS CULTURE

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**General Information**

**Lab Order Codes:** BPC

**Synonyms:** Culture, *Bordetella pertussis*; Culture, Pertussis; Pertussis Culture; Whooping Cough Culture

**CPT Codes:** 87081 – Culture, presumptive, pathogenic organisms, screening only

The following testing may be added if appropriate based on findings for organism identification (multiple additions are possible if more than one organism is identified).

87206 – Smear, fluorescent and/or acid fast stain for bacteria, fungi, parasites, viruses or cell types (if appropriate)

**Test Includes:** Culture and identification of *Bordetella pertussis* and *Bordetella parapertussis*. All positive results are reported immediately by phone to the physician or patient's nurse.

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**Logistics**

**Lab Testing Sections:** Microbiology

**Phone Numbers:** MIN Lab: 612-813-5866

STP Lab: 651-220-6555

**Test Availability:** Daily, 24 hours

**Turnaround Time:** Cultures often are not positive until after 3 or more days. Negative cultures are final after 10 days.

**Special Instructions:**

- Specimens should be obtained during the early phases of the disease and prior to antimicrobial therapy.
- **Specimen site** and **date/time of collection** are required for processing.
- NP aspirates/washes will yield higher *Bordetella* isolation rates than those obtained by NP swabs since more material is collected.

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**Specimen**

**Specimen Type:** 2 nasopharyngeal swabs, one each from right and left nares; nasal aspirate; bronch aspirate

<b>Container:</b>	<ul style="list-style-type: none"> <li>● Charcoal; Stuart's or Amies transport culturette medium, mini tip culturette swabs for NP specimens</li> <li>● Luki tube for bronch or nasal aspirate specimens</li> </ul>
<b>Volume:</b>	<ul style="list-style-type: none"> <li>● 2–NP swabs; Charcoal, Stuart's or Amies culturette transport medium</li> <li>● 0.5 mL of nasal or bronch aspirate.</li> </ul>
<b>Collection:</b>	<p><b>NP swabs</b></p> <ol style="list-style-type: none"> <li>1. Carefully insert the swab into the posterior nasopharynx via the nose.</li> <li>2. Rotate the swab slowly for 5 s to absorb secretions, keeping the swab near the floor and the septum of the nose.</li> <li>3. Remove the swab and place swab in Charcoal; Stuart's or Amies culturette transport medium.</li> <li>4. Repeat the procedure for the other nare.</li> </ol> <p><b>Nasal aspiration</b></p> <ol style="list-style-type: none"> <li>1. Prepare suction set up on low to medium suction.</li> <li>2. Wash hands.</li> <li>3. Put on protective barriers (e.g., gloves, gown, mask).</li> <li>4. Place child supine and obtain assistant to hold child during procedure.</li> <li>5. Attach luki tube to suction tubing and #6 french suction catheter.</li> <li>6. Insert catheter into nostril and pharynx without applying suction.</li> <li>7. Apply suction as catheter is withdrawn.</li> <li>8. If necessary, suction 0.5 - 1 mL of normal saline through catheter in order to clear the catheter and increase the amount of specimen in the luki tube.</li> </ol> <p><b>Bronchoscopy</b></p> <ol style="list-style-type: none"> <li>1. Specimen obtained by physician through the biopsy channel of the bronchoscope.</li> <li>2. Transfer specimen into a luki tube.</li> </ol>
<b>Special Processing:</b>	Specimens received must be cultured within 2 hours of collection.
<b>Transport/Storage:</b>	Transport to the laboratory immediately at room temperature. <b>Do not refrigerate.</b> Refrigeration decreases the colony numbers by >75%.
<b>Sample Rejection:</b>	Specimen that has been refrigerated; specimen with a transit time exceeding 2 hours after collection; specimen not submitted in appropriate transport container; improperly labeled specimen; insufficient volume; external contamination. If an unacceptable specimen is received, the physician or nursing station will be notified and another specimen will be requested before the specimen is discarded.

### ***Interpretive***

**Reference Range:** No *Bordetella pertussis* or *Bordetella parapertussis* isolated

**Alert Values:** The physician or patient's nurse will be notified of all positive cultures.

**Limitations:** The culture sensitivity is limited to the number of viable organisms present in the secretions. Negative cultures do not rule out pertussis.

**Methodology:** Culture on Regan-Lowe medium

**References:**

Cook, JH, and M Pezzlo (1992). Specimen receipt and accessioning. Section 1. Aerobic bacteriology, 1.2.1-4. In HD Isenberg (ed) Clinical Microbiology Procedures Handbook. American Society for Microbiology, Washington DC

Miller, J Michael (1999) A Guide To Specimen Management in Clinical Microbiology, American Society for Microbiology, Washington DC

Miller, J Michael, and HT Holmes (1999) Specimen Collection, Transport, and Storage In PR Murray et al, (ed), Manual of Clinical Microbiology, 7<sup>th</sup> edition, American Society for Microbiology, Washington DC, pp 33-104

**Updates:**

3/24/2010: CPT Updates  
2/1/2012: Specimen container/ transport medium update.  
5/16/2012: Critical value changed to Alert value.  
1/7/2013: Bordetella FA testing no longer available.  
2/27/2013: Addition of charcoal swab info and removal of Infection Prevention notification. DFA no longer performed.