



POLICY: To obtain sputum samples safely and effectively in pediatric patients

PROCEDURE: Induced Sputum Collection in Pediatric Patients

1. Premedicate with albuterol 2.5 mg/3mL (0.083%) solution – 3 mL via nebulizer to induce bronchodilation and better facilitate delivery of hypertonic saline. This can help prevent the development of bronchospasm during delivery of hypertonic saline. An MDI with a mask and spacer is an acceptable substitution.
2. Give 5 mL of 3% hypertonic saline solution via nebulizer over period of at least 10 minutes. Prolonged administration has been shown to yield better samples.
3. If patient has copious nasal secretions, consider nasal suction with olive tip.
4. Obtain mucus specimen trap with suction catheter appropriate for patient size. Measure from tip of nose to the tragus for depth of catheter insertion and obtain sample via suction of the nasopharynx. The goal is to induce a gag and then a cough. Sample is expected to be blood-tinged.

Note: This process may induce a vagal response. The patient should be sitting up with feet supported or lying down, NOT standing. If vasovagal syncope does occur, immediately place the patient supine with the legs elevated.

5. Place specimen in appropriate collection container for desired test. Precise labeling is essential to prevent specimen rejection from state lab.
 - a. For rule-out pulmonary tuberculosis, collect 3 induced sputum samples at least 8 hours apart – one must be first morning sample. Send for Acid Fast Bacilli Smear and Culture. Sample must be in an AFB container (conical with orange top), with a minimum volume of 5 mL; add sterile water to dilute if necessary. Two samples should also be sent for Xpert MTB-RIF. These samples should be 3-5 mL of mucous in a sterile specimen cup. Do not dilute, or "saline wash" nares during suction for this specimen. AFB and Xpert may be obtained at the same time; if quantity not sufficient for both tests, prioritize the AFB.
 - b. Standard sputum cultures do not have a minimum volume and can be placed in a sterile specimen cup.
 - c. Label must contain full user name of collector and date and time of the collection. **This should be written below the barcode, NOT beside it.**
 - d. Collect specimen in RAVEN. Confirm the correct accession number and deselect any additional (future) accession numbers. Ensure the collector ID, date, and time entered into RAVEN are an exact match to the written label.

***Contraindications to above procedure:** oxygen saturation of <92% despite supplemental oxygen therapy, inability to protect the airway, severe bronchospasm, or designation as inappropriate by the clinician for another reason (eg., midface trauma). After exclusion or resolution of these conditions, sputum induction can be considered.

Note: This procedure can also be used for patients who are able to follow instructions but do not have a productive cough. In these cases, suction may or may not be necessary.