Yukon-Kuskokwim HEALTH CORPORATION

Treatment Protocol

Induced Sputum Collection Checklist

This protocol has been designed to maximize efficacy, use the least invasive measures that are still effective, and minimize hospital length of stay. ***Please follow these steps to optimize sample quality.***

☐ 1. **Premedicate** with albuterol 2.5 mg/3mL (0.083%) solution – 3 mL via nebulizer to induce bronchodilation, facilitate delivery of hypertonic saline, and help prevent bronchospasm during delivery of hypertonic saline. May substitute MDI with mask and spacer. ***DO NOT COMBINE with hypertonic saline***.

☐ 2. Administer 5 mL of 3% hypertonic saline solution via nebulizer ***over a 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 sample using mucus specimen trap with suction catheter appropriate for patient size. Measure from tip of nose to the tragus to cricoid cartilage 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.

a. For rule-out pulmonary tuberculosis:

i. Collect three induced sputum samples ***at least 8 hours apart*** – one must be first morning sample (fasting goal 6-8 hours). Send for Acid Fast Bacilli Smear and Culture. Sample must be in an AFB container (conical with orange top), with a minimum volume of 2 mL (although 5 mL is preferable); sterile water may not be added to dilute sample.

ii. Two samples should also be sent for Xpert MTB-RIF. This test requires 3-5 mL of mucous in a sterile specimen cup. ***DO NOT DILUTE***, or "saline wash" nares during suction for this specimen.

iii. 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.

☐ 6. Label with full name of collector and date and time of the collection. This should be written ***below the barcode***, NOT beside it. ***If not labelled correctly, state lab will reject specimen.***

☐ 7. 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 collecting an induced sputum: 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.

Special considerations:

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.

While there are no contraindications due to age, for infants younger than 6 months, the sensitivity of induced sputum samples is lower than that of gastric aspirates. Thus, three first morning gastric aspirates collected 24 hours apart or a single first morning gastric aspirate followed by 2-3 induced sputum samples eight hours apart may be preferable. Please consult a pediatric TB officer to discuss this plan.

NOTE: Gastric aspirate samples cannot be sent for sputum culture or Xpert MTB-RIF.

Young infants with CPT1A-AV may need dextrose-containing mIVF while NPO. Very young infants may not tolerate fasting intervals of 6-8 hours; consider allowing breastmilk up to 4 hours pre-procedure and/or clear liquids up to 2 hours pre-procedure.