LAWRENCE MEMORIAL HOSPITAL	**Title:** Nasal / Nasopharyngeal / Tracheal / Endotracheal Specimen Collection
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PURPOSE: To describe the steps for obtaining a nasal / nasopharyngeal specimen.

SUPPORTIVE DATA:
Nasal/nasopharyngeal/endotracheal specimens are used to test for bacterial or viral infections, and may be collected by one of several methods. The age and condition of the patient plus the type of testing to be done determine which method to use (see Table 1). Equipment needed is determined by the collection method used (see Table 2). Follow Standard Precautions for specimen collection, and deliver specimens to the laboratory promptly.

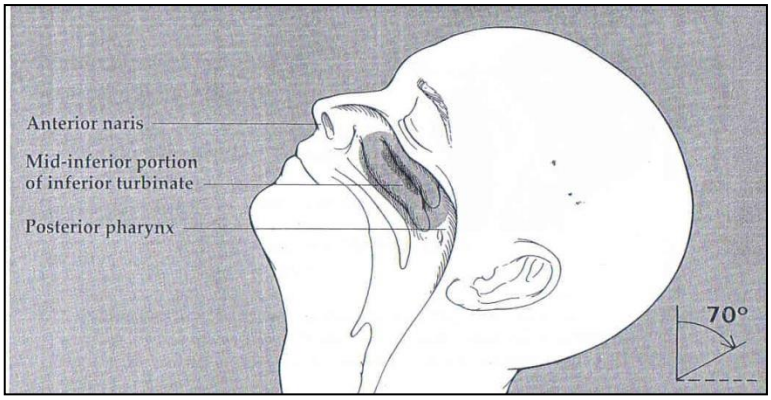
Table 1Collection Methods/Common Types of Tests Used For

	Typical Age Group	**Bacterial Culture Tests**	**Influenza Test FLUPCR (UTM/ XPert viral transport media)**	**Influenza/RSV Test By PCR (UTM/Xpert viral transport media)** Required for Inpatients and ED patients	**RSV Test by PCR RSVPCR (UTM/ Xpert viral transport media)**	**Pertussis Test (BORD) or Respiratory Panel (RPPCR) (UTM/ Xpert viral transport media)**	**MRSA Screen Test (MRSA2)**
Nares, dual swab culturette	All Ages	Not Acceptable	Not Acceptable	Not Acceptable	Not Acceptable	Not Acceptable	Acceptable Method
Nasal Swab, dual swab culturette	All Ages	Acceptable Method	Not Acceptable	Not Acceptable	Not Acceptable	Not Acceptable	Not Acceptable
Nasopharyngeal Swab, UTM kit (Universal Transport Medium for Influenza and Viruses)	All Ages	Not Acceptable	Preferred Method (UTM/ viral transport media)	Preferred Method (UTM/ viral transport media)	Preferred Method (UTM/ viral transport media)	Preferred Method (UTM/ viral transport media)	Not Acceptable
Nasal Aspirate	2 years or younger	Acceptable Method	Not Acceptable	Not Acceptable	Not Acceptable	Not Acceptable	Not Acceptable
Nasal Wash	2 years or younger	Acceptable Method	Not Acceptable	Not Acceptable	Not Acceptable	Not Acceptable	Not Acceptable
Nasopharyngeal Swab	All Ages	Acceptable Method	Not Acceptable	Not Acceptable	Not Acceptable	Not Acceptable	Not Acceptable
Nasal Vacuum-Assisted Aspirate	2 years or younger	Acceptable Method	Not Acceptable	Not Acceptable	Not Acceptable	Not Acceptable	Not Acceptable
Nasopharyngeal Vacuum- Assisted Aspirate	All Ages	Acceptable Method	Not Acceptable	Not Acceptable	Not Acceptable	Not Acceptable	Not Acceptable
Tracheal / Endotracheal Suction	All ages	Acceptable Method	Not Acceptable	Not Acceptable	Not Acceptable	Not Acceptable	Not Acceptable

Table 2

Collection Method	Equipment Needed
Nares, dual swab culturette	• Dual swab culturette
Nasal Swab, dual swab culturette	• Dual swab culturette
Nasal / Nasopharyngeal Swab in UTM kit	• UTM Kit for the Collection and Preservation of Influenza, Viruses, RSV, and Pertussis
Nasal Aspirate	• Sterile bulb syringe • Sterile specimen container
Nasal Wash	• Sterile bulb syringe • Sterile saline bullet • Sterile 1 ml syringe, WITHOUT NEEDLE • Plastic medicine cup • Sterile specimen container
Nasopharyngeal Swab	• Mini-tip culturette
Nasal Vacuum-Assisted Aspirate	• BBG® nasal aspirator • Sterile mucus trap • Sterile saline bullet • Sterile 1 ml syringe, WITHOUT NEEDLE • Plastic medicine cup
Nasopharyngeal Vacuum-Assisted Aspirate	• Sterile suction catheter kit (catheter and 1 sterile glove) • Water-soluble lubricating gel • Sterile mucus trap • Suction source
Tracheal / Endotracheal Suction	• Sterile LUKI Specimen Trap w/lid • Sterile saline bullet • Sterile suction catheter kit (catheter and 1 sterile glove) • In-line suction kit • Wall suction set-up

PROCEDURE



(Figure 1)

Nasal / nasopharyngeal specimen collections are done with the head tilted back at a 70^{o} angle. **EXCEPTION:** This angle can occlude the airways of neonates and infants. For these patients, tilt the head to a "sniffing" position.

For pediatric or other patients who may not be able to remain immobile during the procedure, have a second person assist to hold the patient. For infants, consider use of the papoose board.

A. Nares

1. **Collect specimen with dual swab culturette with liquid Stuart's medium.**
2. **Insert dry swabs (dual) approximately 1-2 cm into each nostril.**
3. **Rotate the swabs against the inside of the nostril for 3 seconds. Apply slight pressure with a finger on the outside of the nose to help assure good contact between the swab and the inside of the nose.**
4. **Using the same (dual) swabs and same process, repeat for the second nostril for 3 seconds.**
5. **Twist the cap off the plastic transport tube and place the swabs deep into the plastic transport tube so that the swabs rest on top of the sponge at the bottom of the tube.**

B. Nasal Swab

1. Tilt head into position (see Figure 1).
2. Gently insert swab into one nostril--into the anterior naris – until resistance is met at the level of the turbinates.
3. Gently rotate the swab a few times against the nasal wall, and leave in place 5-10 seconds.
4. Withdraw swab slowly.
5. Insert swab into culturette.

C. Nasopharyngeal Swab in UTM kit:

1. Tilt head into position (see Figure 1).
2. Gently insert swab into the nostril that presents the most secretion--into the anterior naris. Keep the swab against the septum floor of the nose while gently pushing the swab into the posterior nasopharynx.
3. Gently rotate the swab a few times against the nasal wall, and leave in place 5-10 seconds.
4. Withdraw swab slowly.
5. Insert swab into UTM media.
6. Sample must be transported to the lab immediately or kept at 2-8^{o} C (on ice) if delivery to the laboratory is delayed.

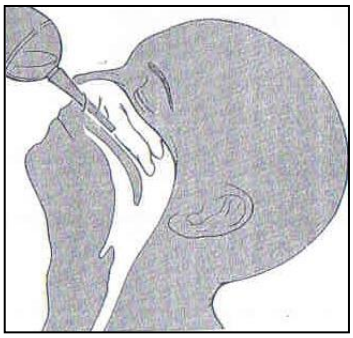
D. Nasal Aspirate

1. Tilt head into position (see Figure 1).
2. Squeeze bulb.
3. Gently place the tapered end of the (squeezed) bulb into one nostril—until the nostril is occluded (see Figure 2). NOTE: This may induce coughing and tearing.
4. Release bulb (to suction secretions).
5. Remove bulb from nostril.
6. Squeeze contents from bulb into specimen container.

E. Nasal Wash

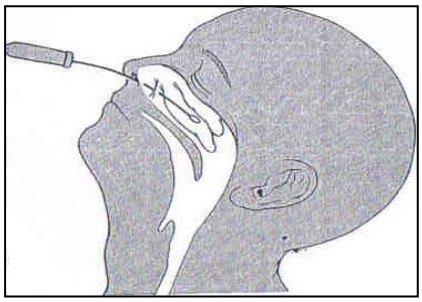
1. Tilt head into position (see Figure 1).
2. Empty contents of saline bullet into plastic medicine cup.
3. Withdraw 1 ml saline from cup with tuberculin syringe.
4. Squeeze bulb.
5. Using tuberculin syringe, instill 2-3 drops of saline into one nostril. NOTE: This may induce coughing and tearing.

6. Immediately after saline instillation, gently place the tapered end of the (squeezed) bulb into one nostril—until the nostril is occluded (see Figure 2).
7. Release bulb (to suction secretions).
8. Remove bulb from nostril.
9. Squeeze contents from bulb into specimen container.



F. Nasopharyngeal Swab

1. Tilt head into position (see Figure 1).
2. Gently insert swab into one nostril—parallel to the palate--until the posterior nares is reached (see Figure 3). NOTE: If resistance is encountered during insertion of the swab, remove it and attempt insertion in the opposite nostril.
3. Leave swab in place for a few seconds (to absorb secretions), then rotate gently. NOTE: This may induce coughing and tearing.
4. Withdraw swab slowly.
5. Insert swab into culturette.



(Figure 3)

G. Nasal Vacuum-Assisted Aspirate

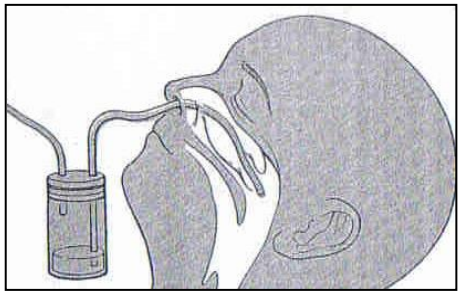
1. Tilt head into position (see Figure 1).
2. Using saline bullet, instill 2-3 drops of saline into one nostril. NOTE: This may induce coughing and tearing.
3. Place the BBG® Nasal Aspirator tip in contact with nares.
4. Adjust suction by partially or fully blocking the hole in the suction control valve with your thumb
5. Assist patient to return to position of comfort.
6. Disconnect mucus trap from suction source and BBG® Nasal Aspirator.
7. Seal mucus trap by securing lid on top.

H. Nasopharyngeal Vacuum-Assisted Aspirate

Patient Age	Recommended Catheter Size (French)	Recommended Suction Pressure
Neonates	8	60-80 mm Hg
29 days to 1 year	10	80-100 mm Hg
Over 1 year through 12 years	12	100-120 mm Hg
Adolescents/Adults	14	100 -150 mm Hg

1. Attach mucus trap to suction source and catheter, maintaining sterility of catheter.
2. Use sterile technique for procedure: Apply sterile glove on hand that will hold the suction catheter.
3. Apply lubricating gel to catheter.
4. With ungloved hand, turn on suction, and adjust to recommended pressure.

5. Tilt head into position (see Figure 1).
6. Insert catheter, without applying suction, into one nostril. Direct the catheter posteriorly and toward the opening of the external ear (see Figure 4). NOTE: Depth of insertion necessary to reach posterior pharynx is equivalent to distance between anterior naris and external opening of the ear.
7. Apply suction intermittently. Using a rotating movement, slowly withdraw catheter while suctioning intermittently. NOTE: Catheter should remain in nasopharynx no longer than 10 seconds.
8. Hold mucus trap upright to prevent secretions from going into suction source.
9. Turn off suction.
10. Disconnect mucus trap from suction source and catheter.
11. Seal mucus trap by placing open end of rubber tubing on open port of mucus trap.



(Figure 4)

I. Tracheal / Endotracheal Suction
(For use with in-line suction catheter kit or stand alone suction kit).

Patient Age	Recommended Catheter Size (French)	Recommended Suction Pressure
Neonates	8	60-80 mm Hg
29 days to 1 year	10	80-100 mm Hg
Over 1 year through 12 years	12	100-120 mm Hg
Adolescents/Adults	14	100 -150 mm Hg

1. Pre-oxygenate patients with 100% oxygen.
2. Attach Luki trap to suction source and catheter, maintaining sterility of catheter.
3. If using the in-line suction catheter, unlock suction control device by pulling the lock up and swivel 180° to disengage the lock. Use sterile technique if in-line suction catheter is not being used. Apply sterile glove on hand that will hold the suction catheter.
4. Using sterile technique, instill 3 ml NS into artificial airway.
5. With ungloved hand, turn on suction, and adjust to recommended pressure.
6. Insert catheter, without applying suction, into artificial airway by directing the catheter posteriorly and down into the airway. (NOTE: Depth of insertion necessary to reach posterior pharynx is equivalent to distance between anterior naris and external opening of ear.)
7. Continue to advance catheter until slight resistance is felt. Pull back slightly. Note the cm marking on the catheter for future suction depth reference.
8. Apply suction intermittently. Using a rotating movement, slowly withdraw catheter while suctioning intermittently. (NOTE: Catheter should remain in artificial airway no longer than 10 seconds.)
9. Hold mucus trap upright to prevent secretions from going into suction source.
10. If using in-line suction catheter, continue to withdraw catheter until black line is visible at the level of the blue connector in the end of the tube. Then, lock suction control cap by pulling it up and swiveling it 180°.
11. Turn off suction.
12. Disconnect mucus trap from suction source and catheter.
13. Return FiO2 to pre-suction level if changed prior to suctioning.

14. Seal mucus trap by placing open end of rubber tubing on open port of mucus trap.

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Refer to current Influenza/RSV by PCR laboratory procedures.

ISSUED: July 2001

REVISED: July 2005 to Interdisciplinary Procedure, "Nasal/Nasopharyngeal Specimen Collection". (Incorporating Nursing Procedure: "Nasopharyngeal Specimen Collection", Pediatric Nursing Procedure, "RSV Nasal Wash Procedure", and Pulmonary Care Procedure, "Specimen Collection: RSV Wash")

REVISED: Standards Committee, December 2006
Patient Care Council, January 2007

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Standards Committee, June 2010
Practice Council, September 2010

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Practice Council, October 2011

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Practice Council, February 2014

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