

Guidance for Carbapenemase-producing Organism (CPO) Colonization Specimen (Non-rectal Source) Collection, Packaging, and Shipping

Background

Carbapenemase-producing organism (CPO) colonization testing of non-rectal sources is performed by culture-based methods utilizing specific selective media followed by species identification (MALDI-TOF), and real-time PCR (RT-PCR). RT-PCR targets the “big-5” carbapenemase genes KPC, NDM, OXA-48-like, VIM, IMP, and/or the typically *Acinetobacter*-specific OXA-23, OXA-24, and OXA-58 genes of any suspicious isolates. The Cepheid GeneXpert Carba-R test detects KPC, NDM, OXA-48, VIM and IMP (typically found in Enterobacterales and sometimes *Pseudomonas aeruginosa*) from rectal swabs only, but is not capable of detecting carbapenemase genes from non-rectal sources, some IMP variants, or the *Acinetobacter* spp.-specific genes (OXA-23, -24, or -58).

Sample Collection

Colonization kit, provided by Minnesota Department of Health Public Health Laboratory (MDH PHL).

Contents of the Kit:

- Nylon-flocked swab with liquid transport medium (BD ESwab™) collection and transport system; Becton Dickinson and Company, Sparks, MD)
- One SafTPak (STP-710) white Tyvek® bag
- One SafTPak (STP-711) clear bag
- One absorbent pad
- Parafilm to seal cap to tube
- Shipping container
- AR Lab Network (ARLN) Submission form (<https://www.health.state.mn.us/diseases/idlab/forms.html#arforms>)
- Guidance for Carbapenemase-producing (CPO) Colonization Specimen (Non-rectal Source) Collection, Packaging, and Shipping (this document)

Procedure for Collecting the Swab

- Before initiating collection, hand hygiene should be performed and appropriate personal protective equipment (PPE) should be donned as indicated by the patient’s clinical care team (e.g. gloves, gown, mask).
- See Appendix A for additional collection diagrams and instructions.

Axilla/groin and wound:

1. Open the **ESwab™** package by grasping the plastic at the opposite end from the soft tip (See Appendix A for additional collection diagrams and instructions.).

2. Carefully remove the tube from its packaging, leaving the swab tip enclosed in the package to prevent contamination.
3. Pull the swab from its package, being careful not to touch the soft tip. Firmly rub the soft end of the collection swab across the indicated site at least 3-5 times.
 - a. Single swab axilla and groin composite collection method:
 - i. Rub both sides of the swab tip over the left axilla skin surface and then the right, targeting the crease in the skin where the arm meets the body (i.e., swab both armpits, swiping back and forth ~5 times per armpit).
 - ii. With the same swab used on each axilla, rub both sides of the swab tip over the left groin skin surface, targeting the inguinal crease in the skin where the leg meets the pelvic region and repeat with the right side (i.e., swab the skin of both hip creases swiping back and forth ~5 times per hip crease).
 - b. Wound collection method:
 - i. Rinse the wound with sterile water or saline prior to collection to remove topical treatments.
 - ii. Firmly rub both sides of the swab tip over the advancing margins of lesion.
4. Remove the cap from the swab collection tube, then place the soft end of the collection swab into the tube. Be careful to keep the cap from touching any materials that may contaminate the sample. ****DO NOT REMOVE THE LIQUID IN THE TUBE.**
 - a. If liquid medium in the ESwab™ collection tube is accidentally spilled after inserting the swab, the specimen must be recollected the sample with a new ESwab™.
 - b. Do not add liquid medium into the ESwab™ collection tube or attempt to retrieve spilled liquid medium.
5. Snap off the end of the swab at the marked line by bending the plastic handle against the edge of the transport medium container.
6. Screw on the tube cap, the snapped end of the swab should slide into place in the center of the cap. Seal with parafilm (included in supplies) by stretching and wrapping the closed tube cap tightly in the parafilm material.

Collection of Sputum or Tracheal Aspirate:

1. Using aseptic technique, collect the sputum or tracheal aspirate in a sterile collection container (not provided), per facility standard operating procedures.
2. Apply patient/resident identification label or clearly write specimen information on the tube/container.
3. See specimen labeling instructions below.

4. Complete an AR Lab Network (ARLN) submission form for each specimen and include with shipment.
5. Package and ship immediately to MDH-PHL, Central Region AR Lab Network laboratory.

***If a delay in shipment cannot be prevented, store the swabs at 2-8°C until shipment. Ship cold.**

Labeling

Specimens must be clearly labeled with:

1. A minimum of 2 acceptable patient identifiers:
 - a. Patient's first and last name
 - b. Date of birth
 - c. Medical record number
 - d. Sample ID number
2. Date of specimen collection
3. Site of collection (e.g. right leg wound)

Shipping

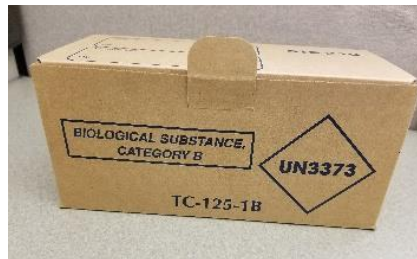
1. Place the ESwab™ tubes in the clear Saf-T-Pak bag (STP-711) along with the absorbent pads provided in the kit. Place one swab per bag. See photo.
2. Fold tape closure over so that the white paper liner is visible and remove the liner to expose adhesive.
3. Gently lay sticky tape over the bag opening and smooth with fingers to seal tightly.
4. Place clear Saf-T-Pak bag (STP-711) sealed with its contents into white Saf-T-Pak bag (STP-710). See photo. NOTE: more up to 10 clear Saf-T-Pak bags can be inserted into this white Saf-T-Pak envelope.
5. Fold tape closure over so that the white paper liner is visible and remove the liner to expose adhesive.
6. Gently lay tape over the bag opening and smooth with fingers to seal tightly.
7. Place white Saf-T-Pak (STP-710) envelope(s) sealed with its contents into the provided Styrofoam shipping container (add additional envelopes as needed) and include sufficient amount of ice packs. Ensure the Biological Substance, Category B label is attached to the side of the exterior box. See photo below.





NOTE: Facilities using local couriers for same-day delivery (not utilizing FedEx, etc.) can replace step 7 with the following:

Place white Saf-T-Pak (STP-710) envelope, sealed with its contents into smaller cardboard shipping container (STP-210) folded so that “Biological Substance, Category B” is facing outward. Include ice packs. This shipping container does not contain a cooler and can hold up to 10 swabs. See photo.



8. Place filled-out submission paperwork inside box, close flap, seal with tape, and ship by your facility’s courier, or if no courier, see Fed-Ex shipping instructions on next page.

Questions? Contact:

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THE FOLLOWING GUIDE IS AN EXAMPLE ONLY, PLEASE CONSULT WITH
YOUR ESWAB REPRESENTATIVE FOR CHANGES TO THIS GUIDE.



eSwab™



Innovating Together™

ESwab is a liquid based multipurpose collection and transport system that maintains the viability of aerobic, anaerobic and fastidious bacteria for up to 48 hours. The ESwab system collects and releases more specimen, significantly improving patient test results and decreasing the need for repeat testing due to insufficient sample.

ESwab replaces multiple transport devices with just one system eliminating the need to stock multiple types of swabs.

ESWAB INSTRUCTIONS

ESWAB IS EASY TO USE:

- Perform hand hygiene and put on gloves if necessary.
- Perform positive patient identification.
- Open the peel pouch.
- Remove the swab.
- Collect the patient sample using the swab. **Avoid touching the swab applicator below the pink molded breakpoint** as this could lead to contamination and incorrect test results.
- Remove the screw cap from the tube and insert the swab **all the way to the bottom of the tube**.
- Hold the tube away from your face. Holding the end of the swab shaft, bend it at a 180 degrees angle to break at the marked breakpoint. **If needed, gently twist the shaft between thumb and forefinger to completely remove it.**
- **Screw the cap on tightly to prevent leakage.**
- Dispose of the swab shaft in a regular trash receptacle.
- Apply patient identification label or write patient information on the tube label.
- Follow the standard operating procedures of transport and testing for your facility.
- Remove gloves if necessary and perform hand hygiene.

NOTE:

The ESwab Liquid Amies fluid maintains the viability of diverse bacteria. **Do not send a dry ESwab as this will lead to unsatisfactory results.**

If the tube spills its contents prior to inserting the swab, the liquid is non-toxic. Simply put the swab into another tube before sending it to the laboratory and discard the spilled tube.

If the tube spills after contamination, follow procedure for blood and body fluid clean up. Refer to your facility's infection control manual for further direction.

If contaminated fluid splashes onto the personnel collecting the sample, treat as a blood and body fluid exposure. Refer to your facility's infection control manual for further direction.



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