

Guidance for Carbapenemase-producing Organism (CPO) Colonization Specimen (Rectal or Perirectal Source) Collection, Packaging, and Shipping

Background

This document is for rectal and perirectal swabs only. Refer to “Guidance for Carbapenemase-producing Organism (CPO) Colonization Specimen (Non-rectal Source)” for information about non-rectal sources (e.g., axilla/groin, wound, tracheal aspirate, sputum, stool, etc.).

The Cepheid GeneXpert Carba-R assay is the only FDA-approved commercial test for the molecular detection of carbapenemase-producing organisms (CPOs) in human rectal or perirectal swab specimens and has a rapid turnaround time for results. The Carba-R assay detects the carbapenemase genes KPC, NDM, OXA-48, VIM, and IMP from rectal or perirectal swabs only. The Carba-R assay is not able to detect some IMP gene variants (e.g., IMP-27), or the *Acinetobacter*-specific OXA genes (OXA-23, -24, -58, -235). Instead, culture-based testing is performed for the detection of carbapenemase genes not detectable using the Carba-R assay. Proper sampling and specimen handling are critical for obtaining accurate results.

NOTE: Please be aware of the deadline for FedEx pick-up in your area.

Prior approval from AR Lab Network Central Region Lab is required for point prevalence surveys before collection and shipping of specimens. Send email to arlnmn@state.mn.us. No prior approval is needed for admission screenings.

Specimen Collection

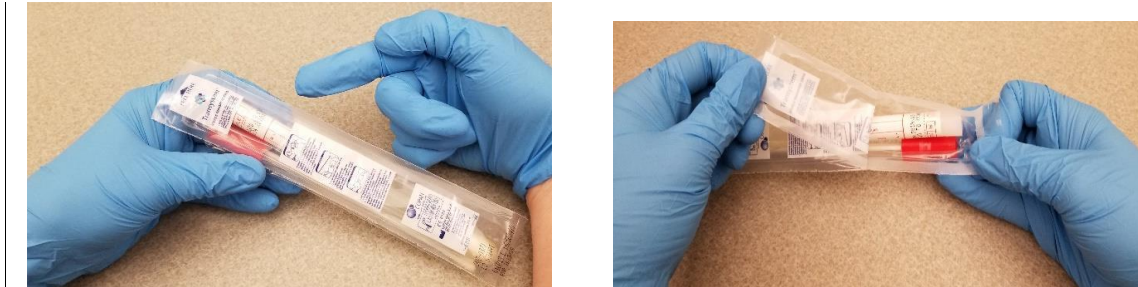
CPO colonization kit, provided by Minnesota Department of Health Public Health Laboratory (MDH PHL).

Contents of the Kit:

- Dual rayon swab with liquid Stuart medium (Copan Transystem™ Sterile transport system; Copan Diagnostics, Murrieta, CA, or equivalent)
- Saf-T-Pak box(es) (pre-assembled so that “Biological Substance, Category B” signage is facing outward)
- Saf-T-Pak white Tyvek® bag(s)
- Saf-T-Pak clear bag(s)
- Absorbent pad(s)
- Guidance for Carbapenemase-producing Organism (CPO) Colonization Specimen (Rectal or Perirectal Source) Collection, Packaging, and Shipping packet (this document)

Procedure for Collecting the Specimen

1. Before initiating collection, perform hand hygiene and don appropriate personal protective equipment (PPE) as indicated by the patient's or resident's clinical care team (e.g., gloves, gown, mask).
2. Open the outer packaging of the Copan Transystem™ Sterile Transport Swab on the end that says, "PEEL HERE" (the opposite end from the swab tips).



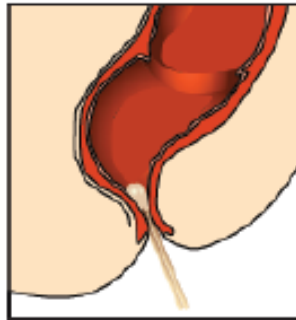
3. Carefully remove the tube from the plastic packaging and label the tube, either by hand or with a printed label. Leave the dual swab enclosed in the plastic packaging to prevent contamination.
 - a. Specimens must be clearly labeled with:
 - i. A minimum of 2 patient identifiers. Acceptable identifiers include:
 1. Patient's full name
 2. Date of birth
 3. Medical record number
 4. Sample ID number
 - ii. Date of specimen collection
 - iii. Site of collection (e.g., rectal)



4. Pull the dual swab from the plastic packaging, being careful not to touch the swab tips.



5. Collection of a paired rectal swab: Carefully insert both swab tips approximately 1 cm beyond the anal sphincter and gently rotate against the walls of the rectum 3 times. See figure for proper swab depth.



6. Collection of a paired perirectal swab: Carefully insert both swab tips no more than 1 cm into the anal opening before the anal sphincter and rotate gently.
7. Confirm swab is not heavily soiled. See figures below for reference.

Acceptable Specimens



Unacceptable Specimens



8. Remove white cap from tube by twisting.



9. Insert dual swab into tube and firmly close red cap by pressing down.



10. Complete an AR Lab Network submission form for each specimen and include with shipment. See **Submission Form** instructions (page 5).
11. Package and ship immediately to MDH-PHL, AR Lab Network Central Region laboratory. Specimens must be shipped at 15–28°C (room temperature) and tested within five (5) days of collection.

	Test	Storage Temp.	Shipping Temp.	Acceptance window after collection
RECTAL/PERIRECTAL SWAB	Carba-R (KPC/NDM/OXA-48/VIM/IMP)	ambient (15-28°C)	ambient (15-28°C)	5 days
	Carba-R (KPC/NDM/OXA-48/VIM/IMP) -AND- Culture-based testing for CRAB (OXA-23, -24, -58, -235)	ambient (15-28°C)	ambient (15-28°C)	5 days
	Culture-based testing for CRAB (OXA-23, -24, -58, -235)	refrigerated (2-8°C)	refrigerated (2-8°C)	5 days optimal; contact MDH if longer
	Culture-based testing for IMP	refrigerated (2-8°C)	refrigerated (2-8°C)	5 days optimal; contact MDH if longer

CRAB – Carbapenem-resistant *Acinetobacter baumannii*

IMP – metallo-beta-lactamase gene *bla_{IMP}* encodes the imipenemase enzyme

Labeling

Specimens must be clearly labeled with:

1. A minimum of 2 patient identifiers. Acceptable identifiers include:
 - a. Patient's full name
 - b. Date of birth
 - c. Medical record number
 - d. Sample ID number
2. Date of specimen collection
3. Site of collection (e.g., rectal)

Submission Form

1. Fill out one **ARLAB Central Region Clinical Testing and Submission Form (PDF)** for each specimen located under the "Forms" section of the following website:
<https://www.health.state.mn.us/diseases/idlab/arln.html>
 - Ensure all fields marked with an asterisk (*) are filled out.
 - For specimen, check the appropriate source type/site. If the swab site is not present, check "Other (specify)" and specify the body site in the "Specify Additional Source Type/Site Information" box.
 - Specimen Test Requested

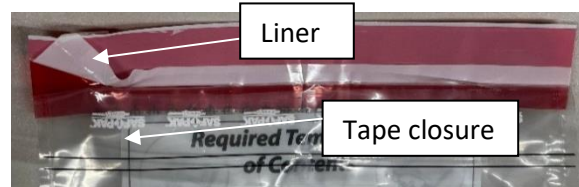
- Check the box for “Carbapenem Resistant Organism Colonization Screening by Carba-R (CARBAR)” if detection of KPC, NDM, OXA-48, VIM, and IMP gene targets is desired.
- Check the box for “Carbapenem Resistant Organism Colonization Screening by Culture (CPOCX)” for the following culture-based testing:
 - Check the box for “CRAB culture testing” if detection of the OXA-23, -24, -58, -235 gene targets is desired.
 - Check the box for “IMP culture testing” if detection of IMP gene targets is desired (typically when specific variants not detectable by Carba-R are suspected such as IMP-27)

Packaging

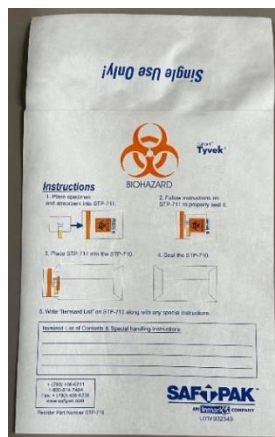
1. Place the swab(s) in the clear Saf-T-Pak bag along with the absorbent pad(s) provided in the kit. **Up to 10 swabs** can be placed per bag provided they fit. See photo.



2. Fold tape closure over so that the white liner is visible, then remove the liner to expose adhesive.



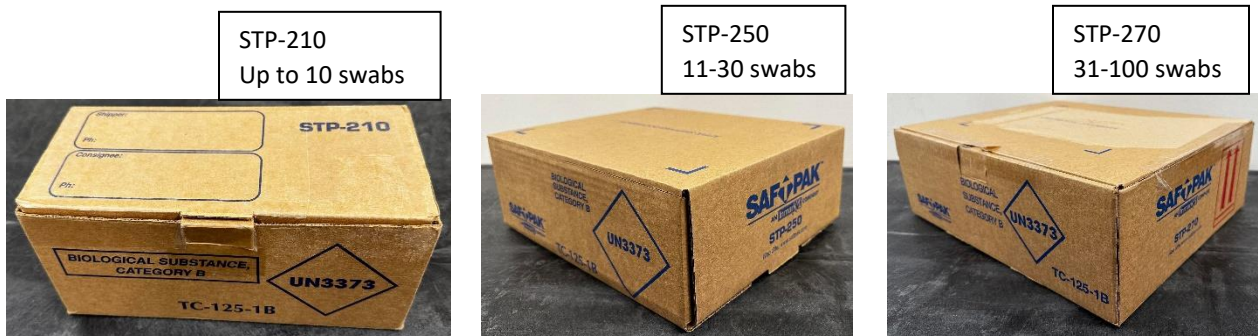
3. Gently lay tape closure over the bag opening and smooth with fingers to seal tightly.
4. Place clear Saf-T-Pak bag sealed with its contents into white Saf-T-Pak envelope. See photo.



5. On the Saf-T-Pak flap, remove the liner to expose adhesive.



6. Gently fold the Saf-T-Pak flap over the bag opening and smooth with fingers to seal tightly.
7. Place white Saf-T-Pak envelope(s), sealed with its contents into the provided box folded so that “Biological Substance, Category B” is outwardly showing. See photos below for sizes and capacity.



8. Neatly fold and place Antimicrobial Resistance (AR) Laboratory Network Central Region Lab submission form(s) inside the box on top of the white Saf-T-Pak envelope(s).
9. Close flap of box and seal with tape.
10. Ship by courier. If there is no courier, ship via FedEx by contacting arlnmn@state.mn.us for account information.

Questions? Contact:

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