

NeoCol: Standard Operating Procedure (SOP) for Environmental Swabs v2.0

Purpose:

The purpose of this SOP is to describe the standard procedures involved in collecting environmental swabs according to the NeoCOL study protocol.

Principal:

Environmental swabs will collect a sample of environmental surfaces in the Neonatal Intensive Care Unit to detect the presence of the resistant (ESBL-producing and CRE) bacteria that may colonise hospital surfaces. The samples will be collected from three high touch, one low touch and two wet areas within the unit. Any isolated resistant bacteria will be identified to the species level to see how they relate to those that colonise infants and their mothers. The collection of environmental samples will occur at the same time for all locations, and be undertaken fortnightly at the same time of day (eg. 0800). Ward cleaning should continue as normal with swabs not to be taken directly after cleaning. Swabs should be collected by the same research assistant to ensure consistency.

Responsibility:

This SOP applies to any clinical staff who are taking environmental swabs from the NICU during the NeoCOL study. It is the responsibility of those users to follow these guidelines when collecting environmental swabs for the study.

Safety Requirements:

Gloves should be worn during swab collection. Standard clinical hand hygiene practices should be followed before, and after sample collection. Handle all specimens with care and treat them as potentially infectious material.

Materials:

- Non-Sterile gloves.
- 1x sterile flocculated swab plus container with amies medium
- 0.9% Sodium Chloride (to moisten swab)
- 10cm² pre-cut template.
- 1x cryogenic label
- Plastic zip lock bag for specimen transport

Procedure:

1. Label each of the specimen containers according to the label coding system (see appendix).
2. Perform hand hygiene and put on gloves.
3. Open the sterile swab package and remove the swab, being careful not to touch the top of the swab to yourself or any other surfaces.
4. Moisten the swab with Sodium Chloride solution.
5. Place the 10cm² pre-cut template over target surface to swab.
6. Swab the target contact surface from top to bottom and side to side within the target template, rotate the swab a minimum of three times to ensure all sides of the swab made contact with the surface so that maximal surface area is obtained.
7. Place the swab into the respective labelled transport container and place into the plastic ziplock bag.
8. Repeat for each target environmental surface (see Appendix)
9. Transport the swabs to the laboratory within 30 minutes.
10. Log the sample collection into the NeoCOL Environmental Sample Collection Log.
11. Dispose of any waste as per hospital policies.
12. Samples will then be processes as per SOP 05 MDR Processing.

Appendix 1: Environmental Swab

Swabbing of the following areas every second week

1. High touch surfaces:
 - a. Nurse station keyboard
 - b. Pulse oximeter screen
 - c. Tip of alcoholic hand rub.
2. Low touch surface
 - a. Underside of cot
3. Wet surfaces
 - a. Water reservoir surface of evaporative humidifier
 - b. Hand washing sink surface.

Appendix 2: Specimen Labelling Code

Site	Week Number	Swab type		Sample Location	
A Philippine General	01 – 52	E Environmental	H High touch surface	1 Keyboard nurse station	
				2 Pulse oximeter screen	
				3 Hand rub tip	
B Cipto Mangunkusumo			L Low touch surface	1 Under-cot surface	
C Hasan Sadikin				W Wet sample area	1 Handwashing sink
D Soetomo					2 Water reservoir of humidifier

Eg. **B02EW1** = Cipto Mangunkusumo Hospital, Week 2, Environmental swab, Wet Sample location, handwashing sink

References

- Rawlinson S, Ciric L, Cloutman-Green E. How to carry out microbiological sampling of healthcare environment surfaces? A review of current evidence. *Journal of Hospital Infection* [Internet] 2019;103(4):363–74. Available from: <https://dx.doi.org/10.1016/j.jhin.2019.07.015>
- Price JR, Cole K, Bexley A, Kostiou V, Eyre DW, Golubchik T, et al.. Transmission of *Staphylococcus aureus* between health-care workers, the environment, and patients in an intensive care unit: a longitudinal cohort study based on whole-genome sequencing. *The Lancet Infectious Diseases* [Internet] 2017;17(2):207–14. Available from: [https://dx.doi.org/10.1016/s1473-3099\(16\)30413-3](https://dx.doi.org/10.1016/s1473-3099(16)30413-3)

Document History

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1.0	B. Dickson	P. Williams	New document	27NOV2023	NeoCOL_SOP08

2.0	B. Dickson	P. Williams	Re-word. Add handrub tip.	20DEC2023	NeoCOL_SOP08

Site Training Record

Trainee Name	Read/Understand SOP (Tick)	Access to SOP (Tick)	Trainee Signature	Date	Trainer Initials