

# NOROVIRUS RECOVERY AFTER DIFFERENT METHODS OF SURFACE DECONTAMINATION: PRELIMINARY RESULTS

Caroline Lopes Ciofi-Silva\*; Kazuko Uchikawa Graziano\*; Rita de Cássia Compagnoli Carmona\*\*; Simone Guadagnucci Morillo; Natália Mayumi Inada\*\*\*; Vanderlei Bagnato\*\*\*

\*School of Nursing at University of São Paulo

\*\* Adolfo Lutz Institute, Enteric Diseases Laboratory

\*\*\*University of São Paulo, Physics Institute, Biophotonics Lab

## BACKGROUND

-Norovirus (NoV) is a chief cause of gastroenteritis outbreaks, and contaminated surfaces contribute to its indirect transmission<sup>1</sup>.

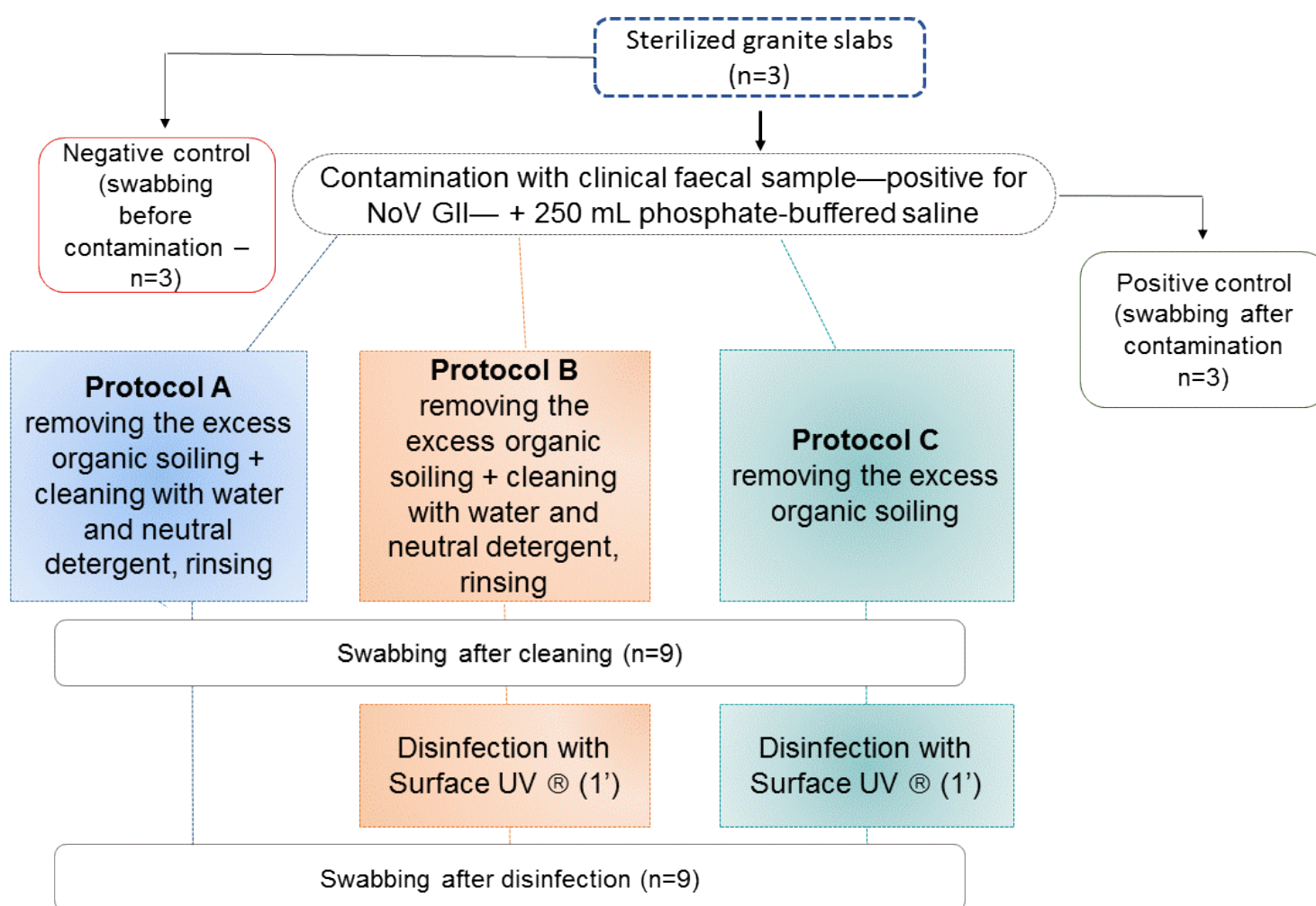
- Effectively decontaminating surfaces is an important step in breaking the transmission cycle of noroviruses. Terminal cleaning fails and new methods have thus been developed, such the ultraviolet light devices.

## PURPOSE

Examine residual contamination by NoV GII after different surface decontamination methods are used.

## MATERIAL AND METHODS

Figure 1: Flowchart of surface sampling. São Paulo, Brazil, 2016



## Detection of NoV:

- Viral RNA was extracted using QIAamp® Viral RNA Mini kit (Qiagen, Valencia, CA, USA)
- TaqMan Real-Time PCR: 25 containing 5µl of cDNA, 12.5 µl TaqMan Universal PCR Master Mix (Applied Biosystems®), 400 and 200 nM concentrations of each primer (cog2F and cog2R) and probe (Ring2), respectively<sup>2</sup>.

## RESULTS

Table 1: CT values\* obtained from RT-PCR in samples collected after different treatments of NoVGII contaminated surfaces.

Samples/ Protocol	Protocol A	Protocol B	Protocol C
<b>Negative control</b>	All samples: Indeterminate	All samples: Indeterminate	All samples: Indeterminate
<b>Positive control</b>	27.58 / 27.41	28.66 / 27.81	30.15 / 29.89
	25.39 / 24.68	26.86 / 26.62	29.64 / 29.72
<b>Cleaning</b>	26.28 / 25.89	27.52 / 26.10	28.68 / 28.79
	38.68 / 38.24	40.89 / Indeterminate	35.00 / 34.86
	39.56 / 42.09	Indeterminate	36.05 / 36.33
<b>Disinfection</b>	38.28 / 38.47	Indeterminate	34.77 / 34.92
	Indeterminate	All samples: Indeterminate	38.94 / 37.68
	42.47 / Indeterminate		37.51 / 38.38
	Indeterminate		35.56 / 36.15

\*Cycle Threshold (CT) values between 13 and 39 were considered positive.

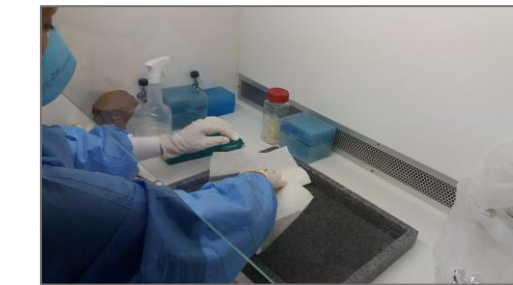


Figure 2: Surface cleaning with absorbent paper.

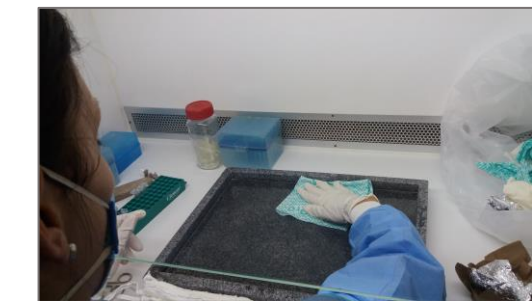


Figure 3: Surface cleaning with water, detergent and rinsing.

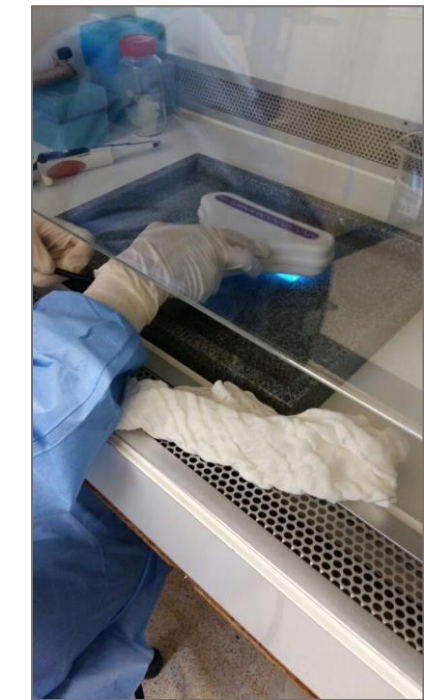


Figure 4: Surface disinfection with Surface UV®

## DISCUSSION

- Soil removal and cleaning is essential before disinfection on NoV contaminated surfaces<sup>3,4</sup>.
- UV light for decontamination of NoV contaminated surfaces in healthcare settings is a unresolved issue and needs strong scientific evidence<sup>5</sup>.

## CONCLUSIONS

- Systematic cleaning was enough to reduce surface contamination by NoV GII.
- Sodium hypochlorite lowered the number of viral particles to undetectable levels.
- New tests featuring longer exposure to ultraviolet C light are recommended.

## REFERENCES

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