

# STAT EPID Monitoring Data Report

NSF International Applied Research Center

**Report Date: 6-August-2019**

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Customer Name: Process Cleaning Solutions  
Contact: Michael Rochon  
Description: ACC Analysis of 111 samples.  
Test Type: Test Only  
Job Number: J-00337679, J-00337851  
Project Number: 10120193  
NSF Corporate: C0493262  
Project Manager: Kyle Martin

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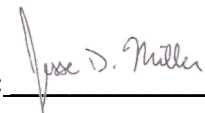
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**Report Authorization:** \_\_\_\_\_



Jesse Miller, Director, Applied Research Center

## Timeline



## Experimental Summary

### Summary of Procedures

#### Sample Collection

- A total of 111 swab samples were collected from a hospital in Quebec, Canada.
  - 55 samples were collected over the course of 3 days using the hospital's current low-level disinfection process.
    - Efficacy for daily cleaning was observed only (discharge cleaning was not considered).
    - Dry time was not timed by staff or by NSF International.
    - All cleaning was performed by trained staff.
  - 56 samples were collected over the course of three days using PCS' cleaning process.
    - The PCS cleaning process involved the use of micro fiber cloths pre-charged in a 200-ppm hypochlorite solution with a neutral pH of 8.5-9.5 followed by immediately wiping surfaces dry with micro fiber cloth.
  - For both product types, rooms were sampled prior to cleaning and again immediately after cleaning.
  - Rooms were chosen randomly based on availability for cleaning as determined by the environmental services staff.
  - Surfaces sampled include:
    - Overbed Table
    - Bedrail
    - Toilet Seat
    - Other
  - Samples from "patient chair", "hamper" and "BP machine" were pooled into the category "other" for statistical analysis.
  - All samples were transported in cold conditions to the NSF microbiology lab.

### Methodology

- All samples were analyzed for total aerobic colony counts (ACC).
- Samples arrived cold to the microbiology test laboratory.
- Upon receipt, each swab was vortexed and plated (dilution factor = 10 for all samples).
- Samples were plated by spread plate method. Triplicate plating of neat only was performed.
- Samples were incubated at 37°C for 48 hours. After 48 hours, colonies were counted, and CFU/sample reported.
- The upper limit of detection is >300 CFU/sample or >30 CFU/cm<sup>2</sup>. The lower limit of detection is <10 CFU/sample or <0.10 CFU/cm<sup>2</sup>.

## Results

**Table 1:** Results for samples collected on July 15, 2019 before and after application of hospital's disinfectant reported in average CFU/cm<sup>2</sup>.

Low Level Disinfectant				
			Before	After
Date	Room	Item	Average CFU/cm <sup>2</sup>	Average CFU/cm <sup>2</sup>
7/15/2019	25	Overbed Table	2.73	0.13
	25	Toilet Seat	18.5	<0.10
	25	Bedrail	0.17	<0.10
	26	Overbed Table	<0.10	<0.10
	26	Toilet Seat	0.37	1.33
	26	Bedrail	0.10	<0.10
	28	Overbed Table	0.20	0.10
	28	Toilet Seat	2.50	<0.10
	28	Bedrail	<0.10	1.23

**Table 2:** Results for samples collected on July 16, 2019 before and after application of hospital's disinfectant reported in average CFU/cm<sup>2</sup>.

Low Level Disinfectant				
			Before	After
Date	Room	Item	Average CFU/cm <sup>2</sup>	Average CFU/cm <sup>2</sup>
7/16/2019	36	Patient Chair	5.13	0.40
	36	Bedrail	<0.10	<0.10
	36	Toilet Seat	2.17	<0.10
	35	Patient Chair	5.03	1.33
	35	Bedrail	<0.10	<0.10
	35	Overbed Table	0.50	<0.10
	35	Hamper	18.8	1.67
	34	Patient Chair	3.33	1.83
	34	Toilet Seat	0.70	0.10
	34	Bedrail	<0.10	

**Table 3:** Results for samples collected on July 17, 2019 before and after application of hospital's disinfectant reported in average CFU/cm<sup>2</sup>.

Low Level Disinfectant				
			Before	After
Date	Room	Item	Average CFU/cm <sup>2</sup>	Average CFU/cm <sup>2</sup>
7/17/2019	9	Patient Chair	12.2	0.10
	9	Bedrail	<0.10	0.40
	9	Toilet Seat	>30.0	3.37
	7	Toilet Seat	0.17	<0.10
	7	Bedrail	1.87	<0.10
	7	Overbed Table	0.47	<0.10
	8	Overbed Table	2.67	2.03
	8	Bedrail	1.30	<0.10
	8	Toilet Seat	5.73	0.90

**Table 4:** Results for samples collected on July 22, 2019 before and after the PCS cleaning process reported in CFU/cm<sup>2</sup>.

PCS Cleaning Process				
			Before	After
Date	Room	Item	Average CFU/cm <sup>2</sup>	Average CFU/cm <sup>2</sup>
7/22/2019	25	Overbed Table	1.60	<0.10
	25	Bedrail	0.10	<0.10
	25	Toilet Seat	>30.0	0.37
	26	Overbed Table	<0.10	<0.10
	26	Bedrail	0.60	<0.10
	26	Toilet Seat	<0.10	<0.10
	29	Overbed Table	3.30	<0.10
	29	Bedrail	0.27	<0.10
	29	Toilet Seat	4.47	<0.10

**Table 5:** Results for samples collected on July 23, 2019 before and after the PCS cleaning process reported in CFU/cm<sup>2</sup>.

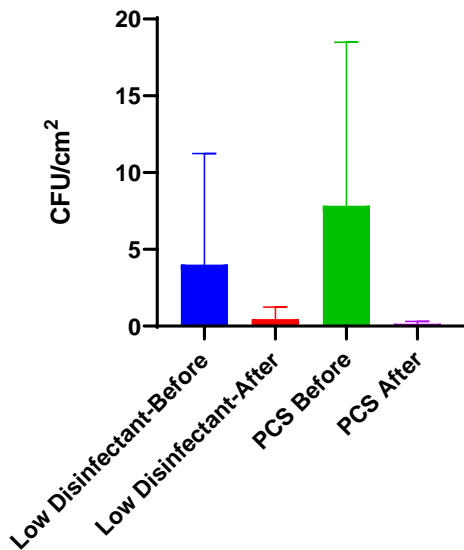
PCS Cleaning Process				
			Before	After
Date	Room	Item	Average CFU/cm <sup>2</sup>	Average CFU/cm <sup>2</sup>
7/23/2019	35	Overbed Table	1.60	0.10
	35	Bedrail	1.07	<0.10
	35	Toilet Seat	>30.0	<0.10
	34	Patient Chair	1.40	0.20
	34	Bedrail	>30.0	<0.10
	34	Toilet Seat	1.13	<0.10
	36	Overbed Table	>30.0	3.33
	36	Bedrail	4.77	<0.10
	36	Toilet Seat	0.50	0.27

**Table 6:** Results for samples collected on July 24, 2019 before and after the PCS cleaning process reported in CFU/cm<sup>2</sup>.

PCS Cleaning Process				
			Before	After
Date	Room	Item	Average CFU/cm <sup>2</sup>	Average CFU/cm <sup>2</sup>
7/24/2019	1	Overbed Table	6.20	0.83
	1	Bedrail	15.2	0.13
	1	Toilet Seat	20.9	<0.10
	3	Overbed Table	5.17	<0.10
	3	Bedrail	0.20	<0.10
	3	Toilet Seat	3.57	0.13
	5	Overbed Table	<0.10	<0.10
	5	Bedrail	6.73	<0.10
	5	BP Machine	2.27	<0.10
	5	Toilet Seat	18.1	<0.10

**Table 7:** Summary Table of average CFU/cm<sup>2</sup> recovered after each cleaning process.

	Low Level Disinfectant		PCS Cleaning Process	
	Before	After	Before	After
Mean CFU/cm <sup>2</sup>	4.12	0.601	7.84	0.263
Log Reduction	0.836		1.47	
% Reduction	85.41%		96.65%	



**Figure 1:** Total average CFU/cm<sup>2</sup> recovered after each cleaning process. Graph shows the average value with standard deviation bars.

