



Nashville General Hospital at Meharry-DDS Trial

Objective:

To measure bacteria levels on surfaces in various environments using the current EVS manual cleaning process and comparing the bacteria levels to the environments that have added Diamond Disinfecting Solutions 24-Hour UV/PURADIGM service program.

Trial Process:

6 Rooms will be identified. 2-ICU Rooms (1 control room), 2-ER Area Rooms (1 control Room), 2-Active Operating Rooms (1 control room). The 3 rooms where the program will be installed will be disinfected utilizing UV light technology. We will utilize 2-UVC Cleaning Systems UV disinfectors to perform the initial UV disinfecting service. Immediately following UV treatment, PURADIGM Zone technology will be installed in the space. These PURADIGM units will run continuously 24/7 over the entire trial. Bacteria levels will be tested in 6 intervals to measure the initial bacteria levels, 24 hours after install, 2 tests on day 5 (before and after UV treatment), and 2 on day 12 (before and after UV treatment) periods. 5 cultures will be taken in each room. 2 on the floor and 3 on critical touch point surfaces. There will be 2 maintenance UV disinfecting treatment 1 time each week. One performed after 5 days of initial install, and one 12 days after initial installation. A final bacteria test after final UV disinfecting treatment.

Testing Procedure:

There will be 6 tests sessions performed and 5 bacteria plate tests conducted. (3 active rooms/3 control rooms). A total of 150 plate tests will be taken. A breakdown of the tests per test day is outlined below:

- Test #1: Initial bacteria counts in all 6 rooms (30 tests total)
- Test #2: 24 hours (1 day) after program installation (30 tests total)
- Test #3: 120 hours (5 days) after installation (30 tests total)
- Test #4: 123 hours after installation we will perform an additional UV reset service in the 3 install rooms-then retest dosed rooms (15 tests only in UV dosed rooms)
- Test #5: 288 hours (12 days) after initial installation (30 tests)
- Test #6 291 hours (12days) after 2nd UV reset service (15 tests only in UV dosed rooms)

150 total bacteria plate tests will be taken by a Metro General employee and sent to Microchem Laboratories, a 3rd party testing company. All tests will be labeled with test location, time stamped and the room number. Test will then be wrapped and packaged in temperature controlled packaging and overnighted to the laboratory.

Results:

In both locations where biological samples were collected and UVC treatment was applied. UVC was 100% successful at reducing all of the pathogens CFUs.

OR Total Bacteria Count								
Surface Area Swabbed	Day 1 Testing		Day 2 Testing		Day 5 Testing		Day 12 Testing	
	OR Service Room	OR Control Room	OR Service Room	OR Control Room	OR Service Room	OR Control Room	OR Service Room	OR Control Room
Computer keyboard	20	0	200	120	10	0	20	0
Mindray touchscreen	0	0	30	0	0	10	0	0
Blue cart handles 1 & 2	10	20	0	0	0	20	10	80
OR table remote	0	0	10	10	0	0	0	0
Floor -front of OR table	0	10	450	10	0	20	0	0
TOTAL CFU's	30	30	690	140	10	50	30	80
Computer mouse(after UV)					0			0
Mindray O2 knob (after UV)					0			0
Blue cart handles 3 & 4 (after UV)					0			0
OR table remote side (after UV)					0			0
Floor-end of OR table (after UV)					0			0
TOTAL CFU's					0			0
Average CFU/swab	6	6	138	28	1	10	3	16
% Reduction In Service Rooms			-392.85%		90.00%		81.25%	

- Key Notes** *Keyboard and mouse were swabbed together on Day 2 vs just the keyboard Day 1,5,12
- 1.) All Rooms had been terminally cleaned upon entering rooms
 - 2.) 100% more volume at Day 5 in Service room (21 operations in service room vs. 11 in control)
 - 3.) Day 2 swabbing was conducted by a different staff member than Day 1,5,12