

Our final conclusions essentially match the results of Cleveland Clinic's work and Univ. of Penn. Medical Center's work:

- It has been scientifically established that UVGI is an effective disinfection method when applied appropriately under the right conditions.
- UVGI is icing on the cake only (a terminal disinfection method)...it cannot replace good, thorough mechanical cleaning and chemical disinfection.
- What UVGI is worth in actual dollars and time for its ability to truly have a positive effect on hospital acquired infections (HAI) has still not been firmly established.
- A reasonable institutional goal would be to apply UVGI as quickly and as inexpensively as possible.
- 2-3 short cycle placements (5-8 min. ea.) within a room produces enough energy to be effective against C.Diff., and are effective in defeating shadowing.
- Shadowing remains one of the major issues that must be consistently addressed. Standard patient room wall paint absorbs most UV light (95-97%), thus reflectivity is very limited.
- We agree with UNMC's work that Lumacept® wall coating truly does have a positive effect on enhancing UV-C reflectivity within a room, but at \$300 per gallon, has limited application.
- You do not have to run exceptionally long (40-60-80 minutes) single-placement cycles and rely on very limited room UV reflectivity to defeat shadowing if you don't want to...but it appears to work. The extended treatment times are prohibitive in major institutions in need of rapid room turn-over times.
- You do not have to spend \$90,000 for a machine to be able to effectively treat a room with UVGI if you don't want to. Expensive machines work...however, certain manufacturer's "total room disinfection" as a claim is suspect. Machines that cost half or less of the most expensive devices on the market are effective when utilized properly.
- We explored the source of the characteristic post-UVGI treatment "odor" left behind in treated rooms by performing airborne particle counts. An unexpected finding was that following UVGI treatment of patient rooms, airborne particle counts were significantly reduced in particle sizes 0.3, 0.5, 1.0, 2.0, 5.0 and 10.0 microns. The potential reduction in airborne pathogens suggested by this finding should receive further scientific study. We know of one such trial currently being done through Clorox Healthcare.
- It is desirable to have documentation generated that each room has been treated for the prescribed amount of time along with the date it was done and by whom.
- The small MRSA-UV Turbo device is equivalent or slightly more powerful than the ECU 435 devices UIHC uses for small space UVGI currently; (device costs - \$560 and \$3,995 respectively).
- Ambulance trials with both small devices showed that adequate doses to treat C. Diff. (~38,500 μ joules) were achieved on most high touch surfaces using a single 15 min. cycle. The device should be elevated 12-20" in the center of the patient compartment. If more thorough dosing and enhanced shadow mitigation is desired,

two 15 min. cycles with device placement closer to either end of the patient compartment can be performed. The ambulance cab should not be ignored as crew cross-contamination of that space is not uncommon. We are recommending that UVGI is utilized more frequently in EMS as a routine terminal disinfection method due to its relatively low cost in both time and money.

- Current ambulance terminal disinfection methods mentioned in NETEC high consequence pathogen training include UVGI, vaporized hydrogen peroxide and chlorine dioxide gas.

Michael J. Hartley, NRP, CHEC
Emergency Management Coordinator
Operations Manager – Special Isolation Unit
University of Iowa Hospitals and Clinics
Hospital Administration
200 Hawkins Drive C526 GH
Iowa City, IA 52242
Ph. 319-353-6857



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