Author's response to reviews

Title: Evaluation of a pulsed-xenon ultraviolet room disinfection device for impact on contamination levels of methicillin-resistant Staphylococcus aureus.

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Author's response to reviews: see over
Dear Prof. Orsi,

Thank you for the opportunity to re-revise the paper, “Evaluation of a Pulsed-Xenon Ultraviolet Room Disinfection Device for Impact on Contamination Levels of Methicillin-resistant Staphylococcus aureus” (MS: 4555114099752751). We have now addressed all of the issues raised by reviewers and feel the manuscript is much improved as a result.

Below please find a point-by-point response to the reviewer critiques. We look forward to hearing from you again.

Sincerely,

Chetan Jinadatha, MD, MPH
Point-By-Point Response to Reviews (our responses are preceded by “>>”)

I. Phil Carling: Version 2 Date: 18th June 2013

1. Level of Interest: An article of insufficient interest to warrant publication in a scientific/medical journal.
   >> This manuscript discusses the importance of environmental disinfection using PX-UV disinfection technology. UV disinfection using pulsed xenon technology is novel, and we believe that our findings will contribute to the existing literature and will be helpful for infection preventionists and environmental services personnel who are interested in adopting no-touch disinfection systems. The level of interest in no-touch disinfection systems is high as evidenced by a dedicated conference on this topic that was held in May 2013 at the SHEA Annual Conference in Atlanta, Georgia USA as well as a special edition dedicated to “The Role of the Environment in Infection Prevention” in Infection Control and Hospital Epidemiology Journal (May 2013 issue). We believe the revised manuscript offers a more persuasive report of our unique data.

2. Quality of Written English: Not suitable for publication unless extensively edited.
   >> We believe our manuscript has been extensively edited and reviewed.

II. Nancy Havill: Date: 9/16/2013

1. Failure of the authors to take into account the standard protocol for the use of UV systems by employing the system alone without prior cleaning of all surfaces to remove other than gross soil (see review by Otter et al in the January issue of the Journal of Hospital Infection).
   >> In the PX-UV arm, the focus was to get the rooms aesthetically clean by manually wiping all grossly soiled surfaces. This process also met with approval from facility leadership. We believe that our efforts to focus on the aesthetic cleaning, thus allowing for a truncated pre-cleaning routine, is consistent with new literature published after Otter et al. An article by Anderson et al (Infect Control Hosp Epidemiol 2013;34(5):466-471) showed that despite the lack of pre-cleaning there was statistically significant reduction in organisms such as VRE and C.diff spores. Another article by Zhang et al (Infect Control Hosp Epidemiol 2013; 34(10):1106-1108) showed that the organic material from the hospital rooms only modestly affected UV killing of spores. Additionally, we have our own data that showed 75% reduction in aerobic colony counts in the absence of any pre-cleaning (Jinadatha et al., manuscript under preparation). (Page 11, Paragraph 1, Lines: 3-10)(Additional references 21, 22).

2. The failure of the authors to evaluate the possible added benefit of UVC treatment above routine environmental cleaning by evaluating the impact of the UVC treatment on the same rooms which had undergone routine cleaning
   >> Unfortunately our study was not designed to evaluate the added benefit of UVC treatment above routine environmental cleaning. We have noted this limitation in the paper. It was designed as a parallel comparison to manual disinfection. Our study findings are consistent with the published literature.

3. The failure of the study to include cultures of surfaces following routine cleaning (pre UVC treatment) in order to compare cultures of identical objects following UVC treatment
   >> We truly appreciate the reviewer comment and have included this approach in our next study which is currently underway. We have noted this limitation.

4. These are very important methodological issues which may affected relevantly the final results of the study as they are described
   >> We feel that we have adequately addressed many possible confounders and incorporated many we could not address in our recommendations for future research. However, we are confident the final results were not affected by methodological issues and are consistent with recently published literature.