

Concerns about Bleach Odor and Spray Application

Using Sodium Hypochlorite Bleach in Healthcare Facilities

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BioMed Central publishes a study involving the implementation of an educational program in the use of a 10% (1:10) bleach solution by housekeeping staff at Cleveland Veterans Affairs Medical Center that significantly reduced rates of environmental surface contamination of *C. difficile*. Note the spray method used in the study and the absence of complaints related to the application of the bleach.

After the intervention, the housekeeping staff agreed to apply 10% bleach solution to disinfect frequently touched surfaces (e.g. bed rails, bedside tables, call buttons, telephones, toilet seats, door handles) in rooms of CDAD patients using a spray bottle. The surfaces were then allowed to air-dry. In addition, without prompting from the research team, the housekeeping staff elected to incorporate this method of bleach disinfection of commonly touched objects into their terminal cleaning practices for all patient rooms in our facility. Although there were initially concerns that bleach might cause damage to surfaces in the rooms, no complaints regarding such damage have been reported. In addition, interviews with the housekeeping staff were conducted, and no complaints related to the application of bleach were reported.

To assess the effect of the intervention, we performed environmental cultures before and after housekeeping cleaning in rooms of 10 patients with VRE colonization or infection and 10 patients with CDAD during the 4-month period after the intervention. Eight (80%) rooms of patients with VRE colonization or infection had one or more positive environmental cultures before cleaning versus 0 (0%) after housekeeping cleaning ($p < 0.001$). Nine (90%) of rooms of patients with CDAD had one or more positive cultures prior to cleaning versus 2 (20%) after housekeeping cleaning ($p < 0.01$). The Infection Control Department currently meets monthly with the housekeeping staff to provide feedback regarding culture results and to maintain awareness of the importance of environmental cleaning as a means to control healthcare-associated pathogens.

BioMed Central: Infectious Diseases, Reduction of *Clostridium Difficile* and Vancomycin-resistant *Enterococcus* Contamination of Environmental Surfaces after An Intervention to Improve Cleaning Methods: Eckstein, Adams, et al. <http://www.biomedcentral.com/1471-2334/7/61>

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The odor of bleach does not equate to significant exposure with potential health consequence. That is because the sensory threshold levels for chlorine species is well below any levels recognized to cause potential respiratory irritation, or overt health effects, and which mirror the current occupational limits. It is unlikely that typical recommended uses of these disinfectants, used in accordance with the label directions, will exceed the occupational exposure limits for chlorine.

It is important to recognize that the distinct chlorine odor is an integral part of the usage of bleach disinfectants. An effective communication clarifying that the sensory recognition of the disinfectant should not be a cause for concern of a potential exposure of any significant health concern is vital. Also, it is important that the areas where these disinfectants are being used are kept well ventilated to ensure that the odors do not build-up. The smell of bleach in a well ventilated room should not linger after it has been used for cleaning and disinfecting. In fact, bleach breaks down quickly into salt and water. In cases where bleach smell seems to linger or is particularly strong after cleaning has taken place, check to ensure area is well ventilated and product is not being overused.

The Clorox Company: Sodium Hypochlorite Based Disinfectants Odor Versus Respiratory Irritation
<http://cloroxprofessional.com/cdiff/pdf/DispellingtheMythAboutBleach.pdf>