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## Disinfectants Containing Chlorine: An Occupational Hazard?

The Belgian national guidelines to prevent transmission of *Clostridium difficile* in hospitals state that it is justified to use a disinfectant containing 1,000 or 5,000 ppm free chlorine to

disinfect the rooms of patients with *C. difficile*-associated disease (CDAD).<sup>1</sup> Concern has risen about the occupational safety of the cleaning employees using the disinfectant at this concentration. We conducted a small test to evaluate the concentration of chlorine in the air while the cleaning employees disinfected a patient's room according to our standard procedure (furniture, door, bathroom, and floor).

The chlorine-containing disinfectant in our hospital is made from 3 tablets of sodium dichloroisocyanurate dihydrate dissolved in 1 L of water to obtain a concentration of 4,500 ppm free chlorine. During the test, the door and windows were closed. Air samples were taken in the neighborhood of the cleaning employees (distance, approximately 1 m) during the decontamination procedure. The samples were analyzed according to method P&CAM 209 in the NIOSH Manual of Analytical Methods.<sup>2</sup>

During an 18-minute decontamination with a solution containing 4,500 ppm free chlorine, we sampled 18.3 L of air and found traces of chlorine that were not quantifiable. During a 15-minute decontamination with a solution containing 1,500 ppm free chlorine, we sampled 15.2 L of air and could not detect chlorine at all. On the basis of these results, we concluded that there is no occupational hazard for the cleaning employees while performing a decontamination procedure with a solution containing 4,500 ppm free chlorine made from sodium dichloroisocyanurate dihydrate tablets.

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