The aims of this study were to compare standard cleaning practice to cleaning using OxyCide™, a novel, sporicidal, one-step disinfectant concentrate on environmental contamination and hospital-acquired infections (HAI).

Methods:
A cross-over study was conducted using 1 medical-surgical and 1 intensive care unit. In the intervention group, OxyCide™ was used for routine cleaning of all patient rooms. In the control group, standard cleaning was conducted using Virex II 256-qaurterly ammonium compound and Disinfect for C. difficile rooms and Virex II alone for other rooms. The study period was 13 months. Using moist cotton swabs, qualitative environmental cultures were collected after cleaning from selected rooms of discharged patients with Acinetobacter or C. difficile, and quantitative samples were collected from occupied rooms. Standard laboratory procedures were used. HAI’s were tracked throughout the study period.

Results:
A total of 4,405 patients were cared for on study units during the study period, accounting for 20,932 patient days. After terminal cleaning, 747 samples were collected from 69 rooms (27 C. difficile and 42 A. baumannii). There was no growth from 331 swabs collected in the control group and 2416 swabs (0.5%) from the intervention group grew. 11/270 (4.1%) swabs grew in the control group and 146/2916 (5%) from the intervention group grew, as did 20/186 (10.7%) from the intervention group (p = 0.075).

There were a total of 122 unit-acquired infections, 24 device-related infections, 15 unique patients with A. baumannii and 25 with C. difficile. The rate of HAI was 6.6 in the control arm and 4.8/1000 patient days in the intervention arm (p = 0.09); of device-related infection was 1.6 and 0.61/1000 patient days, respectively (p = 0.04); of A. baumannii was 0.7 and 0.7/1000 patient days respectively (p = 0.98); and of C. difficile was 1.0 and 1.4/1000 patient days, respectively (p = 0.36).

Conclusion:
Use of OxyCide™ was associated with decreased device-related infections when compared to standard cleaning with quaternary ammonium compound +/- bleach. Recovery of environmental pathogens was low in both study arms.

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