Evaluation of a novel sporicidal spray disinfectant for decontamination of surfaces in healthcare

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Background

- Surfaces in healthcare facilities are typically cleaned by manual application of liquid disinfectants
- However, thoroughness of cleaning is often suboptimal and application can be challenging and time-consuming when surfaces are irregular
- We tested the effectiveness of a novel spray disinfectant technology that uses an electrostatic sprayer to apply a sporicidal disinfectant to surfaces after minimal pre-cleaning to remove visible soil

Figure 2. **A.** The device **B.** Device in use

A.

B.

Methods

- In a laboratory setting, we compared the spray disinfectant versus manual application of disinfectant for removal of *Clostridioides difficile* spores inoculated onto sites of a wheelchair and measured the time required for each method of disinfection
- In a healthcare setting, we tested the effectiveness of a 15-second spray application for reduction of *C. difficile* spores on 100 items with irregular or hard to clean surfaces, including 30 wheelchairs, 40 pieces of portable equipment, and 30 waiting room chair seats

Results

- Application of disinfectant using the electrostatic sprayer was as effective as wiping in reducing *C. difficile* spores inoculated onto wheelchair surfaces, but required only <u>one-fourth</u> the time for application (Figure 3)
- Spray application of the sporicidal disinfectant was effective in reducing contamination (Figure 1)
- *C. difficile* spore contamination was common on mobile equipment, wheelchairs, and waiting rooms chairs

Figure 1. Percentage of sites positive for *C. difficile* spores before and after application of spray disinfectant

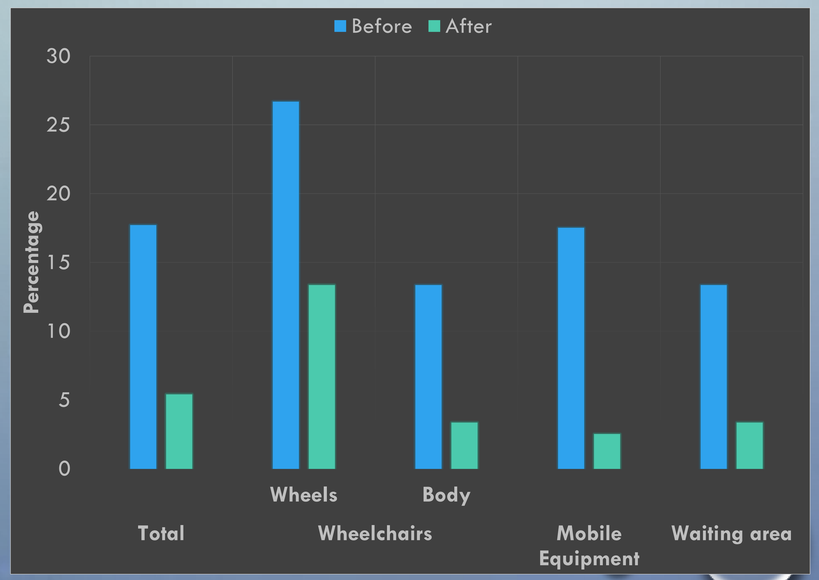

Figure 3. Time needed to disinfect a wheelchair using (A) the electrostatic sprayed or (B) a sodium hypochlorite wipe (C) The device in use cleaning a wheelchair

A.

B.

C.

Conclusions

- Commonly shared items such as wheelchairs, portable equipment, and waiting room chairs were frequently contaminated with *C. difficile* spores
- Application of a sporicidal disinfectant using an electrostatic sprayer provided a rapid and effective means to reduce spore contamination on surfaces

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