

Presentation Type:

Poster Presentation

Timing and Route of Contamination of Patient Rooms With Healthcare-Associated Pathogens

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Background: Transmission of healthcare-associated pathogens such as *Clostridioides difficile* and methicillin-resistant *Staphylococcus aureus* (MRSA) is a persistent problem in healthcare facilities despite current control measures. A better understanding of the routes of pathogen transmission is needed to develop effective control measures. **Methods:** We conducted an observational cohort study in an acute-care hospital to identify the timing and route of transfer of pathogens to rooms of newly admitted patients with negative MRSA nares results and no known carriage of other healthcare-associated pathogens. Rooms were thoroughly cleaned and disinfected prior to patient admission. Interactions of patients with personnel and portable equipment were observed, and serial cultures for pathogens were collected from the skin of patients and from surfaces, including those observed to come in contact with personnel and equipment. For MRSA, spa typing was used to determine relatedness of patient and environmental isolates. **Results:** For the 17 patients enrolled, 1 or more environmental cultures became positive for MRSA in rooms of 10 patients (59%), for *C. difficile* in rooms of 2 patients (12%) and for vancomycin-resistant enterococci (VRE) in rooms of 2 patients (12%). The patients interacted with an average of 2.4 personnel and 0.6 portable devices per hour of observation. As shown in Figure 1, MRSA contamination of the floor occurred rapidly as personnel entered the room. In a subset of patients, MRSA was subsequently recovered from patients' socks and bedding and ultimately from the high-touch surfaces in the room (tray table, call button, bedrail). For several patients, MRSA isolates recovered from the floor had the same spa type as isolates subsequently recovered from other sites (eg, socks, bedding, and/or high touch surfaces). The direct transfer of healthcare-associated pathogens from personnel or equipment to high-touch surfaces was not detected. **Conclusions:** Healthcare-associated pathogens rapidly accumulate on the floor of patient rooms and can be transferred to the socks and bedding

of patients and to high-touch surfaces. Healthcare facility floors may be an underappreciated source of pathogen dissemination not addressed by current infection control measures.

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To Err is Human, To Forget is Device-related: A Cautionary Note for Endoscopists

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Background: In the United States, ~5 million endoscopies are performed annually. Contaminated endoscopes account for more nosocomial infections than any other medical device, but the vast majority of such events go unreported. We found no reports in the literature or the FDA Manufacturer and User Facility Device Experience (MAUDE) database of the incident described below. **Methods:** During a colonoscopy, the operator noticed resistance while advancing a clipping wire through the channel. A balloon-tipped catheter sheath was then extruded into the colonic lumen. The sheath and endoscope were withdrawn without incident, and the procedure was completed with a different endoscope. According to equipment logs, the last time that type of balloon-tipped catheter was used occurred 20 days prior, resulting in 20 patients having potentially been exposed to an incompletely disinfected device. Interrogation of the endoscope with various inserts revealed that the presence of a retained sheath would allow passage of all types of guide wires, (snips, snares, etc), including the cleaning brush. The only device whose passage would have been prevented by a retained sheath was a vascular clipping device. A review of procedure notes and interviews of involved physicians revealed that such clippings were performed as recently as 2 days prior to the incident, thus reducing the number of potentially exposed to 2, plus the index. The county and state health departments were notified, a MAUDE report was filed, and patients were notified and offered free testing for bloodborne and enteric pathogens. **Discussion:** The root causes of the exposure included the absence of a closed-loop feedback for removable components

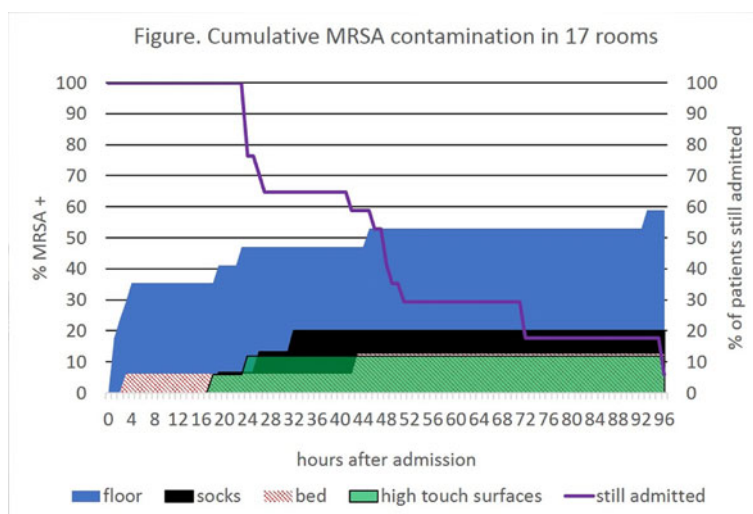


Fig. 1.