Background: The role of the environment for microbe transmission in hospitals has not been adequately described.

Methods: Obs (bed rails, overbed tray, chairs, call button, data device, & IV pole) in randomly selected ICU rms in 3 hospitals (A, B & C) were sampled by sterile wipes and the MB determined as colony forming units (cfu/100cm²). The MB of the room was the sum of the MB of the obs in that rm.

Results: 1760 obs in 160 rms were sampled (660 obs in 60 rms in A & B; 440 obs in 40 rms in C). The mean (m) MB of the rm was 16,885 cfu/100cm². Bed rails had the highest mMB comprising 58% of the MB in A, 45% in B, and 39% in C. Obs in close proximity to the pt had significantly higher mMBs compared to other obs in the rm; bed rails, call button, and chair at A (p < 0.0001); bed rails, call button, chair, and data device at B (p = 0.01 to 0.0001); bed rails, and chair at C (p = 0.03 to 0.0002). Staphylococcus was the predominant organism isolated from each ob and each rm comprising 65% of the mMB in A, 73% in B, and 60% in C (Figure 2). MRSA, VRE, and gram negatives were isolated but were generally <5% of the mMB.

Conclusions: Obs found in ICU rms can serve as a reservoir for spread of microbes, particularly staphylococci. Obs in close proximity to pts pose the greatest risk. Strategies are needed to reduce potential spread from these obs.

Transmission of organisms from patient to patient requires 1) environmental contamination and 2) ineffective or incomplete compliance with infection control measures. If patients become colonized with these organisms, healthcare-acquired infections may develop. Organisms are capable of surviving on inanimate surfaces for extended periods; yet the distribution of these organisms within a patient’s room is poorly characterized. Information regarding where specific resistant organisms may be concentrated in the environment and thus serve as a reservoir for patient to patient spread could lead to development of additional interventions to reduce this bioload.

Objective

We sought to determine the microbial burden (MB) on frequently touched inanimate objects in the ICU rooms of patients at three different US hospitals.