The serious complications associated with hospital-acquired infections (HAIs) have been well documented as an international problem associated with increased morbidity, mortality, and expenditures. The incidence of HAIs caused by multi-drug resistant organisms (MDROs) poses significant clinical challenges, which range from prevention of transmission to effective treatment and eradication.

Multiple studies have been published on the role of environmental contamination in the hospital environment, which can lead to cross-contamination and transmission of MDROs to non-colonized/non-infected patients. Research efforts to identify environmental reservoirs for bacteria have led to several reports on the role of hospital bath basins as environmental vectors for the transmission of bacteria in the United States and Canada; however, the scope of this problem is not well documented internationally. The objective of this study was to further investigate and report on the role of bath basins as potential reservoirs for pathogens associated with HAIs in the United States and Canada, and hospitals from France, Spain, and Belgium.

**METHODS**

**Study Design:** A prospective multicenter, multi-national trial, involving 312 hospitals from 63 different states and provinces in US and Canada, and 5 hospitals in France, Spain and Belgium.

**Data Collection Timeline:** Cultures and analyses were collected from March 2008 through November 2013.

**Culture Collection:** Local Infection Preventionists randomly cultured basins, using a uniform standardized methodology. At the time of culture, the basins were not visibly contaminated and were considered to be “clean”.

**Microbiological Processing Methods:** Microbiological processing was conducted by an external central laboratory, blinded to the origin of samples. All bacteriologic processing adhered to best practices according to the Clinical and Laboratory Standards Institute criteria.

**RESULTS**

Overall, 3,620 basins were sampled, 78 basins from hospitals in Europe and 3,542 basins from North American hospitals. As displayed in the Table, 2,262 (63%) of the basins were contaminated with one or more of the following: vancomycin-resistant Enterococcus (VRE), Gram-negative bacilli (GNB), or methicillin-resistant Staphylococcus aureus (MRSA). Among the European hospitals, 29 (49%) of the basins from 4 (80%) of the hospitals were contaminated with blaKPC producing or extended-spectrum β-lactamase producing Enterobacteriaceae, and 26 (44%) of the basins from 4 (80%) of the hospitals were contaminated with non-fermenting GNBs (Acinetobacter baumannii or Pseudomonas aeruginosa).

**REFERENCES**


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