Medical News

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Ventilation Vents as a Potential Source of MRSA

Although the spread of methicillin-resistant *Staphylococcus aureus* (MRSA) in hospitals is thought to be mainly by direct contact, environmental sources such as exhaust-duct systems increasingly have been reported as a source for MRSA outbreaks in intensive-therapy units. Kumari and colleagues from the Department of Microbiology, Leeds General Infirmary, United Kingdom, describe an outbreak of MRSA related to ventilation vents in an orthopedic ward. Six patients and one nurse were involved in an outbreak with EMRSA-15 during March 1996. The index case was transferred from a large university hospital in Leeds. One of the patients had shared the same bay with the index case. The rest of the patients were in another bay of the same ward and had no direct contact with the index patient. An environmental source was suspected, and the ventilation ducts in bays 1 and 2 were found to be harboring EMRSA-15. The ventilation system at that time was working on an intermittent cycle from 4 PM–8 AM. Daily shutdown of the system temporarily created negative pressure, sucking air in from the ward environment into the ventilation system and probably contaminating the outlet grilles.

The investigators hypothesize that contaminated air was blown back into the ward when the ventilation system was started. The system was cleaned thoroughly, appropriate infection control measures were instituted, and the ventilation system was put back on a continuous running cycle, and the outbreak terminated. Six months after the outbreak, no isolates of EMRSA-15 had been made on the ward.

FROM: Kumari DN, Haji TC, Keer V, Hawkey PM, Duncanson V, Flower E. Ventilation grilles as a potential source of methicillin-resistant *Staphylococcus aureus* causing an outbreak in an orthopaedic ward at a district general hospital. *J Hosp Infect* 1998;39:127-133.

Bacterial Contamination From Testing of Endoscopes

Deva and coinvestigators from the Department of Infectious Diseases, University of Sydney, Australia, have reported on an in-use evaluation of recommended procedures for cleaning and disinfecting gastrointestinal endoscopes. Specimens were obtained from the internal channels of 123 endoscopes before, during, and after disinfection by flushing with saline and brushing with a sterile brush, and examined for vegetative bacteria by broth and plate culture.

Four endoscopy units were tested; the chemical disinfectants used were 2% glutaraldehyde in centers 1 and 2 (automated) and center 3 (manual); peracetic acid in center 4 (automated). Samples from patients in center 1 with known chronic hepatitis B virus (HBV), hepatitis C virus (HCV), and human immunodeficiency virus (HIV-1) infection also were examined for viral nucleic acid by ultracentrifugation, nucleic acid extraction, reverse transcription (for RNA), and polymerase chain reaction (PCR). No persistent vegetative bacteria were found following standard manual cleaning and disinfection for 20 minutes in 2% glutaraldehyde in centers 2 and 3 (n=37). At center 1, while plate culture yielded no growth, 34% of samples (10/29) grew vegetative bacteria in broth culture after cleaning and disinfection for 20 minutes in 2% glutaraldehyde. Investigation revealed an error in manual cleaning; no bacteria were detected in 37 samples taken after this was corrected. At center 4, despite the use of peracetic acid as a sterilant, 3 out of 20 (15%) of postdisinfection samples grew bacteria; 1 contained persistent bacteria. HBV and HCV PCR analysis detected viral nucleic acid in 3 out of 4 and 4 out of 6 samples from viremic patients undergoing endoscopy in center 1 during the period of improper manual washing. After proper cleaning was instituted, samples from 9 out of 9 HCV viremic patients were negative. HIV RNA was detected in 5 of 14 samples taken from endoscopes after use on HIV-positive patients, but all postdisinfection samples were negative.

The authors comment that detection of bacteria in washes from endoscope channels is a useful warning of a breakdown in disinfection practice. Inadequate brushing of internal channels may result in persistent HCV and HBV viral nucleic acid, the significance of which is not clear. These results reinforce the importance of adequate manual cleaning of endoscopes before chemical disinfection.

FROM: Deva AK, Vickery K, Zou J, West RH, Selby W, Benn RA, et al. Detection of persistent vegetative bacteria and amplified viral nucleic acid from in-use testing of gastrointestinal endoscopes. *Hosp Infect* 1998;39:149-157.

Additional news items in this issue: Smoke Tubes Not Reliable for Negative-Pressure Monitoring, page 91; DOT Exempts Cultures and Stocks From Strict Packaging, page 107; Meningococcal Carriage Linked to Campus Bar, page 128.

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