Study suggests use of antimicrobial scrubs may reduce bacterial burden on health care worker apparel

January 19 2012, by Malorie Burkett

(Medical Xpress) -- The use of antimicrobial impregnated scrubs combined with good hand hygiene is effective in reducing the burden of Methicillin-Resistant Staphylococcus Aureus (MRSA) on health care workers' apparel and may potentially play a role in decreasing the risk of MRSA transmission to patients, according to a new study from Virginia Commonwealth University researchers.

Previous findings have shown that hospital textiles may contribute to the transmission of pathogens through indirect contact via the hands of hospital staff and that antimicrobial textiles may reduce the bioburden, or the number of bacteria living on a surface before sterilization in clinical settings.

Led by Gonzalo Bearman, M.D.,M.P.H., associate professor of internal medicine in the VCU School of Medicine and associate hospital epidemiologist at the VCU Medical Center, the study "A Crossover Trial of Antimicrobial Scrubs to Reduce Methicillin-Resistant Staphylococcus Aureus Burden on Healthcare Worker Apparel," is currently available online and will appear in the March issue of the journal *Infection Control and Hospital Epidemiology*, the official publication of the Society for Healthcare Epidemiology of America.

"We strive to study infection prevention interventions that are simple yet effective for the reduction of health care associated infections," said

Bearman. “The goal is to affect change or implement risk reduction by methods that are both easily implemented and sustained.”

In the study, 32 health care workers wore four pairs of identically appearing control scrubs and study scrubs impregnated with an antimicrobial, or germ-killing, compound over the course of four months, washing them regularly. Participants also received identical hand hygiene educational sessions every four weeks, and researchers assessed compliance with hand hygiene practices.

Researchers conducted once weekly, unannounced, garment and hand cultures of participants at the start and end of each shift where they obtained two samples from the garment’s abdominal area and cargo pant pocket – two areas of high touch and high bacterial colonization.

According to Bearman, although the scrubs did not impact the degree of MRSA on the health care workers’ hands, the antimicrobial scrubs were effective in reducing the burden of MRSA on health care worker apparel.

“It is critical for health care workers and patients to understand that the environment—including inanimate surfaces and apparel – is not sterile, and is frequently a reservoir of drug resistant bacteria,” said Bearman. “Meticulous hand hygiene at the point of patient care is critical for reducing the risk of a hospital acquired infection.

“If widespread antimicrobial scrub use were added to existing infection prevention strategies, a further decrease in hospital acquired infections may occur by limiting the cross transmission of pathogens via apparel. The actual impact of antimicrobial scrubs on hospital acquired infections needs further study,” he said.

The scrubs tested in the study were manufactured by Vestagen Technical

Textiles.

Bearman collaborated with VCU researchers Kakotan Sanogo, Michael P. Stevens, M.D., Curtis Sessler, M.D., Richard Wenzel, M.D., along with Adriana Rosato, Ph.D., Methodist Hospital Research Institute and Kara Elam, doctoral student, University of Mississippi.

More information: To view the complete study, visit www.jstor.org/stable/10.1086/664045

Provided by Virginia Commonwealth University

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