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Superbug Transmitted by Textiles

Research Cites Clothing as Key Link in Spread of Infection

San Francisco, CA, June 19, 2012 - According to a review study presented by a Simmons College scientist at the American Society of Microbiology's 112th General Meeting in San Francisco, *staphylococcus aureus* and the community-acquired "Superbug" Methicillin-resistant *Staphylococcus aureus* (CA-MRSA), a potentially deadly bacterial infection that is resistant to antibiotic treatment, is transferred on clothing and other household fabrics used in healthcare facilities, homes, schools, sports teams and prisons.

The research concludes that "clothing and household linens play a significant role in the spread of infectious diseases." Multiple studies have shown how MRSA is acquired and transmitted on healthcare worker uniforms, lab coats in hospitals, and long term care facilities. But in recent years public health experts have become increasingly concerned about MRSA infections acquired and transmitted on clothing in non-healthcare related locations.

"Our findings document the role of textiles in the spread of infectious diseases, like MRSA," says Elizabeth Scott, PhD, co-director of the Simmons Center for Hygiene and Health in Home and Community from Simmons College in Boston, Mass (www.simmons.edu). This research was done in collaboration with Simmons College, Boston, Mass., the London School of Hygiene and Tropical Medicine, and the International Scientific Forum on Home Hygiene.

The authors cited 19 published studies where transmission via clothing and linens was identified as a likely cause, or was identified as a significant risk factor, in transmission. These involved viral, bacterial, and fungal infections, and included gastrointestinal and respiratory tract, together with skin and wound infections.

Clothing Compared to Toilets and Sinks
"We wash our hands frequently throughout the day, but we do not change our clothes. We touch our clothing constantly and people move around a great deal during the day. The data is clear - clothing acquires, retains, and can potentially transmit bacteria. We need to better advise the public on how to achieve hygienic laundering and other clinically proven strategies to reduce the level of contamination on clothing," added Dr. Scott.

In a ranking of sites and surfaces in the home, based on their risk of transmission, hands were the most likely surface to transmit infection while floors, walls, and furniture were the least likely. Surprisingly, clothing and household linens shared a ranking with known harbingers of bacteria as toilets and sinks.

Bacteria such as *S. aureus* and CA-MRSA can survive several days to months on fabrics. Bacterial transfer rates from dry fabrics are significantly less than moist donor fabric or hands. The presentation illustrated clothing and household linens as the nexus of routes of germ transmission in the home because clothing touches everything and people often touch their clothing.

The research also shows that cross-contamination of laundry is associated with low wash temperatures, quick wash cycles and too little detergent. The researchers recommend washing clothing in water temperatures over 140 degrees Fahrenheit, using an oxygen bleach-based laundry product, and following manufacturers' instructions in situations where there is elevated risk. Examples of elevated risk include homes where there is an infected or immune-compromised individual, uniforms of healthcare workers, very heavily soiled items, sports clothing, and textiles used for washing and food preparation.

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