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# A Pilot Study to Explore Contamination of Student Nurses' Scrubs with *Staphylococcus aureus* and MRSA Before and After Laundering in College Dormitory

## Authors and Affiliations

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The potential role of environmental factors, including nurses' scrubs, in the spread of infection is an area of growing interest. Laundering plays an important role in decontaminating scrubs. Our goal was to qualitatively assess the presence of *S. aureus* and MRSA on nursing student scrub tops, before and after laundering in college dormitory facilities.

Study participants included junior and senior nursing students from Simmons College, Boston MA, who interned in acute inpatient clinical units during the 2013-14 academic year. Each participant was provided with sterile culturette swabs, swabbing templates, coded labels, sample transport bags, and detailed written and video sampling instructions. Participants used the template to standardize the swabbing area (abdominal, above the pockets), and collected samples after wearing the scrub top to clinicals, and again after laundering. Swabs were collected on Simmons campus, refrigerated and delivered weekly to UMass Lowell.

Samples were cultured within 24hr to mannitol salt agar, tryptic soy agar and *Staphylococcus* enrichment broth to ensure recovery of low numbers. Plates were incubated for up to 48hr before determination of no growth. Positive enrichment broths with corresponding no growth plates were plated. Colonies morphologically consistent with *S. aureus* were identified with Gram stain, catalase and a commercial kit. Oxacillin and chromogenic MRSA plates were used to confirm methicillin susceptibility.

Forty-three scrub tops were sampled pre and post laundering. Of the pre laundering samples, 11 (26%) were contaminated with *S. aureus*, 5 (45%) of which survived the laundering process. There were two instances of *S. aureus* on the post sample but not the pre.

These pilot study findings demonstrate that student nursing scrub tops may act as a vector for infectious microorganisms, and that traditional laundering practices may not remove all pathogens. Additional samples will be obtained, and laundry conditions analyzed for possible correlation to survival post laundry.