

# **Results of a Timed Study to Determine Persistence of Three Hand Antiseptics**

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The practice of imprinting hand microbial flora onto agar plates is a common method for visualizing presence of bacteria and the effectiveness of sanitizers in cleaning the hands. Many healthcare facilities use these handprints to encourage hand hygiene by their personnel while companies use them for marketing their products to the healthcare industry. 3M™ Avagard™ (Chlorhexidine Gluconate 1% Solution and Ethyl Alcohol 61% w/w) Surgical and Healthcare Personnel Hand Antiseptic with Moisturizers is an antimicrobial product currently marketed for use as a surgical scrub in the OR setting. The objective of this study was to semiquantitatively visualize the immediate and persistent antimicrobial effectiveness of Avagard Hand Antiseptic, Surgicept® Waterless Surgical Hand Scrub, and Sterillium® Rub at two time points: immediately after application on normal skin flora of the hands, and after 15 minutes of hand contamination with environmental microbes.

A total of 90 subjects completed this study (30 subjects per product). Upon consenting, subjects washed their hands with a mild soap prior to using 1 of the 3 randomized surgical scrub products, applied according to manufacturer's instructions for surgical hand scrubs. Within 1 minute of drying, a post prep hand print of a randomized hand, based on dominance, was taken by placing the hand onto the surface of a plate containing TSA with neutralizers. That hand was rinsed and gloved prior to the subject leaving the testing facility to touch "high touch surfaces" around 3M for 15 minutes with the opposite (ungloved) hand. After 15 minutes, a final post touch hand print was taken of the ungloved hand. Hand print plates were incubated for 24 hours.

Hand prints were graded by 3 trained blinded independent graders/microbiologists using a system that the percent coverage of the handprint approximately doubles for each grade (shown below) for percent of hand print containing bacterial colonies. Averages were produced for post prep, post touch and the difference between post prep and post touch.

3M Avagard Hand Antiseptic was found to be superior to both Sterillium and Surgicept in the change from post prep to post touch using 2-sided Wilcoxon rank sum tests (P-values of <0.0001 and 0.0025, respectively)\*.

\*Data on file at 3M

## Baseline

Average grade = 3.52



Grading scale:

0 = <1%

1 = 1-9%

2 = 10-24%

3 = 25-49%

4 = 50-100%

## Sterillium

Post Product: 0.22



Post 15 Min. Touch: 2.79



## Surgicept

Post Product: 0.01



Post 15 Min. Touch: 2.10



## 3M Avagard Hand Antisepetic

Post Product: 0.03



Post 15 Min. Touch: 1.29





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