

Clinical Relevance Testing Report: An evaluation of bacterial migration from a contaminated surface to a patient surrogate with the use of a variety of table covers.

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Test completed by: Roger Huckfeldt, MD

Products tested:

1. Reinforced Cloth Table Cover
2. Reinforced Disposable Table Cover
3. Super-Absorbent, Reinforced, Disposable Table Sheet
4. Antimicrobial, Super-Absorbent, Reinforced, Disposable Table Sheet (SANDEL® STAT-BLOC™ Table Sheet)

Background: The CDC reported, in 2010, that 31% of healthcare-associated infections (HAI) were surgical site in origin. In 2011, inpatient surgical site infections (SSI) topped 157,000 in the U.S. alone. Sources of contamination are thought to include surfaces exposed to patients including operating and exam tables. In addition to cleaning between patients, traditionally, operating room and exam tables have been covered with cloth or, more recently, disposable covers. In an attempt to improve efficiency and decrease contamination, these covers have evolved significantly over time.

Current covers can be divided into four basic categories; re-usable cloth, disposable non-woven fabric reinforced with an impervious backing, disposable non-woven fabric with additional super absorbent material reinforced with an impervious backing, and disposable non-woven fabric with additional super absorbent material reinforced with an antimicrobial, impervious backing. While all products have been evaluated for laboratory success, data showing any clinically relevant difference between the four groups is lacking. Clinically relevant data should include an evaluation of contamination of the patient (or patient surrogate) when the cover is used to prevent bacterial transmission from a contaminated surface.

Procedure: A patient surrogate was created, utilizing a hydroconductive fiber which allows collection only of moisture and associated contaminants transferred completely through the cover. An operating room table mattress was contaminated with 1 ml of a bacterial suspension of 10(8) mixed coliforms in four separate sites. Each site was covered with a different 4 inch by 4 inch section of each type of table cover to be tested. A 1 inch by 1 inch section of

hydroconductive material was placed directly in the center of each cover section and allowed to dwell at that site for one hour. The hydroconductive material was then introduced into a sterile vial of 25 ml of sterile water and rapidly agitated for one minute. Samples were then taken from the vial, serially diluted, and plated on blood agar plates. The samples were incubated for 24 hours at 37 degrees Celsius and standard colony counts performed. A control using hydroconductive material without a table cover was utilized. Each study was repeated five times and counts averaged.

Results* – Average culture results were as follows:

Test Material	Average CFU
Control	2.1 X 10(7)
Reinforced Cloth Table Cover	3.2 X 10(5)
Reinforced Disposable Table Cover	2.5 X 10(2)
Super-Absorbent, Reinforced, Disposable Table Sheet	4 X 10(1)
Antimicrobial, Super-Absorbent, Reinforced, Disposable Table Sheet (SANDEL® STAT-BLOC™ Table Sheet)	0

Conclusion: Significant bacterial transfer from a contaminated operating room table to the patient contact surface does occur. The use of the re-usable cloth table cover provided the least protection against bacterial transfer of the four types of table sheets tested. The use of covers that incorporate an impervious backing and covers adding super absorbent materials in conjunction with an impervious backing decrease transfer significantly, but allow for some bacterial transfer. In this study, the use of a cover which incorporates super absorbent materials and an impervious backing impregnated with an antimicrobial substance (SANDEL STAT-BLOC Super Absorbent Antimicrobial Table Sheet) provided complete protection against bacterial migration. The use of covers which incorporate a non-antimicrobial impervious backing do not prevent bacterial migration. For procedures in which bacterial contamination of the contact surface is a possibility, consideration should be given for the use of an advanced cover which provides impervious, antimicrobial protection.

**Data on file.*

Roger Huckfeldt, MD has performed paid consulting work for Ansell and/or its affiliates.

STAT-BLOC antimicrobial table sheets are not available for sale outside of the United States.