

# Seven Day Dwell Times for Vascular Access Device Exit Site Dressings

SorbaView® Window Dressing  
SorbaView® 2000 Window Dressing

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## ABSTRACT

In 1999, IV Management Services, a division of Lee Medical, Inc., began an evaluation of Tri-State Hospital Supply Corporation's Centurion® SorbaView® Dressing. Data were collected from November 1, 1999 to July 12, 2002. The study focused on several objectives: 1) to evaluate this unique dressing on vascular access device (VAD) exit sites to determine whether the dressing would remain intact and therefore occlusive for seven days, 2) to assess patient skin condition and to determine the presence of catheter exit site infections, and 3) to establish guidelines for use of the dressing in a large variety of health care settings.

SorbaView® is a hybrid transparent semi-permeable film dressing that combines the absorption properties of an island dressing with the visibility and barrier properties of clear film. It is composed of three separate parts: 1) an occlusive, transparent polyurethane film layer coated with an innovative, patterned adhesive that facilitates moisture vapor transmission, 2) a non-adherent absorbent pad and 3) a comfortable non-woven border. This design allows excess moisture to be wicked away from the VAD exit site and creates an occlusive barrier to external contaminants and liquids.

The data collected have been divided into two groups because two different versions of the Sorbaview® Dressing were used in the study: the SorbaView® Dressing, analyzed during the entire study and the SorbaView® 2000 Dressing, introduced January 2, 2002 and used until July 11, 2002. Both SorbaView® Dressings used in this study were identical in size: four inches by four inches with a one-inch square transparent window.

SorbaView® 2000 was introduced in early 2002 as a replacement for the original SorbaView®. The original dressing was constructed such that the transparent film formed the top layer of the dressing, above both the fabric and the pad layers. When the replacement was introduced, the transparent film was placed between the fabric and the pad. This change,

while maintaining the dressing's high absorption qualities, actually improved the occlusivity of the film barrier by placing it in direct contact with the skin.

Once the new design of the SorbaView® 2000 was introduced into the study, an additional study objective was created: to compare the performance of the redesigned SorbaView® 2000 Dressing with the original SorbaView® Dressing in all of the assessment categories.

## BACKGROUND

Transparent Semi-permeable Membrane (TSM) dressings have become widely accepted for dressing VAD exit sites. According to the Centers for Disease Control and Prevention (CDC), "Transparent dressings reliably secure the device, permit continuous visual inspection of the catheter site, ... and require less frequent changes than do standard gauze and tape dressings; the use of these dressings saves personnel time."<sup>1</sup>

In its published "Guidelines for the Prevention of Intravascular Catheter Related Infections" (August 9, 2002), the CDC recommends for central venous catheters (CVCs) including PICCs (Peripherally Inserted Central Catheters) to "Replace the catheter-site dressing when it becomes damp, loosened, or soiled or when inspection of the site is necessary," and to "Replace dressings used on short-term CVC sites every 2 days for gauze dressings and at least every 7 days for transparent dressings, except in those pediatric patients in which the risk for dislodging the catheter outweighs the benefit of changing the dressing."<sup>2</sup>

Although much has been written comparing transparent and gauze dressings<sup>3,4,5,6</sup>, little information is available regarding a transparent dressing's ability to remain intact for seven days. In addition, the condition of the patient's skin is directly related to dressing adherence and yet little has been documented on skin condition as it relates to dressing performance.

## PROTOCOL

Before beginning the study, comprehensive in-services were performed in all of the participating facilities to familiarize the nursing staff with the purpose of the study and the data collection tool. This included nursing administration, nursing staff and infection control committees. Physician groups at all acute care facilities were also in-serviced.

The exit site dressing was changed 24 hours after insertion if the dressing was soiled with blood and then every seven days or more frequently if the dressing was found to be wet and non-adherent. Only nurses who had been trained in the procedure performed dressing changes. Daily monitoring of the site was also performed by the nurse or trained caregiver.

The site care procedure was to don a mask and sterile gloves, remove the old dressing, clean the exit site with alcohol and Povidone-iodine, and apply skin prep. The site was allowed to dry completely after each step. Next, a Centurion® HubGuard® catheter stabilizing adhesive strip was applied as a non-surgical alternative to suturing. A SorbaView® Dressing was then applied over the site, and the dressing was dated and initialed. (See Photo A.)



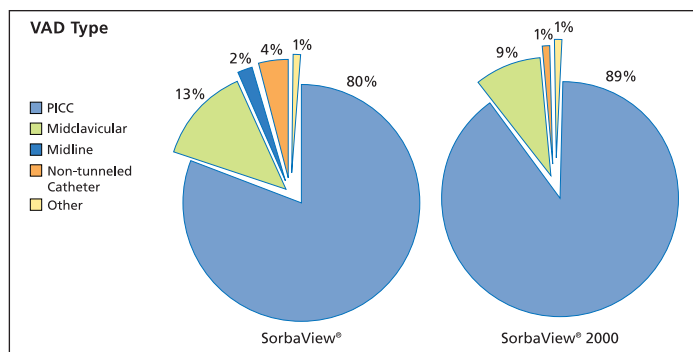
**Photo A**

Patients often received multiple therapies: Antibiotics, Antifungals, Chemotherapy, Hydration, Pain Management, Total Parenteral Nutrition, Lipids, Iontropics, Vasopressors and others.

The site was closely monitored and evaluated for several criteria, including signs and symptoms of infection such as erythema, induration, or exudate present at the exit site. If these symptoms were identified, a Biopatch™ was applied to the exit site and the SorbaView® Dressing placed over the Biopatch™. All exit site infections were cleared with this method without necessitating a VAD site rotation.

## ANALYSIS

The evaluation of this dressing was conducted in 32 facilities including urban and rural acute care facilities, teaching institutions, home health care settings, skilled nursing facilities and rehabilitation units in the middle Tennessee area. In



**Chart B**

both data sets, the acute care sites had the most dressing change assessments. Patients were enrolled if they had vascular access devices that would be in place seven days or longer. (For a list of VAD types used, see chart B.) There were 576 total enrollments that met the study criteria and there were 1961 dressing change assessments. (See Table C for more detailed enrollment and assessment data.)

	SorbaView®	SorbaView® 2000
Earliest Enrollment Date	11/01/99	01/02/02
Last Assessment Date	07/12/02	07/11/02
Number of Enrollments	439	137
Number of Assessments	1,653	308
Average Assessments per Enrollment	3.77	2.25
Catheter Days	11,565	2,144
Median Patient Age	68	71
Average Patient Age	64	69
Minimum Patient Age	9	4
Maximum Patient Age	104	96
Standard Deviation of Patient Age	20	18
Number of Male Patients	168	54
Number of Female Patients	271	83

**Table C**

Good skin condition is important to ensure dressing adherence, occlusivity and safe intravenous therapy. Despite an older patient population, skin condition under the dressing was consistently favorable throughout the entire study. With SorbaView®, 97.8% of patients had intact skin at the time of each assessment, with the SorbaView® 2000, 99.3% of the patients had intact skin. (See Chart D, next page.)

Nurses were permitted to indicate up to two of six possible choices for the dressing condition at each dressing change assessment: Intact, Edges Lifting, Dressing Damaged, Dressing Wet, Dressing Missing, or Patient Tampering. For example, if the dressing was intact and completely occlusive at the catheter exit site but the edges were lifting, those two selections were made. The SorbaView® and SorbaView® 2000 Dressings were indicated to be intact for 82% and

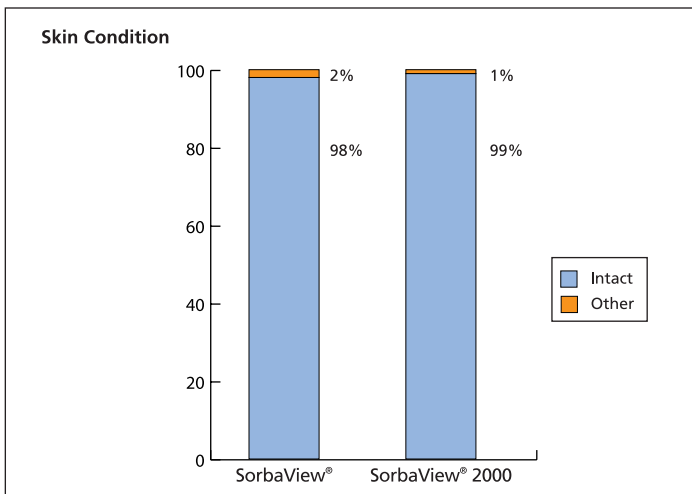


Chart D

93% of their assessments, respectively. (See Chart E.) Dressings indicated as Edges Lifting sustained enough coverage on the site to maintain an occlusive barrier. Dressings were changed at all seven-day assessments, regardless of the condition of the dressing.

The study tracked exit site infections (indicated by erythema, induration or exudate present at the exit site), a potential contributor to CRBSIs<sup>7,8</sup>. There were 16 exit site infections indicated with the SorbaView® and three with the SorbaView® 2000, or 1.38 infections per 1000 catheter days and 1.40 infections per 1000 catheter days, respectively. The difference between the two types of dressings is not significant.

## RESULTS

The results of this study show improved outcomes with the newer dressing – the SorbaView® 2000 – compared to the

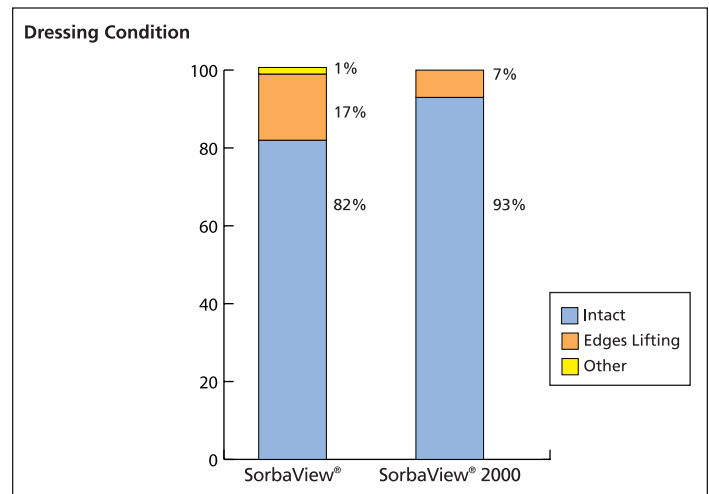


Chart E

original SorbaView® Dressing. Although data from both dressings were similar, it is clear that the SorbaView® 2000 had improved outcomes for skin condition, dressing adherence, and a virtually identical rate of exit site infections to that of the SorbaView®.

Favorable skin condition enhances patient comfort while improving dressing adherence. Greater adherence contributes not only to maintaining low infection rates but also to a reduction of costs incurred from unscheduled dressing changes.

Due to the large percentage of dressings classified as intact at the seven day assessment time, this study clearly indicates that **the recommendations set forth by the CDC for a seven day dressing change protocol can be met by using Centurion® SorbaView® Dressings.**

Key Findings	
Dressing Condition	<ul style="list-style-type: none"> <li>• <b>Significantly high level of intact dressings</b> at time of assessment</li> <li>• <b>Significantly improved performance</b> of SorbaView® 2000 over SorbaView®</li> </ul>
Skin Condition	<ul style="list-style-type: none"> <li>• <b>Significantly high level of intact skin</b> at time of assessment for both dressings, particularly considering average age of patients in study</li> </ul>
Exit Site Infection Rates	<ul style="list-style-type: none"> <li>• <b>No significant difference</b> between the two dressings (SorbaView® vs. SorbaView® 2000) in the rate of infections per 1000 catheter days</li> </ul>

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## REFERENCES

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<sup>3</sup>Maki DG, Stolz S, Wheeler S, Mermel LA. A Prospective, Randomized Trial of Gauze and Two Polyurethane Dressings for Site Care of Pulmonary Artery Catheters: Implications for Catheter Management. *Crit Care Med*. 1994;22: 1729-1737.

<sup>4</sup>Treston-Aurand J, Olmstead RN, Allen-Bridson K, Craig CP. Impact of Dressing Materials on Central Venous Catheter Infection Rates. *J Intraven Nurs*. 1997;20: 201-206.

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<sup>8</sup>Sitges-Serra A, Girvent M. Catheter-related Bloodstream Infections. *World J Surg*. 1999;23: 589-595.