

# When Is Accomplishing “Zero” Outstanding? ...When It Relates To Central Line Infections

Research Summary by M. Ann Anderson, MS, RN  
Director of Clinical Affairs, LifeSync Corporation

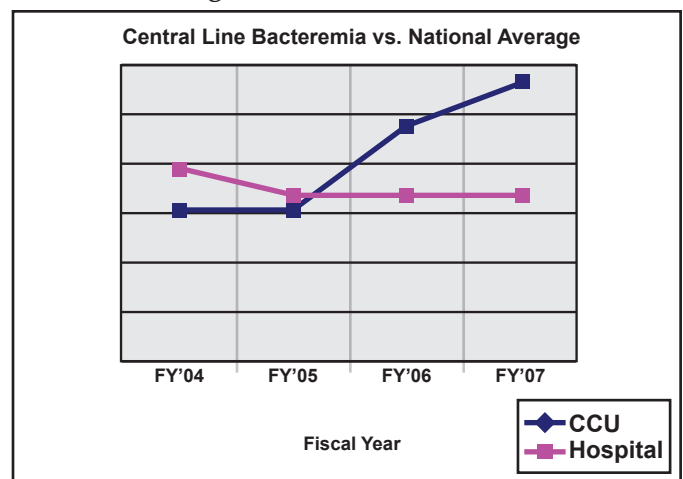
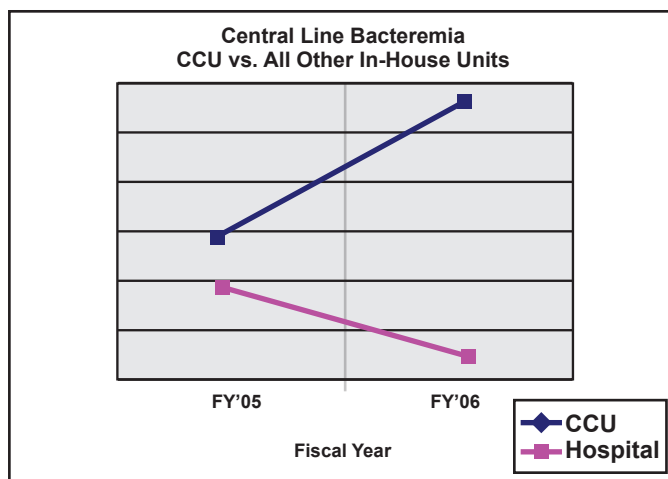
## Overview

The William W. Backus Hospital is a 213- bed, not-for-profit, acute care community facility located in Norwich, CT. Backus Hospital is the primary source of health services for nearly a quarter-million people.<sup>3</sup>

The Critical Care Department of Backus (14-beds) was having a serious central line infection problem. The addition of the LifeSync® Wireless ECG System to their infection control bundle in June of 2007 had a significant impact on the resolution of the facility’s infection problem.<sup>1</sup>

The successful elimination of Central Line Associated Bloodstream Infections (CLABSI) was one of several benefits found for the facility.<sup>1</sup> In addition to economic benefits for both the unit and the hospital many other patient safety and staff advantages were recognized. The use of this new technology contributed to the facility receiving the prestigious John D. Thompson Award for Excellence in the Delivery of Healthcare from the Connecticut Hospital Association<sup>4</sup> through the use of data for twelve straight months without a central line infection.<sup>1</sup>

Problem - Infection Trends Before Changes<sup>1</sup>



## Solution

“Through a collaborative effort between nurse leaders and the (Critical Care) Practice Council, risk factors associated with CLABSI were identified, and an evidence-based plan to completely eliminate Central Line Infections was identified. Following evaluations of Critical Care nurse knowledge, practice techniques, equipment and technology, and the daily interdisciplinary team process, team members created goals to achieve the practice excellence decision of eliminating Central Line infections.”<sup>1</sup> After a comprehensive review of research, the William W. Backus Hospital decided to deploy strategies from the Institute of Healthcare Improvement and John’s Hopkins University ICU collaborative.

The Central Line bundle approach is paraphrased as follows:<sup>1</sup>

- Analyze the need for a central line daily
- Ensure excellent line and dressing maintenance

- Continue to improve upon proper hand hygiene
- Ensure proper site selection / chlorhexidine skin antisepsis
- Preserve sterile fields and garb
- Recognize that published anecdotal evidence suggested
- 77% of ECG lead wires harbored antibiotic-resistant organisms even after cleaning<sup>2</sup>
- Acknowledge that anecdotal evidence suggests traditional lead wire cleaning is almost impossible
- Acknowledge that anecdotal evidence suggests the traditional ECG lead wire cleaning process is time-consuming and damages the wires
- Apply same assumptions to reusable BP cuffs and SPO2 sensors
- Consider housekeeping tasks to clean rooms between admissions

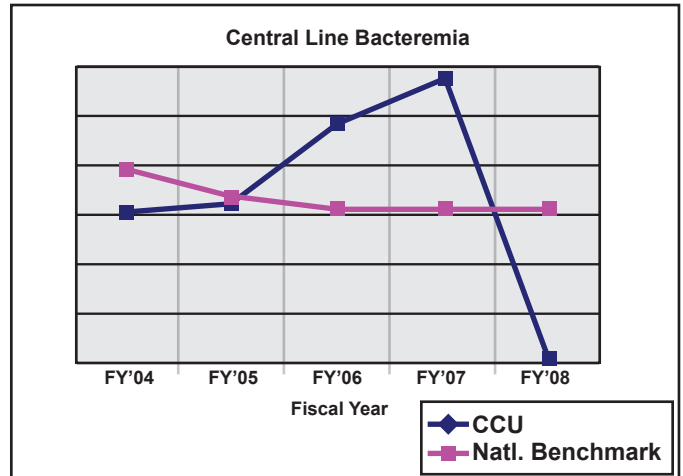
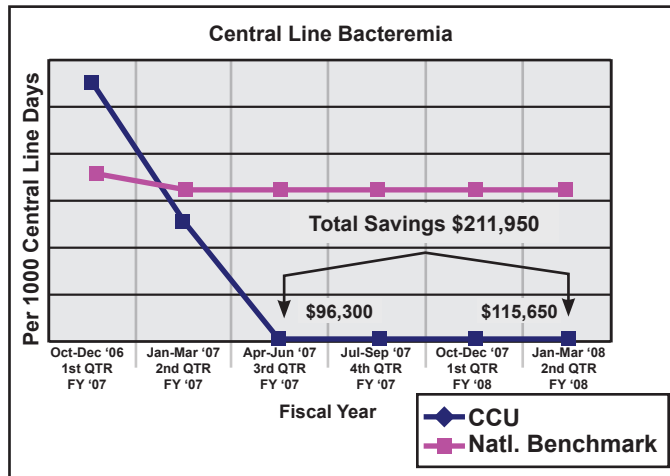
This bundled approach was embraced by the staff and recommendations for change were developed.<sup>1</sup>

## Results and Benefits of the Bundled Approach

After the William W. Backus Hospital formed the Critical Care Practice Council and decided to use evidence-based practice techniques, along with an interdisciplinary focus, the Council successfully deployed strategies that resulted

in 12 months of zero central line infections. This resulted in improving patient and clinical outcomes as well as costs savings of \$211,950 based on 12 months data in one ICU unit alone.<sup>1</sup>

### Infection Trends After Changes<sup>1</sup>



The William W. Backus Hospital management noted the following benefits for patients, nursing staff and physicians:<sup>1</sup>

- 12 continuous months of:
  - “ZERO” central line infections
  - \$211,950 in saving during all 12 months
- Organizational savings due to infection elimination
  - FY 07 = \$96,300
  - YTD FY 08 = \$115,650
  - Projected FY 08 = \$231,300<sup>1</sup>

### Cost Savings Analysis also includes<sup>1</sup>:

- Decrease in patient morbidity & mortality
- Decrease in patient length of stay (LOS)
- Reallocated nursing hours back to patient care
- Decrease patient falls
- Decrease staff trips and falls (workmans comp claims, sick calls)
- Elimination of ECG cable replacement
- Satisfied, empowered Critical Care Nurses
- Improved morale
- Physician satisfaction

### Conclusion

*“Infection rates remained unchanged after all policies and procedures were tightened.”*  
*“It wasn’t until the introduction of the LifeSync® System that infection rates began to drop.”*

-- Debra Furtado<sup>1</sup>

### Debra Furtado RN-BC, BSN, MA



Former Director of Critical Care/Cath Lab/Cardiac Rehab at the William W. Backus Hospital, presented the Backus story in a poster titled When Is Accomplishing Zero Outstanding at the American Association of Critical Care Nurses National Teaching Institute in May of 2008.<sup>1</sup>



### References

<sup>1</sup> Furtado, Debra. (May 7, 2008) Poster Presentation. When Is Accomplishing Zero Outstanding? Poster presentation by Debra Furtado RN-BC, BSN, MA at the American Association of Critical Nurses (AACN) National Teaching Institute (NTI) in Chicago, IL (LS-1007).

<sup>2</sup> Jancin, B. (2004, March). Antibiotic-resistant pathogens found on 77% of ECG lead wires. Cardiology News. vol 2. (LS-998)

<sup>3</sup> The William W. Backus Hospital website. Retrieved October 8, 2008, from <http://www.backushospital.org/about-backus.html>

<sup>4</sup> The William W. Backus Hospital website. Retrieved October 9, 2008, from <http://www.backushospital.org/backus-receives-hospital-association-award1.html>.