# Reduction in Central Line Associated Blood Stream Infection (CLABSI): A Comprehensive Approach

**Lisa Haddad, MS, BSN, RN; Mickey McBride, BS, RN; Theresa Renfro, MSN, RN**

## Background

- Central-line-associated bloodstream infections (CLABSI) are a serious problem.
- National Patient Safety Goal: NPSG.07.04.01 addresses the need for action to reduce infection rates.
- Healthy People Goal 2020-1: Reduce CLABSI.
- Institute for Healthcare Improvement promote use of care bundles to reduce CLABSI and improve patient safety.

## Contact

Lisa Haddad, MS, BSN
University of Tennessee Medical Center
1924 Alcoa Hwy
Knoxville TN 37920
lhaddad@utmck.edu

## Problem

An estimated 250,000 bloodstream infections directly related to the use of central lines occur in hospitals each year in the United States, costing an average of $36 billion to $45 billion per year (CDC, 2009). The average cost per infection is estimated to be $34,000 to $56,000 (CDC, 2002). These costs are only related to direct patient care and do not account for costs to family, disability or loss of productivity.

National averages range from 1.3 – 2.9 infections per 1000 central line days (Consumer Reports, 2010). Tennessee rates were as much as 50% higher than published national averages (TRHAS, 2008). UT Medical Center rates for 2008 were 3.3 infections per 1000 central line days (TRHAI, 2008).

## Strategy

-Implementation of CLABSI bundle to include the following:
- Hand hygiene
- Maximum barrier precautions
- Chlorhexidine prep
- Daily review of line necessity
- Empowerment of nursing staff to stop the process if needed

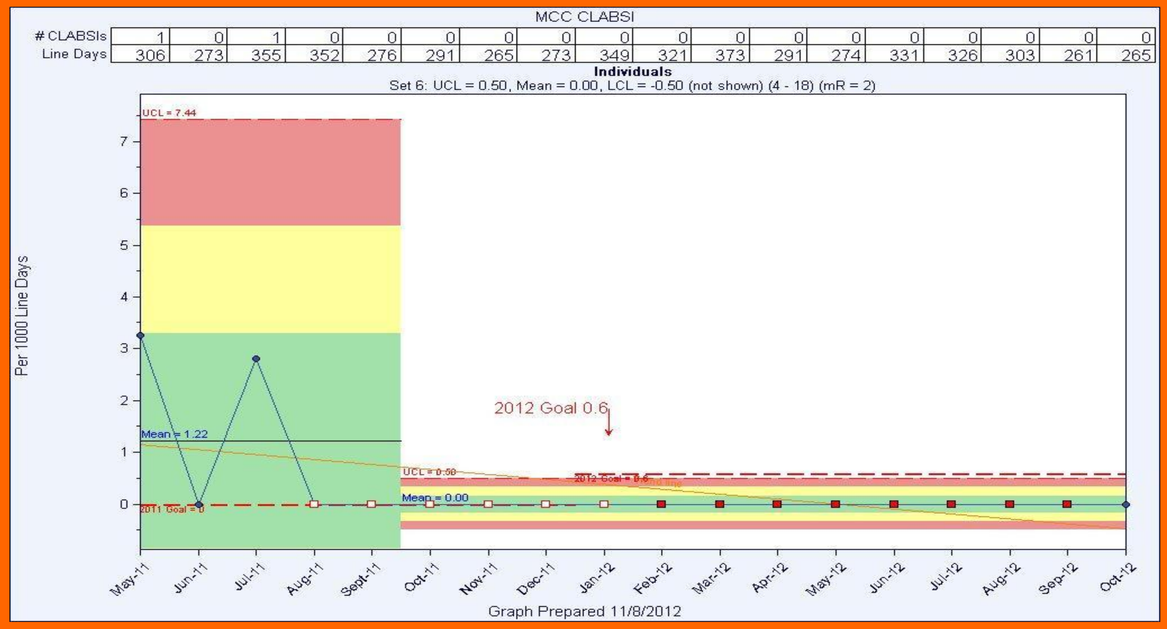
-Strict insertion procedure that follows a checklist
- Ultrasound guidance

-Review of all insertion checklist by Infection Prevention Nurse

-Use of alcohol impregnated cap to cover unused ends of central lines,

-Surveillance Nurse monitoring daily for compliance

## Data




## Implications for Practice

-Nurses empowered to control the central line insertion process

-Reduced CLABSI rates

-Structured practice that allows nurses a straight forward direction to guide their practice

-Decrease in unnecessary central line use

## References

CDC, Centers for Disease Control and Prevention. (2002). Guidelines for the prevention of intravascular catheter-related infections. Retrieved from www.cdc.gov.MMWR/PREVIEW/MMWRHTML/rr5110al.htm

CDC, Centers for Disease Control and Prevention. (2009). Public Health Grand Rounds.Retrieved from www.cdc.gov/about/grand-rounds/archives/2009/download/GR-101509.pdf

Consumer Report (2010). How do patients fair? Bloodstream infections. Retrieved from www.consumerreports.org/health/doctors-hospitals/hospital-infection/deadly-infections-hospitals-can-lower-the-danger/behind-the-data/index.htm

Tennessee's Report on Health Care Associated Infections. (2008). Retrieved from http://health.state.tn.us/Downloads/TN_HAI_Report_2008_Jan_Dec_final.pd

The Joint Commission. (2008). Accreditation Program: Hospital National Patient Safety Goals. Retrieved from www.jointcommission.org/NR/rdonlyres/31666E86-E7F4-423E-9BE8-F05BD1CB0AA8/0/HAP_NPSG.pdf

US Department of Health and Human Services. (2009). *Healthy People 2020.* Retrieved from www.healthypeople.gov/HP2020/