

CENTURION®

CENTRAL LINE INSERTION BUNDLE





WHY IMPLEMENT A CENTRAL LINE BUNDLE?

Hospital-acquired infections (HAIs) are **the fourth largest killer in America**. The death toll from HAIs is estimated at over 100,000 people each year (McCaughey, 2006), and the costs associated with them add over 30 billion dollars a year to what the nation spends on hospital care (Scott, 2008).

Additionally, states, regions and governmental agencies are now requesting HAI reports from hospitals for public disclosure and comparison.

Central Line Associated Blood Stream Infections (CLABSIs) are among this group of frightening infections that increasingly cannot be tamed with commonly-used antibiotics. With a **mortality rate that is 10 times greater** than for patients without hospital-acquired infections (PHC4, 2005), it is important for health care facilities to reduce the risk of CLABSIs. The good news is that by implementing the right protocols and procedures, **these infections are almost all preventable** (McCaughey, 2006). Compelling evidence shows that using a **Central Line Bundle** as a part of an overall plan to reduce infections is an effective way for hospitals to combat CLABSIs (IHI, 2006).

To assist in the prevention of CLABSIs, Centurion creates Central Line Bundle Kits that meet national standards, and are also customized for each health care facility's specific protocols and preferences.

Central line associated blood stream infections are **an avoidable complication**. Taking the recommended steps will help health care facilities by reducing un-reimbursed treatment costs and potentially costly litigation, and save lives.

THE FACTS

- Per the “Deficit Reduction Act” of 2005, effective October 1, 2008, the Centers for Medicare & Medicaid Services (CMS) will no longer reimburse hospitals for vascular catheter associated infections acquired by patients while being treated in a health care facility (CMS, 2008).
- The treatment costs for central line associated blood stream infections (CLABSI) have been estimated (in 2007 dollars) at between \$7,288 and \$29,156 per patient (Scott, 2008).
- Annual costs associated with CLABSI (in 2007 dollars) to U.S. hospitals have been estimated at between \$590 million and \$2.68 billion dollars (Scott, 2008).
- In addition to direct hospital costs (both fixed and variable), indirect costs include lost wages, diminished productivity, increased mortality, lost income by family members, anxiety, grief, and pain and suffering (Scott, 2008).
- In 2007 there were more than 92,000 CLABSIs (Scott, 2008).
- The average additional length of stay associated with CLABSI is 26 days (PHC4, 2005).
- Mortality rates for patients reported as having CLABSI were 25.6% versus mortality rates of 2.4% for patients who did not have a hospital-acquired infection (PHC4, 2005).
- “There is compelling evidence that nearly all hospital infections are preventable when doctors and staff clean their hands and adhere to other low-cost infection prevention measures. These findings put hospitals in a new legal situation. The assumption that infections are unavoidable shielded hospitals from liability for decades. But not in the future. Hospital infections could be the next asbestos.” (McCaughey, 2006)
- Reducing hospital-acquired infections is imperative to reducing health care costs for consumers, payers, and hospitals themselves (PHC4, 2005).
- The Joint Commission (JCAHO) expanded their standards to extend preventative initiatives and surveillance past critical care and into the entire hospital. (JCAHO, 2009)



PREVENTION

Interventions focusing on reducing CLABSI had the greatest impact of any infection intervention strategy, with observed reductions ranging from 38% to 71% (Scott, 2008).

Application of the central line bundle has demonstrated striking reductions in the rate of central line infections in many hospitals (IHI, 2006).

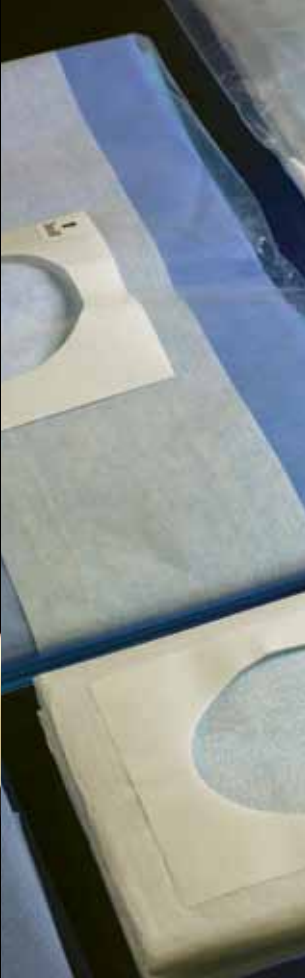
The key components of the bundle are:

- Hand hygiene
- Maximal barrier precautions upon insertion, including: cap, mask, gown, gloves, and head-to-toe sterile drape
- Chlorhexidine skin antisepsis
- Optimal catheter site selection
- Daily review of the necessity of a line with prompt removal of unnecessary lines
- A checklist to support standardized protocol

Based on guidelines and recommendations by The Society for Healthcare Epidemiology of America (SHEA), The Infectious Diseases Society of America (IDSA), The Association for Professionals in Infection Control and Epidemiology (APIC), and others. JCAHO's Critical Access Hospital Accreditation Program has published national Patient Safety Goals effective 1/1/2010.

NATIONAL PATIENT SAFETY GOALS AS ISSUED BY JCAHO EFFECTIVE 1/1/2010

- Implement policies and practices aimed at reducing the risk of central line-associated bloodstream infections that meet regulatory requirements and are aligned with evidence-based standards (for example, HICPAC [Healthcare Infection Control Practices Advisory Committee] via the CDC [Centers for Disease Control and Prevention] and other professional organizational guidelines).
- Use a catheter checklist and a standardized protocol for central venous catheter insertion.
- Use a standardized supply cart or kit that is all inclusive for the insertion of central venous catheters.
- Use a standardized protocol for sterile barrier precautions during central venous catheter insertion.
- Use a Chlorhexidine-based antiseptic for skin preparation during central venous catheter insertion in patients over two months of age, unless contraindicated. (JCAHO, 2009)





GENERAL KIT COMPONENTS

Bouffant(s), Cap(s)	Suture-free Securement Devices
Mask(s)	Pre-filled Saline Syringes
Gown(s)	Centurion SnagFree® Needle Holder
Gloves	Centurion Scissors
Full-body Sterile Drape	Safety Scalpels
Chlorhexidine-based ChloroPrep* Skin Prep	BIOPATCH** Protective Disk with CHG
Edwards™ Pressure Injectable, Antimicrobial Catheters	Centurion SorbaView® SHIELD
Guidewire	Centurion Tubing Anchor
Dilator	Needle Receptacle for Used Needles
Needles and Syringes	Lidocaine
Swabable, Needleless Valves	Heparin
Sutures	Ultrasound Gel and Probe Covers
Gauze	Checklist, Hospital Forms
	Patient and Family Educational Materials

CUSTOM KIT AVAILABILITY

Centurion will custom build a Central Line Bundle Kit with the desired components to meet national standards and your hospital's specific protocols and preferences.

* ChloroPrep® is a registered trademark of Enturia.

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HEAD

Intubation Procedure Practices

GENERAL LINE INSERTION CHECKLIST	
Is the patient's head in the neutral position?	<input type="checkbox"/> Yes <input type="checkbox"/> No
Is the patient's neck in the neutral position?	<input type="checkbox"/> Yes <input type="checkbox"/> No
Is the patient's mouth open?	<input type="checkbox"/> Yes <input type="checkbox"/> No
Is the patient's airway clear?	<input type="checkbox"/> Yes <input type="checkbox"/> No
Is the patient's oxygen saturation > 90%?	<input type="checkbox"/> Yes <input type="checkbox"/> No
Is the patient's respiratory rate > 10 breaths per minute?	<input type="checkbox"/> Yes <input type="checkbox"/> No
Is the patient's end-tidal CO2 > 35 mmHg?	<input type="checkbox"/> Yes <input type="checkbox"/> No
Is the patient's chest X-ray clear?	<input type="checkbox"/> Yes <input type="checkbox"/> No
Is the patient's ECG stable?	<input type="checkbox"/> Yes <input type="checkbox"/> No

Patient ID

REFERENCES

Centers for Medicare & Medicaid Services (CMS) (2008). **CMS Office of Public Affairs: Medicare Takes New Steps To Help Make Your Hospital Stay Safer.** Retrieved from www.cms.hhs.gov/apps/media/press/factsheet.asp?Counter=3227&intNumPerPage=10&checkDate=&checkKey=&srchType=1&numDays=3500&srchOpt=0&srchData=&keywordType=All&chkNewsType=6&intPage=&showAll=&pYear=&year=&desc=&cboOrder=date

Institute for Healthcare Improvement (IHI) (2006). **Getting Started Kit: Prevent Central Line Infections - How-to Guide.** Retrieved from www.ihl.org/IHI/Programs/Campaign.

The Joint Commission on Accreditation of Healthcare Organizations (JCAHO) (2009). **Critical Access Hospital Accreditation Program, 2010 Chapter: National Patient Safety Goals.** NPSG.07.04.01 - Implement evidence-based practices to prevent central line-associated bloodstream infections.

McCaughey, Betsy, Ph.D. (2006). Hospital infection is the next asbestos. **New York Law Journal**, June 6, 2006. www.hospitalinfection.org

Pennsylvania Health Care Cost Containment Council (PHC4) (2005). Hospital-acquired infections in Pennsylvania. Research Briefs, Issue 5, July 2005. www.phc4.org.

Scott, Douglas II (2008). **The Direct Medical Costs of Healthcare-Associated Infections in U.S. Hospitals and the Benefits of Prevention.** Division of Healthcare Quality Promotion; National Center for Preparedness, Detection, and Control of Infectious Diseases; Coordinating Center for Infectious Diseases; Centers for Disease Control and Prevention. March 2009.

To learn more about our Central Line Bundle Kit, contact your local Centurion Sales Rep at 800-248-4058 or visit www.centurionmp.com

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