

# Successful Central Line Associated Blood Stream Infection (CLABSI) Prevention Practices

Inputs	Activities	Outputs	Outcomes	Impact
Hospital Staff	Assess patient's signs and symptoms for CLABSI and implement infection control practices to reduce CLABSIs.	Data showing the number of patients that developed a CLABSI.	<u>Short-Term</u> Facility leadership understands if their SIR is significantly higher than the baseline.  <u>Intermediate Term</u> Reduce SIR.  <u>Long-Term</u> Optimal patient care and CLABSI prevention.	Decrease cost due to reduced infections and need for hospitalization.
Clinical Practice Guidelines	Guide patient care and infection control practices.	Decrease CLABSIs and SIRs.		Decrease patient length of stay.
Healthcare Personnel Education	Train patient care staff on appropriate catheter use, insertion, and other infection control practices. Daily audits.	Decrease CLABSIs and SIRs.		Decrease readmissions due to CLABSI.
Appropriate Central Venous Catheter use	Ensure providers understand appropriate central line use and removal of non-essential catheters.	Reduce the risk of infectious complications.		Decrease morbidity and mortality from CLABSI.
Hand Hygiene and Aseptic Technique	Perform correct hand hygiene procedures during catheter insertion, maintenance, and removal. Aseptic technique is used for catheter insertion including clean gloves, sterile gloves, sterile barrier precautions (cap, mask, sterile gown).	Decrease CLABSIs and SIRs.		
Surveillance	Document source of patient signs and symptoms and care provided.	Facility leadership understands if they are an outlier for CLABSI.		

## Feedback Mechanisms

Care Compare: A tool that provides the public with facility healthcare associated infections SIRs. This allows the public to make informed decisions about where to undergo healthcare.

CMS Hospital Inpatient Quality Reporting Program (HIQR): Under the Hospital Inpatient Quality Reporting Program, CMS collects quality data from hospitals paid under the Inpatient Prospective Payment System, with the goal of driving quality improvement through measurement and transparency by publicly displaying data to help consumers make more informed decisions about their health care. It is also intended to encourage hospitals and clinicians to improve the quality and cost of inpatient care provided to all patients.

## Assumptions

Facilities will implement clinical practice guidelines to reduce CLABSIs in their patients.

## External Factors

Changes to government policies and regulations.

An array of prevention efforts has been identified to reduce the incidence of CLABSI. These interventions include: (i) Appropriate central line use: promptly removing non-essential intravascular catheters, (ii) hand hygiene and aseptic technique, (iii) the use of maximal barrier equipment including a large patient drape, inserter mask, sterile gloves, cap, and sterile gown during aseptic insertion of the central line, (iv) appropriate insertion site decontamination before central line insertion, (v) chlorhexidine-impregnated dressings (in patients  $\geq 18$  years), and (vi) implementing surveillance strategies. The SIR is used both as a quality measure and to drive infection prevention efforts in patient care locations, hospitals, health systems, and collaboratives. The SIR describes a healthcare facility's performance compared to a national baseline. Facilities can compare the number of HAI CLABSI events to the number predicted, given national data.

Reference: O'Grady NP, Alexander M, Burns LA, Dellinger EP, Garland J, Heard SO, Lipsett PA, Masur H, Mermel LA, Pearson ML, Raad II, Randolph AG, Rupp ME, Saint S; Healthcare Infection Control Practices Advisory Committee (HICPAC). Guidelines for the prevention of intravascular catheter-related infections. Clin Infect Dis. 2011 May;52(9):e162-93.