

CHCA Clinical Improvement Collaborative: Reducing Central Venous Catheter-associated Bloodstream Infections MEASUREMENT STRATEGY



Purpose of the Measurement Grid:

The measurement grid outlines the measures to be collected over the life of the collaborative. The grid includes the specific parameters for each measure. See the Instruction Manual for information on data collection sheets and monthly reporting.

Measurement for Improvement:

CHCA improvement collaboratives are about making hospital systems safer for patients, not measurement. But measurement plays an important role. Always remember that measurement should be designed to accelerate improvement, not slow it down. See the Project Charter for a more complete discussion of measurement for improvement.

Timeline for Measurement:

Baseline data will be collected during the pre-work phase, as well as 9 months of collaborative data (April 2005 – December 2005).

Three Types of Measures:

The Measures Grid is broken down into three categories: Outcome, Process and Balancing Measures. Teams may also develop additional measures based on the issues that are of most interest and importance to their hospital. Only the measures in the grid below will be submitted to CHCA.

Outcome Measures (voice of the customer or patient):

These measures tell you whether changes are actually leading to improvement – that is, helping to achieve the overall aim of reducing BSIs associated with catheters. Outcome measures answer questions like, “How is the system performing?” and “What is the result?”

Process Measures (voice of the workings of the system):

To affect the outcome measure of reducing BSIs associated with catheters, changes will be made to improve many core processes in the care system, as well as changes to improve the culture as it relates to safety. We will want to know if the parts / steps in the system are performing as planned. Measuring the results of these process changes will tell you if the changes are leading to an improved, safer system.

Balancing Measures (looking at a system from different directions / dimensions):

We will use these measures to make sure that changes to improve one part of the system aren't causing new problems in other parts of the system. Balancing measures help us to draw reasonable conclusions about the sustainability of the changes.

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Measure	Calculation	Data Collection Plan/Sample Size	Data collection method	Goal
OUTCOME MEASURES				
Central Venous Catheter-associated Bloodstream Infection Rate	<p>Numerator: Number of CVC-BSI infections</p> <p>Denominator: Total number of central line days.</p> <p>Multiply by 1000 to convert to a rate</p>	<p>Baseline: 2-9 months of pre-collaborative data, across the targeted population.</p> <p>Concurrent: Report monthly.</p>	<p>Infection rate from internal sources, such as IC surveillance data.</p> <p>If infection control practitioner reports data quarterly, please disaggregate and report by month</p>	Reduce to at least 1.5 / 1000 (or 50% reduction from current rate)
Time between CVC BSI	<p>Days between occurrences</p> <p>X axis = occurrence y axis = days between occurrences</p>	<p>Baseline: 2-9 months of pre-collaborative data, across the targeted population.</p> <p>Sample should include all patients with CVCs.</p> <p>Concurrent: Report monthly.</p>	Request IC to report date of each occurrence (monthly)	Double the number of days between (2x current number)
PROCESS MEASURES				
Daily Goals Prevalence	<p>Numerator: The total number of patients who had daily goals documented on the day of the prevalence study.</p> <p>Denominator: Total number of patients surveyed</p>	<p>Sample should include all patients with CVCs.</p> <p>Conduct audit one day per week. Rotate days of the week and rotate shifts. Aggregate and report monthly.</p>	Daily goal sheets	95% of patients received documented daily goals

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 MEASUREMENT STRATEGY



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<p>Central Line Insertion Bundle Compliance</p> <p>CVC insertion bundle includes:</p> <ul style="list-style-type: none"> • Hand hygiene • Use transparent semi-permeable dressings when possible / Use gauze only with bleeding/oozing • Maximum barrier protection (sterile technique maintained throughout) • Prepare skin with antiseptic/ detergent chlorhexidine 2%, except in those with a contra indication (e.g., patients less than 2 months of age) 	<p>Numerator: Number of patients with newly placed central lines which are compliant with the insertion bundle.</p> <p>Denominator: Total number of insertions observed.</p> <p>Report separately by unit</p>	<p>Baseline: Sample should include at least 20 patients with newly inserted CVCs</p> <p>Only patients with all aspects of CVC bundle in place are recorded as compliant.</p> <p>Rotate days of the week and shifts.</p> <p>Concurrent: Aggregate and report monthly.</p>	<p>Observation worksheet - insertion</p>	<p>95% of patients with newly inserted CVCs receive all aspects of CVC insertion bundle</p>

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<p>Central Line Maintenance Bundle Compliance</p> <p>CVC maintenance bundle includes:</p> <ul style="list-style-type: none"> • Hand hygiene • Aseptic technique maintained throughout (sterile gloves, dressing) • Use transparent semi-permeable dressings when possible / Use gauze only with bleeding/oozing • Replace dressing if it becomes damp, loosened or visibly soiled • Prepare skin with antiseptic/ detergent chlorhexidine 2% (except in those with a contra indication) 	<p>Numerator: Number of patients with central lines which were compliant with the maintenance bundle</p> <p>Denominator: Total number of maintenance events observed.</p> <p>Report separately by unit</p>	<p>Baseline: Sample should include at least 20 maintenance events for patients with CVCs.</p> <p>Only patients with all aspects of CVC bundle in place are recorded as compliant.</p> <p>Rotate days of the week and shifts.</p> <p>Concurrent: Aggregate and report monthly.</p>	<p>Observation worksheet - maintenance</p>	<p>95% of patients with CVCs receive all aspects of CVC bundle</p>

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Catheter Prevalence (catheter utilization)	<p>Numerator: Total central line days</p> <p>Denominator: Total patient days</p> <p>Report separately by unit</p>	<p>Baseline: 2-9 months of pre-collaborative data, across the targeted population.</p> <p>Sample should include all patients.</p> <p>Concurrent: Report monthly.</p>	Internal sources, such as IC surveillance data and hospital discharge data.	Reduce
BALANCING MEASURES				
Average Length of Stay for ICU	<p>Numerator: ICU monthly patient days</p> <p>Denominator: Total monthly ICU discharges</p>	<p>Baseline: 2-9 months of pre-collaborative data, across the targeted population.</p> <p>Sample should include all patients with CVCs.</p> <p>Concurrent: Report monthly.</p>	Hospital discharge data	Reduce
Costs	Average reduction in BSIs (multiplied by) The national average cost of a BSI.	Calculated by CHCA and reported for each participant at the end of the collaborative.	Infection rate data, nationally published cost data.	Reduce