CLABSI Prevention- “Bundle” Roll Out

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2010 National safety Goal 7
- Joint commission 2009

• NPSG (National patient safety Goal).07.04.01

  Implement evidence-based practices to prevent central line associated blood stream infections.
  [Short and long term central venous catheters and peripherally inserted central catheter lines]

• Expectation of full implementation by January 1, 2010.
New York Department of health Mandatory reporting

• July, 2005 **Public Health Law 2819**: requiring hospitals to report select hospital-acquired infections (HAIs).

• Initial "pilot phase" year (2007) to develop the reporting system; train hospitals on its use; standardize definitions, methods of surveillance and reporting; audit and validate the hospitals' infection data.

• "Hospital-Acquired Infections - New York State 2008" report of hospital-acquired infection rates by individual hospital and region.
New York State Department Of Health funded the collaborative for two years

• To monitor bundle application
• Demonstrate effectiveness
• And then disseminate the bundle to all affiliate NICUs
  - Thereby establishing uniform, evidence based practice in every NYS NICU
Potential routes:

**Extraluminal** - contiguous skin flora;

**Intraluminal** - contamination of catheter hub and lumen or contamination of infusate; and

**Hematogenous** - distant unrelated sites of infection
CLABSI definition

Laboratory confirmed blood stream infection (LCBI) -
Criteria

• Patient < 1yr of age has at least one of the following signs and symptoms: Fever > 38° C/100.4° F, hypothermia, apnea or bradycardia
  and
• Signs and symptoms and positive laboratory results are not related to an infection at another site
  and
• Common skin contaminant, is cultured from 2 or more blood cultures drawn from separate occasions.

CDC/NHSN surveillance definition of health care- associated infection Jan 08
Definitions

• **Central line days**: A daily count (for each day of the month, at the same time each day) of the number of patients in the patient care location with a central line and at the end of the month sum the daily counts.

• **Patient days**: A daily count (for each day of the month, at the same time each day) of the number of patients in the patient care location and at the end of the month, sum the daily counts.

• **CLABSI rate per 1000 central line days**
  \[
  \text{CLABSI rate per 1000 central line days} = \frac{\text{Number of CLABSI}}{\text{Number of central line days}} \times 1000
  \]

• **Central Line Utilization Ratio**
  \[
  \text{Central Line Utilization Ratio} = \frac{\text{Number of central line days}}{\text{Number of patient days}}
  \]
CLABSI care “Bundles”

- Insertion Bundle

- Maintenance bundle
  - Hub disinfection
  - Daily inspection / monitoring
  - Dressing changes

- Removal Bundle
Care Bundle Checklist

✓ Every component is
  • Indispensable
  • Vital
  • Of utmost importance

✓ Checklists ensure we do
  • The right thing
  • At the right time
  • In the right way

✓ Checklist: Insertion
             Maintenance
             Dressing change
Check, check, check, check, check, check

1) Strict hand washing
2) Two operators for insertion
3) Two operators for dressing change
4) One operator for hub care
5) Aseptic technique for insertion
6) Semi sterile for dressing change and hub care
Hub care Protocol - 6 Key steps

1. Cleanse hands with soap and water.
2. Put on gloves.
3. Establish sterile field under access port with 4x4.
4. Place syringes on edge of sterile field.
5. Scrub access port with chlorhexidine scrubbed for 10 seconds and allow to dry.
6. Pick up syringe, keeping tip sterile.
7. Attach syringe to hub, keeping connections sterile.
8. Administer flush solution, keeping connections sterile.
Three Essential principles in central line Hub care protocol

• Establishing **sterile field**: near patient

• **Disinfection** of the central line hub with chlorhexidine.

• **Maintaining sterility** while attaching syringes or tubings.
Hub Care Access- Blood Withdrawal Educational Video
Hub Care Access- Meds administration Educational Video
CLABSI rate from Aug 05 to Dec 09

- CLABSI/MFCH
- CLABSI/NHSN
Thank You
My Life Is In Your Hands
And Be Mindful of How You Care for My Central Line

Mi Vida Esta en Sus Manos
Y tiene presente cómo usted cuida de mi línea central
### CLABSI rates in level II/III NICU’s

<table>
<thead>
<tr>
<th>HOSPITAL</th>
<th># CLABSI</th>
<th># CLDAYS</th>
<th>RAW RATE</th>
<th>ADJ RATE</th>
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**Legend**
- Black circle: Risk-adjusted infection rate
- Red bar: Significantly higher than state average
- Blue bar: Significantly lower than state average
- Grey bar: Average
- *: Zero infections, not significant

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*\(^*\) Significantly higher than state average.
### CLABSI Rate in Regional Perinatal Centers

<table>
<thead>
<tr>
<th>HOSPITAL</th>
<th>CLABSI</th>
<th>CLDAYS</th>
<th>RAW RATE</th>
<th>ADJ RATE</th>
<th>ADJUSTED RATE AND 95% CONFIDENCE INTERVAL COMPARED TO STATE AVERAGE OF 3.1</th>
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</table>

- **Risk-adjusted infection rate**
- ^^Significantly higher than state average.
- **Significantly lower than state average.**
- Average
- *Zero infections, not significant.
Bloodstream Infection Definitions

Summary

**Laboratory Confirmed Bloodstream Infection (LCBI)**--
*All patients*

1. > 1 positive blood culture with recognized pathogen
2. Skin organisms: >2 blood cultures drawn on separate occasions positive for the same organism + clinical symptoms
3. Infant/neonate: >2 blood cultures drawn on separate occasions positive for the same organism + clinical symptoms.

**Clinical Sepsis (CSEP)** --*Infants and neonates only*
Clinical symptoms + no positive blood culture + antimicrobial therapy instituted.

CDC/NHSN surveillance definition of health care-associated infection Jan 08