Getting on the Telephone:
- Your GoTo Navigation pane should be on the right of your screen
- Expand the “audio” box
- Click Telephone option
- Dial the phone number
- Enter the access code, then press #
- You will be prompted to enable audio and enter your audio pin
- Please remember to mute yourself

If you are having trouble getting onto the telephone, please enter your concerns in the question box - We’ll be happy to help!

Questions and Comments:
Should you have any questions and/or comments during the webinar, please enter them into the question box, and we will address them during the open discussion portion.
CLA-BSI Pediatric Webinar

Michele Saysana, MD
Mike Gutzeit, MD
Margie McCaskey, RN
Holly O’Brien, RN

Friday, June 5, 2015
2:00pm - 3:00pm EST

GoToWebinar Registration Link:
https://attendee.gotowebinar.com/register/6246533729997039105
Welcome!

Facilitators for this Session:

Missy Shepherd  
Executive Director, SPS

Deborah Nadzam, PHD, RN, SSBB, FAAN  
Senior Consultant, Quality Improvement, CMS, Patient Safety, Joint Commission Resources
Our Speakers
CLA-BSI Leaders

Margie McCaskey, RN, DNP
Chief Quality Coordinator
Riley Hospital for Children

Michele Saysana, MD
Medical Director,
Riley Quality and Safety
Riley Hospital for Children

Mike Gutzeit, MD
Chief Medical Officer
Children’s Hospital of Wisconsin

Holly O’Brien, MSN RN CPN
Safety Program Manager
Children’s Hospital of Wisconsin
Session Objectives

• Learn about SPS as a Pediatric Safety Learning Network
• Understand Pediatric CLABSI – Central Line Associated Blood Stream Infections
• Learn from SPS experience in building evidence for SPS Prevention Standards
• Best Practices and Top Interventions for preventing Pediatric CLABSI
• Application of High-Reliability Theory to achieve desired Outcomes
About SPS

Missy Shepherd
Executive Director, SPS

Children’s Hospitals’ Solutions for Patient Safety
Every patient. Every day.
OUR MISSION:
Working together to eliminate serious harm across all children’s hospitals
Our 2015-2016 Goals

- 40 percent reduction in hospital-acquired conditions (HACs)
- 10 percent reduction in readmissions
- 25 percent reduction in serious safety events (SSEs)
88 Children’s Hospitals
Greater than 50% of Admissions
Preventing CLA-BSIs In Pediatrics

Mike Gutzeit, MD
Chief Medical Officer
Children’s Hospital of Wisconsin
Question to Consider

What is the attributable cost of a pediatric CLABSI?

a) $3000
b) $5000
c) $13,000
d) $35,000
e) $43,000
### Estimated Attributable Costs

- **$1000 CAUTI**
- **$3000 OBAE**
- **$5000 ADE**
- **$13,000 Falls**
- **$35,000 CLABSI**
- **$43,000 PU**
- **$51,000 VAP**
CLA-BSIs are Unique for Children

Children have different needs than adults. They require special attention for many reasons such as...

- Age diversity
- Challenges with immune function
- Concerns about deploying the usual hygiene agents due to potential toxicity
- Variability in home care standards
- Maintenance vs. insertion
- Kids are Kids!
  - Constant motion
  - Hygiene
Conditions generating unique pediatric safety risk:

- **Size:** Catheters are smaller & more prone to complication; anatomy is smaller leading to difficulties with dressings and location of insertion sites in close proximity to other things (trachs, GT’s ostomies, etc.)
- **High potential for extravasation / effusion due to thinner vasculature**
- **Greater challenges with PIV access**
- **Greater potential for line migration**
Holly O'Brien, MSN RN CPN
Safety Program Manager
Children’s Hospital of Wisconsin
Measurement

Central Line Associated Blood Stream Infections (CLA-BSI)

Description and Rationale

This measure answers the question: How often is a patient harmed due to central line associated blood stream infections?

Population Definition

The patient population for this measure is defined per the patient population operational definition. Inpatient and observational stay patients will be included in the measure. Four units collect CLA-BSI: PICU, CICU, NICU, and Hematology-Oncology.

Inclusion criteria

All patients are included who are defined as inpatient or under observation at the hospital.

Exclusion criteria

Infection must not be incubating at the time of the admission into the hospital. For most infections, this means that the infection does not become evident until 48 hours or more after admission, but each infection must be assessed individually.
Calculation

**Numerator:** Number of patients contracting an infection, as defined by CDC guidelines. Multiple infection sites due to the same organism are counted as one infection. For this measure, distinction is not made between an infection due to CVC/PICC insertion and one due to maintenance practices.

**Denominator:** Total number of central line days during the time period.

**Two analyses:**

a) Number of blood stream infections per 1000 central line days

\[
\text{Numerator/Denominator} \times 1000
\]

b) Total number of blood stream infections
Current SPS Outcomes

Holly O'Brien, MSN RN CPN
Safety Program Manager
Children’s Hospital of Wisconsin
Current SPS Outcomes

Children's Hospitals' Solutions for Patient Safety (SPS) National Network

Central Line Associated Blood Stream Infections Rate

SPS Network Aggregate

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Prevention Bundle and High-Reliability Theory

Michele Saysana, MD
Medical Director,
Riley Quality and Safety
Riley Hospital for Children
Project Name: Local Hospital CLABSI HAC Team
Project Leaders: Holly O'Brien & Mike Gutzeit (Wisconsin) / Michele Saysana & Margie McCaskey (Riley)
OCHSPS QIC: Shari Wooton
Revision Date: 10/31/2014

**Reduction SMART AIM**
Reduce <local hospital>l CLABSI rate centerline by 40% from X to Y BSls per 1000 central line days by 12/31/16.

**GLOBAL AIM**
Eliminate all CLABSI Safety Events across all pediatric hospitals in the US

**INTERVENTIONS (Level Of Reliability – LOR)**
- Adopt & Implement SPS Prevention Bundle - evidence based bundle (Level 2)
- Consider CHG baths for high risk populations (Level 1)
- Utilize PDSA and change management cycles to increase reliability of care delivery. (Level 2)
- Develop and deliver regular training plan on Bundles. (Level 1)
- Effective spread plan from successful units to hospital (Level 1)
- Fully Stocked Insertion bin (Level 2)
- Adopt & Implement SPS Prevention Bundle - evidence based bundle (Level 2)
- Utilize PDSA and change management cycles to increase reliability of care delivery. (Level 2)
- Develop and deliver regular training plan on Bundles. (Level 1)
- Cap change kit (Level 2) & Dressing change kits (Level 2)
- Fully Stocked Insertion bin (Level 2)
- Effectively measure and utilize process data to drive action (Level 1)
- Share process & outcomes data with senior leadership, and demonstrate how reliability reduces outcomes (Level 2)
- Ensure data is visible weekly to unit/bedside teams
- Every day in huddle review previous reliability, and ask staff if “failures” are skill, rule, knowledge error
- Develop Patient & Family Engagement approach to increase reliability of bundle (Level 2)
- Preoccupation with Failure to include systematic analysis of each infection (Level 2)
- Unit level Rounding to influence of accepted safety behaviors around the CLABSI bundle. (Level 2)
- Use of expected safety behaviors around the CLABSI bundle which includes safety coaches. (level 2)
- Disinfect high touched surfaces once a shift
- Limit personal items at the bedside.
- Long term in-patients (> 30 days) a deep cleaning of their room

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SPS CLA-BSI
Prevention Bundles

What should be standardized?
SPS CLA-BSI
Prevention Bundles
All Aviator HACs followed same process to identify Prevention Bundles
HAC Co-Leaders and Subject Matter Experts instrumental in the process and design
Clinical Steering Team ultimately authorized adoption of prevention bundles

Comprehensive literature review; operational definition alignment (2012)

SPS bundle declaration (2012, 2013)

Using survey, understand current state of SPS bundle implementation as related to hospital and network results (March, 2014)

HAC co-leaders and SMEs review results and analysis and develop prevention standard recommendations and summary document (April/May, 2014)

Presentation of summary document to CST and deliberation regarding adoption (May, 2014)
Nomenclature

• **SPS Prevention Bundle** - Terminology selected following input from CST at April meeting

  – **SPS Standard Element**: Strong evidence suggests that implementation of this element is associated with significant decrease in patient harm; all SPS hospitals should implement and measure reliability of this element

  – **Recommended Element**: Preliminary data and clinical expert opinion support the implementation of this element; SPS hospitals should strongly consider implementing and measuring reliability of this element
**Central Line-Associated Blood Stream Infections - INSERTION:**

**SPS Prevention Bundle**

<table>
<thead>
<tr>
<th>Bundle Element</th>
<th>Care Descriptions</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>STANDARD ELEMENTS</strong></td>
<td></td>
</tr>
<tr>
<td>Hand hygiene</td>
<td>• Perform hand hygiene procedures, either by washing hands with conventional soap and water or with alcohol-based hand rubs (ABHR). Hand hygiene should be performed before and after palpating catheter insertion sites as well as before and after inserting, replacing, accessing, repairing, or dressing an intravascular catheter. Palpation of the insertion site should not be performed after the application of antiseptic, unless aseptic technique is maintained [CDC Reference]</td>
</tr>
</tbody>
</table>
| CHG scrub | • Prepare clean skin with an antiseptic (70% alcohol, tincture of iodine, an iodophor or chlorhexidine gluconate) before peripheral venous catheter insertion [CDC Reference]  
• Prepare clean skin with a .0.5% chlorhexidine preparation with alcohol before central venous catheter and peripheral arterial catheter insertion and during dressing changes. If there is a contraindication to chlorhexidine, tincture of iodine, an iodophor, or 70% alcohol can be used as alternatives [CDC Reference] |
| No iodine ointment | • Do not use topical antibiotic ointment or creams on insertion sites, except for dialysis catheters, because of their potential to promote fungal infections and antimicrobial resistance [CDC reference] |
| Prepackaged or filled insertion cart, tray or box | • Catheter cart that contains all the necessary supplies [CDC reference] |
| Insertion checklist with staff empowerment to stop non-emergent procedure | • Include a checklist to ensure adherence to proper practices [CDC Reference]  
• Stoppage of procedures in non-emergent situations, if evidence-based practices were not being followed [CDC Reference] |
<p>| Full sterile barrier for providers and patients | • Use maximal sterile barrier precautions, including the use of a cap, mask, sterile gown, sterile gloves, and a sterile full body drape, for the insertion of CVCs, PICCs, or guidewire exchange 2. Use a sterile sleeve to protect pulmonary artery catheters during insertion [CDC reference] |
| Insertion training for all providers | • Refer to CDC reference on education &amp; training details (page e169) |
| <strong>RECOMMENDED ELEMENTS</strong> | |
| N/A | |</p>
<table>
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</table>
| Daily discussion of line necessity, functionality and utilization including bedside and medical care team members | • Discuss with the medical team continued necessity of line  
• Discuss with the medical team the function of the line and any problems  
• Discuss with the medical team the frequency of access and utilization of line. Consider bundling labs and line entries.  
• Consider best practice is documentation that the discussion occurred in the medical record. |
| Regular assessment of dressing to assure clean/dry/occlusive | • Replace catheter site dressing if the dressing becomes damp, loosened, or visibly soiled (CDC Reference)  
• Replace dressings used on short-term central venous catheters sites every 2 days for gauze dressings and at least every 7 days for transparent dressings [CDC Reference] |
| Standardized access procedure | • Refer to Hand Hygiene details in CLABSI insertion Bundle  
• Disinfect cap before all line entries by scrubbing with an appropriate antiseptic and accessing the port only with sterile devices [CDC Reference]  
• Alcohol (15 second scrub + 15 second dry) or CHG (30 second scrub + 30 second dry) [CDC Reference] |
| Standardized dressing, cap and tubing change procedures/timing | • Scrub skin around site with CHG for 30 seconds (2 minute for femoral site), followed by complete drying. (Note: institutional preference for CHG use for infant < 2 months of age) [CDC Reference]  
• Change crystalloid tubing no more frequently than every 72 hours [CDC Reference]  
• Change tubing used to administer blood products every 24 hours or more frequently per institutional standard [CDC Reference]  
• Change tubing used for lipid infusions every 24 hours [CDC Reference]  
• Document date dressing/cap/tubing was changed or is due for change [CDC Reference & SPS Data]  
• Consider when hub of catheter or insertion site are exposed, wear a mask (all providers and assistants)—shield patient’s face, ETT or trach with mask or drape |
| **RECOMMENDED ELEMENTS** | |
| An in-depth review of all identified CLABSI with multidisciplinary involvement AND the intent to change the process if needed. | • Utilize a systematic approach to review all hospital acquired CLABSIs |
| Daily CHG bathing and linen changes | • Follow manufacturer recommendations for usage |
Prevention Bundle and High-Reliability Theory

Children's Hospitals' Solutions for Patient Safety (SPS) National Network

Reliability to Blood Stream Infections Insertion Bundle

SPS Network Aggregate

Annotations
- Sept '12 – Network Recommended Bundle Released
- Sept '12 - National Sept Learning Session – review bundle and measuring reliability
- Jan '13 – Phase II hospitals joined
- Jan '13 – Sept '13 – Focus on increasing reliability
- June '14 – Released SPS Prevention Bundle Standard Elements
- Sept '14 – 1@90 Challenge by 12/31/14

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Prevention Bundle and High-Reliability Theory

Children's Hospitals' Solutions for Patient Safety (SPS) National Network

Reliability to Blood Stream Infections Maintenance Bundle

SPS Network Aggregate

Annotations

• Sept '12 – Network Recommended Bundle Released
• Sept '12 - National Sept Learning Session – review bundle and measuring reliability
• Jan '13 – Phase II hospitals joined
• Jan '13 – Sept '13 – Focus on increasing reliability
• June '14 – Released SPS Prevention Bundle Standard Elements
• Sept ‘14 – 1@90 Challenge by 12/31/14

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Top Interventions

Margie McCaskey, RN, DNP
Chief Quality Coordinator
Riley Hospital for Children

Holly O'Brien, MSN RN CPN
Safety Program Manager
Children’s Hospital of Wisconsin
Two most powerful best practices:

- Always ask “Do we need to put this central line in this patient?” and “Do we still need this need to keep this line in this patients?”

- Adhering to insertion and maintenance bundles with emphasis on hand hygiene and scrubbing the hub
Top Interventions

• Get everyone at the table
• HAC Champions
• Engaging and educating Families
• Standardization across the hospital
• Dating/Timing Dressing Change
• Looking at Every Opportunity
• Post Huddles
• Reinforcing when things are done well
• Audits
• Sharing the data to the front line
Audits: Using K-Cards

Kamishibai (paper drama)

- Visual control for performing process measure audits
- Standard work
- Clearly stated directions
- Always measured in “all or none”
- Allows for real-time observation and direct care provider conversation
- Engages multiple stakeholders
Rapid Cycle Huddles Following Identification

• Huddle within 24 hours of identification
• Be sure key customers are all aware
• Close Feedback Loop
• Get data as close to real time as possible
• Be Transparent
Engaging Families

The most important thing is for the family to understand the importance of the bundle elements and to comprehend how they can help keep the children safe.
Ah ha...

Keeping children safe isn’t expensive, it’s priceless!
Polling

Deborah Nadzam, PHD, RN, SSBB, FAAN
Senior Consultant,
Quality Improvement,
CMS, Patient Safety,
Joint Commission Resources
Polling

1. Are you measuring bundle compliance in your hospital?

2. If you answered “yes”, please tell us what units measure bundle compliance. (NICU, PICU, HEMONC, Pediatric Med Surg)

3. Do you share CLA-BSI data with front line staff?

4. If yes, what type of data is shared? (Rate, Bundle Compliance, Raw Data, Days Between, Other)
Missy Shepherd
Executive Director, SPS
More Information on Preventing Pediatric HACs

• Publicly available information:
  – www.solutionsforpatientsafety.org
More Information on Preventing Pediatric HACs

• Publicly available information:
  – www.solutionsforpatientsafety.org
Children’s Hospitals’ Solutions for Patient Safety is the most herculean effort to improve safety in children’s hospitals.

Learn more about our goals...

Do no harm.
Results on our Website

Our Results

The Children's Hospitals' Solutions for Patient Safety (SPS) Network is an unparalleled, collaborative effort to improve pediatric patient safety in pursuit of an urgent mission: to eliminate serious harm across all children's hospitals. The data shows that if the SPS Prevention Bundles are implemented reliably, the Network will reduce rates of serious patient harm by 70%.

Employing high-reliability concepts and quality improvement science methods, SPS is focused on eliminating events, and the ten hospital-acquired conditions (HACs) below:

- Adverse drug events (ADE)
- Catheter-associated urinary tract infections (CAUTI)
- Central line-associated blood stream infections (CLABSI)
- Injuries from falls and immobility
- Obstetrical adverse events (ORAE)
- Peripheral intravenous infiltration and extravasations (PIVIEs)
- Pressure ulcers (PU)
- Surgical site infections (SSI)
- Ventilator-associated pneumonia (VAP)
- Venous thromboembolism (VTE)

Scroll down and click on the charts below to view the SPS Results for Readmissions and each hospital-acquired conditions.

SPS HAC Reductions*

Through implementation of the Network’s best practices, children are being protected from harm. Since 2012, this national effort has led to an estimated savings of more than $79 million and saved 3,079 children from serious harm, with a consistent upward trend in harm prevented every month.
Thank you!
Adjourn

Missy Shepherd
Executive Director, SPS

Deborah Nadzam, PhD, RN, SSBB, FAAN
Senior Consultant, Quality Improvement, CMS, Patient Safety
SPS is on Twitter & Facebook!

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Share what you’re learning here using the hashtag #sharesafety