Pediatric Share Safety Webinar Series
– Preventing CA-UTIs
Getting on the Telephone:
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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.
CA-UTI Pediatric Webinar

Rachel Bowes
Vera Hupertz
Friday, April 10, 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

Vera Hupertz, MD
Medical Director of Pediatric Hepatology and Transplantation;
Vice Chair of Quality and Safety, Cleveland Clinic Children’s Hospital

Rachel Wenthe, RN, BSN, CPHQ, LSSBB
Assistant Vice President of Quality Improvement, Cook Children’s Health Care System
## Agenda

**Friday, April 10, 2015  2:00pm - 3:00pm EST**

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<tr>
<th>Agenda Item:</th>
<th>Presenter:</th>
<th>Time:</th>
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<tbody>
<tr>
<td>Welcome and Objectives (hide Agenda)</td>
<td>Missy Shepherd</td>
<td>3 minutes</td>
</tr>
<tr>
<td>Patient Safety Story</td>
<td>Rachel Bowes</td>
<td>5 minutes</td>
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<tr>
<td>About SPS</td>
<td>Missy Shepherd</td>
<td>5 minutes</td>
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<tr>
<td>Preventing CAUTIs in Pediatrics</td>
<td>Rachel Bowes</td>
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<tr>
<td>Share the Operational Definition</td>
<td>Vera Hupertz</td>
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<td>Current SPS Outcomes</td>
<td>Vera Hupertz</td>
<td>5 minutes</td>
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<tr>
<td>Prevention Bundle and High Reliability Theory</td>
<td>Rachel Bowes</td>
<td>5 minutes</td>
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<tr>
<td>Top Interventions (What works, challenges, tools, techniques)</td>
<td>Rachel Bowes</td>
<td>5 minutes</td>
</tr>
<tr>
<td>Polling</td>
<td>Vera Hupertz</td>
<td>5 minutes</td>
</tr>
<tr>
<td>Open Discussion</td>
<td>Missy Shepherd</td>
<td>15 minutes</td>
</tr>
<tr>
<td>Adjourn</td>
<td>Missy Shepherd</td>
<td>2 minutes</td>
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</tbody>
</table>
Session Objectives

- Learn about SPS as a Pediatric Safety Learning Network
- Understand Pediatric CAUTIs – Catheter Associated Urinary Tract Infections
- Learn from SPS experience in building evidence for SPS Prevention Standards
- Best Practices and Top Interventions for preventing Pediatric CAUTIs
- Application of High-Reliability Theory to achieve desired Outcomes
About SPS

Children’s Hospitals’
Solutions for
Patient Safety
Every patient. Every day.
Children’s Hospitals’
Solutions for Patient Safety

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)
Scale

Develop Ohio Network
Initial HAC improvement work
SSE reduction; efforts to address organizational culture
Creation of pediatric patient harm index

Create National Children’s Network
Expand network to include 25 leading children’s hospitals outside Ohio (Phase I)
Active improvement work on 10 HACs
Efforts to address organizational culture
“All Teach, All Learn”
Develop mentor hospitals
Begin to publicly disseminate change efforts

Spread
Add 50 hospitals (Phase II) to data sharing and network learning opportunities (2013).
Expand to 80+ children’s hospitals nationwide (2014).
Share network best practices with all (2012->)
Disseminate at national meetings (2012->)
Develop strategies with national organizations (2012->)
Establish other regional collaboratives (2013)

(2008-2011)
(2012->)
(2014-> All)
80+ Children’s Hospitals
Greater than 50% of Admissions
Our Approach

Leadership Matters
Executive leadership is a critical aspect of successful improvement in pediatric patient safety. The Network has designed efforts to inspire and continuously develop the safety leadership skills of the executives who lead our Network hospitals.

Our mission motivates all that we do
We must act with urgency and discipline, focusing on outcomes through a combination of high-reliability concepts and quality improvement science methods. We learn through testing and partnering with families and front-line staff.

Network hospitals will NOT compete on safety
Instead, the SPS Network is built on the fundamental belief that by sharing successes and failures transparently and learning from one another, children’s hospitals can achieve their goals more effectively and quickly than working alone.
Our Approach (continued)

“All Teach, All Learn”

SPS Network hospitals must humbly share and gratefully learn from others. Accomplishing our goals requires focus on the detailed processes and cultural elements that lead to safer hospitals; guidance and support for hospital teams as they build the capacity for change; and facilitating relationships within the Network to broaden and accelerate learning.

Network hospitals must commit to building a “culture of safety”

Hospitals within the Network are employing the cultural transformation strategies of other high-reliability industries to significantly reduce harm in their institutions. This emphasis on creating a culture of safety within pediatric institutions is a unique aspect of SPS’s approach.
Our Approach

- Reduce by 10% the readmit rate across the SPS National Children’s Network by 12/31/16
- Reduce HACs by 40% across the SPS National Children’s Network by 12/31/16
Our Approach

- SAFETY GOVERNANCE & CAUSE ANALYSIS
- LEADERSHIP METHODS (LM)
- ERROR PREVENTION (EP)
- FAMILY ENGAGEMENT
- HIGH RELIABILITY UNITS
- JUST CULTURE
- Organizational Safety Culture

Reduce by 10% the readmit rate across the SPS National Children’s Network by 12/31/16

Reduce HACs by 40% across the SPS National Children’s Network by 12/31/16

- RE-ADMISSIONS
- ADVERSE DRUG EVENTS
- OBSTETRICAL ADVERSE EVENTS
- VENOUS THROMBOEMBOLISM
- PV INFILTRATE (PIVIE)
- VENTILATOR-ASSOCIATED PNEUMONIA (VAP)
- SURGICAL SITE INFECTIONS (SSI)
- CA-BLOODSTREAM INFECTIONS (CA-BSI)
- PRESSURE ULCERS (PU)
- URINARY TRACT INFECTIONS
- SERIOUS FALLS (SF)
Our Approach

- SAFETY GOVERNANCE & CAUSE ANALYSIS
  - LEADERSHIP METHODS (LM)
  - ERROR PREVENTION (EP)
  - FAMILY ENGAGEMENT
  - HIGH RELIABILITY UNITS
  - JUST CULTURE

- ORGANIZATIONAL SAFETY CULTURE

Reduce by 10% the readmit rate across the SPS National Children’s Network by 12/31/16

Reduce HACs by 40% across the SPS National Children’s Network by 12/31/16
THE JOURNEY TOWARD ZERO HARM

SPS Design

Active Network Improvement

**PIONEER**
- Early adopter Network hospitals
- Develop best practices & prevention standards
- Engagement
- Integrate culture behaviors and family engagement into HAC work

**AVIATOR**
- Adopt HAC goal, measurement & prevention bundle
- Adopt standard measure of serious safety events
- Focus on HAC prevention bundle implementation
- Cause analysis, error prevention, & leadership methods trainings
- Implement culture best practices across all improvement work
- Achieve Network reduction goals

**ORBITING**
- Sustain improvement
- Monitor performance & emerging best practices

**EXPLORER**
- Spread pediatric standards & best practices outside Network to all hospitals

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*All SPS Network hospitals participate*
Unplanned extubations; Small group improvements of additional HACs; Grant-funded research; Industry partnerships; State networks

2nd Victim; Employee Safety; Situation Awareness; Topics generated from PSO

Active Network Improvement

PIioneer

ADE, VTE, Readmissions, OBAE, PIVIE

Family disclosure following adverse events; Incorporate culture behaviors into HAC work

AVIATOR

SSI, PU, CLABSI, CAUTI, VAP

Cause Analysis; Error Prevention; Leadership Methods

ORBITING

Serious Falls

EXPLORER

Operational definitions; Prevention bundles
SPS Prevention Bundles

• Surgical site infections
• Serious falls
• Pressure ulcers
• Central line-associated blood stream infections
• Catheter-associated urinary tract infections
• Ventilator associated pneumonia
Percent Reductions in HACs

- CLA-BSI 11%
- ADE 42%
- VAP 47%
- SSI 19%
- Falls 81%
- CA-UTI 25%
- Readmissions 0%
- VTE Events 27% increase
- PU 3% increase

Reductions calculated from baseline to current centerline on rate chart
Preventing CAUTIs In Pediatrics
SPS CA-UTI Leadership

Co-Leader
Rachel Bowes Wenthe (Cook)

Co-Leader
Vera Hupertz (Cleveland Clinic)

Subject Matter Experts
Kathy Ackerman (Cleveland Clinic)
Charles Foster (Cleveland Clinic)
Lisa Schlaefli (Cook)
Joann Sanders (Cook)

Quality Improvement
Shari Wooton (SPS)

Project Management
Matt Short (SPS)

Project Management
Erin Goodman (SPS)
One of the most common infections in the hospital is a catheter-associated urinary tract infection (CAUTI).

CAUTIs are caused by germs that enter the body via a urinary catheter, a tube inserted into the urinary tract to drain urine.

These infections can lead to serious complications, even death, especially for critically ill patients.
Defining the HAC Problem in Pediatrics

Rachel Bowes

- 80% of urinary tract infections are associated with an indwelling urinary catheter, which is a tube inserted into the bladder through the urethra to drain urine, according to the Institute for Healthcare Improvement.

- Symptoms of a urinary tract infection are burning or pain in the lower abdomen, fever, burning during urination, or an increase in the frequency of urination.
CA-UTIs are Unique for Children

- Kids have limited cognitive ability to understand prevention of infection.
- Kids play on the floor and in other dirty places!
- Kids wear diapers and move around more than adults.
- Kids do not have the same hygiene as adult patients.
**Project Name:** HAC CAUTI Team  
**Project Leaders:** Rachel Bowes (Cook Children’s), Vera Hupertz (Cleveland Clinic)  
**SPS QIC:** Shari Wooton

**Revision Date:** 12/05/2014

**SMART AIM**

Reduce <Local Hospital> CAUTI rate centerline by 40% from X to Y UTIs per 1000 catheter line days by 12/31/16.

**GLOBAL AIM**

Eliminate all UTI Safety Events across all pediatric hospitals in the US

**KEY DRIVERS**

- Achieve reliability with CAUTI evidence-based prevention bundle (>90%)
- Rapid and accurate detection through surveillance
- Reduction of in-dwelling catheter days
- Use of High Reliability methods

**INTERVENTIONS**

- Implement SPS Prevention Bundles for Insertion and Maintenance.
- Measure CAUTI bundle reliability separately in order to better understand system, and resulting interventions.
- Utilize PDSA and change management cycles to increase reliability of care delivery
- Review daily the necessity of catheter, and document need.
- Avoid unnecessary catheterization through written clinical indications, and nurse removal protocols & algorithms
- Share data daily at unit briefs, and with senior leadership
- Family Engagement to increase reliability of bundle (Level 2)

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SPS CA-UTI Operational Definition

Measurement
Catheter Associated Urinary Tract Infections (CAUTI)

Inclusion criteria
All patients admitted to an inpatient unit are included who are defined as inpatient or under observation at the hospital with an indwelling urinary catheter.

Exclusion criteria
Observation patients admitted to observation units and patients admitted to neonatal intensive care units will be excluded. 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. There is no minimum period of time that the catheter must be in place in order for the UTI to be considered catheter associated.
NSHN Changes

Potentially starting in January 2015...

**LINK** -

**UTI-Definitional Changes Highlights**

- The Urinary Tract Infections (UTI) definitions will **no longer** include:
  - Colony counts of less than 100,000 CFU/ml (this may reduce)
  - Urinalysis results
  - Urine cultures that are positive only for yeast, mold, dimorphic fungi, or parasites

  Change - Infection Window Period (7 days from 48 to 72 hours). Culture (3 days before and 3 days afterward) Expect to increase.

**Symptoms Changes:**

- Dysuria will no longer be used to meet the infant criteria for SUTI
- Core temperatures will no longer be required for infant fevers
**Share the Operational Definition**

*Vera Hupertz*

**Calculation**

**Events per Catheter Day**

**Numerator:**
Number of patients contracting an infection, as defined by CDC guidelines

**Denominator:**
Total number of indwelling urinary catheter days during the time period

**Number of urinary tract infections per 1000 urinary catheter days**

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

**Catheter Days per Patient Days**

**Numerator:** Number of catheter days

**Denominator:** Total number of patient days (excluding NICU)

**Number of catheter per 1000 patient days**

\[
\frac{\text{Numerator}}{\text{Denominator}} \times 1000
\]
The CA-UTI operational definition for pediatric patients differs from the adult, only for children of 1 year or less.

These patients have additional symptoms which may be used:

- hypothermia (<36.0°C)
- apnea
- bradycardia
- lethargy
- vomiting
- suprapubic tenderness
Current SPS Outcomes
Current SPS Outcomes

Vera Hupertz

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

Catheter Associated Urinary Tract Infections Rate

SPS Network Aggregate

Annotations:
- March '12 – CEO Kickoff
- March '12 – National Op Def Set
- June '12 – Phase I hospitals submit outcomes
- Sept '12 – Network Recommended Bundle Released
- Sept '12 – National Sept Learning Session
- June – Dec '12 – Reliability Challenge – submit small tests
- 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
Prevention Bundle and High-Reliability Theory
What should be standardized?
• Implementing the prevention bundles reliably leads to reduced outcomes

ELIMINATING SERIOUS HARM IN HEALTHCARE

- **Human Factors Integration**
  - Intuitive Design
  - Obvious to Do the Right Thing
  - Impossible to Do the Wrong Thing

- **High Reliability Culture**
  - Core Values & Vertical Integration
  - Behavior Expectations for All
  - Hire for Fit
  - Fair, Just & 200% Accountability

- **Reliable Key Process Design**
  - Evidence-Based Best Practice
  - Focus & Simplify
  - Tactical Improvements (Process Bundles)
SPS CA-UTI Prevention Bundles
# Catheter-Associated Urinary Tract Infections: SPS Prevention Bundle

## INSERTION

<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>Use Aseptic Technique for Insertion</td>
<td>• Perform hand hygiene immediately before and after insertion or any manipulation of the catheter device or site [CDC Reference]</td>
</tr>
<tr>
<td></td>
<td>• Use sterile gloves, drape, sponges, and appropriate antiseptic or sterile solution for per urethral cleaning, and a single packet of lubricant jelly for insertion [CDC Reference]</td>
</tr>
<tr>
<td>Avoid unnecessary catheterization</td>
<td>• Consider having written clinical indications [CDC Reference]</td>
</tr>
<tr>
<td><strong>RECOMMENDED ELEMENTS</strong></td>
<td>N/A</td>
</tr>
</tbody>
</table>

## MAINTENANCE

<table>
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</thead>
<tbody>
<tr>
<td><strong>STANDARD ELEMENTS</strong></td>
<td></td>
</tr>
<tr>
<td>Maintain a closed drainage system</td>
<td>• If breaks in aseptic technique, disconnection, or leakage occur, replace the catheter and collecting system using aseptic technique and sterile equipment</td>
</tr>
<tr>
<td>Maintain hygiene</td>
<td>• Perform perineal hygiene at minimum daily</td>
</tr>
<tr>
<td>Keep bag below level of bladder</td>
<td>• Do not rest bag on floor [CDC Reference]</td>
</tr>
<tr>
<td>Maintain unobstructed flow</td>
<td>• Keep the catheter and collecting tube free from kinking</td>
</tr>
<tr>
<td>Remove catheter when no longer needed</td>
<td>• Review necessity daily</td>
</tr>
<tr>
<td></td>
<td>• Document indication daily</td>
</tr>
<tr>
<td><strong>RECOMMENDED ELEMENTS</strong></td>
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</table>
Prevention Bundle and High-Reliability Theory

Rachel Bowes

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

Reliability to Urinary Tract 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
Prevention Bundle and High-Reliability Theory

Rachel Bowes

Children's Hospitals' Solutions for Patient Safety (SPS) National Network
Reliability to Urinary Tract 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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Prevention Bundle and High-Reliability Theory

Bundle Reliability >=90%

CAUTI Reduction
Top Interventions
Top Interventions

• Reliable Pediatric Prevention Bundle (Insertion and Maintenance)
• Reliability measures focused on learning (observations vs auditing)
• Avoid unnecessary catheterization through
  • Written clinical indicators; SPS released best practice clinical indicators
  • Nurse Driven Removal Protocols
Real-Time Auditing CA-UTI
Ah-hah Moments

• Rounding with a clip-board intimidates bedside nurses
• Introducing yourself can level the playing field
• On-the-spot education improves attitudes and compliance
• Back to basics
Audits

- Collection bag below level of bladder
- Collection bag off floor
- Foley secured
- Peri care documented in past 24 hours
- Urine with free flow
Challenge 1: Transport

If you aren’t doing this as part of a transport, test it this month in your hospital!

Rachel Bowes
Challenge 2: Insertion Checklist

- Allows observer to stop the line if a breech occurs
- Reinforces the proper procedure is followed
- Adds to reliability by encouraging everyone to keep to the script
- Highlights the high-reliability concept

If you aren’t doing this as part of a transport, test it this month in your hospital!

Rachel Bowes
Example Insertion Standard Operating Procedure

- Explain to the patient and caregivers what you are about to do
- Secure the room so as to limit casual entry
- Assemble supplies
- Wash your hands
- Arrange your patient
- Open kit, put on your gloves
- Drape the patient
- Open lube and antiseptic swabs
- Lube the catheter
- Clean the urinary meatus using antiseptic solution
- Insert Foley into the urinary bladder, assess for urine
- Inflate the balloon and gently position catheter so that the balloon rests at the opening to the bladder
- Secure the catheter with a securement device
- Secure the collection bag so that there are not dependent loops, there is no undue tension on the tubing or catheter and the bag is lower than the level of the bladder
- Clean the lube and or excess antiseptic, dispose of supplies
- Chart insertion information in EMR
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.

Example: Keep the bag low since they are in the room more often.
Engaging Staff

Daily Operations/Safety Brief
8:35 AM

Department Huddles
8:00 AM

Unit-Clinic-Team Huddles
6:30-7:45 AM

Rachel Bowes
Polling

Vera Hupertz, MD
Medical Director of Pediatric Hepatology and Transplantation; Vice Chair of Quality and Safety, Cleveland Clinic Children’s Hospital
Polling Questions

Do you have a mechanism to review daily catheter need?

• Huddle
• Charting
• Automated Trigger (EMR)
• Nurse Driven Protocol
• None
Polling Questions

For bundle compliance reporting, do you use...?

- Electronic Documentation
- Direct Observation
- Self Report
- Multiple methods
Open Discussion

Missy Shepherd
Executive Director, SPS
More Information on Preventing Pediatric HACs

- Publicly available information:
  - [www.solutionsforpatientsafety.org](http://www.solutionsforpatientsafety.org)
More Information on Preventing Pediatric HACs

- Publicly available information:
  - [www.solutionsforpatientsafety.org](http://www.solutionsforpatientsafety.org)
Adjourn

Missy Shepherd
Executive Director, SPS

Deborah Nadzam, PhD, RN, SSBB, FAAN
Senior Consultant, Quality Improvement, CMS, Patient Safety