Eliminating Catheter Associated Urinary Tract Infection (CAUTI)

A System’s Approach

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Meg Simmons, RN, BSN
Purpose

Eliminating CAUTI: A System’s Approach

To improve patient care outcomes and decrease unnecessary costs related to catheter associated urinary tract infection.

To demonstrate that the Children’s Hospital of San Antonio is committed to excellence in pediatric care.
Background and Significance

Eliminating CAUTI: A System’s Approach

The Centers for Disease Control and Prevention (CDC) estimate that roughly 2 million healthcare-associated infections (HAI) occur each year.

CAUTI infections are the most common type of HAI.

Complications associated with CAUTI result in increased length of stay (LOS), patient dissatisfaction, excess cost and mortality.

Increased evidence of inappropriate urinary catheter use in hospitalized patients.

During fiscal year 2013, the CAUTI rate at the Children’s Hospital of San Antonio measured 5.4 (number of infections per 1,000 foley catheter days).

When compared to the National Healthcare Safety Network (NHSN) mean rate of 2.2 for that time period, the number of infections was unacceptably high.
# Methodology

**Eliminating CAUTI: A System’s Approach**

<table>
<thead>
<tr>
<th>Review of infection control data for prior fiscal year related to CAUTI in order to identify common themes and current standard of practice.</th>
<th>Audit of foley insertion and maintenance activities conducted by a third-party vendor.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Literature review related to best practices for CAUTI prevention in the pediatric population (literature lacking—most information was based on research and quality improvement efforts in the adult population).</td>
<td>Aim for project identified based on NHSN recommendations for CAUTI mean infection rates.</td>
</tr>
</tbody>
</table>
| **Areas of Focus:**  
*Selection of Foley (latex vs. silicone)*  
*Insertion Maintenance practices* | |
| CAUTI Prevention Bundle developed and implemented through staff education. | Quantifiable measures selected for audit of bundle compliance. |
| Organizational Policy review and revision. | |
## CAUTI Prevention

### Eliminating CAUTI: A System’s Approach

<table>
<thead>
<tr>
<th>CAUTI Prevention Bundle</th>
<th>Quantifiable Measures for Bundle Compliance</th>
</tr>
</thead>
<tbody>
<tr>
<td>Meticulous, frequent hand washing by all caregivers</td>
<td>Foley bag is labeled with date of insertion</td>
</tr>
<tr>
<td>Avoid unnecessary placement of urinary catheters</td>
<td>Foley discontinued 2 days after surgery</td>
</tr>
<tr>
<td>Insert urinary catheters using aseptic technique (silicone catheters in the pediatric population)</td>
<td>Foley discontinued 7 days after insertion (non-surgical patients)</td>
</tr>
<tr>
<td>Maintenance</td>
<td>Foley care completed a minimum of once every 12 hours using disposable bath wipes and documented in patient record</td>
</tr>
<tr>
<td>Review urinary catheter necessity daily for prompt removal</td>
<td>Foley bag emptied every shift and no more than ½ full</td>
</tr>
<tr>
<td>Proper documentation</td>
<td>Drainage bag emptied prior to transport</td>
</tr>
<tr>
<td>Communication during hand off procedures and rounds</td>
<td></td>
</tr>
</tbody>
</table>
Based on the high incidence of CAUTI infections in the PICU during the prior fiscal year, the team selected the following goals:

**CAUTI Rate for FY2013 5.4**

- Meet or Exceed the NHSN mean rate of 3.1 for fiscal year 2014 (rate is based on number of infections per 1,000 urinary catheter days)

- 100% compliance of bundle parameters
## Results

### Eliminating CAUTI: A System’s Approach

<table>
<thead>
<tr>
<th>Goal</th>
<th>Pre Implementation</th>
<th>Post Implementation</th>
</tr>
</thead>
<tbody>
<tr>
<td>CAUTI Rate</td>
<td>FY2013 5.4</td>
<td>FY2014 1.2</td>
</tr>
<tr>
<td>Urinary Catheter Care Documentation</td>
<td>n/a</td>
<td>84% compliance</td>
</tr>
<tr>
<td>Insertion date labeled on collection bag</td>
<td>n/a</td>
<td>87% compliance</td>
</tr>
<tr>
<td>Indwelling catheter discontinued 2 days after surgery</td>
<td>n/a</td>
<td>93% compliance</td>
</tr>
<tr>
<td>Indwelling catheter discontinued after 7 days (non-surgical patients)</td>
<td>n/a</td>
<td>99% compliance</td>
</tr>
</tbody>
</table>
Conclusions

Eliminating CAUTI: A System’s Approach

Key Reasons for Success ....

CH of SA supports a philosophy of continuous quality improvement.

Commitment demonstrated by nursing leadership, making CAUTI prevention a priority focus.

Multidisciplinary team empowered front line associates to impact change focusing on patient safety.

Achieving and sustaining reductions in CAUTI rates combined best clinical practice with a culture of change.

Quantifiable measures for bundle compliance audited in real time to support a learning environment and maintain forward momentum.
To improve patient care outcomes and decrease unnecessary costs related to catheter-associated urinary tract infection, and to demonstrate that the Children’s Hospital of San Antonio (CH of SA) is committed to excellence in pediatric care.

Purpose

Children’s Hospital of San Antonio
“Eliminating CAUTI”
A System’s Approach

Dana Rohman, RN, BSN, CPN
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Methodology

The Plan Do Study Act (PDSA) methodology was implemented through a multidisciplinary team.

CAUTI Prevention

PDSA Actions

Review of infection control data for prior fiscal year related to CAUTI in order to identify common themes and current standard of practice.

Audit of urinary catheter insertion and maintenance activities conducted by a third-party vendor.

Literature review related to best practices for CAUTI prevention in the pediatric population...

Aim for project identified based on NHSN recommendations for CAUTI mean infection rates.

Area of Focus:
Selection of Foley (Latex vs. Silicone) Insertion
Maintenance practices

CAUTI Prevention Bundle developed and implemented through staff education.

Organizational policy review and revision.

Quantifiable measures selected for audit of bundle compliance

CAUTI Prevention Bundle

Meticulous, frequent hand washing by all caregivers

Avoid unnecessary placement of urinary catheters

Insert urinary catheters using aseptic technique (silicone catheters in the pediatric population)

Maintenance

Review urinary catheter necessity daily for prompt removal

Proper documentation

Communication related to urinary catheter during hand off procedures and rounds

Quantifiable Measures for Bundle Compliance

(1) Urinary catheter bag is labeled with date of insertion
(2) Urinary catheter is discontinued 2 days after surgery
(3) Urinary catheter is discontinued 7 days after insertion (non-surgical patients)
(4) Foley care is completed a minimum of once every 12 hours using disposable bath wipes and documented in the patient record

Urinary catheter bag emptied every shift and no more than ½ full

Drainage bag emptied prior to transport

Goals

Based on the high incidence of CAUTI infection in the PICU during FY2013, the team selected the following goals:

Meet or exceed the NHSN mean rate of 3.1 for FY2014

100% compliance of quantifiable measures in the prevention bundle

Results

<table>
<thead>
<tr>
<th>Goal</th>
<th>PRE Bundle</th>
<th>POST Bundle</th>
</tr>
</thead>
<tbody>
<tr>
<td>CAUTI Rate</td>
<td>FY 2013 5.4</td>
<td>FY2014 1.2</td>
</tr>
<tr>
<td>(1)</td>
<td>n/a</td>
<td>87% Compliance</td>
</tr>
<tr>
<td>(2)</td>
<td>n/a</td>
<td>93% Compliance</td>
</tr>
<tr>
<td>(3)</td>
<td>n/a</td>
<td>99% Compliance</td>
</tr>
<tr>
<td>(4)</td>
<td>n/a</td>
<td>84% Compliance</td>
</tr>
</tbody>
</table>

Conclusions

Key Reasons for SUCCESS:

CH of SA supports a philosophy of continuous quality improvement.

Commitment is demonstrated by nursing leadership, making CAUTI prevention a priority focus.

Multidisciplinary team empowered frontline associates to impact change focusing on patient safety.

Achieving and sustaining reductions in CAUTI rates combined best clinical practice with a culture of change.

Quantifiable measures for bundle compliance audited in real time support a learning environment and maintain forward momentum.
References

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Institute for Healthcare Improvement. (n.d.) [www.ihi.org/resources/Pages/Tools/PlanDoStudyActWorksheet.aspx](http://www.ihi.org/resources/Pages/Tools/PlanDoStudyActWorksheet.aspx)