Assessing the Experience of Florida Neonatal Intensive Care Unit Centers Participating in the Neonatal Catheter-Associated Blood Stream Infection Project

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Disclosure Statement

Pamela C. Guevara

“No relationships to disclose”
Background

- Catheter-associated blood stream infection
  - Significant contributor to morbidity & mortality for infants receiving neonatal intensive care unit (NICU) care

NCABSI Project

- Neonatal Catheter-Associated Blood Stream Infection (NCABSI) Project
  - Collaborative of NICU centers
  - Working to reduce infections in neonates
  - Follows a checklist protocol on line insertion & maintenance
NCABSI Project

- Quality improvement techniques
  - Spread & standardize best evidence practice
  - Proper insertion technique & maintenance procedures of central lines
- Comprehensive Unit-based Safety Program (CUSP) training
- State clinical leadership guided & facilitated work of Florida NICU centers
  - Dr. Douglas E. Hardy (dehardy@icloud.com)

Background

- Data reported through CDC’s National Healthcare Safety Network (NHSN)
- No comprehensive statewide plans for infection reduction
- National collaboratives combined had a baseline of 2.51 infections per 1,000 line days
- Baseline rate in Florida from NHSN data was 2.96 infections per 1,000 line days
Where We Were

<table>
<thead>
<tr>
<th></th>
<th>National</th>
<th>Florida</th>
</tr>
</thead>
<tbody>
<tr>
<td>Central line days</td>
<td>376,630</td>
<td>86,107</td>
</tr>
<tr>
<td>Baseline CLABSI rate</td>
<td>2.51 / 1000 line days</td>
<td>2.96 / 1000 line days</td>
</tr>
<tr>
<td>Expected CLABSI</td>
<td>945</td>
<td>255</td>
</tr>
<tr>
<td>Expected deaths</td>
<td>116</td>
<td>31</td>
</tr>
<tr>
<td>Increased length of stay</td>
<td>7563</td>
<td>2039</td>
</tr>
<tr>
<td>Costs due to CLABSI</td>
<td>$50,103,089</td>
<td>$13,508,466</td>
</tr>
</tbody>
</table>


Purpose

- To assess the experience of 15 Florida NICU centers participating in the NCABSI project on:
  - Carrying out project activities
  - Examining data outcomes
  - Successes, challenges, & feasibility of expanding to other NICUs
Methods

- IRB exemption
- Quality improvement program evaluation
- 40-item survey administered to each team leader in 15 participating Florida NICUs
- Items assessed benefits & challenges
- Expert review panel of neonatologists

- Qualtrics Survey Software used
- Descriptive statistics calculated
Findings

- 10 of 15 centers (67%) had a central line quality improvement project in place during the year prior to NCABSI project
  - Of those, 80% had seen improvements due to their prior plan
Which of the following types of communications did your hospital team use as part of the NCABSI project?

- Face-to-face meetings: 15
- Web-based meetings: 8
- Conference calls: 8
- Listserv discussions: 3
- E-mail communication: 15
- Progress reports: 9
- Other: 2

Which of the following CUSP elements did your NCABSI team build into their work?

- Basic safety and quality principles: 13
- Engaging staff and building a team: 13
- Partnering with senior leadership: 7
- Learn from events and process data: 7
- Employ improvement tools: 12
What was your team’s experience with implementing the CUSP training framework?

<table>
<thead>
<tr>
<th></th>
<th>Planning for the project has begun</th>
<th>Activity but no improvement</th>
<th>Modest improvement</th>
<th>Improvement</th>
<th>Significant improvement</th>
<th>Sustainable improvement</th>
<th>Outstanding results</th>
</tr>
</thead>
<tbody>
<tr>
<td>Training staff in the science of safety</td>
<td>0</td>
<td>0</td>
<td>4</td>
<td>3</td>
<td>4</td>
<td>2</td>
<td>0</td>
</tr>
<tr>
<td>Engaging staff to identify defects</td>
<td>1</td>
<td>0</td>
<td>3</td>
<td>4</td>
<td>2</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td>Partnering with senior executive</td>
<td>0</td>
<td>4</td>
<td>0</td>
<td>4</td>
<td>3</td>
<td>1</td>
<td>0</td>
</tr>
<tr>
<td>Continuing to learn from defects</td>
<td>0</td>
<td>1</td>
<td>0</td>
<td>4</td>
<td>3</td>
<td>3</td>
<td>1</td>
</tr>
<tr>
<td>Implementing tools for improvement</td>
<td>0</td>
<td>1</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>1</td>
</tr>
</tbody>
</table>

The data entry workload for the NCABSI project was heavy.
The NCABSI project workload for the unit team was heavy.

How would you rate your progress on the NCABSI project in your hospital/unit?
Conclusions

- **Benefits**
  - Improvement & success in lowering CABS rates
  - Learn from & collaborate with other NICUs

- **Challenges**
  - Engaging senior leadership
  - Heavy data entry workload

- **Sustainability of positive results**

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Implications

- **Future implementation**
  - Simplify data collection
  - Weekly audits instead of daily maintenance forms
  - Make CUSP process less confusing

- **Improvements implemented throughout the state**
Thank you!

Note: Partial support for carrying out the project was provided by the Florida Agency for Health Care Administration (AHCA) & Health Management Association, Inc. (HMA).

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