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# 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”**

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## 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](mailto: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

|                          | National              | Florida               |
|--------------------------|-----------------------|-----------------------|
| Central line days        | 376,630               | 86,107                |
| Baseline CLABSI rate     | 2.51 / 1000 line days | 2.96 / 1000 line days |
| Expected CLABSIs         | 945                   | 255                   |
| Expected deaths          | 116                   | 31                    |
| Increased length of stay | 7563                  | 2039                  |
| Costs due to CLABSI      | \$50,103,089          | \$13,508,466          |

[http://www.hopkinsmedicine.org/quality\\_safety\\_research\\_group/our\\_projects/stop\\_bsi/toolkits\\_resources/clabsi\\_estimator.html](http://www.hopkinsmedicine.org/quality_safety_research_group/our_projects/stop_bsi/toolkits_resources/clabsi_estimator.html)

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## 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

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## 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

## Methods

- Qualtrics Survey Software used
- Descriptive statistics calculated

Please take a few minutes to complete this survey about your NICU's efforts to reduce neonatal catheter-associated blood stream infections. The Florida Perinatal Quality Collaborative (FPQC) is interested in understanding your experience implementing the NCABSI project so that we can better assist you and your hospital in improving the quality of perinatal care. Participation in this survey is voluntary. We appreciate you taking the time to answer the survey.

If you need to exit this survey before it is completed, simply close the browser window. To return later, please click the URL provided in the email (the one you clicked to access this survey).

Hospital Name:

In the year prior to the NCABSI Project, did your facility have a quality improvement plan to reduce central line associated blood stream infections in place?

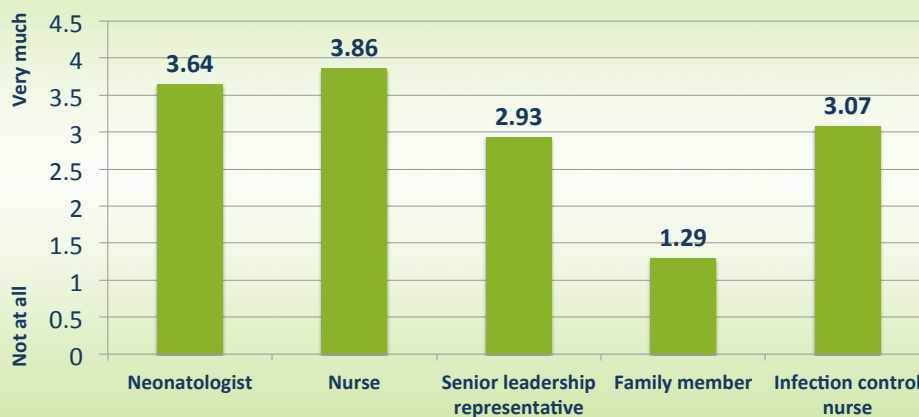
Yes  
 No

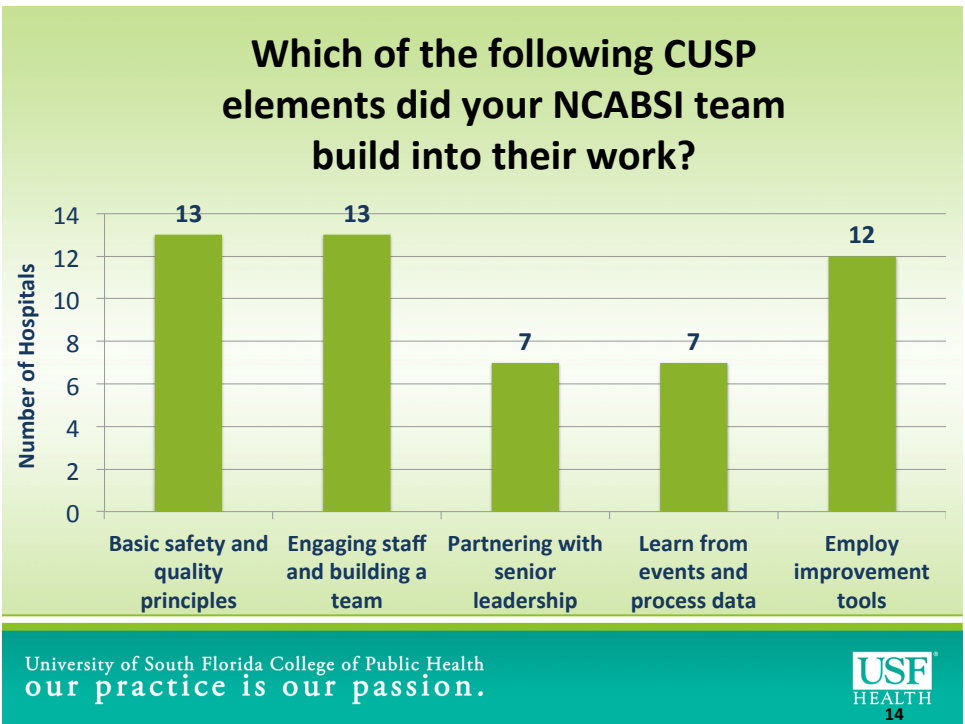
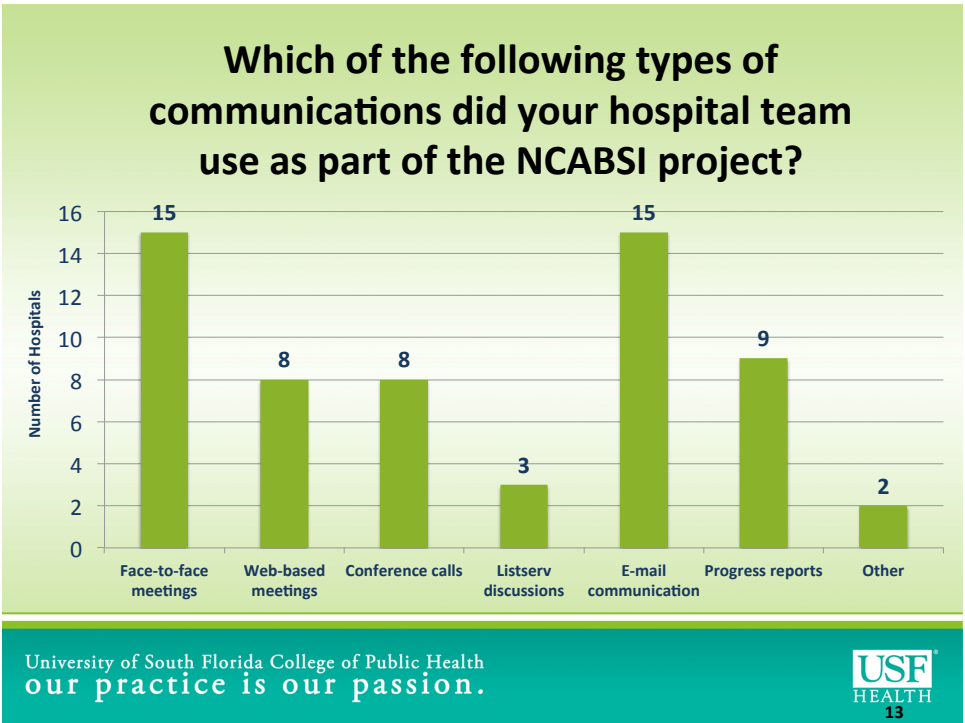
Survey Completion  100%

## 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

### How active were the following members of your team in driving your current NCABSI project?





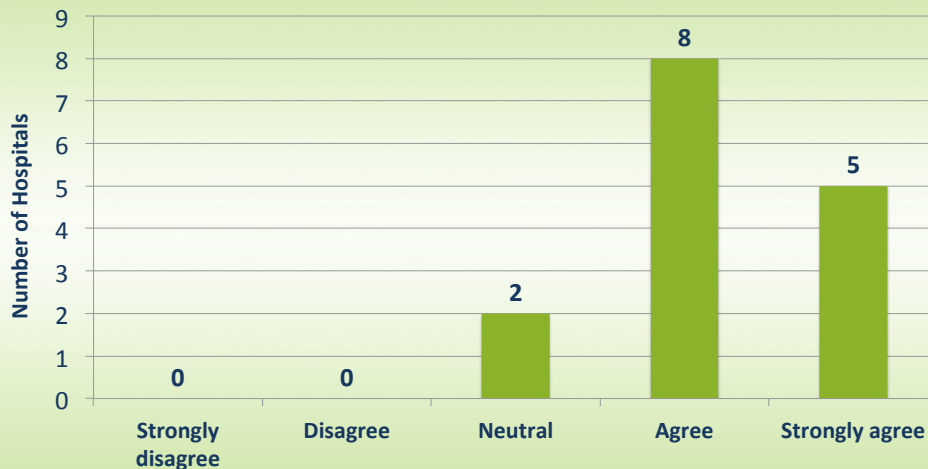
## What was your team's experience with implementing the CUSP training framework?

|   | Planning for the project has begun | Activity but no improvement | Modest improvement | Improvement | Significant improvement | Sustainable improvement | Outstanding sustainable results |
|---|------------------------------------|-----------------------------|--------------------|-------------|-------------------------|-------------------------|---------------------------------|
| Training staff in the science of safety | 0                                  | 0                           | 4                  | 3           | 4                       | 2                       | 0                               |
| Engaging staff to identify defects      | 1                                  | 0                           | 3                  | 4           | 2                       | 1                       | 1                               |
| Partnering with senior executive        | 0                                  | 4                           | 0                  | 4           | 3                       | 1                       | 0                               |
| Continuing to learn from defects        | 0                                  | 1                           | 0                  | 4           | 3                       | 3                       | 1                               |
| Implementing tools for improvement      | 0                                  | 1                           | 1                  | 2           | 3                       | 4                       | 1                               |

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## The data entry workload for the NCABSI project was heavy.

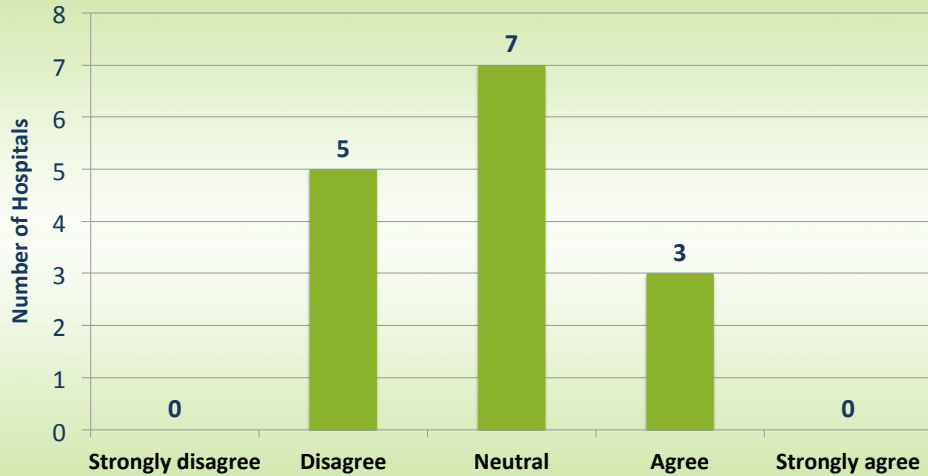


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### The NCABSI project workload for the unit team was heavy.



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



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## Conclusions

- **Benefits**
  - Improvement & success in lowering CABSI rates
  - Learn from & collaborate with other NICUs
  
- **Challenges**
  - Engaging senior leadership
  - Heavy data entry workload
  
- **Sustainability of positive results**


## Implications

- **Future implementation**
  - Simplify data collection
  - Weekly audits instead of daily maintenance forms
  - Make CUSP process less confusing
  
- **Improvements implemented throughout the state**

|                        | National              | Florida               |
|------------------------|-----------------------|-----------------------|
| Central line days      | 376,630               | 86,107                |
| Current CLABSI rate    | 0.85 / 1000 line days | 1.22 / 1000 line days |
| CLABSIs avoided        | 625                   | 150                   |
| Deaths avoided         | 77 babies             | 18 babies             |
| Length of stay reduced | 5002 days             | 1199 days             |
| Cost savings           | \$33,135,907          | \$7,940,788           |

[http://www.hopkinsmedicine.org/quality\\_safety\\_research\\_group/our\\_projects/stop\\_bsi/toolkits\\_resources/clabsi\\_estimator.html](http://www.hopkinsmedicine.org/quality_safety_research_group/our_projects/stop_bsi/toolkits_resources/clabsi_estimator.html)

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## 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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