

# Neonatal Continuous Improvement System (NCIS): 1 Year Update

## The Problem

Our improvement efforts often have difficult challenges, including:

- Few mechanisms for translating bedside challenges identified by clinical staff into improvement activities;
- Limited involvement of front-line staff in the identification and implementation of improvement opportunities;
- Absence of mechanisms to ensure improvement projects are completed in a timely fashion; and
- Absence of integrated communication systems resulting in redundant and uncoordinated work efforts.

## The Team

- Jane Smallcomb, Perinatal Director
- Munish Gupta, QI Director
- Susan Young, CNS
- Kathy Tolland, Nurse Manager
- Pam Dunleavy, Practice Administrator
- Dave Miedema, Data Engineer
- DeWayne Pursley, Chief

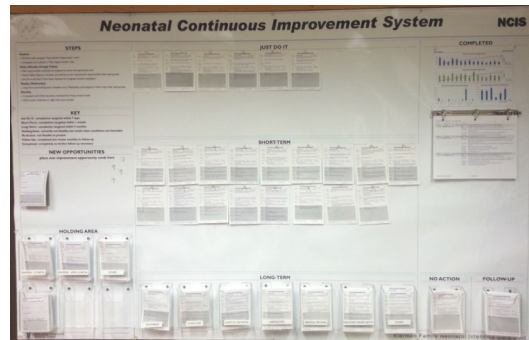
## Aim / Goal

On November 1, 2012, we launched the Neonatal Continuous Improvement System (NCIS), a new platform for coordinating improvement efforts in the NICU. Here we describe our experience with NCIS after 1 year.

## Interventions

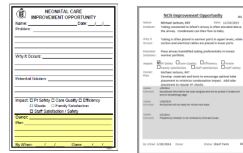
### Project board

- NCIS is built around a project board that organizes ongoing and completed improvement efforts.
- Daily rounds by NICU staff and leadership are conducted to review new and ongoing improvement opportunities (IOs).
- Board has undergone several revisions over first year, including adjustment of section sizes, addition of "Key" defining categories, and addition of plastic card holders in several areas.



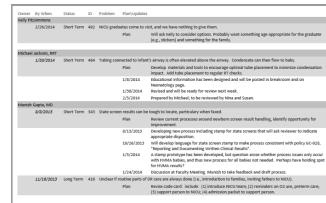
### Improvement Opportunity (IO) Cards

- Completed by any NICU staff member at any time
- New IOs reviewed daily: assigned owner, prioritization category
- Categories: Just Do It (target completion < 7 days), Short-term (< 30 days), Long-term (< 90 days), Holding, No Action



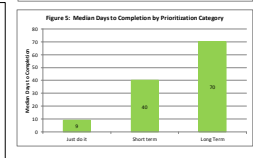
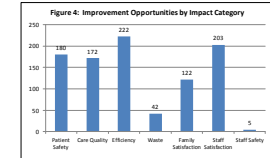
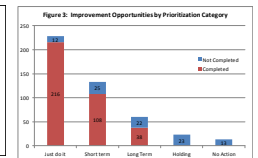
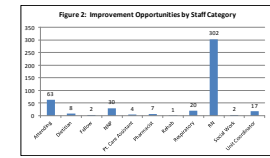
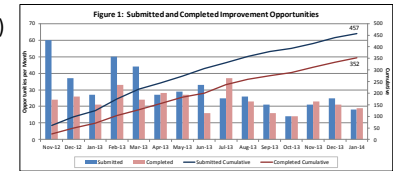
### Microsoft Access Database

- During NCIS rounds, new IOs entered and existing IOs updated
- Reports sent to submitters after initial entry and each update
- Owner reports with outstanding IOs sent weekly by email
- Cumulative summary of completed IOs posted weekly on board



## Results / Progress to Date through January 31, 2014

- Submitted and Completed Improvement Opportunities (Fig 1)
  - \* 457 improvement opportunities submitted
  - \* Submission rate fairly consistent: 15-30 per month
  - \* 352 (77%) have been completed
- Submissions by Discipline (Fig 2)
  - \* Submitted by all disciplines
  - \* 66% by RNs
- Prioritization Category (Fig 3)
  - \* 228 (50%) assigned to "Just Do It"
  - \* 36 (8%) to "Holding" or "No Action"
- Impact Category: all represented (Fig 4)
- Median Days to Completion (Fig 5)
  - \* For all completed items: 18 days
  - \* > than target for Just Do It and Short Term



## Examples of Improvements Resulting from NCIS:

- Enabled central monitoring of third bed space in all rooms
- Instituted family identification badge system
- Developed visual system for cleaning and stocking eye exam kits to ensure availability
- Adjusted virus scan to avoid previously seen unit-wide nightly computer slowdown
- Updated nitric oxide guideline to match new standards of care
- Initiated Last Name / Last Four patient ID system

## Lessons Learned / Next Steps

### Key Features

- After 1 year, staff involvement remains consistent, with 15-30 new submissions per month from all disciplines
- Daily review of items critical for maintaining momentum, encouraging action, and completing items
- Periodic improvements to process, project board, and database increase NCIS impact and ease of use



### Challenges

- Ownership of items still almost exclusively NICU leadership (87% are owned by six individuals)
- Time investment for daily NCIS rounds and improvement work remains substantial, although less time needed in other committee and group meetings

### Next Steps

- Repeat culture of safety survey to measure impact of NCIS (baseline conducted in January 2013)
- Extend system to newborn nurseries, post-partum units, and BID-Plymouth Continuing Care Nursery



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