CLABSI Elimination: It Takes a Team To Reach Zero

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ABSTRACT

Objective: Reporting on the implementation of a team-based approach to diminish CLABSI at a community hospital

Methods: CLABSI elimination project was implemented in late 2009. The team focused on maintenance and education

Results/Conclusions: The CLABSI rate decreased from 10.0/1,000 central line days in Q2, FY 2008 to 3.0/1,000 central line days in Q2, FY 2010.

INTRODUCTION

Methodist Mansfield Medical Center (MMMC) is a 168 bed community hospital located in Mansfield, TX, in the southern part of Tarrant County. The medical center provides inpatient services primarily to adults and newborns. The medical center has an infection prevention project team and PI plan. The PI project and interventions implemented included: hub/tubing maintenance, all central line dressings changed every Thursday (and prn to keep dressings occlusive/dry/intact), and all tubing must be dated (including IVPB). In addition, the CLABSI Problem Statement Tool was completed to identify components of the CLABSI bundle necessary to be in place January 2010. A Pareto Chart was used to identify the major maintenance factors contributing to CLABSI occurrence. The team focused on identifying the maintenance factors contributing to CLABSI occurrence. The maintenance factors contributing to CLABSI occurrence were identified through the CLABSI Problem Statement Tool. The team identified the following maintenance factors contributing to CLABSI occurrence: CVC dressing is occlusive, IV tubing is dated/timed, IV tubing is current, education is sufficient, and all central line dressings are changed every Thursday. The team identified the following measures to support compliance with maintenance factors: Quality checks on payday week/RED non payday week) for quick visual check of hub/tubing maintenance, IV tubing is dated/timed, IV tubing is current. These measures were regularly monitored. The team determined that a decrease in 3.0/1,000 central line days in Q2, FY 2010 was significant.

BIBLIOGRAPHY


METHODS

The team focused on the infection prevention bundle/tool, maintenance factors, and PI plan. The PI project and interventions implemented included: hub/tubing maintenance, all central line dressings changed every Thursday (and prn to keep dressings occlusive/dry/intact), and all tubing must be dated (including IVPB). In addition, the CLABSI Problem Statement Tool was completed to identify components of the CLABSI bundle necessary to be in place January 2010. A Pareto Chart was used to identify the major maintenance factors contributing to CLABSI occurrence. The team focused on identifying the maintenance factors contributing to CLABSI occurrence. The maintenance factors contributing to CLABSI occurrence were identified through the CLABSI Problem Statement Tool. The team identified the following maintenance factors contributing to CLABSI occurrence: CVC dressing is occlusive, IV tubing is dated/timed, IV tubing is current, education is sufficient, and all central line dressings are changed every Thursday. The team identified the following measures to support compliance with maintenance factors: Quality checks on payday week/RED non payday week) for quick visual check of hub/tubing maintenance, IV tubing is dated/timed, IV tubing is current. These measures were regularly monitored. The team determined that a decrease in 3.0/1,000 central line days in Q2, FY 2010 was significant.

RESULTS/CONCLUSIONS

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METHODS

In (month) 2009, a Nursing Staff/Infection Prevention Performance Improvement (PI) team was established to address CLABSI in our facility’s ICU. The team’s membership included bedside caregivers, along with nursing management personnel and the Infection Prevention manager. The team’s initial task was the identification of various factors possibly contributing to CLABSI occurrence; each factor was then given a weight assignment. This information was used to formulate the CLABSI Problem Statement and PI plan. Three main categories were identified and weighted as follows:

- **CL maintenance factors = 40%**
  - Implement annual CVC maintenance competency
  - CL maintenance factors (catheter lines)

- **CL insertion factors = 30%**
  - Develop and implement a CVC insertion bundle.

- **Overuse/Necessity of PICC lines = 30%**
  - Develop and implement PICC criteria and central authority to authorize insertion.

This resulted in a temporary drop in CLABSI’s to zero. Ongoing efforts and a continued team focus proved necessary.

In January 2010, a Nursing Staff/Infection Prevention Performance Improvement (PI) was reformed and CLABSI’s elimination was addressed. Three main categories were identified and weighted as follows:

- **CL maintenance factors = 40%**
  - CL maintenance factors (catheter lines)

- **CL insertion factors = 30%**
  - CL insertion factors (catheter lines)

- **CL discontinuation factors = 30%**
  - CL discontinuation factors (catheter lines)

The PI team focused on the maintenance factors identified. These maintenance factors were weighted as follows:

- Non-compliance with existing care bundle = 25%
- Technique/time = 20%
- Education = 15%
- Policy/criteria known? & annual competency = 10% each
- Supply availability & scattered location of supplies = 5% each

Since previously established CLABSI bundle measures were already in place, the team decided that additional measures beyond the established care bundle would be necessary, and that establishment of measurable care parameters would be essential. Below are major foci of the PI project and interventions implemented to support each:

- **Major focus: Hub Maintenance**
  - IMAX hub is changed every Thursday with dressing change
  - COLOR-CODED HUB implementation (GREEN on payday week/RED on non-payday week) for quick visual check of hub-changing compliance
  - Major scrub-the-hub campaign completion
  - Established CVC re-use after four hours (limited use of alcohol swabs)

- **Major focus: Tubing/Dressing Changes**
  - IMAX tubing must be replaced (Including VFRs)
  - All IV tubing and add-on devices changed every 7 days (Thursday)
  - All central line dressings changed every Thursday (24 hours to keep dressings occlusive/dry/in tact)

- **Major focus: Compliance Monitoring**
  - Daily audits of all central line care issues on all central lines in the ICU

After CLABSI PI interventions were successfully established in the ICU, the extended bundle interventions were spread to non-ICU areas in the facility.

RESULTS/CONCLUSIONS

- Following implementation of the extended bundle measures in late January 2010, the quarterly ICU CLABSI rate decreased to zero, and no CLABSI has occurred in the ICU with surveillance completed through October of 2011.
- The CLABSI rate OUTSIDE the ICU also decreased to zero the quarter following implementation of the extended measures. There were no CLABSI’s in the non-ICU setting for 413 days.