

**Getting to Zero with the
Implementation of a Nurse Directed
Neonatal Peripherally Inserted
Central Catheter (PICC) Team**

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SCN PICC TEAM

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Location:

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SCNPICC Team



Introduction

Bloodstream infection rates had been rising steadily on our unit since 2002, to where by January 2008, our PICC associated bloodstream infection (BSI) rate was 11.8 per 1000 catheter days. Using guidelines provided by the Centers for Disease Control and Prevention (CDC), the Institute for Healthcare Improvement (IHI) and the National Association of Neonatal Nurses (NANN) our unit developed a nurse led neonatal PICC team. Our goal was to eliminate BSI's primarily associated with our PICC's.

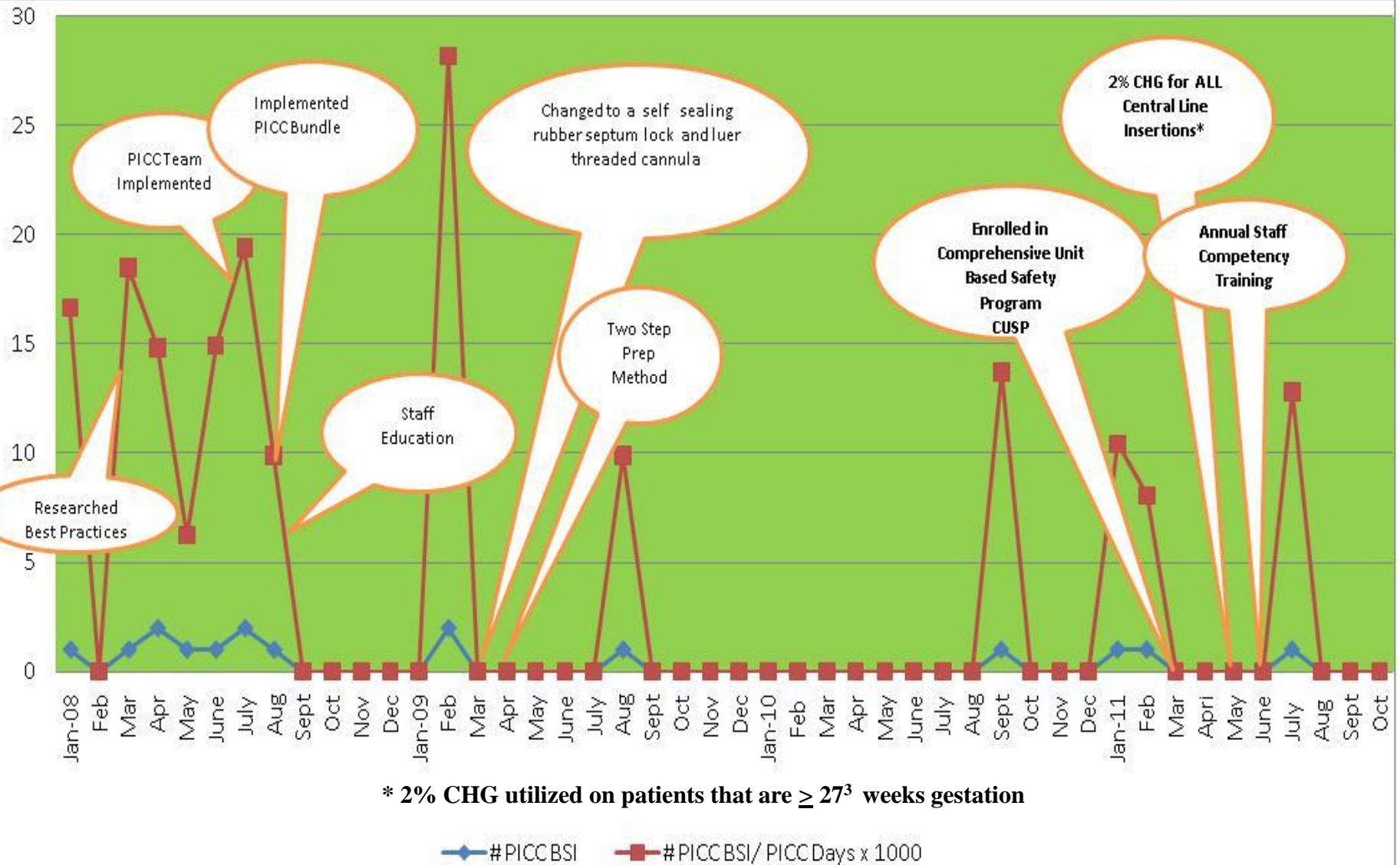
Process

- ▶ Identification and implementation of a Neonatal PICC Team.
- ▶ Development and introduction of a PICC Bundle.
- ▶ Development of PICC candidate criteria guidelines.
- ▶ Unit wide staff education.
- ▶ Implementation of *2 Step Prep* for dressing changes.
- ▶ Use of a dedicated central line cart.

Neonatal PICC Bundle Elements

- ▶ Hand hygiene
- ▶ Maximal barrier precautions on insertion
- ▶ Chlorhexidine skin antisepsis for infants > 27³ weeks gestational age
- ▶ Dressing change every seven days
- ▶ Use of a 2% Chlorhexidine sponge on infant > 27³ weeks gestational age
- ▶ Daily PICC assessment

Results



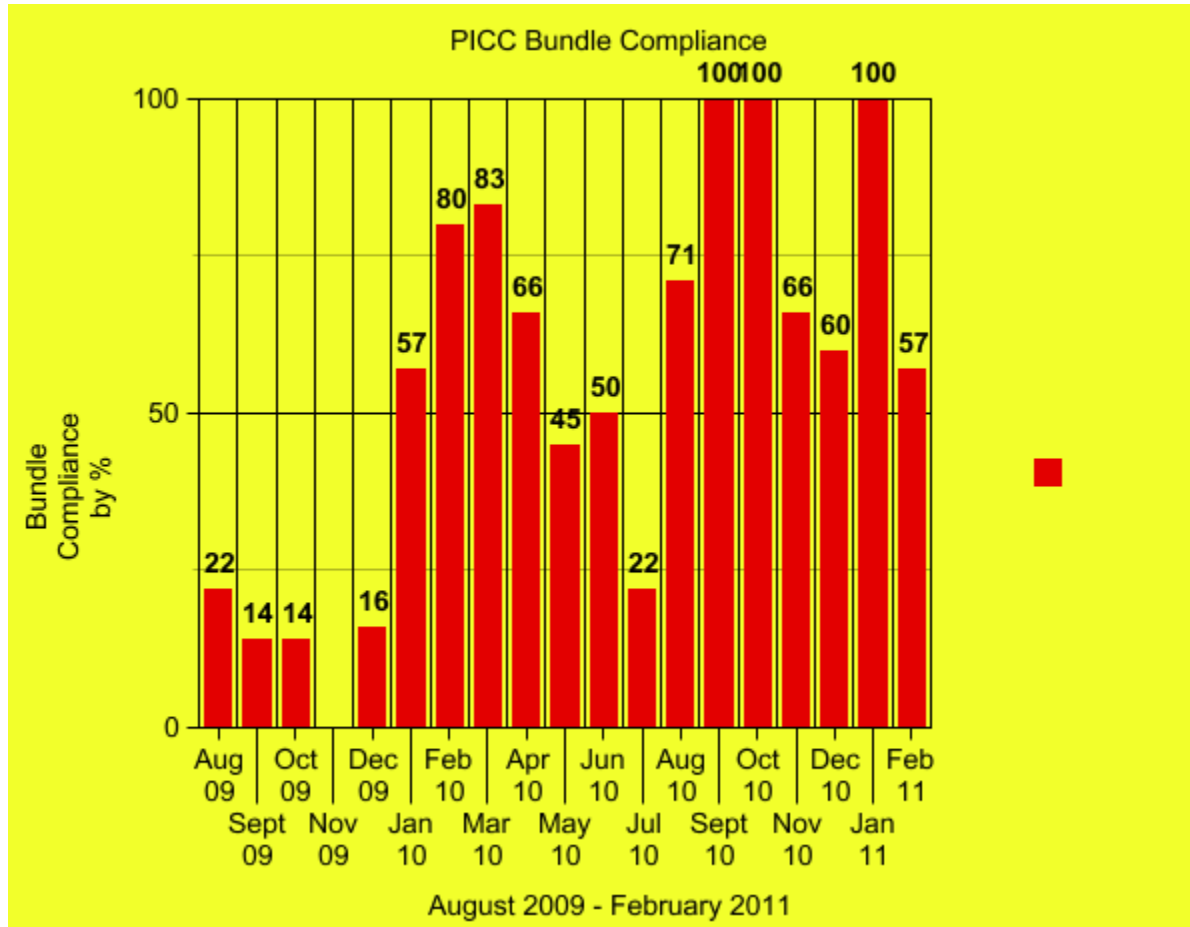
Economic Burden of Sepsis

Year	Actual number of PICC Associated BSI in the Special Care Nursery	Cost to the Institution	Potential Savings in Sepsis Prevention
2007 (Jan 1st – Dec 31st)	19	\$475,000	
2008 (Jan 1st – Dec 31st)	9	\$225,000	\$250,000
2009 (Jan 1st – Dec 31st)	3	\$75,000	\$400,000
2010 (Jan 1st – Dec 31st)	1	\$25,000	\$450,000
2011 (Jan 1st – Aug 31st)	3	\$75,000	\$400,000

Comparison of Neonatal Mortality Rates

Year	SCN Neonatal Mortality Rates	State Neonatal Mortality Rates	USA Neonatal Mortality Rates
2005	3.63	5.3	4.5
2006	3.91	5.2	4.5
2007	3.34	5	4.4
2008	2.4	Unavailable	4.27
2009	2.3	Unavailable	4.19

PICC Bundle Compliance



Conclusion

- ▶ Implementation of our team in June 2008 reduced our rate to 5.63 per 1000 catheter days by July 2009. By July 2010, our rate was again reduced to 1.06 per 1000 catheter days, an overall 90% reduction.
- ▶ Practices were standardized to decrease the incidence of PICC associated blood stream infections.
- ▶ Maintaining open lines of communication between all team members during the entire project and continuing today has proven invaluable in achieving and sustaining outcomes.
- ▶ A dedicated team, a standard for insertion, care and maintenance and having staff and leadership educated and engaged, was and is crucial for sustainment.
- ▶ Knowledge and continual review of the evidence is also important, therefore, we participate in a nationwide initiative; On the CUSP: Stop BSI.
- ▶ Nation wide about 60% of PICC's are placed by nurses from more than eighteen hundred nurse-led teams, which raises the question: why not 100%?