

Reducing Central Line Associated Blood Stream Infection in Medical Intensive Care: Leadership and Standardization

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Yale-New Haven Hospital

Magnet Designation 2011

Total Inpatient Discharges: 56,620

Average Daily Census: 784

Total Outpatients: 638,411

Total Registered Nurses: 2,500

Total Physicians: 3,333

Total Full Time Employees: 8,580

Medical ICU number beds: 28

Purpose:

To develop sustainable strategies for reducing incidence of central line associated blood stream infections (CLABSI) to fall under the National Healthcare Safety Network (NHSN) pooled mean and National Database for Nursing Sensitive Indicators (NDNQI) mean for Academic Medical Centers by July 2011

Strategies:

- 1) Developing staff leadership
- 2) Implementing standard evidence based central line insertion and maintenance bundles

Significance:

CLABSI burdens our entire healthcare system, both providers and payers. Estimates quantify CLABSI as costing \$300 million to \$2.3 billion a year, on top of a mortality rate of 10% to 30%. CMS designates it as a "Never Event" and has a policy of non-payment for this condition.

Ranji SR et al. Prevention of Healthcare Associated Infections. Vol 6 of: Shojania KG et al editors Closing the Quality Gap: A Critical Analysis of Quality Improvement Strategies. AHRQ Publication No. 04(07)-0051-6. Rockville, MD 2007.

Implementation:

Leadership

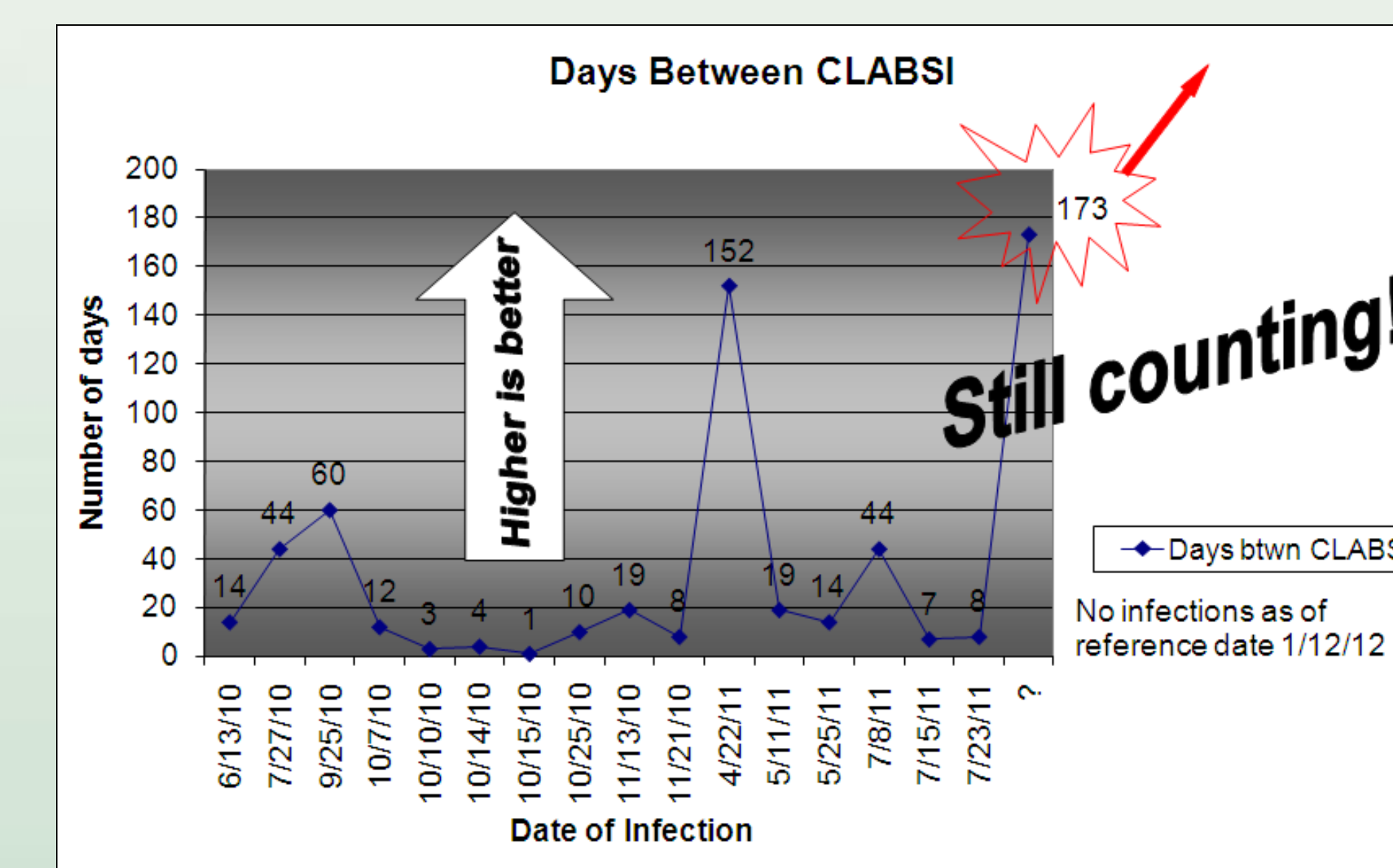
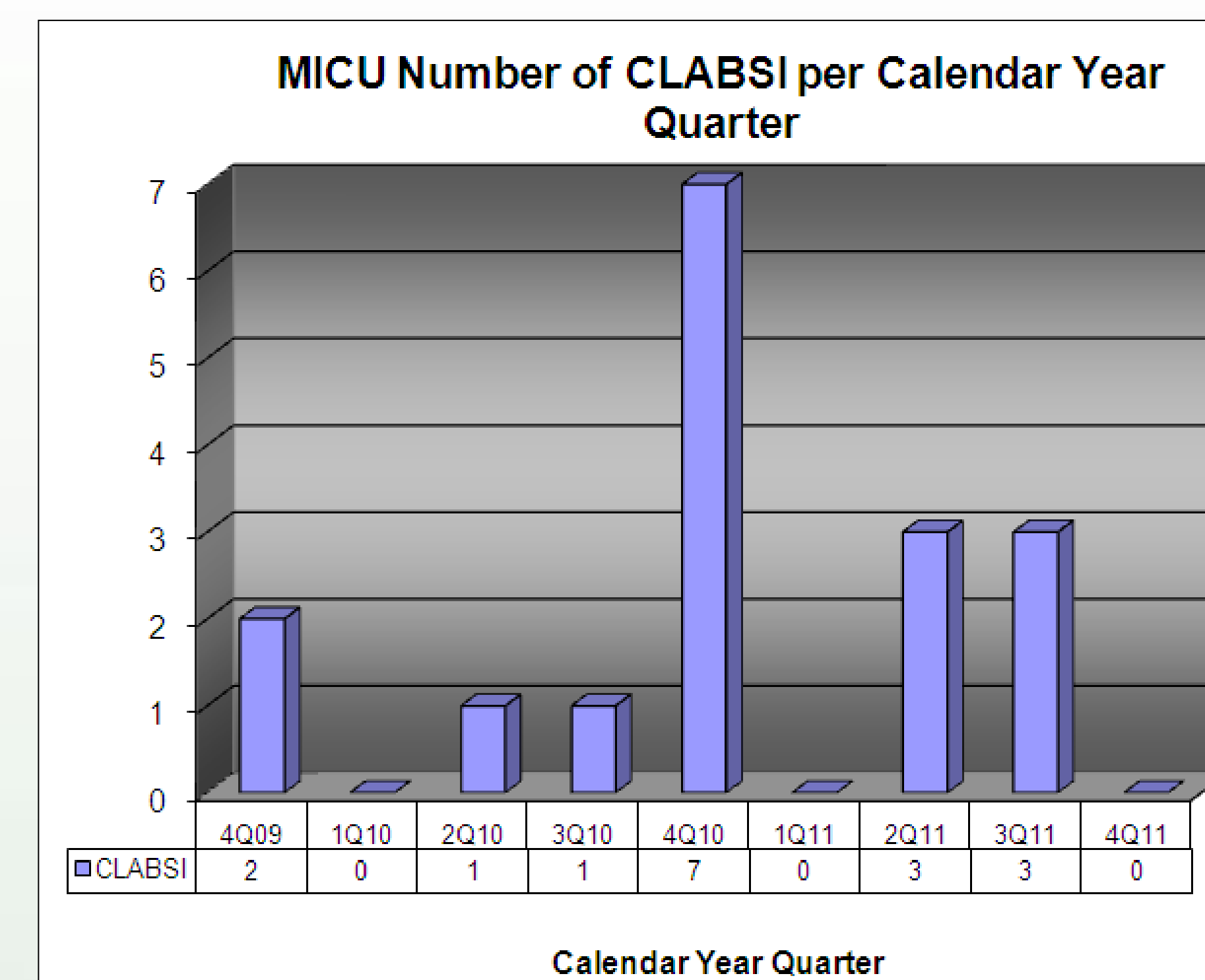
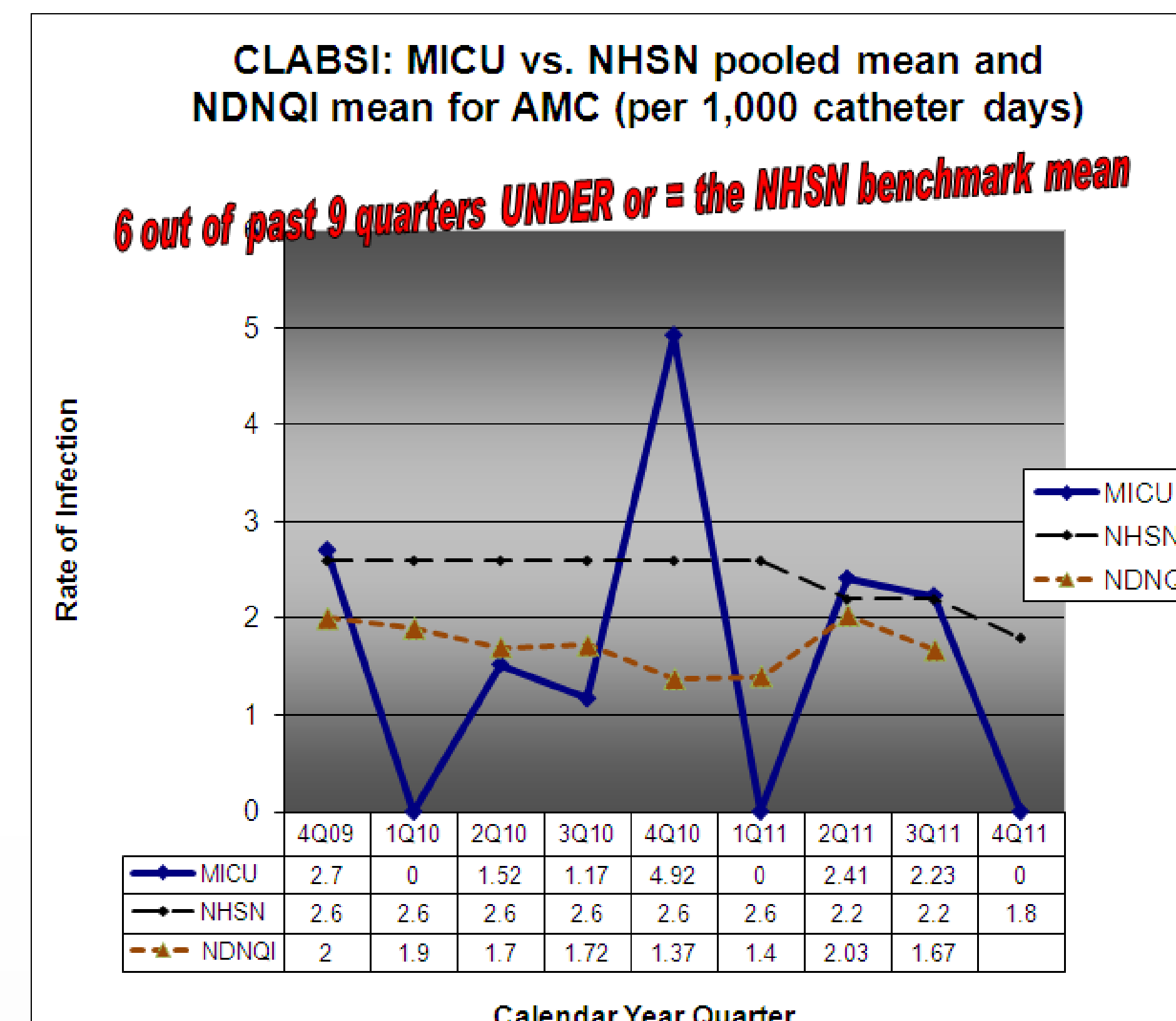
Effective interdisciplinary leadership and administrative support built the foundation for successful practice changes.

Collaboration

Yale-New Haven Hospital joined the state-wide BSI prevention collaborative. Internally, the hospital-wide steering committee partnered with unit based interdisciplinary teams and the Epidemiology Department to implement new standard process bundles (insertion and maintenance checklists) hand-in-hand with a vigorous evaluation methodology.

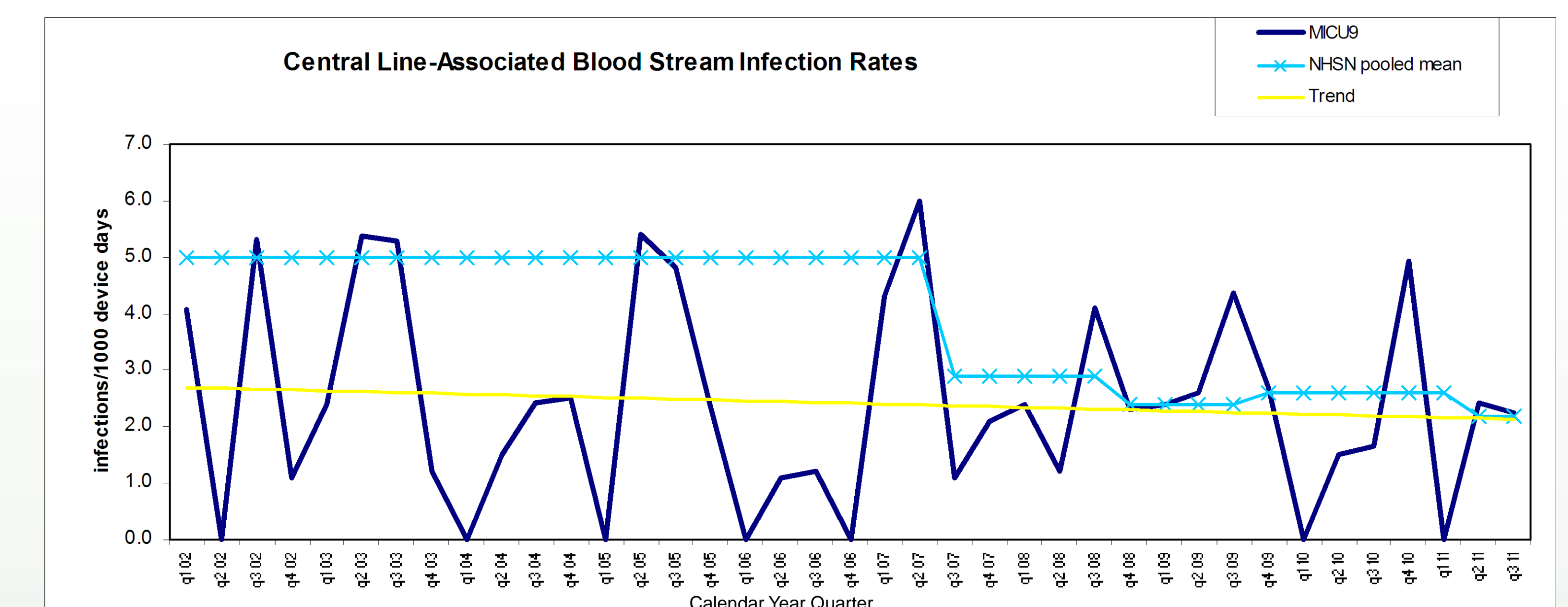
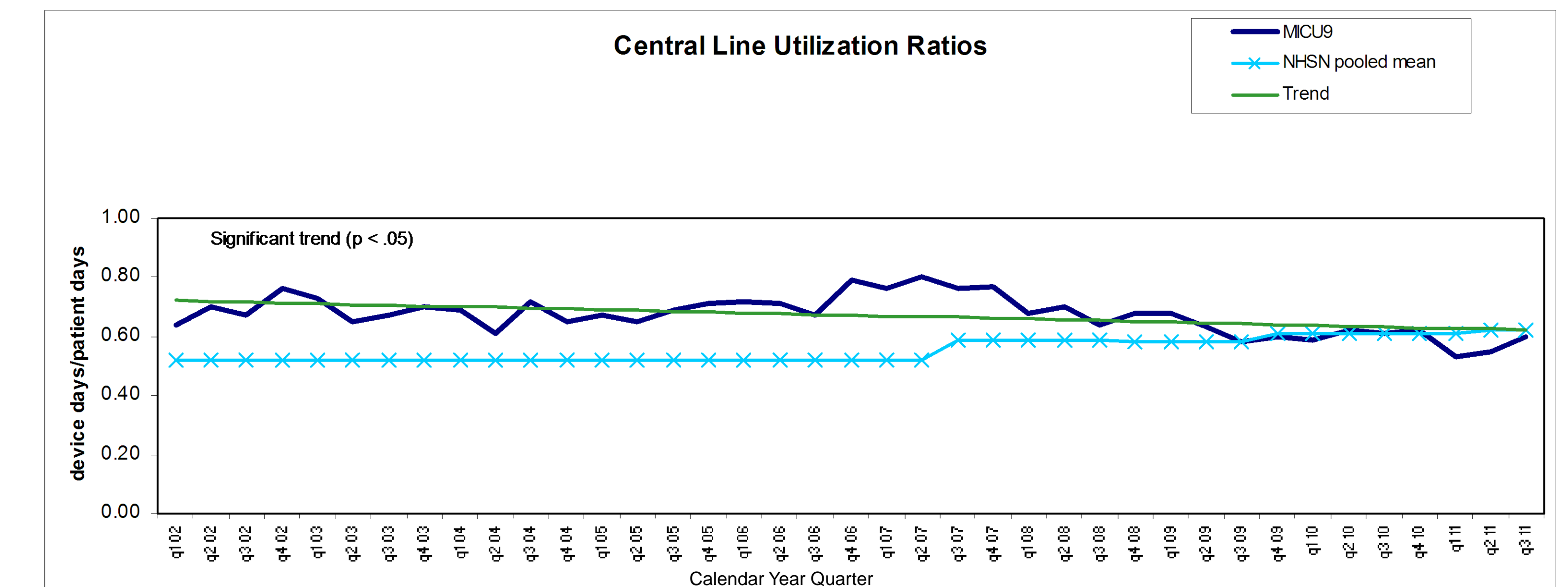
Project Structure and Accountability

One assistant manager, a frontline nurse, and an attending physician took ownership of CLABSI as team leaders. The team leaders worked with the steering committee to develop the standard hospital tools. Strong nurse-physician partnerships allowed for effective and rapid solutions for initiative challenges. Following, they engaged RN and MD staff on the MICU, educated on new processes, tracked data, and adjusted implementation per results.



METRICS

- Hospital-wide epidemiological data
- Days since last event
- Direct-observation audits



Drill Down

If an infection does occur, the team does a thorough case review to determine likely causation and follows up with providers who cared for the patient.

Evaluation:

The MICU achieved and is sustaining a significant reduction in incidence of CLABSI. The unit went 152 days with no infection in early 2011 and performed better than the benchmark NHSN pooled mean (per 1,000 catheter days) six out of the last nine quarters. MICU performed better than the NDNQI benchmark mean for Academic Medical Centers four out of the past eight quarters and anticipates outperforming the benchmark for the fourth quarter 2011. MICU had zero CLABSI three out of the past nine quarters. The unit has currently as of January 12, 2012 has gone 173 days with no CLABSI. MICU publicly reports infection rates and was one of only two ICUs in the state of Connecticut that had individual CLABSI Standardized Infection Ratios "better/lower than expected."

Implications for Practice:

Improved quality care for patients with central lines using standard bundles leads to reduced CLABSIs. All ICUs within YNHH and the 2 other hospitals within the YNHH System can benefit from collaboration to standardize best practices to reduce infection rates, improve care and reduce loss of revenue.