Arming Frontline Nurses with Data to Improve Outcomes

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Carilion Roanoke Memorial Hospital

One of the largest hospitals in the state, Carilion Roanoke Memorial Hospital (CRMH) is a 703-bed hospital with an additional 60-bed Neonatal Intensive Care Unit.

Now in its second century of providing premiere healthcare services, CRMH also features a Level I trauma center.

A Magnet designated facility, CRMH employs over 1000 nurses in acute and ambulatory settings with over 400,000 admissions and visits annually.

Background

Frontline nurses are key to improving the quality and safety of patient care. They provide critical interventions for patient care but often lack skill in using outcome data to evaluate practice and affect change .

Goal: Improve "quality literacy levels" of staff and leadership, enabling them to understand and apply quality metrics.

Strategies:
- Develop knowledge of quality and safety processes
- Utilize data to monitor outcomes
- Implement evidence based strategies
- Analyze structure, processes and outcomes to identify success and areas for improvement

Structure and Process

Targeted "quality literacy" education
Quality improvement methodology: DMAIC

D - Define
- o Problem statement
- o Goal (anticipated benefit)

M - Measure
- o Review data

A - Analyze
- o Focus for action plan

I - Improve
- o Intervention description
- o Initial results

C – Control
- o Follow up ongoing results

Monthly scorecards for nursing units
Focus on unit outcomes & national benchmarks
- National Database of Nursing Quality Indicators (NDNQI)
- National Health Safety Network (NHSN)
- Professional Research Consultants (PRC)

Unit level implementation
Quality champions on each unit
Review data in staff meetings
- Charged with reviewing quality measures and monthly data reports
- Develop evidence-based strategies for improvement
- Evaluate outcomes based on data

Organizational level implementation
Nursing Quality Shared Governance Council
- Establish priorities and accountabilities for quality and safety initiatives
- Focus on roll-up "aggregate" outcomes
- Reviewed monthly at Nursing Quality Council

An Exemplar

<u>Define</u>
VAP Ventilator-associated pneumonia (VAP) in a critically ill patient significantly increases risk of mortality and, at a minimum, increases ventilator time, length of stay, and cost of care.

<u>Measure</u>
- # of VAP occurrences/vent days X 1,000
- Benchmark is NHSN

<u>Analyze</u>
- Above the national benchmark for VAPs;
- Inconsistent application of evidence-based bundle for VAP prevention

<u>Improve</u>

Interventions: Interdisciplinary team led by Clinical Nurse Specialist to develop strategies for systematic implementation of VAP bundle
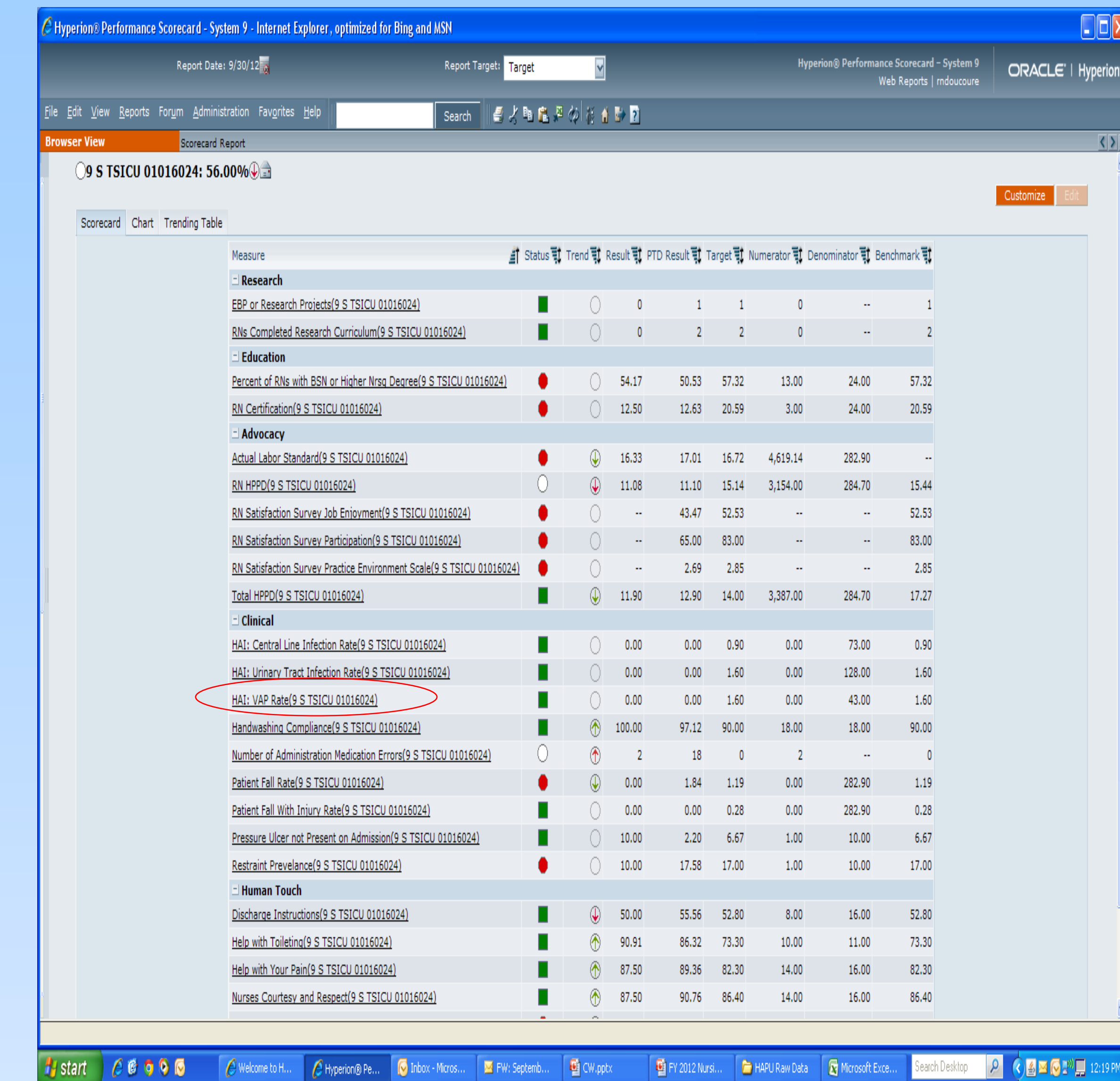- Education of staff
- Monitoring compliance, audit of care practices
- Standardized products to improve compliance (mouth care)
- Monthly performance data to frontline staff to insure consistent implementation and documentation of VAP Bundle
- Intense reviews (deep dives) for VAPs.
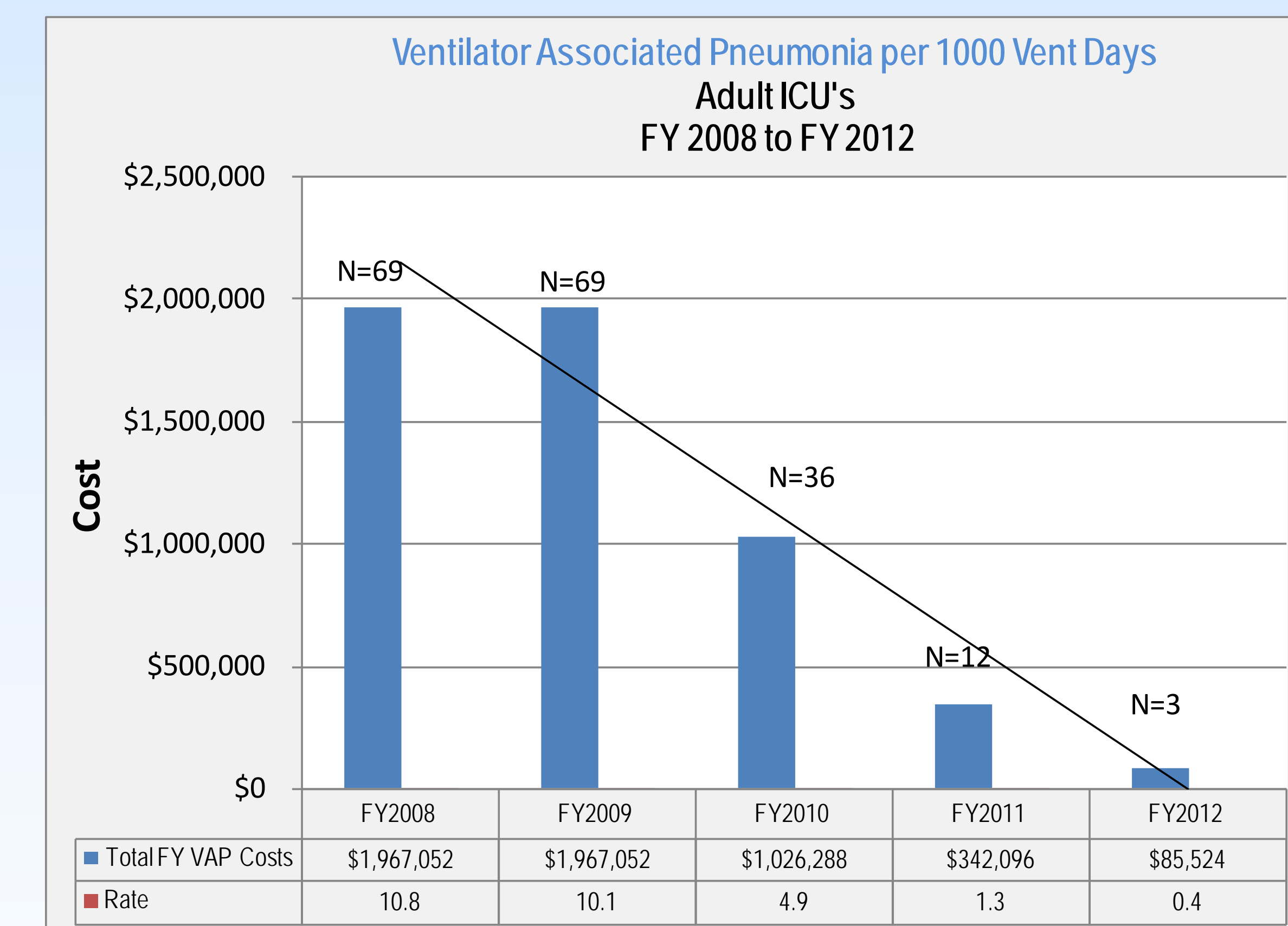   **Results:** Decreased VAP rate from 10.8 (FY2008) to 0.4 (FY2012)

<u>Control</u>
Ongoing monitoring demonstrates **13 out of 13 units outperformed the NHSN Pooled Mean the majority of the time.**

Nursing Unit Scorecard

Outcomes

Ventilator Associated Pneumonia per 1000 Vent Days Adult ICU's FY 2008 to FY 2012

	FY2008	FY2009	FY2010	FY2011	FY2012
Total FY VAP Costs	$1,967,052	$1,967,052	$1,026,288	$342,096	$85,524
Rate	10.8	10.1	4.9	1.3	0.4

Lessons Learned

Providing frontline nurses with timely, data-rich feedback, coupled with systematic application of quality improvement methodologies, provides an evidence-based process for successfully improving patient outcomes.