Central Line Bloodstream Infections (CLABSI) Prevention Outside the ICU

A Collaborative of 6 Hospitals in Rochester, NY

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Outline

- Compare the burden of CLABSI in an outside the ICU
- Summarize the interventions implemented to reduce CLABSI rates
- Discuss the barriers to projects implementation and the potential solutions

Establishment of the Prevention Collaborative

- Collaborative members
  - Hospital Epidemiologists
  - Infection Preventionists
- A letter of support obtained from each hospital CEO
- Nursing Leadership informed of
  - Goals of the project
  - Need for their support
- Collaborative expanded in 2010
  - Nursing, IV teams and Quality staff

6 hospitals

965 medical/surgical beds

37 units

Timeline

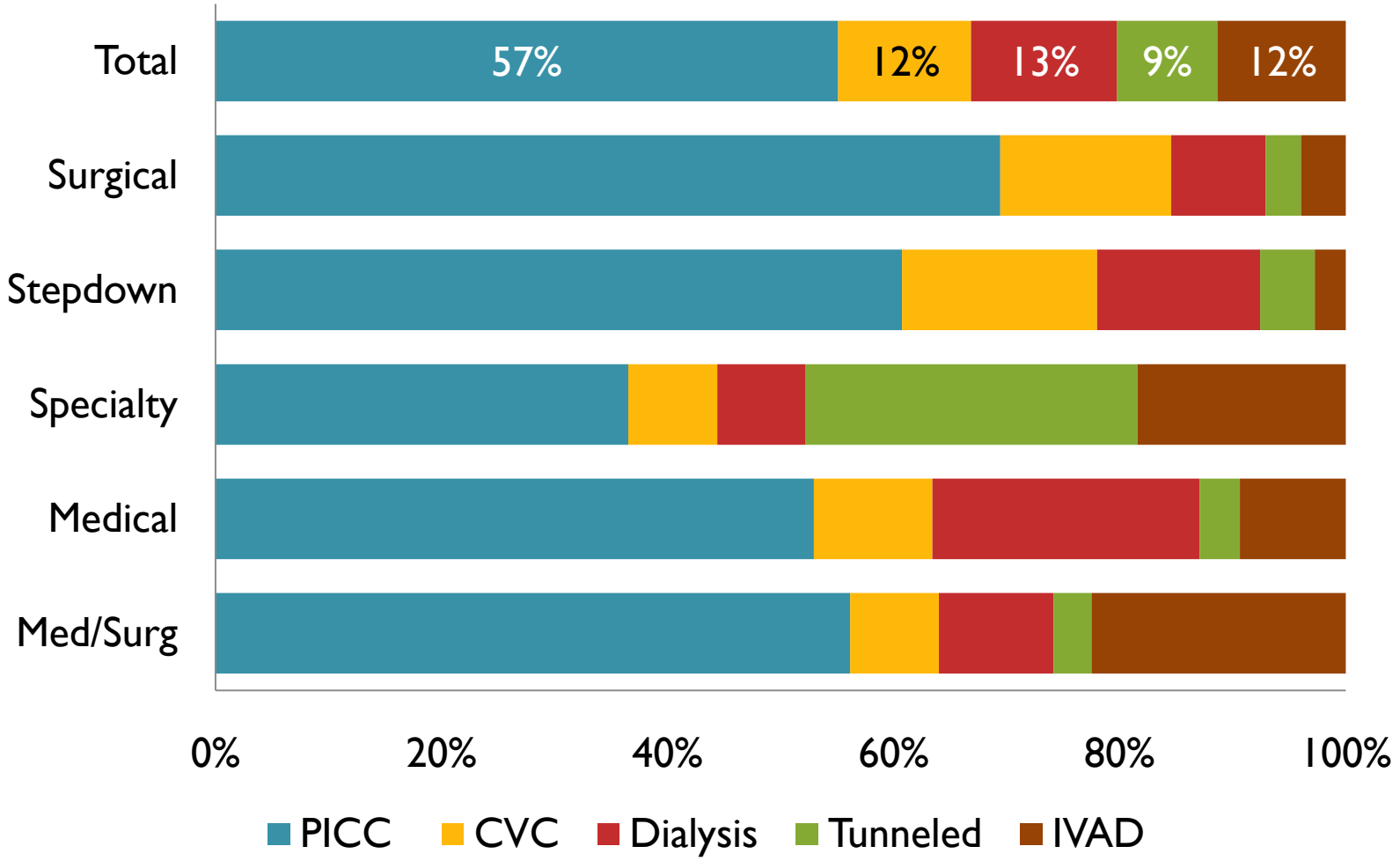
Stage 1	Stage 2	Stage 3	Stage 4
Baseline data	Evaluations of policies & procedures	Interventions	Effect of intervention
•Collection of line and patient-days	•Survey nursing knowledge	• Feedback of CLABSI rates	•Assess the effect of feedback and education on the rate of CLABSI
•Collection of CLABSI events	•Review CVC care policies	•Education of nurses	
•Generation of baseline rates of CLABSI	•Line Care Maintenance Protocol (LCMP)	•Audits of line care	

Device Use Ratio in Non-ICU

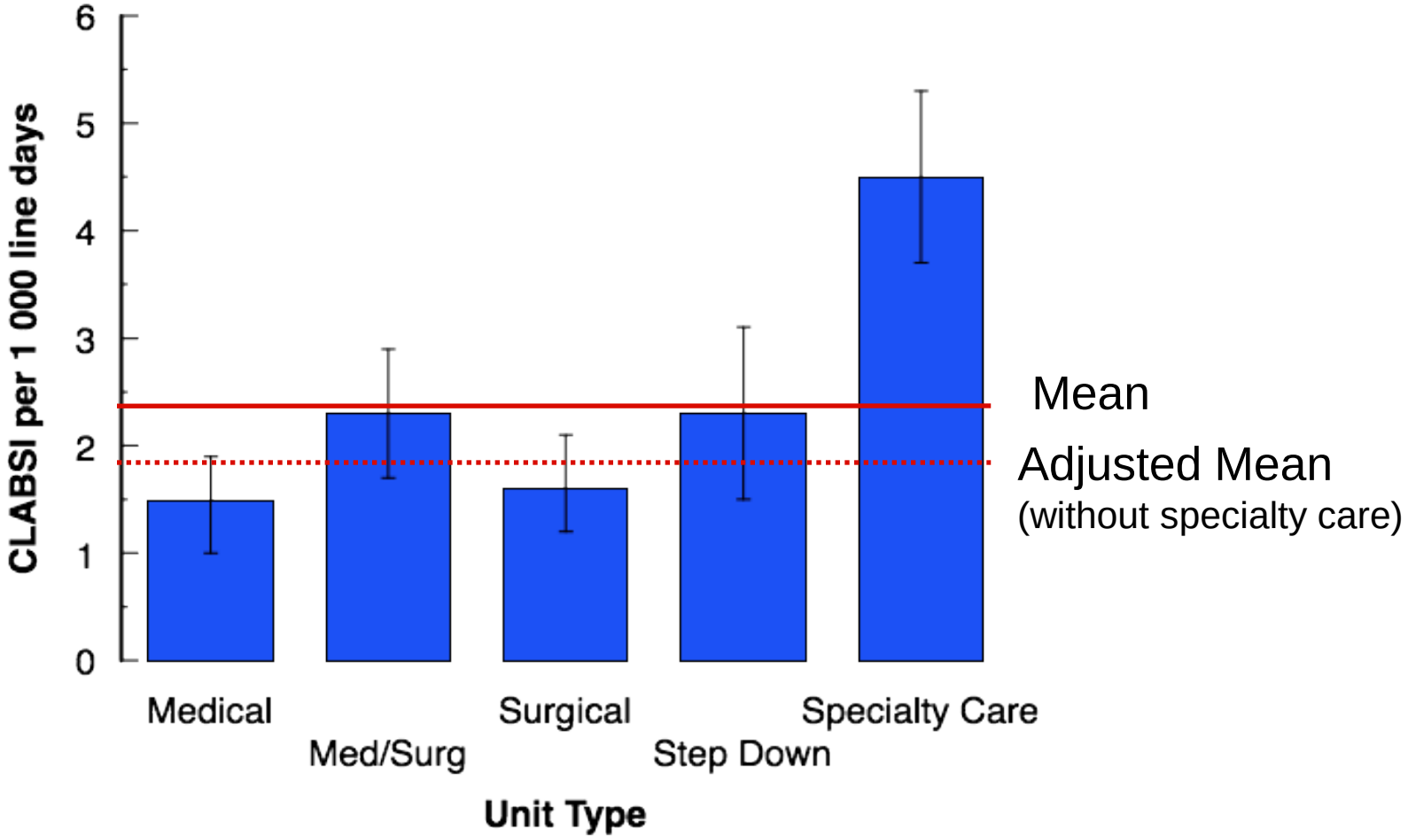
Unit type	Mean DUR	Range
Specialty	33%	24-95%
ICU Step down	26%	9-74%
Medical and Surgical	15%	6-28%
Overall	**18%**	**5.5-95%**

Device use in ICUs in 2009: 40 to 71%

Line Use by Unit Type

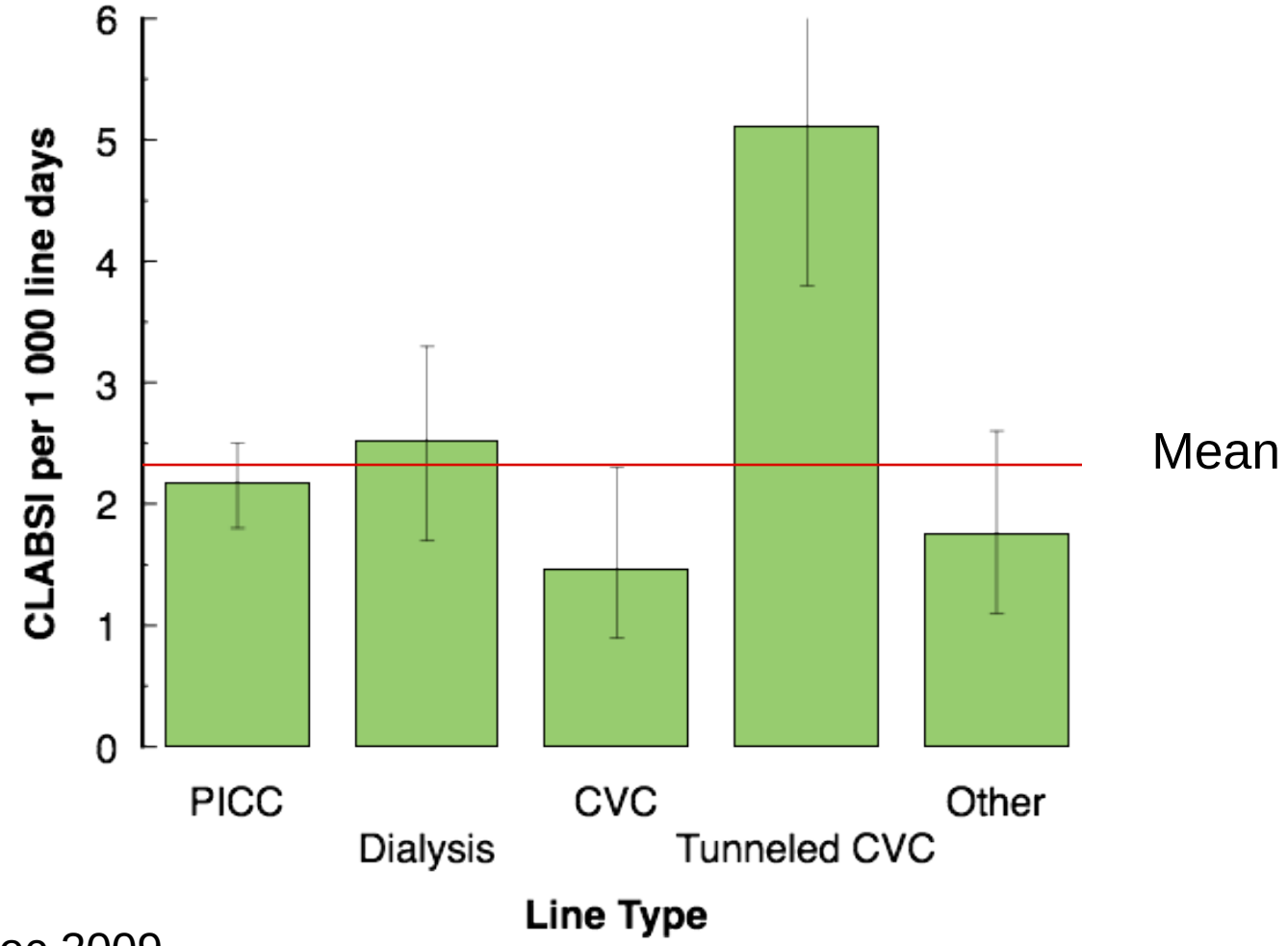


CLABSI Rate by Unit Type



April 2008- Dec 2009

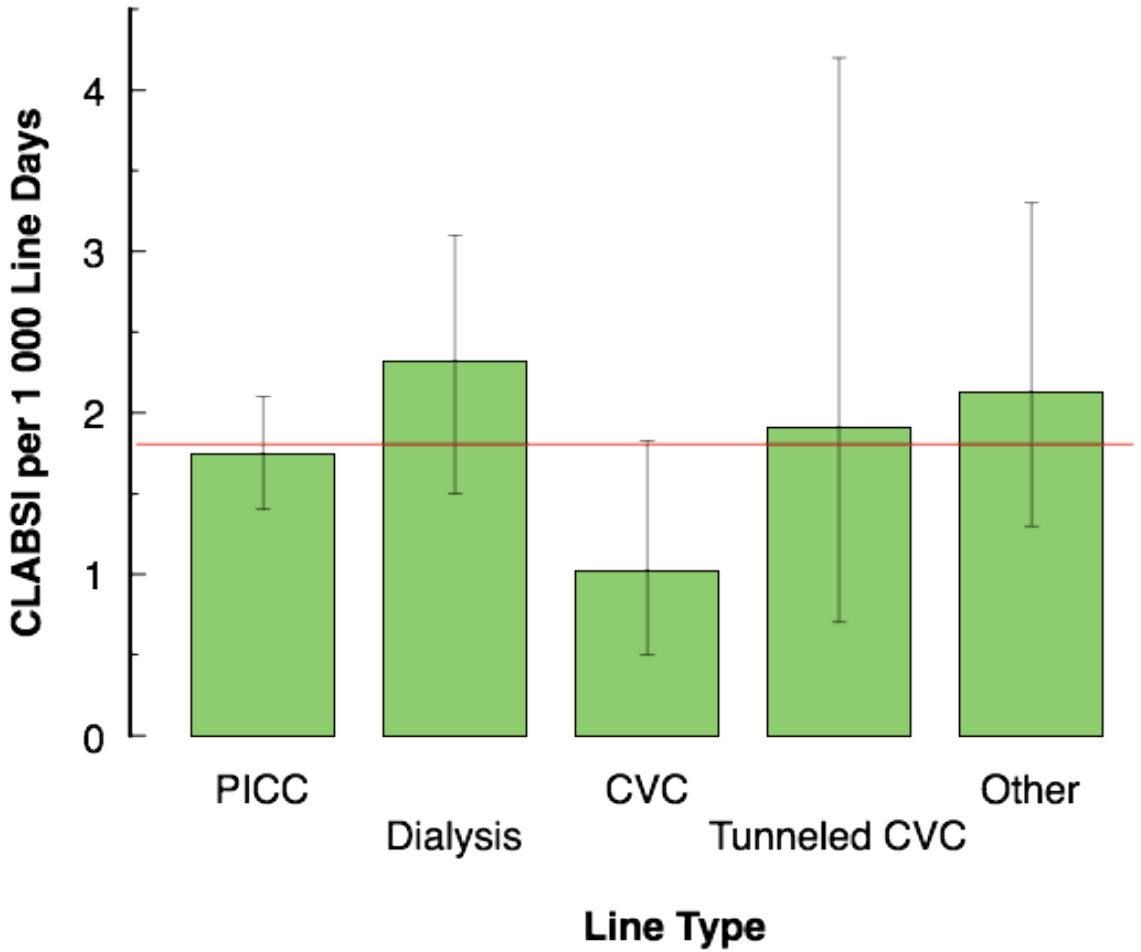
CLABSI Rate by Line Type



April 2008- Dec 2009

CLABSI Rates by Line Type

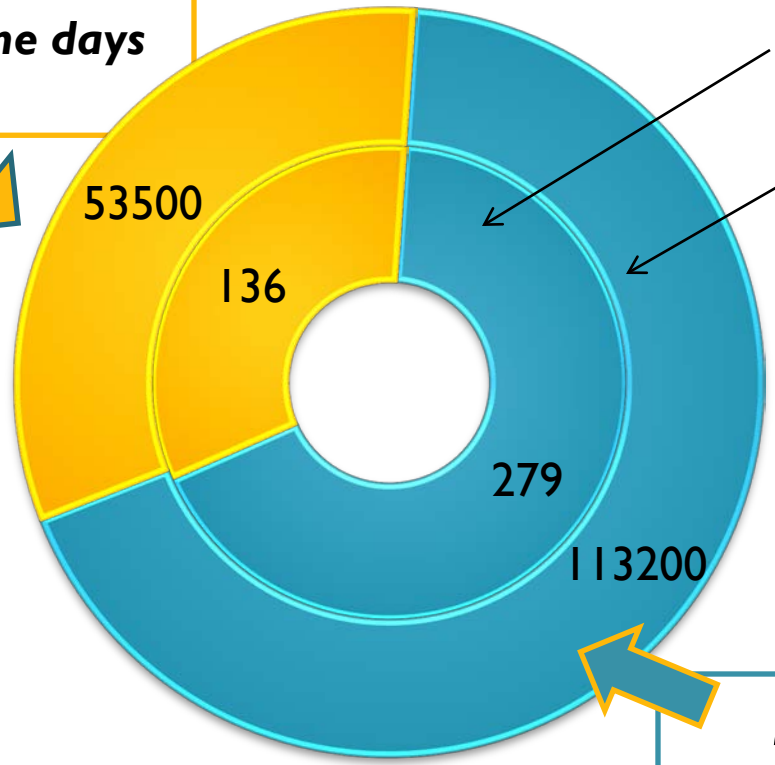
Excluding Specialty Care Units



April 2008- Dec 2009

Burden of Infection and Line days: ICU vs. Non ICU

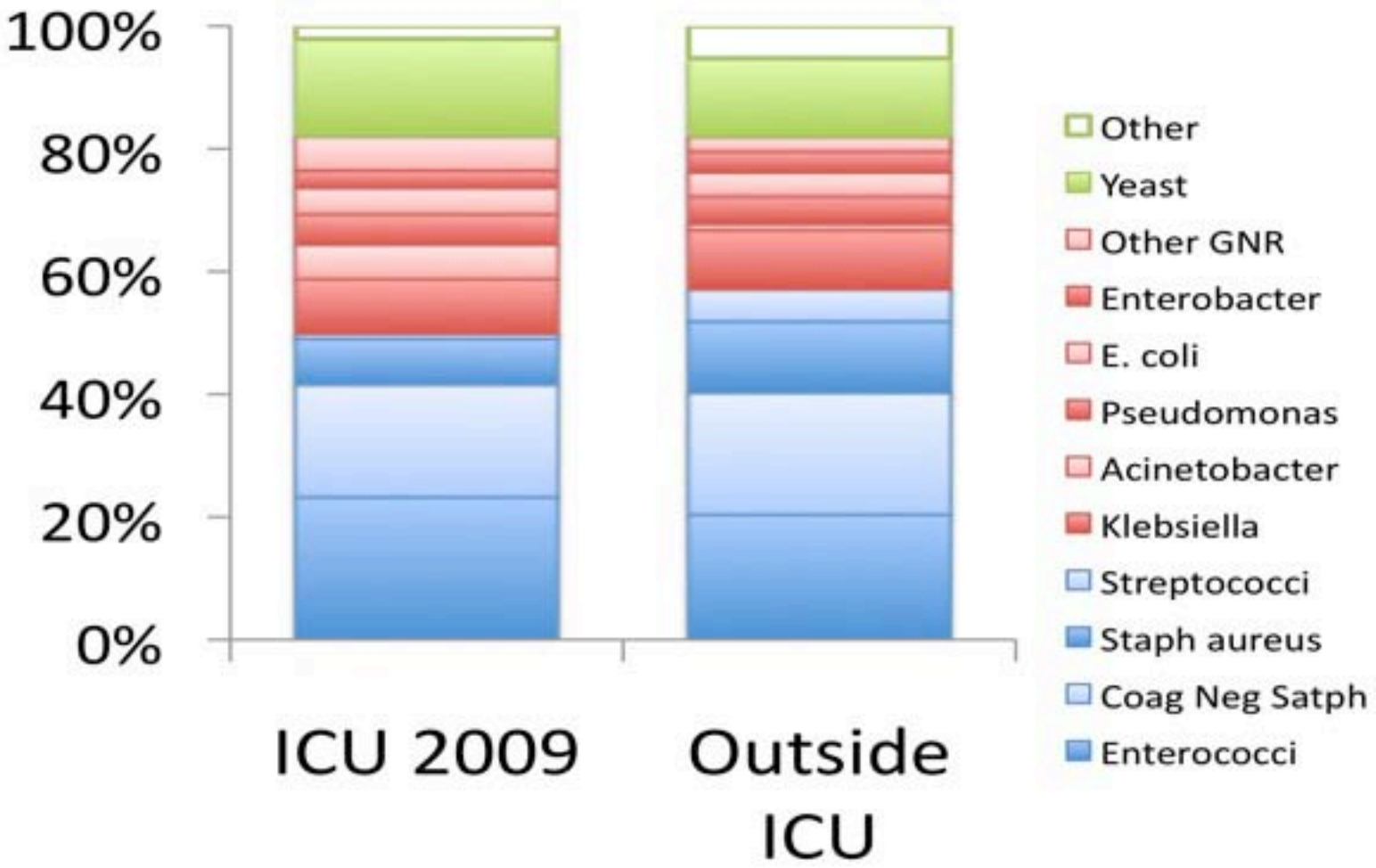
ICU rate:
2.46 per 1,000 line days



Non ICU rate:
2.54 per 1,000 line days

April 2008-Dec 2009

Pathogen Distribution



From HAI 2009, NYS DOH

Line Care Maintenance Protocol

1. **Hand hygiene**:

   Before and after accessing line, dressing and needleless device change

2. **Cleaning and changing the needleless access**

   Use a twisting motion 10-15 X (or 10-15 sec) for cleaning

   Change needleless device aseptically every 96 hrs and with tubing change

3. **Dressing change**:

   Clean site with chlorhexidine/alcohol

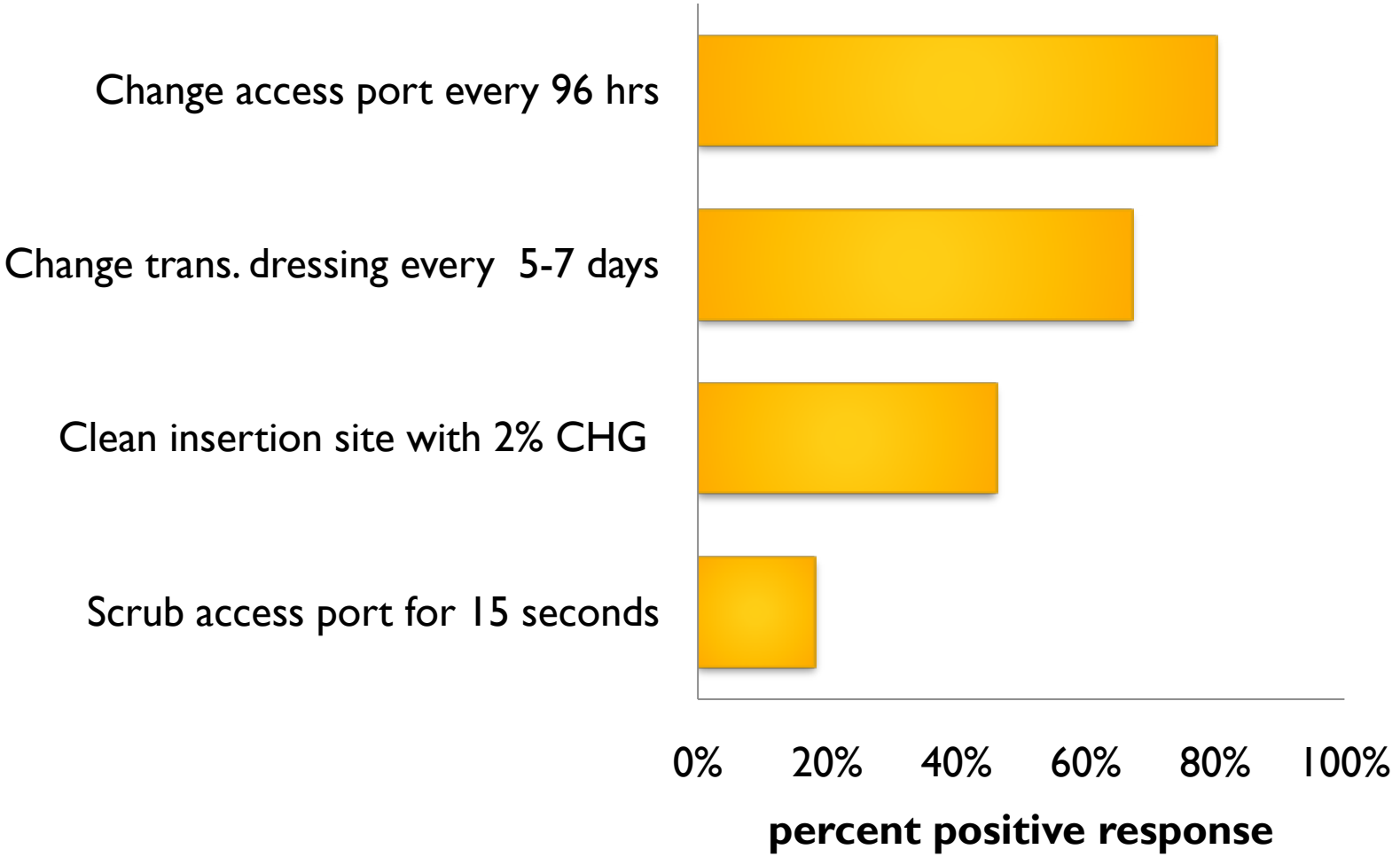
   Use back and forth motion for 30 sec

   Change transparent dressing q 7 days, gauze dressing q 48h or PRN

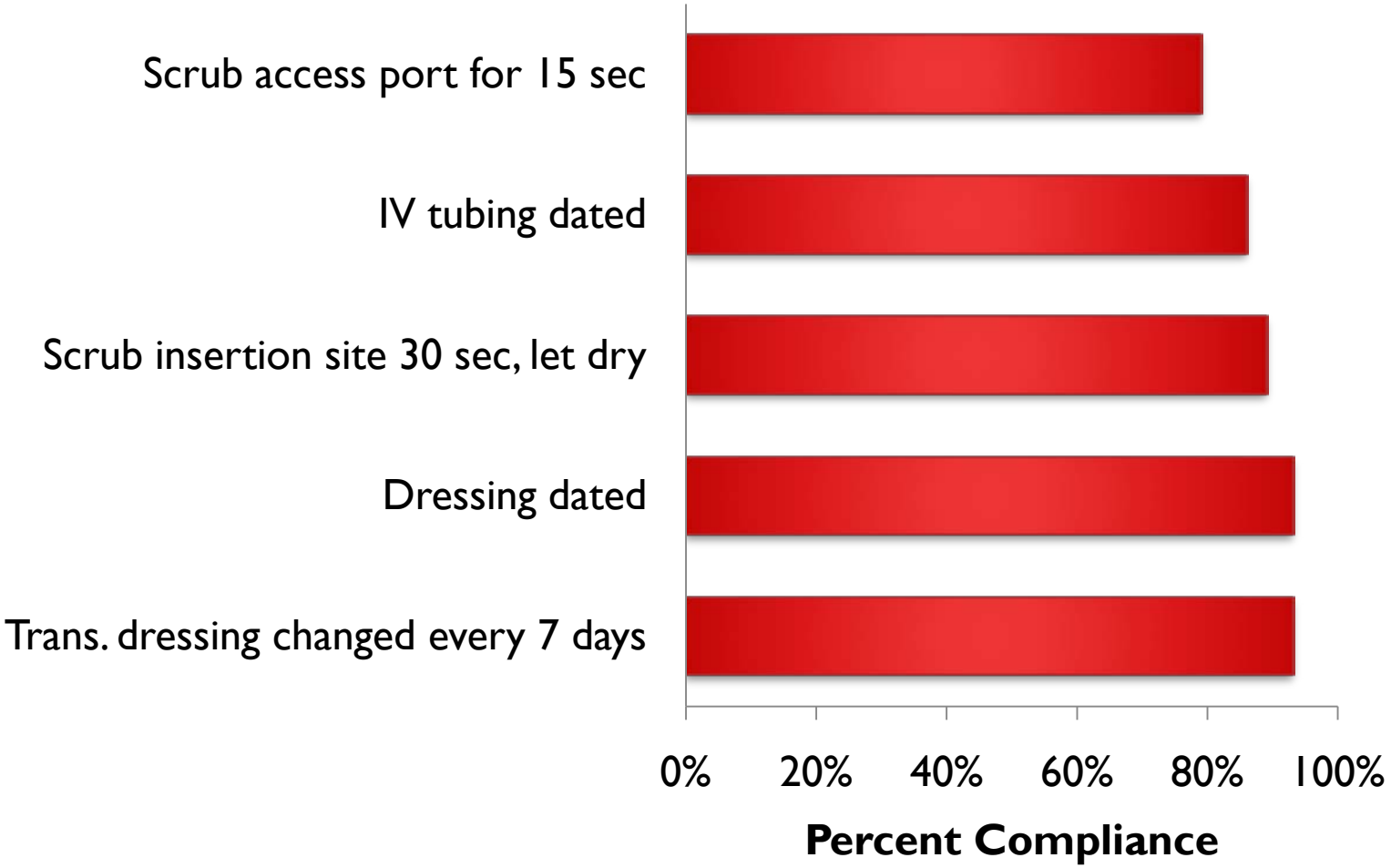
4. **Follow recommendations for flushing lines**

5. **Assess the need for continued CVC use daily**

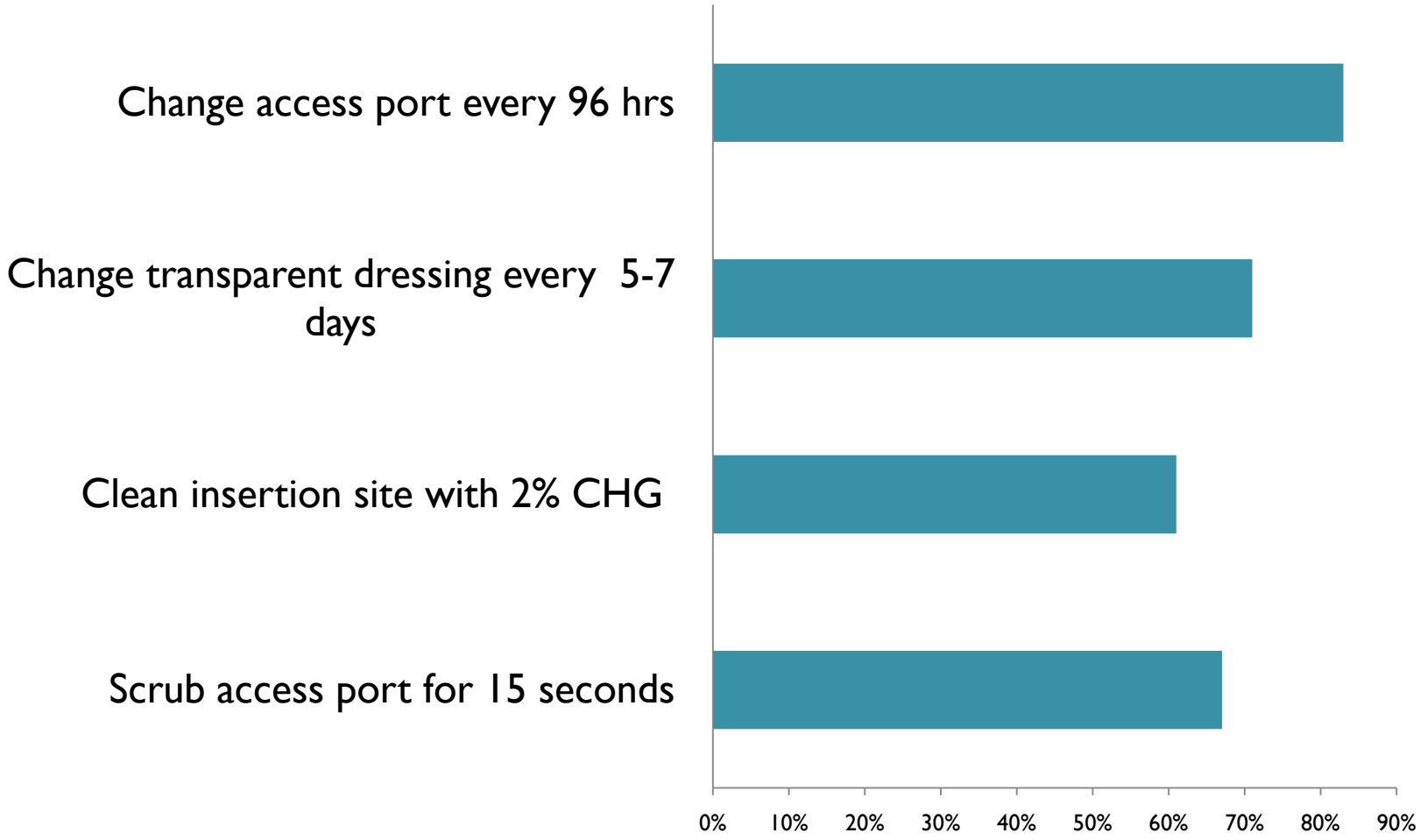
Survey of Nurses, 2008



Nursing Audits Post LCP Education



Nursing Survey 2010

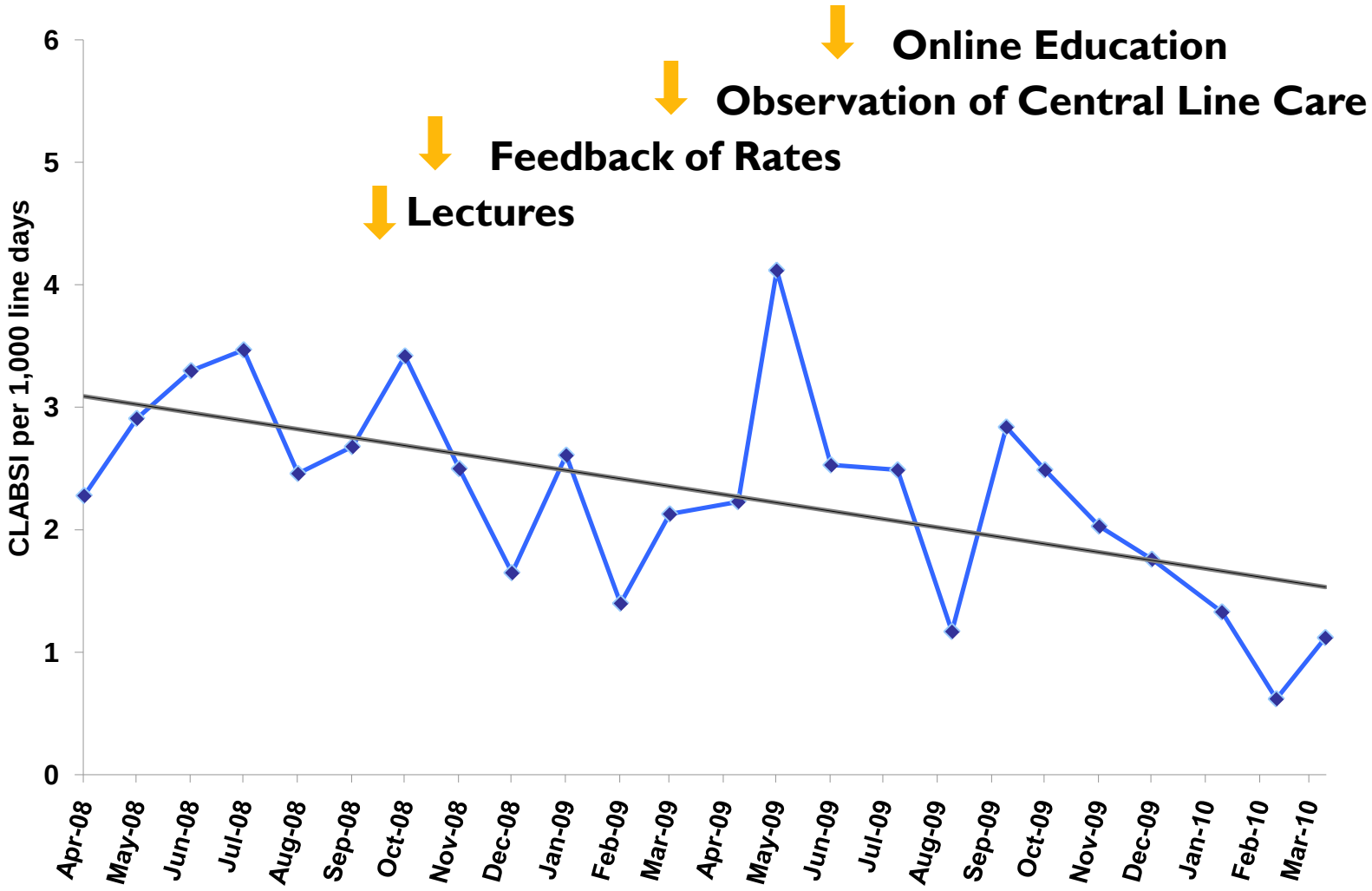


Total Mean CLABSI Rate

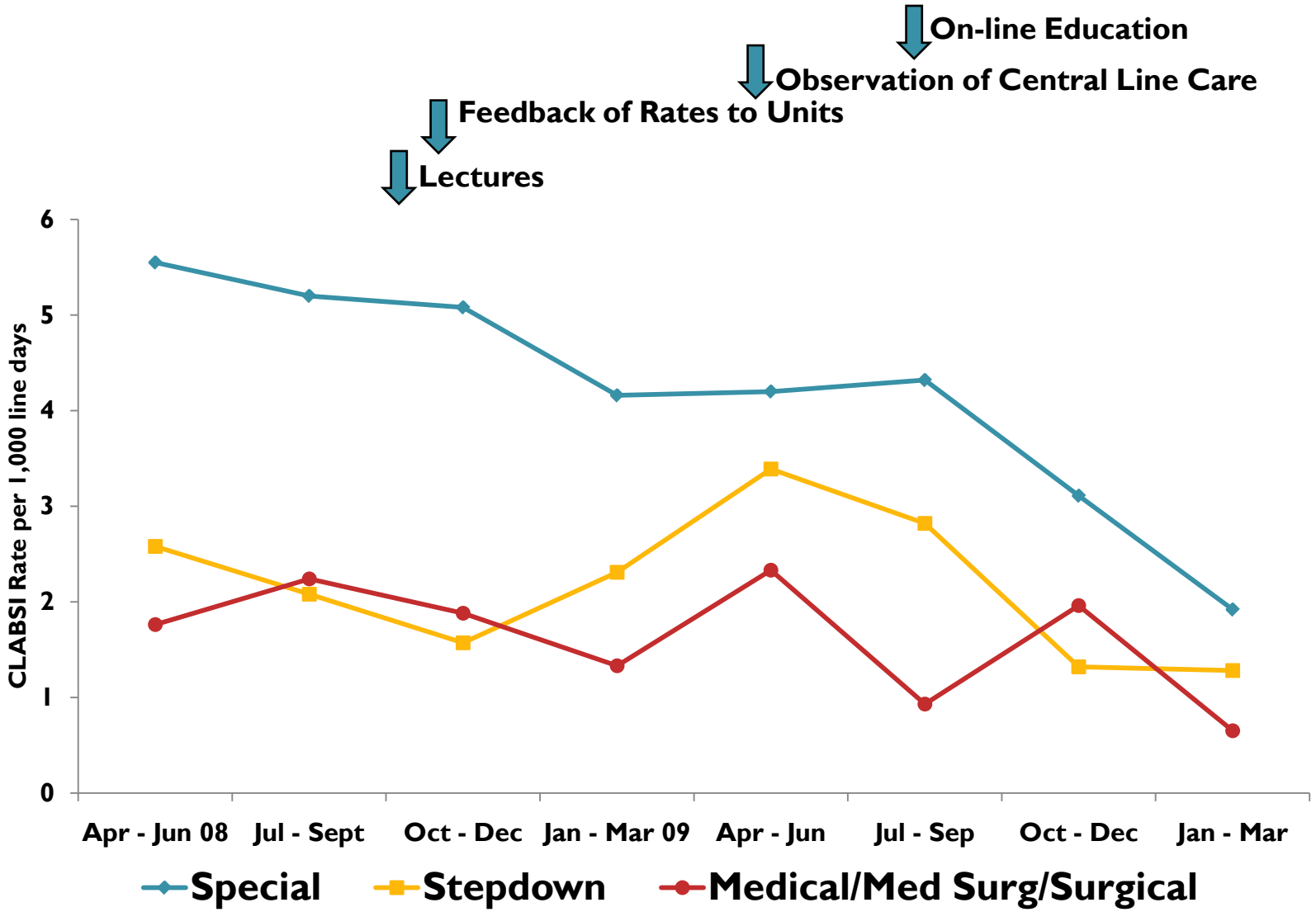
1st quarter		8th quarter
Apr-Jun 08	→	Jan – Mar 10
2.8 per 1,000 line days		1.04 per 1,000 line days*

*P=0.008

Overall CLABSI Monthly Rates

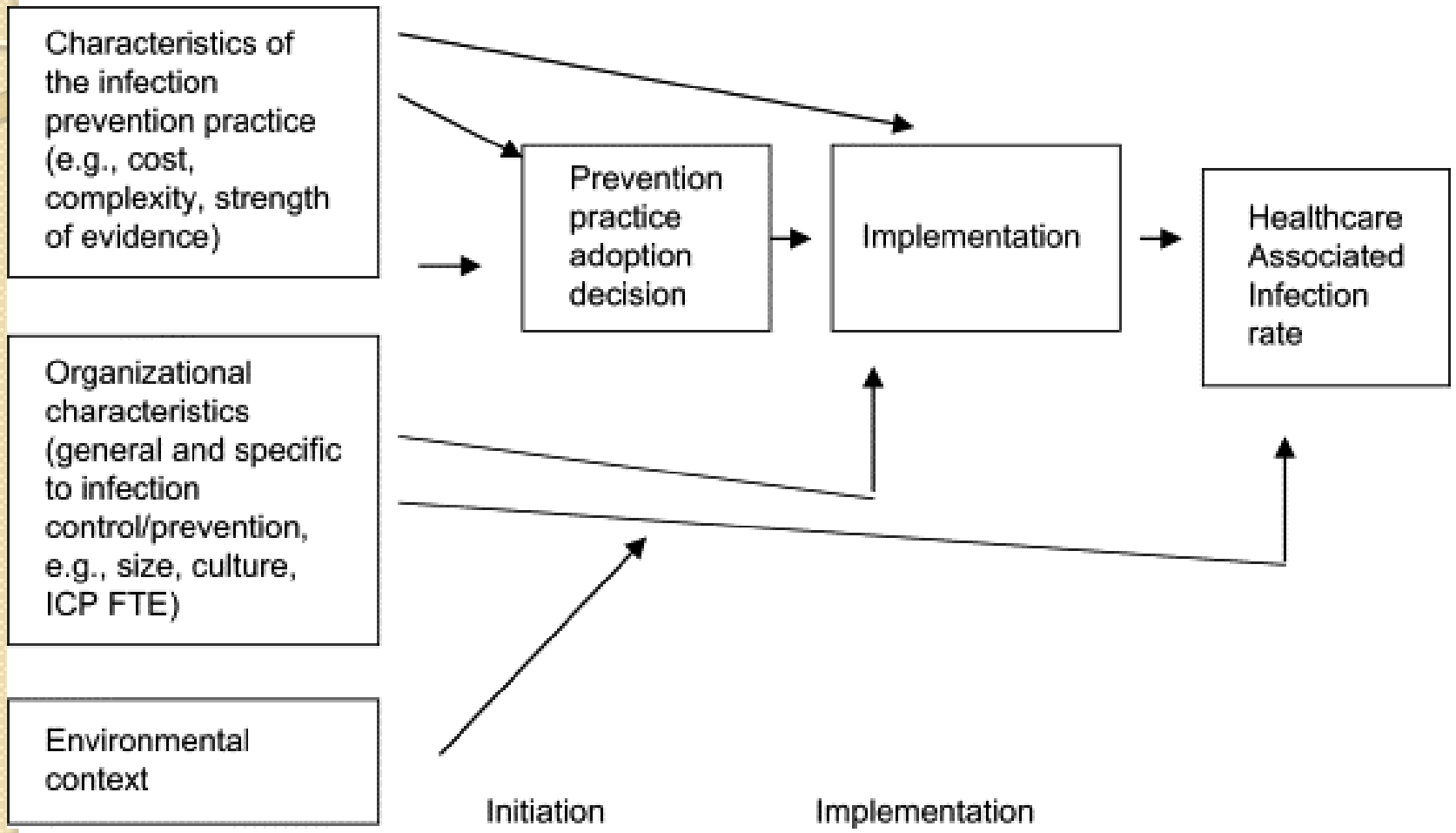


Quarterly CLABSI Rates Grouped by Unit Type



BARRIERS AND SOLUTIONS

Implementation of Evidence Based Guidelines: Diffusion of Innovation



Conceptual framework for translating infection prevention evidence into practice

Krein et al AJIC Vol. 34 No. 8: 507-512

Barriers and Lessons Learned

- The implementation of CLABSI prevention more difficult on non ICU units:
  - Large numbers of units with diverse makeup
  - Communication Gaps regarding information on process change
  - Varied approaches to implementation of prevention efforts

Barriers and Lessons Learned

- Interest and implementation of CLABSI prevention efforts varied between
  - Hospitals
  - Hospital units
- Implementation influenced by
  - Presence of a dedicated unit nurse Champions
  - Hospital and Nursing Leadership "buy in"
  - CLABSI rates

Collection of Line days After TWO Years

Summary

- The burden of CLABSI is higher in non-ICU wards
- Nursing staff play an important role in the prevention of CLABSI
- The use of a line care maintenance protocol has led to a decrease of CLABSI on the general medical wards
- Establishing an innovative infection control practice requires a "culture change" facilitated by:
  - Leadership involvement
  - Identifying "champions"

The Rochester CLABSI Collaborative Members

- **Ghinwa Dumyati, MD (PI)**
- **Mark Shelly, MD (Co-PI)**
- **Cathy Concannon, Coordinator**

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- Gail Quinlan, CIC
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