Using Data for Prevention:
Targeted Assessment for Prevention Strategy

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Division of Healthcare Quality Promotion
Centers for Disease Control and Prevention

ELC HAI and Ebola Supplement Grantees' Meeting
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Nothing to disclose

Targeted Assessment for Prevention (TAP) Strategy

Target → Assess → Prevent

- Target facilities/units with high burden/excess of HAIs
- Assess gaps in infection prevention in targeted facilities/units
- Prevent infections by implementing interventions to address the gaps

A linear progression framework for quality improvement

http://www.cdc.gov/hai/prevent/tap.html

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A-Z Index A B C D E F G H I J K L M N O P Q R S T U V W X Y Z #

Healthcare-associated Infections (HAIs)

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The Five "W"s of the Targeted Assessment for Prevention (TAP) Strategy

Related Links

- NHSN technical documents
- NHSN TAP Training Slides
- Partners for Prevention

WHAT is the TAP strategy?

The Targeted Assessment for Prevention (TAP) strategy is a method developed by the Centers for Disease Control and Prevention (CDC) to use data for action to prevent healthcare-associated infections (HAIs). The TAP strategy targets healthcare facilities and specific units within facilities with a disproportionate burden of HAIs so that gaps in infection prevention in the targeted locations can be addressed. The TAP report uses a metric called the cumulative attributable difference (CAD). The CAD is the number of infections that must be prevented to achieve a HAI reduction goal and is calculated by subtracting a numerical prevention target from an observed number of HAIs. The TAP report allows for the ranking of facilities, or locations within individual facilities, by the CAD to prioritize prevention efforts where they will have their greatest impact.

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CDC HICPAC Recommendations

http://www.cdc.gov/hai/prevent/tap.html

A Measure to Target Prevention to Reach HAI Reduction Goals

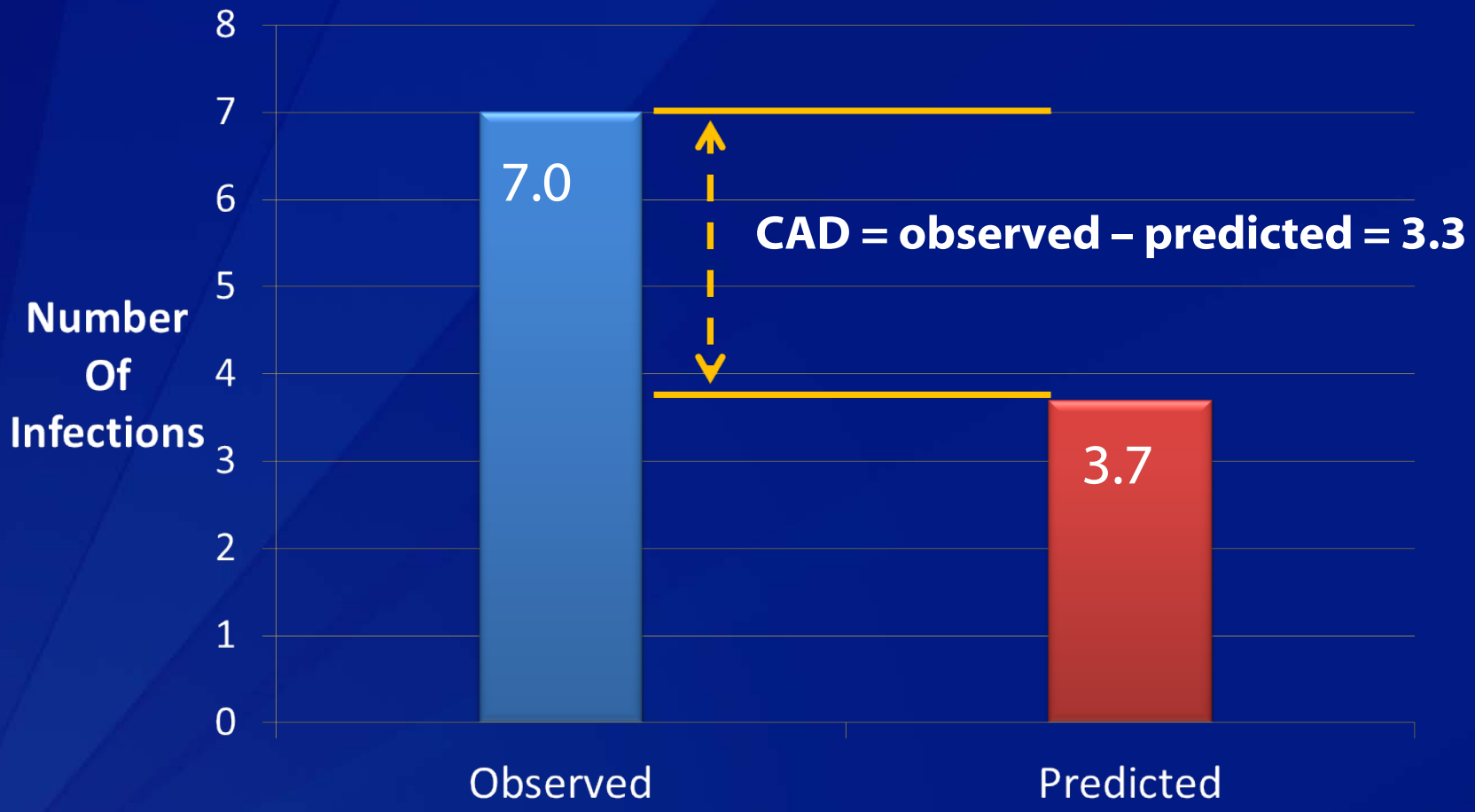
Cumulative Attributable Difference (CAD)

$$\text{CAD} = \text{OBSERVED} - (\text{PREDICTED} * \text{SIR}_{\text{goal}})$$

- SIR_{goal} can be chosen based on goals of a group, state, organization, or national target
  - Lower target SIR → larger CAD ("excess" number of infections)
  - NHSN uses HHS target SIRs with option to customize
- *CAD is the number of infections needed to prevent to reach the* SIR_{goal}

Courtesy of Minn Soe, CDC

Cumulative Attributable Difference (CAD)



INFECTION CONTROL & HOSPITAL EPIDEMIOLOGY

ORIGINAL ARTICLE

Targeted Assessment for Prevention of Healthcare-Associated Infections: A New Prioritization Metric

Minn M. Soe, MBBS, MPH; Carolyn V. Gould, MD, MSCR; Daniel Pollock, MD; Jonathan Edwards, MStat

OBJECTIVE. To develop a method for calculating the number of healthcare-associated infections (HAIs) that must be prevented to reach a HAI reduction goal and identifying and prioritizing healthcare facilities where the largest reductions can be achieved.

SETTING. Acute care hospitals that report HAI data to the Centers for Disease Control and Prevention's National Healthcare Safety Network.

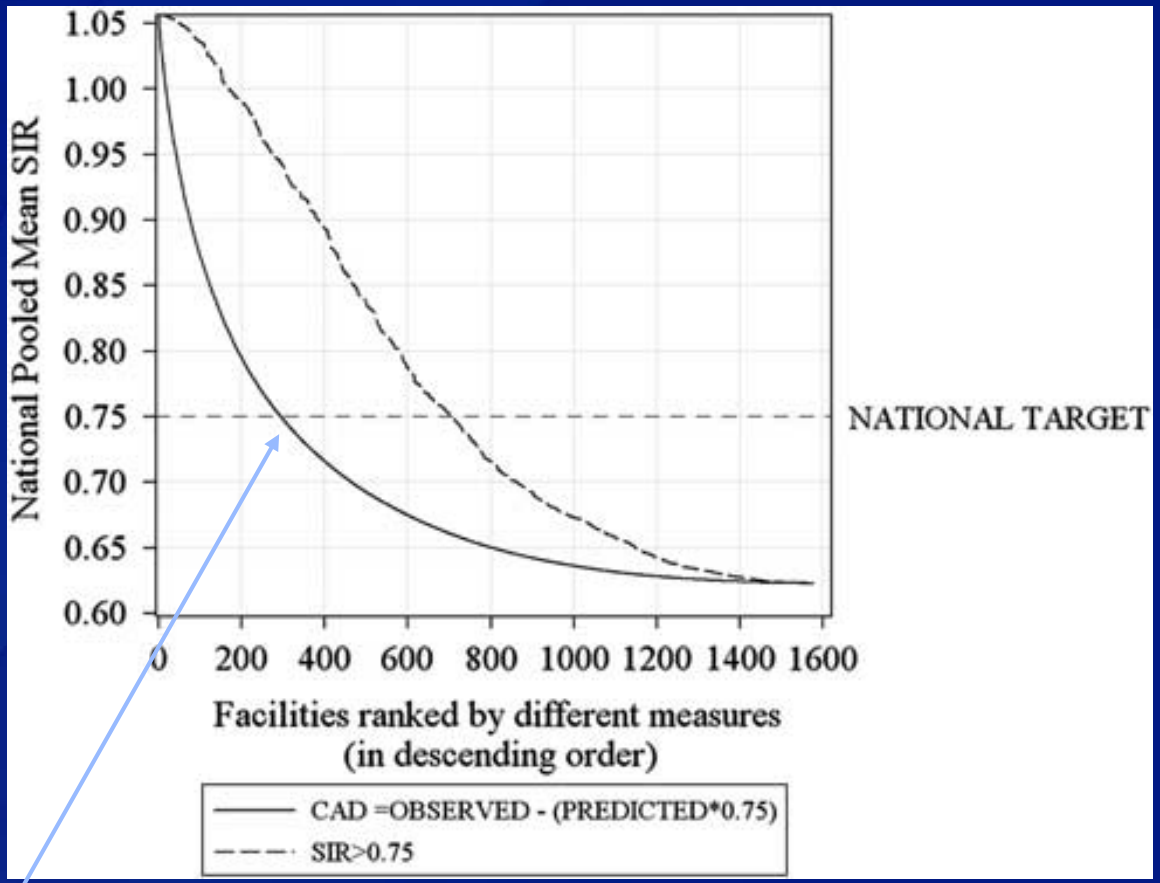
METHODS. The cumulative attributable difference (CAD) is calculated by subtracting a numerical prevention target from an observed number of HAIs. The prevention target is the product of the predicted number of HAIs and a standardized infection ratio goal, which represents a HAI reduction goal. The CAD is a numeric value that if positive is the number of infections to prevent to reach the HAI reduction goal. We calculated the CAD for catheter-associated urinary tract infections for each of the 3,639 hospitals that reported such data to National Healthcare Safety Network in 2013 and ranked the hospitals by their CAD values in descending order.

RESULTS. Of 1,578 hospitals with positive CAD values, preventing 10,040 catheter-associated urinary tract infections at 293 hospitals (19%) with the highest CAD would enable achievement of the national 25% catheter-associated urinary tract infection reduction goal.

CONCLUSION. The CAD is a new metric that facilitates ranking of facilities, and locations within facilities, to prioritize HAI prevention efforts where the greatest impact can be achieved toward a HAI reduction goal.

Infect. Control Hosp. Epidemiol. 2015;00(0):1–6

Impact on 2013 National CAUTI SIR (SIR= 1.057) and Number of Hospitals Needed to Target to Reach National HHS Goal (SIR = 0.75) among NHSN Hospitals with SIR > 0.75



Of 1,578 hospitals with positive CAD, preventing 10,040 CAUTIs at 293 hospitals (19%) with highest CAD would enable achievement of the national 25% CAUTI reduction goal.

Benefits of TAP Strategy

- Focused approach to prevention
- Within targeted facilities, excess HAIs mapped to unit level
- CAD is a concrete prevention goal linked to the SIR
- Specific gaps in infection prevention identified through a standardized assessment of targeted units
- Implementation strategies customized to address gaps

TAP Tools:
1. Target: TAP Reports

Facility-level

FACILITY RANK	ORGID	STATE	BEDS	NO.LOCATION (ICU,NON-ICU)	CAUTIS (ICU,NON-ICU)	DEVICE DAYS (ICU,NON-ICU)	DU% (ICU,NON-ICU)	CAD (ICU, NON-ICU)	SIR (ICU,NON-ICU)	ICU: TOTAL NO. PATHOGENS (% EC,YS,PA,KPO,FS,PM,ES)
1	001	AA	325	6(4,2)	42(34,8)	6861(5364,1497)	26(56,9)	22.9(17.8,5.2)	2.2(2.1,2.8)	37 (24, 14, 16, 8, 11, 0, 0)
2	002	AA	586	3(2,1)	73(70,3)	14292(13898,394)	48(70,4)	21.6(20.1,1.5)	1.4(1.4,2)	78 (27, 17, 10, 17, 12, 1, 0)
3	003	AA	471	3(2,1)	28(26,2)	6255(5880,375)	51(72,9)	15.6(15.1,0.6)	2.3(2.4,1.4)	28 (21, 36, 7, 7, 7, 0, 0)
4	004	AA	340	1(1,0)	36(36,.)	6760(6760,.)	84(84,.)	13(13,.)	1.6(1.6,.)	36 (36, 36, 8, 6, 0, 0, 0)
5	005	AA	646	4(4,0)	45(45,.)	11569(11569,.)	71(71,.)	12.2(12.2,.)	1.4(1.4,.)	45 (22, 31, 4, 9, 2, 2, 16)

Unit-level

FACILITY		LOCATION								
FACILITY RANK	ORGID	LOCATION RANK*	LOCATION	CDC LOCATION TYPE	EVENT	DEVICE DAYS	DU	CAD	SIR	TOTAL NO. PATHOGENS (%EC,YS,PA,KPO,FS,PM,ES)
1	001	1	1073	IN:ACUTE:CC:B	14	1783	48%	6.2	1.78	16 (31, 6, 25, 13, 0, 0, 0)
		1	11001	IN:ACUTE:CC:S	10	1443	64%	6.2	2.66	10 (30, 10, 0, 10, 10, 0, 0)
		3	1004	IN:ACUTE:CC:M_PED	4	197	18%	3.8	.	5 (20, 0, 20, 0, 40, 0, 0)
		4	10011	IN:ACUTE:STEP	5	964	13%	3.2	2.72	5 (20, 80, 0, 0, 0, 0, 0)
		5	1012	IN:ACUTE:WARD:M	3	533	6%	2	2.96	4 (50, 0, 25, 0, 0, 0, 0)
		6	1002	IN:ACUTE:CC:M	6	1941	78%	1.5	1.34	6 (0, 50, 17, 0, 17, 0, 0)

TAP Tools:
2. Assess: Facility Assessment Tools

CAUTI

I. General Infrastructure, Capacity, and Processes	Response	Comments (and/or "As Evidenced By")
1. Is senior leadership involved in CAUTI prevention activities?	◯Yes ◯No ◯Unk	
2. Is unit-level leadership involved in CAUTI prevention activities?	◯Yes ◯No ◯Unk	
3. Does your facility currently have a team/work group focusing on CAUTI prevention?	◯Yes ◯No ◯Unk	
4. Does your facility have a staff person with dedicated time to coordinate CAUTI prevention activities?	◯Yes ◯No ◯Unk	
5. Does your facility have a nurse champion for CAUTI prevention activities?	◯Yes ◯No ◯Unk	

II. Appropriate Indications for Indwelling Urinary Catheter Insertion	Response Choices						Comments (and/or "As Evidenced By")
	Never	Rarely	Sometimes	Often	Always	Unknown	
1. Do ordering providers document an indication for indwelling urinary catheters at your facility/unit?	◯	◯	◯	◯	◯	◯	
2. Do ordering providers use indwelling urinary catheters for appropriate indications?	◯	◯	◯	◯	◯	◯	
3. Do nurses use alternative strategies for management of urinary incontinence (e.g., external catheters, bedside commodes, scheduled toileting, garments/pads)?	◯	◯	◯	◯	◯	◯	
4. Do nurses use bladder ultrasound scanners to confirm urinary retention before placing or replacing urinary catheters?	◯	◯	◯	◯	◯	◯	
5. Do nurses use bladder ultrasound scanners with intermittent catheterization for management of postoperative urinary retention?	◯	◯	◯	◯	◯	◯	

TAP Tools:
3. Prevent: Implementation Guides

Pairing results of assessment with implementation tool allows facilities to identify and utilize existing infection prevention methods that most directly meet their needs

1

5. Does your facility have a *nurse* champion for CAUTI prevention activities?	6. Does your facility have a *physician* champion for CAUTI prevention activities?
# of Responses per Question:	
108	105
Yes:	
49%	15%
No:	
30%	36%
Unknown:	
21%	49%

2

I. General Infrastructure, Capacity, and Processes

ENGAGEMENT OF LEADERSHIP, CHAMPIONS, AND STAFF
Engage the Senior Executive Module - Comprehensive Unit-based Safety Program (CUSP) Toolkit Curriculum focused on the role and responsibilities of senior executives, from the Agency for Healthcare Research and Quality (AHRQ)
Strategies and Tips for Nurse Engagement Strategies to engage nurses as champions in CAUTI prevention, from catheterout.org
Strategies and Tips for Physician Engagement Strategies to engage physicians as champions in CAUTI prevention, from catheterout.org
Presentation to Nurse Manager & Case Manager (or Unit Champion) Agenda for presentation to unit champion, from the On the CUSP: Stop CAUTI Implementation Guide

3

Implementation of TAP Strategy

- **CMS Quality Innovation Network-Quality Improvement Organizations (QIN-QIOs) during 11th Scope of Work**
  - All 14 QIN-QIOs for CAUTI (>1,350 hospitals in 50 states)
  - 10 QIN-QIOs (28 states) for CDI
- **State Health Departments**
- **Health Research & Educational Trust Collaboration**
  - Engaging Partners in Infection Prevention and Control in Acute Care Hospitals
- **Direct outreach to hospitals (in collaboration with SHDs) to direct them to state, regional, and national initiatives**
- **Facilities, healthcare systems, and group users**
  - As of Oct. 1, 2015 > 20,000 TAP reports run in NHSN

TAP Strategy 'How To' Guide

for the *Group User*

Targeted Assessment for Prevention: *Using Data for Action*

www.cdc.gov/hai/prevent/tap.html

The Targeted Assessment for Prevention (TAP) Strategy is a framework for quality improvement that offers a focused approach to infection prevention for healthcare facilities, healthcare systems, public health, and quality improvement partners. This strategy can be used to identify facilities and units with a high burden of healthcare-associated infections (HAIs) so that specific gaps in infection prevention can be identified and addressed. The TAP strategy incorporates the TAP reports generated in CDC's National Healthcare Safety Network (NHSN) along with standardized assessment tools and accompanying implementation strategies.

This guide has been developed to facilitate implementation of the TAP Strategy by providing guidance and tips for success. This version offers guidance for the Group User – including Quality Innovation Networks-Quality Improvement Organizations (QIN-QIOs), State Health Departments, Healthcare Systems, and other quality improvement partners that have access to NHSN data. An additional version of the 'How To' Guide is available for the individual Facility User.

This guide will address the following steps of the TAP strategy:

I. Running TAP Reports
II. Interpreting TAP Reports to Target Facilities and Units
III. Communicating TAP Report Data to Engage Facility Leadership and Administrators
IV. Assessing the Gaps in Infection Prevention
V. Implementing Infection Prevention Strategies

State Partner Sharing

- **Using data to identify regions, facilities, & locations to target prevention efforts and engage facilities**
  - Practical implementation
  - Novel approaches
  - Overcoming challenges and barriers
  - Lessons learned

Tennessee's Implementation of CDC's Targeted Assessment for Prevention

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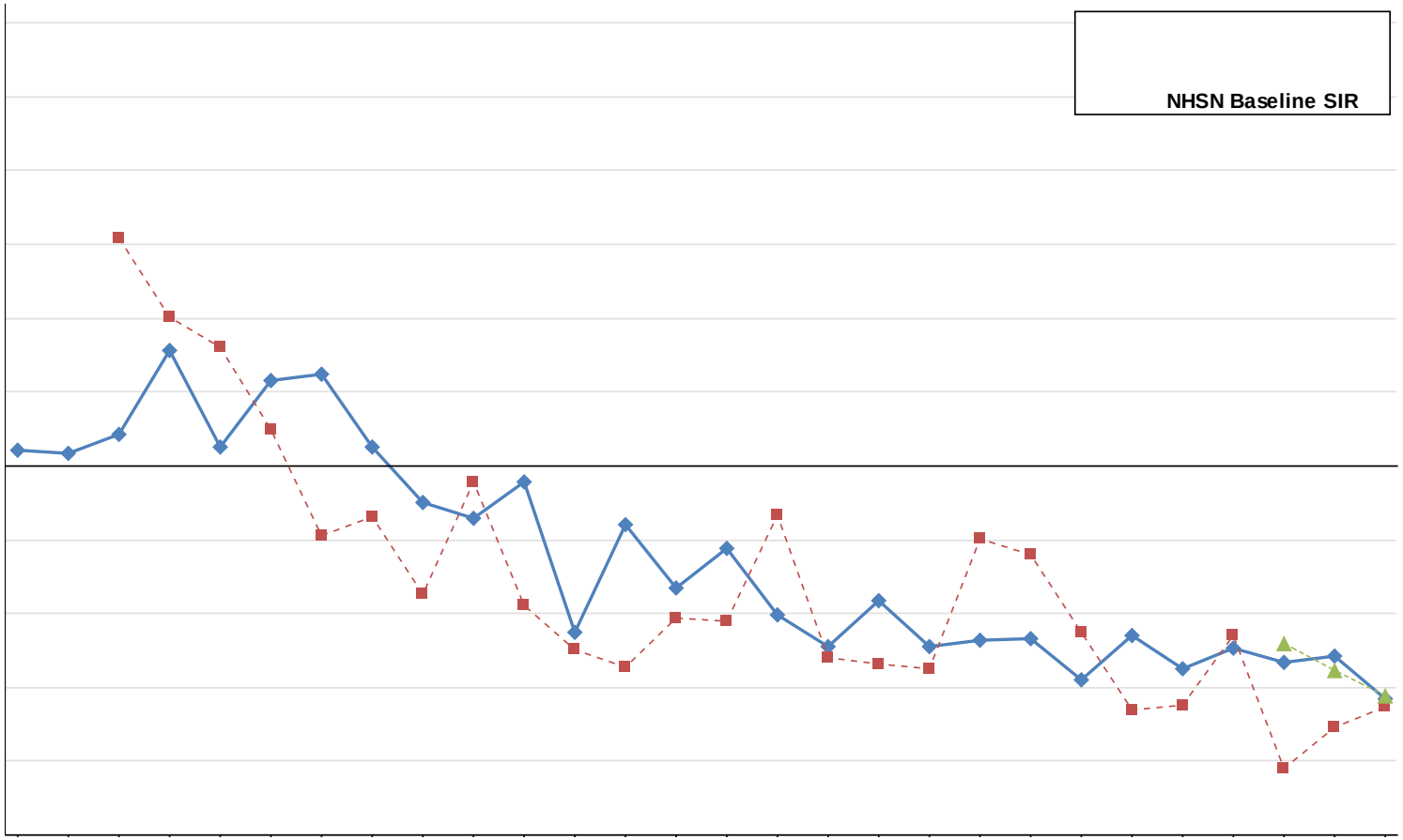
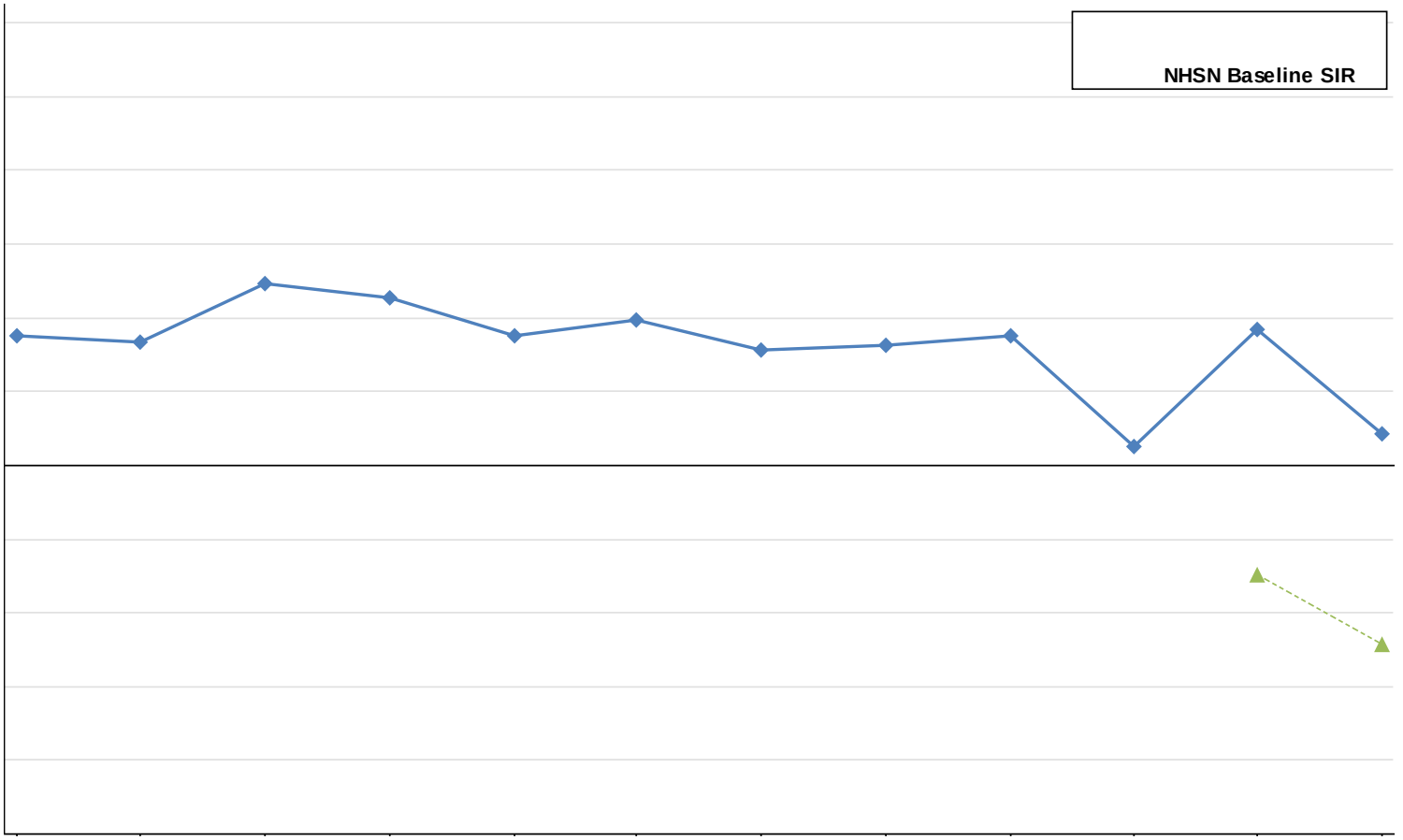
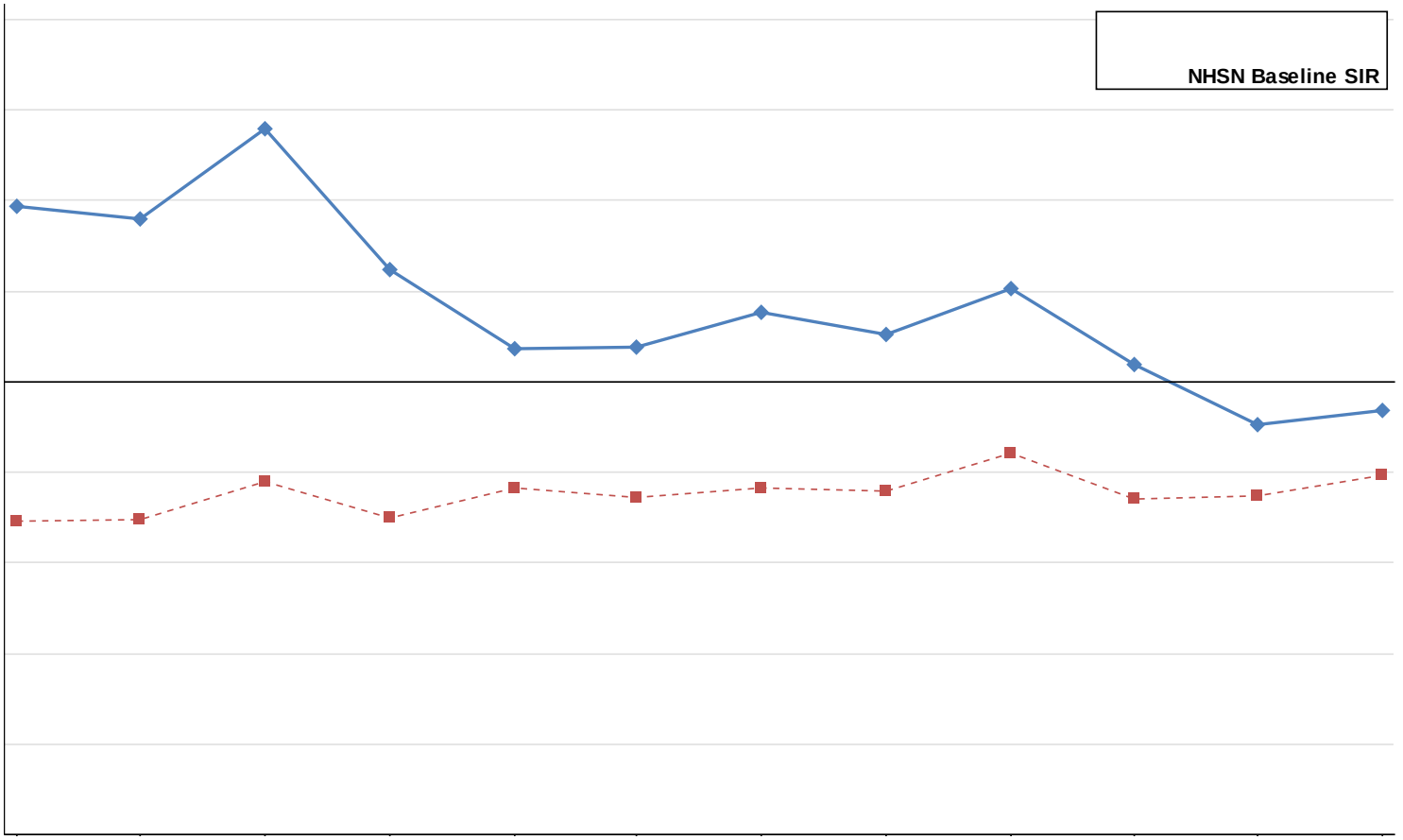
CLABSI SIR, TN: 2008-2014



CAUTI SIR, TN: 2012-2014



LabID Event SIR: MRSA & CDI, TN: 2012-2014



HAI Progress Report: Tennessee, 2013

HAI TYPE	# OF TENNESSEE HOSPITALS THAT REPORTED DATA TO CDC'S NHSN, 2013 Total Hospitals in State: 154+	2013 STATE SIR vs. 2012 State SIR‡	2013 STATE SIR vs. 2013 Nat'l SIR	2013 STATE SIR vs. Nat'l Baseline‡	2013 STATE SIR	2013 NAT'L SIR
CLABSI Nat'l Baseline: 2008	95	↓ 14%	↓ 10%	↓ 52%	0.49	0.54
CAUTI Nat'l Baseline: 2009	94	↓ 10%	↑ 17%	↑ 24%	1.24	1.06
SSI, Abdominal Hysterectomy Nat'l Baseline: 2008	87	⇧ 2%	⇧ 3%	⇩ 11%	0.89	0.86
SSI, Colon Surgery Nat'l Baseline: 2008	95	⇧ 2%	⇩ 1%	⇩ 9%	0.91	0.92
MRSA Bacteremia Nat'l Baseline: 2011	115	2012 SIR not available	↑ 24%	↑ 13%	1.13	0.92
C. difficile Infections Nat'l Baseline: 2011	115	2012 SIR not available	↓ 16%	↓ 23%	0.77	0.90

http://www.cdc.gov/hai/pdfs/stateplans/factsheets/tn.pdf

CAD (or Number Needed to Prevent)

CAD = Cumulative Attributable Difference

= $Obs_{FACILITY}$ - ($Exp_{FACILITY}$*HHS Goal SIR)

2013 HHS Goals	**SIR=0.75 (SSI, CAUTI, MRSA)**
	SIR=0.50 (CLABSI)
	SIR=0.70 (CDI)

See also: Soe, MM et al. A Mathematical Model to Prioritize Healthcare Facilities for High Prevention Impact on Healthcare-Associated Infections. CSTE Annual Conference 2013.
https://cste.confex.com/cste/2013/webprogram/Paper2070.html

Soe M, Gould CV, Pollock D, Edwards J. Targeted assessment for prevention of healthcare-associated infections: a new prioritization metric. Infect Control Hosp Epidemiol 2015 (in press).

http://www.cdc.gov/hai/prevent/tap.html

Targeted Assessment for Prevention (TAP) Strategy

Cumulative Attributable Difference (CAD)

$= Obs_{FACILITY} - (Exp_{FACILITY} * HHS\ Goal\ SIR)$

→Goal SIR = 1

=18 – (10*1.0)

=8

→HHS Goal SIR = 0.7

=18 – (10*0.7)

=11

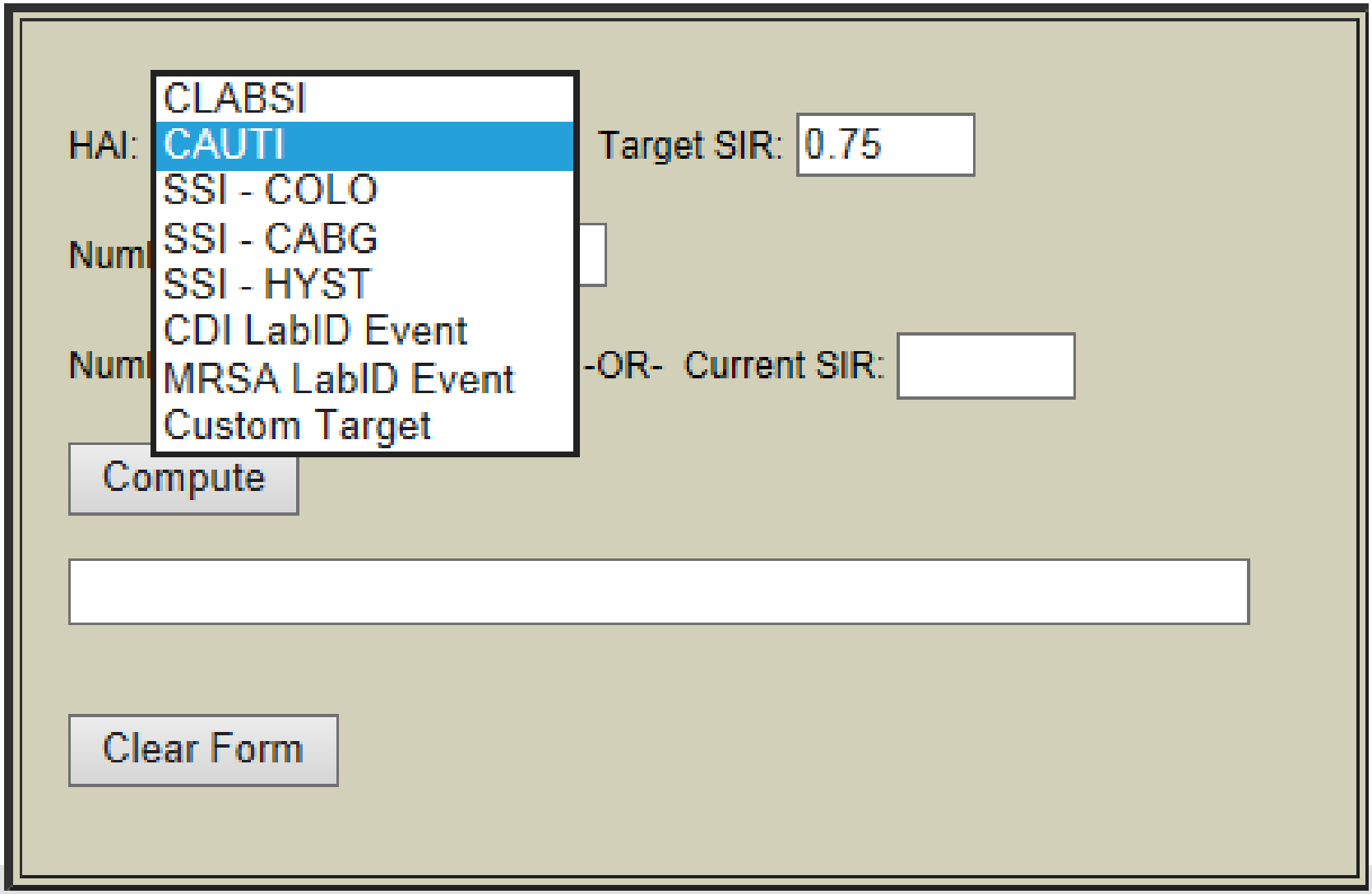
Facility-Specific HAI Prevention Progress Report | Tennessee, 2014-Q4 (10/01/2014 - 12/31/2014)

TN Department of Health

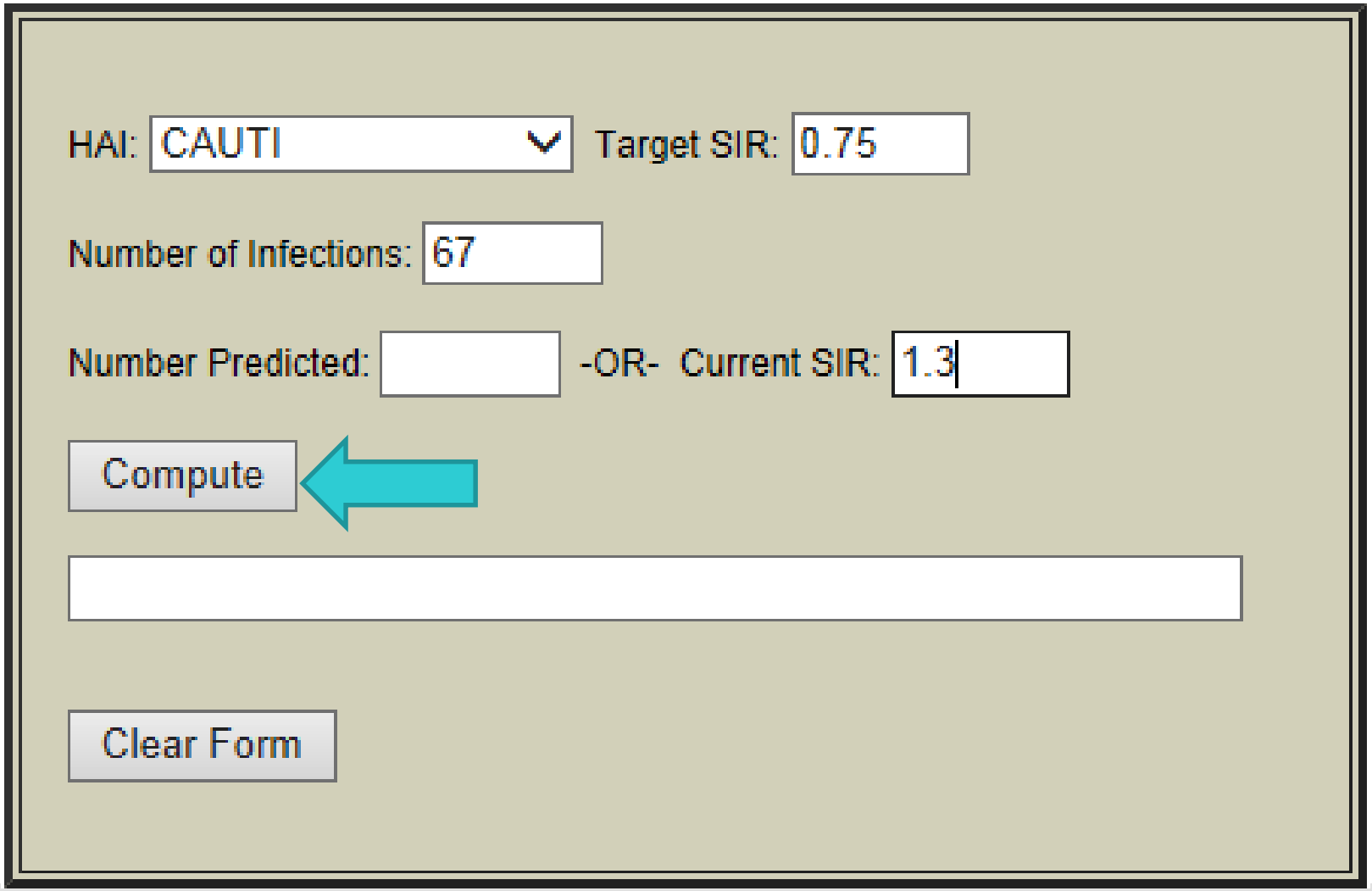
Facility Name: Hospital A
Facility Code: XX

		Facility SIR and 95% Confidence Interval*		Number of Infections			Statewide Comparison	
HAI	Type/Unit	SIR	CI	Actual	Must Prevent To Reach Goal**	SIR Goal**	TN SIR (2014-Q4)	Top 5 Most Preventable Infections? (2014-Q4)
CAUTI	A/P ICUs	1.41	(1.04, 1.87)	45	13	0.75	1.09	YES
	A/P Wards	0.82	(0.57, 1.14)	32	12	0.75	0.52	YES
CLABSI	A/P ICUs	0.57	(0.31, 0.94)	13	.	0.50	0.37	NO
	A/P Wards	0.67	(0.21, 1.61)	4	1	0.50	0.38	NO
	NICUs	0.33	(0.11, 0.80)	4	.	0.50	0.35	NO
LabID	CDI	1.56	(0.89, 2.55)	14	5	0.70	0.80	YES
	MRSA	2.29	(1.59, 3.19)	32	18	0.75	0.96	YES
SSI	CABG	0.26	(0.11, 0.54)	6	.	0.50	0.46	NO
	COLO	1.29	(0.63, 2.36)	9	2	0.75	0.78	NO
	HYST	1.00	(0.05, 4.93)	1	.	0.75	0.75	NO

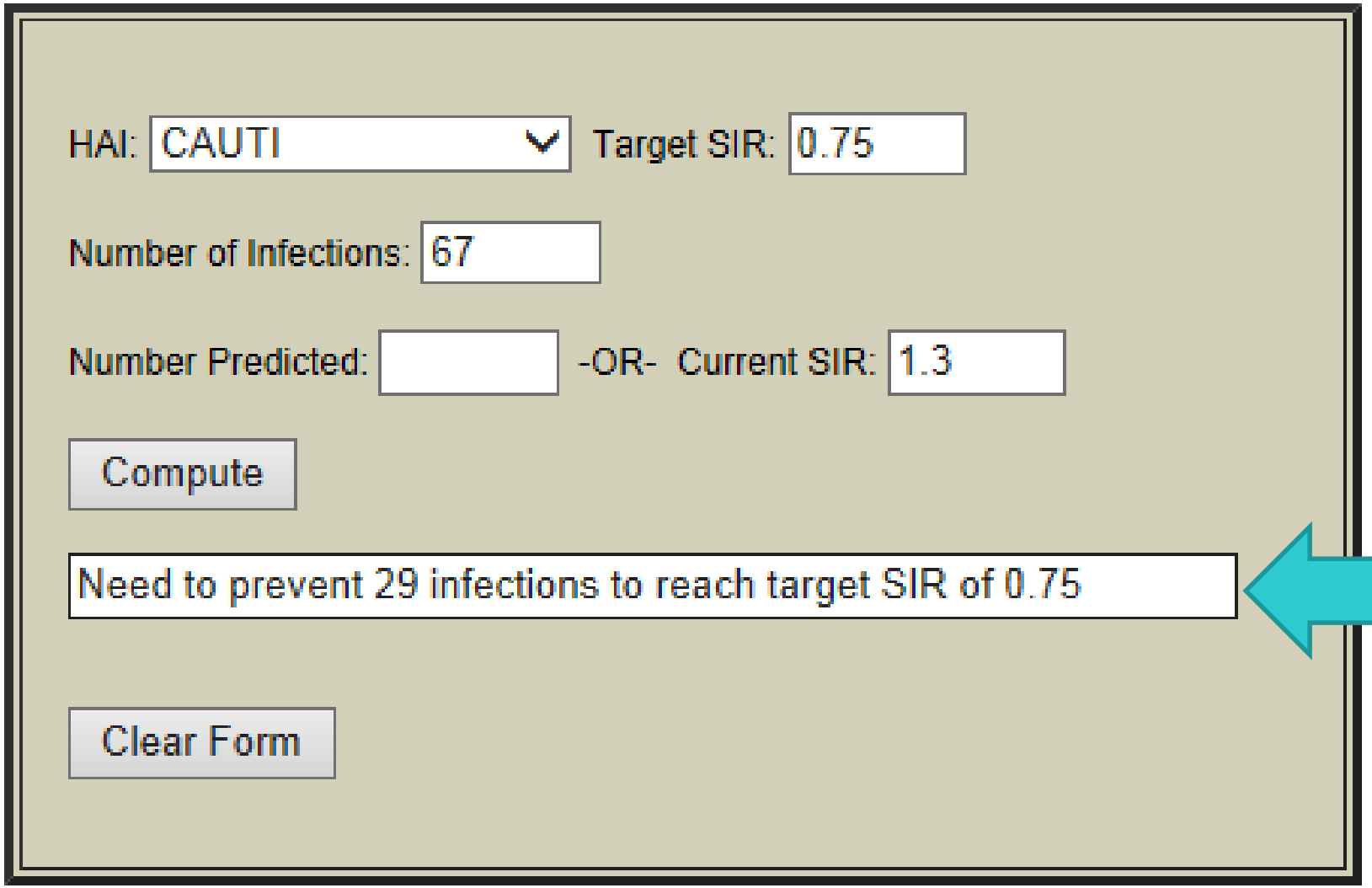
TN HAI Prevention Calculator



TN HAI Prevention Calculator



TN HAI Prevention Calculator



TN Department of Health

http://tn.gov/health/article/hai-prevention-calculator

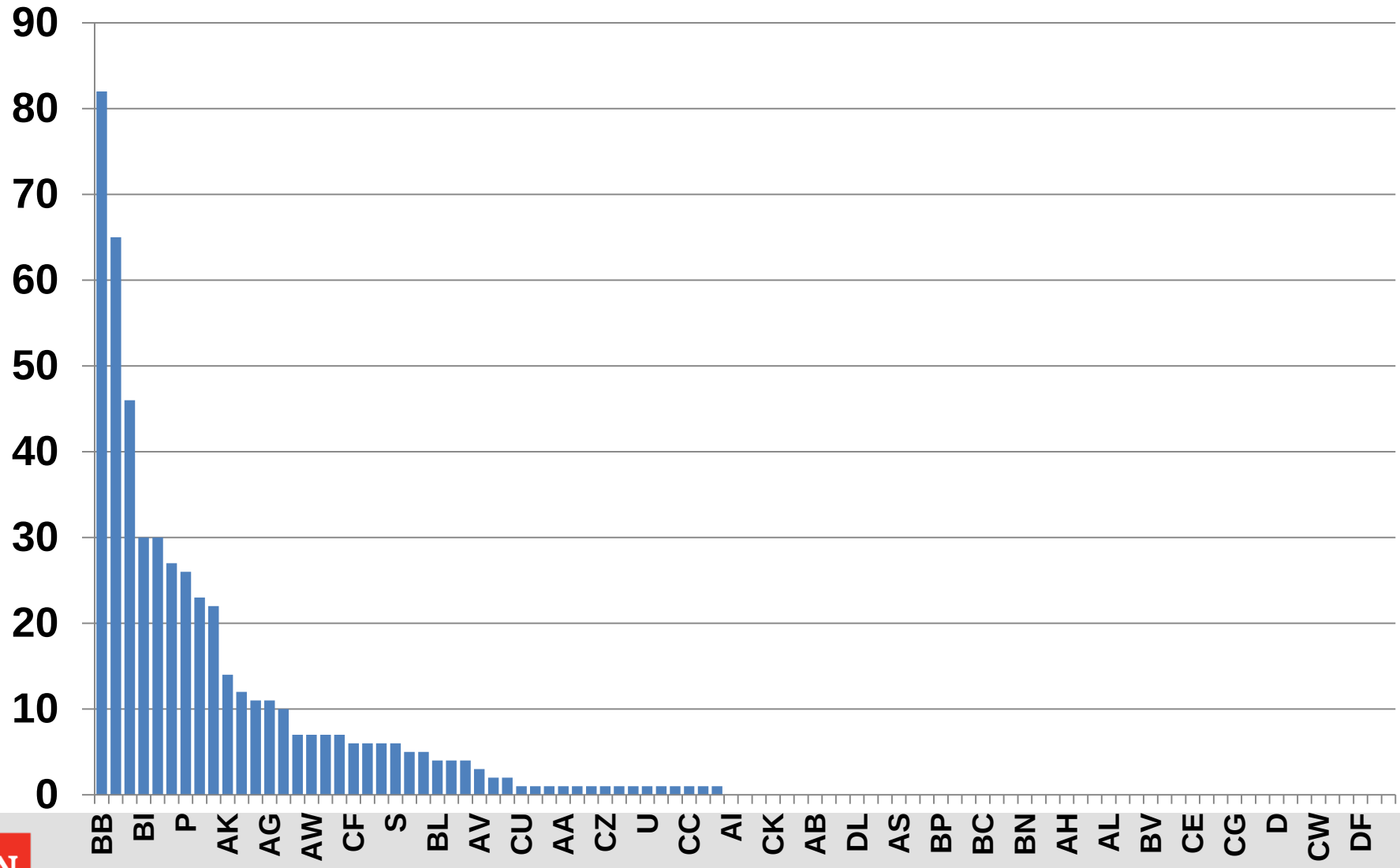
What's possible in TN? *For CAUTI (2013):*

- Top 5 comprise ~50% of "excess" infections
  - Variety of facility types/sizes in this group

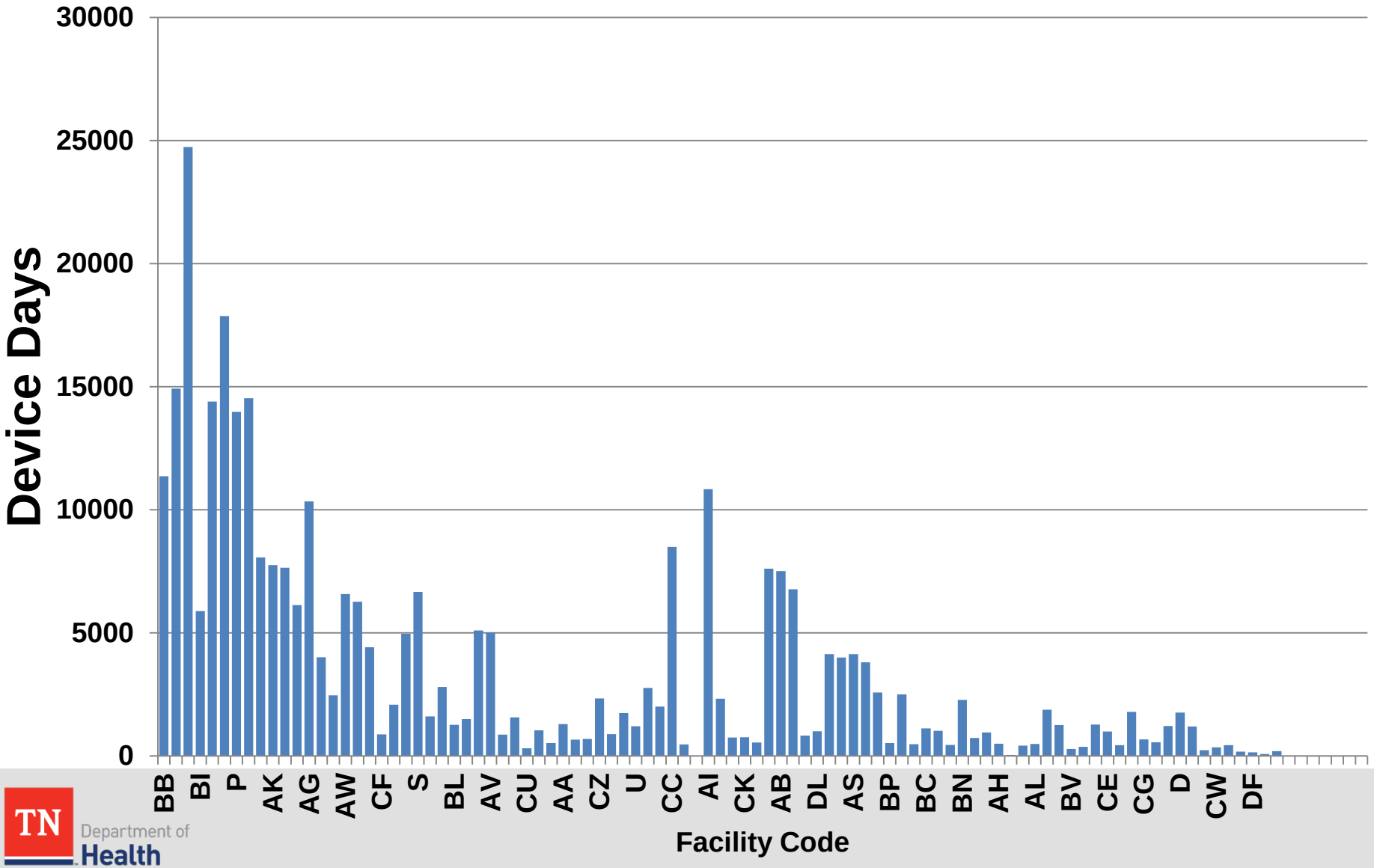
- Hypothetically, if each of these 5 facilities reached the HHS goal:
  - TN SIR of 1.38 → TN SIR of 1.00

- Alternately: Targeting Top 5 SIRs?
  - Eliminating ALL infections from these facilities:
    - TN SIR of 1.17

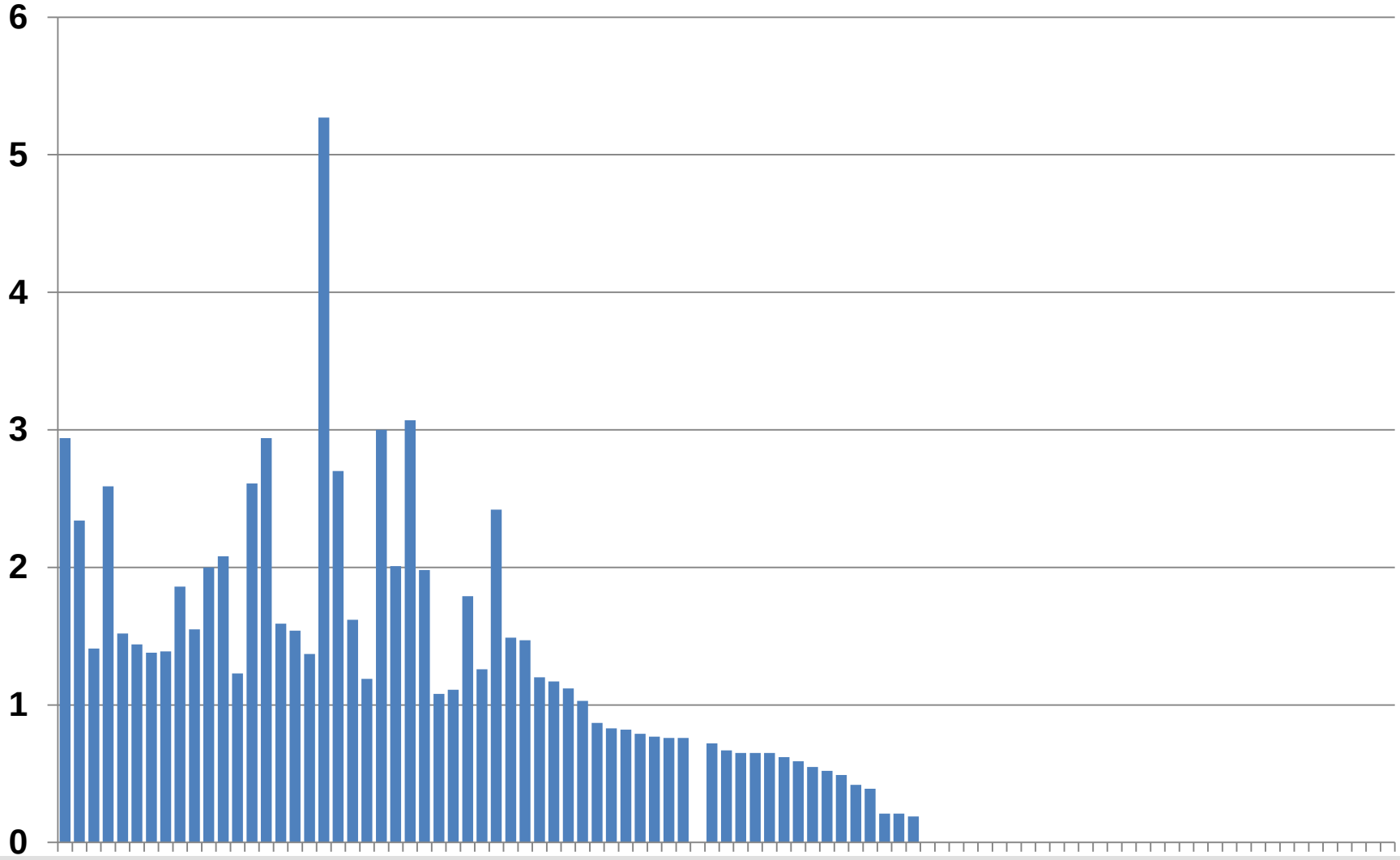
NNTP (CAD), CAUTI (TN 2013)



Device Days, CAUTI (TN 2013)

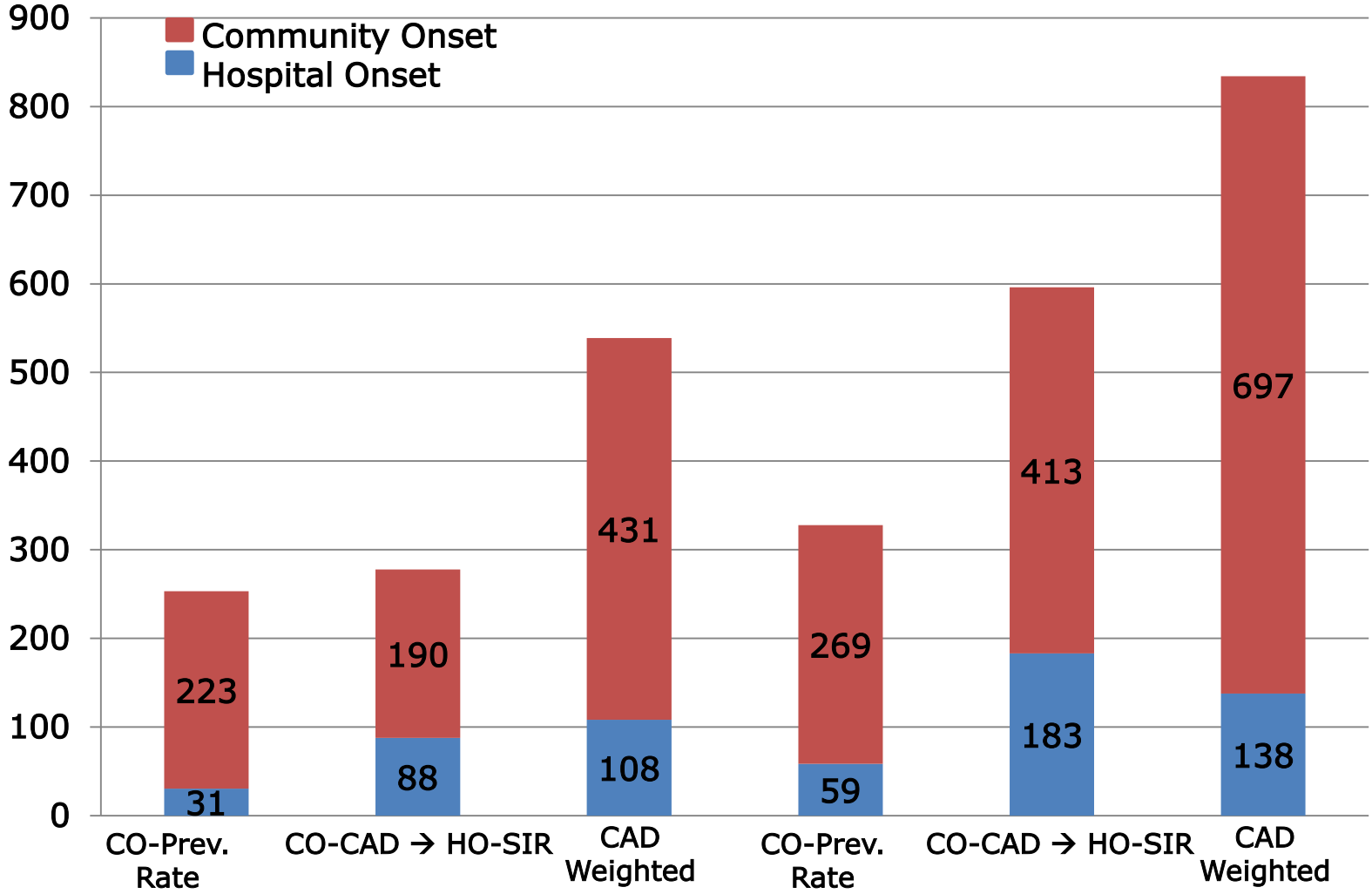


SIRs, CAUTI (TN 2013)



TN Department of Health

Impact of Targeting Methodology: Number of CDI's Prevented



---- Top 5 Ranked Hospitals ----

---- Top 10 Ranked Hospitals ----

TAP Strategy

- Greatest return on investment
- NNTP or CAD easy to comprehend by front line staff (concrete number)
- Metric able to be used for small facilities

Our thoughts:

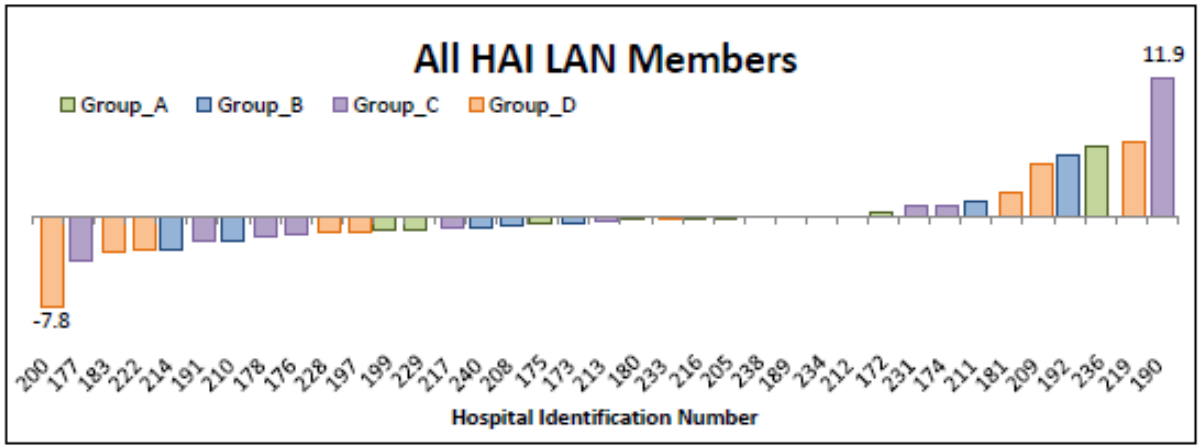
- Expand TAP strategy to CO-CDI and CO-MRSA and examining total-CAD, not just HO-CAD
- Use CO-CAD metric on regional level (e.g., healthcare coalitions) as a metric for all healthcare facilities across spectrum of healthcare PLUS incentives

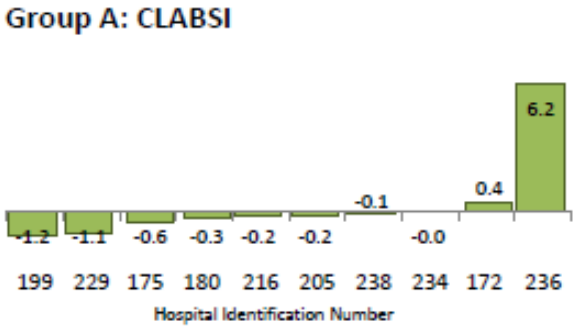
Communicating with TAP Tools

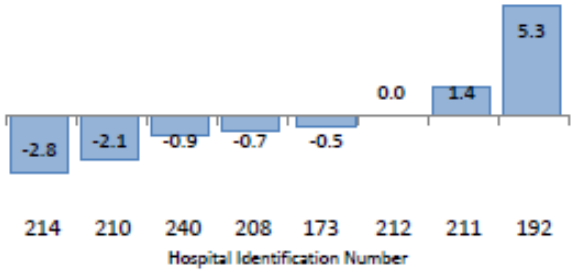
Jamie Moran, MSN, RN, CIC
QI Consultant, Qualis Health

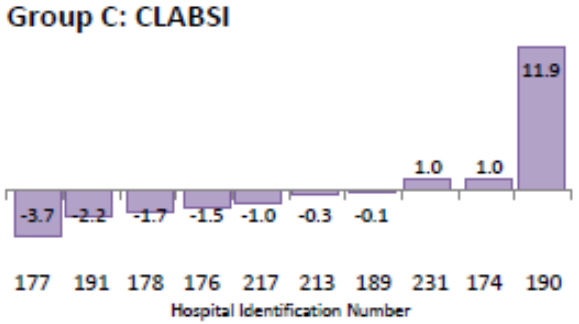
November 2015

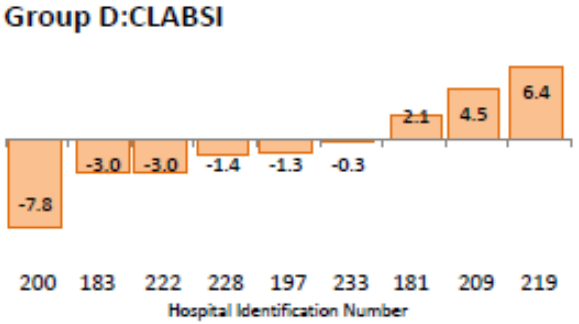
Targeting Hospitals: CAD Bar



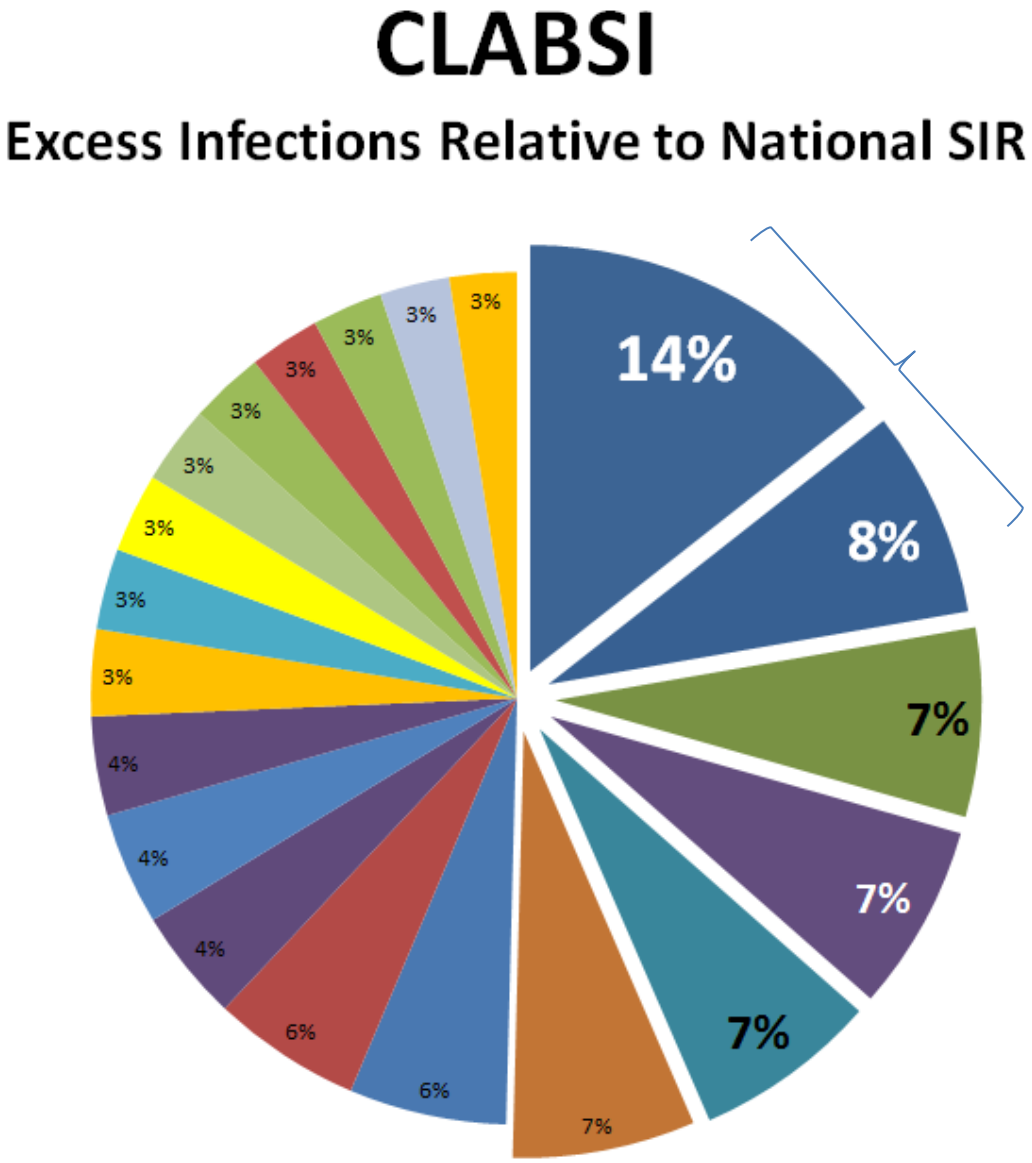








Targeting Units: Wheel of Misfortune



50% of excess CLABSIs occurred in just 6 of 243 monitored units in WA State.

22% occurred in 2 units of the same hospital

Assessing Facilities: FAT Graphic

Catheter-Associated Urinary Tract Infection (CAUTI) Prevention Assessment

24

Assessments Completed

17 by nurses
4 by physicians and other prescribers
1 by administrative leaders
2 by unknown roles

65.9%

Affirmation of
General Infrastructure, Capacity and Processes for Prevention

65.8% affirmed by nurses
66.7% affirmed by prescribers
76.0% affirmed by administrative leaders

2.45

GPA for Perceptions of
Appropriate Indicators of Catheter Insertion

2.62 GPA scored by nurses
2.13 GPA scored by prescribers
1.70 GPA scored by administrative leaders

2.66

GPA for Perceptions of
Aseptic Urinary Catheter Insertion

2.83 GPA scored by nurses
2.31 GPA scored by prescribers
2.50 GPA scored by administrative leaders

GPA ("Grade Point Average"): GPA is the average rating, where ("Always" = 4.0, "Often" = 3.0, "Sometimes" = 2.0, "Rarely" = 1.0, and "Never" = 0.0). "Unknown" is scored as the equivalent of 0.0, and "Not Applicable" responses are excluded from the GPA calculation.

CAUTIs in unit 5D ICU

12
Number of CAUTIs in last 12 months

4.3
Number of expected CAUTIs in last 12 months

2.80
CAUTI Standardized Infection Ratio (SIR)
[1.0 is the expected ratio] Lower is better.

1.06
National CAUTI Standardized Infection Ratio (SIR)*

1.01
Washington State CAUTI Standardized Infection Ratio (SIR)*

** 2013 data published by CDC January, 2015*

3.20

GPA for Perceptions of
Proper Urinary Catheter Maintenance

3.56 GPA scored by nurses
1.83 GPA scored by prescribers
3.67 GPA scored by administrative leaders

2.86

GPA for Perceptions of
Timely Removal of Urinary Catheters

2.87 GPA scored by nurses
3.00 GPA scored by prescribers
2.82 GPA scored by administrative leaders

1.91

GPA for Perceptions of
Laboratory and Medication Practices

2.07 GPA scored by nurses
2.44 GPA scored by prescribers
0.25 GPA scored by administrative leaders

Top 10 Opportunities

1. Assess competency of bladder scanner use
2. Document an indication for insertion in the ED
3. Identify a physician CAUTI champion
4. Assess competency of catheter insertion at least annually
5. Require at 2 staff people to be present for insertions
6. Require orders for insertion in the ED
7. Use automatic stop orders for urinary catheters
8. Identify a staff person with time for CAUTI coordination
9. Do not order urine cultures on asymptomatic patients
10. Document indication, dose and duration of antimicrobials

HAI Ebola Grantees' Meeting
Reactor Panel

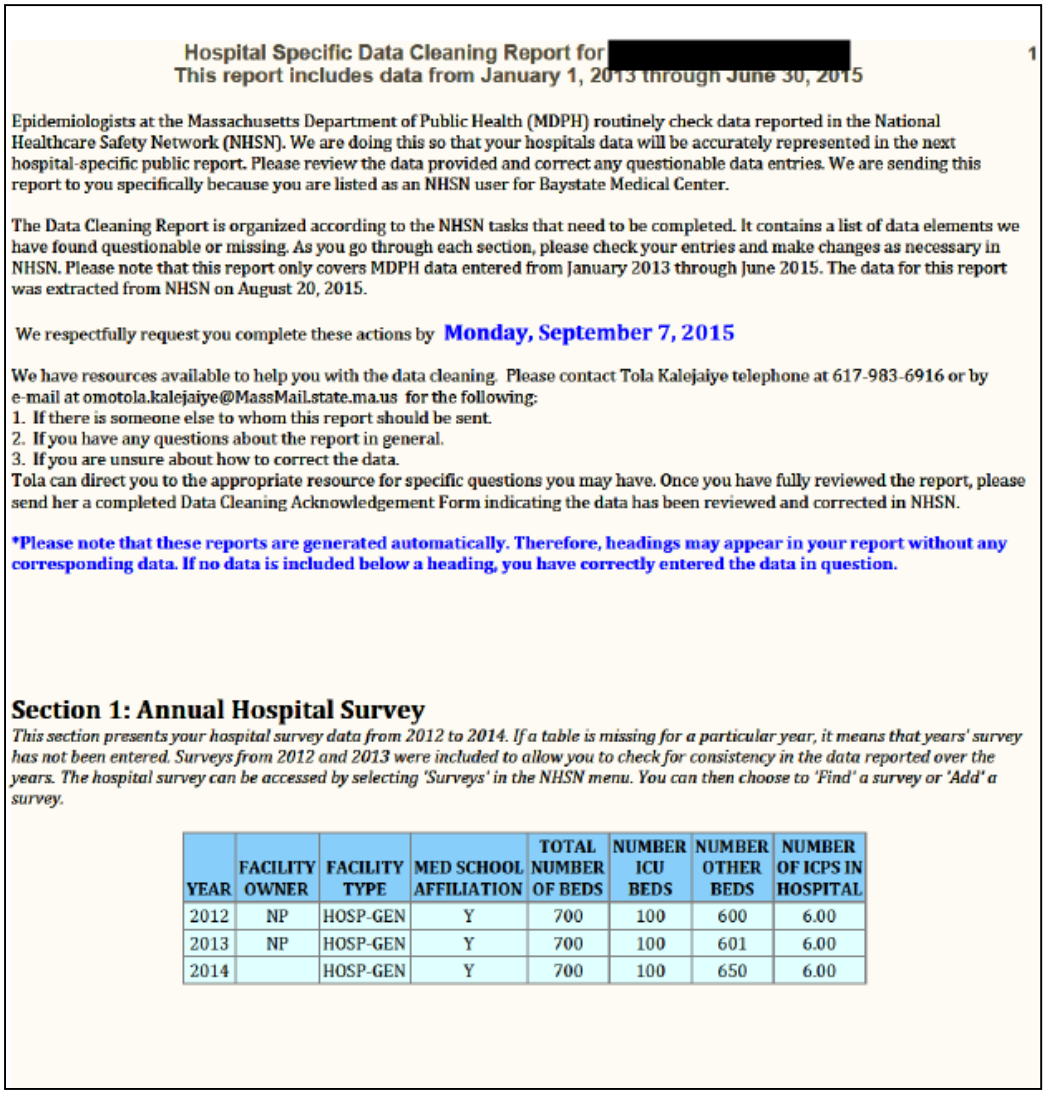
Massachusetts Experience

Using NHSN Data for Action

Data For Action

- Quarterly data cleaning reports
- “One pagers”
- Collaboratives
- HAI Annual Report
- NHSN Data Validation – VHYS
- Targeted Assessment for Prevention (TAP) Strategy Reports
- Hemovigilance

Quarterly Data Cleaning Reports



Hospital Specific Data Cleaning Report for [redacted] 1
This report includes data from January 1, 2013 through June 30, 2015

Epidemiologists at the Massachusetts Department of Public Health (MDPH) routinely check data reported in the National Healthcare Safety Network (NHSN). We are doing this so that your hospitals data will be accurately represented in the next hospital-specific public report. Please review the data provided and correct any questionable data entries. We are sending this report to you specifically because you are listed as an NHSN user for Baystate Medical Center.

The Data Cleaning Report is organized according to the NHSN tasks that need to be completed. It contains a list of data elements we have found questionable or missing. As you go through each section, please check your entries and make changes as necessary in NHSN. Please note that this report only covers MDPH data entered from January 2013 through June 2015. The data for this report was extracted from NHSN on August 20, 2015.

We respectfully request you complete these actions by **Monday, September 7, 2015**

We have resources available to help you with the data cleaning. Please contact Tola Kalejaiye telephone at 617-983-6916 or by e-mail at omotola.kalejaiye@MassMail.state.ma.us for the following:
1. If there is someone else to whom this report should be sent.
2. If you have any questions about the report in general.
3. If you are unsure about how to correct the data.

Tola can direct you to the appropriate resource for specific questions you may have. Once you have fully reviewed the report, please send her a completed Data Cleaning Acknowledgement Form indicating the data has been reviewed and corrected in NHSN.

***Please note that these reports are generated automatically. Therefore, headings may appear in your report without any corresponding data. If no data is included below a heading, you have correctly entered the data in question.**

Section 1: Annual Hospital Survey

This section presents your hospital survey data from 2012 to 2014. If a table is missing for a particular year, it means that years' survey has not been entered. Surveys from 2012 and 2013 were included to allow you to check for consistency in the data reported over the years. The hospital survey can be accessed by selecting 'Surveys' in the NHSN menu. You can then choose to 'Find' a survey or 'Add' a survey.

YEAR	FACILITY OWNER	FACILITY TYPE	MED SCHOOL AFFILIATION	TOTAL NUMBER OF BEDS	NUMBER ICU BEDS	NUMBER OTHER BEDS	NUMBER OF ICPS IN HOSPITAL
2012	NP	HOSP-GEN	Y	700	100	600	6.00
2013	NP	HOSP-GEN	Y	700	100	601	6.00
2014		HOSP-GEN	Y	700	100	650	6.00

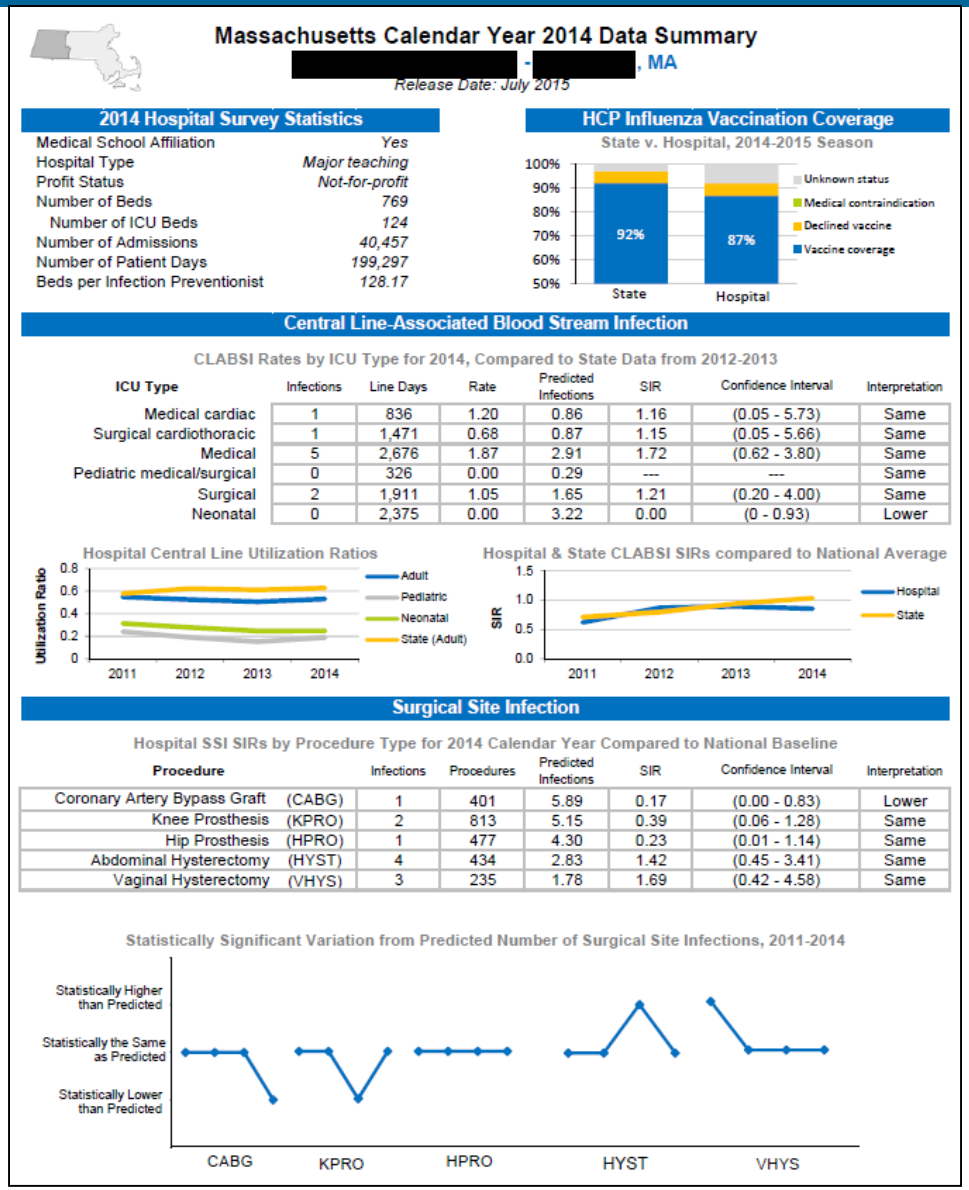
- Sent to MA hospital infection preventionists (IPs) quarterly, to reconcile NHSN data
- Report aligns with CDC's hospital internal validation guidance

HAI Annual Report

- Statewide and hospital-specific data
- Posted on MDPH website: http://www.mass.gov/eohhs/gov/departments/dph/programs/hcq/healthcare-quality/health-care-facilities/hospitals/healthcare-assoc-infections/healthcare-associated-infections-reports.html

Hospital "One Pagers"

- Hospital-specific HAI NHSN annual summary data for facility use
- Statewide Hospital Summary



Massachusetts Calendar Year 2014 Data Summary

[redacted] - [redacted], MA

Release Date: July 2015

2014 Hospital Survey Statistics

Medical School Affiliation	*Yes*
Hospital Type	*Major teaching*
Profit Status	*Not-for-profit*
Number of Beds	*769*
Number of ICU Beds	*124*
Number of Admissions	*40,457*
Number of Patient Days	*199,297*
Beds per Infection Preventionist	*128.17*

HCP Influenza Vaccination Coverage

State v. Hospital, 2014-2015 Season

Central Line-Associated Blood Stream Infection

CLABSI Rates by ICU Type for 2014, Compared to State Data from 2012-2013

ICU Type	Infections	Line Days	Rate	Predicted Infections	SIR	Confidence Interval	Interpretation
Medical cardiac	1	836	1.20	0.86	1.16	(0.05 - 5.73)	Same
Surgical cardiothoracic	1	1,471	0.68	0.87	1.15	(0.05 - 5.66)	Same
Medical	5	2,676	1.87	2.91	1.72	(0.62 - 3.80)	Same
Pediatric medical/surgical	0	326	0.00	0.29	---	---	Same
Surgical	2	1,911	1.05	1.65	1.21	(0.20 - 4.00)	Same
Neonatal	0	2,375	0.00	3.22	0.00	(0 - 0.93)	Lower

Hospital Central Line Utilization Ratios

Hospital & State CLABSI SIRs compared to National Average

Surgical Site Infection

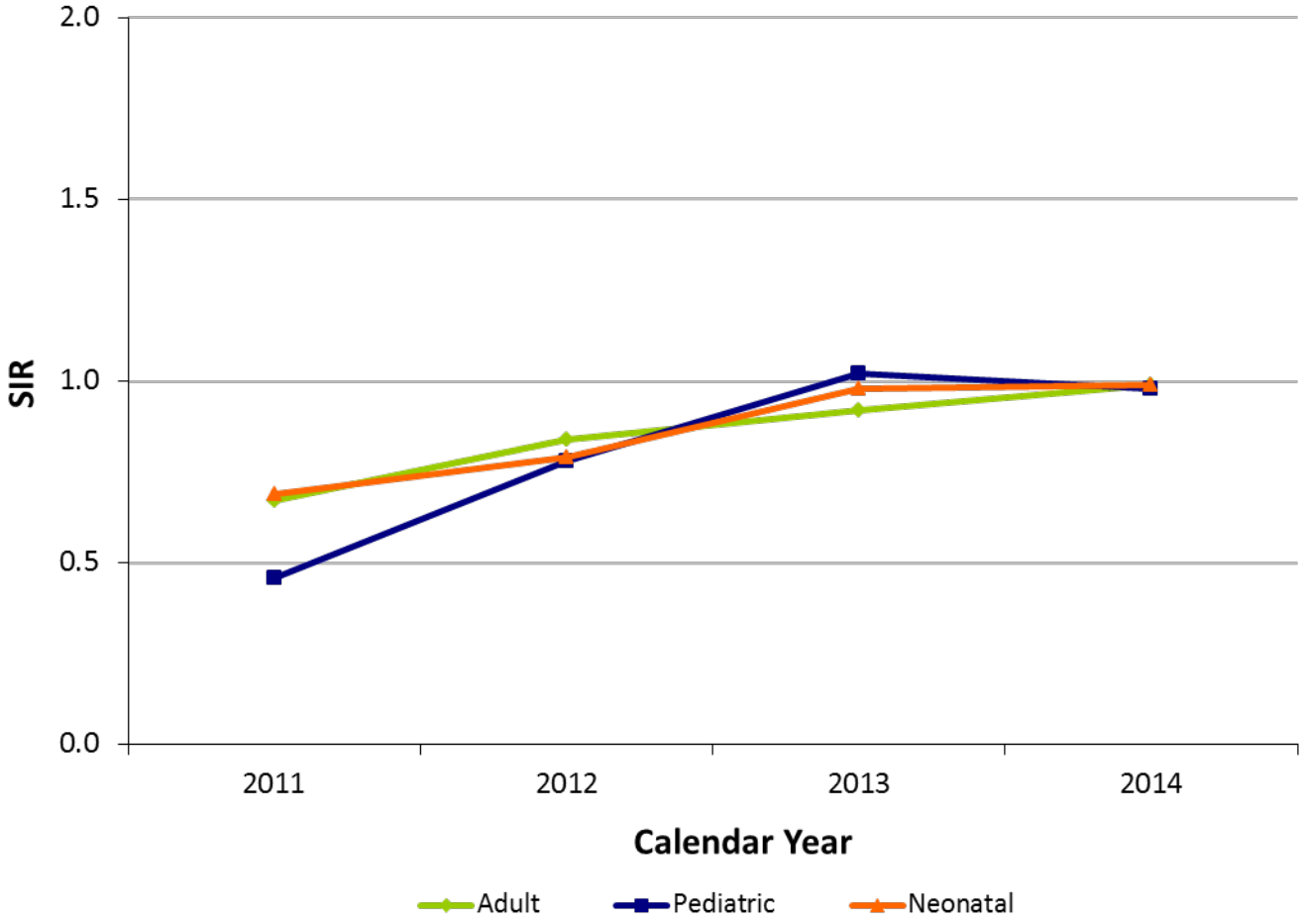
Hospital SSI SIRs by Procedure Type for 2014 Calendar Year Compared to National Baseline

Procedure		Infections	Procedures	Predicted Infections	SIR	Confidence Interval	Interpretation
Coronary Artery Bypass Graft	(CABG)	1	401	5.89	0.17	(0.00 - 0.83)	Lower
Knee Prosthesis	(KPRO)	2	813	5.15	0.39	(0.06 - 1.28)	Same
Hip Prosthesis	(HPRO)	1	477	4.30	0.23	(0.01 - 1.14)	Same
Abdominal Hysterectomy	(HYST)	4	434	2.83	1.42	(0.45 - 3.41)	Same
Vaginal Hysterectomy	(VHYS)	3	235	1.78	1.69	(0.42 - 4.58)	Same

Statistically Significant Variation from Predicted Number of Surgical Site Infections, 2011-2014

HAI Annual Report – Example
CLABSI SIR

- Massachusetts has maintained a statewide SIR at or below 1.0. There has not been a statistically significant change in the statewide CLABSI SIR over time.



HAI Annual Report – Example
Summary of SSI Results

VHYS

Significantly Higher than Predicted

The number of infections reported is higher than the number of predicted infections.

HYST

Same as Predicted

The number of infections reported is the same as the number of predicted infections.

CABG
KPRO
HPRO

Significantly Lower than Predicted

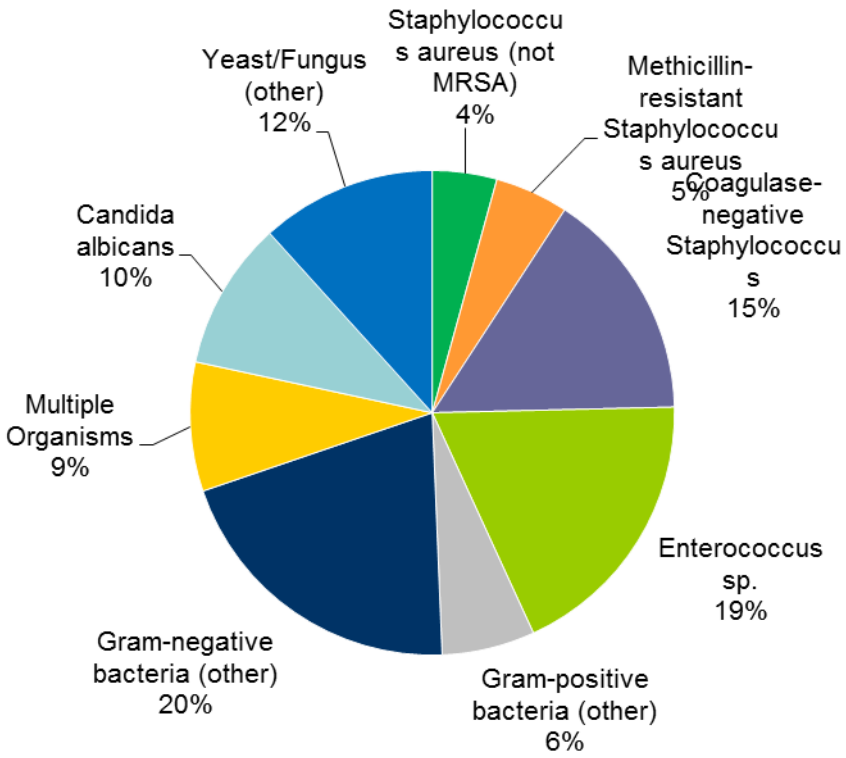
The number of infections reported is lower than the number of predicted infections.

HAI Annual Report - Example
Adult & Pediatric CLABSI ICU Pathogens for 2013 and 2014

Calendar Year 2013

January 1, 2013 – December 31, 2013

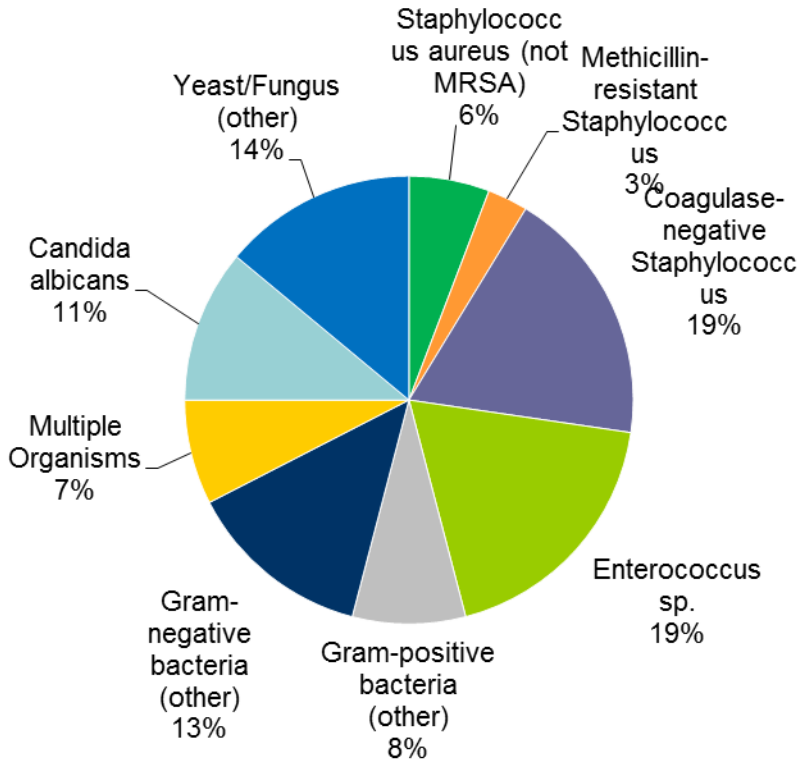
n=162



Calendar Year 2014

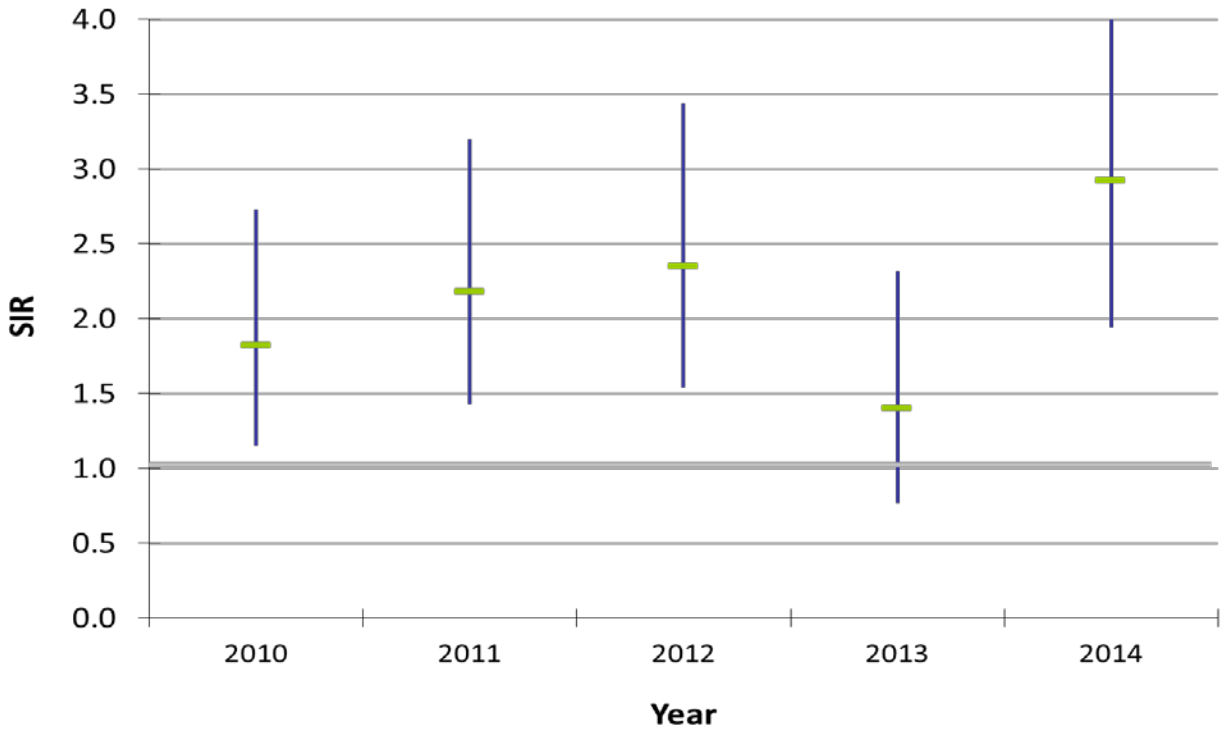
January 1, 2014 – December 31, 2014

n=161



Statewide VHYS SIR

- Massachusetts hospitals performing vaginal hysterectomy procedures experienced a **significantly higher** number of infections than expected compared to national baseline data (Years 2010-2012 and 2014)



Data to Guide HAI Activities

External Data Validation - VHYS

- MA VHYS rates are higher than expected
- Surgeon survey and IP survey looking at VHYS techniques and risk factors found no explanation for rate for infection
- 2015-2016 ELC funding: MDPH is conducting external validation of 2014 VHYS data

Statewide Prevention Collaboratives

- Massachusetts Hospital Association (MHA)
  - NHSN data are shared monthly to evaluate trends
  - MHA makes the data available on their Patient Care Link http://www.patientcarelink.org/Healthcare-Provider-Data/Hospital-Data/Statewide-Aggregate-Performance-Measures.aspx

- Comprehensive Unit-based Safety Program (CUSP)

- AHA/HRET Hospital Engagement Network (HEN)
  - NHSN data are shared monthly to monitor effectiveness of prevention initiatives

- NeoQIC, the Neonatal Quality Improvement Collaborative of Massachusetts
  - All Massachusetts NICUs participate (n=14)
  - NHSN data are shared quarterly and combined with other data sources to evaluate trends over time

Targeted Assessment for Prevention (TAP) Strategy

- *C. difficile* infection prevention initiative: used to identify two hospitals and their long-term care partners for participation

- TAP report findings to continue to be utilized in collaborative work with Quality Improvement Organization (QIO)

- TAP Reports will be included in the quarterly data cleaning reports. Each hospital will receive individual data as well as de-identified data for all hospitals

Commonwealth of Massachusetts
Department of Public Health

MA Hemovigilance

- 100% of MA blood banks are enrolled and reporting to NHSN
- 100% of facilities (68/68) have 12 months of denominator reporting
- 100% are reporting adverse reactions
- 97% (66/68) have completed their Annual Facility Surveys
  - Characterize a facility for classification purposes
  - Learn about common practices in the field
  - Provides denominator data
  - Units and aliquots of specific blood products transfused and discarded monthly
- Established Hemovigilance Technical Advisory Group (TAG)
- First annual report distributed to all MA blood banks
- Future directions:
  - Facilities to conduct internal analysis/benchmarking
  - Engage vendors in CDA architecture adoption
  - Further analysis around specific adverse reaction data
  - Collaborate with CDC to assist states interested in adoption of NHSN for hemovigilance reporting

Kansas Approach to HAI Reduction

Nadyne Hagmeier, RN | QI Project Manager

Kansas Foundation for Medical Care, Inc.

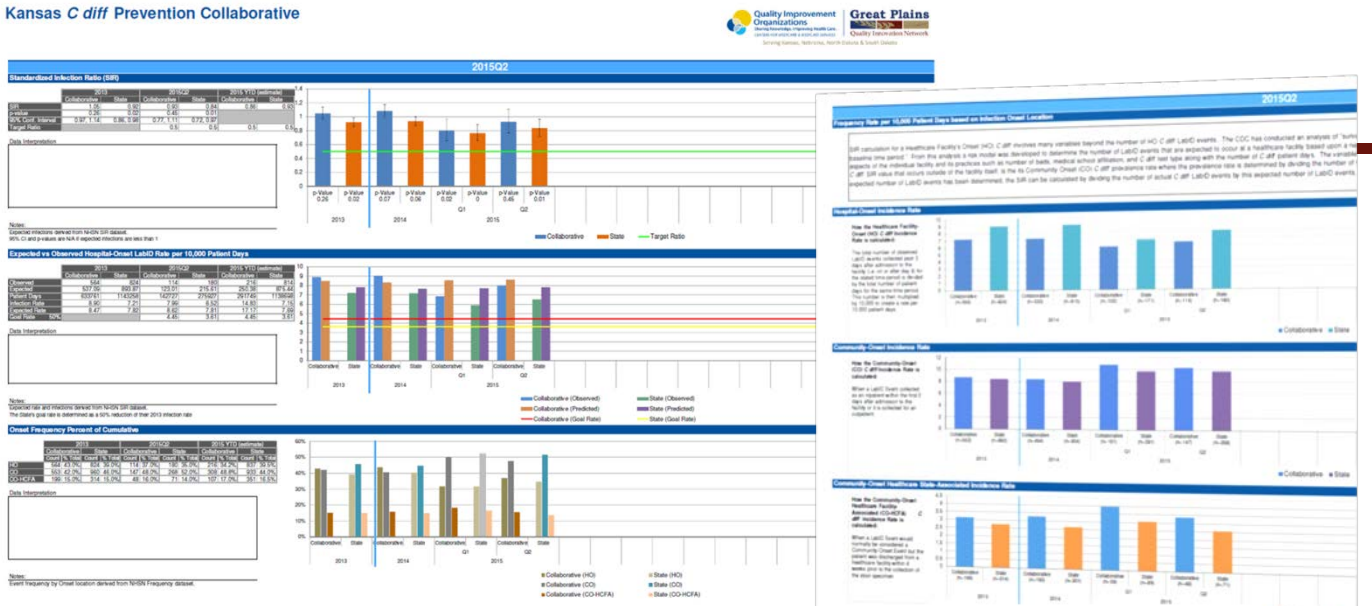
Great Plains

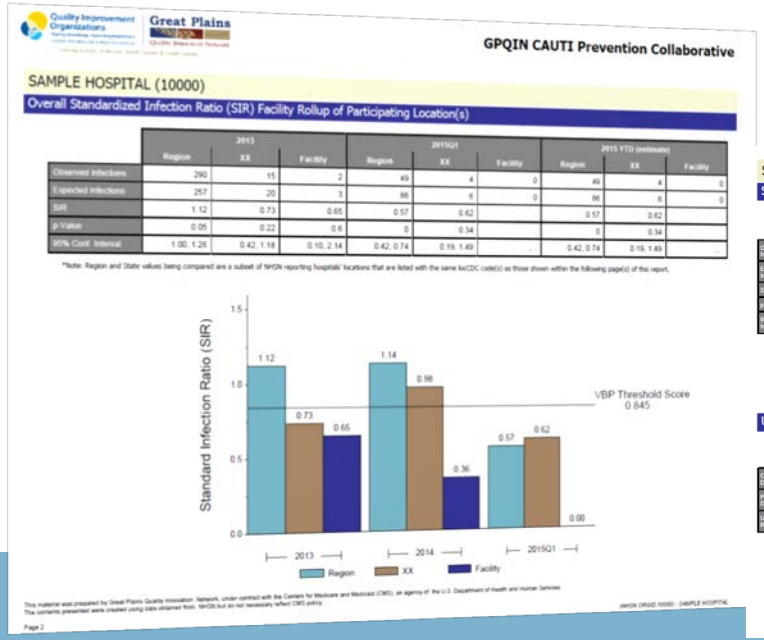
Quality Innovation Network

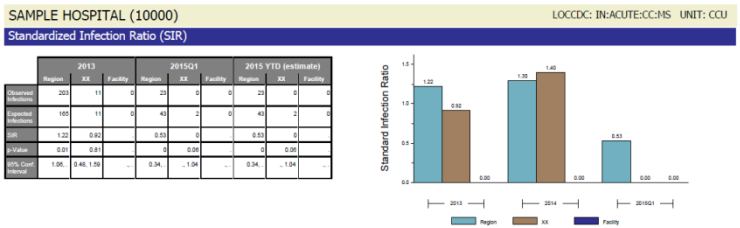
Kansas Approach to HAI Reduction

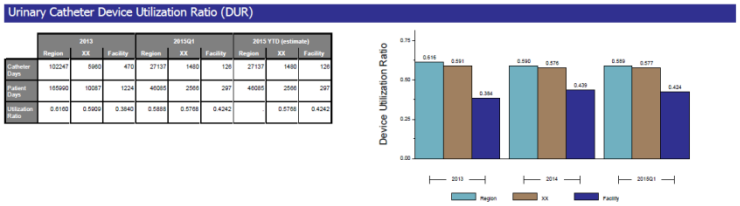
- Partnership is key:
  - Kansas Foundation for Medical Care (KFMC)
  - Kansas Department of Health and Environment, Bureau of Epidemiology and Health Informatics(KDHE)
  - KQIP: Kansas Quality Improvement Partnership
    - Kansas Hospital Association, Kansas Healthcare Collaborative, KFMC, KDHE
  - Kansas APIC Chapters (3)
  - Great Plains Quality Innovation Network
    - KS, NE, SD, ND

Collaborative Reports









Great Plains QIN Perspective on TAP

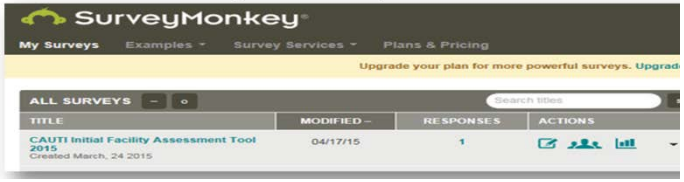
CAUTI TAP: Another Way to Hit the Bullseye

- Target: NHSN Report

National Healthcare Safety Network
TAP Report - CAUTI data for Acute Care Hospitals
Locations Ranked by CAD Within a Facility

FACILITY				LOCATION									
Facility Rank	Facility Org ID	Facility Name	Facility CAD	Location Rank	Location	CDC Location	Events	Urinary Catheter Days	DUR %	CAD	SIR	SIR Test	No. Pathogens (EC,YS,PA,KS,PM,ES)
1	15331	Decennial Medical Center	1.14	1	ICU/CCU	IN:ACUTE:CC:C	2	676	50	1.14	1.74		2 (1, 0, 0, 0, 0, 0)
2	10000	DHQP Memorial Hospital	-1.40	1	INMEDWARD	IN:ACUTE:WARD:M	1	674	47	0.04	0.78		1 (0, 0, 0, 0, 0, 0)
				2	11	IN:ACUTE:WARD:BHV	0	11	100	-0.01			
				3	MD ICU	IN:ACUTE:CC:B	0	434	6	-1.43	0.00		

- Assess: Survey Monkey of CAUTI TAP



- Prevent: CAUTI TAP Feedback Report

Facility Assessment Report		
Facility responses		110
Average Summary Scores		
Total Score (Range 0-57)	Section I: Score (Range 0-25)	Sections II-VI I: Score (Range 0-32)
34.78	16.91	17.87

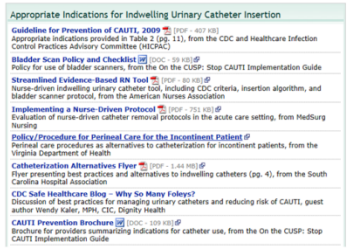
Area of Focus	Action Steps	Person(s) Responsible	Completion Date
Competency assessment for use of bladder scans			
Ordering providers use indwelling urinary catheters for appropriate indications			
Indwelling catheters removed in PACU			

http://www.cdc.gov/hai/prevent/tap/resources.html

CAUTI TAP REPORT TOTALS 2015

GREEN HIGHLIGHTS INDICATE HIGHEST PERFORMANCE PER SECTION (excluded facilities with less than 5 respondents)

FACILITY	# Responses	TOTAL	Section I	Section II	Section III	Section IV	Section V	Section VI	Section II-VI
A	9	42.69	22.56	5.89	3.08	2.75	6.42	2.00	20.14
B	16	37.06	16.38	7.42	3.08	2.11	6.08	2.00	20.69
C	27	36.26	17.26	6.04	2.91	2.15	5.91	2.00	19.00
D	20	35.61	15.05	5.58	2.95	2.10	7.79	2.15	20.56
E	24	34.50	16.92	5.24	2.80	1.97	5.45	2.13	17.58
F	8	34.22	16.63	5.63	3.03	1.41	5.56	1.97	17.59
G	1	33.00	19.00	3.00	3.25	0.00	6.00	1.75	14.00
H	14	30.95	13.57	5.98	2.88	1.89	4.88	1.75	17.38
Sorted by Overall Total Score -- Highest Scoring to Lowest Scoring									
OVERALL	191	32.71	14.81						17.9
OVERALL	218	32.41	15.63						16.78
OVERALL	135	27.12	13.45						13.67



Great Plains Quality Innovation Network

- Kansas
- Nebraska
- South Dakota
- North Dakota

Peg.Gilbert@area-a.hcqis.org
P: 402.802.7997
Nancy McDonald, RN, BSN, CPHQ
Nancy.McDonald@area-a.hcqis.org
P: 605.234.4144

Using NHSN Data for Prevention – Wisconsin

Ashlie Dowdell
HAI Surveillance Coordinator
Wisconsin Division of Public Health
November 18, 2015

TAP Letters

- Sent to 36 hospitals if at least one target area had a CAD > 1.
- CLABSI, CDI and CAUTI results were included.
- Letters sent to IPs, hospital administrators, quality, and chief nursing officers.
- Encouraged to join a prevention collaborative led by the QIO/hospital association.

Scott Walker
Governor

Kitty Rhoades
Secretary

State of Wisconsin

Department of Health Services

DIVISION OF PUBLIC HEALTH

1 WEST WILSON STREET
P O BOX 2659
MADISON, WI 53701-2659

608-266-1251
FAX: 608-267-2832
TTY: 888-701-1253
dhs.wisconsin.gov

July 14, 2015

Hospital Administrator
Name of Hospital
Address

Dear:

As the Division of Public Health (DPH) reviews progress toward reducing healthcare-associated infections (HAIs), we extend our appreciation to you and your staff for your efforts to deliver the safest health care to Wisconsin patients. Significant progress toward reduction of selected HAIs has occurred during the past five years, thanks to healthcare facilities such as yours.

The success of Wisconsin healthcare organizations is exemplified by reductions in central line-associated bloodstream infections (CLABSI), with Wisconsin occurrence more than 50% below the national benchmark. This means we have exceeded the 2013 national goal set under the Department of Health and Human Services National HAI Action Plan. Statewide occurrence of methicillin-resistant *Staphylococcus aureus* (MRSA) bacteremia is also well below the national goal of a 25% reduction. Wisconsin hospitals have experienced a 44% reduction in MRSA bacteremia compared to the national benchmark.

However, despite great strides, challenges to HAI reduction remain. National goals toward reducing catheter-associated urinary tract infections (CAUTI) and *Clostridium difficile* infections (CDI) have not been met among Wisconsin hospitals. Furthermore, several individual facilities continue to experience CLABSI occurrence above the national goal.

You are receiving this letter because 2014 HAI data indicate your facility has not met the 2013 national HAI reduction goals for at least one of three targeted HAIs—CLABSI, CAUTI or CDI. The table below indicates the HAIs for which your facility has an occurrence above the national goals set by the Department of Health and Human Services in the National HAI Action Plan. The cumulative attributable difference (CAD) is the number of infections that must be prevented within your facility to achieve the national standardized infection ratio (SIR) goal.

MetaStar, Inc. and the Wisconsin Hospital Association (WHA) provide HAI reduction consultative services, including education and peer networking, to Wisconsin healthcare facilities at no cost. The tradition of collaboration among Wisconsin hospitals is a proven method for improving healthcare quality, and DPH strongly encourages your facility to participate in one of the collaborative HAI reduction groups led by these organizations. We also encourage you to take advantage of their numerous training and educational opportunities. Participation in these activities will assist your healthcare quality teams in achieving the best patient outcomes possible. The attached brochure provides contact information for MetaStar and WHA.

Again, thank you for your contributions to statewide HAI reduction efforts. We look forward to even greater achievements as we continue our work together.

Sincerely,

Jeffrey P. Davis, MD
Chief Medical Officer and State Epidemiologist
for Communicable Diseases

Cc: Chief Nursing Officers
Infection Preventionists
Quality Resources Directors

Hospital A
2014 NHSN Data as of July 9, 2015

HAI	Number of Observed Events	Number of Predicted Events	2014 SIR	2013 National SIR Goal	CAD*
CDI (healthcare onset)	23	26	0.9	0.70	5
CAUTI (all locations)	5	4	1.3	0.75	2
CLABSI (all locations)	3	2	1.1	0.50	2

* CAD is calculated by subtracting the designated prevention target from an observed number of HAIs, and is the number of infections your facility needs to prevent to achieve the national goal during 2015, assuming no changes in the population at risk since 2014. The formula is:

Number of observed events–(Number of predicted events X national target SIR)

Take Advantage of HAI Resources

If your hospital has identified a need for improvement in the area of healthcare-associated infections (HAI), we encourage you to seek out key national and local organizations that offer the help you need.

Quality Improvement Organizations
Sharing Knowledge. Improving Health Care.
CENTERS FOR MEDICARE & MEDICAID SERVICES

Lake Superior Quality Innovation Network
MICHIGAN | MINNESOTA | WISCONSIN

MetaStar is a nonprofit quality improvement organization that offers free evidence-based resources, education, data reports, peer networking, and technical assistance for hospitals looking prevent healthcare-associated infections, better coordinate care, and improve quality for value-based payment. MetaStar represents Wisconsin in Lake Superior Quality Innovation Network, a partnership under contract with the Centers for Medicare & Medicaid Services. MetaStar's focus is on infection prevention best practices and solutions. Participate in the learning and action network today.

Contact:
DeAnn Richards
drichard@metastar.com
Phone: 1-800-362-2320, ext. 8228

Online:
www.lsqin.org/hai
www.metastar.com

WHA
WISCONSIN HOSPITAL ASSOCIATION, INC.

The **Wisconsin Hospital Association** (WHA), is a nonprofit membership organization, keeping members informed of important local and national legislative issues, interpreting clinical and quality issues for members, and providing up-to-date educational information. WHA's quality team has been successfully working with hospitals to reduce healthcare-associated infections and teaching best practices to engage patients and families in this important work. WHA's focus is on the culture of safety and quality. View the WHA Quality Center for key tools for your improvement journey.

Contact:
Jill Hanson
jhanson@wha.org
Phone: 1-608-268-1842

Online:
www.whaqualitycenter.org

The **Centers for Disease Control and Prevention** (CDC), works 24/7 to protect America from health, safety and security threats. Whether diseases start at home or abroad, are chronic or acute, curable or preventable, human error or deliberate attack, CDC fights disease. Find prevention guidelines, education, and more.

Online:
www.cdc.gov/hai

The **Association for Professionals in Infection Control and Epidemiology** (APIC) has a mission to create a safer world through prevention of infection by providing evidence-based, scientific, and proven resources to infection preventionists, healthcare professionals, and patients. Join your local chapter of APIC today.

Online:
www.apic.org/Professional-Practice/Overview

This material was prepared by the Lake Superior Quality Innovation Network, under contract with the Centers for Medicare & Medicaid Services (CMS), an agency of the U.S. Department of Health and Human Services. The materials do not necessarily reflect CMS policy. 11SOW-WI-C1-15-49 052715

Hospital Report Cards

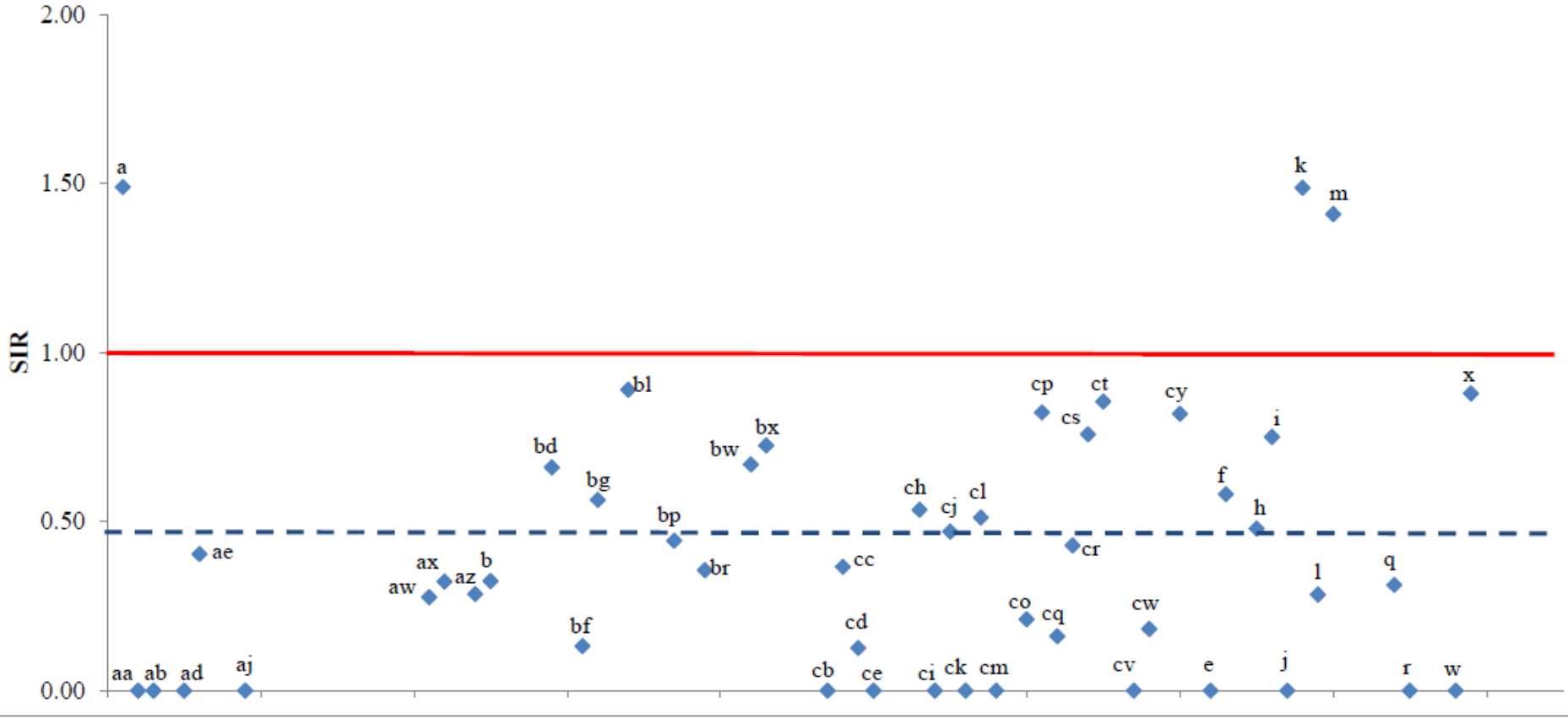
- Sent in late summer 2014 to all acute care and critical access hospitals reporting at least one of the selected topics in 2013 (111).
- Scatter plot of SIRs for CLABSI, CAUTI, MRSA bacteremia, CDI, and SSIs for COLO, HYST, KPRO, and HPRO.
- Data table with additional details (observed, predicted, confidence intervals, etc.).
- Hard copy mailing to hospital administrators and IPs to encourage awareness and discussion of HAIs.

Wisconsin CLABSI Standardized Infection Ratio (SIR)

All Reporting Units, 2013

Accessed July 10, 2014

Number of reporting hospitals = 91



National baseline = 1.00

2013 Wisconsin SIR = 0.46

Wisconsin 2013 SIR Values at Select Percentiles	
Percentile	**SIR**
10th	0.00
25th	0.00
50th	0.32
75th	0.66
90th	0.86

Better

Wisconsin CLABSI Standardized Infection Ratio, All Reporting Units, 2013

Hospital Code	Number of Observed Infections	Number of Predicted Infections	Number of Central Line Days	2013 SIR	95% Confidence Interval	p-value
cb	0	1.98	1,530	0.00	0.00 - 1.51	0.14
cc	4	10.94	7,387	0.37*	0.12 - 0.88	0.02
cd	3	23.79	8,130	0.13*	0.03 - 0.34	< 0.001
ce	0	1.23	823	0.00	0.00 - 2.43	0.29
cf	0	0.24	200			
cg	0	0.03	29			
ch	2	3.74	2,668	0.54	0.09 - 1.77	0.39
ci	0	1.04	337	0.00	0.00 - 2.87	0.35
cj	2	4.25	2,928	0.47	0.08 - 1.55	0.28
ck	0	1.17	744	0.00	0.00 - 2.57	0.31
cl	9	17.57	10,357	0.51*	0.25 - 0.94	0.03
cm	0	3.82	2,634	0.00*	0.00 - 0.78	0.02
cn	0	0.33	221			
co	3	14.24	8,913	0.21*	0.05 - 0.57	< 0.001
cp	2	2.43	1,620	0.82	0.14 - 2.72	0.86
cq	1	6.23	4,454	0.16*	0.01 - 0.79	0.02

NHSN Tutorials

https://www.dhs.wisconsin.gov/hai/tutorials.htm

- Facility Set-up (run time 1:09:00, Adobe Connect, help) **NEW!** - Adding/editing monthly reporting plans, locations, users and surgeons; reassigning the facility administrator and addressing alerts.
- Add Locations (12 slides, run time 4:15, Adobe Connect, help)
- Add Users (7 slides, run time 3:20, Adobe Connect, help)
- Add/edit Surgeons (13 slides, run time 4:00, Adobe Connect, help)
- Confer Rights (14 slides, run time 6:41, Adobe Connect, help)
- Reassign a Facility Administrator (5 slides, run time 2:56, Adobe Connect, help)
- Add County as a Custom Field (8 slides, run time 2:37, Adobe Connect, help)

Specific Events

- Numerator and Denominator Data Entry (run time 1:04:56, Adobe Connect, help) **NEW!** - Adding data, importing CSV files

Analysis

- Analysis Overview/Generating Data Sets (run time 19:36, Adobe Connect, help) **NEW!**
- CMS Reports (run time 58:34, Adobe Connect, help) **NEW!**
- Modifying Reports (run time 1:01:47, Adobe Connect, help) **NEW!** - Modifying/customizing and publishing reports; creating output sets and exporting data.
- Standardized Infection Ratio (SIR) (run time 1:00:01, Adobe Connect, help) **NEW!** - Running, interpreting and graphing SIRs.

SSI Data for Action

https://www.dhs.wisconsin.gov/hai/ssi-prevention.htm

Data and statistics

Wisconsin SSI Data - Quarter 1, 2015

Number of hospitals reporting = 99

Data accessed from the National Healthcare Safety Network (NHSN) on August 20, 2015.

Infections following all reported procedures	Total procedures performed	Wisconsin standardized infection ratio (SIR)
189	12,319	0.79* (Number of observed infections divided by the number of predicted infections based on national data.)

* Statistically significantly lower than the national baseline, but not significantly different from last year at this time.

Questions?

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Targeted Assessment for Prevention (TAP)

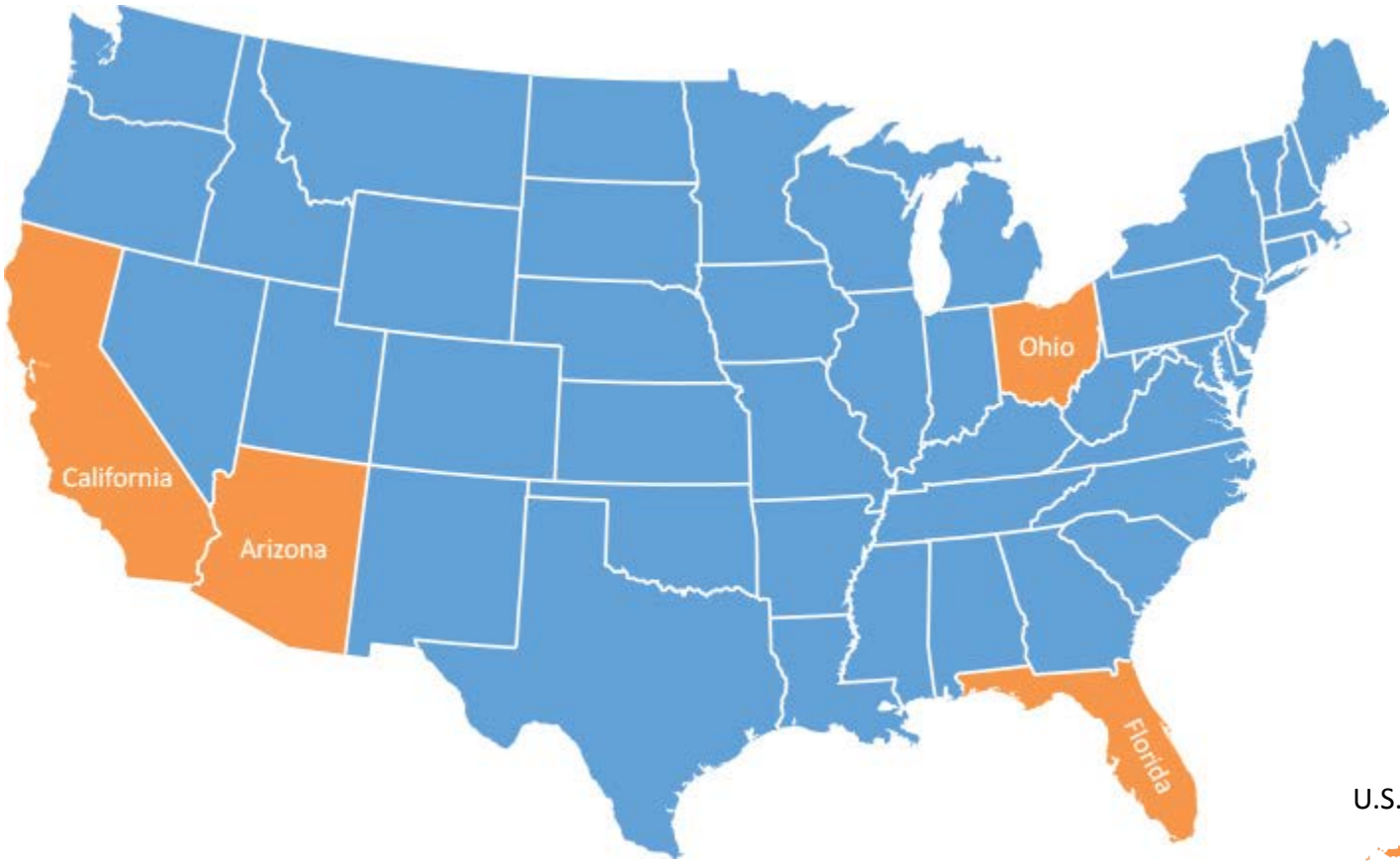
Rick Welsh, RN, CPHQ

Director, Behavioral Health

November 18, 2015

HSAG HEALTH SERVICES ADVISORY GROUP

Health Services Advisory Group: QIN-QIO



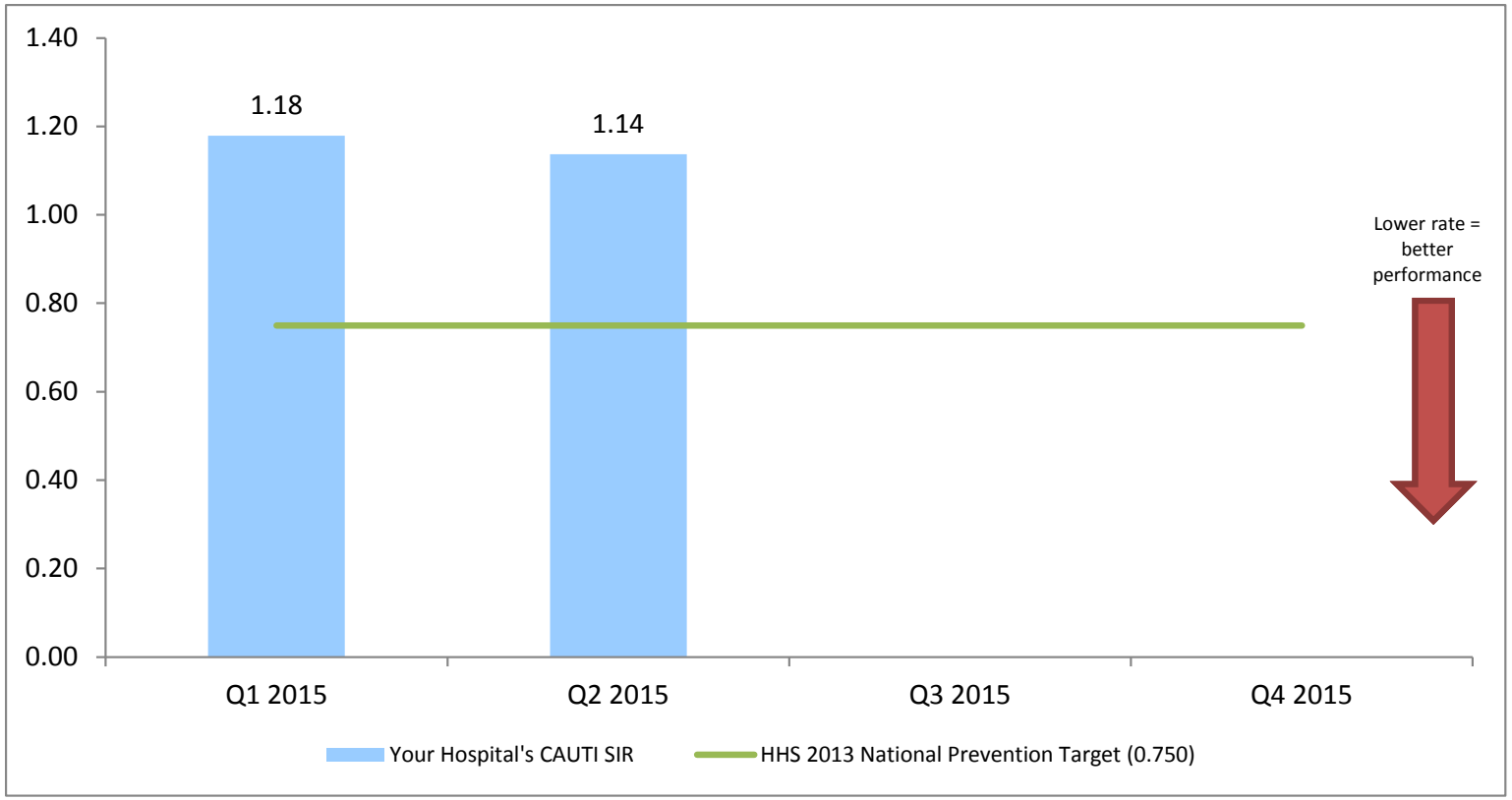
U.S. Virgin Islands

Health Services Advisory Group Serves Nearly 25% of Our Nation's Beneficiaries

State	Medicare Beneficiaries
Arizona	1,078,109
Florida	3,845,591
California	5,518,014
Ohio	2,144,347
U.S. Virgin Islands	18,777

Source: CMS Denominator File: April 2013 – March 2014

HSAG CAUTI Data Feedback Report Intensive Care Units (ICUs)



Source: NHSN

Unit Ranking Based on CAD

Facility CAD	Unit	Location Type	Expected Infections	Observed Infections	SIR	Catheter Days	Patient Days	Device Utilization Ration Facility Pooled Mean		CAD	Number of Pathogens (EC, YS, PA, KS, PM, ES)
								Facility	Pooled Mean		
6.36	1	WARD	2.34	5	2.14	645	5,664	0.11	0.08	3.25	5 (2, 0, 0, 1, 0, 0)
	2	ICU	5.94	7	1.18	1,747	2,356	0.74	0.75	2.55	8 (1, 0, 3, 0, 0, 1)
	3	WARD	0.67	1	NA	355	4,185	0.08	0.15	0.49	1 (1, 0, 0, 0, 0, 0)
	4	WARD	1.07	1	0.94	666	5,684	0.12	0.17	0.20	1 (0, 0, 1, 0, 0, 0)
	5	ICU	3.78	3	0.79	1,890	2,709	0.70	0.61	0.17	3 (1, 0, 0, 1, 0, 1)
	6	WARD	1.72	1	0.58	453	3,129	0.14	0.08	-0.29	1 (0, 0, 0, 0, 0, 0)

Source: NHSN

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Thank you!

Questions?

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The findings and conclusions in this report are those of the authors and do not necessarily represent the official position of the Centers for Disease Control and Prevention.