

# Update on Healthcare Associated Infection (HAI) Reporting Under Act 52

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*“It’s not so much how busy you are, it’s why you are busy. The bee is praised. The mosquito is swatted.”*

Mary O’Connor

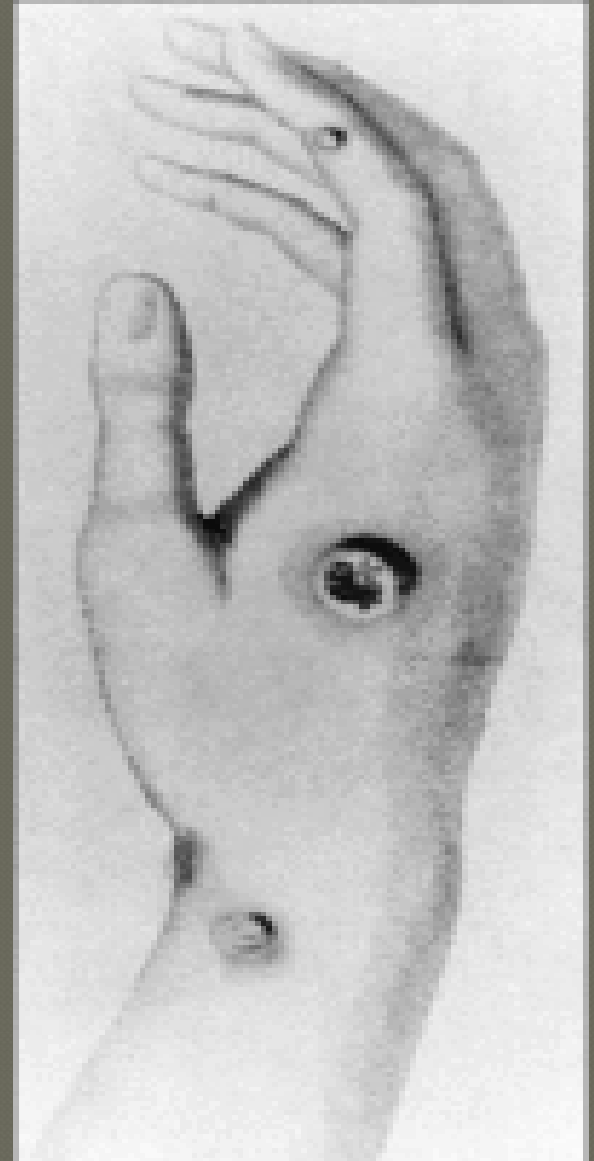
*“It’s not enough to be busy. So are the ants. The question is: What are we busy about?”*

Thoreau



- **Pandemic H1N1**
- Measles cluster in Pittsburgh
- *Vaccinia* associated with oral rabies vaccine baiting program
- Raw milk-associated *Campylobacter*







# Healthcare Acquired Infections











## Act 52 (Aug 2007)

“A **hospital** shall report HAI infection data to the CDC and its National Healthcare Safety Network no later than 180 days following the effective date of this section (Feb 14, 2008)”

- Report all components in NHSN Manual, Patient Safety Component Protocol, **and any successor edition**
- For all patients throughout the facility on a continuous basis
- Authorize PADOH, PSA, and PA Healthcare Cost Containment Council (HC4) access to facility-specific reports



## Act 52 of 2007 (2)

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PADOH required to:

- Develop a **methodology** for determining and assessing the rate of HAIs that occur in health care facilities in this Commonwealth. This methodology shall be used:
  - To determine the rate of reduction in HAI rates within a health care facility
  - To compare HAI rates among similar health care facilities within PA
  - To compare HAI rates among similar health care facilities nationwide
- Develop reasonable **benchmarks** to measure the progress health care facilities make to reduce HAIs. **Beginning in 2010**, all health care facilities shall be measured against these benchmarks.



# Benchmarking Conditions for Hospitals

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- ◎ Benchmarking requires denominators and adequate risk adjustment
- ◎ Selection criteria
  - Compatibility with other metrics (e.g. CMS “never events”; CDC initiatives)
  - Reflective of infection control quality
  - Coverage (every hospital should have something to measure)



# Benchmarking Conditions

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- Catheter-associated urinary tract infections
- Central line-associated bloodstream infections
- Surgical site infections
  - Abdominal hysterectomies
  - Hip & knee replacements
  - Cardiac surgeries



# Data Collection

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- Compliance with start date (Feb 08) high
- Initial data of “variable” quality
- Sufficiently stable mid-2008
- Initial report for 2<sup>nd</sup> half of 2008
  - Considered “pilot” report
  - Content, methodology, and format
- “Baseline” period 2009
- “Progress” measured from 2010 onward



# Report Components

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- Overall statewide data on HAI patterns
  - Numbers/rates of HAIs
  - Rates by category
  - Pathogens causing HAIs
- All HAIs by
  - Hospital
  - HAI type
  - **Crude** rate per 1,000 patient days
- Comparison of PA rates to national rates
- Analysis of benchmarking conditions



# Status

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- 2008 report issued in December 2009
  - Modified in Feb 2010
- 2009 report completed
  - Release date pending
- 2008 Surgical Site infections being finalized



## Healthcare Associated Infections in PA Hospitals by Type 2<sup>nd</sup> Half 2008

Infection Type	No of Infections 2008	%
Bone and Joint (BJ)	5	0.04
Blood Stream Infection (BSI)	1,980	14.38
Central Nervous System (CNS)	39	0.28
Cardiovascular System (CVS)	73	0.53
Ear Nose and Throat (EENT)	322	2.34
Gastrointestinal (GI)	2,499	18.15
Lower Respiratory Tract (LRI)	411	2.98
Pneumonia (PNEU)	1,485	10.78
Reproductive (REPR)	59	0.43
Surgical Site Infection (SSI)	3,062	22.23
Skin and Soft Tissue (SST)	418	3.04
Urinary Tract Infection (UTI)	3,418	24.82
<b>TOTAL</b>	<b>13,771</b>	



# Findings in 2008

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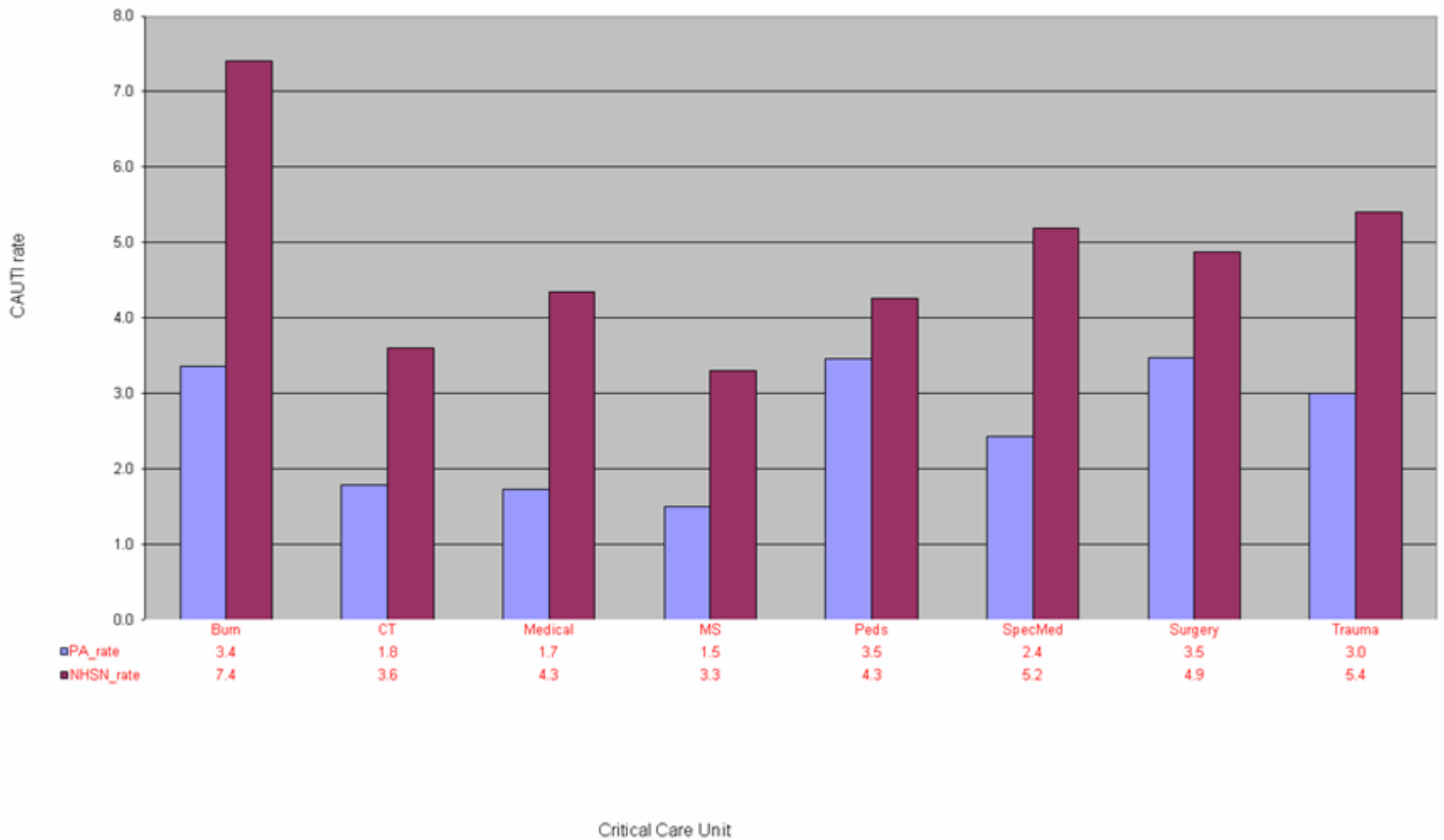
- ◉ Statewide rate of 2.84 HAIs per 1000 patient days
- ◉ 8.1% of HAIs due to MRSA
- ◉ Most common sites for MRSA
  - Skin & soft tissue      21.6%
  - Cardiovascular      17.7%
  - Surgical site      15.0%







Figure 2  
 Comparison of CAUTI Rates in PA Hospitals by Selected Critical Care Locations at Baseline (July to December 2008) to Available NHSN Rate from 2006 through 2008





# Data Analysis

## Benchmarking Conditions

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- Use of **Standardized Infection Ratios**
- Recommended by CDC
- Maximizes potential risk adjustment
- Observed (reported) no. of infections
- Statistically adjusted no. of expected (predicted) infections
- Ratio of observed to expected
- Statistical significance (CIs)



# SIR

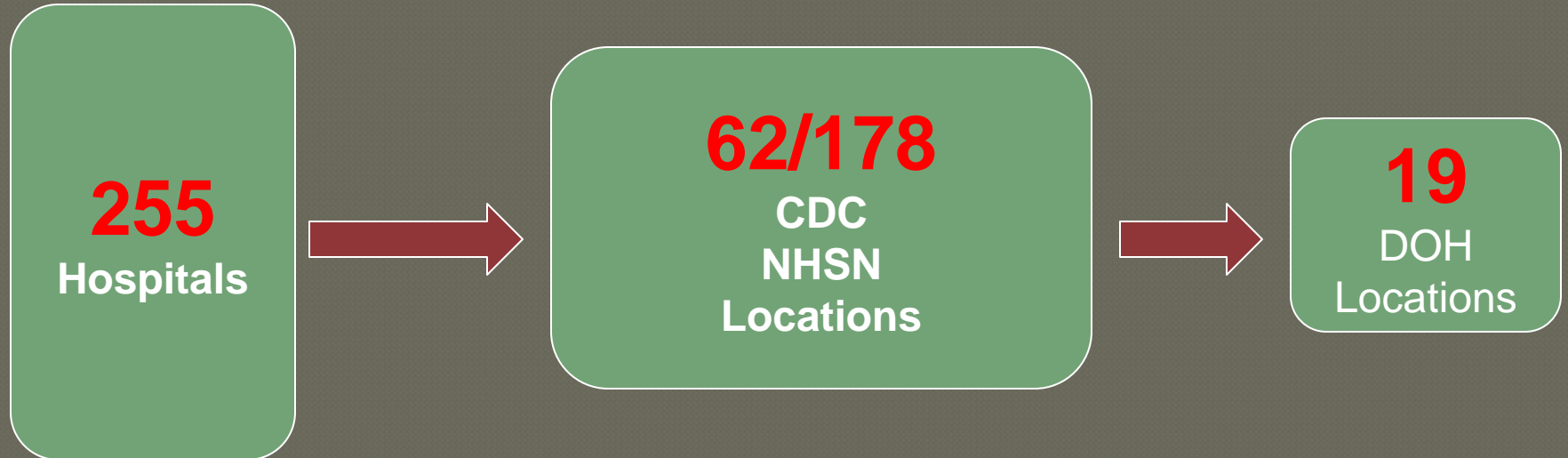
- SIR  $< 1.0$  means the no. of observed infections is *lower* than predicted
- SIR  $> 1.0$  means the no. of observed infections is *higher* than predicted
- If the CI does **not** include 1.0, SIR considered significantly higher or lower
- CI more likely significant:
  - SIR exceedingly high or low
  - Large numbers (larger hospitals)



- Predicted infections based on:
  - Statewide rate per 1000 device days (central line or catheter)
  - Infection of interest (e.g. CAUTI or CLABSI)
  - By each ward category in Pennsylvania



# PA Hospital Wards





# Example: CAUTIs

## Medical ICUs

	Statewide	Facility A	Facility B
Catheter days	250,000	1,000	23,500
No. of CAUTI	1,200	4	200
Rate per 1,000	4.8	4.0	8.5
Expected	x	4.8	112.8
SIR	1.00	0.83	1.77



Ward Category	CAUTI	Urinary Catheter Days	Patient Days	Rate
cc:Burn	8	2,378	5,274	3.36
cc:CT	60	33,668	50,053	1.78
cc:MS	218	144,930	215,313	1.50
cc:Med	75	43,450	68,277	1.73
cc:Peds	23	6,657	26,188	3.46
cc:Surgery	146	41,968	55,425	3.48
cc:Trauma	64	21,311	25,452	3.00
w:MS	606	273,917	1,428,689	2.21
w:Med	246	98,368	562,815	2.50
w:Ped_ms	19	8,073	129,872	2.35
w:Rehab	143	31,942	309,804	4.48
w:Surgery	273	100,274	420,167	2.72
<b>Total</b>	<b>2,357</b>	<b>1,025,727</b>	<b>4,853,047</b>	<b>2.30</b>



# Adjustment of Expected Infections

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- Crude rates by ward category do not account for differential risks between facilities
- Use facility level characteristics as surrogate for patient-level risk



# Adjustment of Expected Infections

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## ● Characteristics examined

- Device utilization ratio (device days/patient days)
- Licensed no. of beds
- Med school affiliation
- Location (urban/suburban/rural)

Multiple data runs done including the factors in various combinations

DUR included as risk modifier in 2008

DUR & med school affiliation in 2009



# SIR table in HAI Report

Facility	Hospital Name	Obs	Exp	Diff	Adjusted SIR	Conf Int
	A	5	7.28	-2.3	0.69	0.22 - 1.6
	B	4	5.71	-1.7	0.70	0.19 - 1.79
	C	4	5.66	-1.7	0.71	0.19 - 1.81
	D	3	4.22	-1.2	0.71	0.14 - 2.08
	E	20	27.88	-7.9	0.72	0.44 - 1.11
	F	32	43.87	-11.9	0.73	0.5 - 1.03
	G	41	54.54	-13.5	0.75	0.54 - 1.02
	H	10	13.05	-3.1	0.77	0.37 - 1.41
	I	12	15.63	-3.6	0.77	0.4 - 1.34



# HAI Report

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- Single table for CAUTI
- Multiple tables for CLABSI
- Three catheter types for CLABSI
  - Special care areas
  - NICUs
  - All other locations
- Within a stratum, all facilities grouped
- Facilities with N/A (lacking numerator or denominator)



# 2009 HAI Report

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- Doesn't include hospitals not open (closed or opened) for all 12 months
- Does not contain comparison graphs (NHSN 2009 data not yet out)
- Lower number of N/A
- Special care areas split for CLABSI
  - Long-term acute care
  - Other special care areas



# Surgical Site Infection Analysis

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- Overall (crude) SSI
- Procedure-specific, risk adjusted analysis for benchmarking procedures
- Small numbers
- Apply patient and facility-level risk adjustment
- Patient-specific
  - Risk index
  - Age
- Facility characteristics
  - Licensed beds
  - Medical school affiliation
  - Location







# Auditing

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- Thought would be underway for 2009 report
- Will be done with ARRA funds with assistance of APIC
- To include
  - Validate reports
  - Search for unreported cases
- Prioritization
  - Facilities with low rates or unusual patterns



# Other Initiatives

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- State specific SIRs published by CDC last week for CLABSI
- PA had SIR of 0.70
- Prevention collaborative partnerships (ARRA) funds
  - HCIF *Clostridium difficile*
  - Surgical site infections
- MRSA screening survey
- MDRO module implementation and support
- Qualified electronic surveillance system analysis





10 different menu items displayed in a red banner above the entrance.

  
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0707 304 204

  
**KFC**  
Kabul Fried Chicken  
Tel: 0795004004 - 0707004004  


  
**KFC**  
Kabul Fried Chicken  
FAST FOOD  
FREE HOME DELIVERY  
  
Kabul Fried Chicken  
Tel: 0795004004 - 0707004004

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KFC



# KFC

کابل فراید چکن



Kabul Fried Chicken

Col: 0795004004 - 0707004004

