



American Recovery and Reinvestment Act
Epidemiology and Laboratory Capacity (ELC)
for Infectious Disease Program
Healthcare-Associated Infections (HAIs)
Grantee Meeting

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October 19-20, 2009



How Can Your State Use NHSN to Establish an HAI Reporting Program?



Objectives

- What is NHSN?
 - Purposes
 - Components and Modules
 - Surveillance methodology
- Who is using NHSN and what are they using it for?
- Why use NHSN for HAI reporting?





CDC Surveillance for HAIs



- Voluntary system for monitoring nosocomial infections (1970 - 2004)
- Voluntary system for monitoring healthcare- associated events and processes (2005 -)
- Increasingly used to comply with State legislation that mandates reporting of HAI data (2007 -)
- Also being used as a tool for prevention collaboratives





CDC Surveillance for HAIs: 2009



This Recovery Act supplement to ELC includes three activities outlined below.

- **Activity A** is the basic staffing and coordination to draft the State HAI Prevention Plan and establish the state's capacity to develop an HAI prevention program. In general, Activity A is aimed for state health departments that have little or no current activity or expertise on HAI prevention or reporting.
- **Activity B aims to increase facility participation in NHSN and use NHSN to establish baseline HAI data for the state.**
- **Activity C** aims to support prevention collaboratives in the state to undertake prevention activities or initiatives.



Purposes of NHSN

- Collect data from a sample of US healthcare facilities to permit valid estimation of the
 - magnitude of adverse events among patients and healthcare personnel
 - adherence to practices known to be associated with prevention of healthcare-associated infections (HAI)
- Analyze and report collected data to permit recognition of trends

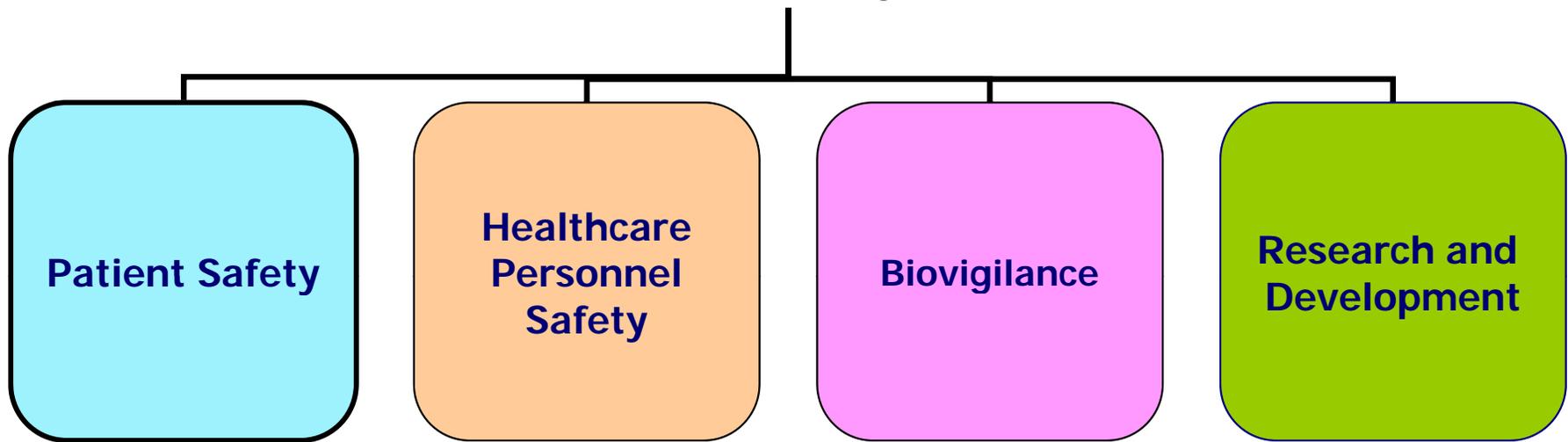


Purposes of NHSN

- Provide facilities with risk-adjusted data that can be used for inter-facility comparisons and local quality improvement activities
- Assist facilities in developing surveillance and analysis methods that permit timely recognition of patient and healthcare personnel safety problems and prompt intervention with appropriate measures
- Conduct collaborative research studies with members

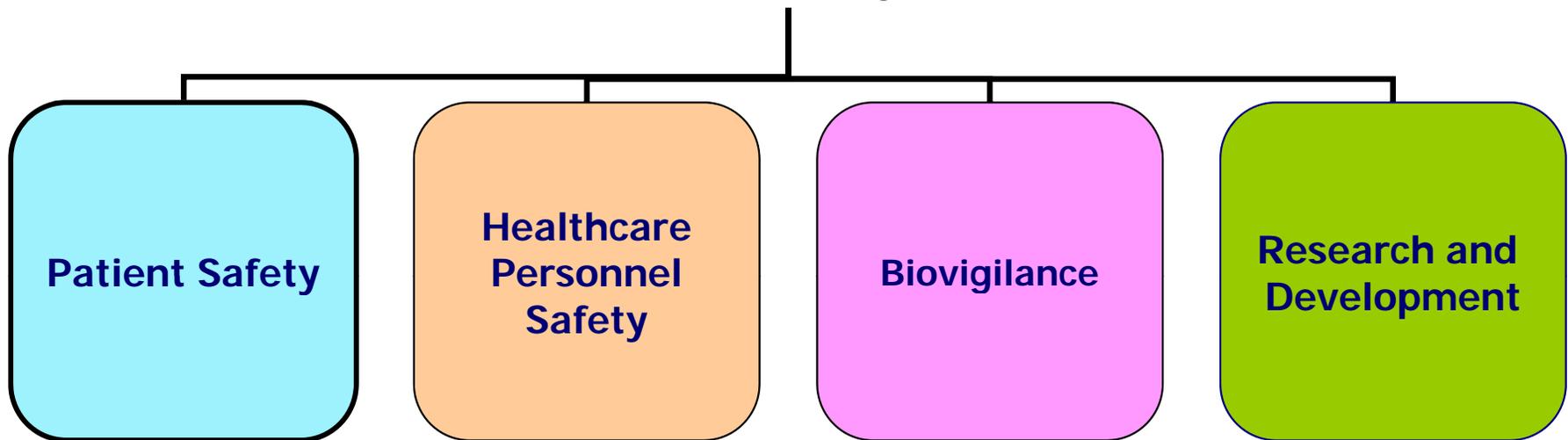


Components of NHSN



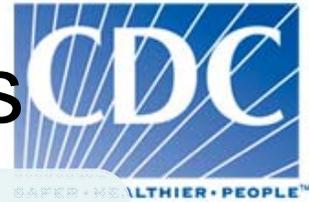


Components of NHSN





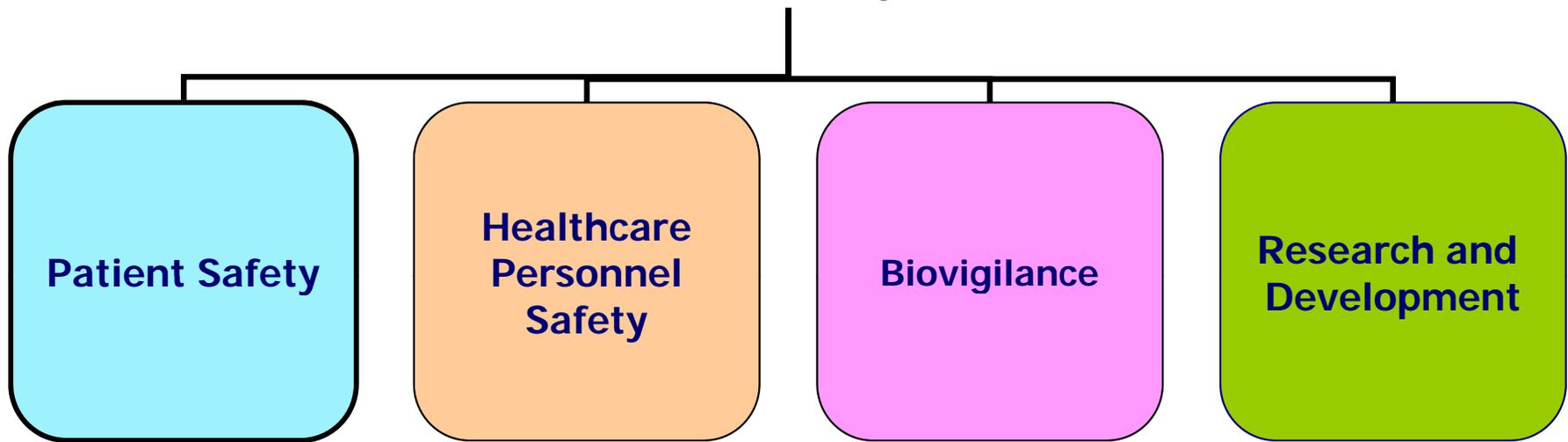
Patient Safety Component Modules



Device-associated	<ul style="list-style-type: none">•CLABSI•CLIP•CAUTI•VAP•DE
Procedure-associated	<ul style="list-style-type: none">• SSI• PPP
Medication-associated	<ul style="list-style-type: none">• AUR Pharmacy• AUR Microbiology
MDRO/CDAD	<ul style="list-style-type: none">•MDRO/CDAD Infection•LabID•Processes
Patient Influenza Immunization	<ul style="list-style-type: none">•Method A•Method B



Components of NHSN





NHSN Surveillance Methodology

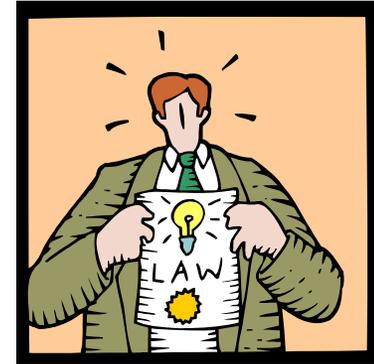


- **Active** (vs. passive)
 - Trained ICPs look for and identify infections
 - Accumulate information from multiple data sources
- **Patient-based** (vs. laboratory-based)
 - Not based solely on laboratory data
 - Identification of risk factors, patient care procedures
- **Prospective** (vs. retrospective)
 - Monitor patients during their hospitalization when possible
- **Priority-directed** (vs. comprehensive)
 - Surveillance objectives are defined and focused on specific events, processes, organisms, populations



Authority and Confidentiality for NHSN

- Public Health Service Act (42 USC 242b, 242k, and 242m(d))
- Confidentiality Protection
 - Sections 304, 306, and 308(d) of the PHS Act



“The information contained in this surveillance system that would permit identification of any individual or institution is collected with a guarantee that it will be held in strict confidence, will be used only for the purposes stated, and will not be disclosed or released without the consent of the individual, or the institution in accordance with Sections 304, 306, and 308(d) of the Public Health Service Act (42 USC 242b, 242k, and 242m(d)).”



NHSN Rapid Growth



August 2008

- 1707 facilities enrolled from 48 States
 - 32% had 201-500 beds (58% have \leq 200 beds)
 - 91% were general, acute-care hospitals
 - 62% were non-major teaching hospitals
- 18 States using or planning to use NHSN for mandatory reporting

October 2009

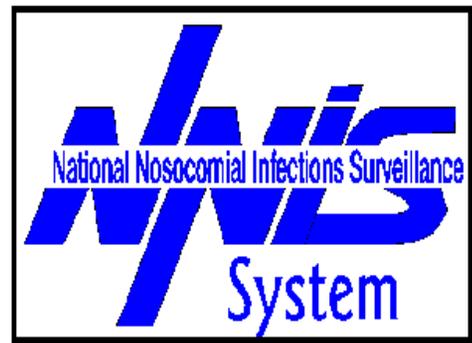
- 2409 facilities enrolled from 50 States+Territories
 - 27% have 201-500 beds (67% have $<$ 200 beds)
 - 85% are general, acute care hospitals
 - 86% are non-major teaching hospitals
- 21 States using or planning to use NHSN for mandatory reporting



CDC Surveillance for HAIs



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What and When States Using NHSN are Reporting (n=21)



NY SC CT CA MD OK VA OR
 VT CO TN PA DE MA WA IL NH NJ WV NV TX



	<i>2007</i>	<i>2008</i>	<i>2009</i>	<i>2010</i>	<i>2011</i>
CLABSI		CA, CO, CT, DE, IL, MA, MD, NH, NJ, NV, NY, OK, OR, PA, SC, TN, TX, VA, VT, WA, WV			
CAUTI		NJ, PA			
SSI		CO, MA, NH, NJ, NY, OR, PA, SC, TN, TX, VT			
VAP		NH, OK, PA, WA			
Dialysis events		CO			
CLIP		CA, NH			
MDRO		NJ, other states are considering its use			
HCW influenza vaccination		WV, other states are considering its use)			



Why use NHSN for HAI Reporting?



- Provides standard definitions, protocols and methodology
- Not just a reporting tool, comparative rates used for performance improvement
- Useful analysis tools are included
- CDC provides training and user support
- Use of the application is free
- Ability to share data with a Group



What is a Group in NHSN?



A Group is a collection of facilities that have joined together within the NHSN framework to share some or all of their data at a single (Group) level for a mutual purpose (e.g., performance improvement, state and/or public reporting).



NHSN Group Demographics



- 125 Groups in NHSN (as of 10/4/2009)
 - 22 state health departments
 - 45 QIOs + 1 QIOSC
 - 4 state hospital associations
 - 22 hospital systems
 - 1 Emerging Infections Program (EIP) site



Steps to form a Group in NHSN



1. Complete required reading and training for the Group Administrator or Group User
2. An NHSN facility “nominates” the Group
3. The Group Administrator obtains a digital certificate
4. The Group Administrator adds additional users to the group and sets a Group joining password.
5. The Group Administrator sends the Group ID and Group joining password to facilities and invites them to join the Group
6. Facilities join the Group and confer some/all rights to data



CDC Support for the Group-Level User



- Consultation on experience from other States
- Presentations to Advisory Groups
- Collaboration with CSTE, SHEA, APIC, IDSA, other Federal agencies including CMS and AHRQ
- Access to “test” facilities
- NHSN State Users Group
 - Conference calls monthly
 - Web Board to share materials
- Consultation on analysis, HAI comparison metrics



Summary of Recommendations



- Communication with facilities:
 - obtain willingness to participate
 - protection and use of information shared
 - education or other incentives
 - routine assistance and feedback
- There is at least one facility enrolled in NHSN in every state
- Collaboration with local APIC chapters, state hospital associations, Quality Improvement Organizations (QIOs), etc. is also encouraged.



NHSN Workshops



October 20, 2009

- 12:45
 - NHSN Basics (facility enrollment, group creation)
 - NHSN Data Validation (methods, summary of recent validation methods)
- 1:45
 - Using NHSN for CLABSI Surveillance
 - Using NHSN for MDRO/CDAD Surveillance
- 3:00
 - Coordination and Reporting of State HAI Prevention
 - NHSN HAI Metrics and Analysis



<http://www.cdc.gov/NHSN>
nhsn@cdc.gov



National Healthcare Safety Network (NHSN)

The National Healthcare Safety Network (NHSN) is a voluntary, secure, internet-based surveillance system that integrates and expands legacy patient and healthcare personnel safety surveillance systems managed by the Division of Healthcare Quality Promotion (DHQP) at CDC. NHSN also includes a new component for hospitals to monitor adverse reactions and incidents associated with receipt of blood and blood products. Enrollment is open to all types of healthcare facilities in the United States, including acute care hospitals, long term acute care hospitals, psychiatric hospitals, rehabilitation hospitals, outpatient dialysis centers, ambulatory surgery centers, and long term care facilities. For more information, click on the topics below.

MDRO

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Topics

About NHSN

Overview, Confidentiality, How data is used...

Patient Safety Component

Procedure, Device (Dialysis Event), Medication-associated, MDRO, & HRIIV Modules

Enrollment Requirements

Eligibility, How to enroll, Training, System Requirements, Security...

Healthcare Personnel Safety Component

Overview, Blood/Body Fluids Exposure; & Influenza Vaccination

Resource Library

Reports, Manuals, Newsletters, Forms...

Biovigilance Component

Overview, Hemovigilance Module Publications...

Data Collection Forms

Forms provided for routine data collection including customizable forms to meet specific needs...

NHSN Training

Training webcast, corresponding slidesets, and materials...

Data & Statistics

States with Facilities Using NHSN (total=2186)



CDC currently supports more than 2000 hospitals that are using NHSN and 19 states require hospitals to report HAI's using NHSN.

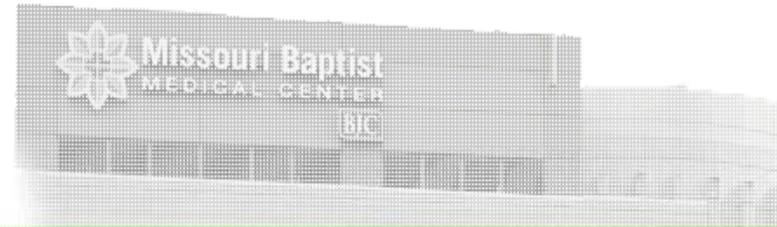
[More Data & Statistics »](#)

Contact NHSN:

Centers for Disease Control and Prevention
National Healthcare Safety Network
MS-A24
1600 Clifton Rd
Atlanta, GA 30333

nhsn@cdc.gov

[More contact info »](#)



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Infection Control

Infection Control

Infection Control Performance Results	CDC National Average	Missouri Baptist Medical Center
<p>Ventilator-associated pneumonia: Ratio of ventilator-associated pneumonia cases compared to the U.S. Centers for Disease Control's (CDC) national average. A score of less than one (1) means that the hospital's infection rate is better than the national average.</p>	1.0	0.14
<p>Catheter-related bloodstream infection: Ratio of catheter-related bloodstream infection cases compared to the U.S. Centers for Disease Control's (CDC) national average. A score of less than one (1) means that the hospital's infection rate is better than the national average.</p>	1.0	0.14
<p>Coronary artery (heart) bypass graft surgical site infections: Ratio of heart bypass surgical</p>		

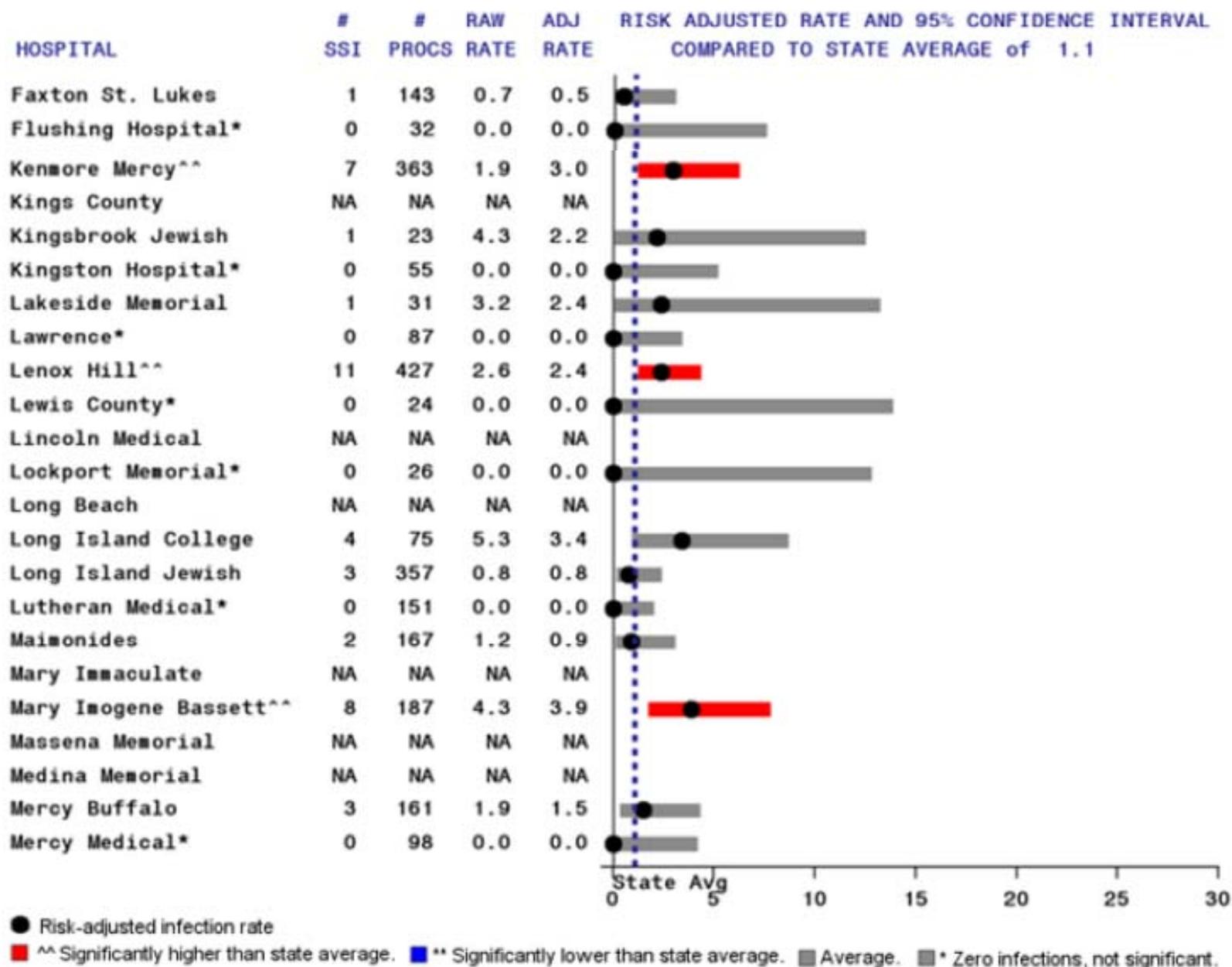


Summary of the NHSN Group Function



- Any entity can form a group in NHSN
- An NHSN facility “nominates” the group
- Facilities join the group and confer some/all rights to data
- The Group can analyze the data of its member facilities
- Facilities within the group cannot see each other’s data
- Facilities can join as many groups as they like

Figure XIV - Hip Replacement Surgical Site Infection Rates (page 2 of 5)



Data reported as of April 8, 2009. Excludes non-readmitted cases identified using post discharge surveillance. SSI=surgical site infections; Procs=procedures; Rates are per 100 procedures. Adjusted using NHSN risk category and type of procedure (initial/revision, total/partial). NA: Hospitals with less than 20 procedures.

National Healthcare Safety Network (NHSN) Report, data summary for 2006 through 2007, issued November 2008

Jonathan R. Edwards, MStat, Kelly D. Peterson, BBA, Mary L. Andrus, BA, RN, CIC, Margaret A. Dudeck, MPH, Daniel A. Pollock, MD, Teresa C. Horan, MPH, and the National Healthcare Safety Network Facilities
Atlanta, Georgia

This report is a summary of device-associated and procedure-associated module data collected and reported by hospitals participating in the National Healthcare Safety Network (NHSN) from January 2006 through December 2007 as reported to the NHSN by March 24, 2008. This report updates previously pub-

- Estimation of the magnitude of HAIs;
- Discovery of HAI trends;
- Facilitation of inter- and intrahospital comparisons with risk-adjusted data that can be used for local quality improvement activities, and
- Assistance for facilities in developing surveillance

