# Summary & Preliminary Recommendations for HICPAC RE: DQHP* Surveillance Branch Peer Review Panel


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# Acknowledgement & Thanks

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- Dr. Louise-Marie Dembry - Yale-New Haven Hospital
- Dr. Edward Hammond - Duke University
- Dr. William Munier - Agency for Healthcare Research and Quality (AHRQ)
- Mr. Russell Olmsted - St. Joseph Mercy Health System
- Dr. Steven Ostroff - Pennsylvania Department of Health
- Ms. Harriett Pitt - Long Beach Memorial Medical Center

- **CDC Representatives**
- Ms. Mary Andrus
- Dr. Michael Bell
- Dr. Elise Beltrami
- Dr. Denise Cardo
- Ms. Karen Deasy
- Mr. Jonathan Edwards
- Dr. Scott Fridkin
- Dr. Tom Hearn
- Dr. Rita Helfand
- Ms. Teresa Horan
- Mr. Tony Johnson
- Dr. Rima Khabbaz
- Ms. Melanie King
- Ms. Marty Monroe
- Dr. Daniel Pollock
- Ms. Catherine Rebmann
- Dr. Chesley Richards
- Ms. Wendy Vance (Contractor)

Proceedings Recorder: Nadine Rivera

# Scope of External Peer Review

The focus of the External Peer Review will be the NHSN Patient Safety Component in the context of other NHSN capabilities and activities and other surveillance activities of the Division, including electronic HAI surveillance (eSurveillance), adverse drug event surveillance, population-based surveillance of methicillin-resistant *Staphylococcus aureus* and *Clostridium difficile*-associated disease, and use of the National Hospital Discharge Survey or National Inpatient Sample to estimate public health burden of healthcare-associated infections.

# Current Landscape of HAI Surveillance

- Scientific - Increasing interest in multidrug-resistant organisms, *Clostridium difficile*-associated disease, HAIs in non-hospital settings, algorithmic detection of HAIs, surrogate measures of HAIs, and adherence to HAI prevention guidelines in clinical practice
- Technical - Increasing attention to technical solutions that capitalize on the availability of healthcare data in electronic form and that reduce or obviate the need for manual data collection and data entry
- Policy - Increasing emphasis on mandatory reporting by providers to public health agencies and public reporting of hospital-specific rates coupled with renewed interest in validating HAI reporting, linking federal data systems, and estimating national scope and costs of HAIs

# Key Questions to Be Addressed in the Panel's Report

1. Are there important scientific, technical, or policy features of the current landscape of healthcare-associated infection surveillance (including antimicrobial resistance and adherence to prevention guidelines) in the United States that were omitted from the Surveillance Branch's presentation?
2. Are the Surveillance Branch's current capacity, priorities and plans for the NHSN Patient Safety Component on target with respect to the current landscape?

# Key Questions to Be Addressed in the Panel's Report (continued)

3. What directions, strategies, and steps are most important for the Surveillance Branch's efforts to meet new opportunities and challenges in HAI surveillance?

# Building the Business Case for Effective HAI Surveillance Programs

- Foundation = using surveillance data to improve patient safety, prevent HAIs and improve performance
  - Protect patients
  - Protect personnel who care for patients
  - Do both in as cost effective manner as possible
- External Factors = increased scrutiny & demand for HAI data
- Value-Based Purchasing by payers
- Inaccuracies associated with use of information in administrative/billing databases…GIGO? ? Or easily obtained data may not be the truth
- Infrastructure needed to manage critical data

# NHSN: Recognized Efficacy & Value

- "The most widely accepted methodology for defining and monitoring of HAIs was developed by the CDC through the National Nosocomial Infection Surveillance (NNIS) (now the National Healthcare Safety Network [NHSN]) system)…This standardized surveillance system using uniform and widely accepted definitions and consistent processes has been shown to be of great value…The CDC/NHSN system methods for expression of infection rates and risk adjustment have become a national and international standard for categorizing and benchmarking HAI rates."

Stevenson KB, et al. Am J Infect Control 2008;36:155-64.

# Global Reach of HAI Surveillance- Examples of Extension of CDC NNIS/NHSN*

## Methodology: Building on a Foundation of Success

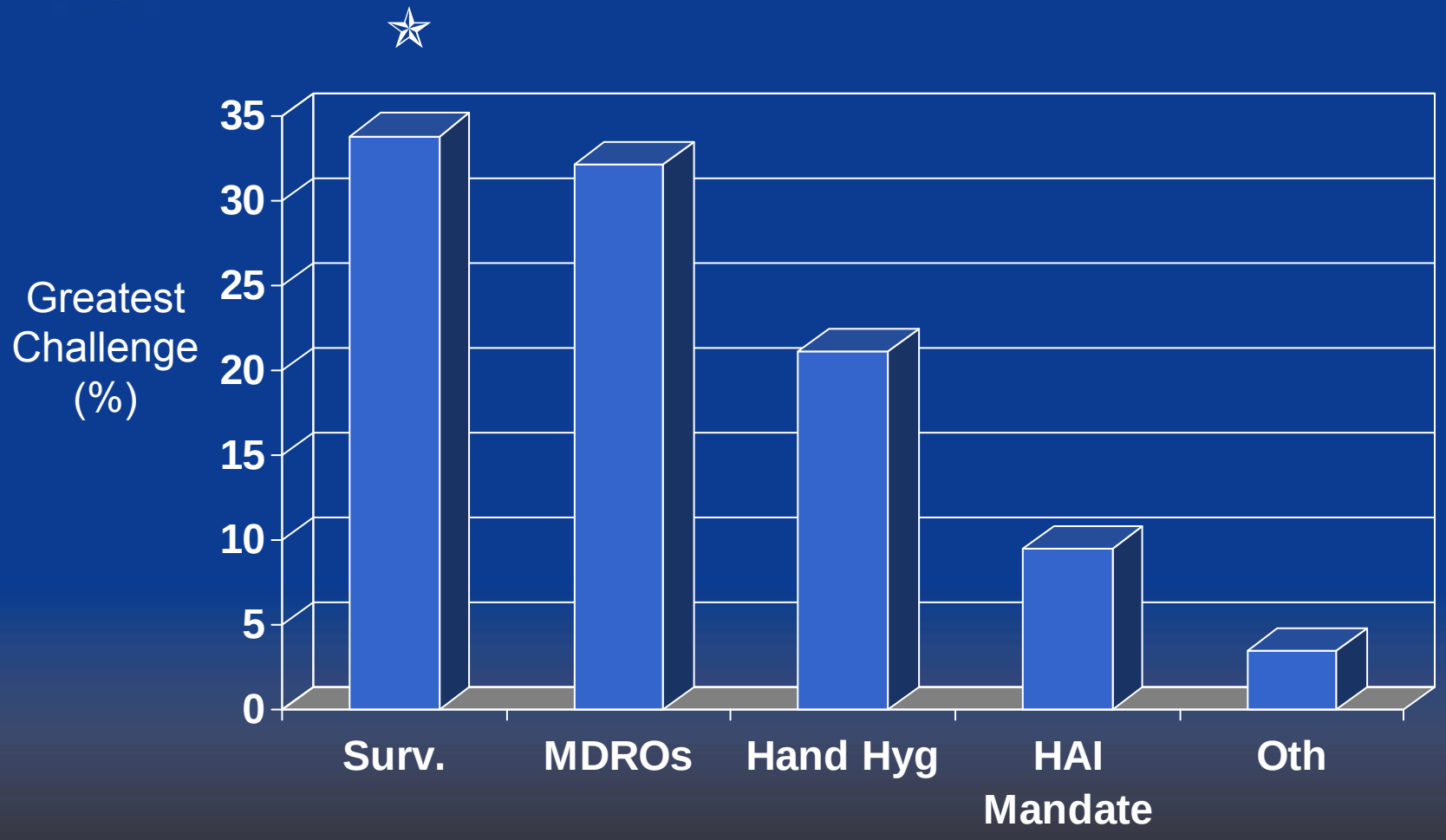
**Examples of Some Recent Studies that used NNIS/NHSN Methodology**

- Germany: Zuschneid I, et al. ICHE 2007;28:496-9
- Turkey: Leblebicioglu H, et al. JHI 2007;65:251-7
- Australia: Russo PL, et al. Am J Infect Control 2006;34:430-6.
- 8 country IC Network: Rosenthal VD, et al. Ann Intern Med 2006;145:582-91.
- Spain: Prospero E, et al. ICHE 2006;27:1313-7
- Brazil: Lobo RD, et al. Am J Infect Control 2005;33:83-7.

*National Nosocomial Infections Surveillance System / National Healthcare Safety Network

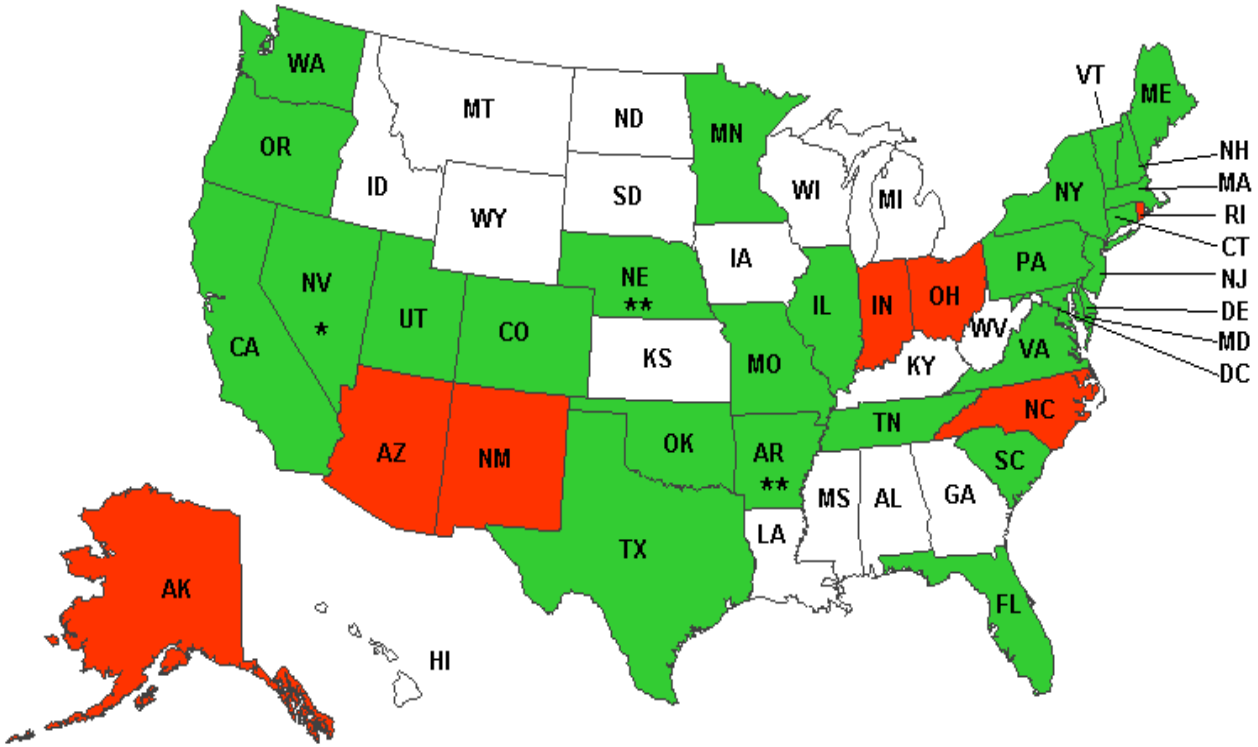
# Premier HAI Survey (N= 790);

## October 2007




☆Timely & Efficient Tracking of HAIs Across Entire Hospital Population

# Healthcare-Associated Reporting Laws and Regulations




States with study laws

Mandates public reporting of infection rates

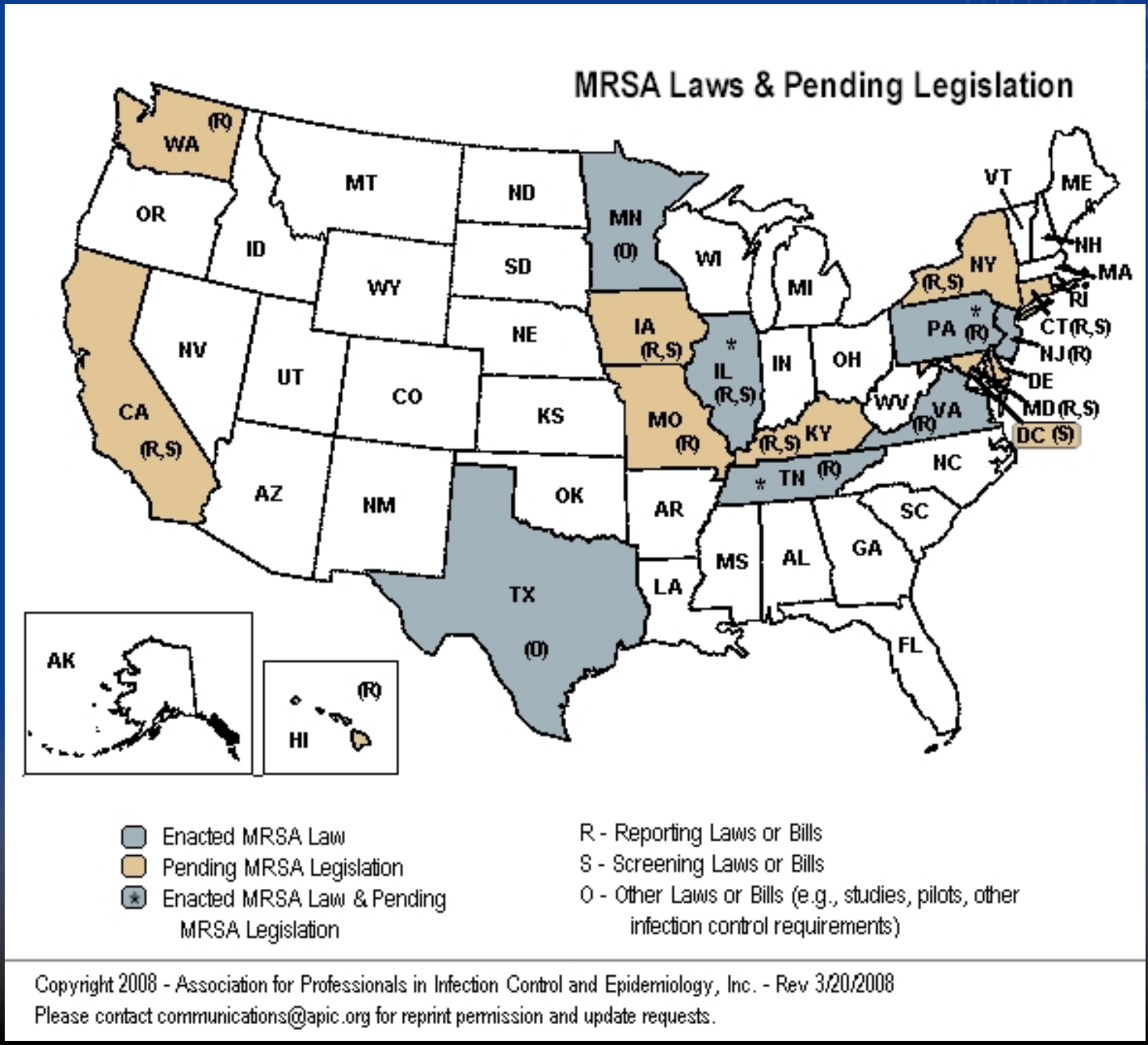
* Mandates reporting only to state government

** Voluntary


Last updated 4/29/2008

MRSA Mandate "Score Card"

03/20/08



# What and When States Using NHSN are Reporting (n=17)


| | |
|---|---|
| CLABSI | CO, CT, DE, IL, MA, MD, NJ, NY, OK, PA, SC, TN, VA, VT, WA |
| CAUTI | PA |
| SSI | CO, DE, MA, NJ, NY, PA, SC, TN, VT |
| VAP | OK, PA, SC, WA |
| Dialysis events | PA |
| MDRO* | CA, MD, NJ, PA |
| Process measures | CA, DE, MD, NJ, PA, VT |

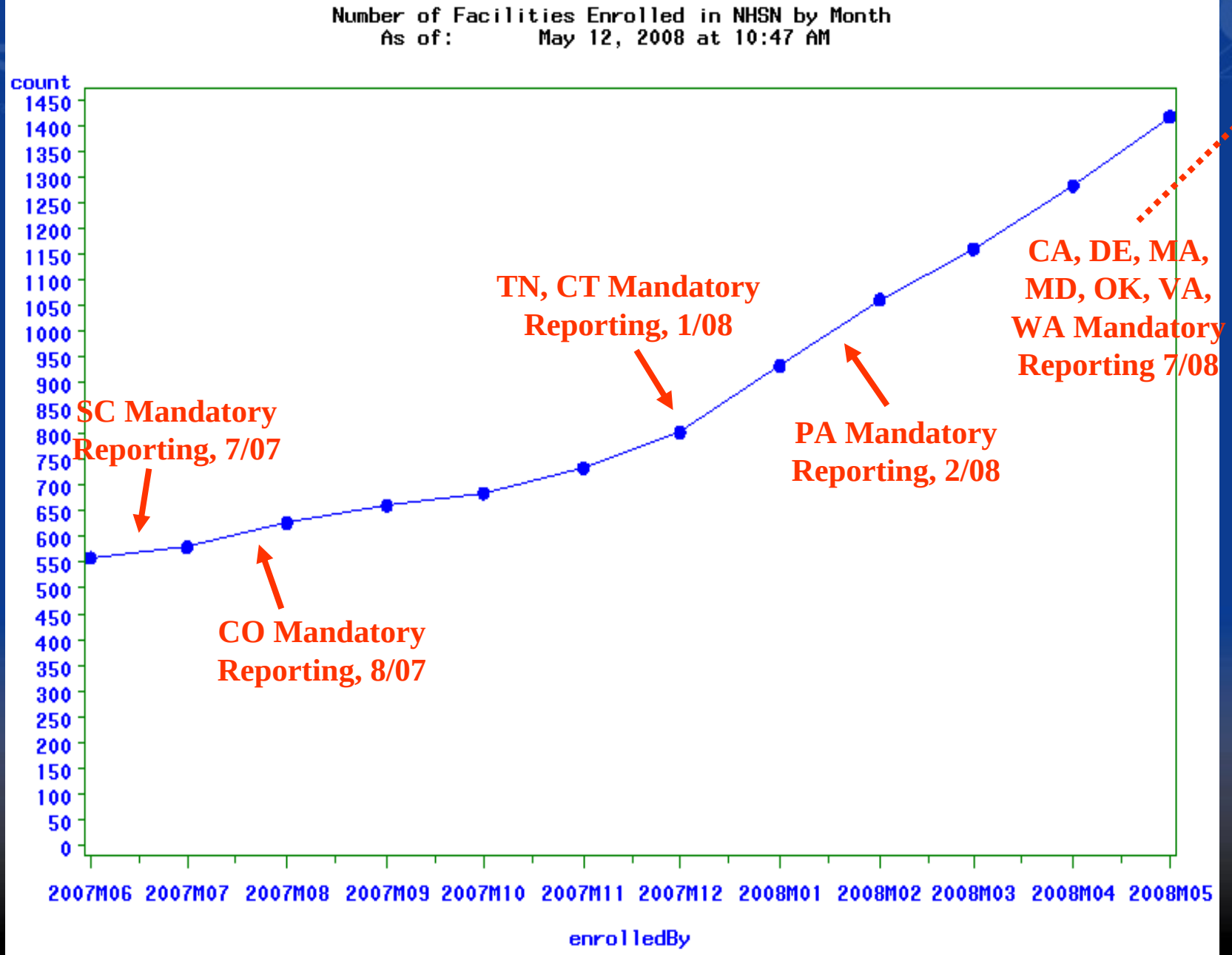
# Growth of NHSN 2007-2008

**April 2007**

- 491 facilities enrolled
  - 44% had 201-500 beds
  - 80% were general, acute care hospitals
  - 39% were non-major teaching hospitals
- 398 actively reporting data
- 8 States using or planning to use NHSN for mandatory reporting

**May 2008**

- 1470 facilities enrolled
  - 34% have 201-500 beds (56% have ≤ 200 beds)
  - 91% are general, acute-care hospitals
  - 61% are non-major teaching hospitals
- 1145 actively reporting data
- 17 States using or planning to use NHSN for mandatory reporting


Number of Facilities Enrolled in NHSN by Month
As of: May 12, 2008 at 10:47 AM
count
1450
1400
1350
1300
1250
1200
1150
1100
1050
1000
950
900
850
800
750
700
650
600
550
500
450
400
350
300
250
200
150
100
50
0
SC Mandatory Reporting, 7/07
CO Mandatory Reporting, 8/07
TN, CT Mandatory Reporting, 1/08
PA Mandatory Reporting, 2/08
CA, DE, MA, MD, OK, VA, WA Mandatory Reporting 7/08
2007M06
2007M07
2007M08
2007M09
2007M10
2007M11
2007M12
2008M01
2008M02
2008M03
2008M04
2008M05
enrolledBy

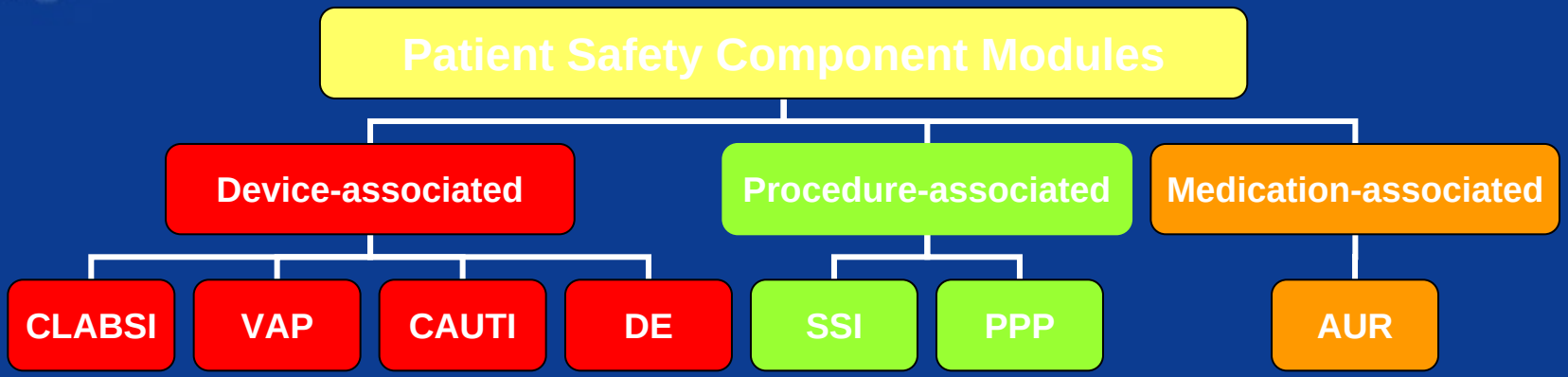
# Recall one of NHSN's Purposes

- Provide facilities with risk-adjusted data that can be used for inter-facility comparisons and local quality improvement activities
  - Based on NNIS paradigm that voluntary confidential data reporters would provide high quality data if the data were useful to them and there were no penalties for reporting the truth

# Components of NHSN


- Patient Safety
- Healthcare Personnel Safety
- Research & Development
- Biovigilance*

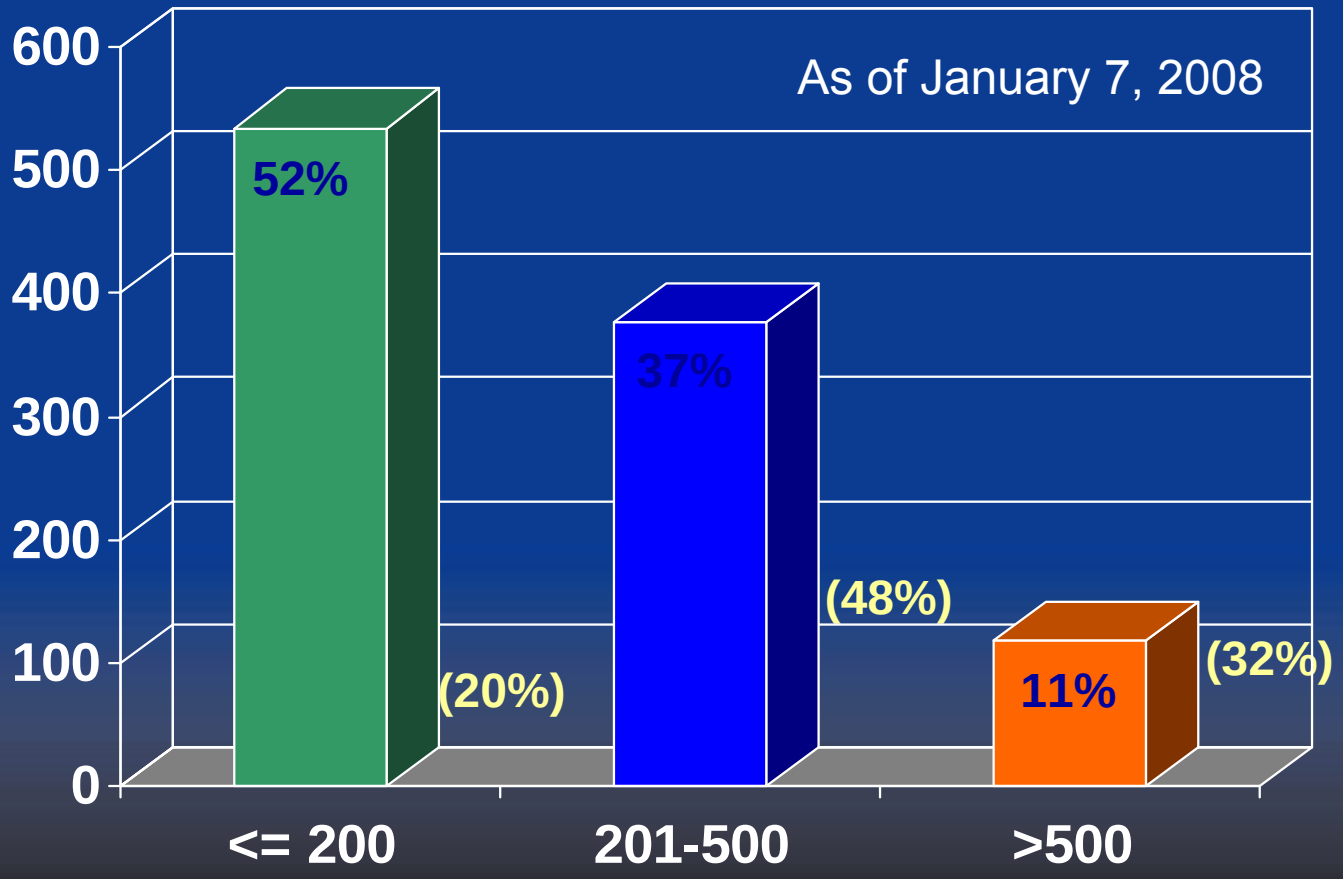
*In development




CLABSI: Central line-associated bloodstream infection
VAP: Ventilator-associated pneumonia
CAUTI: Catheter-associated urinary tract infection
DE: Dialysis event
SSI: Surgical site infection
PPP: Post-procedure pneumonia
AUR: Antimicrobial use and resistance option

# Changing Composition of NHSN

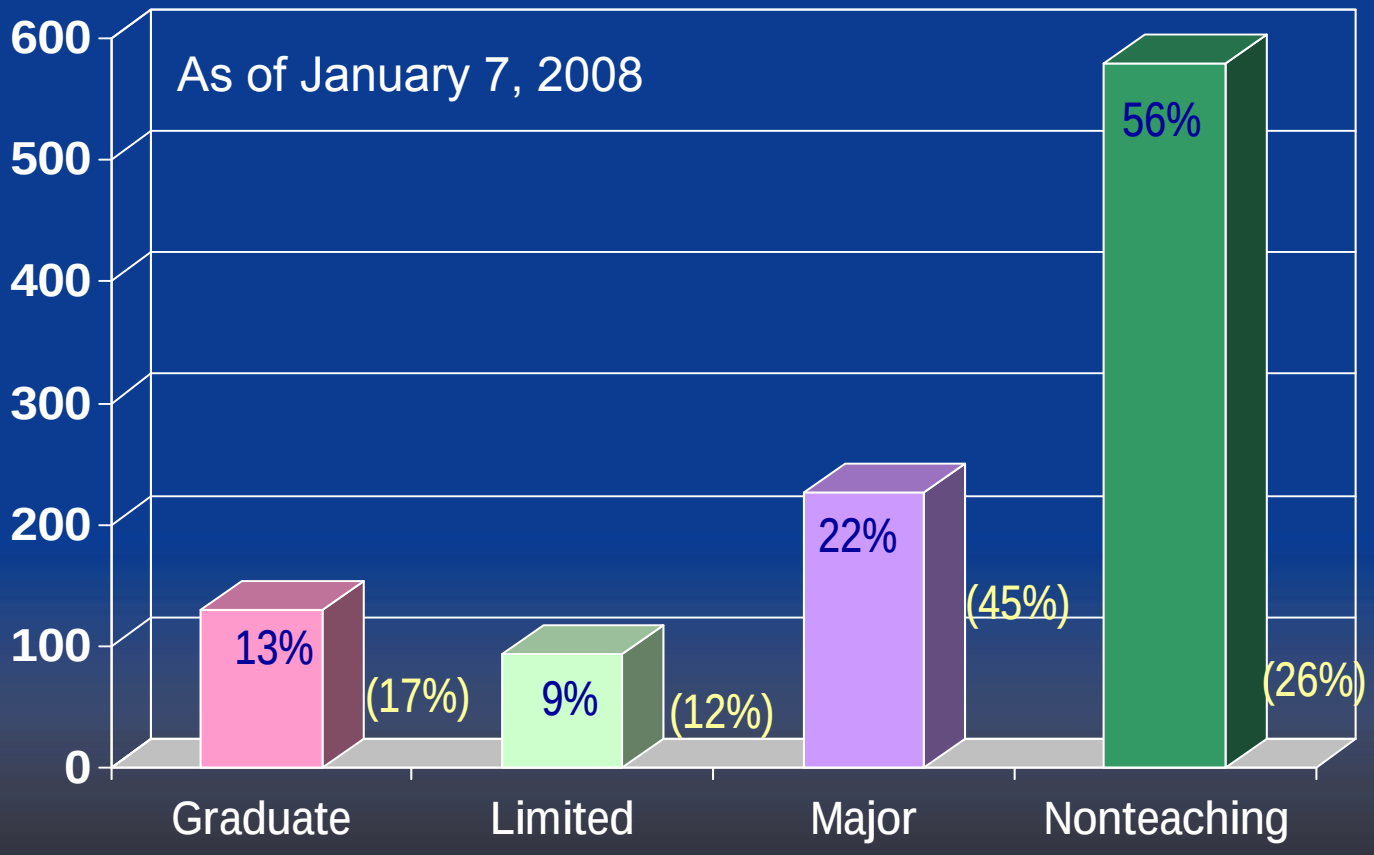
## Hospital Bed Size (n=1028)




Percentage in parenthesis from cohort that comprised 2006 NHSN Report

# Changing Composition of NHSN

## Medical School Affiliation (n=1028)




Percentage in parenthesis from cohort that comprised 2006 NHSN Report

# NHSN Analytic Products

- Internal analytic capacity
- External routine reports
  - NHSN report (HAI rates by device and procedure)
  - Dialysis report
  - Antimicrobial Resistant HAI Report (sent to ICHE)
- Special Analyses
  - HAI burden estimation (published)
  - Trends of CLABSI rates
  - Trends of MRSA & MSSA CLABSI rates
  - Procedure-specific risk factor analyses
  - Reports for external partners (GAO, congressional staffers, VA, etc.)
  - NNIS-related papers & analyses

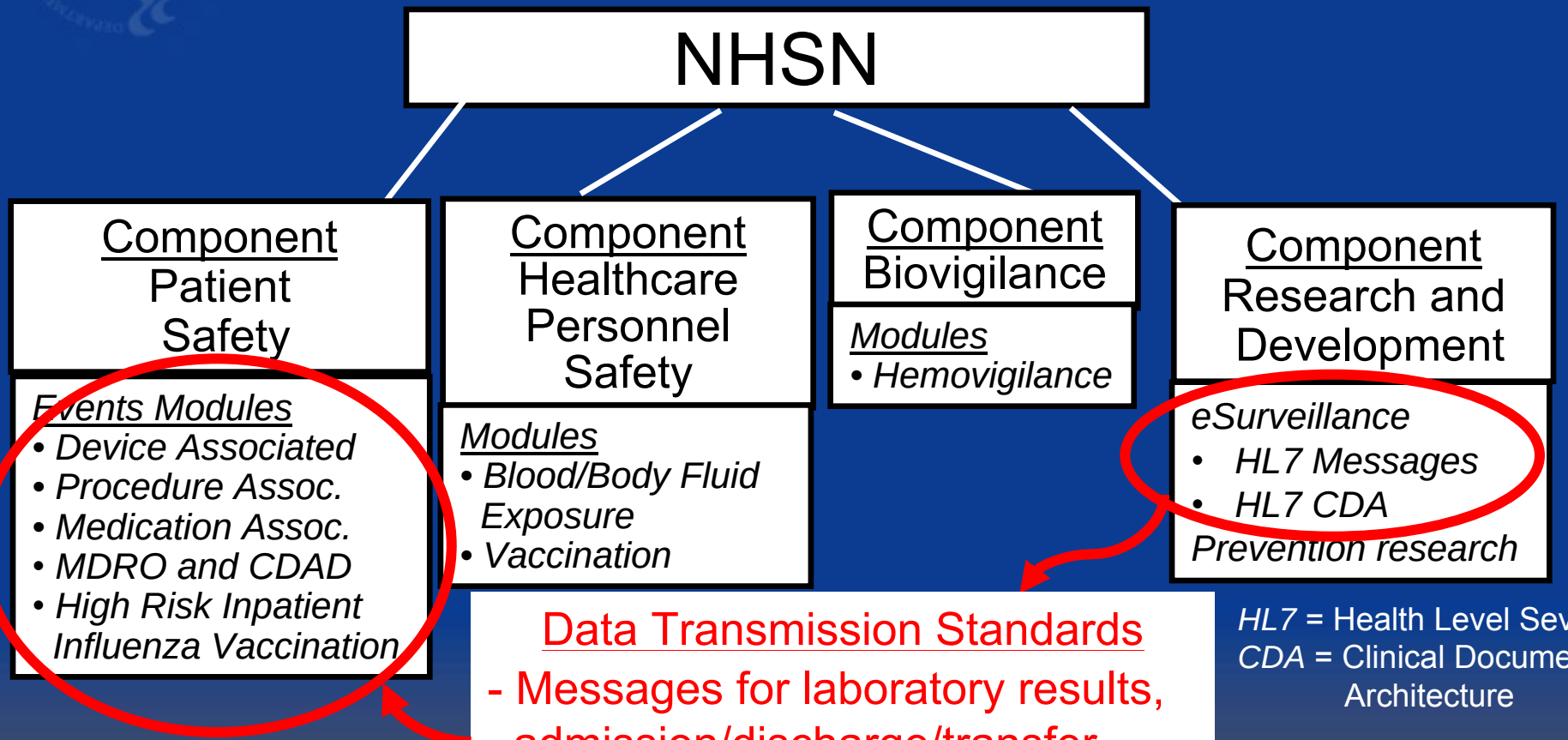
*Am J Infect Control* 2008;36:S21-6

# Making use of electronic data: The National Healthcare Safety Network eSurveillance Initiative

Jonathan R. Edwards, MS, Daniel A. Pollock, MD, Benjamin A. Kupronis, MPH, Wenkai Li, MD, MAS, MS, James S. Tolson, BS, Kelly D. Peterson, BBA, Randy B. Mincey, MBA, and Teresa C. Horan, MPH

***NHSN eSurveillance initiative*** – Efforts are underway at CDC to foster greater use of electronic data stored in health care application databases for surveillance of healthcare-associated infections and antimicrobial use and resistance. These efforts . . . focus on standards-based solutions for conveying healthcare data and validation processes to confirm that the data received at CDC accurately reflect the data transmitted by health care facilities.

# NHSN Components and Modules




Data Transmission Standards

- Messages for laboratory results, admission/discharge/transfer, and pharmacy data
- Structured documents for infection reports, denominators, and process of care measures

*MDRO* = Multidrug-resistant organism

*CDAD* = *Clostridium difficile* associated disease

*HL7* = Health Level Seven

*CDA* = Clinical Document Architecture

# Select Preliminary Recommendations for HICPAC: Peer Review Panel

- Key Question # 1: - Current Landscape:

  1. NHSN needs to broaden its focus beyond the acute care hospital to more accurately reflect the direction of care delivery out of this traditional setting.
  2. HICPAC and its liaisons, in collaboration with DHQP, should jointly develop and/or refine existing resources to create a risk assessment template for facility-based and or setting-based application.

# Select Preliminary Recommendations for HICPAC: Peer Review Panel

- **KEY QUESTION 2:** ***Are the Surveillance Branch's current capacity, priorities and plans for the NHSN PSC on target with respect to the current landscape of HAI surveillance?***

  3. The Surveillance Branch's activities and planning for NHSN are appropriate, but there are concerns about that the Branch does not have the capacity, e.g. financial, technical, etc., to carry out these plans.

  4. CDC needs to see NHSN as pivotal to addressing patient safety and providing the information needed to control and prevent HAIs and give it commensurate priority.

# Select Preliminary Recommendations for HICPAC: Peer Review Panel

- **KEY QUESTION 2:** ***Are the Surveillance Branch's current capacity, priorities and plans for the NHSN PSC on target with respect to the current landscape of HAI surveillance?***

  5. CDC should more fully embrace partnerships with other HHS agencies, e.g. CMS, AHRQ as well as other groups such as the Joint Commission, and CSTE related to NHSN, without diluting the core purpose of NHSN as the primary system for collection of high-quality information on the patterns of HAIs in the United States .

# Select Preliminary Recommendations for HICPAC: Peer Review Panel

- **KEY QUESTION 3:** ***What directions, strategies and steps are most important for the Surveillance Branch to meet new opportunities and challenges in HAI surveillance?***

6. HICPAC should explicitly endorse NHSN as the standard for surveillance of HAIs and reinforce this endorsement in relevant Guidelines and other communications it produces.

    a. HICPAC should assist DHQP and the Secretary by taking a proactive role in determining appropriate actions that should be taken when existing surveillance data are insufficient or conflicting. By example, the Committee should establish a position on value and efficacy of active surveillance detection of MDROs.

# Select Preliminary Recommendations for HICPAC: Peer Review Panel

- **KEY QUESTION 3:** ***What directions, strategies and steps are most important for the Surveillance Branch to meet new opportunities and challenges in HAI surveillance?***

7. HICPAC, in collaboration with DHQP, should establish linkages between NHSN and evidence-based guidelines, new contributions to the scientific literature, and information generated by other divisions within CDC and other HHS agencies to create a fully functional knowledge network.
8. CDC should build a constituency of partners to support the aims and goals of NHSN as the premier source of data on epidemiologic trends, new findings, etc. on HAIs.

# Select Preliminary Recommendations for HICPAC: Peer Review Panel

- **KEY QUESTION 3:** ***What directions, strategies and steps are most important for the Surveillance Branch to meet new opportunities and challenges in HAI surveillance?***

9. DHQP/CDC should encourage and promote the use of NHSN data by outside researchers. DHQP should also develop a standard policy regarding access to this data, including the specific purpose of the request, what data are needed, and how the information will be used.
10. CDC should launch a marketing campaign to broadly share success stories that showcase the efficacy and value of NHSN.

# Select Preliminary Recommendations for HICPAC: Peer Review Panel

- **KEY QUESTION 3:** ***What directions, strategies and steps are most important for the Surveillance Branch to meet new opportunities and challenges in HAI surveillance?***

11. CDC should take a multifaceted approach to improve the communication and timely output of NHSN data while increasing the visibility of NHSN analytic products. Sub-recommendation -
    - a. CDC should use innovative communication mechanisms to disseminate data to the public, such as developing and releasing a consumer version of NHSN and posting user-friendly information on web sites.