NHSN: “Information for Action”
– Reducing Healthcare Associated Infections: Tennessee

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Outline

• Background: mandatory reporting legislation
• Why did TN choose NHSN?
• Implementation
• How data are used
  – Locally
  – Infection Prevention Collaborative
  – State HAI Report
Hospital Infections Study Group: What to Collect & Report

• Emphasis on collection of actionable, verifiable data.
Outcome Measures

- Central line associated blood stream infection (CLABSI) rates in Intensive care unit (ICU) patients
- Surgical site infection (SSI) rates for patients undergoing Coronary Artery Bypass Graft (CABG) surgery
Standard Definitions/Methodology: Accurate Measurement

• National Healthcare Safety Network (NHSN)
  – Definitions
  – Methodology

• Allows comparisons
  – National
  – State
Infrastructure for Reporting
Why did TN Choose to Use NHSN Software?

• Using NNIS/NHSN definitions and methodology
• **NOT** just a reporting tool to provide information to the Department of Health
• Great analysis tools included
• Provides **USEFUL, ACTIONABLE** data in **REAL TIME** to Infection Preventionists and frontline staff that meets **LOCAL** needs
Why did TN Choose to Use NHSN?

- Good reports from users
  - one Tennessee hospital was a beta tester
- Provides a great platform for additional surveillance needs
  - MRSA and other multi-drug resistant organism (MDRO) reporting
    - *Clostridium difficile*
- $$$
  - No software/hardware costs
  - No maintenance fees
Implementation

• CDC Webinars
• Face to Face Educational Meetings
  – APIC chapters
  – State hospital association
  – Invitees: include IT, hospital administration, quality improvement, infection preventionists
• Handholding through the enrollment process
  – “like giving birth… .....painful but worth it in the end”
Ongoing Support to Hospitals

- Initial conference calls every 2 weeks (assist in enrollment)
  - Individual support to hospitals, talking them through on the telephone (e.g., conferring of rights to TDH group)
- Monthly conference calls
- Clarify questions on protocols, definitions
  - Discuss questions sent in from the field since the last call (caller/hospital remains anonymous)
- Share ideas on implementation: e.g., collection of denominator data (central line days)
Partnerships are Crucial

- CDC- DHQP- NHSN State User Group
- Other States: e.g., New York State Health Department
- APIC chapters
- Hospital Association
- Quality Improvement Organization
Ensuring the Data are Accurate

• Educational sessions:
  – interactive, case studies, pop-quizzes

• Monthly conference calls:
  – Definitions, case studies, NHSN updates, any problems

• Internal and external data validation:
  – Quality reports sent to hospitals every 2 weeks

• On-site hospital visits:
  – Data validation
  – Assessment of infection prevention activities
Reducing Burden on Infection Preventionists (IPs)

- Information Technology (IT) support
  - Uploading denominator data for procedures
  - *Electronic laboratory reporting (ELR)*
  - *Admission/Discharge/Transfer (ADT) messages*

- No double data entry by IPs
  - TDH sends aggregate numerator and denominator data to the TN Center for Patient Safety (TCPS)
    - Signed data release form
    - CLABSI
    - Calculate “Infection free” days
Use of the Data

- Local Use
  - Infection Prevention / Quality / C’ Suite / Board
  - **Front line staff **

- Infection Prevention Collaborative
  - Tennessee Center For Patient Safety (TCPS)

- State: Report on HAI
Use of the Data

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• Infection Prevention Collaborative
  – Tennessee Center For Patient Safety (TCPS)

• State: Report on HAI
  
  http://health.state.tn.us/Downloads/
Local Use of NHSN Data

[Bar chart showing Central Line Associated BSIs and Central Line Days from Jan-07 to Jun-09.]

- **Central Line Associated BSIs**
- **Central Line Days**

- **Primary CLA-BSI (per CDC)**
- **CL Days**
Use of the Data

• **Local Use**
  – Infection Prevention / Quality / C’ Suite / Board
  – **Front line staff**

• **Infection Prevention Collaborative**
  – Tennessee Center For Patient Safety (TCPS)

• **State: Report on HAI**
  
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Making Safe Quality Care the Top Priority
Collaboration and Partnership

- CEO, CMO, Infection Control Quality
- BCBS Foundation
- Consumer Rep Nissan
- TN Dept of Health
- Q-Source
- APIC
- THIMA
- TONE
- TCN
- TNA
- TN ACS
- TAHQ
- TSHRM

Patient Safety
Collaborative Includes:

- 122 hospitals enrolled as safety partners
- SCIP – 77 teams
- Central Lines – 64 teams
- MRSA – 67 teams
Collaborative Model

- Peter Pronovost, M.D. Faculty and Coach
- Johns Hopkins Model of Unit-based safety teams

**Strategies**
- Statewide Conferences
- Regional Networking Meetings
- Conference Calls with faculty experts
- Toolkits and Resources

**Website**
www.tnpatientsafety.com
Data Collection Methods

- Culture Assessment
  - AHRQ Culture of Safety Survey tool

- Central Line Bloodstream Infections
  - CDC NHSN measures

- MRSA
  - CDC NHSN measures

- SCIP
  - CMS Process Measures used in public reporting

- MONTHLY FEEDBACK OF DATA FOR ACTION
Use of the Data

- State Report on HAI
Standardized Infection Ratio [SIR]

Observed/Predicted
Central Line-Associated Blood Stream Infection (CLABSI) Rates
Tennessee (Reportable period: January 1 - December 31, 2008)
Medical-Surgical ICUs in Major Teaching Hospitals

<table>
<thead>
<tr>
<th>HOSPITAL</th>
<th># CLABSI</th>
<th># CLDAYS</th>
<th>RAW RATE</th>
</tr>
</thead>
<tbody>
<tr>
<td>Hospital A</td>
<td>3</td>
<td>355</td>
<td>8.5</td>
</tr>
<tr>
<td>Hospital B</td>
<td>3</td>
<td>1427</td>
<td>2.1</td>
</tr>
<tr>
<td>Hospital C</td>
<td>10</td>
<td>4711</td>
<td>2.1</td>
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<tr>
<td>Hospital D</td>
<td>14</td>
<td>3137</td>
<td>4.5</td>
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<tr>
<td>Hospital E</td>
<td>17</td>
<td>8307</td>
<td>2.0</td>
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<tr>
<td>Hospital F</td>
<td>2</td>
<td>1799</td>
<td>1.1</td>
</tr>
<tr>
<td>Hospital G</td>
<td>23</td>
<td>3927</td>
<td>5.9</td>
</tr>
</tbody>
</table>

Data Reported as of August 10, 2008.
** significantly higher than NHSN pooled mean
^^ significantly lower than NHSN pooled mean
* Zero infections, not statistically significant
NA Rates are not shown in ICUs with <50 central line days.
CLABSI Rates (per 1,000 Central Line days) — Pooled Means: TN (2008) vs. NHSN (2006-2007)
CLABSI Rates (per 1,000 Central Line days) – Pooled Means: TN (2008) vs. NHSN (2006-2007)

- Medical Surgical Major Teaching: TENNESSEE 2008 = 3.1, NHSN 2006-2007 = 3.2
Standardized Infection Ratio [SIR] by ICU Type and Grand Division, TN, 2008
Does It Matter if a Tennessee Hospital Participated in an Infection Prevention Collaborative in 2008?
ICUs in TCPS CLABSI initiative: SIR = 1.1 (1.0-1.2)
ICUs NOT in TCPS CLABSI initiative: SIR = 1.4 (1.2-1.7)
Summary

• NHSN provides a useful infrastructure to support efforts to reduce HAI
  – Standardized methods
  – Standardized definitions

• Data useful at a local level for local action

• Data useful at level of the State and Infection Collaborative
  – Crucial information to focus & target efforts
  – Monitor and evaluate results
If you want to go fast, go alone,
If you want to go far, go *together*

~African Proverb