MDCH SHARP NHSN USERS CONFERENCE CALL

Wednesday, January 28th, 2015

Thank you to those who were able to join our bi-monthly NHSN users’ conference call. If you were unable to participate on this call, we hope that you will be able to participate next month. Any healthcare facility is welcome to participate in these calls, whether they are sharing NHSN data with us or not. These conference calls are voluntary. Registration and name/facility identification are not required to participate.

Our monthly conference calls will be held on the 4th Wednesday every other month at 10:00 a.m. **Our next conference call is scheduled for March 25th, 2015**

- Call-in number: 877-336-1831
- Passcode: 9103755

Suggestions for agenda items and discussion during the conference calls are always welcome! Please contact Allie at murada@michigan.gov to add items to the agenda.

**HIGHLIGHTS FROM CONFERENCE CALL**

**Welcome & Introductions**
Allie welcomed participants on the call and SHARP staff in the room were introduced. Participants were reminded to put their phones on mute or to press *6.

**2015 Reporting**
There was some discussion regarding updates in 2015. Please see CDC responses to questions in blue below. The powerpoint discussed on the call is attached to end of these notes.

1. We were reviewing the designation of inpatient and outpatient ORs. I understand that it should be designated inpatient or outpatient based on where the majority of patients will end up (and if they have only one OR, it would be considered inpatient). However, we have a few smaller hospitals that have multiple ORs, and they say each OR is about a 50/50 mix. Are there more details to assist them in designating inpatient or outpatient?

Please see the information below which will be coming out in a blast email to all users, we hope, later today.

**Inpatient and Outpatient Operating Room Definitions for 2015**

Based on feedback provided by NHSN users regarding the 2015 changes to the Inpatient and Outpatient OR Procedure definition, NHSN has made a decision to
rescind these changes. The SSI protocol in the NHSN manual will be updated to reflect this change in the near future, and users will be notified by email.

NHSN serves many types and sizes of acute care facilities, and feedback has highlighted the heterogeneity of patient type (inpatient vs outpatient) which often occurs in a single OR suite. This heterogeneity among patient types was the most important reason for the decision to revert back to use of, only slightly modified, 2014 definitions for inpatient vs outpatient.

Therefore, for 2015, the NHSN SSI protocol will refer to inpatient and outpatient operative procedures, rather than operative procedures that are performed on inpatients or outpatients. Please disregard earlier guidance to identify OR areas/suites as inpatient or outpatient, and instead apply the following definitions to all surgical cases performed on or after January 1, 2015:

**NHSN Inpatient Operative Procedure**: An NHSN operative procedure performed on a patient whose date of admission to the healthcare facility and the date of discharge are different calendar days.

**NHSN Outpatient Operative Procedure**: An NHSN operative procedure performed on a patient whose date of admission to the healthcare facility and date of discharge are the same calendar day.

We apologize for any inconvenience this has caused. NHSN makes changes to definitions and protocols only after careful consideration and with data integrity and surveillance collection burden in mind. However, when user feedback informs us that we have missed the mark, we have a duty to respond. Thank you for your understanding. As always, if you have questions, please do not hesitate to send them to NHSN@cdc.gov.

2. Are UTIs still limited to two organisms even if they are reported throughout the RIT (ex. three different urine cultures show three different organisms)? I want to make sure I understand your question. The system will only allow you to enter 2 organism, unless a secondary BSI is also documented. Then a 3rd organism can be entered. However, if you are asking if 3 separate urine cultures, each with a different organism during a single RIT means that a UTI should NOT be reported, because there were more than 2 organisms, then the answer to this is NO. The exclusion for more than 2 organisms applies to a single urine culture. It signifies that the culture is probably contaminated and should therefore not be used for surveillance. 3 separate urine cultures with a single organism would not be the same. Does this clarify your question?

3. No temperature conversion should be done, even in non-infants, correct? Correct.
Update on Reports
Allie walked through a few graphs and tables from the 2013 Annual Report, due to be published to the www.michigan.gov/hai website in the very near future. This report will include an overall TAP report for the state in which each hospital will be able to see a coded ranking of all participating hospitals and receive their corresponding letter.

Next Meeting
The next SHARP Unit NHSN conference call is scheduled for March 25th, 2015 at 10:00 a.m.
Hold 2015 Data Entry!

* 2015 Patient Safety, Dialysis, and LTC Component reporting plans, surveys, events, summary data, and procedures should not be entered
  * New version of NHSN is coming any day now!
  * Can continue to enter 2014 data, update user info, and edit locations
  * Can begin collecting 2015 data with paper forms
The new “CCN Effective Date” field will allow users to change their facility’s CCN in NHSN and designate the correct effective date. Changing a CCN may be necessary for newly certified facilities or following an acquisition of an existing facility by a new company. This new feature will ensure that the facility’s NHSN data are attributed to the correct CCN for CMS reporting in a specific quarter.

The new “CCN Effective Date” field will allow users to change their facility’s CCN in NHSN and designate the correct effective date. Changing a CCN may be necessary for newly certified facilities or following an acquisition of an existing facility by a new company. This new feature will ensure that the facility’s NHSN data are attributed to the correct CCN for CMS reporting in a specific quarter.

General NHSN Information

- Beginning April 15, 2015, CDC will no longer support digital certificates
- CCN Edits: an “edit CCN” hyperlink will be added to the “edit facility information” screen to allow users to edit their CCN and enter the date the new CCN will be effective
- Reminder: check your facility info to ensure all users are accurate, there is more than one user at each facility, phone and email addresses are correct, and administrators and primary contacts are up to date.
- Users who are no longer at the facility should be deactivated
2015 NHSN Manuals and Data Collection Forms

* Updated protocols, reporting forms, and additional guidance documents have been posted to NHSN website.
* All previous protocols and forms are now obsolete (continue to use old protocols for 2014 data)
Updates to the September 2014 Newsletter

* The September 2014 Newsletter has been edited and re-posted to the NHSN website (additions in bold)
  * NHSN Infection Window Period (Does NOT apply to SSI, VAE, or LabID Event surveillance)
  * Date of Event (Event Date) (Does NOT apply to VAE or LabID Event surveillance)
  * Repeat Infection Timeframe (RIT) (Does NOT apply to SSI, VAE, or LabID Event surveillance)

Updates to the September 2014 Newsletter

- Regarding secondary BSI attribution period: The length of this attribution period will vary from 14-17 days, depending on where the date of event falls within the Infection Window Period.
- The SUTI 1a criterion will be changed, in part, to read, “Patient has an indwelling urinary catheter in place for the entire day on the date of event and such catheter had been in place for >2 calendar days, on that date (day of device placement = Day 1).”

Patient Safety Annual Facility Survey

* The 2014 Patient Safety surveys contain new and updated questions on microbiology laboratory practices, infection control practices, and antibiotic stewardship practices.
* PDF versions along with instructions have already been posted to the NHSN website
* Surveys must be completed by March 1, 2015 (will not be able to create a March 2015 monthly reporting plan without completing a 2014 survey)
Protocol Update - Pathogens

* A particular pathogen species should only be entered once, using the antibiotic susceptibility panel that shows the most resistance overall
* Starting with 2015 reporting, NHSN will not allow you to save an event if you have listed the same pathogen species twice on the event form
* Patient Safety note: this rule also applies when adding an additional pathogen to an existing event that occurred during a repeat infection window period
If the OR suite is largely intended to be used for procedures on patients who will be admitted to an inpatient unit, then all of the procedures from this OR suite will be considered NHSN inpatient procedures. 80/20 rule does not apply.
Non-primary closure: deep tissue layers may be closed by some means (with skin level left open), or the deep and superficial layers may both be left completely open. Wounds with non-primary closure may or may not be described as “packed” with gauze or other material, and may or may not be covered with plastic, wound vacs, or other synthetic devices or materials.
Reminder: In addition to reporting CLABSI and CAUTI data from all adult, pediatric, and neonatal ICUs, CMS IPPS hospitals will also be required to report CLABSI and CAUTI data from adult and pediatric medical, surgical, and medical/surgical wards.
<table>
<thead>
<tr>
<th>Scenario</th>
<th>CDC Location</th>
<th>Are CLABSI and CAUTI required in this location for Hospital IQR in 2015?</th>
</tr>
</thead>
<tbody>
<tr>
<td>An inpatient adult ward in which approximately 90% of patients are admitted to that unit because of the need for telemetry.</td>
<td>Telemetry Ward (IN:ACUTE:WARD:TELE)</td>
<td>No</td>
</tr>
<tr>
<td>An inpatient adult unit that is comprised of 60% step-down patients and 40% medical ward patients.</td>
<td>Adult Mixed Acuity Unit (IN:ACUTE:MIXED:ALL_ADULT)</td>
<td>No</td>
</tr>
<tr>
<td>An inpatient adult ward that is comprised of 55% surgical patients and 45% medical patients.</td>
<td>Medical/Surgical Ward (IN:ACUTE:WARD:MS)</td>
<td>Yes</td>
</tr>
</tbody>
</table>
PLEASE NOTE: If your facility does not have a designated observation unit, then you do not need to map an observation unit in NHSN. The observation patients should continue to be included in the surveillance efforts for the unit in which they reside.
TAP Reports

- TAP Reports will now be available in the analysis output options
  - This allows for the ranking of facilities or locations in order to identify and target those areas with the greatest need for improvement
  - Will be available for CLABSI, CAUTI, and CDI LabID event data
  - Will rank facilities or locations by the number of excess infections identified (calculated as cumulative attributable difference (CAD)).
Validation

* The 2013 NHSN Data Validation Guidance and Toolkit includes standardized guidance for conducting both internal and external validation
* Provides standardized methods for validating: ICU CLABSI, ICU CAUTI, COLO SSIs, HYST SSIs, MRSA Bacteremia LabID Events, and CDI LabID Events
* Internal guidance: meant for facilities
* External guidance: meant for state health departments or oversight agencies
* Available at: www.cdc.gov/nhsn/validation
Healthcare Personnel Safety

* CMS Reporting Deadline: May 15, 2015 for the October 1 – March 31 flu season.
* Although vaccinations may be complete at your facility, vaccination status of any new healthcare workers will still need to be reported
Notes from Wisconsin

* Helpful chart for excluded modules for general HAI reporting, a RIT example, and a secondary BSI example
# Excluded Modules for Certain General HAI Rules

**Table 1: Definition Application**

<table>
<thead>
<tr>
<th></th>
<th>SSI</th>
<th>LabID</th>
<th>VAE</th>
</tr>
</thead>
<tbody>
<tr>
<td>Infection Window Period</td>
<td>N/A</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Date of Event</td>
<td>Yes</td>
<td></td>
<td></td>
</tr>
<tr>
<td>POA</td>
<td>N/A</td>
<td></td>
<td></td>
</tr>
<tr>
<td>HAI</td>
<td>N/A</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Repeat Infection Timeframe (RIT)</td>
<td>N/A</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Secondary BSI Attribution Period</td>
<td>*</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

*See SSI specific guidance; N/A=Not Applicable
RIT Example

- November 25: Patient admitted, urinary catheter placed.
- December 1: Fever documented (38.4°C) with suprapubic tenderness. Urine specimen collected (+ 100,000 CFU/ml of *Pseudomonas aeruginosa*).
  - Report CAUTI to NHSN. This is the date of the event (also Day 1 of RIT).
- December 10: Fever documented, urine specimen collected (+ for *E. coli*).
  - Do not report another CAUTI, but edit the original event and add the new pathogen.
- December 15: If patient meets CAUTI criteria on or after this date, infection is eligible for NHSN reporting again.
Secondary BSI Attribution Period, cont.

Example: CAUTI (primary infection) has an event date of December 1, so secondary BSI must occur between November 28 (day 1 of the infection window) and December 14 (day 14 of the RIT).

- December 1: First symptoms and culture collected = Event Date.
- November 28 – December 4: Infection Window (specimen collection date, three days before and three days after).
- December 1 - 14: Repeat Infection Timeframe (event date + 13 days).
- November 28 - December 14 = Secondary BSI Attribution Period (Infection Window through RIT).
2013 MI HAI Surveillance Report

Note: Report is not final; tables and graphs subject to change
Facilities Sharing NHSN Data with SHARP

- Acute Care
- Critical Access
- LTAC
- Rehab

Legend:
- Sharing NHSN Data with SHARP
- Total Facilities in Michigan
Table B: Cumulative Michigan MRSA Rate

<table>
<thead>
<tr>
<th>Facilities</th>
<th>Number of MRSA Events</th>
<th>Number of Patient Days</th>
<th>Number of Patient Admits/Encounters</th>
<th>MRSA Rate(^a)</th>
<th>MRSA Prevalence Rate(^a)</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>2013 H2 Data</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>MRSA Inpatient LabID</td>
<td>86</td>
<td>2,231 LabID</td>
<td>2,126,601</td>
<td>549,648 Admits</td>
<td>0.9580</td>
</tr>
<tr>
<td>MRSA Bacteremia LabID</td>
<td>86</td>
<td>816 LabID</td>
<td>2,126,601</td>
<td>549,648 Admits</td>
<td>0.3533</td>
</tr>
<tr>
<td>MRSA Outpatient LabID</td>
<td>30</td>
<td>237 LabID</td>
<td>-----</td>
<td>224,116 Encounters</td>
<td>0.1057</td>
</tr>
<tr>
<td><strong>2013 Annual Data</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>MRSA Inpatient LabID</td>
<td>86</td>
<td>4,420 LabID</td>
<td>4,741,962</td>
<td>1,108,481 Admits</td>
<td>0.3533</td>
</tr>
<tr>
<td>MRSA Bacteremia LabID</td>
<td>86</td>
<td>1,591 LabID</td>
<td>4,741,962</td>
<td>1,108,481 Admits</td>
<td>0.3564</td>
</tr>
<tr>
<td>MRSA Outpatient LabID</td>
<td>30</td>
<td>501 LabID</td>
<td>-----</td>
<td>406,157 Encounters</td>
<td>0.1248</td>
</tr>
<tr>
<td><strong>Michigan Data</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

\(^a\)MRSA Rate: Methicillin-Resistant Staphylococcus aureus (MRSA) rate. This is the number of MRSA LabID Events or surveillance infections per 1,000 patient days.

MRSA Prevalence Rate: This is the number of MRSA LabID Events per 100 patients admitted or 100 encounters.

\(^a\)MRSA Lab ID: MRSA Laboratory Identified (LabID) Event. This is an option within the Multi-drug Resistant Organism / Clostridium difficile infection (MRSA/CDI) Module of NHSN for tracking laboratory results without conducting additional surveillance for infections.

\(^b\)The number of MRSA LabID Events indicated in this table is less than the number of MRSA LabID Events indicated in Table 7. This is because events used to calculate a rate required denominator data (patient days and/or admissions). Those without denominator data were excluded from the calculation.

\(^c\)MRSA bacteremia LabID: MRSA LabID event from a blood specimen

\(^d\)MRSA outpatient LabID: MRSA LabID event taken in an outpatient location, and reported only if the hospital is reporting outpatient events. These events are also reported in inpatient location, and are attributed to the admitting location.

\(^\dagger\)Indicates statistically significantly less than or greater than previous year (respectively). Significance testing was only performed on annual data, comparing 2013 annual data to 2012 annual data.
2013 MI HAI Surveillance Report

Michigan SHARP-Participating MRSA LabID Event Rates

Rate per 1,000 patient days


Time Period
### Table 11. Cumulative Michigan CDI Rate

<table>
<thead>
<tr>
<th></th>
<th>Facilities</th>
<th>Number of CDI Events</th>
<th>Number of Patient Days</th>
<th>Number of Patient Admits/Encounters</th>
<th>CDI Rate</th>
<th>CDI Prevalence Rate</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>2013 H2 Data</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>CDI Inpatient LabID²</td>
<td>86</td>
<td>4,418 LabID²</td>
<td>2,163,459</td>
<td>512,581 Admits</td>
<td>20.4210</td>
<td>0.8619</td>
</tr>
<tr>
<td>CDI Outpatient LabID²</td>
<td>10</td>
<td>135 LabID</td>
<td>——</td>
<td>223,300 Encounters</td>
<td>0.0694</td>
<td>——</td>
</tr>
<tr>
<td><strong>2013 Annual Data</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>CDI Inpatient LabID²</td>
<td>86</td>
<td>9,159 LabID²</td>
<td>4,408,069</td>
<td>1,035,071 Admits</td>
<td>20.7778</td>
<td>0.8878</td>
</tr>
<tr>
<td>CDI Outpatient LabID²</td>
<td>10</td>
<td>307 LabID</td>
<td>——</td>
<td>402,996 Encounters</td>
<td>0.0762</td>
<td>——</td>
</tr>
</tbody>
</table>

**Michigan Data**

1CDI Rate: *Clostridium difficile* rate. This is the number of CDI LabID or surveillance events per 10,000 patient days.
2CDI Prevalence Rate: This is the number of C. diff/ LabID events per 100 patients admitted or per 100 encounters.
3CDI Lab ID: *Clostridium difficile* Infection (CDI) Laboratory-Identified (LabID) Event. This is an option within the Multidrug-Resistant Organism / *Clostridium difficile* Infection (MROD/CDI) Module of NNDM for tracking laboratory results without conducting additional surveillance for infections.
4The number of CDI LabID Events indicated in this table is less than the number of CDI LabID Events indicated in Table 8. This is because events used to calculate a rate required denominator data (patient days and/or admissions). Those without denominator data were excluded from the calculation.
5CDI outpatient LabID: CDI LabID event specimen collected in an outpatient location, and reported only if the hospital is reporting outpatient events. If a patient is then admitted as an inpatient, these events are also reported as inpatient events, and are attributed to the admitting location.
6 or † indicates statistically significantly less than or greater than previous year (respectively). Significance testing was only performed on annual data, comparing 2013 annual data to 2012 annual data.
### Table 34.

<table>
<thead>
<tr>
<th>Type of Infection</th>
<th>Facilities</th>
<th>Patient Days</th>
<th>Observed(^1)</th>
<th>Predicted(^2)</th>
<th>MI SIR(^3)</th>
<th>MI p-value</th>
<th>MI 95% CI(^4)</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>2013 H2 Data</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>MRSA Bac LabID(^5)</td>
<td>83</td>
<td>2,299,821</td>
<td>147</td>
<td>168.1274</td>
<td>0.874</td>
<td>0.1069</td>
<td>0.741, 1.025</td>
</tr>
<tr>
<td>C. diff LabID(^6)</td>
<td>83</td>
<td>2,142,014</td>
<td>1,588</td>
<td>1,785.859</td>
<td>0.884</td>
<td>&lt;0.0001</td>
<td>0.846, 0.984</td>
</tr>
<tr>
<td><strong>2013 Annual Data</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>MRSA Bac LabID</td>
<td>83</td>
<td>4,689,042</td>
<td>327</td>
<td>341.5245</td>
<td>0.957</td>
<td>0.4502</td>
<td>0.858, 1.066</td>
</tr>
<tr>
<td>C. diff LabID</td>
<td>83</td>
<td>4,864,348</td>
<td>3,178</td>
<td>3,641.14</td>
<td>0.926</td>
<td>&lt;0.0001</td>
<td>0.897, 0.959</td>
</tr>
</tbody>
</table>

\(^1\)Observed: Number of infections reported during the time frame.

\(^2\)Predicted: The number of infections predicted based on the type of hospital unit(s) under surveillance.

\(^3\)SIR: Standardized Infection Ratio: Ratio of observed events compared to the number of predicted events, accounting for unit type or procedure. An SIR of 1 can be interpreted as having the same number of events that were predicted. An SIR that is between 0 and 1 represents fewer events than predicted, while an SIR of greater than 1 represents more events than expected.

\(^4\)95% CI: 95% confidence interval around the SIR estimate. A 95% CI indicates that 95% of the time, the actual SIR will fall within this interval.

\(^5\)MRSA Bacteremia LabID: Inpatient facility-wide MRSA bacteremia Laboratory-identified Event

\(^6\)Clostridium difficile LabID: Inpatient facility-wide Clostridium difficile Laboratory-identified Event

\(\downarrow\) or \(\uparrow\) indicates statistically significantly less than or greater than previous year (respectively). Significance testing was only performed on annual data, comparing 2013 annual data to 2012 annual data.
## 2013 MI HAI Surveillance Report

### Table 22: Device Standardized Infection Ratios (SIR)

<table>
<thead>
<tr>
<th>Type of Infection</th>
<th>Number</th>
<th>Facilities</th>
<th>Device Days</th>
<th>Observed*</th>
<th>Predicted*</th>
<th>SIR</th>
<th>SIR p-value</th>
<th>MI SIR</th>
<th>SIR 95% CI</th>
<th>SIR 95% CI</th>
</tr>
</thead>
<tbody>
<tr>
<td>CAUTI</td>
<td>96</td>
<td>197</td>
<td>529</td>
<td>433.223</td>
<td>433.223</td>
<td>1.0001</td>
<td>0.0001</td>
<td>1.0001</td>
<td>0.967</td>
<td>1.037</td>
</tr>
<tr>
<td>CLABSI</td>
<td>83</td>
<td>182</td>
<td>398</td>
<td>384.352</td>
<td>384.352</td>
<td>1.0001</td>
<td>0.0001</td>
<td>0.226</td>
<td>0.232</td>
<td>0.232</td>
</tr>
<tr>
<td>CRBSI</td>
<td>83</td>
<td>165</td>
<td>165</td>
<td>349.825</td>
<td>349.825</td>
<td>1.0001</td>
<td>0.0001</td>
<td>0.250</td>
<td>0.254</td>
<td>0.254</td>
</tr>
<tr>
<td>CRABSI</td>
<td>17</td>
<td>17</td>
<td>17</td>
<td>43.625</td>
<td>43.625</td>
<td>1.0002</td>
<td>0.0002</td>
<td>0.926</td>
<td>0.972</td>
<td>0.926</td>
</tr>
</tbody>
</table>

### 2013 Annual Data

<table>
<thead>
<tr>
<th>Type of Infection</th>
<th>Number</th>
<th>Facilities</th>
<th>Device Days</th>
<th>Observed*</th>
<th>Predicted*</th>
<th>SIR</th>
<th>SIR p-value</th>
<th>MI SIR</th>
<th>SIR 95% CI</th>
<th>SIR 95% CI</th>
</tr>
</thead>
<tbody>
<tr>
<td>CAUTI</td>
<td>96</td>
<td>197</td>
<td>529</td>
<td>433.223</td>
<td>433.223</td>
<td>1.0001</td>
<td>0.0001</td>
<td>1.0001</td>
<td>0.967</td>
<td>1.037</td>
</tr>
<tr>
<td>CLABSI</td>
<td>83</td>
<td>182</td>
<td>398</td>
<td>384.352</td>
<td>384.352</td>
<td>1.0001</td>
<td>0.0001</td>
<td>0.226</td>
<td>0.232</td>
<td>0.232</td>
</tr>
<tr>
<td>CRBSI</td>
<td>83</td>
<td>165</td>
<td>165</td>
<td>349.825</td>
<td>349.825</td>
<td>1.0001</td>
<td>0.0001</td>
<td>0.250</td>
<td>0.254</td>
<td>0.254</td>
</tr>
<tr>
<td>CRABSI</td>
<td>17</td>
<td>17</td>
<td>17</td>
<td>43.625</td>
<td>43.625</td>
<td>1.0002</td>
<td>0.0002</td>
<td>0.926</td>
<td>0.972</td>
<td>0.926</td>
</tr>
</tbody>
</table>

**Legend:**
- "Indicates significantly fewer infections than expected" (value < 1)
- "Indicates significantly more infections than expected" (value > 1)
- "*Observed: Number of infections (CAUTI or CLABSI) reported during the time frame."
- "*Predicted: The number of CAUTI or CLABSI predicted based on the type of hospital unit(s) under surveillance."
- "SIR: Standardized Infection Ratio. Ratio of observed events compared to the number of predicted events, accounting for unit type or procedure. An SIR of 1 can be interpreted as having the same number of events that were predicted. An SIR that is between 0 and 1 represents fewer events than predicted, while an SIR of greater than 1 represents more events than expected. If significant SIR increase from previous annual report, a significant SIR decrease from previous annual report. Note: only annual comparisons were made.
- "p-value: The p-value indicated whether the observed number of events is significantly different than expected. It can show either significantly more infections (if the SIR is greater than 1 and the p-value is < 0.05) or significantly fewer infections (if the SIR is less than 1 and the p-value is > 0.05)."
- "95% CI: 95% confidence interval around the SIR estimate. A 95% CI indicates that 95% of the time, the actual SIR will fall within this interval."
- "SIR and 95% CI taken from the National and State Healthcare-Associated Infections Standardized Infection Ratio Report, January-December 2012."
- "**CAUTI:** Catheter-Associated Urinary Tract Infection."
- "**CRBSI:** Central Line-Associated Bloodstream Infection."
Overall SSI Standardized Infection Ratios

- *Significantly different from previous report
- **Significantly different from previous report

Time Period

- 2010-2011 Annual Report *
- 2012 Annual Report **
- 2013 Annual Report *

SSI SIR

- 0
- 0.2
- 0.4
- 0.6
- 0.8
- 1.0
- 1.2
- 1.4
### Table 20:

<table>
<thead>
<tr>
<th>Facility Type</th>
<th>MRSA Infection Type</th>
<th>Rate</th>
<th>CDI Rate1</th>
<th>LR2</th>
<th>LR p-value3</th>
<th>LR 95% Confidence Interval4</th>
</tr>
</thead>
<tbody>
<tr>
<td>Teaching</td>
<td>MRSA LabID (40)</td>
<td>0.8068</td>
<td>0.3942 (78)</td>
<td>0.922</td>
<td>0.2386</td>
<td>0.786, 1.102</td>
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<tr>
<td></td>
<td>CDI LabID (40)</td>
<td>20.6350</td>
<td>6.3684 (42)</td>
<td>0.267</td>
<td>0.0002</td>
<td>0.863, 0.917</td>
</tr>
<tr>
<td>Non-Teaching</td>
<td>MRSA LabID (39)</td>
<td>1.4604</td>
<td>0.4759 (87)</td>
<td>0.246</td>
<td>0.0232</td>
<td>0.296, 0.529</td>
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<tr>
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<td>CDI LabID (39)</td>
<td>20.0176</td>
<td>6.4200 (33)</td>
<td>0.267</td>
<td>0.0001</td>
<td>0.863, 0.879</td>
</tr>
</tbody>
</table>

### 2013 Annual Data

<table>
<thead>
<tr>
<th>Facility Type</th>
<th>MRSA Infection Type</th>
<th>Rate</th>
<th>CDI Rate1</th>
<th>LR2</th>
<th>LR p-value3</th>
<th>LR 95% Confidence Interval4</th>
</tr>
</thead>
<tbody>
<tr>
<td>Teaching</td>
<td>MRSA LabID (40)</td>
<td>0.8064</td>
<td>0.2706 (76)</td>
<td>0.867</td>
<td>0.0127</td>
<td>0.841, 1.032</td>
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<td>CDI LabID (40)</td>
<td>20.6017</td>
<td>6.321 (41)</td>
<td>0.267</td>
<td>0.0023</td>
<td>0.913, 0.961</td>
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<tr>
<td>Non-Teaching</td>
<td>MRSA LabID (39)</td>
<td>1.4597</td>
<td>0.4564 (94)</td>
<td>0.246</td>
<td>0.0004</td>
<td>0.413, 0.580</td>
</tr>
<tr>
<td></td>
<td>CDI LabID (39)</td>
<td>23.2064</td>
<td>5.4373 (58)</td>
<td>0.267</td>
<td>-0.0091</td>
<td>0.736, 0.881</td>
</tr>
</tbody>
</table>

**MRSA LabID** indicates significantly fewer infections than expected. **CDI LabID** indicates significantly more infections than expected.

1 Rates were calculated using the number of infections/ events per 1,000 per 3,000 per CDI patient days or denoms days according to the same MIT rates shown in Tables 9–14 among hospitals that shared data with MDH SHARP through the NRSA. Note: MRSA LabID rates include all specimen types.

2 CDI Rate: Community-Derived rate, (LR): Percent of LabID events that were community onset.

3 Standardized Infection Ratio: ratios of observed events compared to the number of predicted events, accounting for unit type or procedure. An SR of 1 or 1 can be interpreted as having the same number of events that were predicted. An SR of 1 or 1 represents more events than predicted, while an SR of greater than 1 represents fewer events than expected. Note: MRSA LabID SRs only include blood specimens.

4 LR p-value: A SR p-value of <0.05 is considered significantly different than expected. It can show either significantly more infections (if the SR is greater than 1) and the p-value is <0.05 or significantly fewer (if the SR is less than 1 and the p-value is <0.05).

5 LR 95% Confidence Interval: around this SR estimate. A 95% CI indicates that 95% of the time, the actual SR will fall within this interval.

6 NRSA LabID: Methicillin-Resistant Staphylococcus aureus (MRSA) Laboratory-Identified (LABID) Event option within the Monitoring-Resistant Organism / Diastology-DBwInfection (MDRO/CDI) Module of NIHWR for tracking NRSA Laboratory results without conducting additional surveillance for infections.

7 CDI LabID: Costim/Reference (CDI) LabID Event option within the MDRO/CDI Module of NIHWR for tracking CDI laboratory results without conducting additional surveillance for infections.

8 Significant rates or SR increase from previous annual report, 1: significant rate or SR decrease from previous annual report.
# 2013 MI HAI Surveillance Report

## Table 2.1

<table>
<thead>
<tr>
<th>Facility Type</th>
<th>Device-Associated Infection</th>
<th>Rate (Number of Hospitals)</th>
<th>2013 Rate</th>
<th>SIR</th>
<th>SIR p-value</th>
<th>SIR 95% Confidence Interval</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Teaching</strong></td>
<td>CAUTI</td>
<td>2.7629 (47)</td>
<td>0.947</td>
<td>&lt;0.001</td>
<td>1.272</td>
<td>1.409</td>
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<tr>
<td></td>
<td>CLABSI</td>
<td>0.8068 (69)</td>
<td>0.359</td>
<td>&lt;0.001</td>
<td>0.602</td>
<td>0.594</td>
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<tr>
<td></td>
<td>Total VAE</td>
<td>3.549 (116)</td>
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<tr>
<td><strong>Non-Teaching</strong></td>
<td>CAUTI</td>
<td>1.5209 (39)</td>
<td>1.426</td>
<td>&lt;0.001</td>
<td>1.039</td>
<td>1.857</td>
</tr>
<tr>
<td></td>
<td>CLABSI</td>
<td>0.6509 (35)</td>
<td>0.368</td>
<td>&lt;0.001</td>
<td>0.516</td>
<td>0.564</td>
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<tr>
<td></td>
<td>Total VAE</td>
<td>2.171 (74)</td>
<td>---</td>
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<td>---</td>
</tr>
</tbody>
</table>

### 2013 Annual Data

<table>
<thead>
<tr>
<th>Facility Type</th>
<th>Device-Associated Infection</th>
<th>Rate (Number of Hospitals)</th>
<th>2013 Rate</th>
<th>SIR</th>
<th>SIR p-value</th>
<th>SIR 95% Confidence Interval</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Teaching</strong></td>
<td>CAUTI</td>
<td>2.1817 (51)</td>
<td>0.403</td>
<td>&lt;0.001</td>
<td>1.314</td>
<td>1.439</td>
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<td></td>
<td>CLABSI</td>
<td>0.8308 (59)</td>
<td>0.364</td>
<td>&lt;0.001</td>
<td>0.590</td>
<td>0.480</td>
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<tr>
<td></td>
<td>Total VAE</td>
<td>6.8423 (110)</td>
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<tr>
<td><strong>Non-Teaching</strong></td>
<td>CAUTI</td>
<td>1.3249 (66)</td>
<td>1.426</td>
<td>&lt;0.001</td>
<td>1.039</td>
<td>1.857</td>
</tr>
<tr>
<td></td>
<td>CLABSI</td>
<td>0.8109 (53)</td>
<td>0.368</td>
<td>&lt;0.001</td>
<td>0.516</td>
<td>0.564</td>
</tr>
<tr>
<td></td>
<td>Total VAE</td>
<td>2.1358 (119)</td>
<td>---</td>
<td>---</td>
<td>---</td>
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</tr>
</tbody>
</table>

### Notes

- **CAUTI**: Catheter-Associated Urinary Tract Infection
- **CLABSI**: Central Line-Associated Blood Stream Infection
- **VAP**: Ventilator-Associated Pneumonia
- **SIR**: Standardized Infection Ratio
- **SIR p-value**: p-value for the SIR
- **SIR 95% Confidence Interval**: 95% confidence interval for the SIR

- **SIR** indicates significantly fewer infections than expected.
- **CAUTI** indicates significantly more infections than expected.

### Source

This data is from the Michigan Healthcare Associated Infections (HAI) Surveillance Report 2013. It includes data on catheter-associated urinary tract infections (CAUTI), central line-associated blood stream infections (CLABSI), and ventilator-associated pneumonia (VAP). The report provides rates and trends for these infections, along with statistical analysis to determine whether the rates are significantly higher or lower than expected.