

Massachusetts Calendar Year 2017 HAI Data Summary

Statewide Hospital Summary



This document is designed to help you better understand the data presented on the Summary Page that follow.

Standardized Infection Ratio (SIR): This measure compares the actual number of healthcare-associated infections (HAIs) reported by a location to the predicted number of infections at that location. If a hospital experiences the exact same number of infections as predicted, the SIR has a value of 1. If a hospital experiences more infections, the SIR is greater than 1, and vice versa. Statistical significance means that the number of infections observed was unlikely to have occurred by chance alone. A statistical interpretation of Same or Lower means that the number of infections was comparable or significantly better than expected. An interpretation of Higher means that the number of infections was significantly higher than the expected.

2017 Hospital Survey Statistics

These statistics aim to provide a broad sense of patient care capacity and staffing in Massachusetts acute care hospitals. Every hospital in Massachusetts has Infection Preventionists who work to reduce healthcare-associated infections at their hospital. The Society for Healthcare Epidemiology of America (SHEA) recommends that there be at least one Infection Preventionist per 125 hospital beds.

Central Line-Associated Blood Stream Infection

The **CLABSI SIR** table shows data by ICU type. The risk of infection can vary greatly from one ICU to another depending on the type of patients in the unit and the type of treatment received. In addition to adult and pediatric ICUs, 10 hospitals in the state have neonatal ICUs, or NICUs. **Each location strives for zero infections.** The data presented in this table is from calendar year 2017 (January 1, 2017 through December 31, 2017). The predicted number of infections is calculated based on 2015 national HAI aggregate data and adjusted for each facility using variables found to be significant predictors of HAI incidence. SIRs can only be calculated using this new baseline from calendar year 2015 and forward. Therefore, you will not see data for calendar year 2014 or earlier. The SIR and confidence interval of ICUs with a predicted number of infections less than 0.5 have been suppressed (not calculable).

The **State CLABSI SIR** chart shows how the state SIR has changed over time across three ICU types. The SIRs in this chart use predicted values calculated using a negative binomial regression model generated from nationally aggregated data from calendar year 2015. **As CLABSIs are prevented, the state SIRs should decrease.**

The **central line utilization ratio** measures how often and for how long acute care patients have a central venous catheter in place. This statistic is important because fewer central lines mean fewer chances for infection. A downward trend may indicate that hospitals across the state have implemented interventions to try to reduce CLABSIs by removing central lines when not absolutely necessary.

Catheter-Associated Urinary Tract Infection

The **CAUTI SIR** table shows data by ICU type. The risk of infection can vary greatly from one ICU to another depending on the type of patients in the unit and the type of treatment received. **Each location strives for zero infections.** The data presented in this table is from calendar year 2017 (January 1, 2017 through December 31, 2017). The predicted number of infections is calculated based on 2015 national HAI aggregate data and adjusted for each facility using variables found to be significant predictors of HAI incidence. SIRs can only be calculated using this new baseline from calendar year 2015 and forward. Therefore, you will not see data for calendar year 2014 or earlier. The SIR and confidence interval of ICUs with a predicted number of infections less than 0.5 have been suppressed (not calculable).

The **State CAUTI SIR** chart shows how the state SIR has changed over time across two ICU types. The SIRs in this chart use predicted values calculated using a negative binomial regression model generated from nationally aggregated data from calendar year 2015. **As CAUTIs are prevented, the state SIRs should decrease.**

The **catheter utilization ratio** measures how often and for how long acute care patients have a urinary catheter in place. This statistic is important because fewer urinary catheters mean fewer chances for infection. A downward trend may indicate that hospitals across the state have implemented interventions to try to reduce CAUTIs by removing urinary catheters when not absolutely necessary.

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Surgical Site Infection

SSI data are reported by procedure type since the risk of infection can vary greatly from one procedure to the next depending on individual patient and hospital factors. All deep incisional primary and organ/space infections are included in this report. Procedures with implants are observed for infection for 90 days after the procedure. These procedures included coronary artery bypass graft, hip prosthesis and knee prosthesis procedures. Abdominal hysterectomies, vaginal hysterectomies and colon procedures are observed for 30 days after procedure.

The **SSI SIR** table contains hospital data for 2017 for each procedure currently under surveillance. **Each hospital strives for zero infections.** The predicted number of infections is calculated based on 2015 national HAI aggregate data and adjusted for each procedure using variables found to be significant predictors of HAI incidence. SIRs can only be calculated using this new baseline from calendar year 2015 and forward. Therefore, you will not see data for calendar year 2014 or earlier. The SIR and confidence interval of ICUs with a predicted number of infections less than 0.5 have been suppressed (not calculable).

The chart included depicts SSI statistical interpretations for calendar year 2015 through 2017. It is meant to be used as a quick assessment of significant variation of infection rates over time. This chart does not capture changes in infection rates that were not statistically significant.

Facility Wide LabID Events

The LabID event section includes overall inpatient facility-wide (FacWideIn) *Clostridium difficile* infection (CDI) and methicillin-resistant *Staphylococcus aureus* (MRSA) bacteremia surveillance LabID event data reported from acute care facilities. LabID events are provided as proxy surveillance measures of healthcare infection acquisition, exposure burden, and infection burden, based on laboratory and limited admission data, and should be evaluated as such. When interpreting pediatric CDI data, asymptomatic colonization in children less than one year of age may confound pediatric CDI rates.

The **CDI and MRSA SIR** table contains hospital data for 2017 for each LabID event currently under surveillance. Each hospital strives for zero infections. The predicted number of infections is calculated based on 2015 national HAI aggregate data and adjusted for each facility using variables found to be significant predictors of HAI incidence. SIRs can only be calculated using this new baseline from calendar year 2015 and forward. Therefore, you will not see data for calendar year 2014 or earlier. The SIR and confidence interval of ICUs with a predicted number of infections less than 0.5 have been suppressed (not calculable).

The chart included depicts LabID statistical interpretations for calendar year 2015 through 2017. It is meant to be used as a quick assessment of significant variation of infection rates over time. This chart does not capture change in infection rates that were not statistically significant.