



About the Data: Healthcare-Associated Infections in Oregon, 2017

About the Data

This document is intended to accompany facility-specific and statewide health care-associated infections (HAI) data for calendar year 2017. Facilities reported data to the Oregon Health Authority (OHA) through the National Healthcare Safety Network (NHSN), managed by the Centers for Disease Control and Prevention (CDC).

Tables and maps that include 2017 data and summarize performance for all metrics that facilities must report to Oregon's HAI Program are accessible online at www.healthoregon.org/hai-reports.

Background

One in 25 hospitalized patients in the United States gets a health care-associated infection (HAI) while receiving medical treatment. An estimated 722,000 HAIs occur each year in acute care facilities. (1) HAIs result in medical complications, longer hospital stays, increased risk of death, and increased health care costs. (2)

In 2007, the Oregon Legislative Assembly passed House Bill 2524. This bill created Oregon's HAI Program, with oversight provided by its HAI Advisory Committee (HAIAC) of stakeholders including providers, consumers, insurers and experts. The HAIAC advises OHA regarding which HAIs facilities should report to OHA under Oregon Administrative Rule (OAR) 333-018. Oregon's hospitals began reporting selected HAIs to OHA in 2009. By 2015, 10 types of HAIs were reportable by hospitals. In addition, a requirement for dialysis facilities to report adverse events was established. Published tables and maps contain HAI and dialysis event data; data from previous years are also available at the link provided above.

Methods

Surveillance is conducted by facility staff, typically infection preventionists. NHSN definitions are applied to determine whether an HAI has occurred. CDC's NHSN website provides reporting resources, including HAI definitions and surveillance protocols, online at <https://www.cdc.gov/nhsn/enrolled-facilities/index.html>.

On September 4, 2018, OHA staff exported data from NHSN. Any changes made by facilities to their data after this date may not be reflected in published data.

OHA staff reviewed all data submitted, and provided each facility their annual data for each reported measure before publication. Facilities were given two weeks to respond and to correct any errors. Final data were then provided to allow a second opportunity for facilities to review and make any needed edits. The HAI Program offers technical assistance to help resolve any data discrepancies.

Hospitals may have been exempt from reporting specific HAIs. OHA granted exemptions from CLABSI reporting if hospitals reported fewer than 50 central line days a year. Likewise, OHA granted exemptions from procedure-specific surgical site infection (SSI) reporting if hospitals reported performing fewer than 20 of a given reportable surgical procedure a year. Some hospitals report voluntarily despite meeting criteria for an exemption. Following a vote by the Health Care-Associated Infections Advisory Committee (HAIAC), the

exemption option has been eliminated starting in January 2019. This change is intended to allow the HAI Program to better protect patient safety; improve generalizability of HAI data; improve consistency between states; and continue to meet our legislative mandate. ¹

Data Presentation and Usage

Mandatory healthcare-associated infections reporting to State of Oregon includes:

- ❖ Central line-associated bloodstream infections (CLABSIs) in selected locations
- ❖ Catheter-associated urinary tract infections (CAUTIs) in selected locations
- ❖ Laboratory-identified methicillin-resistant *Staphylococcus aureus* (MRSA) bloodstream infections (BSIs)
- ❖ Laboratory-identified *Clostridioides difficile* infections (CDI)
- ❖ Surgical site infections (SSIs) resulting from the following procedures:
 - Coronary artery bypass graft (CBGB)
 - Knee prosthesis (KPRO)
 - Colon surgery (COLO)
 - Hip prosthesis (HPRO)
 - Abdominal hysterectomy (HYST)
 - Laminectomy (LAM)

House Bill 2301 eliminated the requirement for OHA to produce an annual summary report for health care acquired infections. OAR 333-018 was amended accordingly as of January 1, 2018. This change was made to avoid duplication of reporting concurrently required by federal regulatory agencies, especially Centers for Medicare & Medicaid Services, which already report facility-specific data from Oregon and across the US. Though data will no longer regularly be summarized in a single PDF document, annual HAI data will continue to be available on our website to ensure timely access to Oregon- and facility-specific data for consumers, policy makers, and health care partners.

Because the information presented is for diverse stakeholders, we provide the following recommendations for use.

- Consumers: Online maps let consumers search HAI data at the region or facility level. For example, a patient seeking elective medical care can view a map for hospital-onset *Clostridioides difficile* infection (HO-CDI) for the entire state, with performance on national benchmarks, by clicking on facilities.
- Health care providers: Facility-level tables will be of interest to front-line personnel, those who work in infection prevention, administrators and other health care providers. Tables include benchmarks to evaluate facility performance. The standardized infection ratio is a measurement in relation to the national baseline in 2015. Tables also include whether performance met U.S. Department of Health and Human Services (HHS) HAI reduction targets, and how the individual facility's data compared with national performance.
- State and regional health officials: By viewing the data summaries public health officials will know more about the overall burden of HAIs and the best way to guide resources. Local officials can filter tables and maps by county or Health Preparedness Program (HPP) region to examine regional performance.

¹ For more information about changes to exemption policies impacting data starting in 2019, please review HAIAC meeting materials from March 12, 2018 online at <https://go.usa.gov/xUFS9>

Data Interpretation

The standardized infection ratio (SIR)

- This report characterizes HAIs using the SIR, the metric recommended by CDC. Information on the interpretation of the SIR is available online at <https://www.cdc.gov/nhsn/pdfs/ps-analysis-resources/nhsn-sir-guide.pdf>. CDC recommends this metric. This metric is the ratio of the observed number of infections reported in 2017 to the predicted number for 2017. The predicted number comes from risk-adjusted national baseline data. The risk adjustment inherent in the SIR helps accurately compare different kinds of hospitals. For example, CLABSIs and CAUTIs are adjusted for hospital unit type (e.g., wards, ICUs); HO-MRSA and HO-CDI LabID events are adjusted for admission prevalence and laboratory testing methods; and SSIs are adjusted for patient-level risk. CDC includes information about risk adjustment methods along with their most recently published data.
- CDC updated the national baseline for the purposes of risk adjustment for all measures in 2015. Information regarding the 2015 baseline is available online at <https://www.cdc.gov/hai/surveillance/data-reports/2015-SIR-report.html>.
- Models used for SIRs presented depend upon measure, facility type, and patient age. Descriptions of the models used to analyze these data are presented in our internal validation guidance document, available online at <https://go.usa.gov/xUMfR>.

Benchmarks

- OHA compares the collective, state-level and facility-level data in these tables and maps against two national benchmarks:
 - ❖ The 2020 U.S. HHS target SIRs for acute care hospital HAI prevention, as described in the National Action Plan to Prevent Health Care-Associated Infections: Road Map to Elimination, available online at <https://health.gov/hcq/prevent-hai-action-plan.asp>.
 - ❖ The 2015 national SIR established by NHSN, as described in the National and State Healthcare-associated Infection Data Report, available online at <https://www.cdc.gov/hai/surveillance/data-reports/2015-HAI-data-report.html>.

Table elements

- Facility name: Facilities listed are those that reported data to OHA. Facilities missing from tables had an exemption from reporting.
- Location (where relevant): For device-associated infections (CLABSI and CAUTI), facilities must report from specific locations. This aligns with the Centers for Medicare & Medicaid Services (CMS) for the hospital inpatient quality reporting program (IQR). Each table presents both collective data and data by location.
- Observed infections: Total number of infections (or events) meeting the NHSN criteria for reporting.
- Predicted infections: Total number of infections (or events) predicted for 2017, based on risk-adjusted national baselines.
- Standardized infection ratio (SIR): This measure divides the number of observed infections (or events) by the number of predicted infections (or events).
- SIR interpretation: An SIR value of one means the facility reported the same number of infections (or events) as predicted based on risk-adjusted national baselines. Values of less than one means the facility reported fewer infections than predicted based on the national baseline. Values of greater than one means the facility reported more infections than predicted based on the national baseline. SIRs are not calculated where the predicted number of infections is fewer than one.
- 95% confidence interval (CI): There is a 95% chance the true SIR lies within this range of values. If this range includes the value of one, the number of infections or events reported was not significantly different from predicted. Confidence intervals (CI) will not be calculated when an SIR is not available.

- Direction and significance: The following categories describe how a facility's observed number of HAIs in 2017 compared to the number of HAIs predicted based on the national baseline.
 - ❖ Statistically fewer infections
 - ❖ Fewer infections (not statistically significant)
 - ❖ More infections (not statistically significant)
 - ❖ Statistically more infections
- Benchmarks: met 2020 HHS target SIR or zero infections: Benchmarks help facilities assess progress towards HAI prevention goals. The goal for all hospitals should be zero infections. Still, five-year HAI reduction targets set by HHS in 2016 (for 2020) reflect if hospitals have seen substantial decreases in HAIs since collecting baseline data.

Prevention Activities

The HAI Program supports various infection prevention efforts.

- [DROP-CRE Network](#)
The Drug Resistant Organism Prevention and Coordinated Regional Epidemiology (DROP-CRE) Network is a unique public-academic partnership whose primary objective is to detect and contain carbapenem-resistant *Enterobacteriaceae* (CRE) in Oregon.
- [HAI Advisory Committee](#)
The Healthcare-Associated Infection Advisory Committee (HAIAC) is a statutorily mandated committee to advise Oregon Health Authority (OHA) on the development of a health care acquired infections reporting program in Oregon.
- [Interfacility Transfer Communication](#)
As part of best practice during patient transfers, information about a patient's medical status, including colonization or infection with a multidrug-resistant organism, should travel with a patient and be readily available to medical providers.
- [The Only and Only Campaign for Safe Injections](#)
The Oregon Health Authority has joined the CDC-led *One and Only Campaign* to raise awareness among patients and healthcare providers about safe injection practices. The campaign aims to eradicate outbreaks resulting from unsafe injection practices.
Additional information about prevention activities is available online at <https://www.oregon.gov/oha/PH/DISEASES/CONDITIONS/COMMUNICABLEDISEASE/HAI/PREVENTION/Pages/index.aspx>.

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References

1. Magill SS, Edwards JR, Bamberg W, et al. Multistate Point-Prevalence Survey of Health Care–Associated Infections. *N Engl J Med* 2014;370:1198–208. Available from: <http://www.nejm.org/doi/full/10.1056/NEJMoa1306801>.
2. Scott RD. The direct medical costs of healthcare-associated infections in US hospitals and the benefits of prevention2009. CDC Report. Available from: https://www.cdc.gov/HAI/pdfs/hai/Scott_CostPaper.pdf.