



Washington State Department of
HEALTH

**Annual
Healthcare-Associated
Infections Report
2022**

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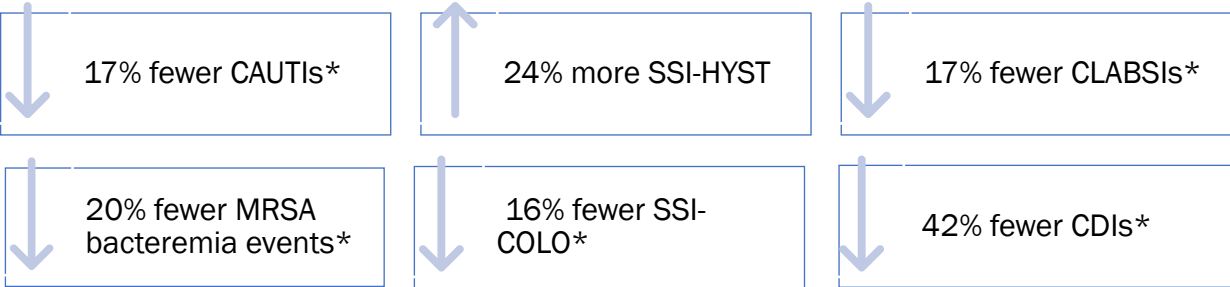
Executive Summary

The Washington State Department of Health (WA DOH) publishes an annual healthcare-associated infection (HAI) report to provide data about the quality of hospital care in Washington, monitor prevention progress, and compare to national averages and targets. This report covers HAIs that patients have acquired in [acute care hospitals](#) (ACHs) throughout Washington in 2022 and have been reported to the Centers for Medicare and Medicaid Services (CMS). It also includes a report of influenza vaccination coverage among healthcare personnel during the 2022-2023 influenza season, defined as October through May. The reported data are mandated by CMS and by the [Washington Administrative Code \(WAC\)246-440-100](#).

Washington hospitals reported a steady decline in rate of incidence for most HAIs from 2015 to 2019. By 2019, hospitals reported significantly lower HAI incidence than the national baseline and were on track to meet elimination targets defined by the 2020 U.S. Department of Health and Human Services (HHS) in the [National Action Plan to Prevent Healthcare-Associated Infections: Road Map to Elimination \(HAI Action Plan\)](#). However, the pandemic curtailed those efforts. It will take time for HAI rates to return to the pre-pandemic baseline levels. Current goals are being created with the assumption that HAI rates will take 2-3 years to fall to pre-pandemic baseline¹.

For each HAI in this report, Washington hospitals' performances are included below as compared to the national baseline:

Figure 1. Washington Hospitals as Compared to the National Baseline, 2022



* Denotes statistical significance defined by a p-value less than 0.05

The HAI progress in Washington hospitals changed in 2020, with the start of the COVID-19 pandemic. HAI incidences began to increase, even surpassing the National Healthcare Safety Network (NHSN) baseline for some HAIs. In reporting year 2022, HAI incidence increased slightly, but the increases were not statistically significant. Compared to 2021 data, the 2022 HAI standardized infection ratios (SIRs) remained the same or worse for all HAIs except for catheter-associated urinary tract infection (CAUTI). Significant progress has been made to reduce CAUTI incidence back to its pre-pandemic level as it surpassed the NHSN baseline during the pandemic. Washington HAI SIRs remain below the NHSN baseline SIR of 1.0 for most HAIs.

SIRs better in 2022 as compared to 2021 for:

- Catheter-associated urinary tract infection (**CAUTI**)

SIRs worse* or the same in 2022 as compared to 2021 for:

- Central-line associated blood stream infection (**CLABSI**)
- Clostridioides difficile infection (**CDI**)
- Methicillin-resistant Staphylococcus aureus (**MRSA**) bacteremia
- Surgical site infection following colon surgery (**COLO**)
- Surgical site infection following abdominal hysterectomy (**HYST**)

*HAI incidence increased slightly, but not statistically significant.

The WA DOH Healthcare-Associated Infection and Antimicrobial Resistance (HAI/AR) Program works closely with local health jurisdictions (LHJs), the Washington State Hospital Association (WSHA) and Washington state hospitals to track HAIs. HAI tracking is standardized using the Center for Disease Control and Prevention's (CDC) NHSN surveillance system and standardized surveillance definitions, which allows the data to be used for epidemiological purposes. The HAI/AR Program utilizes NHSN to monitor HAI events over time to help inform trends and quality improvement activities, which is important for prevention of HAIs and risk reduction.

Figure 2. Healthcare-associated Infections SIRs in Washington, 2018-2022

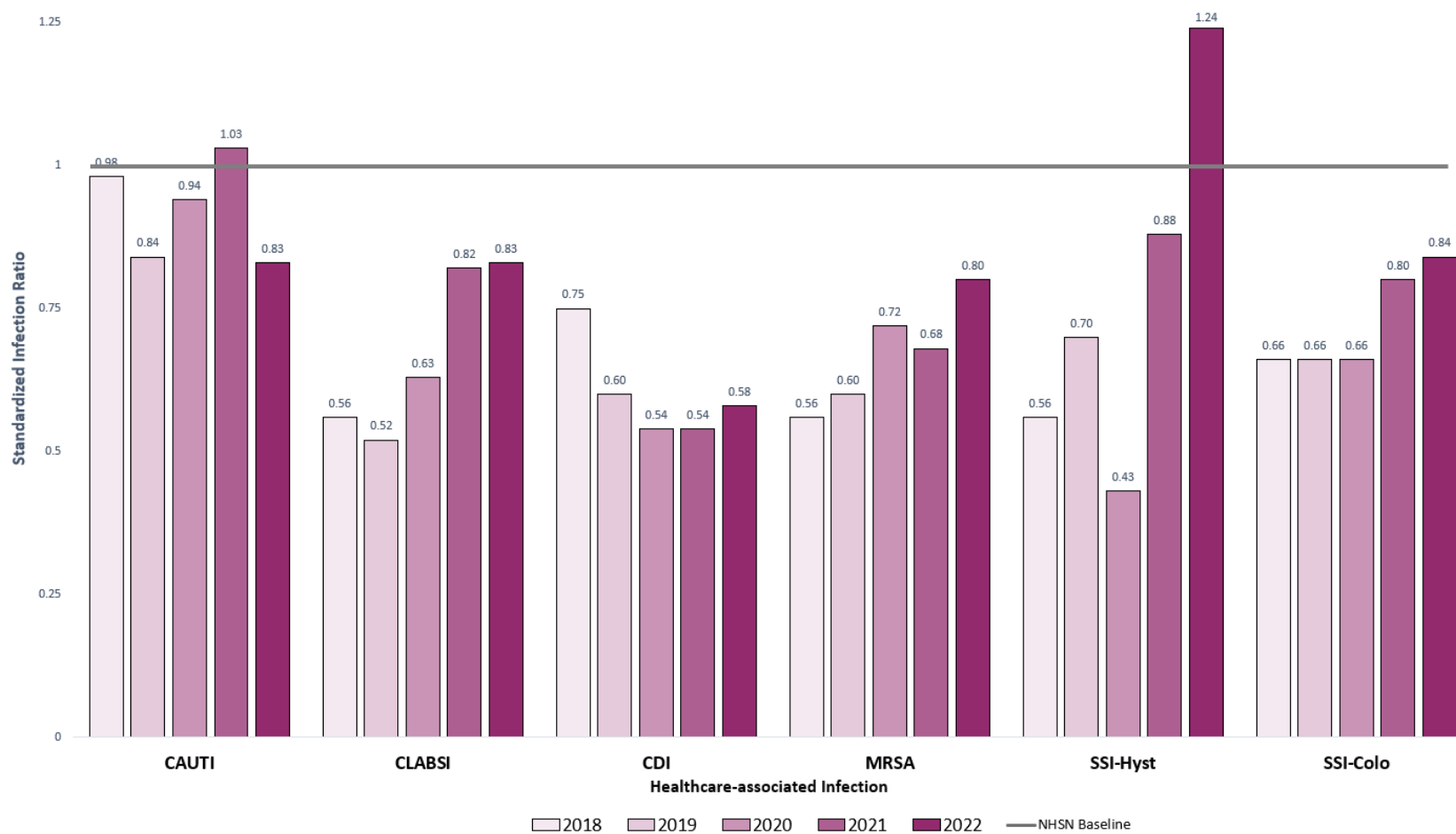


Figure 2 shows the statewide SIR for each reportable HAI for the past 5 years. Since 2018, there has been a general uptrend in HAI incidence, most notably for CAUTI, CLABSI, MRSA, SSI-COLO, and SSI-HYST. In 2022 (darkest bar), most HAIs increased, except for CAUTI. Only SSI-HYST surpassed the national baseline of SIR = 1, represented by the gray line.

Table 1. Washington HAI Standardized Infection Ratios (SIRs), 2022

HAI	Location	Number of Infections		Number of Device Days/ Patient Days/ Procedures	SIR	95% Confidence Interval (CI)
		Observed	Predicted			
CAUTI	<i>Facility-Wide</i>	358	430.37	365,634	0.83	0.75, 0.92
	<i>Critical Care</i>	166	237.15	170,463	0.70	0.60, 0.81
	<i>Non-Critical Care</i>	192	193.22	195,171	0.99	0.86, 1.14
CLABSI	<i>Facility-Wide</i>	339	409.90	406,671	0.83	0.74, 0.92
	<i>Critical Care</i>	204	192.31	171,991	1.06	0.92, 1.21
	<i>Non-Critical Care</i>	108	189.98	213,945	0.57	0.47, 0.68
	<i>Neonatal Critical Care</i>	27	27.61	20,735	0.98	0.66, 1.40
CDI	<i>Facility-Wide</i>	832	1427.74	2,839,492	0.58	0.54, 0.62
MRSA	<i>Facility-Wide</i>	161	202.07	3,048,014	0.80	0.68, 0.93
SSI - COLO	<i>Facility-Wide</i>	145	171.84	6,342	0.84	0.72, 0.99
SSI - HYST	<i>Facility-Wide</i>	43	34.74	4,198	1.24	0.91, 1.65

Green indicates SIR is significantly LOWER than the national baseline (SIR<1).

Red indicates SIR is significantly HIGHER than the national baseline (SIR>1).

Definition of locations:

Critical Care: Includes all intensive care units, excludes wards and non-critical care units and neonatal critical care units.

Facility-Wide: All inpatient units combined, excluding neonatal critical care units.

Neonatal Critical Care: Hospital area housing newborns and infants with complex, critical or serious illness, e.g. neonatal intensive care unit

Non-Critical Care: includes all wards (stepdown, mixed acuity and specialty care areas, excluding neonatal critical care units.

Introduction

Background

Healthcare-associated infections (HAIs) are infections acquired by patients as they receive care in healthcare settings. These infections threaten patient safety and public health and are a major cause of morbidity and mortality in the United States. The impact of HAIs is significant, contributing to increased length of hospitalization, financial burden, loss of trust in the healthcare system, and potential death. Each day, about 1 in 31 hospital patients will develop at least one HAI². An HAI develops during, or soon after, receiving healthcare services or being in a healthcare setting. These settings can include hospitals, clinics, doctor's offices, surgery centers, dialysis centers, nursing homes, or home-care visits. HAIs are caused by bacteria, fungi, viruses, and other common pathogens that enter the body through vulnerable body sites such as an open wound from surgery or an invasive medical device. These infections can cause serious illness and death, but many are preventable.

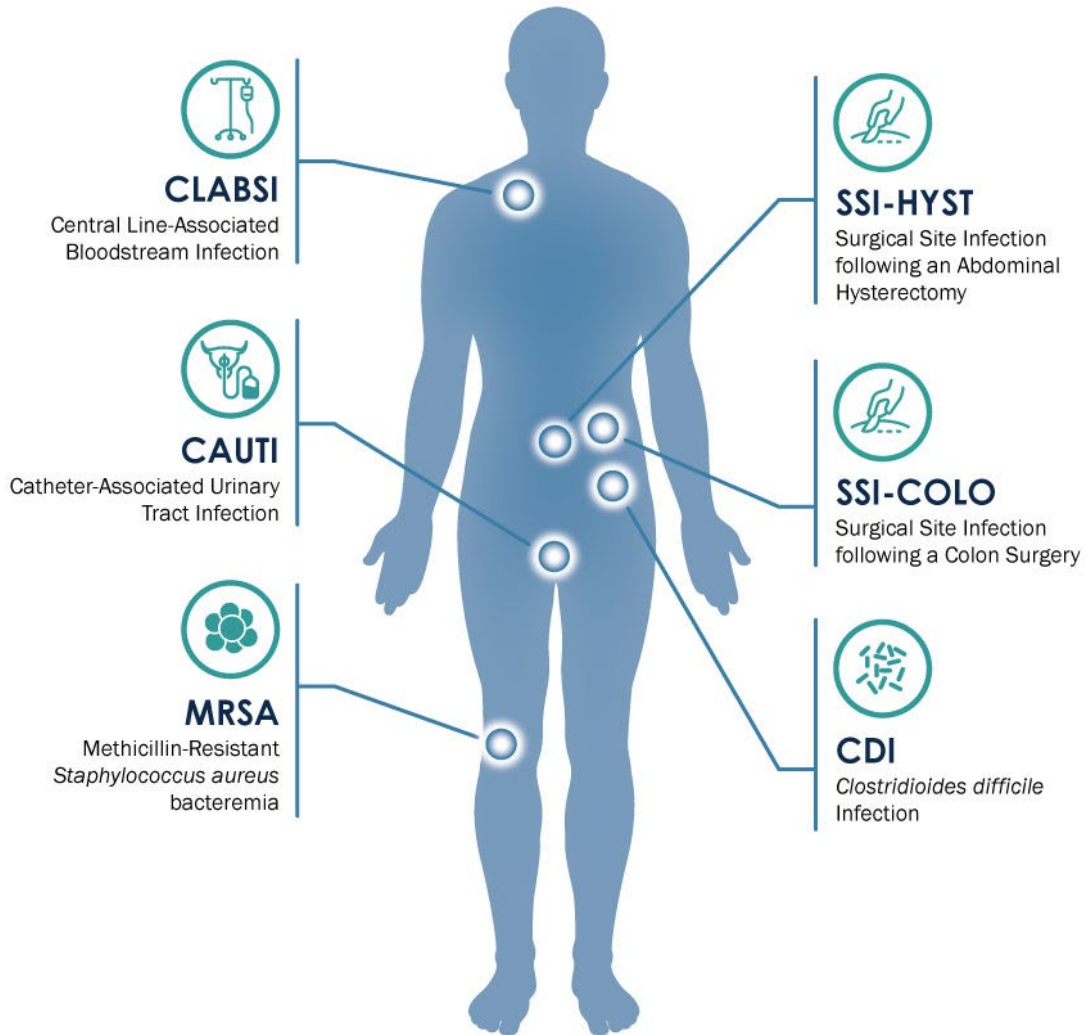
Infection prevention personnel in healthcare settings perform robust surveillance for HAIs and continuously work to prevent HAIs in their facilities. The role of public health is to inform consumers and stakeholders of HAI surveillance data and metrics while also collaborating with facilities to ensure standardized and reliable HAI surveillance.

This report focuses on acute care hospitals (ACHs), which are hospitals that provide short-term, inpatient medical and surgical services for many different conditions and illnesses. ACHs with fewer than 25 beds in rural areas may be federally designated as critical access hospitals (CAH). CAHs are not included in this report because the CMS reporting requirements differ for these facilities.

ACHs are required to track and self-report five types of HAIs, which are shown on the human body in Figure 3 below:

- Catheter-associated urinary tract infection (CAUTI)
- Central-line associated bloodstream infections (CLABSI)
- Hospital-onset *Clostridioides difficile* infections (CDI)
- Hospital-onset methicillin-resistant *Staphylococcus aureus* (MRSA) bacteremia
- Surgical site infections (SSI) related to colon surgeries (COLO) and abdominal hysterectomies (HYST)

Figure 3. Reportable HAIs Shown Along the Human Body by Body Site Location



This report summarizes HAI data reported to the CMS, Centers for Disease Control and Prevention (CDC), and the WA DOH through the National Healthcare Safety Network (NHSN). NHSN is a free and secure web-based data management system developed and maintained by the CDC. The CDC and the WA DOH provide support to hospital surveillance staff on the appropriate use of the system and guidance to track infections using a standardized methodology. For more information about NHSN, please visit: www.cdc.gov/nhsn.

The data for this report was downloaded from NHSN in September 2023. Changes made to the data after this date are not reflected in this report. The data reported here is generally delayed by one year, because the data needs to be validated and finalized for public reporting by the NHSN team at CDC. The WA DOH Epidemiology team is then able to publish these data after the CDC has released the final annual data for public viewing. For information about NHSN's Progress Reports and the most current report, please visit: <https://www.cdc.gov/nhsn/datastat/progress-report.html>.

Report Audience

The WA DOH Healthcare-Associated Infections/Antibiotic Resistance (HAI/AR) Program Epidemiology team produces this report for the general public, healthcare providers, public health officials and Washington policy makers. Data should drive consumer advocacy, healthcare choice, healthcare facility prevention strategies, awareness of the burden of HAIs within the community, and legislative support for HAI prevention and surveillance.

Reporting Requirements

CMS Required Reporting

CMS requires facility-wide infection reporting from ACHs through the following programs:

- [CMS Hospital Inpatient Quality Reporting \(IQR\) Program](#) authorized by 42 U.S.C. 1395ww (b)(3)(B)(viii)
- [CMS PPS-Exempt Cancer Hospital Quality Reporting \(PCHQR\) Program](#) authorized by 42 U.S.C. 1395cc(k)

Washington CAHs report data to NHSN according to the following program:

- [CMS Additional Member Beneficiary Quality Improvement Project \(MBQIP\)](#) Measures authorized by 42.U.S.C 1395i-4

More information about MBQIP measures specific to Washington CAHs can be found in the [Washington State Department of Health MBQIP Desk Manual](#).

Detailed information on NHSN reportable events and their reporting deadlines can be found in the [CMS Reporting Requirements and Deadlines](#) document.

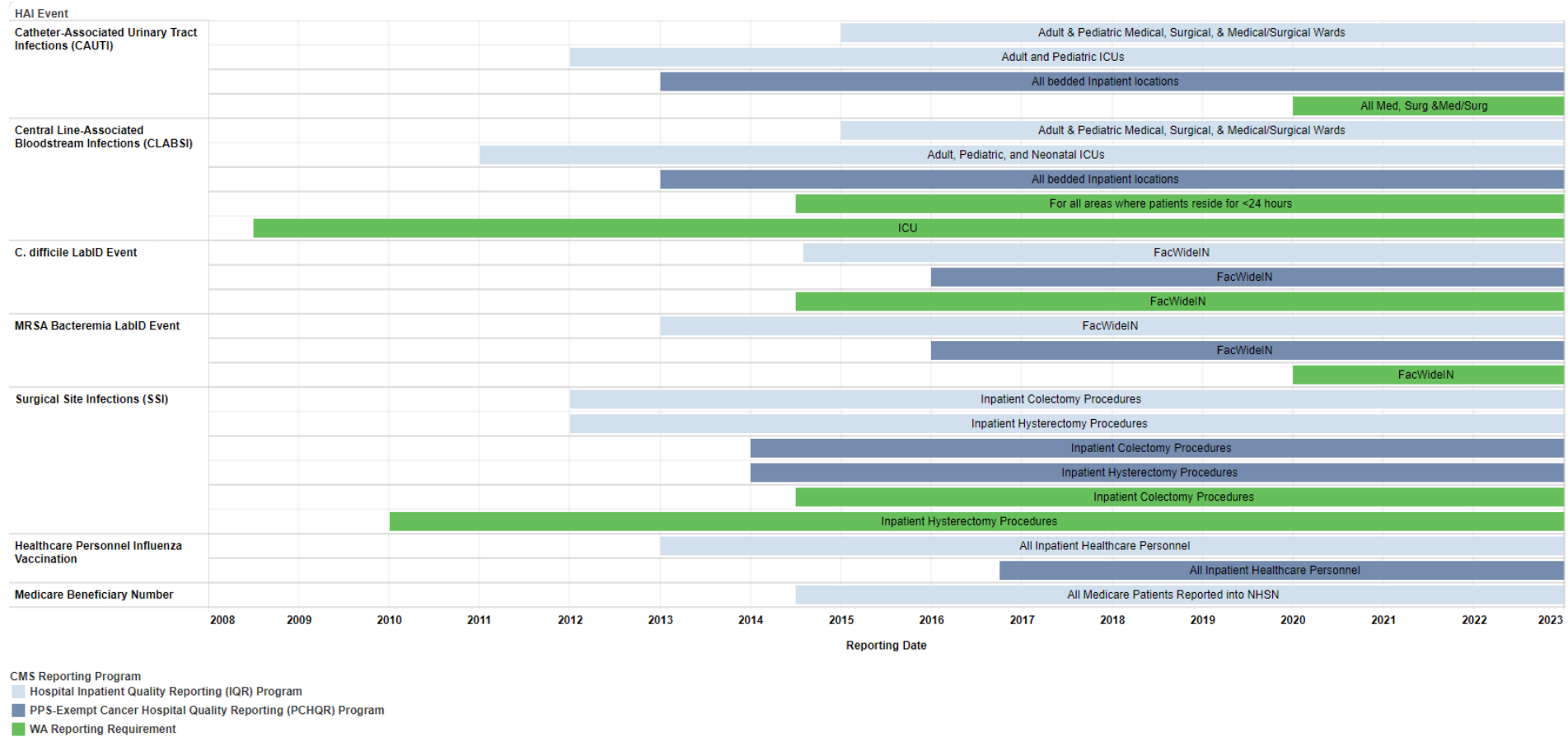
Purpose of WAC 246-440-100

The Washington Administrative Code (WAC) established data collection and submission requirements for hospitals licensed under chapter 70.41 RCW to report HAIs. [WAC 246-440-100](#) was updated in 2020 to align Washington State HAI requirements with current CMS reporting requirements. See Figure 4 for a timeline of reporting requirements for ACHs per CMS rules (blue bars) and Washington state WAC updates (green bars), including the WAC updates that went into effect January 1, 2020. Specific reporting requirements are found in WAC 246-440-100 and listed in Table 2.

Purpose of RCW 43.70.056

The [Revised Code of Washington \(RCW\) 43.70.056](#) charges hospitals to collect and submit HAI data to the WA DOH via CDC's NHSN. Under the RCW, WA DOH is charged with using data to compile and publish reports, implement regional infection prevention strategies, and evaluate the quality and accuracy of HAI reporting. Beginning in January 2020, the RCW required the WA DOH to align with CMS reporting categories and criteria.

Figure 4. HAI Reporting Requirement Timeline



*Facility-wide inpatient (FacWideIN)

Figure 4 shows the timeline of reporting requirements for ACHs per CMS rules (light and dark blue) and Washington state WAC updates (green), including the WAC updates that went into effect January 1, 2020.

Table 2: Hospital Reporting Requirements for HAI under WAC 246-440-100

Hospital Type	Reporting Requirement	Reporting Specifications
Acute Care Hospital	CLABSI	Adult, pediatric and neonatal intensive care units, medical, surgical, and medical/surgical wards
	CAUTI	Adult and pediatric intensive care units, medical, surgical, and medical/surgical wards
	SSI <ul style="list-style-type: none"> • Colon • Abdominal hysterectomy 	Inpatient procedures
	MRSA bacteremia LabID Event	Facility-wide inpatient
	CDI LabID Event	Facility-wide inpatient
	Healthcare personnel vaccination <ul style="list-style-type: none"> • Influenza • COVID-19 	All inpatient locations
Cancer Hospital	CLABSI	Facility-wide inpatient
	CAUTI	Facility-wide inpatient
	SSI <ul style="list-style-type: none"> • Colon • Abdominal hysterectomy 	Inpatient procedures
	MRSA bacteremia LabID Event	Facility-wide inpatient
	CDI LabID Event	Facility-wide inpatient
	Healthcare personnel vaccination <ul style="list-style-type: none"> • Influenza • COVID-19 	All inpatient locations
Rehabilitation Hospital	CAUTI	Facility-wide inpatient
	CDI LabID Event	Facility-wide inpatient
	Healthcare personnel vaccination <ul style="list-style-type: none"> • Influenza • COVID-19 	All inpatient locations
Critical Access Hospital	Healthcare personnel vaccination <ul style="list-style-type: none"> • Influenza • COVID-19 	All inpatient locations



Methods

Per Washington’s reporting requirements, hospitals are required to report HAIs into the CDC’s NHSN system. The WA DOH HAI/AR Program has established a data use agreement (DUA) with the CDC, which allows the WA DOH to use NHSN to retrieve and report on data submitted by hospitals. The SIR tables following each HAI section list SIRs for ACHs. The Washington state data included in this report are those that have been reported to CMS and may differ from those published by CDC. The reasons for the differences include when data are frozen prior to reporting, the locations or units included in the data, and whether the data included only those reported to CMS or all data submitted by the hospitals. Generally, the observed and predicted numbers, along with the standardized infection ratio (SIR) differ slightly between publications, however the differences are negligible.

Incidence

Incidence is the occurrence of new cases of disease in a population over a specified period of time (e.g., month, year). Incidence is typically calculated as a rate or proportion.

$$\text{Incidence} = \frac{\text{Number of new cases of specific disease during specified time period}}{\text{Total population at risk}}$$

Standardized Infection Ratio (SIR)

A SIR is not calculated when the number of predicted infections is less than 1.0. According to national baseline data, if the number of predicted infections is less than 1.0, the risk to patients is so low that not even one type of event (or infection) is predicted to occur in that group of patients. For reporting purposes, the SIR can be assumed to be zero if it was not calculated. When the SIR is calculated, there are three possible results, as shown in Table 3.

$$\text{SIR} = \frac{\text{Number of observed infections}}{\text{Number of predicted infections}}$$

For more information on the SIR, please visit CDC’s website on [A Guide to the SIR](#).



Table 3: Standardized Infection Ratio Interpretations

SIR Value	Interpretation	Meaning
<1.0	Better than predicted	There were fewer infections than predicted. <i>If a facility has a CAUTI SIR of 0.75, they experience 25% fewer events than expected.</i>
1.0	Same as expected	The SIR ratio is not significantly different than 1.0 meaning the number of infections was close to or the same as the number predicted
>1.0	Worse than predicted	There were more infections than predicted. <i>If a facility has a CAUTI SIR of 1.5, they experienced 50% more events than predicted.</i>
N/A	No conclusion	There was not enough information to make a reliable comparison to the national experience.

Statistical Significance

The p-value and 95% confidence interval (CI) are statistical measures that describe the likelihood that a numerical estimate, i.e., what was observed, was due to random chance. These measures indicate whether a facility's SIR is significantly different from 1, or the value expected if the facility performed the same as predicted based on the national data.

- If the p-value is **less than or equal to 0.05**, the number of observed infections is significantly different than the number of predicted infections (i.e., SIR is significantly different from 1).
- If the p-value is **greater than 0.05**, the number of observed infections in a facility is not significantly different than the number predicted (i.e., SIR is not significantly different than 1).







The 95% CI is a range of values, indicating a high degree of confidence, that the true SIR lies within this range. The upper and lower limits of the CI are used to determine the significance and precision of the SIR.



- If the confidence interval **includes the value of 1**, then the SIR is *not significant* (i.e., the number of observed events is not significantly different than the number predicted).
- If the confidence interval **does not include the value of 1**, then the SIR is *significant* (i.e., the number of observed events is significantly different than the number predicted).
- When the **SIR is 0**, the lower bound of the 95% CI cannot be calculated. However, for ease of interpretation, it can be considered 0.

Hospital Performance Legend

The following symbols visually depict how a facility’s observed number of HAIs compares to the number of HAIs predicted by NHSN, based on the national baseline. The symbol in the performance column describes the state’s SIR compared to the national SIRs in the specified acute care locations. For facility-specific tables, “Observed similar to predicted” is used when the difference between the number of observed and predicted infections is less than 1. For the statewide tables, “Observed similar to predicted” is used when the difference between the state SIR and the national SIR is less than 0.05.

	Statistically fewer infections (better)
	Fewer infections (not statistically significant)
	More infections (not statistically significant)
	Statistically more infections (worse)
	Number of predicted infections is less than 1; SIR cannot be calculated
	Observed similar to predicted (not statistically significant)



National Targets

In 2015, the CDC created new baselines for each HAI reported to NHSN to be used when comparing HAI data. Progress of HAI prevention is measured in comparison to infection data reported to NHSN, using updated risk-adjustment models which account for the differences in risk that may impact infections reported by a hospital (e.g., unit type, hospital bed size, or patient age). Hospital performance is compared using the SIR, discussed in more detail in the “Methods” section. A new baseline is expected soon.

The 2020 U.S. Department of Health and Human Services (HHS) SIR target, developed for the [National Action Plan to Prevent Healthcare-Associated Infections: Road Map to Elimination \(HAI Action Plan\)](#), provides HAI target goals for each NHSN reportable condition. The HHS HAI Action Plan targets the most common infections in inpatient settings and provides a standard of measurable improvement for ACHs. Due to complications of the COVID-19 pandemic, hospitals nationwide were unable to meet the target goals for most HAIs, including those located in Washington state. Updated goals are expected to be released soon.

HHS has continued to include HAI reduction goals in the [Healthy People 2030](#) national objectives for the next decade. Two HAI objectives in Healthy People 2030 are specific to nationally reportable HAIs and tracked by the WA DOH:

- “Reduce *C. diff* infections that people get in the hospital³” target SIR goal of 0.70
- “Reduce MRSA bloodstream infections that people get in the hospital⁴” target SIR goal: 0.50

Progress Towards National Targets

Table 4 below shows the progress made toward three different national goals:



Table 4: WA Acute Care Hospitals' Progress Toward National Targets in 2022

HAI	LESS THAN OR EQUAL TO		
	NHSN Baseline SIR 1.0	NHSN National Average SIR	HP 2030
CAUTI	✓	✗	NA
CDI	✓	✗	✓
CLABSI	✓	✓	NA
MRSA BACTEREMIA	✓	✓	✗
SSI – COLO	✓	✓	NA
SSI – HYST	✗	✗	NA

In Table 4, a green checkmark denotes goals that were met in 2022, while a black X denotes the target SIR was not met. Washington ACHs have made significant strides to reduce SIRs below these national targets, meeting or exceeding each goal for at least half of the HAIs tracked.



CAUTI: Improved as Statewide SIR Decreased to 0.83

Historically, Washington ACHs have faced challenges decreasing the incidence of CAUTI, but began to make progress reducing CAUTIs in 2019 and were slated to meet the HHS HAI Action Plan 2020 target goal. Unfortunately, the CAUTI incidence in Washington increased for two years in a row (2020-2021) likely due to the COVID-19 pandemic. Now for reporting year 2022, there was a statistically significant improvement in the state CAUTI SIR. Compared to 2021 when the SIR was above the NHSN baseline at 1.03, 2022's SIR of 0.83 was 18.5% better. Interestingly, CAUTI is the only HAI in 2022 that had a statistically significant improvement in SIR when compared to the previous year.



CLABSI: Stable as Statewide SIR Increased to 0.83

CLABSI incidence in Washington has remained low the years prior to the pandemic. However, the SIR has been steadily increasing since 2020. There has been nearly 60% increase in CLABSI incidence



since the beginning of the pandemic. Compared to 2021, however, the 2022 SIR only increased by 0.6% to 0.83 and this was not statistically significant. Washington hospitals have continued to keep the average CLABSI SIR below the national average and NHSN baseline despite the increases.



CDI: No Improvement as Statewide SIR Increased to 0.58

Washington hospitals have been very successful in reducing CDI incidences over the years and this progress continued over the pandemic. For two years in a row (2020-2021), the SIR has stayed the same at 0.54. The 2022 SIR slightly increased to 0.58, representing an 8.5% increase, however, this increase is not statistically significant. Unfortunately, the Washington state SIR for CDI surpassed that of the national average of 0.48, representing a statistically significant 20% difference. Although Washington surpassed the national CDI average SIR, the state SIR remains lower than the NHSN baseline of 1 and the target SIR goal of 0.70 for Healthy People 2030 was met.



MRSA: No Improvement as Statewide SIR Increased to 0.80

With a SIR of 0.80, 2022 marks the year with the highest SIR for MRSA bacteremia in Washington hospitals. Prior to the pandemic, Washington ACHs were on track to meeting national target goals for MRSA. The pandemic has curtailed those efforts as there has been a 33% increase since the beginning of the pandemic. Just looking at the last year, the SIR in 2022 was 18% higher than the 2021 SIR of 0.68. Washington continues to remain below the NHSN baseline and the national average SIRs but has not met the Healthy People 2030 SIR target goal of 0.50.



COLO: No Improvement as Statewide SIR Increased to 0.84

Prior to the COVID-19 pandemic, the SSI following colon surgery (COLO) SIR had stayed the same at 0.66 for three years (2018-2020). However, SIR for COLO increased nearly 24% between 2020 and 2021. The SIR of 0.84 in 2022 has slightly increased by 6% from the 2021 SIR of 0.80. This



increase was not statistically significant. Despite the increase, the SIR for COLO in Washington remains below the NHSN baseline and the national average SIRs.



HYST: No Improvement as Statewide SIR Increased to 1.24

The SIR for SSI following abdominal hysterectomies (HYST) has increased annually since 2018, with the exception of 2020 when the Governor’s Proclamation limited non-emergent surgeries. The SIR has increased by 77% since the start of the pandemic. At 1.24, the SIR in 2022 has surpassed the NHSN baseline of 1 and the national average SIR for HYST. Over the past year, the SIR for HYST has increased by 44%, but this increase was not statistically significant.

In Summary

The third year of the pandemic was less severe for most Americans, with the availability of vaccines, treatment, and growing immunity to COVID-19. Pandemic-related challenges that affected hospitals early in the pandemic have had a lasting effect on HAIs and curtailed efforts made by Washington ACHs to reduce HAI incidence. The WA DOH HAI/AR Program continues to work with partner organizations, including the Washington State Hospital Association (WSHA), Association for Professionals in Infection Control and Epidemiology (APIC), LHJs, and ACHs to improve existing programs and develop new strategies to reduce HAI incidence and ultimately protect patients who entrust their care to Washington hospitals.

Early in 2022, the nation was battling the Omicron wave and hospitalizations were increasing, with 20%⁵ of all hospitalizations in Washington being COVID-19 related. Variations in occurrence of HAIs between hospitals depends on several factors, including infection prevention practices or policies, patient risk factors, and underlying conditions. While infection prevention staff in hospitals worked tirelessly to improve patient care and reduce HAIs, most HAI incidence and SIRs have increased over the past year. All the reportable HAIs in Washington experienced an increase, with the notable exception of CAUTI. In 2021, CAUTI was the only HAI to surpass the NHSN SIR baseline of 1. This year, the CAUTI SIR dropped below the national baseline, and SSI-HYST was the only HAI to surpass the national baseline.



Due to the COVID-19 pandemic, federal agencies delayed the progress of updating the national HAI action plan and target goals for HAIs in ACHs due to unstable data, such as SSI data. Healthy People 2030 was updated prior to the pandemic, and only includes target goals for CDI and MRSA reduction. Federal agencies predict that HAI rates should return to pre-pandemic levels within two to three years. Despite not having national goals to compare to, WA DOH continues to monitor progress of HAI reduction among Washington hospitals. Continued vigilance in surveillance and education in infection control practices are essential to improve patient safety and outcomes and foster patient trust in healthcare systems.



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To learn more about the WA DOH HAI/AR Program, please email HAI@doh.wa.gov.

If you have any questions regarding this report or the data contained in this report, please email NHSNepi@doh.wa.gov.



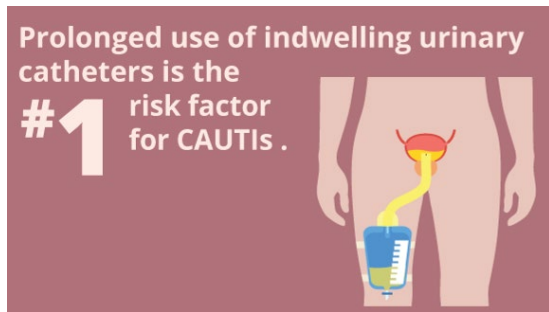
Glossary

- ACH: Acute care hospital
- ACIP: Advisory Committee on Immunization Practices
- BSI: Bloodstream infection
- CAH: Critical access hospital
- CAUTI: Catheter-associated urinary tract infection
- CC: Critical care location
- CDC: Centers for Disease Control and Prevention
- CDI: *Clostridioides* (formerly *Clostridium*) *difficile* infection
- CI: Confidence interval
- CLABSI: Central line-associated bloodstream infection
- CMS: Centers for Medicare and Medicaid Services
- COLO: Colon surgery
- DUA: Data use agreement
- FacWideIN: Facility-wide Inpatient
- HAI: Healthcare-associated infection
- HAI/AR: Healthcare-Associated Infections/Antibiotic Resistance
- HHS: U.S. Department of Health and Human Services
- HO: Hospital-onset
- HP: Healthy People 2030
- HYST: Abdominal hysterectomy surgery
- ICU: Intensive care unit
- IUC: Indwelling urinary catheter
- IQR: Inpatient Quality Reporting
- LabID: Laboratory-identified
- LHJ: Local health jurisdictions
- MBQIP: Member Beneficiary Quality Improvement Project
- MDRO: Multidrug-resistant organism
- MRSA: Methicillin-resistant *Staphylococcus aureus*
- NHSN: National Healthcare Safety Network
- PCHQR: PPS-Exempt Cancer Hospital Quality Reporting
- PPE: Personal protective equipment
- RCW: Revised Code of Washington
- SA: *Staphylococcus aureus*
- SIR: Standardized infection ratio
- SSI: Surgical site infection
- UTI: Urinary tract infection
- WA DOH: Washington State Department of Health
- WAC: Washington Administrative Code



Catheter-Associated Urinary Tract Infections (CAUTI)

An indwelling urinary catheter (IUC) is a drainage tube that is inserted into the urinary bladder through the urethra, left in place, and connected to a closed collection system. A urinary tract infection (UTI) is an infection involving any part of the urinary system, including urethra, bladder, ureters, and kidneys. A catheter-associated urinary tract infection (CAUTI) occurs when germs (usually bacteria) enter the urinary tract through the urinary catheter and cause infection.



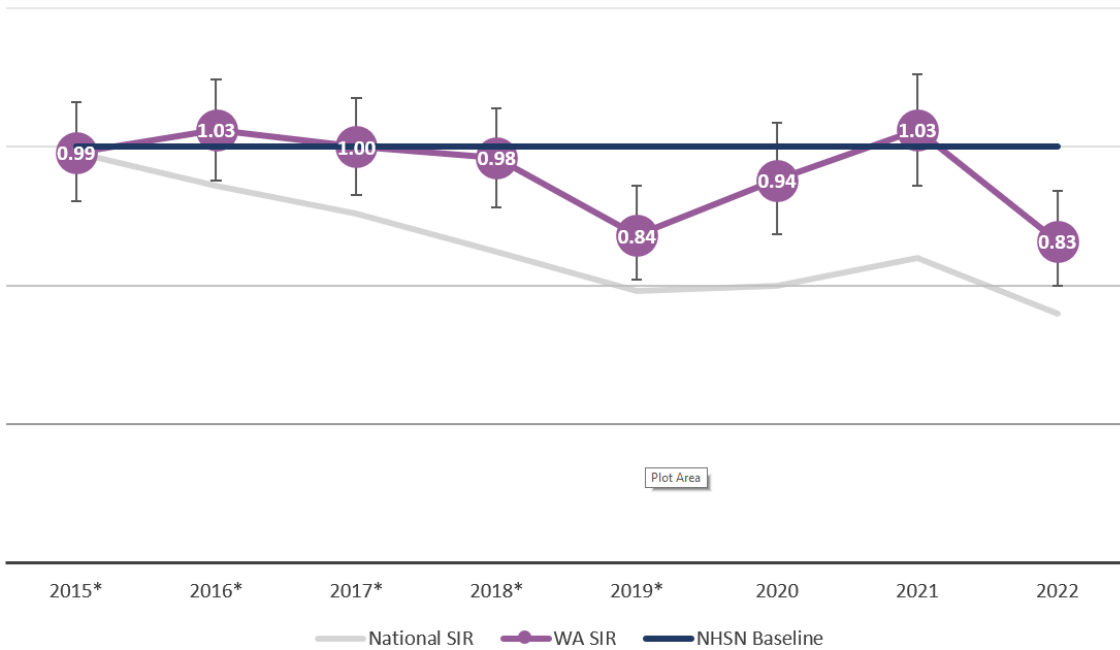
CAUTI was made a reportable HAI in January 2020 when RCW 43.70.056 was updated to complement reporting requirements of all HAIs to those of CMS. Previously, the WA DOH did not have access to CAUTI SIRs by facility; instead, WA DOH received aggregated state data.

Figure 5 below shows the statewide SIR since 2015, when the baseline was last adjusted, with a gray line showing the national SIRs during that time period. The vertical bars mark the confidence intervals around the estimate. CAUTI incidence has been fairly stable over time and has mimicked the national trend. Table 5 shows the SIR for each ACH in Washington in 2022 and table 6 shows the state SIR compared to the national CAUTI SIR.

For more information, visit CDC's webpage on [CAUTI](#).



Figure 5: CAUTI SIR Trend in Washington, 2015-2022



* Aggregate data provided from the CDC for years prior to 2020, when CAUTI was made reportable.

Table 5: CAUTI Standardized Infection Ratios by Facility, 2022

Facility Name	Performance	Number of Infections		Device Days	SIR	95% CI
		Observed	Predicted			
Astria Toppenish Hospital	◆	0	0.60	1,099	-	NA
Capital Medical Center	▬	3	2.54	3,343	1.18	0.30, 3.22
Cascade Valley Hospital	◆	1	0.72	1,390	-	NA
Central Washington Hospital	▲	10	5.32	7,542	1.88	0.96, 3.35
CHI-FHS St. Anne Hospital	▬	4	3.44	3,276	1.16	0.37, 2.81
CHI-FHS St. Anthony Hospital	▬	5	5.93	5,875	0.84	0.31, 1.87
CHI-FHS St. Clare Hospital	▬	4	3.20	3,159	1.25	0.40, 3.01
CHI-FHS St. Francis Hospital	▼	3	5.52	5,377	0.54	0.14, 1.48
CHI-FHS St. Joseph Medical Center	▼	13	23.94	13,531	0.54	0.30, 0.90



Facility Name	Performance	Number of Infections		Device Days	SIR	95% CI
		Observed	Predicted			
CHI-FHS St. Michael Medical Center	▼	8	11.53	9,472	0.69	0.32, 1.32
Evergreen Health Kirkland	▲	14	10.96	8,739	1.28	0.73, 2.09
Evergreen Health Monroe	◆	0	0.19	394	-	NA
Grays Harbor Community Hospital	▼	0	2.29	4,492	0	0, 1.31
Harborview Medical Center	▲	77	69.81	30,292	1.10	0.88, 1.37
Island Hospital	◆	0	0.80	1,583	-	NA
Kadlec Regional Medical Center	≡	13	12.02	12,807	1.08	0.60, 1.80
Kaiser Permanente Central Hospital	◆	0	0.18	359	-	NA
Legacy Health Salmon Creek	≡	5	5.05	6,387	0.99	0.36, 2.19
MultiCare Allenmore Hospital	≡	1	1.01	2,045	0.98	0.05, 4.86
MultiCare Auburn Medical Center	▼	2	3.66	3,565	0.55	0.09, 1.80
MultiCare Covington Medical Center	◆	0	0.46	651	-	NA
MultiCare Deaconess Hospital	▼	9	11.37	11,822	0.79	0.39, 1.45
MultiCare Good Samaritan	▼	9	14.80	11,817	0.61	0.30, 1.12
MultiCare Mary Bridge Hospital	◆	1	0.68	749	-	NA
MultiCare Tacoma General Hospital	▼	12	19.54	15,121	0.61	0.33, 1.04
MultiCare Valley Hospital and Medical Center	≡	2	2.67	3,730	0.75	0.12, 2.47
Northwest Hospital and Medical Center	▲	16	8.15	6,768	1.96	1.16, 3.12
Olympic Medical Center	≡	3	2.63	3,494	1.14	0.29, 3.10
Overlake Hospital Medical Center	≡	5	5.56	6,383	0.90	0.33, 1.99
PeaceHealth Southwest Medical Center	▼	7	12.36	12,909	0.57	0.25, 1.12






Facility Name	Performance	Number of Infections		Device Days	SIR	95% CI
		Observed	Predicted			
PeaceHealth St. John Medical Center	▼	1	2.54	3,623	0.39	0.02, 1.94
PeaceHealth St. Joseph Medical Center	▼	4	5.18	6,035	0.77	0.25, 1.86
Providence Centralia Hospital	▬	3	2.96	3,657	1.01	0.26, 2.76
Providence Holy Family Hospital	▼	1	3.56	5,115	0.28	0.01, 1.39
Providence Regional Medical Center Everett	▲	32	26.29	20,918	1.22	0.85, 1.70
Providence Sacred Heart Medical Center	▼	12	17.75	13,794	0.68	0.37, 1.15
Providence St. Mary Medical Center	▼	1	2.55	3,181	0.39	0.02, 1.93
Providence St. Peter's Hospital	▼	10	14.51	14,577	0.69	0.35, 1.23
Samaritan Hospital	◆	0	0.46	942	-	NA
Seattle Children's Hospital	▬	6	5.76	4,187	1.04	0.42, 2.17
Skagit Regional Hospital	▲	9	5.44	6,988	1.66	0.81, 3.04
Swedish Medical Center - Ballard	◆	0	0.36	486	-	NA
Swedish Medical Center - Cherry Hill	▼	7	8.67	6,866	0.81	0.35, 1.60
Swedish Medical Center - Edmonds	▼	0	2.50	3,093	0	0, 1.20
Swedish Medical Center - First Hill	▼	7	14.70	11,832	0.48	0.21, 0.94
Swedish Medical Center - Issaquah	▬	2	2.22	3,097	0.90	0.15, 2.97
Trios Southridge Hospital	▼	1	2.44	3,124	0.41	0.02, 2.02
University of Washington Medical Center	▼	15	23.27	18,336	0.64	0.38, 1.04
Valley Medical Center	▼	9	14.07	14,183	0.64	0.31, 1.17
Virginia Mason Medical Center	▼	2	16.75	13,804	0.12	0.02, 0.40
Wenatchee Valley Medical Center	◆	1	0.31	623	-	NA
Yakima Valley Memorial Hospital	▼	8	11.14	9,002	0.72	0.33, 1.36



State and National CAUTI Standardized Infection Ratios

Table 6 below shows the SIR for the state, with aggregated NHSN data. The symbol in the performance column describes the state’s SIR compared to the national SIRs for CAUTI in that specified care location. Overall, the statewide SIR for CAUTI is significantly higher than the national SIR.

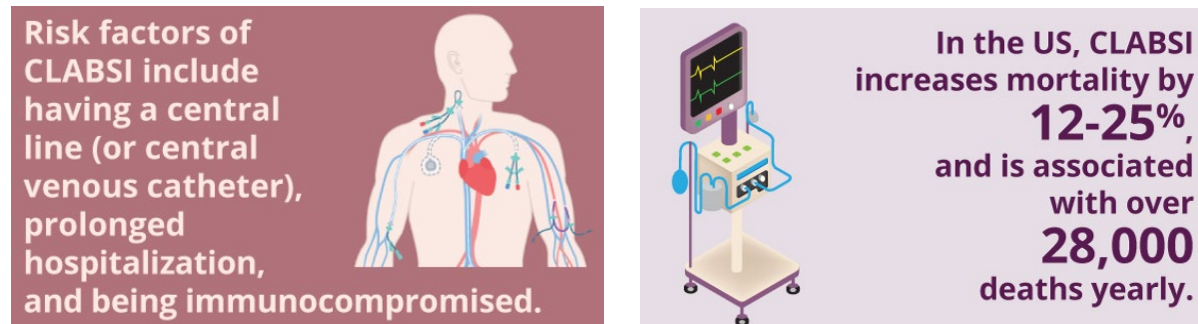
Table 6: CAUTI Standardized Infection Ratios 2022 State Summary

	Performance	Number of Infections		Device Days	SIR	95% CI
		Observed	Predicted			
All locations (WA)		358	430.37	365,634	0.83	0.75, 0.92
Critical care locations (WA)		166	237.15	170,463	0.70	0.60, 0.81
Non-Critical care locations (WA)		192	193.22	195,171	0.99	0.86, 1.14
All locations (National)	Reference	20,237	29,055.17	25,186,938	0.70	0.69, 0.71
Critical care locations (National)	Reference	7,784	13,320.80	9,713,553	0.58	0.57, 0.60
Non-Critical care locations (National)	Reference	12,453	15,734.39	15,473,385	0.79	0.78, 0.81



Central Line-Associated Bloodstream Infections (CLABSI)

A central line-associated bloodstream infection (CLABSI) is a serious infection that can occur if bacteria enters the bloodstream through a central line. A central line is a long, flexible tube (catheter) that is inserted into a large vein in the neck, chest, upper arm, or leg to allow access to a patient's bloodstream with a tip that ends near the heart. They are used to provide medicine, nutrients, fluids, access for laboratory testing, or to monitor pressure inside the heart. Central lines are typically kept in place longer than a regular intravenous (IV) catheter and are often used for treatments of kidney disease (dialysis) or cancer (chemotherapy). Patients can be discharged from the hospital with a central line in place if they require continuous treatment at home or an outpatient infusion facility.



Risk factors of CLABSI include having a central line (or central venous catheter), prolonged hospitalization, and being immunocompromised.

In the US, CLABSI increases mortality by 12-25%, and is associated with over 28,000 deaths yearly.

Since 2011, Washington hospitals have been required to report all adult, pediatric, and neonatal intensive care unit (ICU) acquired CLABSIs. That requirement was extended to all adult and pediatric medical, surgical, and medical/surgical wards in 2015.

Figure 6 below shows the statewide SIR since 2015, when the baseline was last adjusted, with a gray line showing the national SIRs during that time period. The vertical bars mark the confidence intervals around the estimate. CLABSI incidence was declining annually until the COVID pandemic began in 2019. The Washington SIR since 2015 follows the same trend as the national SIR.

Table 7 shows the SIR for each ACH in Washington in 2022 and table 8 shows the state SIR compared to the national SIR.

For more information, visit CDC's webpage on [CLABSI](#).

Figure 6: CLABSI SIR Trend in Washington, 2015-2022

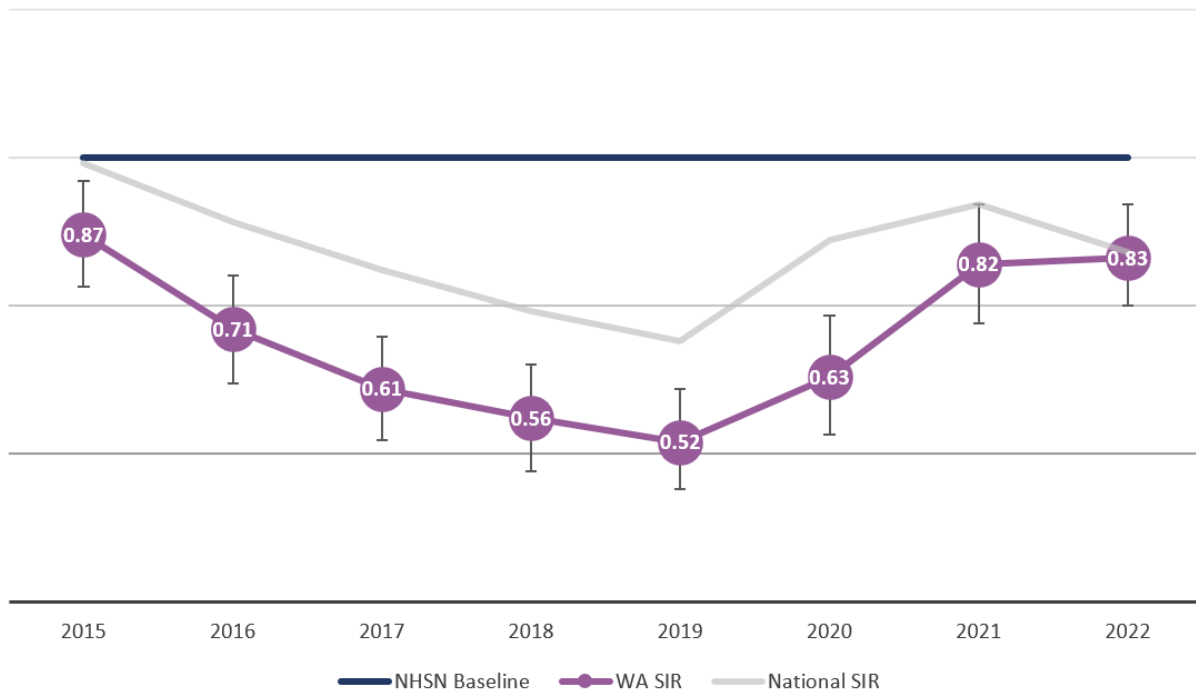






















Table 7: CLABSI Standardized Infection Ratios by Facility, 2022





Facility Name	Performance	Number of Infections		Device Days	SIR	95% CI
		Observed	Predicted			
Astria Toppenish Hospital	◆	0	0.53	915	-	NA
Capital Medical Center	▽	1	2.44	2,959	0.41	0.02, 2.02
Cascade Valley Hospital	◆	1	0.64	1,040	-	NA
Central Washington Hospital	▽	2	5.10	7,422	0.39	0.07, 1.29
CHI-FHS St. Anne Hospital	▬	2	2.08	2,295	0.96	0.16, 3.17
CHI-FHS St. Anthony Hospital	▽	2	5.06	5,650	0.40	0.07, 1.30
CHI-FHS St. Clare Hospital	▽	0	2.52	2,768	0	0, 1.19
CHI-FHS St. Francis Hospital	▽	1	4.29	4,600	0.23	0.01, 1.15
CHI-FHS St. Joseph Medical Center	▽	5	16.53	13,938	0.30	0.11, 0.67

Facility Name	Performance	Number of Infections		Device Days	SIR	95% CI
		Observed	Predicted			
CHI-FHS St. Michael Medical Center		3	9.84	9,537	0.30	0.08, 0.83
Evergreen Health Kirkland		3	6.53	6,365	0.46	0.12, 1.25
Evergreen Health Monroe		0	0.08	140	-	NA
Grays Harbor Community Hospital		0	1.04	1,676	0	NA, 2.87
Harborview Medical Center		64	30.42	22,334	2.10	1.63, 2.67
Island Hospital		0	0.45	727	-	NA
Kadlec Regional Medical Center		11	11.56	12,710	0.95	0.50, 1.65
Kaiser Permanente Central Hospital		0	0.11	196	-	NA
Legacy Health Salmon Creek		10	5.46	6,656	1.83	0.93, 3.27
MultiCare Allenmore Hospital		0	1.00	1,282	0	0, 2.98
MultiCare Auburn Medical Center		3	3.28	3,516	0.92	0.23, 2.49
MultiCare Covington Medical Center		0	0.20	261	-	NA
MultiCare Deaconess Hospital		3	12.57	13,556	0.24	0.06, 0.65
MultiCare Good Samaritan		3	13.26	12,740	0.23	0.06, 0.62
MultiCare Mary Bridge Hospital		3	3.82	3,901	0.78	0.20, 2.14
MultiCare Tacoma General Hospital		14	22.75	20,393	0.62	0.35, 1.01
MultiCare Valley Hospital and Medical Center		1	1.50	2,167	0.67	0.03, 3.29
Northwest Hospital and Medical Center		7	7.04	6,900	1.00	0.44, 1.97
Olympic Medical Center		3	1.59	1,960	1.89	0.48, 5.14
Overlake Hospital Medical Center		4	5.39	6,506	0.74	0.24, 1.79



Facility Name	Performance	Number of Infections		Device Days	SIR	95% CI
		Observed	Predicted			
PeaceHealth Southwest Medical Center	▬▬	10	10.43	12,792	0.96	0.49, 1.71
PeaceHealth St John Medical Center	▬▬	2	2.27	3,275	0.88	0.15, 2.91
PeaceHealth St. Joseph Medical Center	▽	5	6.95	8,832	0.72	0.26, 1.59
Providence Centralia Hospital	▬▬	2	1.29	1,617	1.55	0.26, 5.12
Providence Holy Family Hospital	▽	1	3.91	5,719	0.26	0.01, 1.26
Providence Regional Medical Center Everett	▽	18	22.83	22,382	0.79	0.48, 1.22
Providence Sacred Heart Medical Center	▽	11	23.76	20,140	0.46	0.24, 0.80
Providence St. Mary Medical Center	▬▬	2	2.31	2,872	0.87	0.14, 2.87
Providence St. Peter's Hospital	▽	13	16.84	18,001	0.77	0.43, 1.29
Samaritan Hospital	◆	0	0.16	284	-	NA
Seattle Children's Hospital	▲	35	31.58	22,896	1.11	0.78, 1.52
Skagit Regional Hospital	▽	4	5.06	6,545	0.79	0.25, 1.91
Swedish Medical Center - Ballard	◆	1	0.20	260	-	NA
Swedish Medical Center - Cherry Hill	▲	10	7.73	9,238	1.29	0.66, 2.31
Swedish Medical Center - Edmonds	▲	4	2.76	3,373	1.45	0.46, 3.49
Swedish Medical Center - First Hill	▽	17	21.24	19,907	0.80	0.48, 1.26
Swedish Medical Center - Issaquah	▲	5	2.10	3,068	2.38	0.87, 5.28
Trios Southridge Hospital	▬▬	2	2	2,449	1.00	0.17, 3.30
University of Washington Medical Center	▽	32	34.07	31,491	0.94	0.65, 1.31







Facility Name	Performance	Number of Infections		Device Days	SIR	95% CI
		Observed	Predicted			
Valley Medical Center		11	17.38	18,805	0.63	0.33, 1.1
Virginia Mason Medical Center		3	13.13	12,801	0.23	0.06, 0.62
Wenatchee Valley Medical Center		0	0.23	403	-	NA
Yakima Valley Memorial Hospital		5	4.55	4,411	1.10	0.40, 2.44

State and National CLABSI Standardized Infection Ratios

Table 8 shows the SIR for the state by the specified care location with aggregated NHSN data. The symbol in the performance column describes the state’s SIR compared to the national SIRs for CLABSI. Overall, the statewide SIR for CLABSI is similar to the national SIR, for all locations.

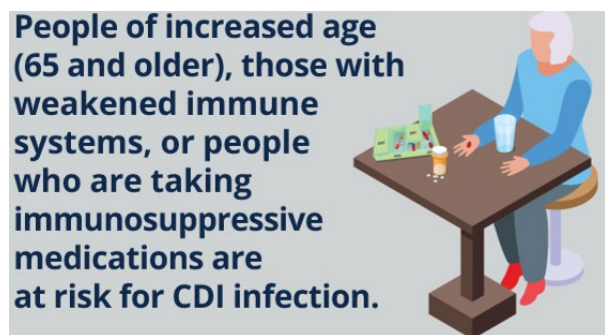
Table 8: CLABSI Standardized Infection Ratios 2022 State Summary

	Performance	Number of Infections		Device Days	SIR	95% CI
		Observed	Predicted			
All locations (WA)		339	409.90	406,671	0.83	0.74, 0.92
Critical care locations (WA)		204	192.31	171,991	1.06	0.92, 1.21
Non-Critical care locations (WA)		108	189.98	213,945	0.57	0.47, 0.68
Neonatal critical care locations (WA)		27	27.61	20,735	0.98	0.66, 1.40
All locations (National)	Reference	23,389	27,993.688	27,695,414	0.84	0.83, 0.85
Critical care locations (National)	Reference	9,666	10,074.210	9,210,882	0.96	0.94, 0.98
Non-Critical care locations (National)	Reference	12,449	16,067.482	17,147,623	0.78	0.76, 0.79
Neonatal critical care locations (National)	Reference	1,274	1,852.002	1,336,909	0.69	0.65, 0.73



Clostridioides Difficile (C. diff or CDI) Laboratory Identified (LabID) Infections

Clostridioides difficile (formerly *Clostridium difficile*), also known as “CDI, *C. difficile* or *C. diff*”, is a bacterium (germ) that can cause severe diarrhea, colitis, sepsis, and death. Most cases of CDI occur in people who are currently or have recently been taking antibiotics, clearing the way for *C. diff* to colonize in the gastro-intestinal tract.



C. difficile infection can spread from person to person on contaminated equipment and on the hands of healthcare providers and visitors. Since the spore-forming bacteria can persist in the environment and resist some methods of cleaning and disinfection, *C. difficile* poses a great infection prevention challenge in healthcare settings. The CDC has classified *C. difficile* as ‘Urgent’, the highest threat level, based on the level of concern to human health⁶.

Since 2014, Washington ACHs have been required to report all *C. difficile* infections identified by a laboratory test (LabID). According to NHSN, the onset of the infection is assigned based on the location that the specimen was collected, the date of specimen collection, and the date of admission to the facility.

Figure 7 below shows the CDI SIR since 2015, when the baseline was last updated, with a gray line showing the national SIRs during that time period. CDI incidence has been decreasing since 2015, with a slight increase in 2022. This follows the national trend. The vertical bars mark the confidence intervals around the estimate. Table 9 lists SIRs for hospital-onset *C. difficile* infections (HO-CDI) for each ACH in Washington in 2022. Table 10 shows the state SIR compared to the national SIR.

For more information, visit the CDC’s webpage on [C. difficile](#).

Figure 7: CDI SIR Trend in Washington, 2015-2022

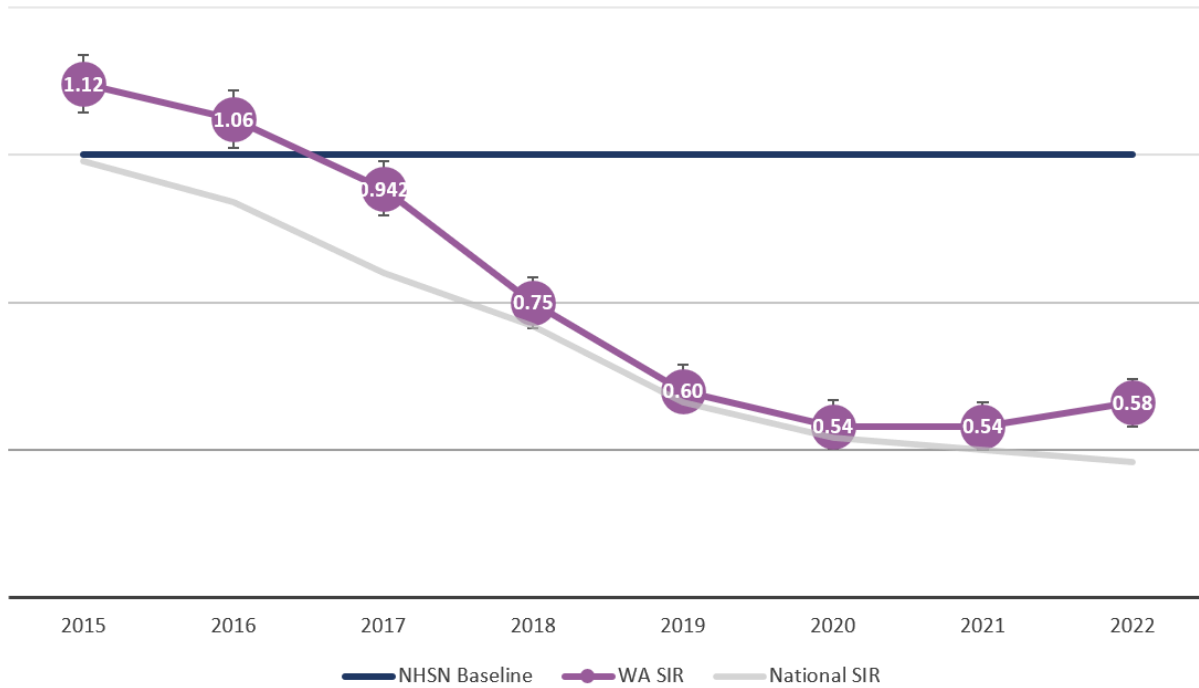


Table 9: HO-CDI Standardized Infection Ratios by Facility, 2022

Facility Name	Performance	Number of Infections		Patient Days	SIR	95% CI
		Observed	Predicted			
Astria Toppenish Hospital	⚖️	0	1	4,525	0	0, 2.99
Capital Medical Center	▼	4	10.41	16,418	0.38	0.12, 0.93
Cascade Valley Hospital	▲	5	2.49	8,358	2.01	0.74, 4.45
Central Washington Hospital	▼	30	34.04	50,068	0.88	0.61, 1.24
CHI-FHS St. Anne Hospital	▼	6	13.46	34,959	0.45	0.18, 0.93
CHI-FHS St. Anthony Hospital	▼	1	15.49	39,153	0.06	0, 0.32
CHI-FHS St. Clare Hospital	▼	2	13.75	37,492	0.14	0.02, 0.48
CHI-FHS St. Francis Hospital	▼	6	14.62	38,770	0.41	0.17, 0.85
CHI-FHS St. Joseph Medical Center	▼	9	51.47	113,682	0.17	0.09, 0.32





Facility Name	Performance	Number of Infections		Patient Days	SIR	95% CI
		Observed	Predicted			
CHI-FHS St. Michael Medical Center	▼	8	37.24	76,092	0.22	0.10, 0.41
Evergreen Health Kirkland	▼	12	38.42	83,958	0.31	0.17, 0.53
Evergreen Health Monroe	◆	0	0.77	3,097	-	NA
Fred Hutch Cancer Care	▲	9	5.23	3,217	1.72	0.84, 3.16
Grays Harbor Community Hospital	▼	6	8.35	14,905	0.72	0.29, 1.50
Harborview Medical Center	▲	136	96.72	139,108	1.41	1.18, 1.66
Island Hospital	▼	0	2.93	9,402	0	0, 1.02
Kadlec Regional Medical Center	▼	21	34.38	74,888	0.61	0.39, 0.92
Kaiser Permanente Central Hospital	◆	0	0.56	2,322	-	NA
Legacy Health Salmon Creek	▼	18	39.61	64,919	0.45	0.28, 0.70
MultiCare Allenmore Hospital	▼	3	5.80	19,067	0.52	0.13, 1.41
MultiCare Auburn Medical Center	▼	4	18.67	32,917	0.21	0.07, 0.52
MultiCare Covington Medical Center	▼	3	4.09	12,457	0.73	0.19, 2.00
MultiCare Deaconess Hospital	▼	15	39.36	59,483	0.38	0.22, 0.62
MultiCare Good Samaritan	▼	31	68.56	102,020	0.45	0.31, 0.63
MultiCare Mary Bridge Hospital	▼	2	6.050	16,379	0.33	0.06, 1.09
MultiCare Tacoma General Hospital	▼	28	66.83	106,769	0.42	0.28, 0.60
MultiCare Valley Hospital and Medical Center	▼	5	9.07	23,737	0.55	0.20, 1.22
Northwest Hospital and Medical Center	▼	25	33.59	57,715	0.74	0.49, 1.08
Olympic Medical Center	▬	7	6.74	12,565	1.04	0.45, 2.06
Overlake Hospital Medical Center	▼	9	34.68	79,112	0.26	0.13, 0.48



Facility Name	Performance	Number of Infections		Patient Days	SIR	95% CI
		Observed	Predicted			
PeaceHealth Southwest Medical Center	▼	19	50.93	110,532	0.37	0.23, 0.57
PeaceHealth St John Medical Center	▼	3	11.52	30,770	0.26	0.07, 0.71
PeaceHealth St. Joseph Medical Center	▼	13	27.31	63,960	0.48	0.26, 0.79
Providence Centralia Hospital	▼	5	9.80	28,247	0.51	0.19, 1.13
Providence Holy Family Hospital	▼	14	18.26	42,075	0.77	0.44, 1.26
Providence Regional Medical Center Everett	▼	31	82.19	168,076	0.38	0.26, 0.53
Providence Sacred Heart Medical Center	▼	34	75.41	151,263	0.45	0.32, 0.62
Providence St. Mary Medical Center	▼	6	8.39	22,373	0.72	0.29, 1.49
Providence St. Peter's Hospital	▼	16	43.93	102,044	0.36	0.22, 0.58
Samaritan Hospital	▼	0	2.75	12,025	0	0, 1.09
Seattle Children's Hospital	▲	46	31.58	96,892	1.46	1.08, 1.93
Shriners Hospitals for Children - Spokane	◆	0	0.22	1,435	-	NA
Skagit Regional Hospital	▼	5	21.79	42,660	0.23	0.08, 0.51
Swedish Medical Center - Ballard	▼	0	2.97	15,418	0	0, 1.01
Swedish Medical Center - Cherry Hill	▼	10	20.06	46,759	0.50	0.25, 0.89
Swedish Medical Center - Edmonds	▼	7	19.04	39,390	0.37	0.16, 0.73
Swedish Medical Center - First Hill	▼	24	60.43	127,004	0.40	0.26, 0.58
Swedish Medical Center - Issaquah	▼	7	11.69	31,259	0.60	0.26, 1.18
Trios Southridge Hospital	▼	6	8.66	20,726	0.69	0.28, 1.44
University of Washington Medical Center	▲	107	88.22	125,313	1.21	1.00, 1.46
Valley Medical Center	▼	57	60.05	89,728	0.95	0.73, 1.22
Virginia Mason Medical Center	▼	7	29	68,279	0.24	0.11, 0.48




Facility Name	Performance	Number of Infections		Patient Days	SIR	95% CI
		Observed	Predicted			
Wenatchee Valley Medical Center		1	0.71	2,624	-	NA
Yakima Valley Memorial Hospital		9	28.48	63,086	0.32	0.15, 0.58

State and National HO-CDI Standardized Infection Ratios

Table 10 shows the SIR for the state, with aggregated NHSN data. The symbol in the performance column describes the state’s SIR compared to the national SIRs for CDI in all acute care locations combined.

Table 10: HO-CDI Standardized Infection Ratios 2022 State Summary

	Performance	Number of Infections		Patient Days	SIR	95% CI
		Observed	Predicted			
Facility-wide (WA)		832	1427.74	2,839,492	0.58	0.54, 0.62
Facility-wide (National)	Reference	42,601	88,078.90	152,907,604	0.48	0.48, 0.49



Methicillin-Resistant *Staphylococcus aureus* (MRSA) bacteremia

Staphylococcus aureus (SA) are bacteria commonly found on the skin. Although these bacteria are generally harmless, they can cause infections ranging from pimples or boils to serious infections of internal organs. Most SA infections are minor and do not require treatment with antibiotics. However, more severe SA infections are often treated with antibiotics. Methicillin-resistant *Staphylococcus aureus* (MRSA) is a strain of SA that has become resistant to certain antibiotics, such as methicillin.

MRSA bacteremia, MRSA in the bloodstream, is one of the more severe forms of MRSA infection. Diagnosis requires blood cultures that verify MRSA in the blood, indicating a systemic infection.

Invasive procedures or open wounds on the skin increase the risks of MRSA infections.

In the US, in 2017, an estimated **10,600 deaths were related to healthcare-associated MRSA bloodstream infections.**

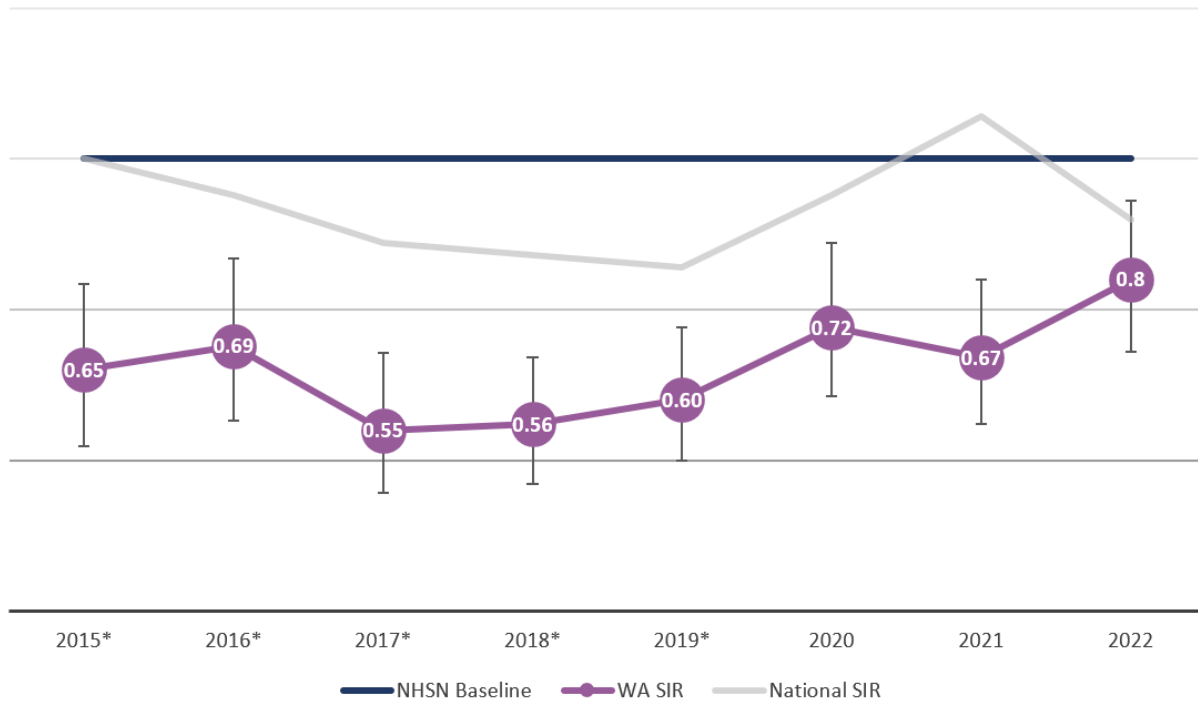
MRSA bacteremia became reportable to WA DOH in January 2020. Prior to the RCW 43.70.056 revision, WA DOH received MRSA bacteremia LabID data from CDC/NHSN as aggregated state data. Figure 8 shows the statewide MRSA trend has been stable since 2015, with a slight increase in 2020. The gray line notes the national MRSA trend during the same time period. The vertical bars mark the confidence intervals around the estimate.

Washington ACHs must report all MRSA bacteremia events identified by a laboratory test (LabID). According to NHSN, the onset of the infection is assigned based on the location that the specimen was collected, the date of specimen collection, and the date of admission to the facility. Table 11 shows the SIR ACHs in Washington in 2022. Table 12 shows the state SIR compared to the national MRSA bacteremia SIR.

For more information, please visit CDC's website on [MRSA](#).



Figure 8: MRSA SIR Trend in Washington, 2015-2022



* Aggregated NHSN data was used for years prior to 2020, when MRSA became reportable in Washington.

Table 11: HO-MRSA LabID Standardized Infection Ratios by Facility, 2022

Facility Name	Performance	Number of Infections		Patient Days	SIR	95% CI
		Observed	Predicted			
Astria Toppenish Hospital	◆	1	0.10	4,525	-	NA
Capital Medical Center	◆	0	0.99	17,856	-	NA
Cascade Valley Hospital	◆	1	0.30	8,625	-	NA
Central Washington Hospital	▽	0	2.46	52,598	0	0, 1.22
CHI-FHS St. Anne Hospital	≡	3	2.61	36,687	1.15	0.29, 3.13
CHI-FHS St. Anthony Hospital	≡	3	2.62	39,153	1.15	0.29, 3.12
CHI-FHS St. Clare Hospital	▲	5	3.16	37,492	1.58	0.58, 3.51
CHI-FHS St. Francis Hospital	▲	5	2.82	41,291	1.77	0.65, 3.93







Facility Name	Performance	Number of Infections		Patient Days	SIR	95% CI
		Observed	Predicted			
CHI-FHS St. Joseph Medical Center	▬	11	10.64	126,958	1.03	0.54, 1.8
CHI-FHS St. Michael Medical Center	▼	1	6.19	80,503	0.16	0.01, 0.80
Evergreen Health Kirkland	▼	1	4.47	89,478	0.22	0.01, 1.1
Evergreen Health Monroe	◆	0	0.07	3,097	-	NA
Fred Hutch Cancer Care	◆	0	0.43	6,607	-	NA
Grays Harbor Community Hospital	◆	1	0.91	15,503	-	NA
Harborview Medical Center	▲	26	12.88	139,108	2.02	1.35, 2.92
Island Hospital	◆	0	0.22	10,272	-	NA
Kadlec Regional Medical Center	▼	4	5.11	85,410	0.78	0.25, 1.89
Kaiser Permanente Central Hospital	◆	0	0.04	2,322	-	NA
Legacy Health Salmon Creek	▼	1	2.83	67,813	0.35	0.02, 1.74
MultiCare Allenmore Hospital	◆	1	0.48	19,067	-	NA
MultiCare Auburn Medical Center	▬	3	2.28	35,363	1.31	0.33, 3.58
MultiCare Covington Medical Center	◆	0	0.33	13,047	-	NA
MultiCare Deaconess Hospital	▼	5	6.24	66,078	0.80	0.29, 1.78
MultiCare Good Samaritan	▼	8	9.11	110,674	0.88	0.41, 1.67
MultiCare Mary Bridge Hospital	◆	0	0.40	16,379	-	NA
MultiCare Tacoma General Hospital	▼	7	10.78	124,701	0.65	0.28, 1.28
MultiCare Valley Hospital and Medical Center	▲	3	1.16	23,737	2.58	0.66, 7.02
Northwest Hospital and Medical Center	▲	5	3.73	60,906	1.34	0.49, 2.97
Olympic Medical Center	◆	1	0.70	13,159	-	NA
Overlake Hospital Medical Center	▼	1	3.26	82,634	0.31	0.01, 1.51



Facility Name	Performance	Number of Infections		Patient Days	SIR	95% CI
		Observed	Predicted			
PeaceHealth Southwest Medical Center	▼	4	8.05	115,497	0.5	0.16, 1.20
PeaceHealth St John Medical Center	▼	0	2.09	32,624	0	0, 1.43
PeaceHealth St. Joseph Medical Center	≡	4	3.69	69,976	1.08	0.34, 2.61
Providence Centralia Hospital	◆	2	0.91	29,216	-	NA
Providence Holy Family Hospital	▼	0	2.37	43,252	0	NA, 1.26
Providence Regional Medical Center Everett	▼	7	13.73	181,669	0.51	0.22, 1.01
Providence Sacred Heart Medical Center	▼	7	12.93	171,110	0.54	0.24, 1.07
Providence St. Mary Medical Center	◆	0	0.91	23,541	-	NA
Providence St. Peter's Hospital	▼	5	6.86	105,200	0.73	0.27, 1.62
Samaritan Hospital	◆	0	0.21	12,025	-	NA
Seattle Children's Hospital	≡	4	3.93	107,756	1.02	0.32, 2.45
Shriners Hospitals for Children - Spokane	◆	0	0.02	1,435	-	NA
Skagit Regional Hospital	▼	0	2.61	44,907	0	0, 1.15
Swedish Medical Center - Ballard	◆	0	0.46	15,418	-	NA
Swedish Medical Center - Cherry Hill	≡	4	4.42	46,759	0.91	0.29, 2.18
Swedish Medical Center - Edmonds	▼	1	2.04	41,235	0.49	0.03, 2.42
Swedish Medical Center - First Hill	▼	5	12.11	144,245	0.41	0.15, 0.92
Swedish Medical Center - Issaquah	▼	0	1.01	32,643	0	0, 2.98
Trios Southridge Hospital	◆	1	0.81	22,148	-	NA
University of Washington Medical Center	▲	12	10.73	139,297	1.12	0.61, 1.90




Facility Name	Performance	Number of Infections		Patient Days	SIR	95% CI
		Observed	Predicted			
Valley Medical Center		3	5.85	99,675	0.51	0.13, 1.40
Virginia Mason Medical Center		1	5.74	68,937	0.17	0.01, 0.86
Wenatchee Valley Medical Center		0	0.05	2,624	-	NA
Yakima Valley Memorial Hospital		4	3.24	65,782	1.23	0.39, 2.98

State and National HO-MRSA LabID Standardized Infection Ratios

Table 12 shows the SIR for the state, with aggregated NHSN data. The symbol in the performance column describes the state’s SIR compared to the national SIRs for HO-MRSA LabID events for all acute care locations combined. The statewide SIR for HO-MRSA LabID was significantly lower than the national SIR.

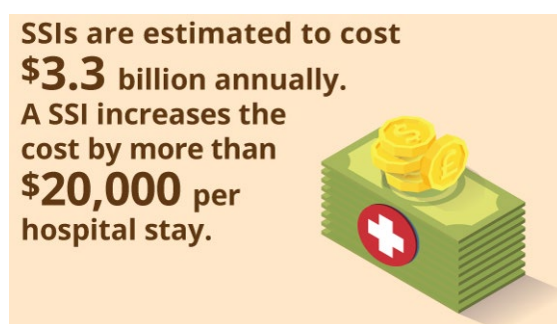
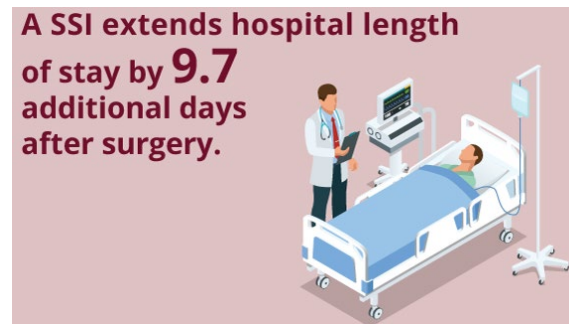
Table 12: HO-MRSA LabID Standardized Infection Ratios 2022 State Summary

	Performance	Number of Infections		Patient Days	SIR	95% CI
		Observed	Predicted			
Facility-wide (WA)		161	202.07	3,048,014	0.80	0.68, 0.93
Facility-wide (National)	Reference	9,830	10,878.37	165,729,704	0.90	0.89, 0.92



Surgical Site Infections (SSI)

A surgical site infection (SSI) is an infection that occurs after surgery is performed. SSIs occur in 2% to 5% of patients undergoing any inpatient surgery. These infections can spread in superficial skin layers, deep incisional layers (fascial and muscle), and into the organ/space areas.



SSI reporting focuses on certain types of surgeries because they are performed frequently or may have higher risk of infection. Hospital SSI rates are compared by the type of surgical procedure performed. Nationally, two SSI types are reported by all or most ACHs in most states: abdominal hysterectomy and colon surgery infections. SSI reporting of inpatient colon (SSI-COLO) and abdominal hysterectomy (SSI-HYST) surgeries has been mandated in Washington since 2012.

For more information, visit the CDC's webpage on [SSI](#).

Colon Surgeries

Colon (large intestine or bowel) surgeries involve a surgical incision to access the intestinal cavity to make a repair on or remove part of the large intestine. Some colon repairs include removing diseased or damaged colon (resection), attaching healthy parts of the colon together (anastomosis), or making an opening in the colon to remove waste (ostomy).

SSI-COLO can affect the tissue around the incision and cause a superficial infection in skin and subcutaneous tissue. It can also cause a deep infection in the muscles, connective tissues, or organs such as the gastrointestinal tract or in the intra-abdominal area.



Rectal operations, small bowel surgeries, gallbladder, or appendix removal, and non-surgical routine tests like colonoscopies are considered different types of procedures and are not included in this NHSN colon surgery category and are not tracked by the WA DOH.

Figure 9 below shows the statewide SSI-COLO trend has been relatively stable since 2015, with slightly lower incidence from 2018-2020. The vertical bars mark the confidence intervals around the estimate. The gray line notes the national SSI-COLO trend since 2015.

Table 13 shows the SIR ACHs in Washington in 2022. Table 14 shows the state SIR compared to the national SSI-COLO SIR.

Figure 9: SSI-COLO SIR Trend in Washington, 2015-2022

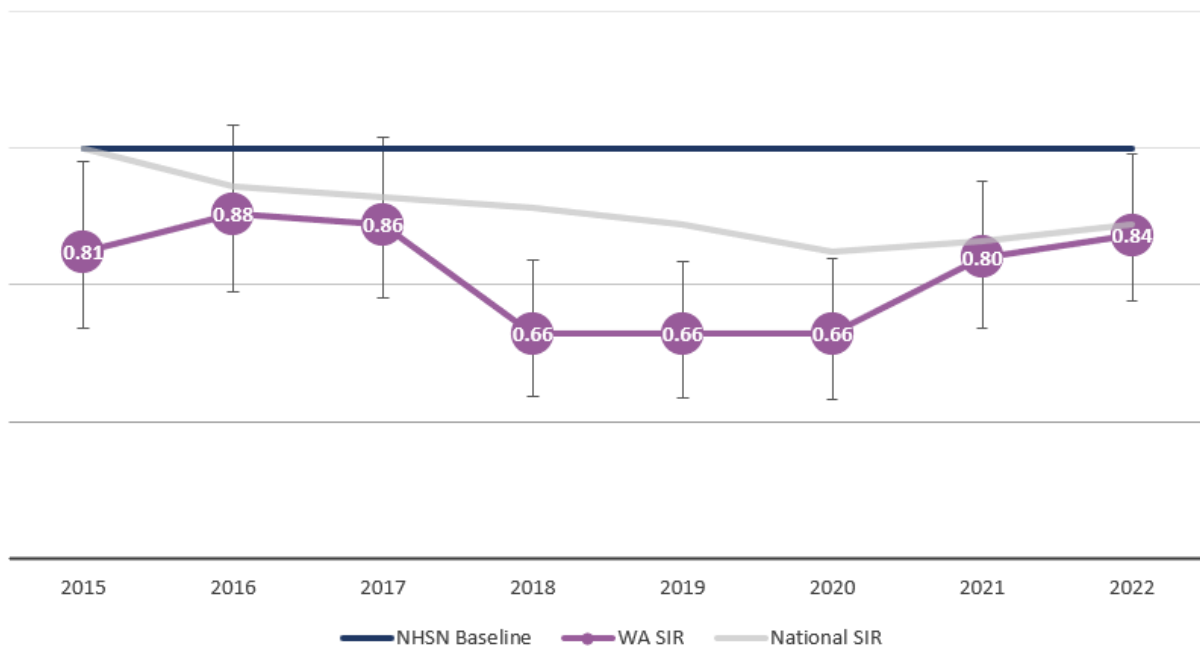


Table 13: SSI-Colon Standardized Infection Ratios by Facility

Facility Name	Performance	Number of Infections		Procedure Count	SIR	95% CI
		Observed	Predicted			
Capital Medical Center	▬▬	2	1.86	71	1.07	0.18, 3.55
Cascade Valley Hospital	▬▬	2	1.30	47	1.53	0.26, 5.07
Central Washington Hospital	▬▬	3	3.44	131	0.87	0.22, 2.37
CHI-FHS St. Anne Hospital	▽	0	1.19	46	0	0, 2.51
CHI-FHS St. Anthony Hospital	△	3	1.87	72	1.61	0.41, 4.37
CHI-FHS St. Clare Hospital	◆	1	0.32	12	-	NA
CHI-FHS St. Francis Hospital	▬▬	1	1.40	55	0.71	0.04, 3.52
CHI-FHS St. Joseph Medical Center	▽	4	8	301	0.50	0.16, 1.21
CHI-FHS St. Michael Medical Center	▽	2	4.76	186	0.42	0.07, 1.39
Evergreen Health Kirkland	▽	0	3.15	120	0	0, 0.95
Evergreen Health Monroe	◆	0	0.19	8	-	NA
Grays Harbor Community Hospital	◆	0	0.69	30	-	NA
Harborview Medical Center	△	16	5.00	119	3.20	1.90, 5.09
Island Hospital	◆	0	0.75	31		NA
Kadlec Regional Medical Center	▬▬	7	6.55	229	1.07	0.47, 2.11
Legacy Health Salmon Creek	▽	3	4.67	175	0.64	0.16, 1.75
MultiCare Allenmore Hospital	▬▬	1	1.21	46	0.83	0.04, 4.08
MultiCare Auburn Medical Center	▽	0	1.75	68	0	0, 1.71
MultiCare Covington Medical Center	◆	0	0.09	4	-	NA
MultiCare Deaconess Hospital	▽	1	4.30	156	0.23	0.01, 1.15
MultiCare Good Samaritan	▽	0	3.48	132	0	0, 0.86
MultiCare Tacoma General Hospital	▽	4	8.86	306	0.45	0.14, 1.09



Facility Name	Performance	Number of Infections		Procedure Count	SIR	95% CI
		Observed	Predicted			
MultiCare Valley Hospital and Medical Center	▼	0	2.46	94	0	0, 1.22
Northwest Hospital and Medical Center	▼	0	2.52	104	0	0, 1.19
Olympic Medical Center	▬	1	1.30	50	0.77	0.04, 3.80
Overlake Hospital Medical Center	▲	7	5.06	202	1.38	0.60, 2.74
PeaceHealth Southwest Medical Center	▼	5	6.35	229	0.79	0.29, 1.75
PeaceHealth St John Medical Center	▼	1	2.05	76	0.49	0.02, 2.40
PeaceHealth St. Joseph Medical Center	▲	11	4.63	180	2.38	1.25, 4.13
Providence Centralia Hospital	▼	0	1.26	44	0	0, 2.38
Providence Holy Family Hospital	▼	5	6.10	232	0.82	0.30, 1.82
Providence Regional Medical Center Everett	▬	9	9.38	333	0.96	0.47, 1.76
Providence Sacred Heart Medical Center	▼	7	10.03	361	0.70	0.30, 1.38
Providence St. Mary Medical Center	▬	1	1.68	60	0.59	0.03, 2.93
Providence St. Peter's Hospital	▬	7	6.27	228	1.12	0.49, 2.21
Samaritan Hospital	◆	2	0.95	33	-	NA
Seattle Children's Hospital	◆	0	0.30	7	-	NA
Skagit Regional Hospital	▲	6	2.80	109	2.14	0.87, 4.46
Swedish Medical Center - Ballard	◆	0	0.02	1	-	NA
Swedish Medical Center - Cherry Hill	◆	0	0.17	4	-	NA
Swedish Medical Center - Edmonds	▲	5	3.53	141	1.42	0.52, 3.14
Swedish Medical Center - First Hill	▼	7	10.45	397	0.67	0.29, 1.32



Facility Name	Performance	Number of Infections		Procedure Count	SIR	95% CI
		Observed	Predicted			
Swedish Medical Center - Issaquah	▲	6	3.67	142	1.63	0.66, 3.40
Trios Southridge Hospital	▬	1	1.11	41	0.90	0.04, 4.43
University of Washington Medical Center	▲	9	7.55	255	1.19	0.58, 2.19
Valley Medical Center	▼	0	3.98	157	0	0, 0.75
Virginia Mason Medical Center	▼	5	8.07	311	0.62	0.23, 1.37
Yakima Valley Memorial Hospital	▼	0	2.60	95	0	0, 1.15

State and National SSI-COLO Standardized Infection Ratios

Table 14 shows the SIR for the state, with aggregated NHSN data. The symbol in the performance column describes the state’s SIR compared to the national SIRs for SSI-COLO.

Table 14: SSI Colon Standardized Infection Ratios 2022 State Summary

	Performance	Number of Infections		Procedure Count	SIR	95% CI
		Observed	Predicted			
Washington	▬	145	171.84	6,342	0.84	0.72, 0.99
National	Reference	7,355	8,574.09	320,128	0.86	0.84, 0.89



Abdominal Hysterectomies

Abdominal hysterectomy is a common surgical procedure in which the uterus is removed through an incision in the lower abdomen. SSI-HYST can affect the area around the incision. This is a superficial infection, as the area affected is limited to the skin and subcutaneous tissue. Other more serious SSIs can result in a deep infection in the muscles or an infection affecting the reproductive tract in the area around the abdomen. A lower risk alternative to an abdominal hysterectomy is a vaginal hysterectomy.

Figure 10 below shows the statewide SSI-HYST trend has increased since 2015, with a gray line showing the national SIRs during that time period. The vertical bars mark the confidence intervals around the estimate.

Table 15 shows the SIR ACHs in Washington in 2022. Table 16 shows the state SIR compared to the national SSI-HYST SIR.

Figure 10: SSI-HYST SIR Trend in Washington, 2015-2022



Table 15: SSI Hysterectomy Standardized Infection Ratios by Facility, 2022

Facility Name	Performance	Number of Infections		Procedure Count	SIR	95% CI
		Observed	Predicted			
Astria Toppenish Hospital	◆	0	0.07	9	-	NA
Capital Medical Center	◆	3	0.34	39	-	NA
Cascade Valley Hospital	◆	0	0.03	3	-	NA
Central Washington Hospital	◆	1	0.16	22	-	NA
CHI-FHS St. Anne Hospital	◆	0	0.22	28	-	NA
CHI-FHS St. Anthony Hospital	◆	0	0.66	83	-	NA
CHI-FHS St. Francis Hospital	◆	0	0.15	19	-	NA
CHI-FHS St. Joseph Medical Center	▼	0	1.27	149	0	0, 2.36
CHI-FHS St. Michael Medical Center	◆	0	0.41	54	-	NA
Evergreen Health Kirkland	◆	0	0.42	51	-	NA
Grays Harbor Community Hospital	◆	0	0.10	13	-	NA
Harborview Medical Center	◆	1	0.16	21	-	NA
Island Hospital	◆	0	0.36	49	-	NA
Kadlec Regional Medical Center	▬▬	3	2.97	338	1.01	0.26, 2.75
Legacy Health Salmon Creek	◆	1	0.87	114	-	NA
MultiCare Allenmore Hospital	◆	0	0.10	12	-	NA
MultiCare Auburn Medical Center	◆	0	0.10	11	-	NA
MultiCare Deaconess Hospital	◆	0	0.32	37	-	NA
MultiCare Good Samaritan	◆	4	0.85	98	-	NA
MultiCare Tacoma General Hospital	▲	4	1.04	107	3.84	1.22, 9.26
MultiCare Valley Hospital and Medical Center	◆	0	0.33	38	-	NA
Northwest Hospital and Medical Center	◆	0	0.91	119	-	NA



Facility Name	Performance	Number of Infections		Procedure Count	SIR	95% CI
		Observed	Predicted			
Olympic Medical Center		0	0.38	41	-	NA
Overlake Hospital Medical Center		6	1.88	273	3.18	1.29, 6.62
PeaceHealth Southwest Medical Center		2	1.05	123	1.91	0.32, 6.32
PeaceHealth St John Medical Center		0	0.28	25	-	NA
PeaceHealth St. Joseph Medical Center		2	0.64	87	-	NA
Providence Centralia Hospital		0	0.84	93	-	NA
Providence Holy Family Hospital		0	0.33	41	-	NA
Providence Regional Medical Center Everett		0	2.88	353	0	0, 1.04
Providence Sacred Heart Medical Center		7	1.83	210	3.83	1.67, 7.57
Providence St. Mary Medical Center		0	0.24	27	-	NA
Providence St. Peter's Hospital		0	2.04	238	0	0, 1.47
Samaritan Hospital		2	0.27	29	-	NA
Skagit Regional Hospital		2	0.11	13	-	NA
Swedish Medical Center - Edmonds		1	0.46	60	-	NA
Swedish Medical Center - First Hill		3	3.40	423	0.88	0.22, 2.40
Swedish Medical Center - Issaquah		0	0.35	43	-	NA
Trios Southridge Hospital		0	0.09	10	-	NA
University of Washington Medical Center		0	2.59	295	0	0, 1.16
Valley Medical Center		1	0.66	77	-	NA
Virginia Mason Medical Center		0	1.12	138	0	0, 2.67
Yakima Valley Memorial Hospital		0	0.54	63	-	NA



State and National SSI Hysterectomy Standardized Infection Ratios

Table 16 shows the SIR for the state, with aggregated NHSN data. The symbol in the performance column describes the state’s SIR compared to the national SIRs for SSI-HYST. The statewide SIR for SSI-HYST is higher than the national SIR, but it is not statistically significant.

Table 16: SSI Hysterectomy Standardized Infection Ratios 2022 State Summary

	Performance	Number of Infections		Procedure Count	SIR	95% CI
		Observed	Predicted			
Washington	▲	43	34.74	4,198	1.24	0.91, 1.52
National	Reference	1,695	1,782.01	250,602	0.95	0.91, 1.00



Healthcare Personnel Influenza Vaccination

The Advisory Committee on Immunization Practices (ACIP) recommends that all healthcare personnel (HCP) and persons in training for healthcare professions should be vaccinated against influenza annually. Influenza vaccination of HCPs reduces potential healthcare associated transmission and risk to patients. CMS-certified hospitals are required to report on influenza vaccination to NHSN for hospital employees, licensed independent practitioners (non-employed physicians, advanced practice nurses, and physician assistants), and adult students/trainees and volunteers who are at least 18 years old. Since 2017, inpatient hospitals have been required to report influenza vaccinations for healthcare personnel. Vaccinations received inside and outside of the facility between October 1 and March 31 of each year are to be reported. Medical contraindications and declinations are also reported to NHSN. Contraindication is defined as a condition or circumstance that indicates a technique or drug should not be used. For vaccinations, this includes a severe allergic reaction to eggs or other components of the influenza vaccine or a history of Guillain-Barre Syndrome within 6 weeks after a previous influenza vaccination.

For more information, please visit the CDC’s webpage on [HCP influenza vaccine reporting](#).

Table 17 lists the number of ACHs and CAHs that reported influenza vaccinations from 2020 to 2023 and the rate of vaccinated HCP. Rate vaccinated is defined as HCP who received an influenza vaccine. HCP who declined are not considered vaccinated, and individuals with contraindications are not included in total HCP eligible for influenza vaccination.

Table 17. Healthcare Personnel Influenza Vaccination, 2020-2023

Influenza Season (October 1- March 31)	Number of Hospitals*	Rate vaccinated *(of total HCP eligible for vaccination)
2020-2021	82	84.6%
2021-2022	82	80.6%
2022-2023	84	81.2%

* Numbers in these columns differ from those in the 2021 Annual Report due to the classification of hospital type in NHSN and was missed when the data were pulled.



References

1. US Department of Health and Human Services. Office of Infectious Disease and HIV/AIDS Policy. HAI National Action Plan. <https://www.hhs.gov/oidp/topics/health-care-associated-infections/hai-action-plan/index.html#P1>
2. Center for Disease Control and Prevention. HAI and Antibiotic Use Prevalence Survey. <https://www.cdc.gov/hai/eip/antibiotic-use.html>.
3. US Department of Health and Human Services. Healthy People 2030. Health Care Associated Infections. <https://health.gov/healthypeople/objectives-and-data/browse-objectives/health-care-associated-infections/reduce-c-diff-infections-people-get-hospital-hai-01>
4. US Department of Health and Human Services. Healthy People 2030. Health Care Associated Infections. <https://health.gov/healthypeople/objectives-and-data/browse-objectives/health-care-associated-infections/reduce-mrsa-bloodstream-infections-people-get-hospital-hai-02>
5. Washington State Department of Health. Respiratory Illness data Dashboard. <https://doh.wa.gov/data-and-statistical-reports/diseases-and-chronic-conditions/communicable-disease-surveillance-data/respiratory-illness-data-dashboard>
6. Center for Disease Control and Prevention. (2023). National Healthcare Safety Network. Patient Safety Manual: Urinary Tract Infection (Catheter-Associated Urinary Tract Infection [CAUTI] and Non-Catheter-Associated Urinary Tract Infection [UTI]) Events. <https://www.cdc.gov/nhsn/pdfs/pscmanual/7psccauticurrent.pdf>
7. Agency for Healthcare Research and Quality. Guide: Purpose and Use of CLABSI Tools. <https://www.ahrq.gov/hai/clabsi-tools/guide.html#ref2>
8. Center for Disease Control and Prevention. Antibiotic Resistance Threats in the United States, 2019. Atlanta, GA: US Department of Health and Human Services, CDC; 2019. www.cdc.gov/DrugResistance/Biggest-Threats.html.
9. Center for Disease Control and Prevention. COVID-19: US Impact on Antimicrobial Resistance, Special Report 2022. Atlanta, GA: US Department of Health and Human Services, CDC; 2022. <https://www.cdc.gov/drugresistance/covid19.html>

