



HAWAII STATE
DEPARTMENT
OF HEALTH

HEALTHCARE-ASSOCIATED
INFECTIONS IN HAWAII

2016
Report

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Executive Summary:

Healthcare-associated infections (HAIs) are infections associated with receiving treatment in a healthcare setting. According to a 2011 survey by the Centers for Disease Control and Prevention (CDC), about 1 in 25 hospital patients in the United States had at least one HAI¹. The total cost of HAIs to U.S. hospitals has been estimated at almost \$33 billion per year².

The following report includes information about specific HAIs among patients who received treatment in Hawaii's acute care facilities in 2016, as well as a report of influenza vaccination coverage in Hawaii facilities for the 2016–2017 influenza season. This report contains data for conditions mandated by the Centers for Medicare and Medicaid Services (CMS) for the Inpatient Quality Reporting (IQR) program as mandated by HRS §325-2.5. Please note that, beginning in 2016, critical access hospitals were required to report influenza vaccination coverage as part of Medicare Beneficiary Quality Improvement Project (MBQIP).

Overall, the statewide infection rates were lower than predicted; with central line-associated bloodstream infection (CLABSI), catheter-associated urinary tract infections (CAUTI), *Clostridium difficile* infections (CDI) and methicillin-resistant *Staphylococcus aureus* (MRSA) bacteremia events being statistically significant (see below). For each condition in the report, compared with the nationally predicted levels, there were (* denotes statistical significance):

- 50% fewer CLABSIs*
- 38% fewer CAUTIS*
- 19% fewer colon (COLO) surgical site infections (SSIs)
- 8% fewer abdominal hysterectomy (HYST) SSIs
- 27% fewer *Clostridium difficile* infections (CDI)*
- 62% fewer MRSA bacteremia events*

Please note the 2016 data utilizes a new national baseline based on 2015 data and new risk adjustment methodology. Therefore, the data in this report are not comparable with previous State HAI Reports.

Hawaii continues to work towards longer term goals in HAI reduction. In October 2016, the U.S. Department of Health & Human Services (DHHS) announced new HAI Prevention Targets to be achieved by 2020. This year, Hawaii has achieved the targets for each condition, except for SSIs and CDI. As a measure of national success, CDC calculated a new baseline using 2015 national data; this will drive prevention targets closer to zero HAIs in facilities. Additional strategies may be needed to address SSIs and CDIs and to further reduce HAIs in general to achieve these anticipated updated goals.

Influenza vaccination coverage of 90% of a facility's healthcare personnel is a DHHS Healthy People 2020 goal.³ The Joint Commission (TJC) requires facilities set incremental goals to achieve this goal.⁴ Vaccination coverage by hospitals in our state ranged from 54% to 96%, and the overall state average was 82% for the 2016–2017 influenza season. To provide context, the Hawaii average was 77% during the 2015–2016 influenza season, and the national average was 86%.⁵ The state average for the 2015–2016 influenza season showed improvement, while only four facilities have attained the Healthy People 2020 goal, indicating that this should continue to be an area for increased focus by our facilities.

Many factors contribute to a healthcare facility's reported infection rate, both within the facility as a whole and at the level of individual provider practices and individual patient situations. Hawaii's healthcare sector continues to stay abreast and even ahead of national peers in controlling the incidence of HAIs. Many of Hawaii's healthcare facilities are actively involved in collaboratives to reduce HAIs (e.g., [Partnership for Patients](#), [Hawaii Antimicrobial Stewardship Collaborative](#), and [Improving Surgical Care and Recovery](#)). Continued vigilance and education are necessary to ensure HAIs become the exceptions rather than accepted consequences of hospitalizations.

¹ <http://www.nejm.org/doi/full/10.1056/NEJMoa1306801>

² https://www.cdc.gov/hai/pdfs/hai/scott_costpaper.pdf

³ http://www.healthypeople.gov/node/6361/data_details

⁴ http://www.jointcommission.org/assets/1/18/R3_Report_Issue_3_5_18_12_final.pdf

⁵ <http://www.cdc.gov/flu/fluvaxview/healthcare/trends1314-1415/trends-1415.html>

Introduction:

Healthcare-associated infections (HAIs) are infections related to receiving treatment in a healthcare setting. For each type of infection affecting a patient in a healthcare setting, specific criteria are used to determine whether the infection is an HAI for the purposes of surveillance. For example, if a bloodstream infection develops in a patient on or after the third hospital day (day of admission is day one), the infection is considered an HAI. Bloodstream infections occurring within the first two hospital days are considered community-associated infections; i.e., they were acquired in the community before admission to the hospital.

In 2009, CDC estimated the direct cost of HAIs to U.S. hospitals ranged from \$28.4 to 33.8 billion (after adjusting to 2007 dollars).⁶ According to a 2011 survey by CDC, approximately one in 25 hospital patients developed at least one HAI. There were an estimated 722,000 HAIs in U.S. acute care hospitals in 2011, and about 75,000 hospital patients with HAIs died during their hospitalizations.⁷

HAIs have decreased dramatically in hospitals across the nation, including Hawaii. New technologies, more teamwork, and a reliance on evidence-based practices have had a considerable impact on safety and quality of care. Just 15 years ago, HAIs were considered an unavoidable risk of being hospitalized. Today, many intensive care units and other inpatient wards are reporting 6, 12, and even 24 consecutive months without a single case of healthcare-associated bloodstream, urinary tract, or pneumonia infections.

The CDC's most [recent HAI Progress report](#) (assessing 2014 data), shows the nation continues to strive to reduce HAIs across the board. Hawaii's standardized infection ratios (SIRs) showed improvement when compared with the national SIR for all reportable conditions, except for abdominal hysterectomy (HYST) surgical site infections (SSIs). Additionally, among the hospitals with enough data to calculate an SIR, there were no facilities with a significantly higher (i.e., worse) SIR compared with national SIRs for central line-associated bloodstream infections (CLABSIs), catheter associated urinary tract infections (CAUTIs), and *Clostridium difficile* infections (CDIs) ([Hawaii Progress Fact Sheet](#)).

The following report includes information about HAIs among patients who received treatment requiring specific types of devices or procedures in Hawaii's acute care facilities in 2016. In 2011, the Hawaii legislature [passed HRS §325-2.5](#), relating to HAI reporting. Healthcare facilities have granted the Hawaii Department of Health (HDOH) access to HAI data reported under the Centers for Medicare and Medicaid Services (CMS) rules to the [National Healthcare Safety Network \(NHSN\)](#).

The statute also instructs HDOH to prepare public reports of Hawaii HAI rates using methodology developed by CDC and CMS. The [first Hawaii HAI report](#) was released in 2013 and contained data for conditions mandated by CMS for the Inpatient Quality Reporting (IQR) program for calendar year 2012, including all CLABSI and CAUTI in intensive care unit (ICU) locations as well as all inpatient SSIs after abdominal hysterectomy (HYST) and colon surgery (COLO) surgeries. The following year the 2013 Hawaii HAI Report added data on methicillin-resistant *Staphylococcus aureus* (MRSA) bacteremia, CDI infections, and healthcare personnel (HCP) influenza vaccination rates. These data were presented for the entire facility, respectively. The 2015 report added CLABSI and CAUTI data for medical and surgical wards (in addition to ICU data) in accordance with IQR reporting requirements.

Figure 1 shows the location of each hospital included in this report. Hospitals not part of the CMS IQR program were excluded, including: Kau Hospital, Kula Hospital, Lanai Community Hospital, Leahi Hospital, Maluhia, Molokai General Hospital, and Tripler Army Medical Center. While Kahuku Medical Center, Kapiolani Medical Center for Women & Children, Kauai Veterans Memorial Hospital, Kohala Hospital, Hale Hoola Hamakua, Samuel Mahelona Memorial Hospital, and Shriners Hospital for Children also fall into this category, they have voluntarily shared their data with HDOH and are therefore included in this report. Rehabilitation Hospital of the Pacific participates in the CMS Inpatient Rehabilitation

⁶ https://www.cdc.gov/hai/pdfs/hai/scott_costpaper.pdf

⁷ <http://www.nejm.org/doi/full/10.1056/NEJMoa1306801>

Facility Quality Reporting Program for HCP influenza vaccination, and their influenza vaccination coverage is included in this report.

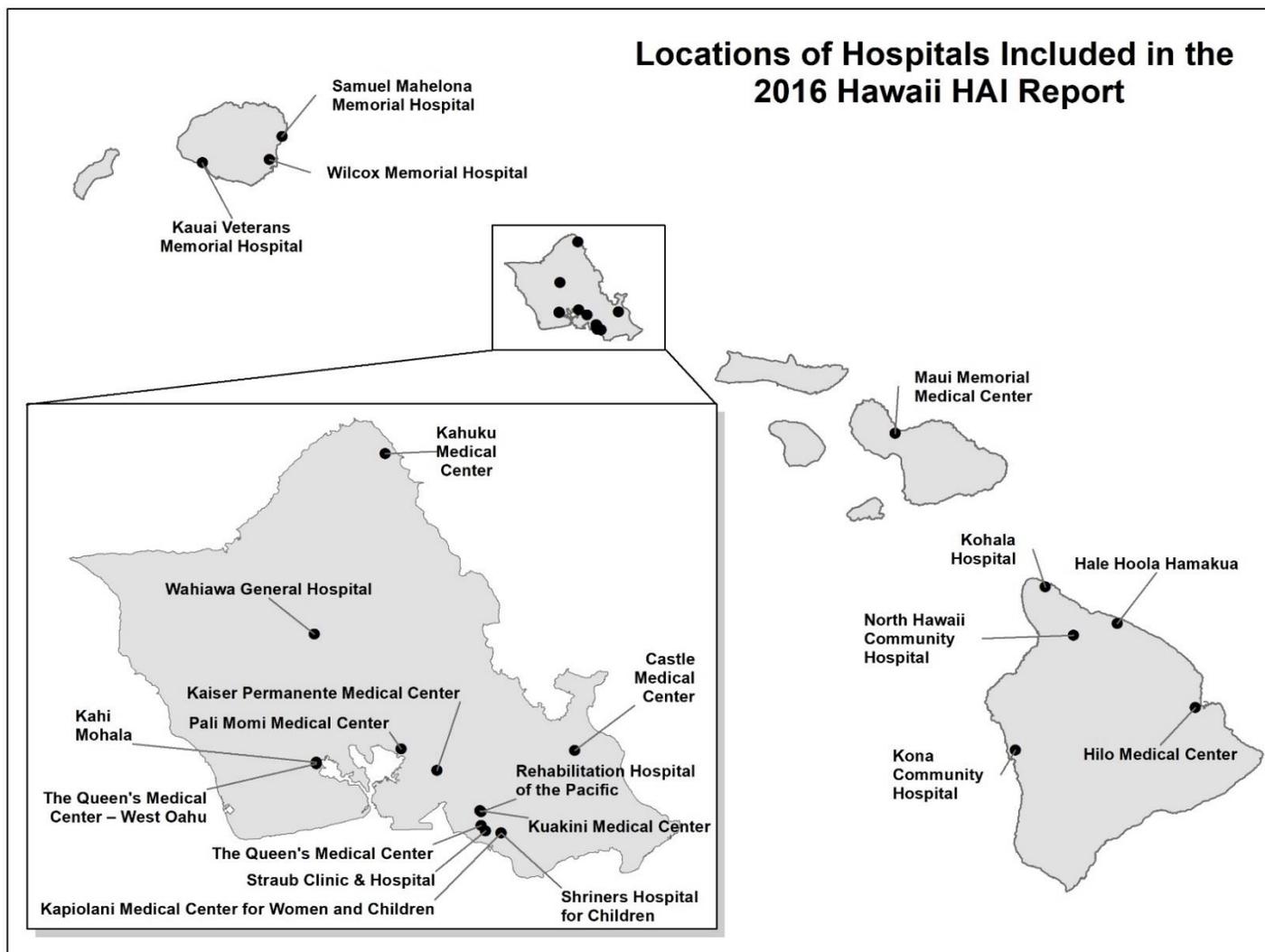


Figure 1: Locations of hospitals included in the 2016 HAI Report

The information in this report is consistent with HAI data published in [CDC reports](#) and on the CMS website [Hospital Compare](#). Please note the Hospital Compare website may have some discrepancies compared with our report because data submitted to CMS cannot be corrected or updated by facilities once a quarterly submission period has ended. Additionally, for SSI, CMS utilizes slightly different statistical models which may generate small discrepancies.

The measures in this report do not represent all infections associated with healthcare, but provide a good overview of how a hospital is doing in preventing HAIs. Many factors contribute to a healthcare facility's reported HAI rate, both within the facility as a whole and at the level of individual provider practices and individual patient situations. However, these infections are largely preventable when healthcare providers use infection prevention best practices and national recommendations. Hawaii's healthcare sector continues to stay abreast and even ahead of national peers in controlling the incidence of HAIs. Many of Hawaii's healthcare facilities are actively involved in collaboratives to reduce HAIs (e.g. [Partnership for Patients](#), [Hawaii Antimicrobial Stewardship Collaborative](#)). Continued vigilance and education are necessary to ensure HAIs become exceptions rather than accepted consequences of hospitalizations.

Methods:

HDOH utilizes CDC's NHSN system for HAI reporting. NHSN is a free, secure, web-based surveillance system developed by CDC and used by over 17,000 healthcare facilities in the nation. NHSN has data collection modules covering a wide variety of HAIs from many types of healthcare organizations. The data are risk-adjusted and aggregated with standardized numerator and denominator definitions to allow for comparison and trending across facilities.

The six HAIs that CMS mandates reporting are presented using a standardized infection ratio (SIR). The SIR is a summary measure which compares the number of infections associated with a facility's number of device days (CLABSI and CAUTI), procedures (SSI), or patient days (CDI and MRSA bacteremia) with what is predicted from the national baseline data. The number of predicted infections is an estimate based on aggregated data reported to CDC's NHSN for calendar year 2015 (i.e. national baseline data).

The SIR accounts for some risk factors which could increase or decrease a patient's risk of infection (e.g. type of patient care location, bed size of the hospital or patient age). This adjustment for differences in risk allows for reasonable comparisons among hospitals, regardless of patient characteristics. The findings in this report are based on the assumption that patients at Hawaii hospitals are similar to all patients in the NHSN database. Lower SIRs indicate better performance ([Click here for more information on the risk adjustment methodology for the SIR](#)).

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

Since the NHSN database does not contain data for every HAI in the United States, there is a level of uncertainty associated with the estimated SIR. This uncertainty is represented by a 95% confidence interval (CI; presented as an error bar). This means we have a high degree of confidence (in this case, 95%) the true SIR lies within this range. CIs provide a simple way to determine statistical significance. 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 of predicted events). If the confidence interval does not include the value of 1, then the SIR is significant. ([Click here for a technical guide on the SIR](#)).

This report also presents HCP influenza vaccination status in Hawaii's healthcare facilities. HCP includes employees, licensed independent practitioners, adult students/trainees and volunteers. Additionally, there is an optional category that includes other contract personnel: direct care providers and providers of non-direct services such as maintenance, IT, or dietary food staff. The proportion of HCP vaccinated was calculated as the number of workers known to be vaccinated divided by the total number of workers in the facility. Influenza vaccination coverage of 90% of a facility's healthcare personnel is a U.S Department of Health and Human Services Healthy People 2020 goal.⁸ The Joint Commission on Accreditation (TJC) requires facilities set incremental goals to achieve the 90% rate.⁹ For the purposes of this report, facility benchmarks were set at 90% (the Healthy People 2020 goal), 86% (the 2015–2016 national average) and 77% (the 2015–2016 state average). Additionally, data are included from the Rehabilitation Hospital of the Pacific, an inpatient rehabilitation facility participating in the CMS Inpatient Rehabilitation Facility Quality Reporting Program for HCP influenza vaccination; it should be noted that rehabilitation facilities may not be comparable with acute care facilities.

⁸ http://www.healthypeople.gov/node/6361/data_details

⁹ http://www.jointcommission.org/assets/1/18/R3_Report_Issue_3_5_18_12_final.pdf

Limitations:

This report cover data from January 1, 2016 to December 31, 2016. The data were downloaded from NHSN on **August 21, 2017**; any changes made to the data after this date are not reflected in this report. The 2016 data presented in this report have not been validated. Validation is defined as a survey and audit process which would be performed by HDOH to assure quality of NHSN surveillance and reporting. However, the 2016 data have been assessed for completeness and quality.

A hospital's ability to detect HAI cases varies between hospitals as a result of the different resources available for surveillance, methodology employed, and infection prevention methods implemented. Higher HAI rates may be attributable to superior detection of HAIs rather than an actual higher number of events.

Data collected in 2015 was used as the new baseline (i.e., comparison) for 2016 and will be used for all subsequent years as a comparison (see below). It is important to note that 2016 and future reports will not be comparable with reports using the earlier baselines (e.g., 2012–2014 data). Also, with the new baseline, facility SIRs have increased and shifted closer to 1 ([click here for more information about the updated NHSN baseline](#)).



Additionally, for HCP influenza vaccination, caution should be used in applying these data as an estimate of the overall number of healthcare workers vaccinated in the state. In some instances, a single healthcare worker may be counted in multiple hospitals, and therefore the total number of vaccinated personnel in the state as shown in this table may be inflated.

Instructions for reading the graphs and tables:

Since the SIR is an estimate, the graphs included in this report display an associated CI using an error bar. Please see the methods section for definitions of the SIR and CI. For hospitals with smaller volumes, the error bar will be wider.

The closer the SIR is to 1.0, the closer the actual number of infections was to the predicted number of infections for a given hospital. A SIR greater than 1.0 indicates more HAIs were observed than predicted; conversely, a SIR less than 1.0 indicates fewer HAIs were observed than predicted. A SIR of 0 means the hospital had no infections during the time period. The SIR can only be calculated if the number of predicted infections for the hospital is greater than 1.0. When the number of predicted infections is less than 1.0, the number of device days or procedures in that facility is too low to calculate a reliable SIR. For this reason, a SIR could not be calculated for every facility in Hawaii.

There are four possible results for a hospital's SIR:

- If the error bar on the graph (95% CI) falls completely below the reference line of 1.0, the number of infections was **significantly lower (better)** than what we would predict, based on national data. This is represented by a green checkmark on the table:  or a green circle:  on the SIR graph.
- If the error bar crosses over the reference line of 1.0, the number of infections was **similar (not significantly different than)** to the predicted value, based on national data. This is represented by a yellow equals sign on the table:  or a yellow square:  on the SIR graph.
- If the error bar falls completely above the reference line of 1.0, the number of infections was **significantly higher (worse)** than predicted, based on national data. This is represented by a yield sign on the table:  or a red diamond:  on the SIR graph.
- If the number of **predicted infections is less than 1.0**, then a SIR is not calculated. This is represented by a white triangle  on the table, and will not be included on the SIR graph (indicated by an * by the facility name).

Additionally, facilities achieving zero infections during the specified time period are marked with a green flower  next to the facility name in the table.

Central Line-Associated Bloodstream Infections

What is a Central Line-Associated Bloodstream Infection (CLABSI)?

A “central line” or “central catheter” is a tube placed into a patient’s large vein, usually in the neck, chest, arm, or groin. The central line is often used to draw blood or give fluids or medications. It may be left in place for several weeks. A bloodstream infection can occur when bacteria or other germs travel into a “central line” and enter the bloodstream. If you develop a central line-associated bloodstream infection (CLABSI) you may become ill with fevers and chills, or the skin around the central line may become sore and red. For more information, visit [CDC’s CLABSI website](#).

What are some of the things hospitals do to prevent CLABSI?

To prevent CLABSI, doctors, nurses, and other healthcare providers:

- Clean their hands with soap and water or an alcohol-based hand rub before putting in the central line.
- Wear a mask, cap, sterile gown, and gloves when putting in the catheter.
- Clean their hands, wear gloves, and clean the central line opening with an antiseptic solution before using the central line to draw blood or give medications.
- Healthcare providers also clean their hands and wear gloves and a mask when changing the bandage covering the area the central line enters the skin.
- Evaluate every day whether the patient still needs to have the central line. The central line is removed as soon as it is no longer needed.

What can you do to help prevent a CLABSI?

- Ask your doctors and nurses to explain why you need the central line and how long you will have it.
- Make sure all doctors and nurses caring for you clean their hands with soap and water or an alcohol-based hand rub before and after caring for you. If you do not see your providers clean their hands, please ask them to do so.
- Inform your nurse or doctor if the area around your central line is sore or red and if the bandage comes off or becomes wet or dirty.
- Family and friends should clean their hands with soap and water or an alcohol-based hand rub before and after visiting you. If you do not see them clean their hands, ask them to clean their hands.

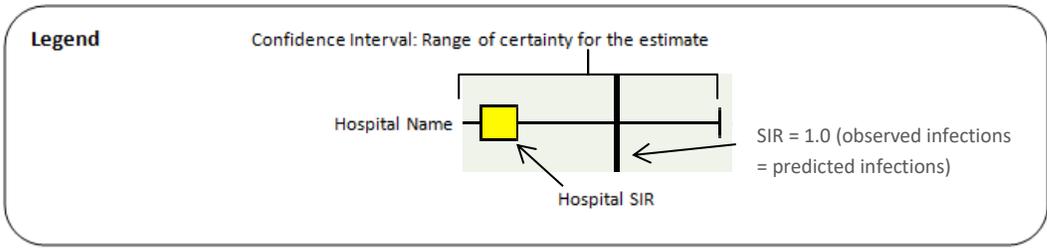
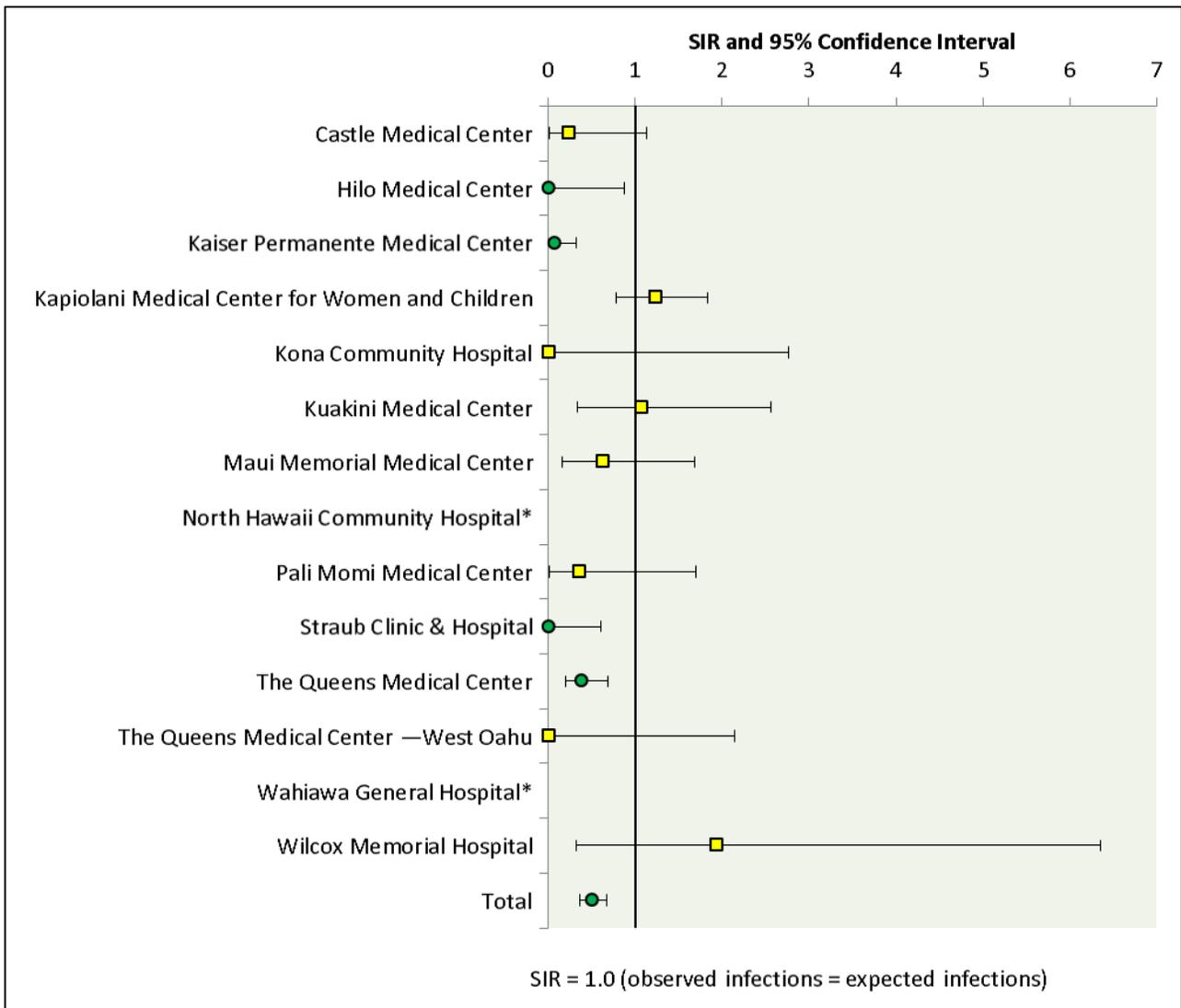
What is the current situation of CLABSIs?

- In 2016, 44 CLABSIs were reported in ICU & medical/surgical ward locations within acute care hospitals in Hawaii. This was 50% lower than predicted.
- Hawaii achieved the DHHS 2020 HAI prevention target (SIR of 0.50) with an SIR of 0.50.



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SIRs for Central Line-Associated Bloodstream Infections in Acute Care ICUs & Medical/Surgical Wards
 January 1, 2016 – December 31, 2016



- = Number of infections was significantly **lower (better)** than predicted
- = Number of infections was **similar (not significantly different)** to predicted
- ◆ = Number of infections was significantly **higher (worse)** than predicted

Note: Facilities with an asterisk (*) have less than one predicted infection, and therefore do not have a SIR or confidence interval.

Central Line-Associated Bloodstream Infections in ICUs & Medical/Surgical Wards
January 1, 2016 through December 31, 2016

| Facility Name | Hospital Performance Compared to National Data | Number of Infections | Number of Predicted Infections | Number of Central Line Days | Standardized Infection Ratio | 95% Confidence Interval for SIR |
|---|--|----------------------|--------------------------------|-----------------------------|------------------------------|---------------------------------|
| Castle Medical Center | | 1 | 4.36 | 6,415 | 0.23 | 0.01, 1.13 |
| Hilo Medical Center | | 0 | 3.41 | 4,396 | 0.00 | 0.00, 0.88 |
| Kaiser Permanente Medical Center | | 1 | 15.49 | 15,082 | 0.07 | 0.00, 0.32 |
| Kapiolani Medical Center for Women and Children | | 21 | 17.17 | 13,789 | 1.22 | 0.78, 1.84 |
| Kona Community Hospital | | 0 | 1.08 | 1,588 | 0.00 | 0.00, 2.77 |
| Kuakini Medical Center | | 4 | 3.76 | 4,697 | 1.06 | 0.34, 2.56 |
| Maui Memorial Medical Center | | 3 | 4.85 | 6,815 | 0.62 | 0.16, 1.68 |
| North Hawaii Community Hospital | | 0 | 0.35 | 583 | Too Small to Calculate | |
| Pali Momi Medical Center | | 1 | 2.90 | 3,148 | 0.35 | 0.02, 1.70 |
| Straub Clinic & Hospital | | 0 | 4.90 | 7,037 | 0.00 | 0.00, 0.61 |
| The Queen's Medical Center | | 10 | 26.11 | 24,937 | 0.38 | 0.20, 0.68 |
| The Queen's Medical Center — West Oahu | | 0 | 1.40 | 2,247 | 0.00 | 0.00, 2.15 |
| Wahiawa General Hospital | | 1 | 0.94 | 1,289 | Too Small to Calculate | |
| Wilcox Memorial Hospital | | 2 | 1.04 | 1,719 | 1.92 | 0.32, 6.35 |
| Hawaii Total — Acute care Facilities | | 44 | 87.76 | 93,742 | 0.50 | 0.37, 0.67 |
| Kauai Veterans Memorial Hospital† | | 1 | 0.06 | 227 | Too Small to Calculate | |

Note: Reporting in Hawaii is linked to CMS IQR reporting requirements. Shriners Hospital for Children is not mandated to report CLABSI to NHSN. Source of national baseline data: 2015 NHSN CLABSI Data. Data contained in this report were last generated on August 21, 2017.

† CAHs utilize different models to calculate the number of predicted infections, and are therefore separated for CLABSI, CAUTI, CDI & MRSA Bacteremia.

Legend:

- = Number of infections was significantly **lower (better)** than predicted
- = Number of infections was **similar (not significantly different)** to predicted
- = Number of infections was significantly **higher (worse)** than predicted
- = Patients had too few central line days to calculate a reliable SIR. When SIR cannot be calculated, a comparison to national data is not possible
- = Recognizes hospitals with zero infections during the specified time period
- Too Small to Calculate = Predicted number of infections was less than one

Catheter Associated Urinary Tract Infections in ICU Locations

What is a Catheter Associated Urinary Tract Infection (CAUTI)?

A urinary catheter is a thin tube placed in the bladder to drain urine. Urine drains through the tube into a bag to collect the urine. People with urinary catheters have a much higher chance of getting a urinary tract infection than people who do not have a catheter. A urinary tract infection is an infection in the urinary system, which includes the bladder (stores the urine) and the kidneys (filter the blood to make urine). Germs (for example, bacteria or yeasts) do not normally live in these areas; if germs are introduced, an infection can occur. If you have a urinary catheter, germs can travel along the catheter and cause an infection in your bladder or your kidney, in which case it is called a catheter-associated urinary tract infection (CAUTI). For more information, visit [CDC's CAUTI website](#).

What are some of the things hospitals are doing to prevent CAUTI?

To prevent CAUTI, doctors, nurses, and other healthcare providers:

- Put in catheters only when necessary and routinely evaluate to determine if they can be removed as soon as possible.
- Only allow catheters to be inserted and removed by properly trained persons using sterile (clean) technique.
- Clean the skin in the area where the catheter will be inserted before inserting the catheter.
- Clean their hands by washing them with soap and water or using an alcohol-based hand rub before and after touching a catheter.

What can you do to help prevent a CAUTI?

- Ask your healthcare provider each day if you still need the catheter.
- Make sure all doctors and nurses caring for you clean their hands with soap and water or an alcohol-based hand rub before and after caring for you. If you do not see your providers clean their hands, please ask them to do so.
- Always clean your hands before and after doing catheter care.
- Always keep your urine bag below the level of your bladder.
- Family and friends should clean their hands with soap and water or an alcohol-based hand rub before and after visiting you. If you do not see them clean their hands, ask them to clean their hands.

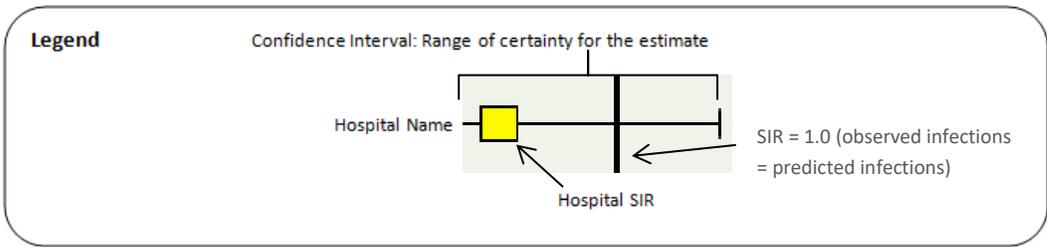
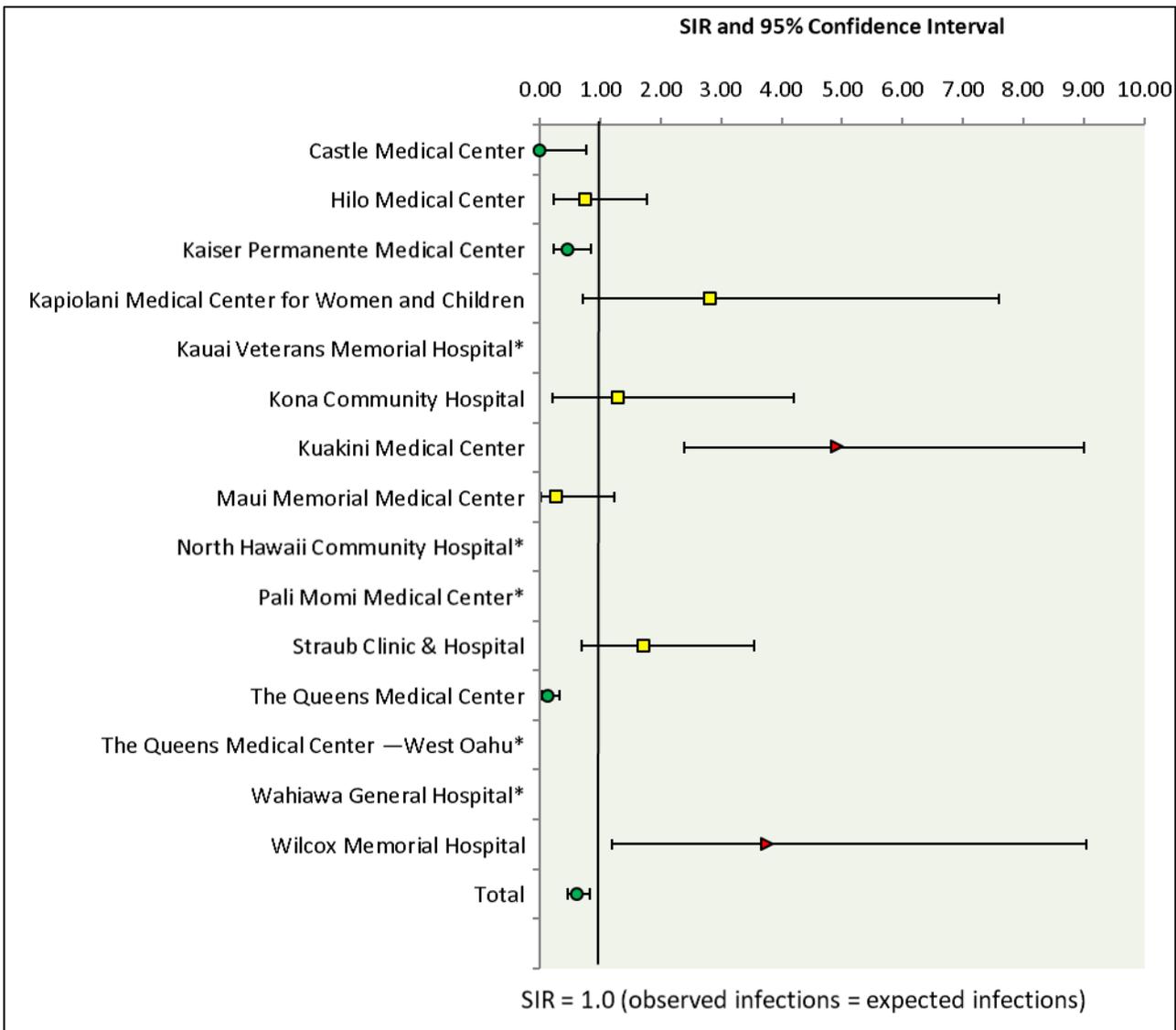
What is the current situation of CAUTIs?

- In 2016, 45 CAUTIs were reported in ICU & medical/surgical ward locations within Hawaii hospitals. This was 38% lower than predicted.
- Hawaii achieved the DHHS 2020 HAI prevention target (SIR of 0.75) with an SIR of 0.62.



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SIRs for Catheter Associated Urinary Tract Infections in ICUs & Medical/Surgical Wards
January 1, 2016 – December 31, 2016



- = Number of infections was significantly **lower (better)** than predicted
- = Number of infections was **similar (not significantly different)** to predicted
- ◆ = Number of infections was significantly **higher (worse)** than predicted

Note: Facilities with an asterisk (*) have less than one predicted infection, and therefore do not have a SIR or confidence interval

Catheter Associated Urinary Tract Infections in ICUs & Medical/Surgical Wards
January 1, 2016 through December 31, 2016

| Facility Name | Hospital Performance Compared to NHSN National Data | Number of Infections | Number of Predicted Infections | Number of Catheter Days | Standardized Infection Ratio | 95% Confidence Interval for SIR |
|---|---|----------------------|--------------------------------|-------------------------|------------------------------|---------------------------------|
| Castle Medical Center  |  | 0 | 3.91 | 5,555 | 0.00 | 0.00, 0.77 |
| Hilo Medical Center |  | 4 | 5.47 | 6,701 | 0.73 | 0.23, 1.76 |
| Kaiser Permanente Medical Center |  | 9 | 19.78 | 15,589 | 0.46 | 0.22, 0.84 |
| Kapiolani Medical Center for Women and Children |  | 3 | 1.08 | 1,466 | 2.79 | 0.71, 7.60 |
| Kona Community Hospital |  | 2 | 1.57 | 2,292 | 1.27 | 0.21, 4.20 |
| Kuakini Medical Center |  | 9 | 1.84 | 2,315 | 4.90 | 2.39, 9.00 |
| Maui Memorial Medical Center  |  | 0 | 4.03 | 5,748 | 0.25 | 0.01, 1.22 |
| North Hawaii Community Hospital |  | 3 | 0.41 | 791 | Too Small to Calculate | |
| Pali Momi Medical Center  |  | 0 | 2.77 | 2,730 | 0.00 | 0.00, 1.08 |
| Straub Clinic & Hospital |  | 6 | 3.52 | 5,012 | 1.70 | 0.69, 3.54 |
| The Queen's Medical Center |  | 3 | 25.17 | 16,324 | 0.12 | 0.03, 0.32 |
| The Queens Medical Center — West Oahu  |  | 0 | 1.46 | 2,820 | 0.00 | 0.00, 2.05 |
| Wahiawa General Hospital |  | 1 | 0.59 | 972 | Too Small to Calculate | |
| Wilcox Memorial Hospital |  | 4 | 1.07 | 2,113 | 3.75 | 1.19, 9.04 |
| Hawaii Total |  | 45 | 72.66 | 70,428 | 0.62 | 0.46, 0.82 |
| Kauai Veterans Memorial Hospital†  |  | 0 | 0.22 | 329 | Too Small to Calculate | |

Note: Reporting in Hawaii is linked to CMS IQR reporting requirements. Shriners Hospital for Children is not mandated to report CAUTI to NHSN. Source of national baseline data: 2015 NHSN CAUTI Data. Data contained in this report were last generated on August 21, 2017.

† CAHs utilize different models to calculate the number of predicted infections, and are therefore separated for CLABSI, CAUTI, CDI & MRSA Bacteremia.

Legend:

-  = Number of infections was significantly **lower (better)** than predicted
-  = Number of infections was **similar (not significantly different)** to predicted
-  = Number of infections was significantly **higher (worse)** than predicted
-  = Patients had too few catheter days to calculate a reliable SIR. When SIR cannot be calculated, a comparison to national data is not possible.
-  = Recognizes hospitals with zero infections during the specified time period
- Too Small to Calculate = Predicted number of infections was less than one

Inpatient Colon Surgery—Surgical Site Infection

What is a Surgical Site Infection (SSI)?

A SSI is an infection occurring after surgery in the part of the body where the surgery took place. Most surgical patients do not develop an infection. However, infections develop in approximately 1 to 3 out of every 100 patients who have surgery in the United States. The most common symptoms of a SSI are redness and pain around the area of the surgery, drainage of cloudy fluid from the surgical wound, and fever. For more information, visit [CDC's SSI website](#).

What is Colon Surgery (COLO)?

COLO is a surgical procedure that includes incision (cutting), resection (removal), and sometimes the re-joining of any part(s) of the colon (large intestine). It does not include operations on the rectum (the rectum is the end of the colon); those involve a different surgical procedure.

What are some of the things hospitals are doing to prevent SSIs?

To prevent SSIs, doctors, nurses, and other healthcare providers:

- Clean their hands and arms up to their elbows with an antiseptic agent just before the surgery.
- May remove some of your hair immediately before your surgery using electric clippers if the hair is in the same area where the procedure will occur. They should not shave you with a razor as that could cause microscopic wounds and possible entry points for bacteria.
- Give you antibiotics before your surgery starts to try to decrease the bacteria level on your skin and therefore limit your risk for infection. In most cases, you should get antibiotics within 60 minutes of the surgery; antibiotics should be stopped at most 24 hours after surgery.

What can you do to help prevent a SSI?

- Make sure your healthcare providers clean their hands before and after examining you, either with soap and water or an alcohol-based hand rub. If you do not see your providers clean their hands, please ask them to do so.
- Do not shave surgical area with a razor before surgery.
- Speak up if someone tries to shave you with a razor before surgery. Ask why you need to be shaved, and talk with your surgeon if you have any concerns.
- Family and friends should clean their hands with soap and water or an alcohol-based hand rub before and after visiting you. If you do not see them clean their hands, ask them to clean their hands.

What is the current situation of COLO SSIs?

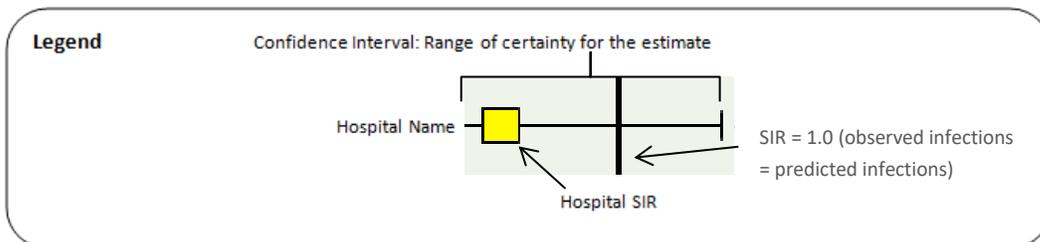
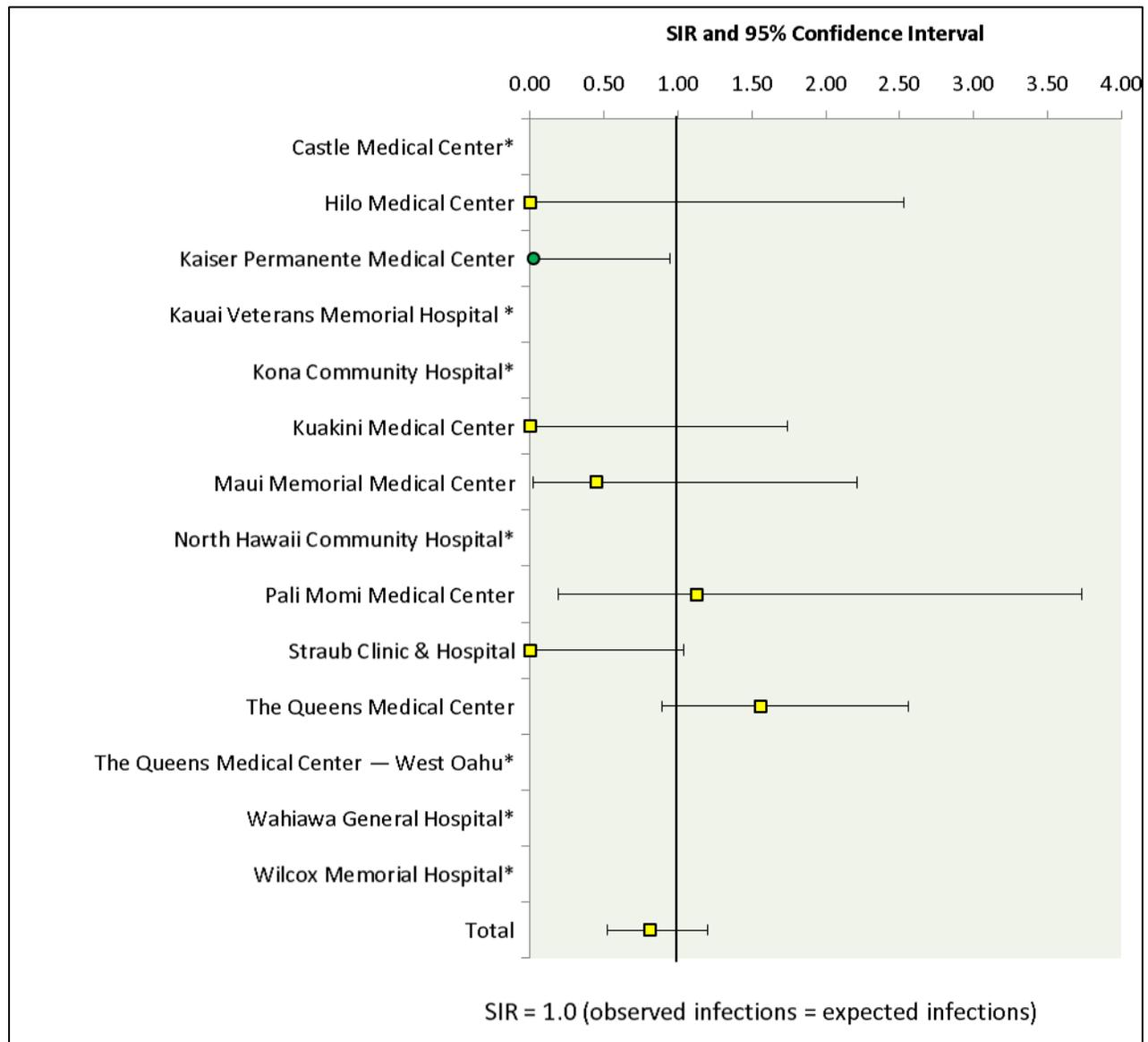
- In 2016, 22 COLO SSIs were reported within Hawaii hospitals. This was 19% lower than predicted.
- Hawaii did not achieve the DHHS 2020 HAI prevention target (SIR of 0.75), with an SIR of 0.81.



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SIRs for Inpatient Colon Surgery—Surgical Site Infection

January 1, 2016 – December 31, 2016



- = Number of infections was significantly **lower (better)** than predicted
- = Number of infections was **similar (not significantly different)** to predicted
- ◆ = Number of infections was significantly **higher (worse)** than predicted

Note: Facilities with an asterisk (*) have less than one predicted infection, and therefore do not have a SIR or confidence interval.

**Inpatient Colon Surgery—Surgical Site Infection
January 1, 2016 through December 31, 2016**

| Facility Name | Hospital Performance Compared to NHSN National Data | Number of Infections | Number of Predicted Infections | Number of Procedures | Standardized Infection Ratio | 95% Confidence Interval for SIR |
|---------------------------------------|---|----------------------|--------------------------------|----------------------|------------------------------|---------------------------------|
| Castle Medical Center 🌿 | △ | 0 | 0.64 | 26 | Too Small to Calculate | |
| Hilo Medical Center 🌿 | ▬ | 0 | 1.18 | 44 | 0.00 | 0.00, 2.53 |
| Kaiser Permanente Medical Center | ✓ | 1 | 5.21 | 234 | 0.02 | 0.01, 0.95 |
| Kona Community Hospital | △ | 0 | 0.27 | 16 | Too Small to Calculate | |
| Kuakini Medical Center 🌿 | ▬ | 0 | 1.72 | 70 | 0.00 | 0.00, 1.74 |
| Maui Memorial Medical Center | ▬ | 1 | 2.23 | 98 | 0.45 | 0.02, 2.22 |
| North Hawaii Community Hospital 🌿 | △ | 0 | 0.28 | 14 | Too Small to Calculate | |
| Pali Momi Medical Center | ▬ | 2 | 1.77 | 90 | 1.13 | 0.19, 3.73 |
| Straub Clinic & Hospital 🌿 | ▬ | 0 | 2.88 | 110 | 0.00 | 0.00, 1.04 |
| The Queen's Medical Center | ▬ | 14 | 8.95 | 280 | 1.56 | 0.89, 2.56 |
| The Queens Medical Center — West Oahu | △ | 2 | 0.99 | 49 | Too Small to Calculate | |
| Wahiawa General Hospital 🌿 | △ | 0 | 0.07 | 4 | Too Small to Calculate | |
| Wilcox Memorial Hospital | △ | 2 | 0.98 | 40 | Too Small to Calculate | |
| Hawaii Total | ▬ | 22 | 27.11 | 1,075 | 0.81 | 0.52, 1.20 |
| Kauai Veterans Memorial Hospital 🌿 | △ | 0 | 0.03 | 2 | Too Small to Calculate | |

Note: Reporting in Hawaii is linked to CMS IQR reporting requirements. Shriners Hospital for Children does not perform this procedure. Kapiolani Medical Center for Women and Children is not mandated to report COLO SSI to NHSN. Report excludes Superficial Incisional Secondary (SIS) and Deep Incisional Secondary (DIS) SSIs. Includes only procedures and associated SSIs that are reported with primary closure technique. Source of national baseline data: 2015 NHSN SSI Data. Data contained in this report were last generated on August 21, 2017.

Legend:

- ✓ = Number of infections was significantly **lower (better)** than predicted
- ▬ = Number of infections was **similar (not significantly different)** to predicted
- ▽ = Number of infections was significantly **higher (worse)** than predicted
- △ = The facility had too few COLO procedures to calculate a reliable SIR. When SIR cannot be calculated, a comparison to national data is not possible.
- 🌿 = Recognizes hospitals with zero infections during the specified time period
- Too Small to Calculate = Predicted number of infections was less than one

Inpatient Abdominal Hysterectomy—Surgical Site Infection

What is a Surgical Site Infection (SSI)?

A SSI is an infection occurring after surgery in the part of the body where the surgery took place. Most surgical patients do not develop an infection. However, infections develop in approximately 1 to 3 out of every 100 patients who have surgery in the United States. The most common symptoms of a SSI are redness and pain around the area of the surgery, drainage of cloudy fluid from the surgical wound, and fever. For more information, visit [CDC's SSI website](#).

What is an Abdominal Hysterectomy (HYST)?

HYST is a procedure to remove the uterus through an incision in the abdominal (i.e., belly) wall. This includes hysterectomy procedures done by laparoscope. (Laparoscopy is an operation performed in the abdomen or pelvis through tiny incisions using small surgical tools and a camera to see the areas needing repair or removal.)

What are some of the things hospitals are doing to prevent SSIs?

To prevent SSIs, doctors, nurses, and other healthcare providers:

- Clean their hands and arms up to their elbows with an antiseptic agent just before the surgery.
- May remove some of your hair immediately before your surgery using electric clippers if the hair is in the same area where the procedure will occur. They should not shave you with a razor as that could cause microscopic wounds and possible entry points for bacteria.
- Give you antibiotics before your surgery starts to try to decrease the bacteria level on your skin and therefore limit your risk for infection. In most cases, you should get antibiotics within 60 minutes of the surgery; antibiotics should be stopped at most 24 hours after surgery.

What can you do to help prevent a SSI?

- Make sure your healthcare providers clean their hands before and after examining you, either with soap and water or an alcohol-based hand rub. If you do not see your providers clean their hands, please ask them to do so.
- Do not shave surgical area with a razor prior to surgery.
- Speak up if someone tries to shave you with a razor before surgery. Ask why you need to be shaved, and talk with your surgeon if you have any concerns.
- Family and friends should clean their hands with soap and water or an alcohol-based hand rub before and after visiting you. If you do not see them clean their hands, ask them to clean their hands.

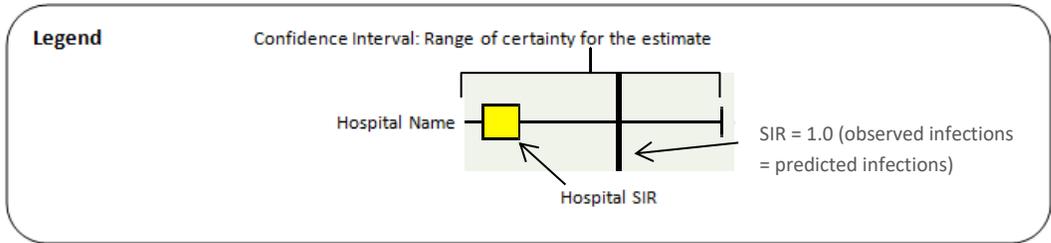
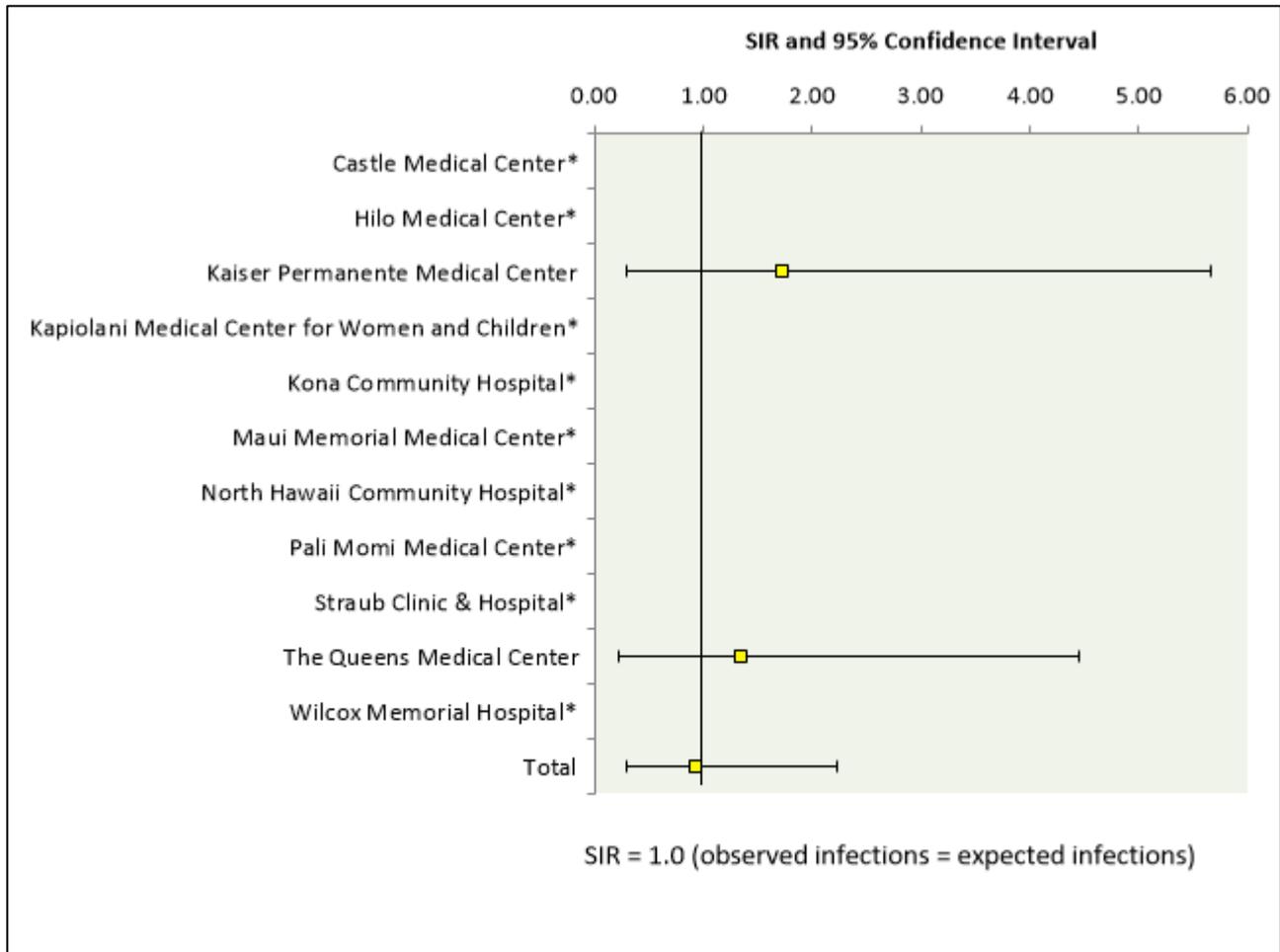
What is the current situation of HYST SSIs?

- In 2016, 4 HYST SSIs were reported within Hawaii hospitals. This was 8% lower than predicted.
- Hawaii did not achieve the DHHS 2013 HAI prevention target (SIR of 0.75), with an SIR of 0.92.



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SIRs for Inpatient Abdominal Hysterectomy—Surgical Site Infection
January 1, 2016 – December 31, 2016



- = Number of infections was significantly **lower (better)** than predicted
- = Number of infections was **similar (not significantly different)** to predicted
- ◆ = Number of infections was significantly **higher (worse)** than predicted

Note: Facilities with an asterisk (*) have less than one predicted infection, and therefore do not have a SIR or confidence interval

**Inpatient Abdominal Hysterectomy—Surgical Site Infection
January 1, 2016 through December 31, 2016**

| Facility Name | Hospital Performance Compared to NHSN National Data | Number of Infections | Number of Predicted Infections | Number of Procedures | Standardized Infection Ratio | 95% Confidence Interval for SIR |
|---|---|----------------------|--------------------------------|----------------------|------------------------------|---------------------------------|
| Castle Medical Center  | △ | 0 | 0.08 | 18 | Too Small to Calculate | |
| Hilo Medical Center  | △ | 0 | 0.23 | 42 | Too Small to Calculate | |
| Kaiser Permanente Medical Center | ▬▬ | 2 | 1.17 | 185 | 1.71 | 0.29, 5.66 |
| Kapiolani Medical Center for Women and Children | △ | 0 | 0.87 | 124 | Too Small to Calculate | |
| Kona Community Hospital  | △ | 0 | 0.07 | 11 | Too Small to Calculate | |
| Maui Memorial Medical Center  | △ | 0 | 0.08 | 11 | Too Small to Calculate | |
| North Hawaii Community Hospital  | △ | 0 | 0.11 | 24 | Too Small to Calculate | |
| Pali Momi Medical Center  | △ | 0 | 0.02 | 3 | Too Small to Calculate | |
| Straub Clinic & Hospital  | △ | 0 | 0.03 | 5 | Too Small to Calculate | |
| The Queen's Medical Center | ▬▬ | 2 | 1.49 | 200 | 1.35 | 0.23, 4.45 |
| Wilcox Memorial Hospital  | △ | 0 | 0.18 | 27 | Too Small to Calculate | |
| Hawaii Total | ▬▬ | 4 | 4.34 | 650 | 0.92 | 0.29, 2.23 |

Note: Reporting in Hawaii is tied to CMS IQR reporting requirements. Shriners Hospital for Children and Kuakini Medical Center do not perform this procedure. Excludes Superficial Incisional Secondary (SIS) and Deep Incisional Secondary (DIS) SSIs. Includes only procedures and associated SSIs that are reported with primary closure technique. Source of national baseline data: 2015 NHSN SSI Data. Data contained in this report were last generated on August 21, 2017.

Legend:

-  = Number of infections was significantly **lower (better)** than predicted
-  = Number of infections was **similar (not significantly different)** to predicted
-  = Number of infections was significantly **higher (worse)** than predicted
-  = The facility had too few HYST procedures days to calculate a reliable SIR. When SIR cannot be calculated, a comparison to national data is not possible.
-  = Recognizes hospitals with zero infections during the specified time period
- Too Small to Calculate = Predicted number of infections was less than one

Inpatient *Clostridium difficile* Infection

What is a *Clostridium difficile* infection (CDI)?

Clostridium difficile, also known as “C. diff,” is a bacterium which can cause diarrhea and inflammation of the colon (large intestine). CDI usually occurs in patients who are taking or have recently taken antibiotics. The most common symptoms of CDI include watery diarrhea, fever, loss of appetite, nausea, and belly pain. C. difficile can live as spores outside the human body for a very long time and can be found on objects such as bed linens, bathroom fixtures, and medical equipment. It can also be spread more directly through contaminated shared equipment and the hands of healthcare providers. For more information, visit [CDC’s CDI website](#).

What are some of the things hospitals are doing to prevent CDI?

To prevent CDI, doctors, nurses, and other healthcare providers:

- Preform hand hygiene before and after caring for every patient.
- Carefully clean hospital rooms and medical equipment.
- Use [Contact Precautions](#) when caring for patients with CDI.
 - Whenever possible, a patient with CDI will have a single room or will share a room only with someone else who also has CDI.
 - Healthcare providers will put on gloves and wear a gown over their clothing while taking care of patients with CDI; visitors may also be asked to wear a gown and gloves.
 - When leaving the room, hospital providers and visitors remove their gown and gloves and clean their hands.
 - Patients on contact precautions are asked to stay in their hospital rooms as much as possible.

What can you do to help prevent CDI?

- Make sure your healthcare providers clean their hands before and after examining you. If you do not see your providers clean their hands, please ask them to do so.
- Family and friends should clean their hands with soap and water before and after visiting you. If you do not see them clean their hands, ask them to clean their hands.
- Only take antibiotics as prescribed by your doctor.
- Be sure to clean your hands often, especially after using the bathroom and before eating.

What is the current situation of CDI?

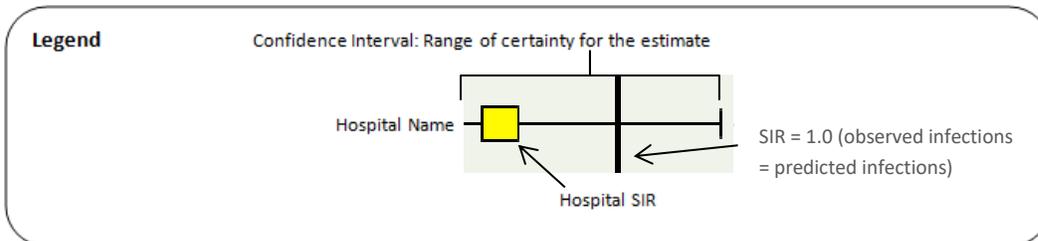
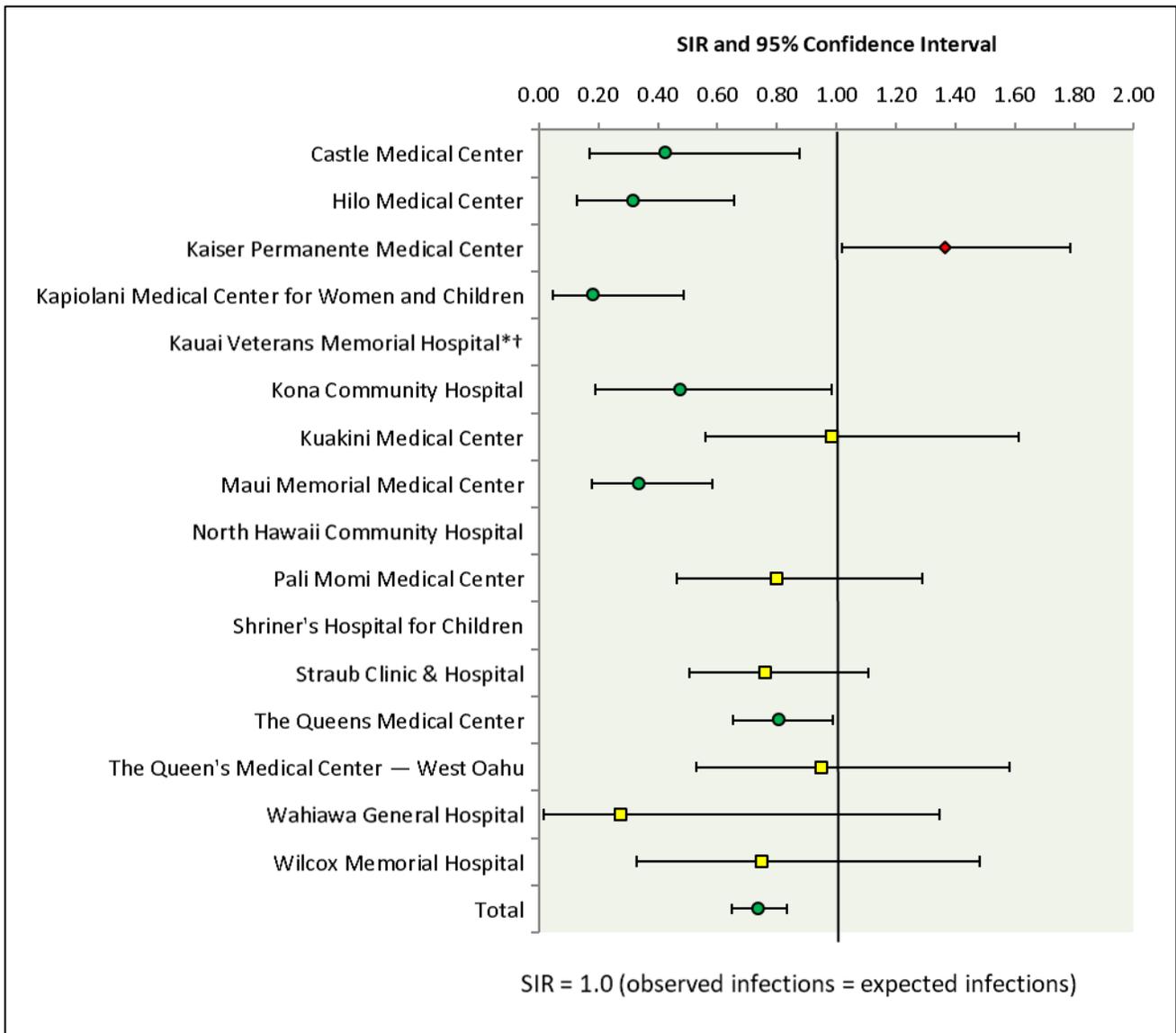
- In 2016, 246 CDI were reported within Hawaii hospitals. This was 27% lower than predicted.
- Hawaii did not achieve the DHHS 2013 HAI prevention target (SIR of 0.70) with an SIR of 0.73.



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SIRs for Inpatient Acute Care *Clostridium difficile* Infections

January 1, 2016 – December 31, 2016



- = Number of infections was significantly **lower (better)** than predicted
- = Number of infections was **similar (not significantly different)** to predicted
- ◆ = Number of infections was significantly **higher (worse)** than predicted

Note: Facilities with an asterisk (*) have less than one predicted infection, and therefore do not have a SIR or confidence interval

Inpatient *Clostridium difficile* Infections
January 1, 2016 through December 31, 2016

| Facility Name | Hospital Performance Compared to NHSN National Data | Number of Infections | Number of Predicted Infections | Number of Patient Days | Standardized Infection Ratio | 95% Confidence Interval for SIR |
|---|---|----------------------|--------------------------------|------------------------|------------------------------|---------------------------------|
| Castle Medical Center | | 6 | 14.27 | 31,940 | 0.42 | 0.17, 0.88 |
| Hilo Medical Center | | 6 | 18.99 | 36,404 | 0.32 | 0.13, 0.66 |
| Kaiser Permanente Medical Center | | 49 | 35.98 | 62,045 | 1.36 | 1.02, 1.79 |
| Kapiolani Medical Center for Women and Children | | 3 | 16.79 | 48,380 | 0.18 | 0.05, 0.49 |
| Kona Community Hospital | | 6 | 12.70 | 35,951 | 0.47 | 0.10, 0.74 |
| Kuakini Medical Center | | 14 | 14.21 | 26,418 | 0.99 | 0.58, 1.57 |
| Maui Memorial Medical Center | | 11 | 32.82 | 56,608 | 0.34 | 0.49, 1.15 |
| North Hawaii Community Hospital | | 1 | 0.96 | 5,885 | Too Small to Calculate | |
| Pali Momi Medical Center | | 15 | 18.75 | 33,902 | 0.80 | 0.40, 1.06 |
| Shriner's Hospital for Children | | 0 | 0.21 | 1,356 | Too Small to Calculate | |
| Straub Clinic & Hospital | | 25 | 32.84 | 43,043 | 0.76 | 0.50, 1.11 |
| The Queen's Medical Center | | 89 | 110.36 | 159,332 | 0.81 | 0.65, 0.99 |
| The Queens Medical Center — West Oahu | | 13 | 13.71 | 24,277 | 0.95 | 0.53, 1.58 |
| Wahiawa General Hospital | | 1 | 3.66 | 7,181 | 0.27 | 0.01, 1.345 |
| Wilcox Memorial Hospital | | 7 | 9.35 | 17,106 | 0.75 | 0.33, 1.48 |
| Hawaii Total | | 246 | 335.68 | 589,828 | 0.73 | 0.65, 0.83 |
| Kauai Veterans Memorial Hospital† | | 0 | 0.74 | 3,370 | Too Small to Calculate | |

Note: Reporting in Hawaii is tied to CMS IQR reporting requirements. Only laboratory confirmed inpatient healthcare-onset CDI isolates are presented. Source of national baseline data: 2015 NHSN CDI LabID Data. Data contained in this report were last generated on August 21, 2017.

† CAHs utilize different models to calculate the number of predicted infections, and are therefore separated for CLABSI, CAUTI, CDI & MRSA Bacteremia.

Legend:

- = Number of infections was significantly **lower (better)** than predicted
- = Number of infections was **similar (not significantly different)** to predicted
- = Number of infections was significantly **higher (worse)** than predicted
- = The facility had too few patient days to calculate a reliable SIR. When SIR cannot be calculated, a comparison to national data is not possible.
- = Recognizes hospitals with zero infections during the specified time period
- Too Small to Calculate = Predicted number of infections was less than one

Inpatient Methicillin-Resistant *Staphylococcus aureus* Bacteremia

What is methicillin-resistant *Staphylococcus aureus* (MRSA)?

Staphylococcus aureus is a very common bacterium found on the skin or in the nose of about 1 out of every 3 people. Usually, this bacterium does not cause problems for people, but under the right circumstances it can cause serious infections such as skin or wound infections, pneumonia, or infections of the blood (bacteremia). MRSA is a type of *S. aureus* which is resistant to some of the antibiotics often used to treat these infections. For more information, visit [CDC's MRSA website](#).

What are some of the things hospitals are doing to prevent MRSA infections?

To prevent MRSA infections, doctors, nurses, and other healthcare providers:

- Clean their hands with soap and water or an alcohol-based hand rub before and after caring for every patient.
- Carefully clean hospital rooms and medical equipment.
- Use [Contact Precautions](#) when caring for patients with MRSA.
 - Whenever possible, a patient with MRSA will have a single room or will share a room only with someone else who also has MRSA.
 - Healthcare providers will put on gloves and wear a gown over their clothing while taking care of patients with MRSA; visitors may also be asked to wear a gown and gloves.
 - When leaving the room, hospital providers and visitors remove their gown and gloves and clean their hands.
 - Patients on contact precautions are asked to stay in their hospital rooms as much as possible.

What can you do to help prevent MRSA infections?

- Make sure your healthcare providers clean their hands before and after examining you, either with soap and water or an alcohol-based hand rub. If you do not see your providers clean their hands, please ask them to do so.
- Family and friends should clean their hands with soap and water or an alcohol-based hand rub before and after visiting you. If you do not see them clean their hands, ask them to clean their hands.

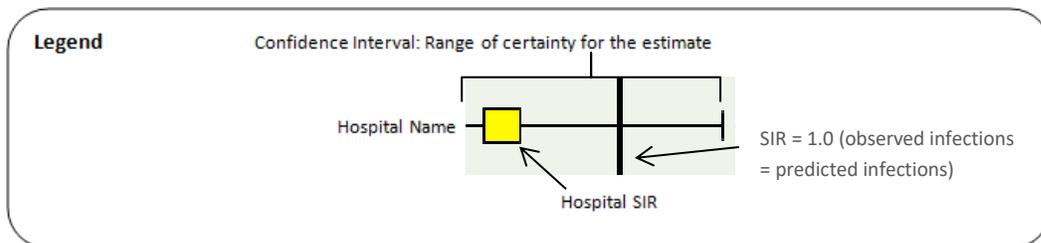
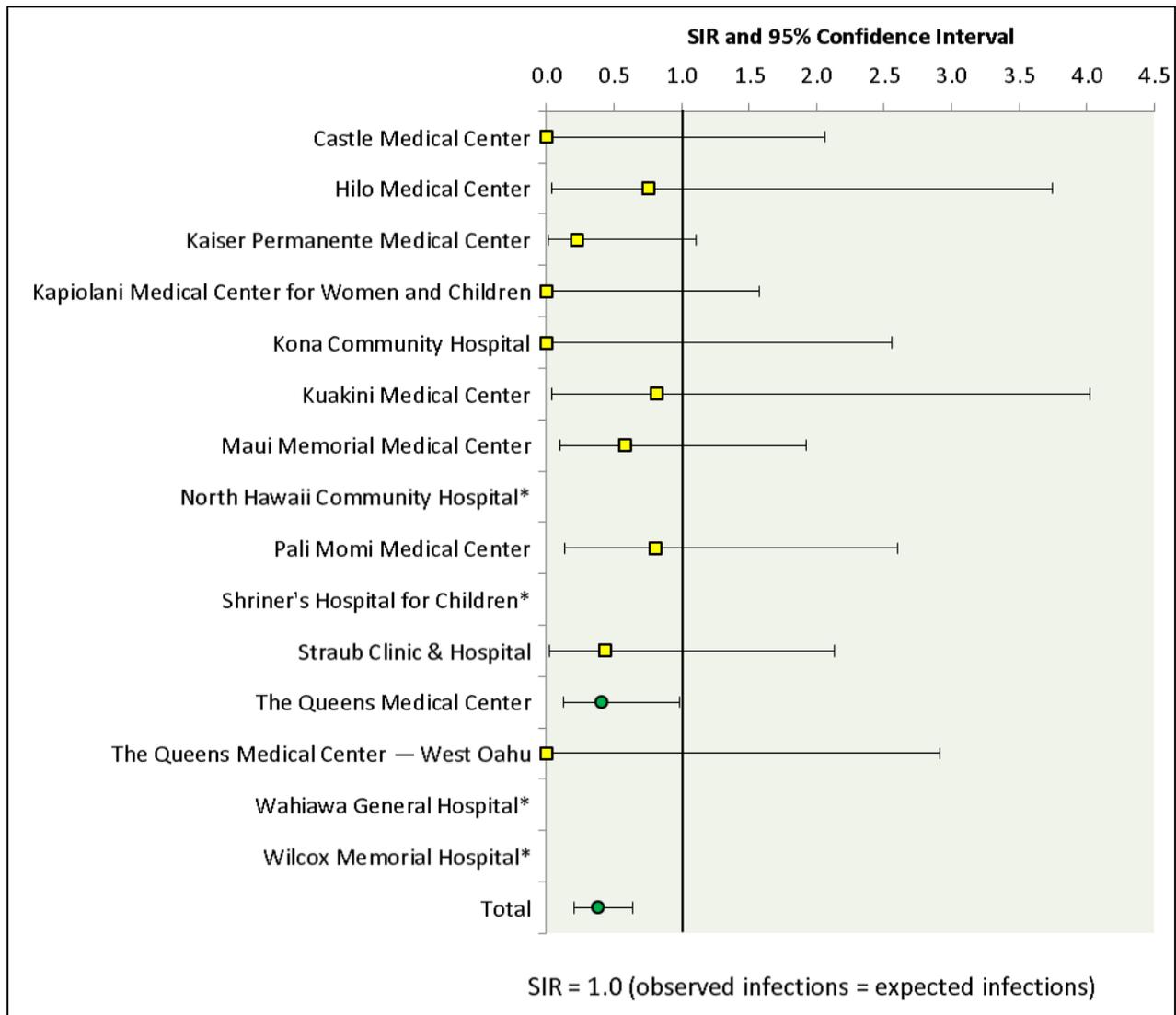
What is the current situation of MRSA bacteremia infections?

- In 2016, 18 MRSA bacteremia infections were reported within Hawaii hospitals. This was 59% lower than predicted.
- Hawaii achieved the DHHS 2013 HAI prevention target (SIR of 0.75) with a SIR of 0.41.



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SIRs for Inpatient Acute Care Methicillin-Resistant *Staphylococcus aureus* Bacteremia
 January 1, 2016 – December 31, 2016



- = Number of infections was significantly **lower (better)** than predicted
- = Number of infections was **similar (not significantly different)** to predicted
- ◆ = Number of infections was significantly **higher (worse)** than predicted

Note: Facilities with an asterisk (*) have less than one predicted infection, and therefore do not have a SIR or confidence interval

Inpatient Methicillin-Resistant *Staphylococcus aureus* Bacteremia

January 1, 2016 through December 31, 2016

| Facility Name | Hospital Performance Compared to NHSN National Data | Number of Infections | Number of Predicted Infections | Number of Patient Days | Standardized Infection Ratio | 95% Confidence Interval for SIR |
|---|---|----------------------|--------------------------------|------------------------|------------------------------|---------------------------------|
| Castle Medical Center 🌺 | ▬▬ | 0 | 1.37 | 34,106 | 0.00 | 0.00, 2.06 |
| Hilo Medical Center | ▬▬ | 1 | 1.32 | 38,500 | 0.76 | 0.04, 3.74 |
| Kaiser Permanente Medical Center | ▬▬ | 1 | 4.09 | 69,086 | 0.23 | 0.01, 1.11 |
| Kapiolani Medical Center for Women and Children 🌺 | ▬▬ | 0 | 1.90 | 76,331 | 0.00 | 0.00, 1.57 |
| Kona Community Hospital 🌺 | ▬▬ | 0 | 1.17 | 37,227 | 0.00 | 0.00, 2.56 |
| Kuakini Medical Center | ▬▬ | 1 | 1.23 | 26,418 | 0.82 | 0.04, 4.03 |
| Maui Memorial Medical Center | ▬▬ | 2 | 3.44 | 59,446 | 0.58 | 0.10, 1.92 |
| North Hawaii Community Hospital 🌺 | △ | 0 | 0.12 | 7,014 | Too Small to Calculate | |
| Pali Momi Medical Center | ▬▬ | 2 | 2.54 | 33,902 | 0.79 | 0.13, 2.56 |
| Shriner's Hospital for Children 🌺 | △ | 0 | 0.03 | 1,356 | Too Small to Calculate | |
| Straub Clinic & Hospital | ▬▬ | 1 | 2.32 | 43,043 | 0.43 | 0.02, 2.13 |
| The Queen's Medical Center | ✓ | 4 | 9.82 | 163,559 | 0.41 | 0.13, 0.98 |
| The Queens Medical Center — West Oahu 🌺 | ▬▬ | 0 | 1.03 | 24,277 | 0.00 | 0.00, 2.91 |
| Wahiawa General Hospital 🌺 | △ | 0 | 0.22 | 7,181 | Too Small to Calculate | |
| Wilcox Memorial Hospital 🌺 | △ | 0 | 0.73 | 18,624 | Too Small to Calculate | |
| Hawaii Total | ✓ | 12 | 31.82 | 640,070 | 0.38 | 0.20, 0.70 |
| Kauai Veterans Memorial Hospital 🌺 | △ | 0 | 0.08 | 3,895 | Too Small to Calculate | |

Note: Reporting in Hawaii is tied to CMS IQR reporting requirements. Source of national baseline data: 2015 NHSN MRSA Blood LabID Data. Only laboratory confirmed inpatient healthcare-onset MRSA Bacteremia isolates are presented. Data contained in this report were last generated on August 21, 2017.

† CAHs utilize different models to calculate the number of predicted infections, and are therefore separated for CLABSI, CAUTI, CDI & MRSA Bacteremia.

Legend:

- ✓ = Number of infections was significantly **lower (better)** than predicted
 - ▬▬ = Number of infections was **similar (not significantly different)** to predicted
 - ▽ = Number of infections was significantly **higher (worse)** than predicted
 - △ = The facility had too few patient days to calculate a reliable SIR. When SIR cannot be calculated, a comparison to national data is not possible.
 - 🌺 = Recognizes hospitals with zero infections during the specified time period
- Too Small to Calculate = Predicted number of infections was less than one

Influenza Vaccination of Healthcare Personnel

What is influenza?

Influenza, also known as the flu, is a contagious respiratory illness caused by influenza viruses. It can cause mild to severe illness. Serious outcomes of influenza infection can result in hospitalization or death. Some people, such as older adults, young children, and people with certain health conditions, are at higher risk for serious flu complications. The best way to prevent the flu is by getting vaccinated each year. Attaining vaccination coverage of 90% of a facility's HCP is a U.S. DHHS Healthy People 2020 goal. For more information, visit CDC's influenza website.

What are some of the things hospitals are doing to prevent influenza?

To prevent influenza, healthcare facilities, doctors, nurses, and other healthcare providers ensure the following strategies:

- **Vaccination:** Annual vaccination is the most important measure to prevent seasonal influenza infection. Facilities promote and administer seasonal influenza vaccination. High HCP and patient vaccination rates are critical steps in preventing healthcare transmission of influenza.
- **Cough Etiquette:** Ensure providers cover their mouth and nose when coughing or sneezing with a tissue or their elbow and then clean their hands with soap and water or an alcohol-based hand rub.
- **Management of Ill Workers:** Ensure ill workers stay home, or if at work, stop patient-care activities, wear a facemask, and promptly notify their supervisor and infection control personnel/occupational health before leaving work.
- **Infection Control:** Adhere to infection prevention precautions for all patient-care activities and aerosol-generating procedures.
- **Environmental Cleaning:** Carefully clean hospital rooms and medical equipment.

What can you do to help prevent influenza infections?

- The single best way to prevent the flu is get vaccinated against flu each season.
- Practice cough etiquette and cover your mouth or nose when you cough or sneeze.
- Make sure your healthcare providers clean their hands before and after examining you, either with soap and water or an alcohol-based hand rub. If you do not see your providers clean their hands, please ask them to do so.
- Family and friends should clean their hands with soap and water or an alcohol-based hand rub before and after visiting you. If you do not see them clean their hands, ask them to clean their hands.

What is the current situation of Healthcare Personnel Influenza Vaccination?

- For the 2016–2017 influenza season, the overall state average vaccination coverage was 82%.
- Only 4 facilities in Hawaii have achieved the DHHS Healthy People 2020 goal of 90% vaccination coverage.
- For context, the overall state average vaccination coverage for the 2015–2016 influenza season was 77%, and the national average was 86%.



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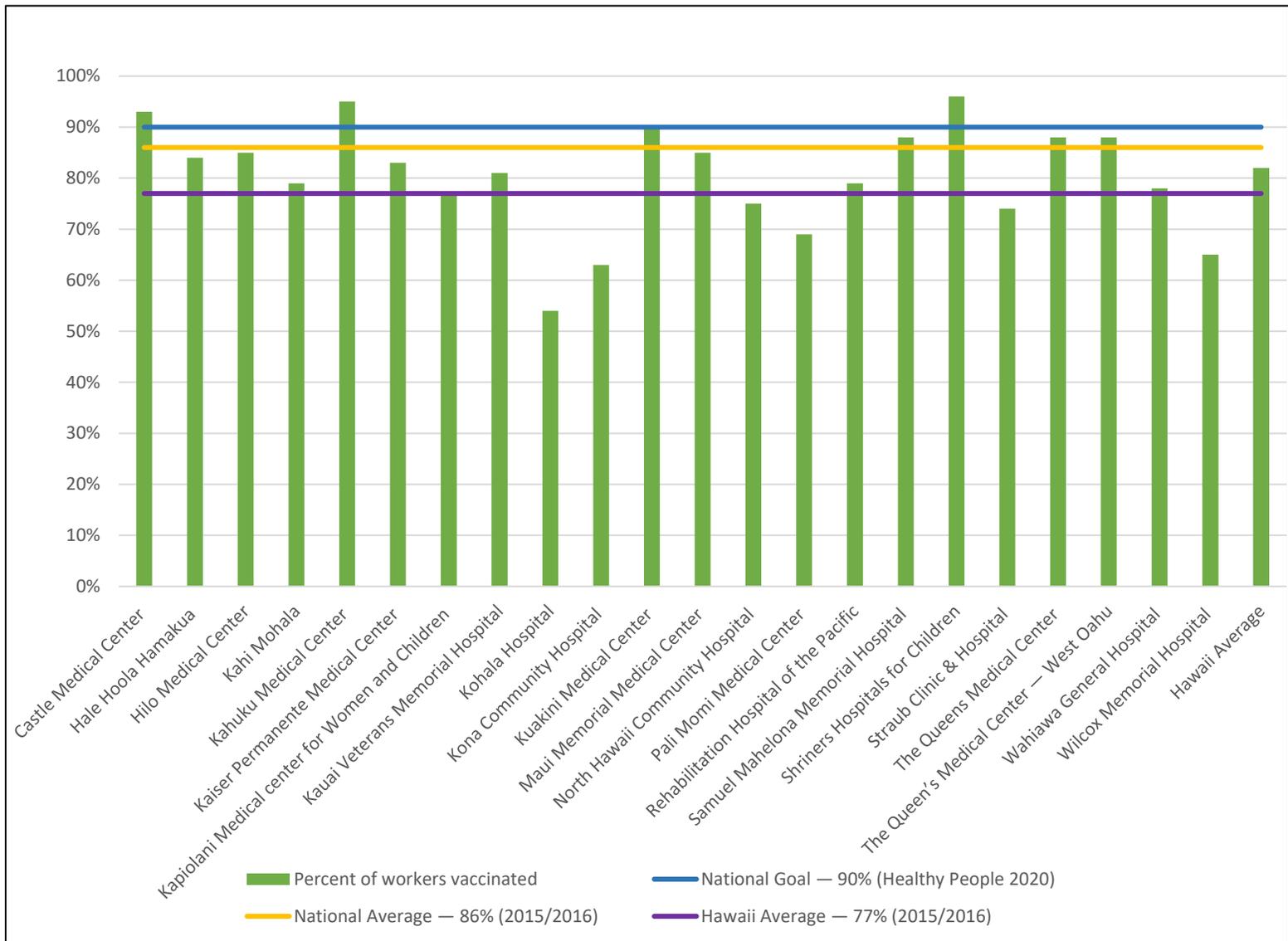
**Healthcare Personnel Influenza Vaccination—All Healthcare Workers
October 1, 2016 through March 31, 2017**

| Facility Name | Vaccinated at Facility | Vaccinated Elsewhere | Total Vaccinated | Total number of workers | Number of Contraindications | Number of declinations | Percent of workers vaccinated |
|---|------------------------|----------------------|------------------|-------------------------|-----------------------------|------------------------|-------------------------------|
| Castle Medical Center | 1,012 | 377 | 1,389 | 1,491 | 7 | 83 | 93% |
| Hale Hoola Hamakua | 101 | 14 | 115 | 137 | 1 | 18 | 84% |
| Hilo Medical Center | 948 | 100 | 1,048 | 1,239 | 25 | 103 | 85% |
| Kahi Mohala | 174 | 161 | 335 | 424 | 2 | 7 | 79% |
| Kahuku Medical Center | 150 | 17 | 167 | 176 | 2 | 7 | 95% |
| Kaiser Permanente Medical Center | 2,041 | 125 | 2,166 | 2,614 | 23 | 174 | 83% |
| Kapiolani Medical Center for Women and Children | 1508 | 632 | 2,140 | 2,794 | 15 | 246 | 77% |
| Kauai Veterans Memorial Hospital | 200 | 103 | 303 | 373 | 0 | 43 | 81% |
| Kohala Hospital | 35 | 4 | 39 | 72 | 1 | 32 | 54% |
| Kona Community Hospital | 317 | 30 | 347 | 551 | 10 | 113 | 63% |
| Kuakini Medical Center | 764 | 532 | 1,296 | 1,442 | 14 | 107 | 90% |
| Maui Memorial Medical Center | 1,201 | 300 | 1,501 | 1,769 | 0 | 200 | 85% |
| North Hawaii Community Hospital | 341 | 79 | 420 | 560 | 2 | 37 | 75% |
| Pali Momi Medical Center | 785 | 417 | 1,202 | 1,737 | 19 | 219 | 69% |
| Rehabilitation Hospital of the Pacific | 295 | 208 | 503 | 639 | 7 | 54 | 79% |
| Samuel Mahelona Memorial Hospital | 84 | 79 | 163 | 186 | 0 | 23 | 88% |
| Shriner's Hospital for Children | 270 | 167 | 437 | 457 | 0 | 7 | 96% |
| Straub Clinic & Hospital | 1,270 | 588 | 1,858 | 2,497 | 30 | 370 | 74% |
| The Queen's Medical Center | 4,885 | 886 | 5,771 | 6,532 | 33 | 243 | 88% |
| The Queens Medical Center — West Oahu | 784 | 216 | 1,000 | 1,135 | 10 | 51 | 88% |
| Wahiawa General Hospital | 366 | 81 | 447 | 571 | 10 | 23 | 78% |
| Wilcox Memorial Hospital | 432 | 140 | 572 | 874 | 28 | 197 | 65% |
| Hawaii Total | 17,963 | 5,256 | 23,219 | 28,270 | 239 | 2,357 | 82% |

Note: * Rehabilitation Hospital of the Pacific participates in the CMS Inpatient Rehabilitation Facility Quality Reporting Program and Kahi Mohala participates in the CMS Inpatient Psychiatric Facility Quality Reporting Program; their data may not be comparable to acute care facility data. Data contained in this report were last generated on June 21, 2017.

Influenza Vaccination Coverage of Healthcare Personnel¹⁰ by Facility

October 1, 2016 – March 31, 2017



Note: National average from the CDC's FluVaxView 2015-16 Influenza Season Health Care Personnel Vaccination Dashboard

<http://www.cdc.gov/flu/fluview/healthcare/trends1314-1415/trends-1415.html>

State average from Healthcare-Associated Infections in Hawaii – 2015 report:

https://health.hawaii.gov/docd/files/2017/01/HAI_Report_2015.pdf

National goal obtained from Healthy People Objective IID-12.13:

<http://www.healthypeople.gov/2020/topicsobjectives2020/objectiveslist.aspx?topicid=23>. Additionally, TJC requires facilities to set incremental goals to reach 90%. http://www.jointcommission.org/assets/1/18/R3_Report_Issue_3_5_18_12_final.pdf

¹⁰ HCP include employees, licensed independent practitioners, adult students/trainees and volunteers. There is an optional category that includes other contract personnel: direct care providers and providers of non-direct services such as maintenance, IT, or dietary food staff.

Hospital Summary Table (2016) – Respective Healthcare Associated Infection SIRs Compared with NHSN National Baseline

| Facility Name | CLABSI | CAUTI | COLO | HYST | CDI | MRSA |
|---|--------|-------|------|------|-----|------|
| Castle Medical Center | ▬▬ | ▬▬ | △ | △ | ✓ | ▬▬ |
| Hilo Medical Center | ✓ | ▬▬ | ▬▬ | △ | ✓ | ▬▬ |
| Kaiser Permanente Medical Center | ✓ | ✓ | ✓ | ▬▬ | ▽ | ▬▬ |
| Kapiolani Medical Center for Women and Children | ▬▬ | ▬▬ | ** | △ | ✓ | ▬▬ |
| Kona Community Hospital | ▬▬ | ▬▬ | △ | △ | ✓ | ▬▬ |
| Kuakini Medical Center | ▬▬ | ▽ | ▬▬ | ** | ▬▬ | ▬▬ |
| Maui Memorial Medical Center | ▬▬ | ▬▬ | ▬▬ | △ | ▬▬ | ▬▬ |
| North Hawaii Community Hospital | △ | ▬▬ | △ | △ | △ | △ |
| Pali Momi Medical Center | ▬▬ | ▬▬ | ▬▬ | △ | ▬▬ | ▬▬ |
| Shriner's Hospital for Children | ** | ** | ** | ** | △ | △ |
| Straub Clinic & Hospital | ✓ | ▬▬ | ▬▬ | △ | ▬▬ | ▬▬ |
| The Queen's Medical Center | ✓ | ✓ | ▬▬ | ▬▬ | ✓ | ✓ |
| The Queens Medical Center — West Oahu | ▬▬ | ▬▬ | △ | ** | ▬▬ | ▬▬ |
| Wahiawa General Hospital | △ | ▬▬ | △ | ** | ▬▬ | △ |
| Wilcox Memorial Hospital | ▬▬ | ▽ | △ | △ | ▬▬ | △ |
| Hawaii Total | ✓ | ✓ | ▬▬ | ▬▬ | ✓ | ✓ |
| Kauai Veterans Memorial Hospital | △ | △ | △ | △ | △ | △ |

Legend:

- ✓ = Number of infections was significantly lower (better) than predicted
- ▬▬ = Number of infections was similar (not significantly different) than predicted
- ▽ = Number of infections was significantly higher (worse) than predicted
- △ = The facility had too few device days/procedures or patient days to calculate a reliable SIR. When SIR cannot be calculated, a comparison to national data is not possible.
- ** = Surveillance not mandated for reporting into NHSN on this device or procedure, or procedure not performed at this facility.

Hospital Summary Table (2016) – SIRs

| Facility Name | CLABSI | CAUTI | COLO | HYST | CDI | MRSA |
|---|-------------|-------------|-------------|-------------|-------------|-------------|
| Castle Medical Center | 0.23 | 0.00 | Too Small | Too Small | 0.42 | 0.00 |
| Hilo Medical Center | 0.00 | 0.73 | 0.00 | Too Small | 0.32 | 0.76 |
| Kaiser Permanente Medical Center | 0.07 | 0.46 | 0.02 | 1.71 | 1.36 | 0.23 |
| Kapiolani Medical Center for Women and Children | 1.22 | 2.79 | ** | Too Small | 0.18 | 0.00 |
| Kona Community Hospital | 0.00 | 1.27 | Too Small | Too Small | 0.47 | 0.00 |
| Kuakini Medical Center | 1.06 | 4.90 | 0.00 | ** | 0.99 | 0.82 |
| Maui Memorial Medical Center | 0.62 | 0.25 | 0.45 | Too Small | 0.34 | 0.58 |
| North Hawaii Community Hospital | Too Small | Too Small | Too Small | Too Small | 0.41 | Too Small |
| Pali Momi Medical Center | 0.35 | 0.00 | 1.13 | Too Small | 0.80 | 0.82 |
| Shriner's Hospital for Children | ** | ** | ** | ** | Too Small | Too Small |
| Straub Clinic & Hospital | 0.00 | 1.70 | 0.00 | Too Small | 0.76 | 0.43 |
| The Queen's Medical Center | 0.38 | 0.12 | 1.56 | 0.23 | 0.81 | 0.41 |
| The Queens Medical Center — West Oahu | 0.00 | 0.00 | Too Small | ** | 0.95 | 0.00 |
| Wahiawa General Hospital | Too Small | Too Small | Too Small | ** | 0.27 | Too Small |
| Wilcox Memorial Hospital | 1.92 | 3.75 | Too Small | Too Small | 0.75 | Too Small |
| Hawaii Total | 0.50 | 0.62 | 0.81 | 0.92 | 0.73 | 0.38 |

Too Small = The number of predicted infections is less than 1.0 or the number of device days or procedures in that facility is too low to calculate a reliable SIR.

** = Surveillance not mandated for reporting into NHSN on this device or procedure, or procedure not performed at this facility.

Conclusion:

In 2016, a total of 373 HAIs were reported, including 246 CDIs, 45 CAUTIs, 44 CLABSI, 26 SSIs, and 12 MRSA bacteremia events. Overall, the number for each HAI reported was lower than predicted compared to the national baseline, with CLABSI, CAUTI, CDI and MRSA being statistically significant.

Unfortunately, SIRs previously presented under the old baseline (e.g. 2012-2015 data) cannot be directly compared to SIRs collected under the [updated baseline](#) (based on 2015 data). With the 2017 and subsequent HAI Reports we will be able to compare two years' worth of data (e.g. 2016 vs 2017).

Hawaii continues to work towards longer-term goals. In 2009, the U.S. DHHS developed [the National Action Plan to Prevent Health Care-Associated Infections: Road Map to Elimination](#), which identified the HAI measures recommended for continued monitoring and provided a roadmap for HAI prevention in acute care hospitals. The Action Plan included 5-year Prevention Targets to be achieved by 2013. In October 2016, U.S. DHHS announced new [Prevention Targets](#) to reach by 2020. In 2016, Hawaii achieved the target SIR for each condition, with the exception of SSIs and CDI (see below).

| Condition | 2020 Target | Hawaii 2016 SIR | Target: |
|-------------------|--------------------------------------|--------------------------------------|--------------|
| CLABSI (ICU only) | 0.50 SIR or 50% lower than predicted | 0.50 SIR or 50% lower than predicted | Achieved |
| CAUTI (ICU only) | 0.75 SIR or 25% lower than predicted | 0.62 SIR or 38% lower than predicted | Achieved |
| SSI (combined) | 0.75 SIR or 25% lower than predicted | 0.82 SIR or 18% lower than predicted | Not Achieved |
| CDI | 0.70 SIR or 30% lower than predicted | 0.74 SIR or 26% lower than predicted | Not Achieved |
| MRSA | 0.75 SIR or 25% lower than predicted | 0.41 SIR or 59% lower than predicted | Achieved |

Efforts to date by the healthcare community have resulted in the prevention of hundreds of HAIs in 2016. This results in improved patient outcomes, decreases in re-hospitalization and long-term rehabilitation, and savings in direct healthcare costs. HDOH, working with stakeholders, will continue to monitor trends and promote prevention strategies with a goal of elimination of HAIs as a public health concern.

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Appendix 1 – Acronyms:

| | |
|--------|---|
| CAUTI | Catheter associated urinary tract infections |
| CDC | Centers for Disease Control and Prevention |
| CDI | <i>Clostridium difficile</i> infection |
| CI | Confidence interval |
| CLABSI | Central line-associated bloodstream infections |
| CMS | Centers for Medicare and Medicaid Services |
| COLO | Colon surgeries |
| DHHS | Department of Health and Human Services |
| HAIs | Healthcare-associated infections |
| HCP | Healthcare personnel |
| HDOH | Hawaii Department of Health |
| HYST | Abdominal hysterectomy |
| ICU | Intensive care unit (also known as critical care unit) |
| IQR | Inpatient quality reporting |
| MRSA | Methicillin-resistant <i>Staphylococcus aureus</i> |
| NHSN | National Healthcare Safety Network |
| NICU | Neonatal intensive (critical) care unit |
| SIR | Standardized infection ratio: $SIR = \frac{\text{Observed HAIs}}{\text{Expected HAIs}}$ |
| SSI | Surgical site infections |
| TJC | The Joint Commission |

Appendix 2 – CLABSIs in Acute Care ICUs:

| Central Line-Associated Bloodstream Infections in ICU Locations January 1, 2016 through December 31, 2016 | | | | | | |
|---|---|----------------------|--------------------------------|-----------------------------|------------------------------|---------------------------------|
| Facility Name | Hospital Performance Compared to NHSN National Data | Number of Infections | Number of Predicted Infections | Number of Central Line Days | Standardized Infection Ratio | 95% Confidence Interval for SIR |
| Castle Medical Center  |  | 0 | 1.32 | 1,749 | 0.00 | 0, 2.27 |
| Hilo Medical Center  |  | 0 | 0.65 | 742 | Too Small to Calculate | |
| Kaiser Permanente Medical Center  |  | 0 | 5.84 | 5,186 | 0.00 | 0, 0.51 |
| Kapiolani Medical Center for Women and Children |  | 16 | 15.56 | 12,205 | 1.03 | 0.61, 1.63 |
| Kona Community Hospital  |  | 0 | 0.35 | 464 | Too Small to Calculate | |
| Kuakini Medical Center |  | 3 | 1.57 | 1,797 | 1.91 | 0.49, 5.19 |
| Maui Memorial Medical Center |  | 1 | 3.03 | 4,027 | 0.33 | 0.02, 1.63 |
| North Hawaii Community Hospital |  | 0 | 0.11 | 170 | Too Small to Calculate | |
| Pali Momi Medical Center |  | 1 | 1.75 | 1,785 | 0.57 | 0.03, 2.82 |
| Straub Clinic & Hospital  |  | 0 | 2.33 | 3,086 | 0.00 | 0, 1.29 |
| The Queen's Medical Center |  | 7 | 13.26 | 11,753 | 0.53 | 0.23, 1.04 |
| The Queens Medical Center — West Oahu  |  | 0 | 0.68 | 1,011 | 0.00 | 0, 2.07 |
| Wahiawa General Hospital |  | 1 | 0.51 | 660 | Too Small to Calculate | |
| Wilcox Memorial Hospital  |  | 0 | 0.31 | 467 | Too Small to Calculate | |
| Hawaii Total |  | 29 | 47.28 | 45,102 | 0.61 | 0.05, 0.19 |
| Kauai Veterans Memorial Hospital† |  | 1 | 0.06 | 227 | Too Small to Calculate | |

Note: Reporting in Hawaii is linked to CMS IQR reporting requirements. Shriners Hospital for Children is not mandated to report CLABSI to NHSN. Source of national baseline data: 2015 NHSN CLABSI Data. Data contained in this report were last generated on July 26, 2017.

† CAHs utilize different models to calculate the number of predicted infections, and are therefore separated for CLABSI, CAUTI, CDI & MRSA Bacteremia.

Legend:

 = Number of infections was significantly **lower (better)** than predicted

 = Number of infections was **similar (not significantly different)** to predicted

 = Number of infections was significantly **higher (worse)** than predicted

 = ICU patients had too few central line days to calculate a reliable SIR. When SIR cannot be calculated, a comparison to national data is not possible.

 = Recognizes hospitals with zero infections during the specified time period

Too Small to Calculate = Predicted number of infections was less than one

Appendix 3 – CAUTIs in Acute Care ICUs:

| Catheter Associated Urinary Tract Infections in ICUs locations January 1, 2016 through December 31, 2016 | | | | | | |
|---|---|----------------------|--------------------------------|-------------------------|------------------------------|---------------------------------|
| Facility Name | Hospital Performance Compared to NHSN National Data | Number of Infections | Number of Predicted Infections | Number of Catheter Days | Standardized Infection Ratio | 95% Confidence Interval for SIR |
| Castle Medical Center  |  | 0 | 1.23 | 1676 | 0.00 | 0.00, 2.44 |
| Hilo Medical Center |  | 2 | 2.20 | 2637 | 0.91 | 0.15, 3.00 |
| Kaiser Permanente Medical Center |  | 4 | 5.01 | 3644 | 0.80 | 0.25, 1.93 |
| Kapiolani Medical Center for Women and Children |  | 2 | 0.72 | 868 | Too Small to Calculate | |
| Kona Community Hospital |  | 1 | 0.72 | 984 | Too Small to Calculate | |
| Kuakini Medical Center |  | 5 | 1.04 | 1249 | 4.80 | 1.76, 10.64 |
| Maui Memorial Medical Center |  | 1 | 2.61 | 3568 | 0.38 | 0.02, 1.89 |
| North Hawaii Community Hospital |  | 2 | 0.18 | 330 | Too Small to Calculate | |
| Pali Momi Medical Center  |  | 0 | 1.65 | 1555 | 0.00 | 0.00, 1.81 |
| Straub Clinic & Hospital |  | 3 | 2.34 | 3206 | 1.28 | 0.33, 3.48 |
| The Queen's Medical Center |  | 1 | 16.44 | 8912 | 0.06 | 0.00, 0.30 |
| The Queens Medical Center – West Oahu  |  | 0 | 0.77 | 1398 | Too Small to Calculate | |
| Wahiawa General Hospital |  | 1 | 0.34 | 531 | Too Small to Calculate | |
| Wilcox Memorial Hospital |  | 1 | 0.30 | 547 | Too Small to Calculate | |
| Hawaii Total |  | 23 | 35.55 | 31,105 | 0.65 | 0.42, 0.96 |
| Kauai Veterans Memorial Hospital†  |  | 0 | 0.07 | 104 | Too Small to Calculate | |

Note: Reporting in Hawaii is linked to CMS IQR reporting requirements. Shriners Hospital for Children is not mandated to report CAUTI to NHSN. Source of national baseline data: NHSN Report, *Am J Infect Control* 2011; 39:349-367. Data contained in this report were last generated on July 26, 2017.

† CAHs utilize different models to calculate the number of predicted infections, and are therefore separated for CLABSI, CAUTI, CDI & MRSA Bacteremia.

Legend:

-  = Number of infections was significantly **lower (better)** than predicted
-  = Number of infections was **similar (not significantly different)** to predicted
-  = Number of infections was significantly **higher (worse)** than predicted
-  = ICU patients had too few central line days to calculate a reliable SIR. When SIR cannot be calculated, a comparison to national data is not possible.
-  = Recognizes hospitals with zero infections during the specified time period
- Too Small to Calculate = Predicted number of infections was less than one

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