

# Healthcare-Associated Infections in Hawaii

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## 2013 Report



July 9, 2014



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# Executive Summary:

Healthcare-associated infections (HAIs) are infections that are associated with receiving treatment in a healthcare setting. About 1 in 25 hospital patients in the United States has at least one healthcare-associated infection. 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. The total cost of HAIs to U.S. hospitals has been estimated at almost \$33 billion per year. According to CDC's most recent [National and State HAI report \(2012\)](#), Hawaii had the second best standardized infection ratio (SIR)<sup>1</sup> for central line-associated bloodstream infections (CLABSI) in the nation. Specifically for intensive care unit (ICU) locations, Hawaii was the second-best in the nation. Additionally, in 2012, state-specific catheter associated urinary tract infections (CAUTI) data were included in CDC's report for the first time. For ICU locations, Hawaii had the seventh-best SIR in the nation.

In 2011, the Hawaii legislature passed [HRS §325-2.5](#), relating to HAI reporting. The [first HAI report](#) was released in 2012 and contained data for conditions mandated by the Centers for Medicare and Medicaid Services (CMS) for the Inpatient Quality Reporting (IQR) program for calendar year 2012.

The following report includes information about specific HAIs among patients who received treatment in Hawaii's acute care facilities in 2013, as well as a report of influenza vaccination coverage in Hawaii facilities for the 2013–2014 influenza season. Overall, the statewide infection rates were lower than expected based on national data. A total of 346 HAIs were reported, including 236 *Clostridium difficile* infections (CDI), 43 CAUTI, 28 colon (COLO) surgical site infections (SSI), 20 methicillin-resistant *Staphylococcus aureus* (MRSA) bacteremia events (bacterial infection of the blood), 19 CLABSI, and 0 abdominal hysterectomy (surgery to remove the uterus) SSIs. The total observed number of HAIs in Hawaii hospitals was almost 40% lower than expected based on national data. For each condition contained in the report, compared with the nationally expected levels, there were:

- 77% fewer CLABSIs
- 41% fewer CAUTIs
- 2% more COLO SSIs
- 100% fewer HYST SSIs
- 33% fewer CDIs
- 43% fewer MRSA bacteremia events

For all the above reportable conditions except for SSIs after COLO, these differences were found to be statistically significant. For those conditions that were also reported on the 2012 Hawaii HAI Report, the 2013 findings were statistically similar, with the exception of SSIs after an abdominal hysterectomy (HYST), where a statistically significant improvement was seen.

Hawaii also made progress this year in working towards longer-term goals. In 2009, the U.S. Department of Health & Human Services (HHS) 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. This year, Hawaii has achieved the target for each condition, with the exception of SSIs.

Condition	2013 Target	Hawaii 2013 SIR	Target:
CLABSI	50% reduction	77% lower than expected	Achieved
CAUTI	25% reduction	41% lower than expected	Achieved
SSI	25% reduction	16% lower than expected	Not Achieved
CDI	30% reduction	33% lower than expected	Achieved
MRSA	25% reduction	43% lower than expected	Achieved

Lastly, this report addresses the influenza vaccination status of healthcare workers in Hawaii's healthcare facilities. 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<sup>1</sup>; the Joint Commission on Accreditation of Healthcare Organizations (JCAHO) has begun to require that facilities set incremental goals to achieve the 90% rate<sup>2</sup>. All 15 reporting facilities in Hawaii provided staff influenza vaccination rates for the 2013–2014 influenza season. Vaccination rates by hospital ranged from 43% to 91%, and the overall State rate was 67%, compared with the national average of 72% for the 2012–2013 influenza season<sup>3</sup>. For the 2013–2014 influenza season, only four of the 15 reporting facilities reported vaccination rates that were at or above the 2012–2013 national average, indicating that this may be an area for increased focus by facilities during the coming influenza season.

Many factors contribute to a healthcare facility's reported infection rate, both within the facility as a whole and at the level of an individual patient's situation and day-to-day practices of individual clinicians and healthcare support staff. Hawaii's healthcare sector is staying abreast and even ahead of national peers in controlling the incidence of HAIs. Continued vigilance and education are necessary to ensure that HAIs become the exceptions rather than accepted consequences of hospitalizations.

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<sup>1</sup> <http://www.healthypeople.gov/2020/topicsobjectives2020/objectiveslist.aspx?topicId=23#>

<sup>2</sup> [http://www.jointcommission.org/assets/1/18/R3\\_Report\\_Issue\\_3\\_5\\_18\\_12\\_final.pdf](http://www.jointcommission.org/assets/1/18/R3_Report_Issue_3_5_18_12_final.pdf)

<sup>3</sup> <http://www.cdc.gov/flu/fluview/hcp-ips-nov2013.htm>

## Introduction:

Healthcare-associated infections (HAIs) are infections related with 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 a HAI or not 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 picked up in the community before admission to the hospital.

According to a recent survey by Centers for Disease Control and Prevention (CDC), on any given day an estimated one in 25 hospital patients has 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. In 2007, CDC estimated that the direct cost of HAIs to U.S. hospitals ranged from \$28.4 to 33.8 billion.

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 significant impact on safety and quality of care. Just 10 years ago, HAIs were thought to be an unavoidable risk of being hospitalized. Today many intensive-care units and other inpatient wards are reporting 6, 12, and even 24 months straight without a single case of hospital-borne bloodstream, urinary tract, or pneumonia infections.

According to CDC's 2011 and 2012 National and State HAI report, Hawaii had the second best standardized infection ratio (SIR) for CLABSI in the nation. Specifically for ICU locations, Hawaii was the best in the [nation in 2011](#) and second-best in the [nation in 2012](#). In 2012, state-specific CAUTI data were included in CDC's report for the first time. For ICU locations, Hawaii had the seventh best SIR rate in the nation. However, Hawaii was the 23<sup>rd</sup> state for all locations reporting, indicating that there is still a lot of work to be done to spread the success of the ICU to the rest of the facility.

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 2013. 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 to the [National Healthcare Safety Network \(NHSN\)](#) under the Centers for Medicare and Medicaid Services (CMS) rules.

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 2012 and contained data for conditions mandated by CMS for the [Inpatient Quality Reporting \(IQR\)](#) program for calendar year 2012, including all central line-associated bloodstream infections (CLABSI) and catheter-associated urinary tract infections (CAUTI) in intensive care units (ICU) as well as all inpatient surgical site infections (SSI) after abdominal hysterectomy (HYST) and colon surgeries (COLO).

In addition to the aforementioned conditions, the 2013 report includes methicillin-resistant *Staphylococcus aureus* (MRSA) bacteremia, *Clostridium difficile* infections (CDI), and healthcare personnel (HCP) influenza vaccination rates. These data are presented for the entire facility.

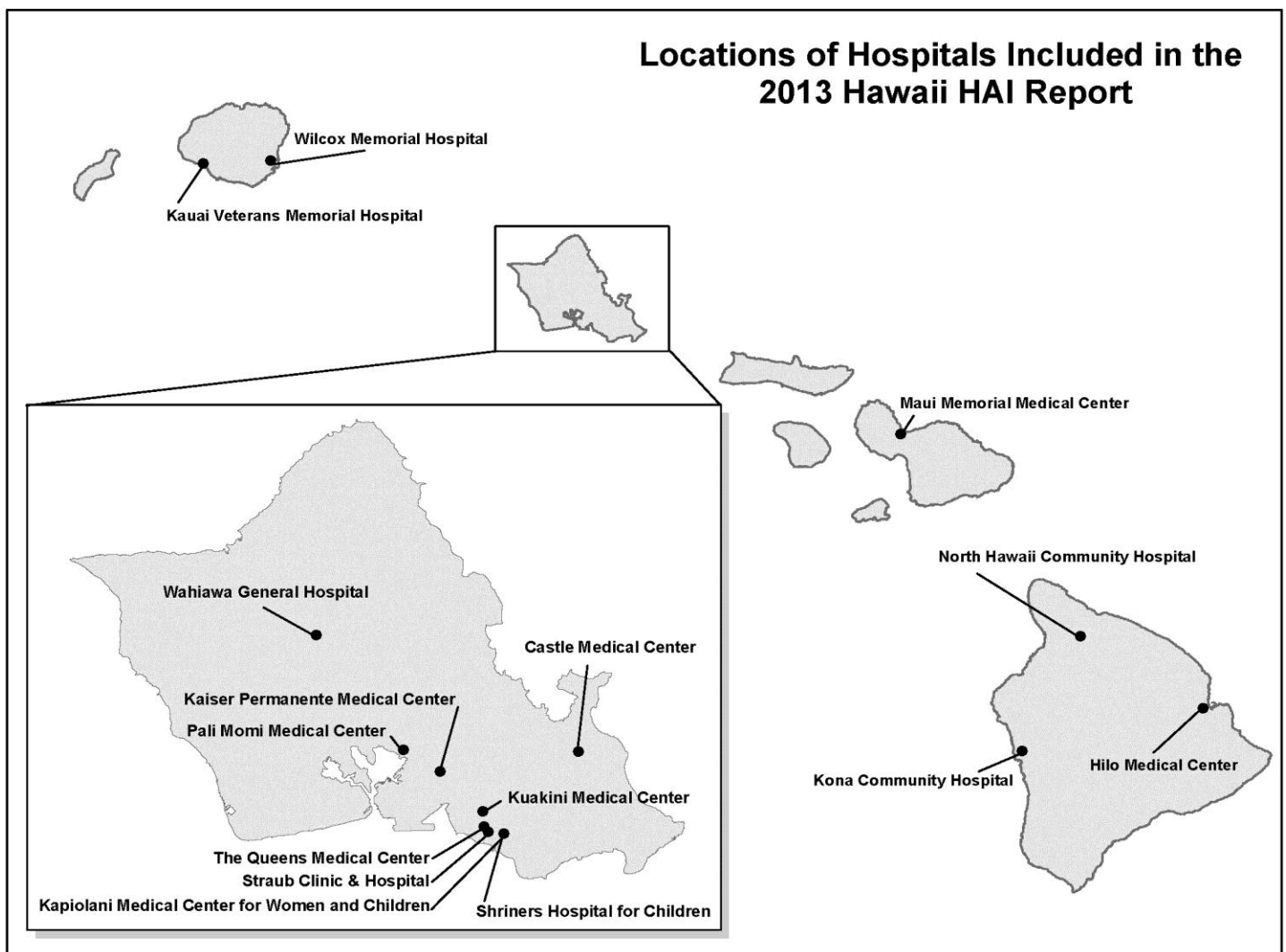
Figure 1 shows the location of each hospital included in this report. Hospitals not part of the CMS IQR program were excluded, including: Hale Hoola Hamakua, Kahuku Medical Center, Kau Hospital, Kohala Hospital, Kula Hospital, Lanai Community Hospital, Leahi Hospital, Maluhia, Molokai General Hospital, Rehab Hospital of the Pacific, Samuel Mahelona Memorial Hospital, and Tripler Army Medical Center. While Kapolani Medical Center for Women & Children,

Kauai Veterans 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.

The information in this report is consistent with HAI data published in [CDC reports](#) and on the CMS website [Hospital Compare](#). Please note that 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.

Many factors contribute to a healthcare facility's reported infection rate, both within the facility as a whole and at the level of an individual patient's situation and day-to-day practices of individual clinicians and healthcare support staff. Hawaii's healthcare sector is staying abreast and even ahead of national peers in controlling the incidence of HAIs. Continued vigilance and education are necessary to ensure that HAIs become the exceptions rather than accepted consequences of hospitalizations.

**Figure 1: Locations of Hospitals Included in the 2013 Hawaii HAI Report**





## Methods:

HDOH utilizes CDC's NHSN system for HAI reporting. NHSN is a free, secure, web-based surveillance system developed by the CDC and used by over 12,000 healthcare facilities in the nation. NHSN has data collection modules that cover a wide variety of HAIs, from all 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 CMS mandated HAIs are presented using a standardized infection ratio (SIR). The SIR is a summary measure that compares the number of infections associated with the number of device days (CLABSI & CAUTI), procedures (SSI), or patient days (CDI & MRSA bacteremia) in a facility to national baseline data. The national data include all U.S. hospitals that report data to the CDC's NHSN database.

The SIR accounts for some risk factors that could increase or decrease a patient's risk of infection. 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.

The SIR is a ratio that describes a hospital's actual infection numbers compared with an expected number using national baseline data. Since the NHSN database does not contain data for every infection 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). A 95% CI can be interpreted as follows: If the procedure for calculating the SIR were repeated for different groups of patients who have a device or undergo a procedure, the true SIR would fall within that range 95% of the time. CIs provide a simple way to determine statistical significance. If one SIR lies outside the 95% CI of another SIR, there would be a significant difference between the two SIRs. ([Click here for technical guide on the SIR](#)).

## Limitations:

The 2013 data presented in this report have not been validated. Validation is defined as a survey and audit process by HDOH to assure quality of NHSN surveillance and reporting. However, validation of NHSN data will begin in stages in 2014. However, the 2013 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.

The national data used for comparison in these data analyses are the NHSN pooled means from national HAI data collected during each condition's respective "baseline period"(see table below).








Condition	Baseline	Reporting Location	Reporting Start Date
CLABSI	2006–2008	Adult, Pediatric, and Neonatal ICUs	January 2011
CAUTI	2009	Adult and Pediatric ICUs	January 2012
SSI: COLO & HYST	2006–2008	All inpatient procedures	January 2012
MRSA Bacteremia	2010–2011	Facility wide — inpatient	January 2013
CDI	2010–2011	Facility wide — inpatient	January 2013


## Instructions for reading the graphs and tables:

Since the SIR is an estimate, the graphs included in this report also display the CI using an error bar. A CI is a measure of the precision (in this case with 95% certainty) of an estimate (such as the SIR). 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 expected number of infections for a given hospital. A SIR greater than 1.0 indicates more HAIs were observed than expected; conversely, a SIR less than 1.0 indicates fewer HAIs were observed than expected. A SIR of 0 means the hospital had no infections during the time period. The SIR can only be calculated if the number of expected infections for the hospital is greater than 1.0. When the number of expected 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 expected, 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 shaded bar falls completely above the reference line of 1.0, the number of infections was **significantly higher (worse)** than expected, 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 **expected infections is less than 1.0**, then an SIR could not be calculated. This is represented by a blank triangle  on the table, it will not be included on the SIR graph (indicated by an \* by the facility name).

Additionally, facilities that achieved 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 in ICU locations

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

A “central line” or “central catheter” is a tube that is 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 down 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 that hospitals are doing to prevent CLABSI?

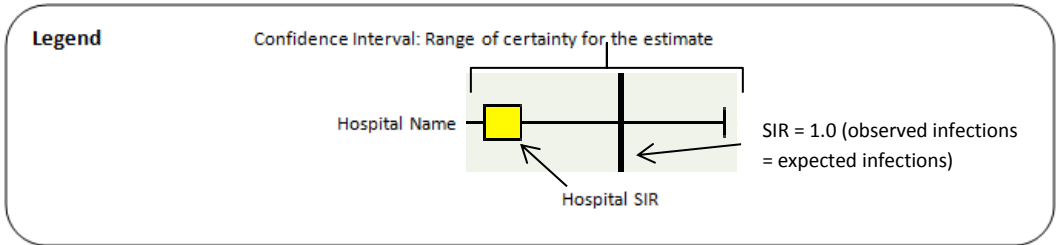
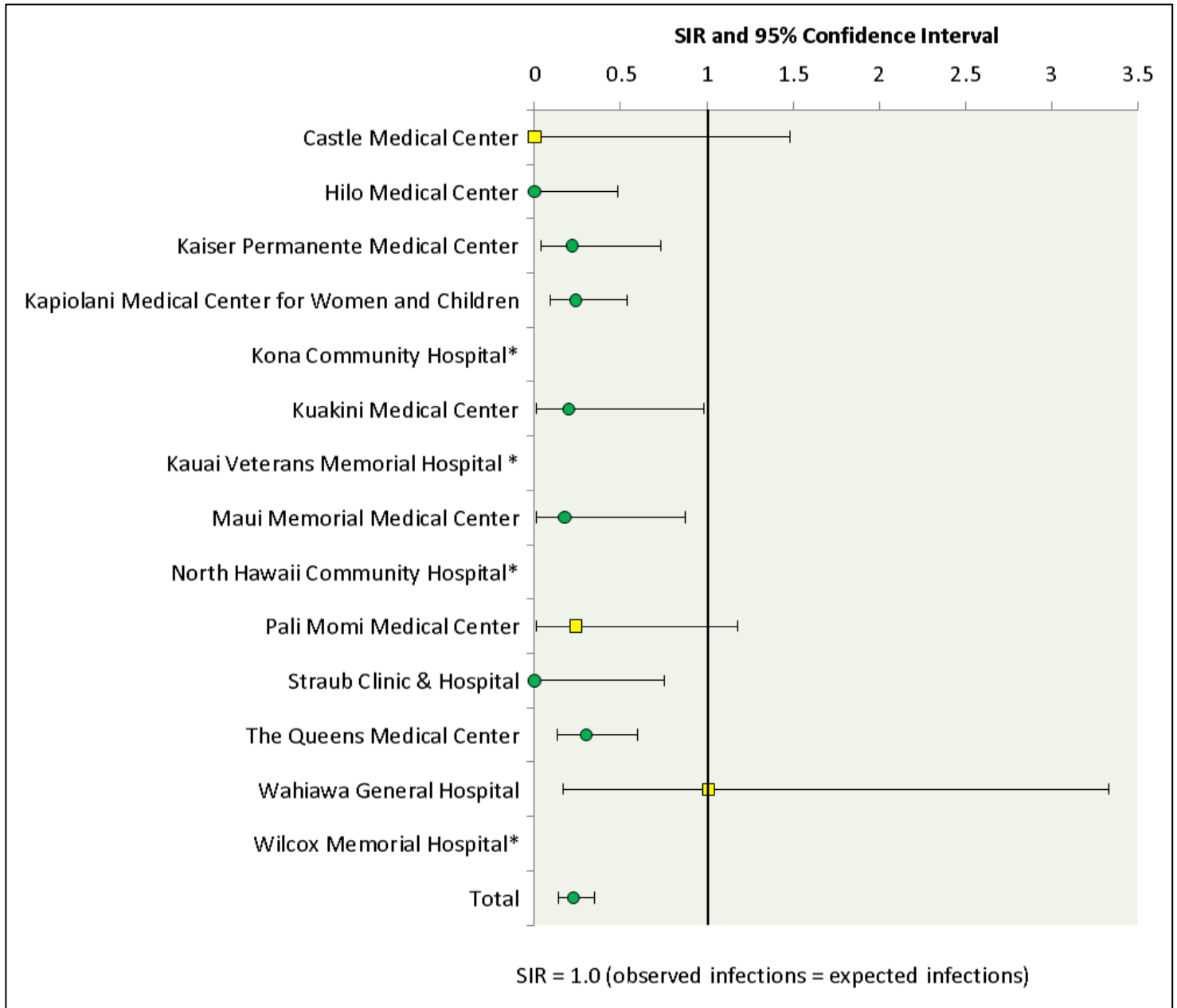
To prevent CLABSI, doctors, nurses, and other healthcare providers:

- 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 when changing the bandage that covers the area where the central line enters the skin.
- Evaluate every day whether the patient still needs to have the central line. The central line will be 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 that 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.**

## SIRs for Central Line-Associated Bloodstream Infections in ICU locations January 1, 2013 - December 31, 2013



- = Number of infections was **lower (better)** than predicted
- = Number of infections was **similar (not significantly different)** than predicted
- ◆ = Number of infections was **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 ICU locations  
January 1, 2013 through December 31, 2013**

Hospital	Hospital Performance Compared To NHSN National Data	Number Of Infections	Number Of Expected Infections	Number Of Central Line Days	Standardized Infection Ratio	95% Confidence Interval For SIR
Castle Medical Center 		0	2.02	1,347	0	0, 1.48
Hilo Medical Center 		0	6.16	4,108	0	0,0.49
Kaiser Permanente Medical Center		2	9.03	4,247	0.22	0.04, 0.73
Kapiolani Medical Center for Women and Children		5	20.67	9,107	0.24	0.09, 0.54
Kona Community Hospital 		0	0.57	378	Too Small to Calculate	
Kuakini Medical Center		1	5	2,382	0.2	0.01, 0.99
Kauai Veterans Memorial Hospital 		0	0.13	70	Too Small to Calculate	
Maui Memorial Medical Center		1	5.64	3,757	0.18	0.01, 0.88
North Hawaii Community Hospital 		0	0.46	308	Too Small to Calculate	
Pali Momi Medical Center		1	4.19	2,791	0.24	0.01, 1.18
Straub Clinic & Hospital 		0	3.97	2,647	0	0, 0.75
The Queen's Medical Center		7	23.08	10,936	0.3	0.13, 0.6
Wahiawa General Hospital		2	1.98	1,044	1.01	0.17, 3.33
Wilcox Memorial Hospital 		0	0.69	458	Too Small to Calculate	
<b>Hawaii Total</b>		19	83.58	43,580	0.23	0.14, 0.35

Note: Reporting in Hawaii is tied to CMS IQR reporting requirements. Kapiolani Medical Center for Women & Children only enters data for their Neonatal and Pediatric ICUs into NHSN. Shriners Hospital for Children does not have an ICU and therefore does not have data for this condition. Source of national baseline data: NHSN Report, *Am J Infect Control* 2009;37:783-805. Data contained in this report were last generated on June 17, 2014.

**Legend:**

-  = Number of infections was **lower (better)** than expected
-  = Number of infections was **similar (not significantly different)** than expected
-  = Number of infections was **higher (worse)** than expected
-  = 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 = Expected number of infections was below 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 that collects 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 that hospitals are doing to prevent CAUTI?

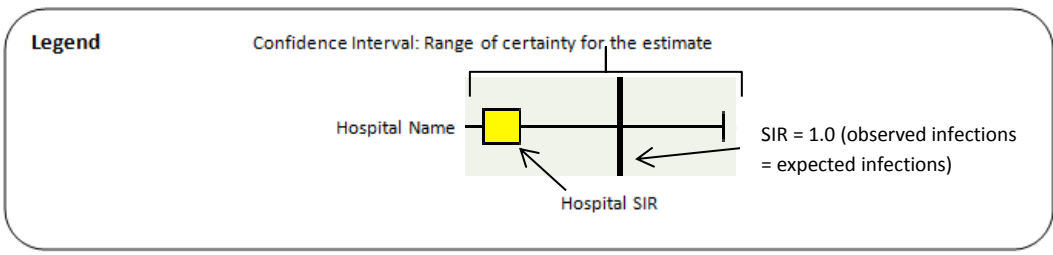
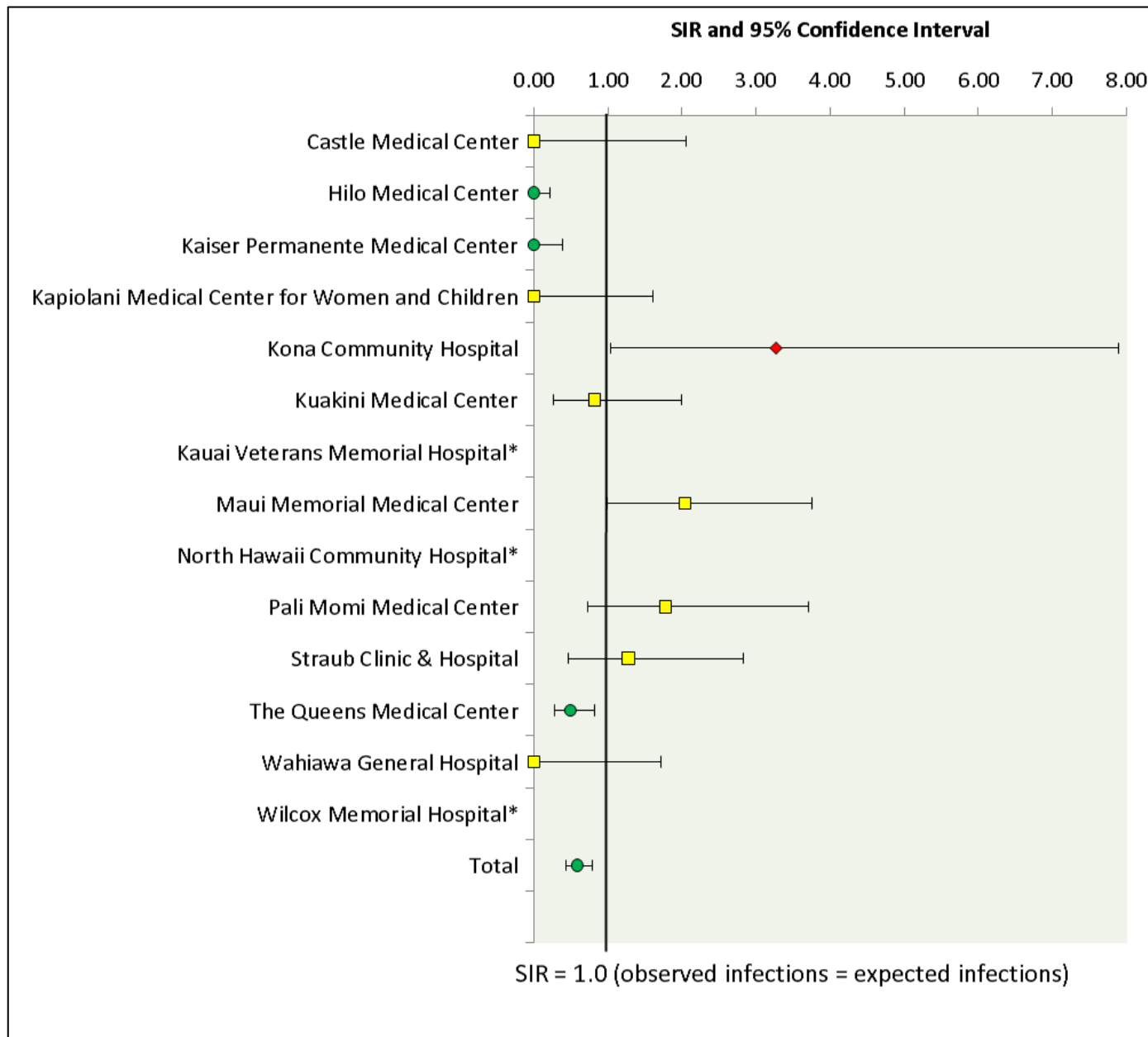
To prevent CAUTI, doctors, nurses, and other healthcare providers:

- 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 that 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.**

## SIRs for Catheter Associated Urinary Tract Infections in ICU locations January 1, 2013 – December 31, 2013



- = Number of infections was **lower (better)** than predicted
- = Number of infections was **similar (not significantly different)** than predicted
- ◆ = Number of infections was **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 ICU locations  
January 1, 2013 through December 31, 2013**

Hospital	Hospital Performance Compared To NHSN National Data	Number Of Infections	Number Of Expected Infections	Number Of Catheter Days	Standardized Infection Ratio	95% Confidence Interval For SIR
Castle Medical Center 		0	1.46	1,123	0	0, 2.05
Hilo Medical Center 		0	14.13	10,869	0	0, 0.21
Kaiser Permanente Medical Center 		0	7.79	3,461	0	0, 0.39
Kapiolani Medical Center for Women and Children 		0	1.87	707	0	0, 1.6
Kona Community Hospital		4	1.22	940	3.27	1.04, 7.9
Kuakini Medical Center		4	4.85	2,108	0.83	0.26, 1.99
Kauai Veterans Memorial Hospital 		0	0.25	124	Too Small To Calculate	
Maui Memorial Medical Center		9	4.40	3,670	2.04	1, 3.75
North Hawaii Community Hospital 		0	0.56	432	Too Small To Calculate	
Pali Momi Medical Center		6	3.37	2,592	1.78	0.72, 3.7
Straub Clinic & Hospital		5	3.93	3,018	1.27	0.47, 2.83
The Queen's Medical Center		13	26.20	10,112	0.5	0.28, 0.83
Wahiawa General Hospital 		0	1.75	873	0	0, 1.72
Wilcox Memorial Hospital		2	0.88	676	Too Small To Calculate	
<b>Hawaii Total</b>		43	72.64	40,705	0.59	0.43, 0.79

Note: Reporting in Hawaii is tied to CMS IQR reporting requirements. Shriners Hospital for Children does not have an ICU and therefore does not have data for this condition. Source of national baseline data: NHSN Report, *Am J Infect Control* 2011;39:349-367. Data contained in this report were last generated on June 17, 2014.

**Legend:**

-  = Number of infections was **lower (better)** than expected
-  = Number of infections was **similar (not significantly different)** than expected
-  = Number of infections was **higher (worse)** than expected
-  = 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 = The expected number of infections was below one



# Inpatient Colon Surgery — Surgical Site Infection



## What is a Surgical Site Infection (SSI)?

A SSI is an infection that occurs 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), or 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), as those involve a different surgical procedure.

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

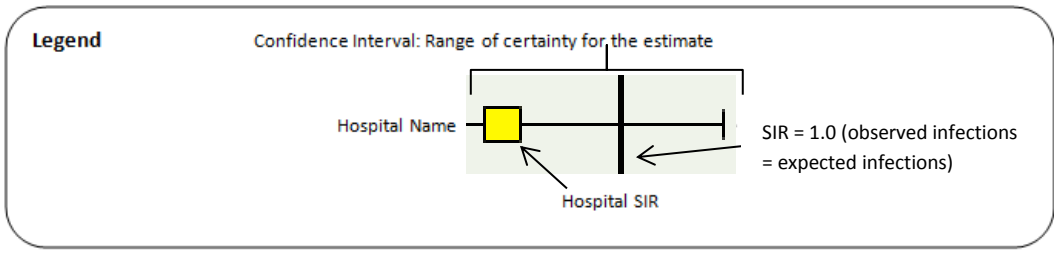
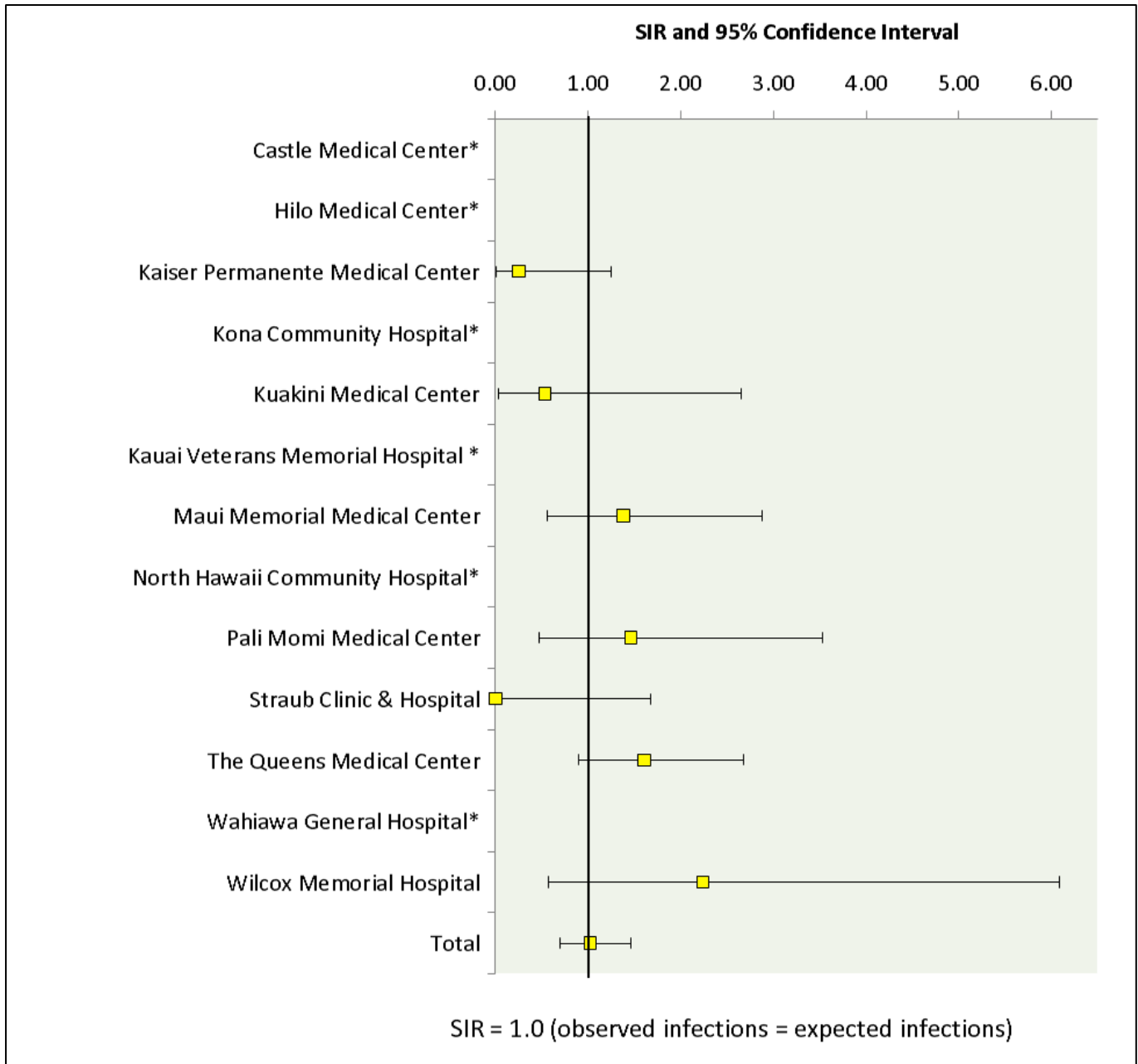
To prevent SSIs, doctors, nurses, and other healthcare providers:

- 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 therefore 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 that 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.**


## SIRs for Inpatient Colon Surgery—Surgical Site Infection January 1, 2013 - December 31, 2013



- = Number of infections was **lower (better)** than predicted
- = Number of infections was **similar (not significantly different)** than predicted
- ◆ = Number of infections was **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, 2013 through December 31, 2013**

Hospital	Hospital Performance Compared To NHSN National Data	Number Of Infections	Number Of Expected Infections	Number Of Procedures	Standardized Infection Ratio	95% Confidence Interval For SIR
Castle Medical Center 	△	0	0.99	38	Too Small To Calculate	
Hilo Medical Center 	△	0	0.99	34	Too Small To Calculate	
Kaiser Permanente Medical Center		1	3.95	146	0.25	0.01, 1.25
Kona Community Hospital 	△	0	0.58	26	Too Small To Calculate	
Kuakini Medical Center		1	1.86	84	0.54	0.03, 2.65
Kauai Veterans Memorial Hospital 	△	0	0.22	11	Too Small To Calculate	
Maui Memorial Medical Center		6	4.34	125	1.38	0.56, 2.88
North Hawaii Community Hospital 	△	0	0.26	10	Too Small To Calculate	
Pali Momi Medical Center		4	2.74	109	1.46	0.47, 3.53
Straub Clinic & Hospital 		0	1.80	87	0	0, 1.67
The Queen's Medical Center		13	8.10	239	1.61	0.89, 2.68
Wahiawa General Hospital 	△	0	0.20	8	Too Small To Calculate	
Wilcox Memorial Hospital		3	1.34	39	2.24	0.57, 6.09
<b>Hawaii Total</b>		28	27.36	956	1.02	0.69, 1.46

Note: Reporting in Hawaii is tied 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 into 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: 2006–2008 NHSN SSI Data. Data contained in this report were last generated on June 17, 2014.

**Legend:**

-  = Number of infections was **lower (better)** than expected
-  = Number of infections was **similar (not significantly different)** than expected
-  = Number of infections was **higher (worse)** than expected
-  = 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 = The expected number of infections was below one

# Inpatient Abdominal Hysterectomy – Surgical Site Infection



## What is a Surgical Site Infection (SSI)?

A SSI is an infection that occurs 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 wall. This includes hysterectomy procedures done by laparoscope.

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

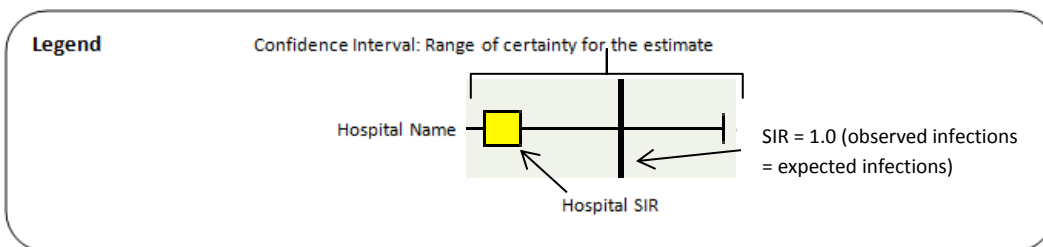
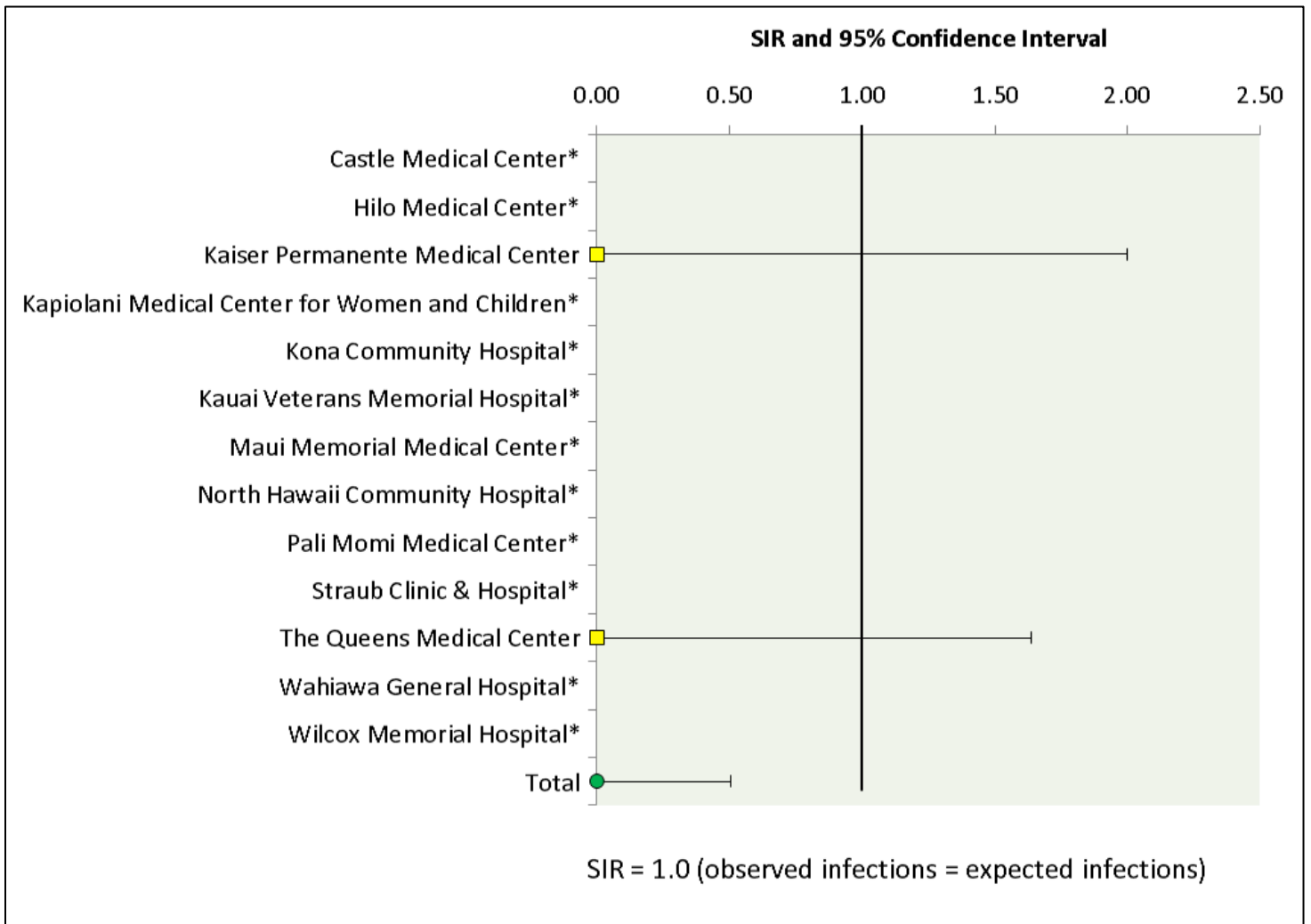
To prevent SSIs, doctors, nurses, and other healthcare providers:

- 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 therefore 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 that 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.**

## SIRs for Inpatient Abdominal Hysterectomy—Surgical Site Infection January 1, 2013 - December 31, 2013



- = Number of infections was **lower (better)** than predicted
- = Number of infections was **similar (not significantly different)** than predicted
- ◆ = Number of infections was **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, 2013 through December 31, 2013**

Hospital	Hospital Performance Compared To NHSN National Data	Number Of Infections	Number Of Expected Infections	Number Of Procedures	Standardized Infection Ratio	95% Confidence Interval For SIR
Castle Medical Center 	△	0	0.19	25	Too Small To Calculate	
Hilo Medical Center 	△	0	0.53	73	Too Small To Calculate	
Kaiser Permanente Medical Center 		0	1.50	146	0	0, 2
Kapiolani Medical Center for Women and Children 	△	0	0.94	118	Too Small To Calculate	
Kona Community Hospital 	△	0	0.05	6	Too Small To Calculate	
Kauai Veterans Memorial Hospital 	△	0	0.01	2	Too Small To Calculate	
Maui Memorial Medical Center 	△	0	0.25	22	Too Small To Calculate	
North Hawaii Community Hospital 	△	0	0.29	38	Too Small To Calculate	
Pali Momi Medical Center 	△	0	0.03	5	Too Small To Calculate	
Straub Clinic & Hospital 	△	0	0.13	13	Too Small To Calculate	
The Queen's Medical Center 		0	1.83	284	0	0, 1.64
Wahiawa General Hospital 	△	0	0.01	1	Too Small To Calculate	
Wilcox Memorial Hospital 	△	0	0.17	22	Too Small To Calculate	
<b>Hawaii Total</b> 		0	5.92	755	0	0, 0.54

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: 2006–2008 NHSN SSI Data. Data contained in this report were last generated on June 17, 2014.

**Legend:**

-  = Number of infections was **lower (better)** than expected
  -  = Number of infections was **similar (not significantly different)** than expected
  -  = Number of infections was **higher (worse)** than expected
  -  = The facility had too few HYST 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 = The expected number of infections was below one



# Inpatient *Clostridium difficile* Infection

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

*Clostridium difficile* (CDI), also known as “*C. diff*,” is a bacterium that can cause diarrhea and inflammation of the colon (large intestine). CDI usually occurs in patients who are taking or have 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 things such as bed linens, bathroom fixtures, and medical equipment. It can also be spread more directly through contaminated equipment and the hands of healthcare providers. For more information, visit [CDC’s CDI website](#).

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

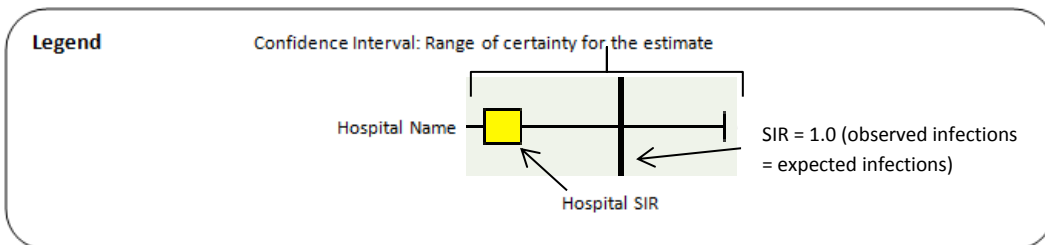
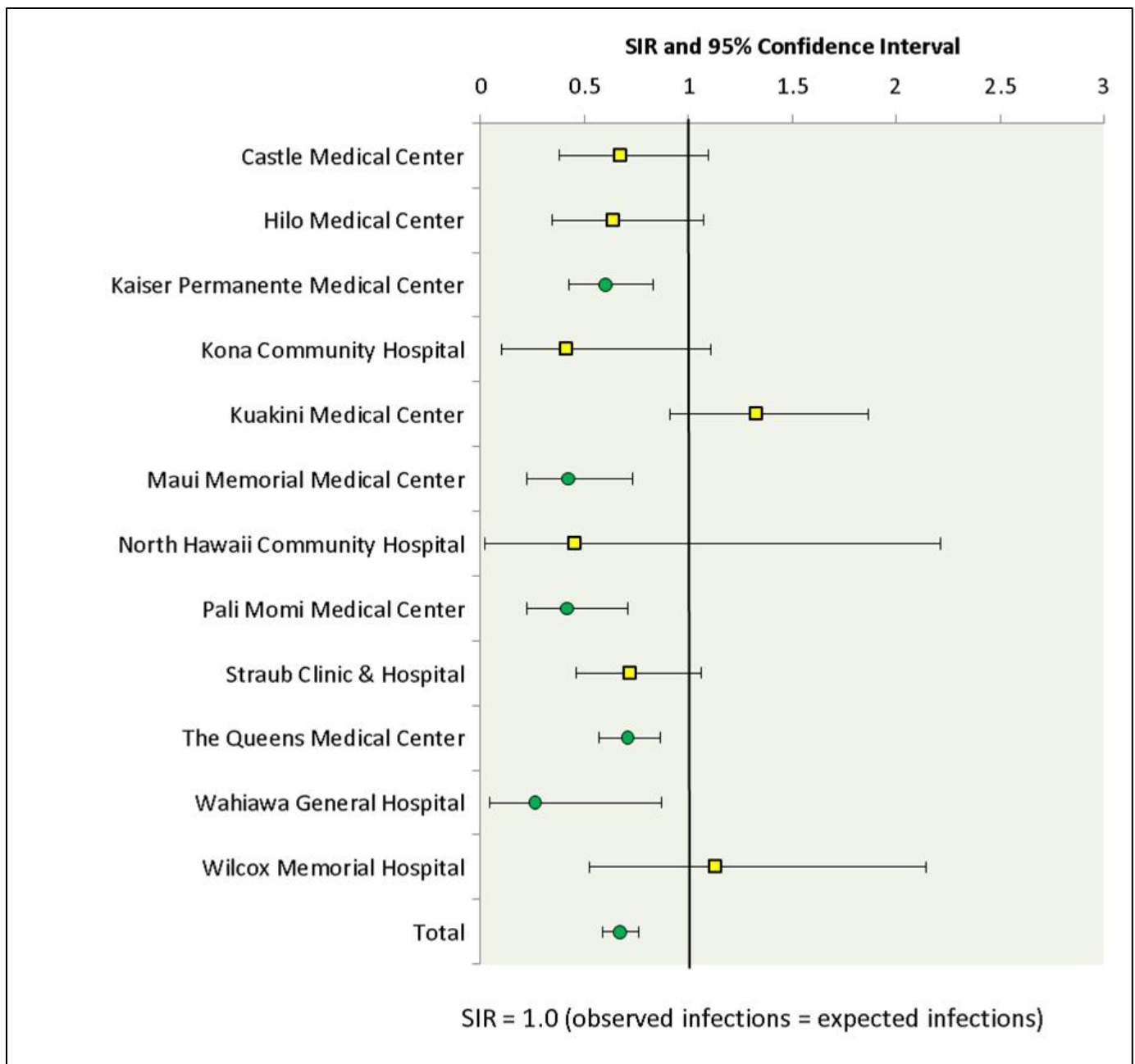
To prevent CDI, doctors, nurses, and other healthcare providers:

- Perform 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 infections?

- Make sure that 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 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.**
- **Only take antibiotics as prescribed by your doctor.**
- **Be sure to clean your hands often**, especially after using the bathroom and before eating.

## SIRs for Inpatient *Clostridium difficile* Infections January 1, 2013 - December 31, 2013




- = Number of infections was **lower (better)** than predicted
- = Number of infections was **similar (not significantly different)** than predicted
- ◆ = Number of infections was **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, 2013 through December 31, 2013**

Hospital	Hospital Performance Compared To NHSN National Data	Number Of Infections	Number Of Expected Infections	Number Of Patient Days	Standardized Infection Ratio	95% Confidence Interval For SIR
Castle Medical Center		14	20.90	33,737	0.67	0.80, 1.10
Hilo Medical Center		12	19.00	36,993	0.63	0.34, 1.07
Kaiser Permanente Medical Center		34	56.37	60,551	0.60	0.42, 0.83
Kona Community Hospital		3	7.38	16,357	0.41	0.10,1.11
Kuakini Medical Center		30	22.65	35,674	1.32	0.91, 1.87
Maui Memorial Medical Center		11	26.09	52,474	0.42	0.22, 0.73
North Hawaii Community Hospital		1	2.23	4,925	0.45	0.02, 2.22
Pali Momi Medical Center		12	28.85	45,311	0.42	0.23, 0.71
Straub Clinic & Hospital		22	30.81	42,949	0.71	0.46, 1.06
The Queen's Medical Center		87	122.97	142,064	0.71	0.57, 0.87
Wahiawa General Hospital		2	7.60	15,325	0.26	0.04, 0.87
Wilcox Memorial Hospital		8	7.10	15,008	1.13	0.52, 2.14
<b>Hawaii Total</b>		236	351.93	501,368	0.67	0.59, 0.76

Note: Reporting in Hawaii is tied to CMS IQR reporting requirements. Kapiolani Medical Center for Women and Children, Kauai Veterans Memorial Center, and Shriners Hospital for Children are not mandated to report CDI into NHSN. Only healthcare-onset, inpatient CDI laboratory confirmed isolate are presented. Source of national baseline data: 2010–2011 NHSN CDI LabID Data. Data contained in this report were last generated on June 17, 2014.

**Legend:**

-  = Number of infections was **lower (better)** than expected
-  = Number of infections was **similar (not significantly different)** than expected
-  = Number of infections was **higher (worse)** than expected
-  = The facility had too few patient days 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 = The expected number of infections was below one



# Inpatient Methicillin-Resistant *Staphylococcus aureus* Bacteremia

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

*Staphylococcus aureus* is a very common bacterium that about 1 out of every 3 people have on their skin or in their nose. Usually, this bacterium does not cause problems for people, but sometimes 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* that 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 that hospitals are doing to prevent MRSA infections?

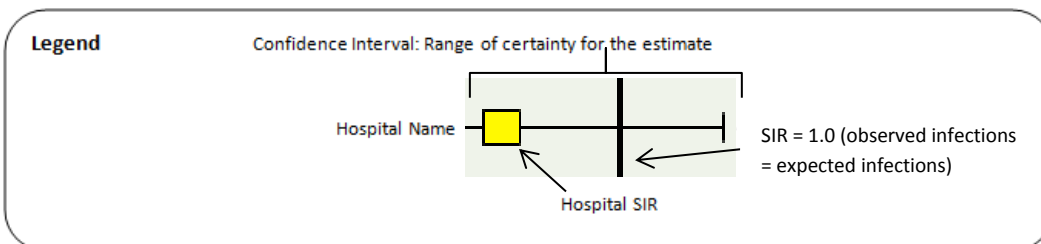
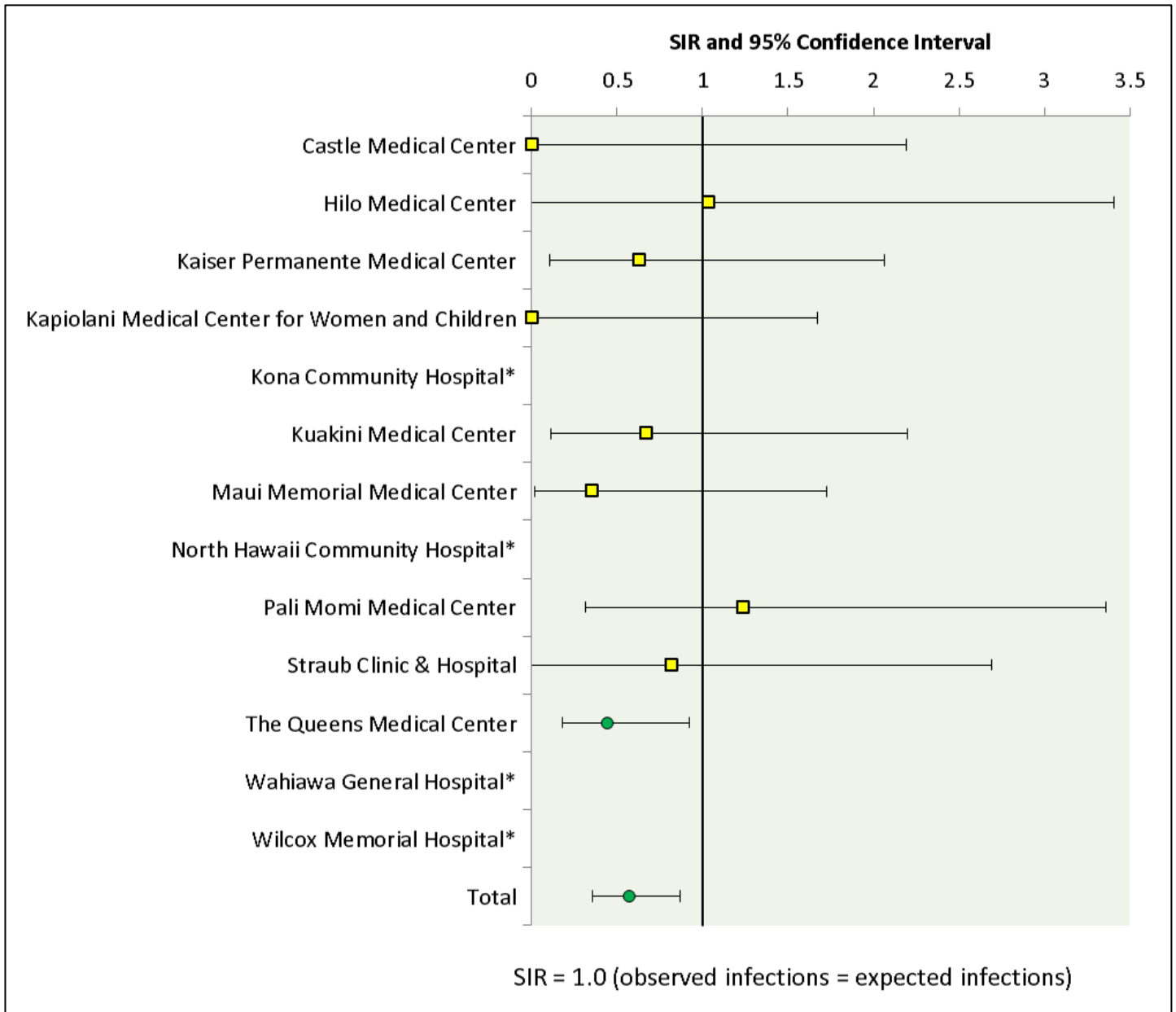
To prevent MRSA infections, doctors, nurses, and other healthcare providers:

- 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 that 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.**



















## SIRs for Inpatient Methicillin-Resistant *Staphylococcus aureus* Bacteremia January 1, 2013 – December 31, 2013



- = Number of infections was **lower (better)** than predicted
- = Number of infections was **similar (not significantly different)** than predicted
- ◆ = Number of infections was **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, 2013 through December 31, 2013**

Hospital	Hospital Performance Compared To NHSN National Data	Number Of Infections	Number Of Expected Infections	Number Of Patient Days	Standardized Infection Ratio	95% Confidence Interval For SIR
Castle Medical Center 		0	1.37	36,035	0	0, 2.19
Hilo Medical Center		2	1.94	36,993	1.03	0.17, 3.41
Kaiser Permanente Medical Center		2	3.20	64,555	0.63	0.11, 2.07
Kapiolani Medical Center for Women and Children 		0	1.79	36,085	0	0, 1.68
Kona Community Hospital 		0	0.69	16,357	Too Small to Calculate	
Kuakini Medical Center		2	3.01	35,674	0.67	0.11, 2.20
Maui Memorial Medical Center		1	2.86	55,542	0.35	0.02, 1.72
North Hawaii Community Hospital		1	0.18	5,027	Too Small to Calculate	
Pali Momi Medical Center		3	2.43	45,311	1.23	0.31, 3.36
Straub Clinic & Hospital		2	2.45	42,949	0.82	0.14, 2.69
The Queen's Medical Center		6	13.55	147,152	0.44	0.18, 0.92
Wahiawa General Hospital		1	0.73	15,325	Too Small to Calculate	
Wilcox Memorial Hospital 		0	0.74	16,265	Too Small to Calculate	
<b>Hawaii Total</b>		20	34.94	553,270	0.57	0.36, 0.87

Note: Reporting in Hawaii is tied to CMS IQR reporting requirements. Kapiolani Medical Center for Women and Children, Kauai Veterans Memorial Center, and Shriners Hospital for Children are not mandated to report MRSA Bacteremia into NHSN. Only healthcare-onset, inpatient MRSA bacteremia lab events are presented. Source of aggregate data: 2010–2011 NHSN MRSA Blood LabID Data. Data contained in this report were last generated on June 17, 2014.

**Legend:**

-  = Number of infections was **lower (better)** than expected
-  = Number of infections was **similar (not significantly different)** than expected
-  = Number of infections was **higher (worse)** than expected
-  = 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 = The expected number of infections was below 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 are at higher risk for serious flu complications, such as older adults, young children, and people with certain health conditions. The best way to prevent the flu is by getting **vaccinated** each year. Attaining vaccination coverage of 90% of a facility's healthcare personnel is a U.S Department of Health and Human Services Healthy People 2020 goal. For more information, visit [CDC's influenza website](#).

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

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

- **Vaccination**: Annual vaccination is the most important measure to prevent season influenza infection. Facilities promote and administer seasonal influenza vaccination. High vaccination rates of healthcare personnel (HCP) and patients is a critical step in preventing healthcare transmission of influenza.
- **Cough Etiquette**: Ensure that providers cover their mouth and nose when coughing or sneezing and then **clean their hands** with soap and water or an alcohol-based hand rub.
- **Management of Ill Workers**: Ensure that 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 control 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?

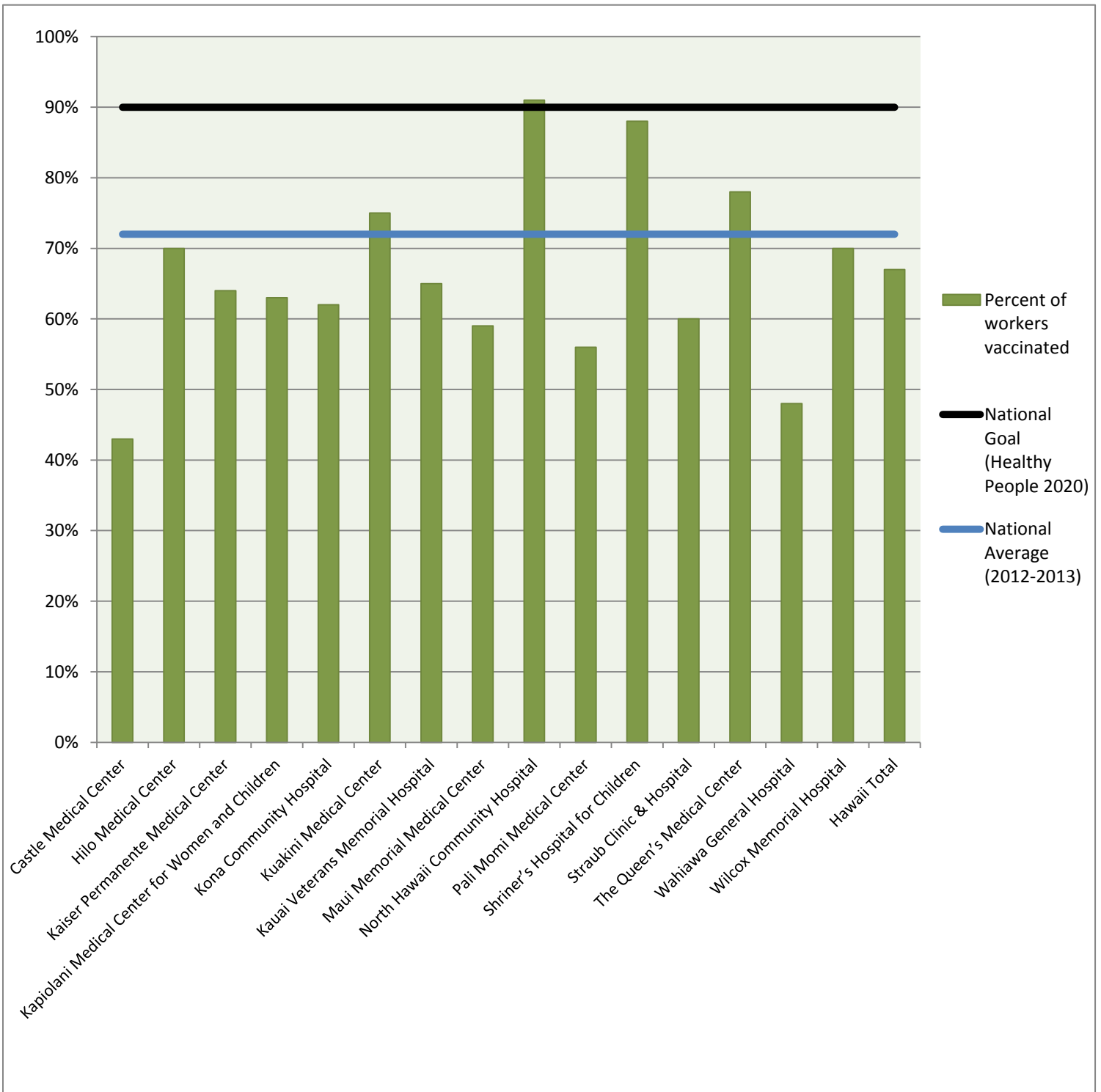
- **The single best way to prevent the flu is get vaccinated against flu each season.**
- Practice cough etiquette and **cover your mouth or nose** when you cough or sneeze.
- Make sure that your healthcare providers clean their hands before and after examining you, either with soap and water or an alcohol-based 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.**

**Healthcare Personnel Influenza Vaccination—All Healthcare Workers  
October 1, 2013 through March 31, 2014**

<b>Hospital</b>	<b>Vaccinated at Facility</b>	<b>Vaccinated Elsewhere</b>	<b>Total Vaccinated</b>	<b>Total number of workers</b>	<b>Number of Contraindications</b>	<b>Number of declinations</b>	<b>Percent of workers vaccinated</b>
<b>Castle Medical Center</b>	532	56	588	1,379	29	29	43%
<b>Hilo Medical Center</b>	960	4	964	1,377	14	200	70%
<b>Kaiser Permanente Medical Center</b>	1,564	86	1,650	2,585	17	229	64%
<b>Kapiolani Medical Center for Women and Children</b>	1,175	640	1,815	2,860	20	482	63%
<b>Kona Community Hospital</b>	322	46	368	598	9	169	62%
<b>Kuakini Medical Center</b>	635	617	1,252	1,659	12	336	75%
<b>Kauai Veterans Memorial Hospital</b>	192	13	205	313	2	24	65%
<b>Maui Memorial Medical Center</b>	875	293	1,167	1,963	2	504	59%
<b>North Hawaii Community Hospital</b>	406	37	443	485	9	23	91%
<b>Pali Momi Medical Center</b>	734	383	1,117	2,000	23	428	56%
<b>Shriner's Hospital for Children</b>	164	81	245	280	0	22	88%
<b>Straub Clinic &amp; Hospital</b>	1,062	461	1,523	2,357	26	510	60%
<b>The Queen's Medical Center</b>	3,650	1,553	5,203	6,631	33	456	78%
<b>Wahiawa General Hospital</b>	297	73	370	778	19	93	48%
<b>Wilcox Memorial Hospital</b>	462	120	582	831	14	187	70%
<b>Hawaii Total</b>	<b>13,029</b>	<b>4,463</b>	<b>17,492</b>	<b>26,276</b>	<b>229</b>	<b>3,692</b>	<b>67%</b>

Note: Data in this report were last generated June 17, 2014.

## Influenza Vaccination Coverage by Facility October 1, 2013 – March 31, 2014



Note: National average obtained from CDC survey: <http://www.cdc.gov/flu/fluview/hcp-ips-nov2013.htm>. National goal obtained from Healthy People Objective IID-12.13: <http://www.healthypeople.gov/2020/topicsobjectives2020/objectiveslist.aspx?topicId=23>. Additionally, Joint Commission 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](http://www.jointcommission.org/assets/1/18/R3_Report_Issue_3_5_18_12_final.pdf)

# Hospital Summary Table (2013)

Facility	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				**		
Kauai Veterans Memorial Hospital					**	**
Maui Memorial Medical Center						
North Hawaii Community Hospital						
Pali Momi Medical Center						
Straub Clinic & Hospital						
The Queen's Medical Center						
Wahiawa General Hospital						
Wilcox Memorial Hospital						
Hawaii Total						

## Legend:

- = Number of infections was **lower (better)** than expected
- = Number of infections was **similar (not significantly different)** than expected
- = Number of infections was **higher (worse)** than expected
- = 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.



## Progress Made in 2013

A total of 346 HAIs were reported, including 236 *Clostridium difficile* infections (CDI), 43 catheter associated urinary tract infections (CAUTI), 28 surgical site infections, 20 methicillin-resistant *Staphylococcus aureus* (MRSA) bacteremia events, and 19 central line-associated bloodstream infections (CLABSI). The overall observed number of HAIs in Hawaii hospitals was almost 40% lower than expected based on national data.

For those conditions that were also reported on the 2012 Hawaii HAI Report, the 2013 findings were statistically similar, with the exception of SSIs after an abdominal hysterectomy (HYST), where a statistically significant improvement was seen.

Condition	2012			2013			Difference in Observed HAIs	SIR: 2013 Compared to 2012
	Observed	Expected	SIR	Observed	Expected	SIR		
CLABSI	13	82.07	0.16	19	83.58	0.23	+6	Similar
CAUTI	62	75.84	0.82	43	72.64	0.59	-19	Similar
COLO	27	27.80	0.97	28	27.33	1.02	+1	Similar
HYST	5	4.54	1.10	0	5.92	0	-5	Lower

Hawaii also made progress this year in working towards longer-term goals. In 2009, the U.S. Department of Health & Human Services (HHS) 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. The following table compares Hawaii's 2013 SIR to the 2013 Action Plan Targets:

Condition	2013 Target	Hawaii 2013 SIR	Target:
CLABSI	0.50 SIR or 50% reduction	0.23 SIR or 77% lower than expected	Achieved
CAUTI	0.75 SIR or 25% reduction	0.59 SIR or 41% lower than expected	Achieved
SSI (combined)	0.75 SIR or 25% reduction	0.84 SIR or 16% lower than expected	Not Achieved
CDI	0.70 SIR or 30% reduction	0.67 SIR or 33% lower than expected	Achieved
MRSA	0.75 SIR or 25% reduction	0.57 SIR or 43% lower than expected	Achieved

## **Acknowledgements:**

We would like to acknowledge the Vermont Program for Quality in Health Care for developing the format and select content which we have used as a template for this document. We greatly appreciate the staff at the Division of Healthcare Quality Promotion at CDC for their technical assistance. We would like to thank the infection prevention, quality, and information technology staff at Hawaii hospitals for collaborating to provide data presented in this report. Finally, we would also like to thank the members of the Hawaii HAI Advisory Committee for contributing guidance in recommendations toward the completion of this report. Please see Appendix 2 for a list of the HAI Advisory Committee members.

## **For questions about this report, please contact:**

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Website: <http://health.hawaii.gov/docd/dib/healthcare-associated-infections-hais/>

## Appendix 1 – Acronyms:

<b>CAUTI</b>	Catheter associated urinary tract infections
<b>CDC</b>	Centers for Disease Control and Prevention
<b>CDI</b>	<i>Clostridium difficile</i> infection
<b>CI</b>	Confidence interval
<b>CLABSI</b>	Central line-associated bloodstream infections
<b>CMS</b>	Centers for Medicare and Medicaid Services
<b>COLO</b>	Colon surgeries
<b>HAIs</b>	Healthcare-associated infections
<b>HCP</b>	Healthcare personnel
<b>HDOH</b>	Hawaii Department of Health
<b>HYST</b>	Abdominal hysterectomy
<b>ICU</b>	Intensive care unit
<b>IQR</b>	Inpatient quality reporting
<b>MRSA</b>	Methicillin-resistant <i>Staphylococcus aureus</i>
<b>NHSN</b>	National healthcare safety network
<b>SIR</b>	Standardized infection ratio: $SIR = \frac{\text{Observed HAIs}}{\text{Expected HAIs}}$
<b>SSI</b>	Surgical site infections

## Appendix 2 - HAI Advisory Committee

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