

State of New Hampshire
HEALTHCARE-ASSOCIATED INFECTIONS
2011 REPORT

Prepared by
New Hampshire Department of Health and Human Services
Division of Public Health Services
Infectious Disease Surveillance Section

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ABBREVIATIONS USED IN THIS DOCUMENT

ASA Score	American Society of Anesthesiologists (ASA) Classification of Physical Status, a scale used by an anesthesiologist to classify the patient's physical condition prior to surgery
ASC	Ambulatory surgical center
CABG	Coronary Artery Bypass Graft procedure
CAUTI	Catheter-associated urinary tract infection
CBGB	NHSN operative code for coronary artery bypass graft procedures with both a chest and donor site incision
CBGC	NHSN operative code for coronary artery bypass graft procedures with chest incision site only
CDC	U.S. Centers for Disease Control and Prevention
CLABSI	Central line-associated bloodstream infection
CLIP	Central line insertion practices
CMS	Centers for Medicare and Medicaid Services
COLO	NHSN operative code for colon procedures
CSTE	Council of State and Territorial Epidemiologists
DHHS	New Hampshire Department of Health and Human Services
DHMC	Dartmouth Hitchcock Medical Center (Mary Hitchcock Memorial Hospital)
HAI	Healthcare-associated infection
HICPAC	Healthcare Infection Control Practices Advisory Committee
HHS	U.S. Department of Health and Human Services
ICU	Intensive care unit
IV	Intravenous
KPRO	NHSN operative code for knee arthroplasty procedures
NH	New Hampshire
NHSN	National Healthcare Safety Network
SAP	Surgical antimicrobial prophylaxis
SCIP	Surgical Care Improvement Project
SIR	Standardized infection ratio
SSI	Surgical site infection
TAW	Healthcare-Associated Infections Technical Advisory Workgroup
VAP	Ventilator-associated pneumonia
PICC	Peripheral Intravenous Catheter Insertion

Note: In order to increase readability of tables and figures, hospital names have been provided in an abbreviated format. In all tables and figures, DHMC refers to Dartmouth-Hitchcock Medical Center (Mary Hitchcock Memorial Hospital).

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EXECUTIVE SUMMARY

A healthcare-associated infection (HAI) is an infection that a patient acquires during the course of receiving treatment for another condition within a healthcare setting. HAIs cause an estimated 1.7 million infections and 99,000 deaths each year in the United States, resulting in over \$30 billion in excess healthcare costs. During the 2006 legislative season, the New Hampshire Legislature passed a bill creating NH RSA 151:32-35, which requires hospitals to identify, track, and report selected HAIs to the New Hampshire Department of Health and Human Services (DHHS). All 26 acute care hospitals began reporting data to DHHS on two infections and three process measures in January 2009, and five specialty hospitals reported influenza vaccination rates. This report represents the third summary of HAI-related data reported by hospitals in New Hampshire.

Healthcare-Associated Infections

Overall, statewide infection rates were lower than expected based on national data. A total of 110 HAIs were reported, representing 85 surgical site infections and 25 central line-associated bloodstream infections. The overall observed number of HAIs in New Hampshire hospitals was 40% fewer than expected based on national data. There were 42% fewer central line-associated bloodstream infections and 40% fewer surgical site infections. Twenty hospitals had robust enough data to present hospital-specific data in this report. Of these 20, four hospitals had an overall number of infections that was lower than expected based on national data. The remaining 16 all observed a similar number of infections as expected based on national data. None of the hospitals observed more infections than were expected. While the total number of infections reported decreased in 2011 compared to 2010, this difference was not statistically significant.

Central Line–Associated Bloodstream Infections

All twenty-five hospitals with Intensive Care Units (ICU) reported central line-associated bloodstream infections data. Data were robust enough for 20 hospitals to present hospital-specific data in this report. All 20 hospitals experienced rates of central line-associated bloodstream infections that were similar to national rates. While the total number of infections reported increased in 2011 compared to 2010, this difference was not statistically significant.

Central Line Insertion Practices

Twenty-four hospitals reported information on central line insertion practices (CLIP) for central lines inserted in ICUs (one hospital did not place any central lines in the intensive care unit). Overall, statewide adherence to all four infection-prevention practices during central line insertions was 95.7%. Intravenous (IV) Teams more frequently adhered to all four infection-prevention practices during central line insertions (100%). Data were robust enough for 14 hospitals to present hospital-specific data in this report. Seven hospitals reported central line insertion practices adherence rates that were similar to the State average, two hospitals reported an adherence rate that was lower than the State average, and five hospitals reported adherence rates that were higher than the State average. In 2011, the statewide adherence percentage for CLIP decreased from 2010 (96.8%), this was not statistically significant. Two hospitals decreased CLIP adherence in 2011 compared to 2010 and one hospital increased CLIP adherence.

Surgical Site Infections

Twenty-six hospitals reported surgical site infections data for three surgical procedures.

- **Coronary Artery Bypass Surgery (CABG):** Four hospitals performed CABG. All four hospitals reported CABG surgical site infection rates that were similar to national data.

- Colon Procedures: 26 hospitals performed the procedure, and data were robust enough for 16 hospitals to present hospital-specific data in this report. Fourteen hospitals reported colon procedure-associated surgical site infection rates that were similar to national data and two hospitals reported rates that were lower than expected based on national data.
- Knee Arthroplasty: 26 hospitals performed the procedure and data were robust enough for 10 hospitals to present hospital-specific data in this report. All ten hospitals reported knee arthroplasty-associated surgical site infection rates that were similar to national data. While the total number of infections reported decreased in 2011 compared to 2010, this difference was not statistically significant.

Surgical Antimicrobial Prophylaxis Administration

All 26 acute care hospitals reported surgical antimicrobial prophylaxis data and other measures to the Centers for Medicare and Medicaid Services (CMS) through the Surgical Care Improvement Project (SCIP). Overall, New Hampshire hospitals performed surgical antimicrobial prophylaxis appropriately more often than the national average. For SCIP measure 1, 98.7% of patients in New Hampshire received prophylactic antibiotic within one hour prior to surgery compared with 97.5% nationally. For SCIP measure 2, 98.7% of patients in New Hampshire received the appropriate prophylactic antibiotic compared with 98.1% nationally. For SCIP measure 3, 97.4% of patients in New Hampshire had his or her prophylactic antibiotic discontinued within 24 hours after surgery compared with 96.1% nationally. In 2011 the statewide adherences to SCIP-2 and SCIP-3 was similar to 2010 and adherence to SCIP-1 was higher than in 2010.

Influenza Vaccination Rates in Hospital Staff

All 31 acute care, psychiatric, and rehabilitation hospitals reported staff influenza vaccination rates. Vaccination rates by hospital ranged from 52.8% to 98.5%, and the overall State rate was 88.5%. Eleven hospitals had vaccination rates similar to the overall State vaccination rate, seven hospitals reported vaccination rates that were significantly higher than the overall State vaccination rate, and 13 hospitals reported vaccination rates that were significantly lower than the overall State vaccination rate. The overall statewide hospital staff vaccination rate increased significantly from 2010–2011 (77.4%) to 2011-2012 (88.5%). Specifically, fourteen hospitals increased staff influenza vaccination rates in 2011-2012 compared to 2010-2011, 13 hospitals had similar vaccination rates, and four hospitals reported a decrease in staff influenza vaccination.

This third report of the HAI Program displays progress moving toward the goal of eliminating HAIs in New Hampshire. This report provides a picture of selected HAI data, which should be used by healthcare facilities in the State to identify areas for improvement and prevention as well as healthcare consumers to make informed healthcare decisions.

INTRODUCTION

Background on Healthcare-Associated Infections

A healthcare associated infection (HAI) is an infection that a patient acquires during the course of receiving treatment for another condition within a healthcare setting. HAIs cause an estimated 1.7 million infections and 99,000 deaths each year in the United States¹. By these estimates, HAIs are among the top 10 leading causes of death in the United States, and 5–10% of all hospital admissions are complicated by HAI.² The economic burden of HAIs is substantial and increasing. The total cost of HAIs has been estimated at \$33 billion per year in US hospitals. The most common HAIs are catheter-associated urinary tract infections, surgical site infections, central line-associated bloodstream infections, and ventilator-associated pneumonia.³ The recent HAI outbreaks of Hepatitis C at a New Hampshire hospital and fungal infections from contaminated injectable medications highlights the increasing burden of HAI. This report acknowledges these outbreaks but is intended to provide information under the HAI reporting law RSA 151:32-33.

New Hampshire Healthcare-Associated Infections Program

The New Hampshire Department of Health and Human Services (DHHS) has been actively engaged in developing an HAI surveillance program since 2007. During the 2006 legislative season, the New Hampshire Legislature passed a bill creating NH RSA 151:32-35, which requires hospitals to identify, track, and report HAIs to DHHS. RSA 151:33 specifically requires reporting of central line-associated bloodstream infections (CLABSI), surgical site infections (SSIs), ventilator-associated pneumonia, central line insertion practices (CLIP), surgical antimicrobial prophylaxis (SAP), and influenza vaccination rates. The intent of the law is to provide HAI data by hospital in a publicly accessible forum for hospital comparison. The passage of the 2006 bill did not include funding to carry out these activities, and therefore, mandatory reporting was not fully implemented until January 2009.

In September 2008, DHHS notified the 26 acute care hospitals in New Hampshire that they would be required to enroll in NHSN and report the mandated HAI data beginning January 1, 2009. DHHS, with consideration of the law, required that hospitals initially report the following measures:

- Central line-associated bloodstream infections in adult intensive care units (via NHSN)
- Central line insertion practices in all adult intensive care units (via NHSN)
- Surgical site infections following coronary artery bypass graft, colon, and knee arthroplasty procedures (via NHSN).
- Surgical antimicrobial prophylaxis (via Centers for Medicare and Medicaid Services)
- Influenza vaccination in patients and staff (via DHHS web survey)

¹ Klevens, RM, Edwards RJ, Richards CL, Jr, et al. Estimating health care-associated infections and deaths in U.S. Hospitals, 2002. *Public Health Rep* 2007;122(2):160-166.

http://www.cdc.gov/ncidod/dhqp/pdf/hicpac/infections_deaths.pdf

² Humphreys, H, Newcombe RG, Enstone J et al. Four country healthcare associated infection prevalence survey 2006: risk factor analysis. *J Hosp Infect* 2008; 69(3) 249-257.

³ Scott R, Douglas. The direct medical costs of healthcare-associated infections in US hospitals and the benefits of prevention. March 2009. http://www.cdc.gov/ncidod/dhqp/pdf/Scott_CostPaper.pdf

All 26 acute care hospitals successfully enrolled in NHSN and began reporting the required data in January 2009. Specialty hospitals (rehabilitation and psychiatric) did not enroll in NHSN because they were required to report only influenza vaccination rates.

During the 2010 legislative season, the New Hampshire Legislature passed HB 1548 (2010) amending RSA 151:32-35 to require all licensed ambulatory surgical centers (ASCs) to report healthcare-associated infections to DHHS. HAI data reported by ASCs will not be publicly released until 2013 depending on validity of data.

The administrative rules related to HAI reporting were revised in 2011 to include additional hospital reporting measures. Starting January 2012, hospitals were also required to report:

- Central line–associated bloodstream infections in all intensive care units (via NHSN)
- Central line insertion practices in all intensive care units (via NHSN)
- Catheter-associated urinary tract infections (CAUTI) in all pediatric and adult intensive care units (via NHSN)
- Surgical site infections following abdominal hysterectomy (HYST) procedures (via NHSN).

Data for these new measures are expected to be released in the next HAI Report.

State of New Hampshire Healthcare-Associated Infections Plan

In response to increasing concerns about the public health impact of HAIs, the US Department of Health and Human Services (HHS) developed an Action Plan to Prevent Healthcare-Associated Infections (HHS Action Plan) in 2009. The HHS Action Plan includes recommendations for surveillance, research, communication, and metrics for measuring progress toward national goals.

In a concurrent development, the 2009 Omnibus bill required states receiving Preventive Health and Health Services Block Grant funds to certify that they would submit a plan to reduce HAIs to the Secretary of Health and Human Services not later than January 1, 2010. In order to assist states in responding within the short timeline required by that language and to facilitate coordination with national HAI prevention efforts, the CDC provided a template to assist state planning efforts in the prevention of HAI. The template targeted four areas: 1) Development or Enhancement of HAI Program Infrastructure, 2) Surveillance, Detection, Reporting, and Response, 3) Prevention, and 4) Evaluation, Oversight, and Communication. In 2009, DHHS drafted a State HAI plan and submitted it to HHS. New Hampshire's State HAI Plan is available on the DHHS HAI website at:

<http://www.dhhs.nh.gov/dphs/cdcs/hai/index.htm>.

Overview of Healthcare-Associated Infections Prevention Efforts

DHHS participates in statewide prevention activities through the New Hampshire Health Care Quality Assurance Commission (NHHCQAC), on which the DHHS State Epidemiologist serves. Currently there are no specific prevention activities being coordinated directly by DHHS, however, DHHS remains an active partner in various projects coordinated by the NHHCQAC and the Northeast Health Care Quality Foundation. Major statewide initiatives through these organizations have included hand hygiene campaigns, patient safety checklists, and programs to prevent bloodstream infections, antimicrobial resistance, and *Clostridium difficile* infections. Additionally,

the Foundation for Healthy Communities received a large grant through the Partnership for Patients program to conduct additional large, statewide prevention initiatives. For additional information on these various efforts, the following websites may be helpful:

New Hampshire Health Care Quality Assurance Commission

<http://www.healthynh.com/fhc-initiatives/nh-health-care-quality-assurance-commission.html>

Foundation for Healthy Communities Partnership for Patients

<http://www.healthynh.com/partnership-for-patients.html>

Northeast Health Care Quality Foundation

<http://www.nhcqf.org/>

In addition to supporting and engaging in prevention activities with patient safety groups, the state HAI program provides many educational opportunities to healthcare facilities across the state in order to share best practices for infection prevention and ultimately reduce HAI. The program is involved in many infection prevention initiatives and continues to work with partners to improve healthcare quality across the continuum of care.

Healthcare-Associated Infections Technical Advisory Workgroup

In the spring of 2009, DHHS formed an HAI Technical Advisory Workgroup. The purpose of the Technical Advisory Workgroup (TAW) is to provide scientific and infection prevention expertise to the DHHS HAI Program. The TAW is not intended to be an oversight group, but instead a forum for stakeholder participation in decision making around the New Hampshire HAI Program. The TAW is an 18-member group that includes representation from stakeholders across New Hampshire and includes representatives from various sizes and types of hospitals and ASCs, infection control associations, the consumer organization ‘New Hampshire Patient Voices’, the New Hampshire Hospital Association, the New Hampshire Healthcare Quality Assurance Commission, and the Northeast Health Care Quality Foundation (see page 13 for a list of TAW members during the 2011 reporting year). The TAW currently meets quarterly.

New Hampshire Healthcare-Associated Infections Technical Advisory Workgroup, 2011

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SURVEILLANCE METHODS

2011 Healthcare-Associated Infections Reporting Requirements

Reporting requirements are governed by RSA 151:33 with authority given to DHHS to develop administrative rules to provide specific reporting instructions and methodology. Administrative rules, He-P 309 Healthcare Associated Infections, were drafted in 2010 with stakeholder input and approved January 14, 2011 by the Joint Legislative Committee on Administrative Rules. Reporting requirements for 2009-2011 included the following required measures for hospitals:

- Central line–associated bloodstream infections in adult intensive care units
- Central line insertion practices in adult intensive care units
- Surgical site infections following coronary artery bypass graft, colon, and knee arthroplasty procedures.
- Surgical antimicrobial prophylaxis
- Influenza vaccination in patients and staff

The rules were updated in 2012 and now include the following required measures for hospitals in addition to above measures:

- Central line–associated bloodstream infections in *all intensive care units*
- Central line insertion practices in *all intensive care units*
- *Catheter-associated urinary tract infections in all adult and pediatric intensive care units*
- Surgical site infections following *abdominal hysterectomy procedures*

While all licensed hospitals including acute care and specialty hospitals are required to report the selected measures under RSA 151:33, specialty hospitals (rehabilitation and psychiatric hospitals), that do not perform surgeries or central line insertions, cannot report CLABSI, CLIP, SSI or SCIP measures. The three rehabilitation and two psychiatric hospitals are only required to report influenza vaccination rates for patients and staff.

Selection of Reporting Requirements

RSA 151:33 broadly requires reporting of all SSI and CLABSI; however, it is not feasible to do surveillance for all of these infections using NHSN. In order to generate infection rates for hospitals and compare them with national data, infection reporting needed to be limited to the capabilities of NHSN and were selected in accordance with national recommendations for HAI surveillance in the context of public reporting.

In 2005, the CDC released a report titled “Guidance on Public Reporting of Healthcare-Associated Infections: Recommendations of the Healthcare Infection Control Practices Advisory Committee” (HICPAC).⁴ The group recommended selecting outcome measures for reporting based on the frequency, severity, and preventability of the outcomes and the likelihood that they can be detected

⁴ Linda McKibben, MD,^a Teresa Horan, MPH,^b Jerome I. Tokars. Guidance on Public Reporting of Healthcare-Associated Infections: Recommendations of the Healthcare Infection Control Practices Advisory Committee (Am J Infect Control 2005;33:217-26.) <http://www.cdc.gov/ncidod/dhqp/pdf/hicpac/PublicReportingGuide.pdf>

and reported accurately. Specifically, the group recommended monitoring the following outcome measures:

- Central line–associated bloodstream infections in intensive care units
- Surgical site infections following selected operations
- Catheter-associated urinary tract infections (CAUTI) and ventilator-associated pneumonia (VAP) were not recommended because of lower morbidity and mortality resulting in less prevention effectiveness relative to the burden of data collection and reporting (in the case of CAUTI), and difficulty in detecting infections accurately resulting in invalid and misleading comparisons of infection rates for consumers (in the case of VAP).

Additionally, the group recommended monitoring the following process measures:

- Central line insertion practices
- Surgical antimicrobial prophylaxis
- Influenza vaccination of patients and healthcare personnel

In 2008, the Healthcare-Associated Infection Working Group of the Joint Public Policy Committee released “Essentials of Public Reporting of Healthcare-Associated Infections: A Tool Kit.”⁵ The Healthcare-Associated Infection Working Group of the Joint Public Policy Committee is a multi-organizational group represented by the Association for Professionals in Infection Control and Epidemiology, CDC, Council of State and Territorial Epidemiologists, and Society for Healthcare Epidemiology of America. The toolkit recommends monitoring the following outcome measures:

- Central line-associated bloodstream infection in intensive care units
- Surgical site infections that are performed with adequate frequency to permit meaningful comparisons among institutions. Specific reasonable options listed were: 1) coronary artery bypass surgery, 2) colon resection, 3) total hip arthroplasty, 4) total knee arthroplasty, 5) laminectomy, and 6) total abdominal hysterectomy
- The working group agreed with the CDC/HICPAC document, “Guidance on Public Reporting of Healthcare-Associated Infections” (referenced above) and recommended exclusion of outcome measures related to VAP and CAUTI because the existing surveillance criteria are difficult to apply consistently, making case counts unreliable.

The only process measure the group recommended monitoring was healthcare worker influenza vaccination rates.

Within the context of RSA 151:33, DHHS reviewed the national guidelines and capabilities of NHSN in selecting infection and process measures. It is expected that these reporting requirements may change in the future as we learn from public reporting, as HAI epidemiology changes, and as new surveillance methods and reporting technologies become available.

⁵ Essentials of Public Reporting of Healthcare-Associated Infections: A Tool Kit. Prepared by the Healthcare-Associated Infection Working Group of the Joint Public Policy Committee
http://www.cdc.gov/ncidod/dhqp/pdf/ar/06_107498_Essentials_Tool_Kit.pdf

Accuracy of Reported Healthcare-Associated Infections Surveillance Data

DHHS conducted a validation study of 2009-2010 data to assess the degree of under and over reporting and to provide additional training to address any common or systematic errors in reporting processes. DHHS contracted with an independent external agency to perform the validation study and HAI program staff participated in activities, which included: NHSN data review, medical record review, data analysis, corrections, and follow up for deficiencies. Overall, validation of 2009-2010 data showed that there was approximately 33% under-reporting of CLABSI and SSI across all New Hampshire hospitals. This under-reporting was mostly due to misunderstandings about the NHSN definitions for HAI. In addition to under-reporting, the validation studies also found 12% of over-reporting (i.e., reporting an infection that did not meet NHSN standard definitions for CLABSI or SSI). The 2011 CLABSI data presented in this report have not been validated and must be interpreted with the understanding that in general there are both under- and over-reporting of infections.

Despite this fact, there are several processes that are implemented to ensure that the data are as accurate as possible within the current resources and reporting processes available. First, DHHS selected NHSN for mandatory reporting, which requires the use of standardized infection definitions and reporting methodologies. Second, DHHS analyzed and reviewed all data reported for 2011 from each hospital. This review identified any obvious reporting errors or internal inconsistencies that suggested errors. Third, DHHS provided data reports to each hospital asking hospitals to confirm that the data reported to DHHS was accurate. This reconciliation process was iterative until all hospitals made corrections and agreed to the reported data. Lastly, 2009-2010 data validation was performed; reducing systematic errors that may have occurred during the reporting process and likely resulted in improved quality of 2011 data. Despite these measures, there are several limitations to the reporting methods that then limit comparison of data across hospitals.

While definitions for classifying an infection as healthcare-associated are standardized through the use of NHSN, methods to identify the infection in each hospital are not. For example, hospitals may use different methods to identify CLABSI (reviewing laboratory records, reviewing intensive care unit records, etc.) or may have different approaches to diagnosing and managing suspect CLABSI in the ICU. For SSI, identifying patients who develop infections after discharge from the hospital can be difficult, and each hospital may use a different method of post-discharge surveillance (e.g., letters to surgeons, conducting chart reviews for surgical patients, calling surgeon offices, etc.). These different approaches may result in more comprehensive detection of SSI. Therefore, a higher SSI rate at a hospital may not be a reflection of poorer infection prevention activities, but rather a more comprehensive system of identifying such infections after the patient is discharged. See page 40 for more details about how hospitals identify SSI.

National Healthcare Safety Network

NHSN is a voluntary, secure, internet-based surveillance system for healthcare facilities to monitor patient safety and infection prevention measures. Enrollment is open to all types of healthcare facilities in the United States. DHHS has selected the use of NHSN as the method for New Hampshire hospitals and ASCs to report healthcare-associated infections surveillance data. NHSN was selected because it is widely used across the entire United States, it offers already developed

and accepted surveillance definitions and methods, it provides national comparison data, and there is no cost to use or join the system.

More information about NHSN is available at: <http://www.cdc.gov/nhsn/index.html>

Comparisons with National Data

All surgical site infections comparisons with national data use 2006–2008 NHSN data published in the “National Healthcare Safety Network (NHSN) report: Data summary for 2006 through 2008, issued December 2009.”⁶ This report is available at:

<http://www.cdc.gov/nhsn/PDFs/dataStat/2009NHSNReport.PDF>

All central line-associated bloodstream infections comparisons with national data use 2010 data published in the “National Healthcare Safety Network (NHSN) report: Data summary for 2010, Device-Associated Module issued July 2011.”⁷ This report is available at:

http://www.cdc.gov/nhsn/PDFs/dataStat/NHSN-Report_2010-Data-Summary.pdf

Central Line–Associated Bloodstream Infections Surveillance

A central line is an intravascular catheter that terminates at or close to the heart or in one of the great vessels and is used for infusion, withdrawal of blood, or hemodynamic monitoring.

In general terms, a CLABSI is a laboratory-confirmed bloodstream infection that develops after insertion of a central line and is not secondary to an infection at another body site. Hospitals are required to monitor and report CLABSI in adult ICUs. This monitoring includes reporting the number of infections identified as well as the total number of central line days in the unit. These metrics are monitored following NHSN protocols and definitions and reported in NHSN.

Central line days are the number of patients with one or more central lines of any type, which is counted at the same time each day and aggregated over the reporting period. For example, a patient with a central line in place for five days would be counted as five central line days.

Detailed descriptions of the NHSN CLABSI surveillance protocols are available at:

http://www.cdc.gov/nhsn/PDFs/pscManual/4PSC_CLABSCurrent.pdf.

Limitations for CLABSI surveillance:

- NHSN only allows for monitoring CLABSI in inpatient units. In New Hampshire in 2011, CLABSI were monitored in adult intensive care units (which excludes pediatric, neonatal, and step down units) and not in other inpatient locations.

⁶ Edwards JR, Peterson KD, Mu Y, et al. National Healthcare Safety Network (NHSN) report: Data summary for 2006 through 2008, issued December 2009. *Am J Infect Control* 2009; 37:783-805.

<http://www.cdc.gov/nhsn/PDFs/dataStat/2009NHSNReport.pdf>

⁷ Dudeck MA, Horan TC, Peterson KD, et al. National Healthcare Safety Network (NHSN) report: Data summary for 2010, issued July 2011.

http://www.cdc.gov/nhsn/PDFs/dataStat/NHSN-Report_2010-Data-Summary.pdf

- Validation of 2009-2010 data showed that there was approximately 43% under-reporting of CLABSI across all New Hampshire hospitals. This under-reporting was mostly due to misunderstandings about the NHSN definition for CLABSI. In addition to under-reporting, the validation studies also found 11% of over-reporting (i.e., reporting an infection that did not meet NHSN standard definitions for CLABSI). The 2011 CLABSI data presented in this report have not been validated and must be interpreted with the understanding that in general there are both under- and over-reporting of infections.

Central Line Insertion Practices Monitoring

CLIP monitoring assesses key infection prevention practices that occur during the insertion of a central line. In order to comply with all infection prevention practices during the insertion, the inserter must 1) perform hand hygiene prior to insertion, 2) use all five barriers (gloves, gown, cap, mask, and drape), 3) use an appropriate skin preparation agent, and 4) ensure skin is dry prior to insertion.

Hospitals monitor and report CLIP data through NHSN using all NHSN protocols and definitions. In 2011, hospitals were required to monitor all central line insertions that were placed in adult intensive care units (which excludes pediatric, neonatal, and step down units). The NHSN CLIP protocols are available at:

http://www.cdc.gov/nhsn/PDFs/pscManual/5psc_CLIPcurrent.pdf.

Limitations for central line insertion practices monitoring:

- In New Hampshire, CLIPs were monitored only in adult ICUs (which excludes pediatric, neonatal, and step down units) and not in other settings where central lines may be inserted (operating room, procedure rooms, emergency room, dialysis centers, etc).
- The person recording the insertion practices may differ in each hospital. In some cases it may be an observer or the person doing the insertion, which may impact quality of data on adherence reported.

Surgical Site Infections Surveillance

In general terms, a SSI is an infection that develops at the site of a surgical procedure. There are different ways to classify an SSI, such as whether they develop superficially, in deep tissue, or in the organ/space. The infection must develop within 30 days of the procedure; however, if the procedure involved an implant or transplant, monitoring for an SSI must occur for a year following the procedure (e.g., knee arthroplasty, CABG). In 2011, hospitals were required to monitor and report SSI for three procedures:

- Coronary Artery Bypass Graft (chest incision and donor site)
 - NHSN Operative Procedure CBGC and CBGB (ICD-9: 36.10-36.17, 36.19, 36.2)
- Colon Surgery (incision, resection, or anastomosis of the large intestine)
 - NHSN Operative Procedure COLO (ICD-9: 17.31-17.36, 17.39, 45.03, 45.26, 45.41, 45.49, 45.52, 45.71-45.76, 45.79, 45.81-45.83, 45.92-45.95, 46.03, 46.04, 46.10, 46.11, 46.13, 46.14, 46.43, 46.52, 46.75, 46.76, 46.94)

- Knee Arthroplasty
 - NHSN Operative Procedure KPRO (ICD-9: 00.80-00.84, 81.54-81.55)

SSI monitoring includes reporting information on each infection identified as well as patient-level information for all patients undergoing the same procedure. This allows for appropriate risk adjustment, because risk for development of an SSI can be influenced by patient- and procedure-specific factors. Patient and procedure risk factors that are considered when assessing SSI standardized infection ratios by hospital vary by type of procedure but include factors such as:

- a. Operation lasting more than the duration of cut point hours
- b. Contaminated or dirty/infected wound class
- c. ASA classification of 3, 4, or 5 (see below)
- d. Age of the patient
- e. Gender of the patient
- f. Hospital bed size
- g. Hospital's medical school affiliation
- h. Whether the surgery was the result of trauma

The wound class is a way of determining how clean or dirty the operation body site was at the time of the operation. Operation body sites are divided into four classes:

Clean: An uninfected operation body site is encountered and the respiratory, digestive, genital, or uninfected urinary tracts are not entered.

Clean-Contaminated: Operation body sites in which the respiratory, digestive, genital, or urinary tracts are entered under controlled conditions and without unusual contamination.

Contaminated: Operation body sites that have recently undergone trauma, operations with major breaks in sterile technique (e.g., open cardiac massage), or gross spillage from the gastrointestinal tract.

Dirty or Infected: Includes old traumatic wounds with retained dead tissue and those that involve existing infection or perforated intestines.

The ASA classification is the American Society of Anesthesiologists (ASA) Classification of Physical Status, a scale used by the anesthesiologist to classify the patient's physical condition prior to surgery. It is one of the factors that help determine a patient's risk of possibly developing an SSI.

The ASA scale is:

1. Normally healthy patient
2. Patient with mild systemic disease
3. Patient with severe systemic disease
4. Patient with an incapacitating systemic disease that is a constant threat to life
5. A patient who is not expected to survive with or without the operation

All SSI metrics are monitored following NHSN protocols and definitions and reported in NHSN. The NHSN SSI protocols are available at:

<http://www.cdc.gov/nhsn/PDFs/pscManual/9pscSSICurrent.pdf>

Limitations for SSI surveillance:

- Hospitals do not use a standard method of post-discharge surveillance to identify infections once a patient has been discharged. This may make data interpretation difficult because a higher SSI rate at a hospital could be a reflection of poor infection prevention practices or perhaps a more comprehensive system for identifying infections. Post-discharge surveillance methods were analyzed to better understand these differences between facilities and are presented in this report on page 52.
- SSI reporting is only on a subset of procedures. Reporting in NHSN requires detailed information on every patient who underwent the procedure being monitored. This allows for risk adjustment. As such, DHHS has elected to monitor a subset of procedures based on national recommendations since it would not be feasible for hospitals to report information on every patient receiving a surgical procedure due to the burden of reporting.
- Some procedures require monitoring for SSI for one year after the procedure (in New Hampshire, this includes CABG and knee arthroplasty). Due to the timeline required by law for producing a data report, a full year has not elapsed for surgeries performed at the end of 2011. As such, this report may not account for all SSI that developed as a result of procedures performed in 2011. Most infections, however, occur within 30 days of the procedure.
- The SSI data presented in this report include all types of infections, including superficial surgical site infections, which can occur as a result of care in the hospital but also as a result of the patient's care of the wound site once discharged.
- Validation of 2009-2010 data showed that there was approximately 31% under-reporting of SSI across all New Hampshire hospitals. This under-reporting was mostly due to misunderstandings about the NHSN definition for SSI. In addition to under-reporting, the validation studies also found 12% of over-reporting (i.e., reporting an infection that did not meet NHSN standard definitions for SSI). The 2011 SSI data presented in this report have not been validated and must be interpreted with the understanding that in general there are both under- and over-reporting of infections.

Surgical Antimicrobial Prophylaxis Administration Monitoring

All New Hampshire hospitals report surgical antimicrobial prophylaxis data and other measures to the Centers for Medicare and Medicaid Services (CMS) through the Surgical Care Improvement Project (SCIP). For this reason, DHHS does not collect surgical antimicrobial prophylaxis data directly from hospitals. In addition to other measures required by CMS, measures relative to NH RSA 151:33 include the following:

- SCIP 1: Number and percentage of patients who received prophylactic antibiotic within one hour prior to surgery

- SCIP 2: Number and percentage of patients who received the appropriate prophylactic antibiotic
- SCIP 3: Number and percentage of patients whose prophylactic antibiotic was discontinued within 24 hours after surgery

These process measures show a hospital's adherence rate to best practices designed to reduce surgical complications. Hospitals follow the CMS specification manual appropriate to the date of discharge found at:

<http://qualitynet.org/dcs/ContentServer?cid=1141662756099&pagename=QnetPublic%2FPage%2FQnetTier2&c=Page>

DHHS accesses hospital data on surgical antimicrobial prophylaxis administration from the New Hampshire Quality Care website at: <http://www.nhqualitycare.org/index.php/reports/scip>.

Influenza Vaccination Rate Monitoring

All hospitals are required to report staff and resident/patient vaccination rates directly to DHHS via online survey that is provided to facilities prior to the influenza season. Data for the 2011–2012 influenza season were reported by hospitals on or before April 30, 2012. Submission of these data meets the requirements of both the HAI law (RSA 151:32-35) and the healthcare immunization law (RSA 151:9-b). The 2011–2012 survey asked the following 12 questions regarding influenza vaccination:

1. Hospital demographics
2. How many patients were admitted to your hospital between 10/01/2011 and 03/31/ 2012?
3. How many patients were immunized against seasonal influenza by your facility between 10/01/2011 and 03/31/ 2012?
4. How many patients were immunized against pneumococcal disease by your facility between 10/01/2011 and 03/31/ 2012??
5. How many healthcare personnel (HCP) worked or volunteered in your hospital at any time between 10/01/2011 and 03/31/ 2012?
6. How many HCP were immunized against seasonal influenza between 10/01/2011 and 03/31/ 2012? This includes healthcare workers (HCW) immunized at your facility or elsewhere.
7. How many HCP did not receive the seasonal influenza vaccine for the following reasons: medical contraindications/exemptions, declinations or refusal, or unknown?
8. Does your facility have a mandatory employee vaccination policy? Mandatory vaccination policy means that the institution requires vaccination of employees or else there is some consequence.
9. If YES, what exemptions (reasons not to be vaccinated) are accepted (medical, personal/philosophical, religious, any reason)?
10. If YES, what is the consequence for an employee that is not vaccinated and does not have an exemption (unvaccinated employees must wear a mask or unvaccinated employees are terminated)?

11. If YES, what is the alternative precaution for an employee that is not vaccinated and does have an accepted exemption (unvaccinated employees must wear a mask or unvaccinated employees are terminated)?
12. Please enter any comments or questions.

Staff influenza vaccination rates were then calculated by adding the number of staff vaccinated at the facility and the number of staff vaccinated elsewhere and dividing by the total number of staff.

Limitations for influenza vaccination monitoring:

- The survey asks for the total number of staff vaccinated. This may not reflect the number of staff to whom the vaccine was offered. Hospitals may vary in the refusal rate for vaccination among staff and the reasons for such refusal. Additionally, some staff may not be eligible to receive the vaccine. The survey attempted to assess why unvaccinated staff did not receive the vaccine, however, not all hospitals can report this information.
- Reporting of patient vaccination rates (Influenza and Pneumococcal vaccine) is limited by availability of vaccine and by the hospital's ability to track why patients did not receive the vaccine. For example, some patients may be offered vaccine but may have already received it in another setting. Additionally, the survey asks for the total number of admissions, but some of these may be readmissions, in which case the patient would not again receive vaccine. Finally, the survey asks for admissions through March 31, 2012, by which time many hospitals have used their vaccine supply and are unable to order more. This would result in a lower vaccination rate because the survey counts all patients through March, even though there was no opportunity to vaccinate these patients due to supply. DHHS has elected not to report patient vaccination rates until a better way to collect the information is identified so that results are reliable, accurate, and informative.
- Data collection techniques at hospitals may vary from year-to-year, which may affect comparison of data from year-to-year and between hospitals (example: definition of staff including all paid and unpaid individuals that work in the hospital). DHHS continues to work each year on improving the validity and utility of this measure.

STATEWIDE DATA

HAI data are presented throughout this report as both standardized infection ratios and rates as appropriate. Presenting data as a standardized infection ratio (SIR) allows for aggregating data across risk group, procedures, and hospitals to gain a better understanding of the incidence of HAI while still adjusting for underlying patient or hospital factors that may affect the occurrence of infections. The SIR does not give the infection rate, but rather a comparison between how many infections actually occurred and how many were expected to occur based on national data. Specific rate information is also provided where possible, which represents the number of infections that occurred taking into account the number of procedures that were performed. Rate data are limited by the requirement to only calculate rates that are broken down by certain factors, such as location in the hospital. See technical notes for additional information on rates and the SIR.

Because an SIR is a comparison of the number of actual observed infections to the number expected based on national data, an SIR of 1.0 means that exactly the same number of infections were observed as were expected. An SIR of less than one means that fewer infections were observed than were expected (for example, SIR = 0.70 would be interpreted as 30% fewer infections observed than expected). An SIR of more than one means that more infections were observed than were expected (for example, SIR = 1.30 would be interpreted as 30% more infections observed than expected). A confidence interval is calculated to determine whether the difference between observed and expected infections is statistically significant. If the difference is not statistically significant, the observed and expected numbers of infections are considered similar. See technical notes for additional information on confidence intervals.

This report provides comparisons with national and state data where appropriate. Comparisons are color coded consistently throughout. For infections, yellow represents infection rates that are similar to national data, red represents infection rates that are significantly higher than national rates, and green represents infection rates that are significantly lower than national rates.

 fewer than expected  similar to expected  more than expected

For process measures, yellow represents rates that are similar to the state average, red represents rates that are significantly lower than the state average, and green represents rates that are significantly higher than the state average.

 higher than state  similar to state  lower than state

Statistical significance is affected by sample size. If a value is almost or just barely significant, just a few additional observations can push significance one way or the other (i.e., not significant or significant).

Statewide Standardized Infection Ratios

There were 110 healthcare-associated infections reported across all 26 acute care hospitals in New Hampshire in 2011. These infections represent CLABSI in ICUs and SSI following colon, knee, and coronary artery bypass procedures. Based on national data, we expected to observe 185 infections. The overall observed number of healthcare-associated infections was 40% fewer than expected based on national data. More specifically, there were 42% fewer CLASBI and 40% fewer SSI. Looking individually at the specific procedures, there were 50% fewer coronary artery bypass infections, 47% fewer colon infections, and 19% fewer knee arthroplasty infections than expected; however, the difference for knee arthroplasty is not statistically significant and the number of infections observed is considered similar to national data.

TABLE 1: Statewide standardized infection ratios (SIR), Jan 1–Dec 31, 2011

	Observed Infections	Expected Infections	Standardized Infection Ratio (SIR)	95% Confidence Interval	Comparison to Expected Number of Infections
Overall HAI SIR	110	184.79	0.60	0.49 , 0.72	Lower
	The overall observed number of HAI in New Hampshire hospitals was 40% fewer than expected based on national data. This difference is statistically significant, which means the overall number of HAI in the state is LOWER than the number seen nationally.				
CLABSI SIR	25	43.41	0.58	0.37 , 0.85	Lower
	The overall observed number of CLABSI in New Hampshire hospitals was 42% fewer than expected based on national data. This difference is statistically significant, which means the overall number of CLABSI in the state is LOWER than the number seen nationally.				
Overall SSI SIR	85	141.38	0.60	0.48 , 0.75	Lower
	The overall observed number of SSI in New Hampshire hospitals was 40% fewer than expected based on national data. This difference is statistically significant, which means the overall number of SSI in the state is LOWER than the number seen nationally.				
CABG SIR	10	20.01	0.50	0.24 , 0.92	Lower
	The overall observed number of CABG infections in New Hampshire hospitals was 50% fewer than expected based on national data. This difference is statistically significant, which means the overall number of SSI in the state is LOWER than the number seen nationally.				
COLO SIR	45	84.44	0.53	0.39 , 0.72	Lower
	The overall observed number of COLO infections in New Hampshire hospitals was 47% fewer than expected based on national data. This difference is statistically significant, which means the overall number of COLO infections in the state is LOWER than the number seen nationally.				
KPRO SIR	30	36.93	0.81	0.54 , 1.17	Similar
	The overall observed number of KPRO infections in New Hampshire hospitals was 19% fewer than expected based on national data. This difference is not statistically significant, which means the overall number of KPRO infections in the state is SIMILAR to the number seen nationally.				

HAI: Healthcare-associated infection

CLABSI: Central line-associated blood stream infections

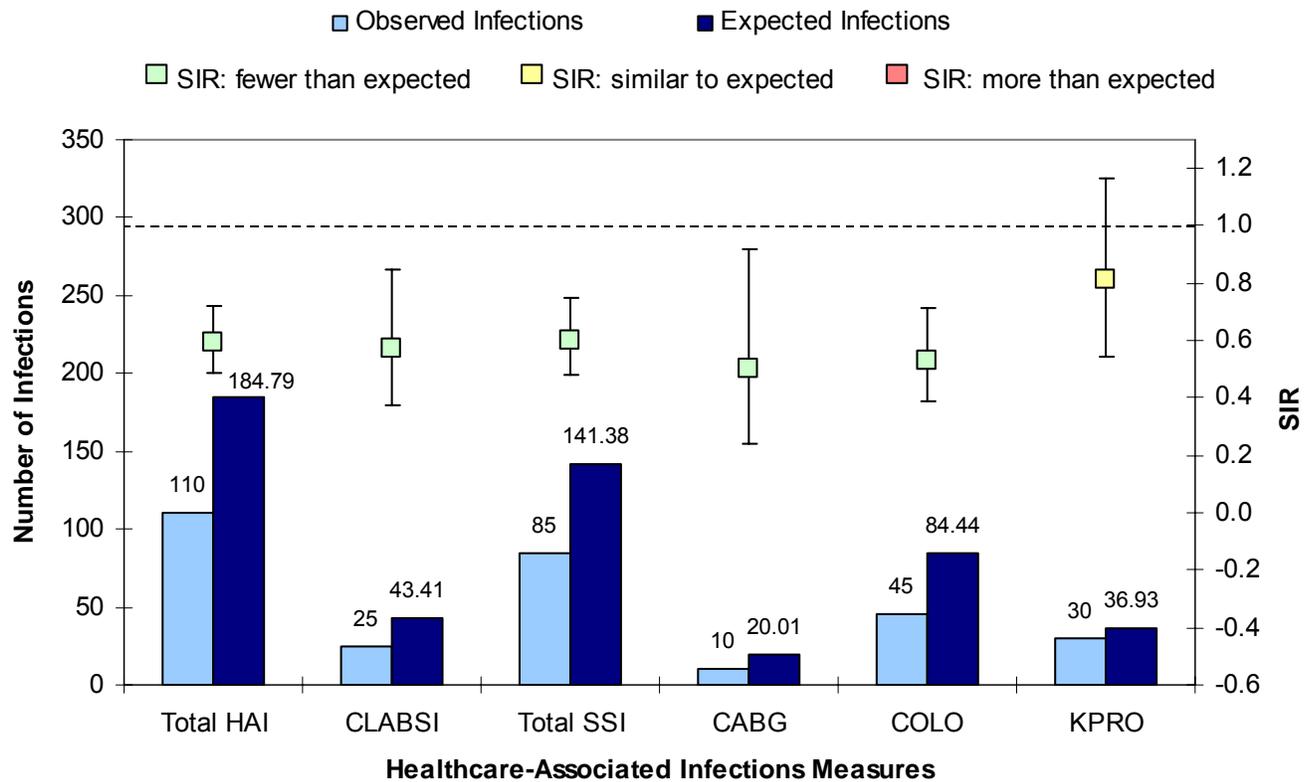
SSI: Surgical site infections

CABG: Surgical site infections associated with coronary artery bypass graft procedures

COLO: Surgical site infections associated with colon procedures

KPRO: Surgical site infections associated with knee arthroplasty procedures

FIGURE 1: Statewide standardized infection ratios (SIR), Jan 1–Dec 31, 2011



HAI: Healthcare-associated infection
 CLABSI: Central line-associated blood stream infections
 SSI: Surgical site infections
 CABG: Surgical site infections associated with coronary artery bypass graft procedures
 COLO: Surgical site infections associated with colon procedures
 KPRO: Surgical site infections associated with knee arthroplasty procedures

Overall Standardized Infection Ratios by Hospital

The table below shows the total number of HAI reported by each hospital. These infections represent CLABSI in ICUs and SSI following colon, knee, and coronary artery bypass procedures. Twenty hospitals had robust enough data to provide in the table. Of these 20, four hospitals had an overall number of infections that was lower than expected based on national data. None of the hospitals observed more infections than was expected. The remaining 16 observed a similar number of infections as were expected based on national data.

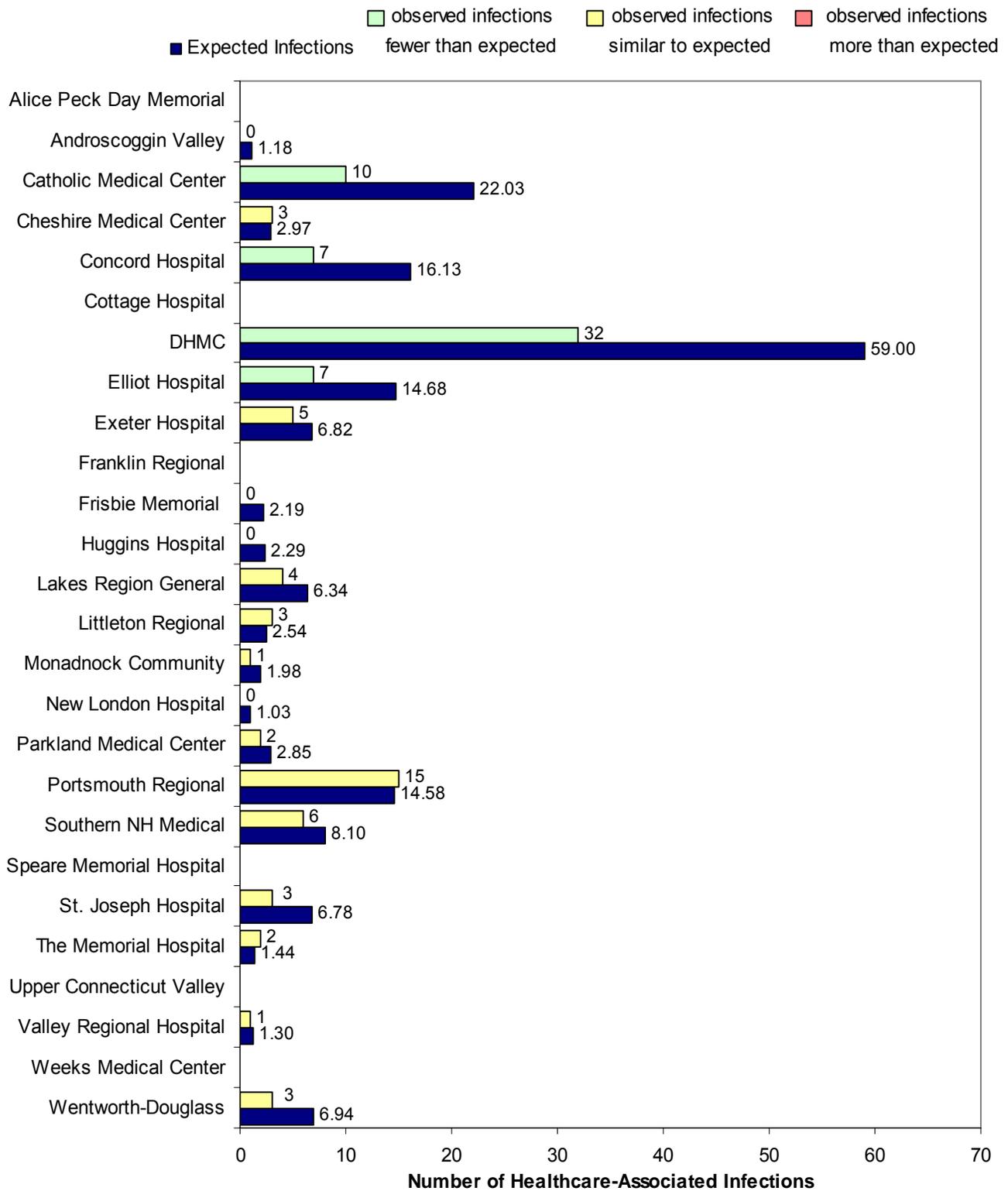
TABLE 2: Overall healthcare-associated infections standardized infection ratios, Jan 1–Dec 31, 2011

Hospital	Observed Infections*	Expected Infections	Standardized Infection Ratio (SIR)	95% Confidence Interval	Comparison to Expected Number of Infections
Alice Peck Day Memorial	†	†	†	†	†
Androscoggin Valley	0	1.18	0.00	- , 3.12	Similar
Catholic Medical Center	10	22.03	0.45	0.22 , 0.83	Lower
Cheshire Medical Center	3	2.97	1.01	0.20 , 2.95	Similar
Concord Hospital	7	16.13	0.43	0.17 , 0.89	Lower
Cottage Hospital	†	†	†	†	†
DHMC	32	59.00	0.54	0.37 , 0.77	Lower
Elliot Hospital	7	14.68	0.48	0.19 , 0.98	Lower
Exeter Hospital	5	6.82	0.73	0.24 , 1.71	Similar
Franklin Regional	†	†	†	†	†
Frisbie Memorial	0	2.19	0.00	- , 1.68	Similar
Huggins Hospital	0	2.29	0.00	- , 1.60	Similar
Lakes Region General	4	6.34	0.63	0.17 , 1.61	Similar
Littleton Regional	3	2.54	1.18	0.24 , 3.45	Similar
Monadnock Community	1	1.98	0.51	0.01 , 2.81	Similar
New London Hospital	0	1.03	0.00	- , 3.58	Similar
Parkland Medical Center	2	2.85	0.70	0.08 , 2.53	Similar
Portsmouth Regional	15	14.58	1.03	0.58 , 1.70	Similar
Southern NH Medical	6	8.10	0.74	0.27 , 1.61	Similar
Speare Memorial Hospital	†	†	†	†	†
St. Joseph Hospital	3	6.78	0.44	0.09 , 1.29	Similar
The Memorial Hospital	2	1.44	1.39	0.16 , 5.03	Similar
Upper Connecticut Valley	†	†	†	†	†
Valley Regional Hospital	1	1.30	0.77	0.01 , 4.27	Similar
Weeks Medical Center	†	†	†	†	†
Wentworth-Douglass	3	6.94	0.43	0.09 , 1.26	Similar
State Total	110	184.79	0.60	0.49 , 0.72	Lower

† Data are not shown for hospitals with less than one expected infection.

* Observed number of infections includes all infections that are required to be reported (central line–associated bloodstream infections and surgical site infections following coronary artery bypass, colon, and knee arthroplasty procedures).

FIGURE 2: Overall healthcare-associated infections standardized infection ratios, Jan 1–Dec 31, 2011



Note: Data are not shown for hospitals with less than one expected infection. Observed number of infections includes all infections that are required to be reported (central line–associated bloodstream infections and surgical site infections following coronary artery bypass, colon, and knee arthroplasty procedures).

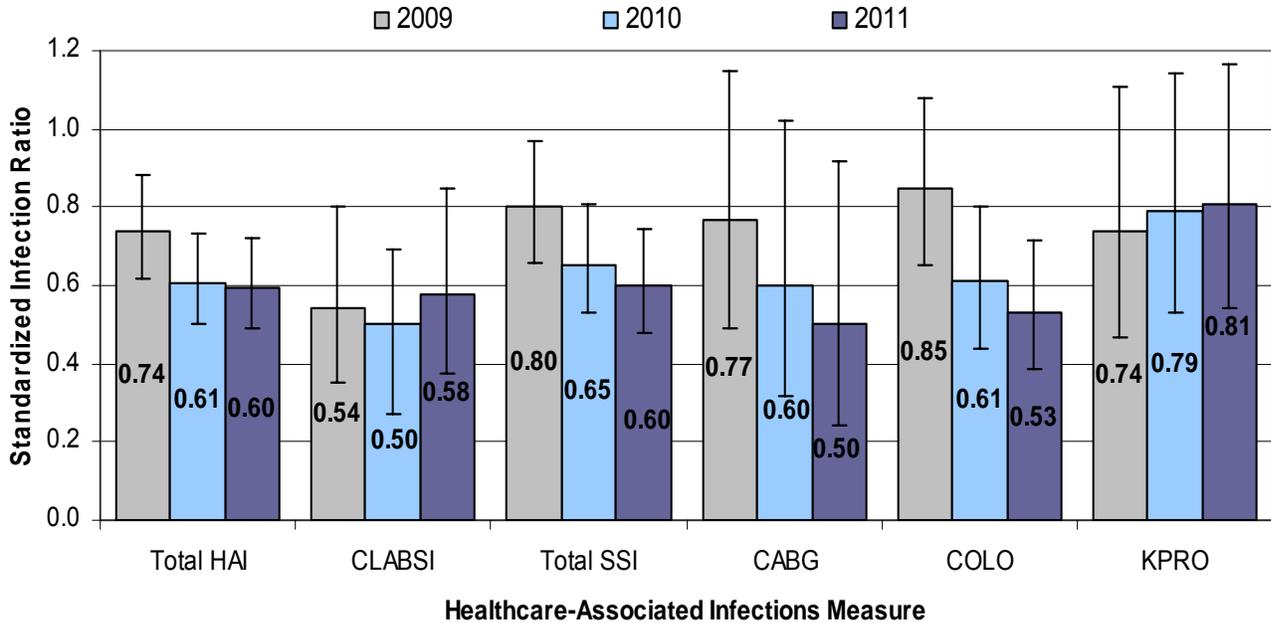
Overall statewide standardized infection ratios: Comparison to 2010 Data

Overall, the statewide SIR in 2011 was similar compared to 2010. In 2011, a total of 110 HAIs were reported, representing 85 SSI and 25 CLABSI compared to 114 HAI (94 SSI and 20 CLABSI) in 2010. Nineteen hospitals had robust enough data to provide overall HAI SIR in table 4. While the overall SIR decreased in many hospitals, these decreases were not statistically significant.

TABLE 3: Overall healthcare-associated infections standardized infection ratios, comparison between 2010 and 2011

Hospital	Standardized Infection Ratio (SIR) 2011	95% Confidence Interval 2011	Standardized Infection Ratio (SIR) 2010	95% Confidence Interval 2010	2011 Compared to 2010
Overall HAI SIR	0.60	0.49 , 0.72	0.61	0.50 , 0.73	Similar
CLABSI SIR	0.58	0.37 , 0.85	0.45	0.27 , 0.69	Similar
Overall SSI SIR	0.60	0.48, 0.75	0.65	0.53 , 0.81	Similar
CABG SIR	0.50	0.24, 0.92	0.60	0.32 , 1.02	Similar
COLO SIR	0.53	0.39, 0.72	0.61	0.44 , 0.80	Similar
KPRO SIR	0.81	0.54, 1.17	0.79	0.53 , 1.14	Similar

FIGURE 3: Statewide standardized infection ratios (SIR), comparison between 2009, 2010, and 2011



HAI: Healthcare-associated infection

CLABSI: Central line-associated blood stream infections

SSI: Surgical site infections

CABG: Surgical site infections associated with coronary artery bypass graft procedures

COLO: Surgical site infections associated with colon procedures

KPRO: Surgical site infections associated with knee arthroplasty procedures

TABLE 4: Overall healthcare-associated infections standardized infection ratios by hospital, comparison between 2010 and 2011

Hospital	Standardized Infection Ratio (SIR) 2011	95% Confidence Interval 2011	Standardized Infection Ratio (SIR) 2010	95% Confidence Interval 2010	2011 Compared to 2010
Alice Peck Day Memorial	†	†	†	†	†
Androscoggin Valley	0.00	-, 3.12	0.58	0.01, 3.23	†
Catholic Medical Center	0.45	0.22, 0.83	0.30	0.11, 0.65	Similar
Cheshire Medical Center	1.01	0.20, 2.95	0.28	-, 1.56	Similar
Concord Hospital	0.43	0.17, 0.89	0.48	0.21, 0.94	Similar
Cottage Hospital	†	†	†	†	†
DHMC	0.54	0.37, 0.77	0.36	0.23, 0.55	Similar
Elliot Hospital	0.48	0.19, 0.98	1.35	0.78, 2.15	Similar
Exeter Hospital	0.73	0.24, 1.71	0.90	0.36, 1.86	Similar
Franklin Regional	†	†	†	†	†
Frisbie Memorial	0.00	-, 1.68	0.00	-, 1.33	Similar
Huggins Hospital	0.00	-, 1.60	0.30	0.00, 1.64	Similar
Lakes Region General	0.63	0.17, 1.61	0.52	0.10, 1.53	Similar
Littleton Regional	1.18	0.24, 3.45	0.42	0.01, 2.34	Similar
Monadnock Community	0.51	0.01, 2.81	1.40	0.16, 5.07	Similar
New London Hospital	0.00	-, 3.58	0.00	-, 2.64	Similar
Parkland Medical Center	0.70	0.08, 2.53	1.95	0.71, 4.25	Similar
Portsmouth Regional	1.03	0.58, 1.70	1.34	0.83, 2.04	Similar
Southern NH Medical	0.74	0.27, 1.61	0.68	0.25, 1.49	Similar
Speare Memorial Hospital	†	†	4.37	1.41, 10.21	†
St. Joseph Hospital	0.44	0.09, 1.29	0.17	0.00, 0.94	Similar
The Memorial Hospital	1.39	0.16, 5.03	0.00	-, 2.84	Similar
Upper Connecticut Valley	†	†	†	†	†
Valley Regional Hospital	0.77	0.01, 4.27	0.64	0.01, 3.58	Similar
Weeks Medical Center	†	†	†	†	†
Wentworth-Douglass	0.43	0.09, 1.26	0.24	0.03, 0.88	Similar
State Total	0.60	0.49, 0.72	0.61	0.50, 0.73	Similar

† Data are not shown for hospitals with less than one expected infection.

Central Line–Associated Bloodstream Infections

CLABSI is a laboratory-confirmed bloodstream infection that develops after insertion of a central line and is not secondary to an infection at another body site. The following tables show the number of infections that were identified in adult intensive care units at each hospital in NH. The analyses presented in the tables below show that among hospitals that had robust enough data to report, all hospitals observed a similar number of infections as expected based on national data. See methods for additional information on data collection.

Statewide CLABSI Rates

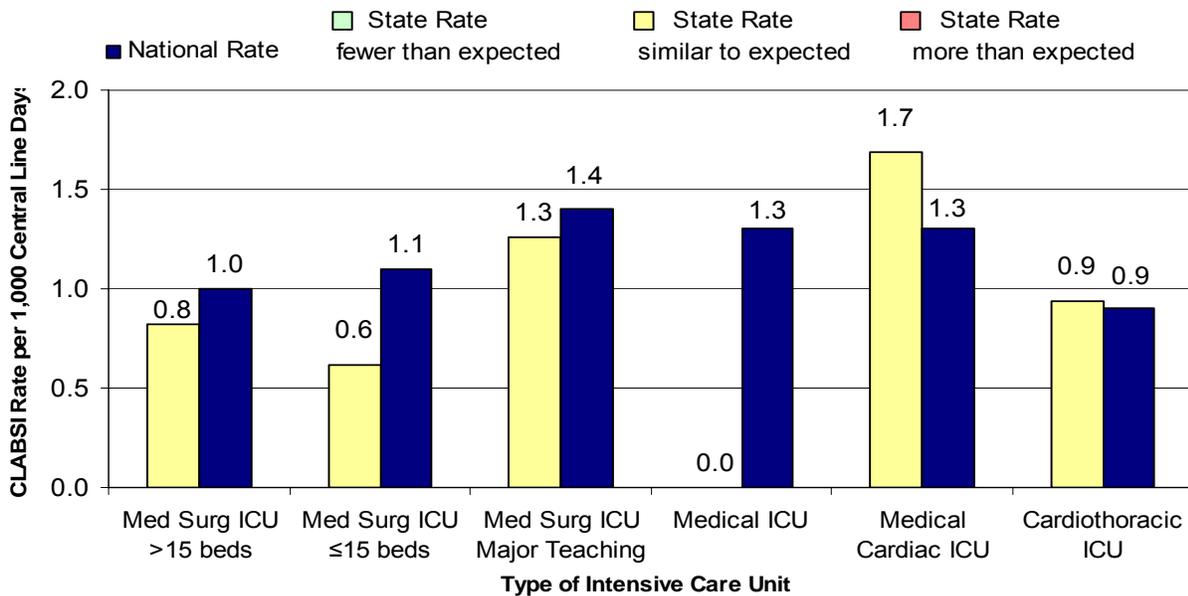
The statewide rates for CLABSI reported in NH ICUs were similar to the national rate.

TABLE 5: Statewide rates for central line–associated bloodstream infections, Jan 1–Dec 31, 2011

CLABSI Rates	Infections	Denominator	State Rate	National Rate	p-value	State Rate Compared to National Rate
Medical/Surgical ICU >15 bed (n=3)	6	7307	0.8	1.0	0.36	Similar
Medical/Surgical ICU ≤15 beds (n=18)	4	6527	0.6	1.1	0.17	Similar
Medical/Surgical ICU- Major Teaching Hospital (n=1)	8	6375	1.3	1.4	0.48	Similar
Medical ICU (n=2)	0	184	0.0	1.3	0.79	Similar
Medical Cardiac ICU (n=2)	5	2962	1.7	1.3	0.36	Similar
Cardiothoracic ICU (n=1)	2	2140	0.9	0.9	0.68	Similar

Note: For CLABSI, denominator is number of central line days. CLABSI rate is the number of infections per 1,000 central line days.

FIGURE 4: Statewide rates for central line–associated bloodstream infections, Jan 1–Dec 31, 2011



Med Surg = medical surgical

ICU = intensive care unit

TABLE 6: Central line–associated bloodstream infections rates, Jan 1–Dec 31, 2011

	Unit Type	Infections	Central line days	Hospital Rate	National Rate	P-value	Hospital Rate Compared to National Rate
Alice Peck Day	-	-	-	-	-	-	-
Androscoggin Valley	Med/Surg ICU	0	81	0.0	1.1	0.92	Similar
Catholic Medical	Med/Surg ICU	3	3551	0.8	1.0	0.49	Similar
Cheshire Medical	Medical ICU	0	130	0.0	1.3	0.84	Similar
Concord Hospital	Med/Surg ICU	1	1929	0.5	1.0	0.40	Similar
Cottage Hospital	Med/Surg ICU	0	86	0.0	1.1	0.91	Similar
DHMC	Med Cardiac ICU	5	2263	2.2	1.3	0.19	Similar
	Med/Surg ICU	8	6375	1.3	1.4	0.48	Similar
Elliot Hospital	Med Cardiac ICU	0	699	0.0	1.3	0.39	Similar
	Med/Surg ICU	2	1827	1.1	1.0	0.57	Similar
Exeter Hospital	Med/Surg ICU	2	1513	1.3	1.1	0.49	Similar
Franklin Regional	Med/Surg ICU	†	†	†	1.1	†	†
Frisbie Memorial	Med/Surg ICU	0	293	0.0	1.1	0.73	Similar
Huggins Hospital	Med/Surg ICU	0	192	0.0	1.1	0.81	Similar
Lakes Region General	Med/Surg ICU	0	501	0.0	1.1	0.58	Similar
Littleton Regional	Med/Surg ICU	0	261	0.0	1.1	0.75	Similar
Monadnock Hospital	Med/Surg ICU	0	52	0.0	1.1	0.95	Similar
New London Hospital	Med/Surg ICU	0	57	0.0	1.1	0.94	Similar
Parkland Medical	Med/Surg ICU	0	482	0.0	1.1	0.59	Similar
Portsmouth Regional	Cardiothoracic ICU	2	2140	0.9	0.9	0.68	Similar
Southern NH Medical	Med/Surg ICU	2	1101	1.8	1.1	0.34	Similar
Speare Memorial	Med/Surg ICU	†	†	†	1.1	†	†
St. Joseph Hospital	Med/Surg ICU	0	574	0.0	1.1	0.54	Similar
The Memorial Hospital	Medical ICU	0	54	0.0	1.3	0.93	Similar
Upper Connecticut Valley	Med/Surg ICU	†	†	†	1.1	†	†
Valley Regional	Med/Surg ICU	†	†	†	1.1	†	†
Weeks Medical Center	Med/Surg ICU	†	†	†	1.1	†	†
Wentworth Douglass	Med/Surg ICU	0	1218	0.0	1.1	0.27	Similar

Note: Alice Peck Day Memorial Hospital did not have an intensive care unit in which to monitor infections and as such, had no data to report.

† Data are not shown for hospitals with fewer than 50 central line days.

Med/Surg = medical surgical ICU = intensive care unit

CLABSI standardized infection ratios

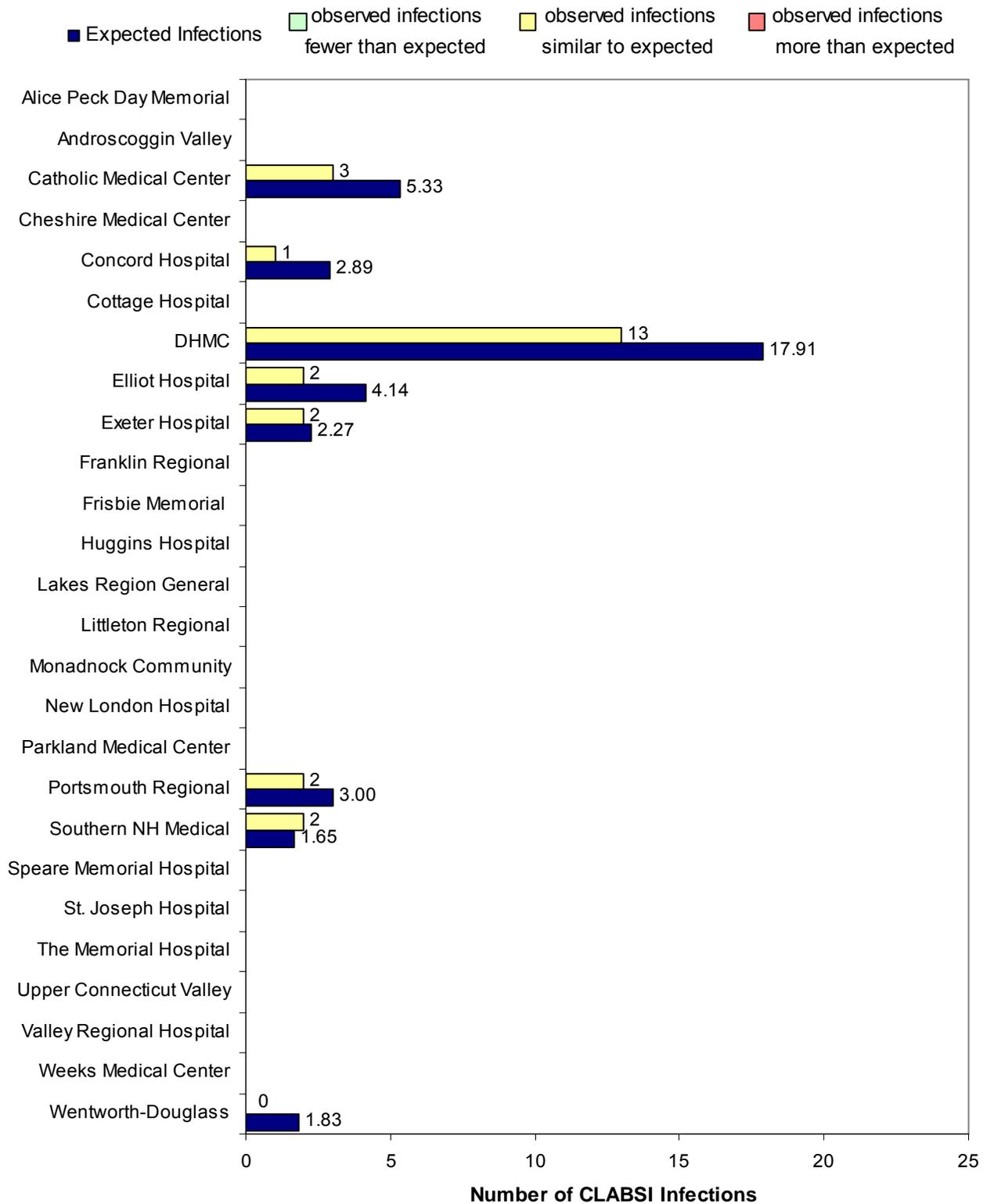
Overall, the observed number of CLABSI was 42% fewer than expected based on national data. The analysis presented in Table 7 shows that eight hospitals observed a similar number of infections as expected, and none of the hospitals observed more infections than expected based on national data.

TABLE 7: Central line–associated bloodstream infections standardized infection ratios, Jan 1–Dec 31, 2011

	Observed Infections	Expected Infections	Standardized Infection Ratio (SIR)	95% Confidence Interval	Comparison to Expected Number of Infections
Alice Peck Day Memorial	†	†	†	†	†
Androscoggin Valley	†	†	†	†	†
Catholic Medical Center	3	5.33	0.56	0.12, 1.65	Similar
Cheshire Medical Center	†	†	†	†	†
Concord Hospital	1	2.89	0.35	0.01, 1.95	Similar
Cottage Hospital	†	†	†	†	†
DHMC	13	17.91	0.73	0.39, 1.24	Similar
Elliot Hospital	2	4.14	0.48	0.06, 1.75	Similar
Exeter Hospital	2	2.27	0.88	0.11, 3.18	Similar
Franklin Regional	†	†	†	†	†
Frisbie Memorial	†	†	†	†	†
Huggins Hospital	†	†	†	†	†
Lakes Region General	†	†	†	†	†
Littleton Regional	†	†	†	†	†
Monadnock Community	†	†	†	†	†
New London Hospital	†	†	†	†	†
Parkland Medical Center	†	†	†	†	†
Portsmouth Regional	2	3.00	0.67	0.08, 2.41	Similar
Southern NH Medical	2	1.65	1.21	0.15, 4.37	Similar
Speare Memorial Hospital	†	†	†	†	†
St. Joseph Hospital	†	†	†	†	†
The Memorial Hospital	†	†	†	†	†
Upper Connecticut Valley	†	†	†	†	†
Valley Regional Hospital	†	†	†	†	†
Weeks Medical Center	†	†	†	†	†
Wentworth-Douglass	0	1.83	0.00	- , 2.02	Similar
State Total	25	43.41	0.58	0.37, 0.85	Lower

Note: Alice Peck Day Memorial Hospital did not have an intensive care unit in which to monitor infections.
 † Data are not shown for hospitals with less than one expected infection.

FIGURE 5: Central line-associated bloodstream infections (CLABSI) standardized infection ratios, Jan 1–Dec 31, 2011



Note: Alice Peck Day Memorial Hospital did not have an intensive care unit in which to monitor infections. Data are not shown for hospitals with less than one expected infection.

Central line-associated bloodstream infections: Comparison to 2010 Data

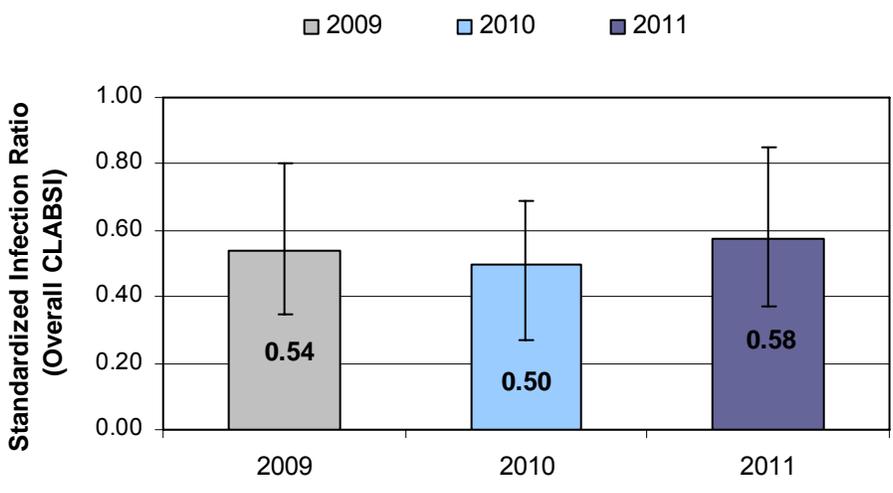
Overall, in 2011 the statewide CLABSI SIR was similar to 2010 and 2009 (Figure 6). The analysis presented in Table 8 shows that all 8 hospitals for which data are shown observed a similar number of infections in 2011 and 2010.

TABLE 8: Central line-associated bloodstream infections standardized infection ratios, comparison between 2010 and 2011

Hospital	Standardized Infection Ratio (SIR) 2011	95% Confidence Interval 2011	Standardized Infection Ratio (SIR) 2010	95% Confidence Interval 2010	2011 Compared to 2010
Alice Peck Day Memorial	†	†	†	-	-
Androscoggin Valley	†	†	†	†	†
Catholic Medical Center	0.56	0.12, 1.65	0.63	0.17 , 1.63	Similar
Cheshire Medical Center	†	†	†	†	†
Concord Hospital	0.35	0.01, 1.93	0.96	0.26 , 2.48	Similar
Cottage Hospital	†	†	†	†	†
DHMC	0.73	0.39, 1.24	0.29	0.12 , 0.56	Similar
Elliot Hospital	0.48	0.06, 1.75	1.73	0.59 , 3.95	Similar
Exeter Hospital	0.88	0.11, 3.18	0.00	0.00 , 1.27	Similar
Franklin Regional	†	†	†	†	†
Frisbie Memorial	†	†	†	†	†
Huggins Hospital	†	†	†	†	†
Lakes Region General	†	†	†	†	†
Littleton Regional	†	†	†	†	†
Monadnock Community	†	†	†	†	†
New London Hospital	†	†	†	†	†
Parkland Medical Center	†	†	†	†	†
Portsmouth Regional	0.67	0.08, 2.41	0.46	0.08 , 1.45	Similar
Southern NH Medical	1.21	0.15, 4.37	0.00	0.00 , 2.60	Similar
Speare Memorial Hospital	†	†	†	†	†
St. Joseph Hospital	†	†	†	†	†
The Memorial Hospital	†	†	†	†	†
Upper Connecticut Valley	†	†	†	†	†
Valley Regional Hospital	†	†	†	†	†
Weeks Medical Center	†	†	†	†	†
Wentworth-Douglass	0.00	- , 2.02	0.00	0.00 , 1.90	Similar
State Total	0.58	0.37, 0.85	0.45	0.27 , 0.69	Similar

Note: Alice Peck Day Memorial Hospital did not have an intensive care unit in which to monitor infections.
 † Data are not shown for hospitals with less than one expected infection.

FIGURE 6: Overall central line-associated bloodstream infections standardized infection ratio (SIR) by year, 2009-2011



Central Line Insertion Practices

Central line insertion practices (CLIP) monitoring assesses key infection prevention practices that occur during the insertion of a central line. In order to comply with all infection prevention practices during the insertion, the inserter must: 1) perform hand hygiene prior to insertion, 2) use all five barriers (gloves, gown, cap, mask, and drape), 3) use an appropriate skin preparation agent, and 4) ensure skin was dry prior to insertion. See methods section for information on monitoring CLIP.

The tables below show the number of insertions during which all four infection-prevention practices were appropriately followed, which is referred to as bundle adherence. A confidence interval is provided to assess any statistically significant differences in bundle adherence between groups. Groups are compared with the overall State compliance percentage since there are no national data for comparison. Groups with a confidence interval that overlaps the State's confidence interval are considered to be similar to the State adherence percentage. Any occupation or hospital with a confidence interval that is higher than the State's confidence interval is considered to have a significantly higher percentage than the State adherence percentage. Groups with a confidence interval that is lower than the State's confidence interval are considered to have a significantly lower percentage than the State adherence percentage. The analysis presented in Table 9 suggests that IV Teams more frequently adhere and Interns, Residents, and Fellows less frequently adhere to all four practices during central line insertions. The analysis presented in Table 10 shows that five hospitals had higher adherence, seven hospitals had similar adherence, and two hospitals had lower adherence compared with the State adherence percentage.

TABLE 9: Central line insertion practices adherence percentages by occupation of inserter, Jan 1–Dec 31, 2011

Occupation of Inserter	Insertions that Adhered to Bundle*	Total Number of Insertions	% Adherence	95% Confidence Interval	Occupation % Compared to State %
Advanced Practice Nurse	†	†	†	†	†
Attending Physician	691	721	95.8	94.2 , 97.1	Similar
Fellow	204	230	88.7	84.1 , 92.3	Lower
Intern/Resident	244	272	89.7	85.7 , 92.9	Lower
IV Team	466	466	100.0	99.4 , -	Higher
Other	143	144	99.3	86.6 . -	Similar
Other Medical Staff	150	152	98.7	95.7 , 99.8	Similar
Physician Assistant	46	50	92.0	81.8 , 97.4	Similar
PICC Team	103	106	97.2	92.5 , 99.3	Similar
Registered Nurse	25	25	100.0	88.7 , -	Similar
Student, Other	†	†	†	†	†
State Total	2075	2169	95.7	94.8 , 96.5	

Note: An IV Team and PICC team is a specially trained group of practitioners (most often nurses or phlebotomists) who are dedicated to assessing, maintaining, and inserting intravascular devices or peripheral intravenous central catheters, respectively. Other Medical Staff represents other (non-attending) physicians.

† Data are not shown when fewer than 20 insertions were performed.

* Bundle adherence refers to performing all four infection-prevention practices during central line insertion.

TABLE 10: Central line insertion practices adherence percentages by hospital, Jan 1–Dec 31, 2011

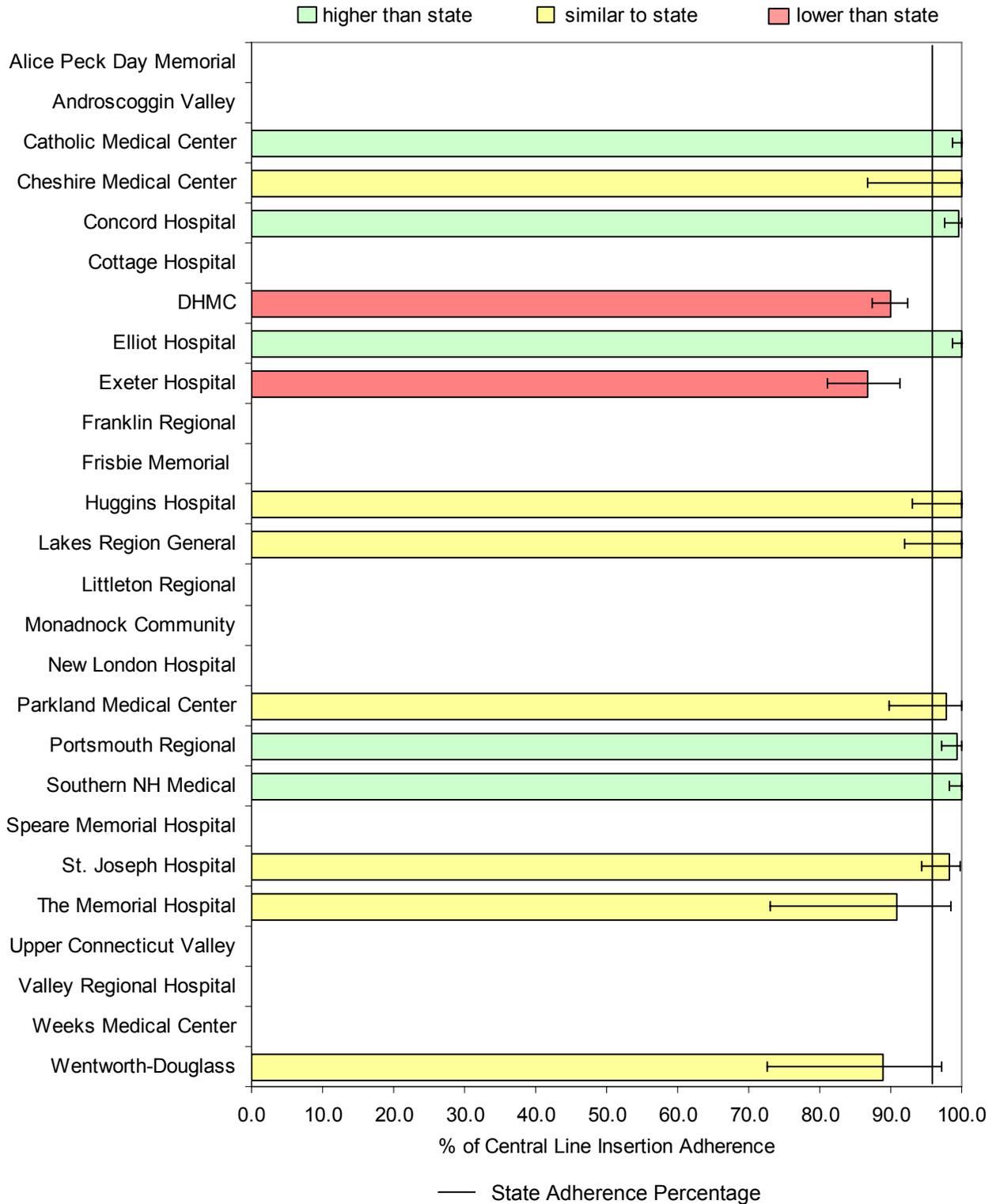
Hospital	Insertions that Adhered to Bundle*	Total Number of Insertions	% Adherence	95% Confidence Interval	Hospital % Compared to State %
Alice Peck Day Memorial	-	-	-	-	-
Androscoggin Valley	†	†	†	†	†
Catholic Medical Center	225	225	100.0	98.7 , -	Higher
Cheshire Medical Center	21	21	100.0	86.7 , -	Similar
Concord Hospital	213	214	99.5	97.7 , -	Higher
Cottage Hospital	†	†	†	†	†
DHMC	536	595	90.1	87.5 , 92.3	Lower
Elliot Hospital	216	216	100.0	98.6 , -	Higher
Exeter Hospital	151	174	86.8	81.1 , 91.2	Lower
Franklin Regional	†	†	†	†	†
Frisbie Memorial	†	†	†	†	†
Huggins Hospital	41	41	100.0	93.0 , -	Similar
Lakes Region General	36	36	100.0	92.0 , -	Similar
Littleton Regional	†	†	†	†	†
Monadnock Community	†	†	†	†	†
New London Hospital	†	†	†	†	†
Parkland Medical Center	45	46	97.8	89.7 , 99.9	Similar
Portsmouth Regional	174	175	99.4	97.2 , 100.0	Higher
Southern NH Medical	173	173	100.0	98.3 , -	Higher
Speare Memorial Hospital	†	†	†	†	†
St. Joseph Hospital	113	115	98.3	94.4 , 99.7	Similar
The Memorial Hospital	20	22	90.9	73.1 , 98.5	Similar
Upper Connecticut Valley	†	†	†	†	†
Valley Regional Hospital	†	†	†	†	†
Weeks Medical Center	†	†	†	†	†
Wentworth-Douglass	24	27	88.9	72.7 , 97.1	Similar
State Total	2075	2169	95.7	94.8 , 96.5	

Note: Alice Peck Day Memorial Hospital did not have an intensive care unit in which to monitor insertion practices. Upper Connecticut Valley Hospital did not perform any insertions in the intensive care unit for 2011.

† Data are not shown when fewer than 20 insertions were performed.

* Bundle adherence refers to performing all four infection-prevention practices during central line insertion.

FIGURE 7: Central line insertion practices adherence percentages by hospital, Jan 1–Dec 31, 2011



Note: Alice Peck Day Memorial Hospital did not have an intensive care unit in which to monitor insertion practices. Upper Connecticut Valley did not perform any insertions in the intensive care unit.

Data are not shown when fewer than 20 insertions were performed.

* Bundle adherence refers to performing all four infection-prevention practices during central line insertion.

Central line insertion practices: Comparison to 2010 Data

Overall, in 2011 the statewide adherence percentage for CLIP was similar compared to 2010. The analysis presented in Table 11 shows that interns and residents had lower CLIP adherence compared to 2010. All other occupations had similar CLIP compared to 2010. Specifically by hospital, the analysis presented in Table 12 shows that one hospital increased CLIP adherence in 2011 compared to 2010, eight hospitals had similar CLIP adherence, and two hospital decreased CLIP adherence.

TABLE 11: Central line insertion practices adherence percentages by occupation of inserter, comparison between 2010 and 2011

Occupation of Inserter	% Adherence* 2011	95% Confidence Interval 2011	% Adherence* 2010	95% Confidence Interval 2010	2011 Compared to 2010
Advanced Practice Nurse	†	†	-	-	-
Attending Physician	95.8	94.2 , 97.1	96.1	94.6 , 97.3	Similar
Fellow	88.7	84.1 , 92.3	93.8	90.5 , 96.2	Similar
Intern/Resident	89.7	85.7 , 92.9	98.1	96.4 , 99.1	Lower
IV Team	100.0	99.4 , -	99.8	99.1 , -	Similar
Other	99.3	86.6 . -	94.4	90.1 , 97.3	Similar
Other Medical Staff	98.7	95.7 , 99.8	94.3	89.0 , 97.5	Similar
Physician Assistant	92.0	81.8 , 97.4	95.7	86.4 , 99.3	Similar
PICC Team	97.2	92.5 , 99.3	95.9	87.2 , 99.3	Similar
Registered Nurse	100.0	88.7 , -	-	-	-
Student, other	†	†	†	†	†
State Total	95.7	94.8 , 96.5	96.8	96.0 , 97.4	Similar

Note: An IV Team is a specially trained group of practitioners (most often nurses or phlebotomists) who are dedicated to assessing, maintaining, and inserting intravascular devices. Other Medical Staff represents other (non-attending) physicians. Advanced practice nurse, registered nurse, or PICC team central line insertion bundle adherence data were not collected individually in 2009.

† Data are not shown when fewer than 20 insertions were performed.

* Bundle adherence refers to performing all four infection-prevention practices during central line insertion.

TABLE 12: Central line insertion practices adherence percentages by hospital, comparison between 2010 and 2011

Hospital	% Adherence* 2011	95% Confidence Interval 2011	% Adherence* 2010	95% Confidence Interval 2010	2011 Compared to 2010
Alice Peck Day Memorial	-	-	-	-	-
Androscoggin Valley	†	†	†	†	†
Catholic Medical Center	100.0	98.7 , -	100.0	98.6 , -	Similar
Cheshire Medical Center	100.0	86.7 , -	†	†	†
Concord Hospital	99.5	97.7 , -	98.8	96.7 , 99.7	Similar
Cottage Hospital	†	†	†	†	†
DHMC	90.1	87.5 , 92.3	95.7	94.2 , 97.0	Lower
Elliot Hospital	100.0	98.6 , -	99.1	97.1 , 99.9	Similar
Exeter Hospital	86.8	81.1 , 91.2	96.8	93.5 , 98.7	Lower
Franklin Regional	†	†	†	†	†
Frisbie Memorial	†	†	†	†	†
Huggins Hospital	100.0	93.0 , -	95.8	86.9 , 99.3	Similar
Lakes Region General	100.0	92.0 , -	93.6	86.4 , 97.6	Similar
Littleton Regional	†	†	†	†	†
Monadnock Community	†	†	100.0	91.0 , -	†
New London Hospital	†	†	†	†	†
Parkland Medical Center	97.8	89.7 , 99.9	100.0	88.3 , -	Similar
Portsmouth Regional	99.4	97.2 , 100.0	94.0	88.9 , 97.2**	Higher
Southern NH Medical	100.0	98.3 , -	100.0	98.1 , -	Similar
Speare Memorial Hospital	†	†	-	-	†
St. Joseph Hospital	98.3	94.4 , 99.7	99.3	96.5 , -	Similar
The Memorial Hospital	90.9	73.1 , 98.5	†	†	†
Upper Connecticut Valley	-	-	-	-	-
Valley Regional Hospital	†	†	†	†	†
Weeks Medical Center	†	†	†	†	†
Wentworth-Douglass	88.9	72.7 , 97.1	†	†	†
State Total	95.7	94.8 , 96.5	96.8	96.0 , 97.4	Similar

Note: Alice Peck Day Memorial Hospital did not have an intensive care unit in which to monitor insertion practices. Upper Connecticut Valley Hospital did not perform any insertions in the ICU in 2011 and 2010. † Data are not shown when fewer than 20 insertions were performed.

* Bundle adherence refers to performing all four infection-prevention practices during central line insertion.

** The upper bound of this confidence interval is 97.17, which rounds up to 97.2. Therefore, since the true unrounded interval is less than 97.2, the CLIP adherence is significantly higher.

Surgical Site Infections

In general terms, a SSI is an infection that develops at the site of a surgical procedure. The tables below show the number of infections that were identified following the three monitored procedures at each acute care hospital in New Hampshire. Overall, the observed number of surgical site infections was 40% fewer than expected based on national data. The analysis presented in Table 13 shows that three hospitals observed fewer infections than expected and sixteen hospitals observed a similar number of infections as expected. For coronary artery bypass graft procedures (Table 15), all four hospitals observed a similar number of infections as expected. For colon procedures (Table 16), two hospitals observed fewer infections than expected and 14 hospitals observed a similar number of infections as expected. For knee arthroplasty (Table 17), ten hospitals observed a similar number of infections as expected based on national data. None of the hospitals observed more surgical site infections for coronary artery bypass graft, colon, or knee arthroplasty procedures than expected based on national data.

In the 2009 HAI report, SSI rates and SIRs were presented. This 2011 report does not display SSI rates due to a change in NHSN analysis features, as CDC transitions from risk adjusted rates to SIRs. SSI data are presented throughout this report as standardized infection ratios (SIRs). This allows adjustment for underlying patient or hospital factors. The new SSI SIR is a result of logistic regression modeling, providing better risk adjustment and comparisons. See Appendix 1 for technical notes for more detail regarding the SIR.

Post Discharge Surveillance for Surgical Site Infections

Hospitals do not use a standard method to identify infections once a patient has been discharged (i.e., post-discharge surveillance). This may make data interpretation difficult because a higher SSI rate at a hospital could be a reflection of poor infection prevention practices or a more comprehensive system for identifying infections. SSI data detected through post-discharge surveillance were analyzed for 2009-2010 and infection control staff were interviewed regarding methods of SSI surveillance. The percent of SSIs detected post-discharge were calculated for each hospital and compared to a moving state average (hospital vs. all other hospitals). Statistical significance was calculated by Wald normal approximation.

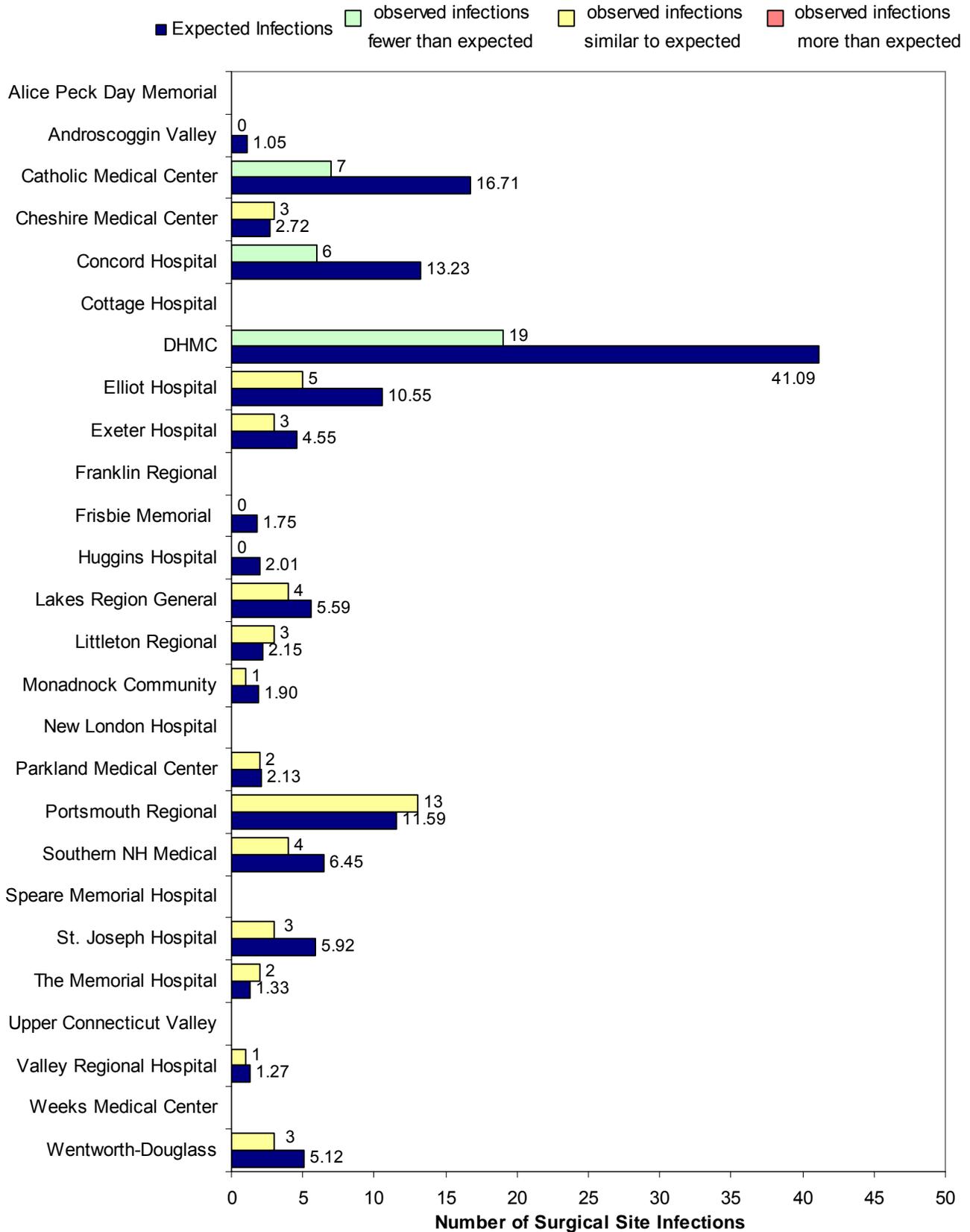
Table 18 shows the percentage of surgical site infections identified through post-discharge surveillance at each acute care hospital in New Hampshire. Of the 21 hospitals with robust enough data, one hospital identified more SSIs through post-discharge surveillance, 17 hospitals identified similar infections through post-discharge surveillance, and three hospitals identified fewer infectious through post-discharge surveillance when compared to the state rolling average. Out of 211 SSIs reported 2009-2010, 30% (63) were detected during admission, 41% (86) were detected during readmission, and 29% (62) were detected post-discharge. Most of the infections detected post-discharge were superficial infections (58%). Of the 62 infections detected post-discharge, 53% were colon procedures, 27% were coronary artery bypass graft procedures, and 19% were knee arthroplasty procedures. NH hospital infection prevention staff rely primarily on follow-up letters to surgeons, culture reports, and outpatient clinic notes as forms of post-discharge surveillance. Other methods include patient letters, and/or communication with other healthcare facilities.

TABLE 13: Surgical site infections standardized infection ratios, Jan 1–Dec 31, 2011

Hospital	Observed Infections	Expected Infections	Standardized Infection Ratio (SIR)	95% Confidence Interval	Comparison to Expected Number of Infections
Alice Peck Day Memorial	†	†	†	†	†
Androscoggin Valley	0	1.05	0.00	- , 3.50	Similar
Catholic Medical Center	7	16.71	0.42	0.17, 0.86	Lower
Cheshire Medical Center	3	2.72	1.10	0.23, 3.22	Similar
Concord Hospital	6	13.23	0.45	0.17, 0.99	Lower
Cottage Hospital	†	†	†	†	†
DHMC	19	41.09	0.46	0.28, 0.72	Lower
Elliot Hospital	5	10.55	0.47	0.15, 1.11	Similar
Exeter Hospital	3	4.55	0.66	0.14, 1.93	Similar
Franklin Regional	†	†	†	†	†
Frisbie Memorial	0	1.75	0.00	- , 2.11	Similar
Huggins Hospital	0	2.01	0.00	- , 1.84	Similar
Lakes Region General	4	5.59	0.72	0.20, 1.83	Similar
Littleton Regional	3	2.15	1.40	0.29, 4.08	Similar
Monadnock Community	1	1.90	0.53	0.01, 2.93	Similar
New London Hospital	†	†	†	†	†
Parkland Medical Center	2	2.13	0.94	0.11, 3.39	Similar
Portsmouth Regional	13	11.59	1.12	0.60, 1.92	Similar
Southern NH Medical	4	6.45	0.62	0.17, 1.59	Similar
Speare Memorial Hospital	†	†	†	†	†
St. Joseph Hospital	3	5.92	0.51	0.11, 1.48	Similar
The Memorial Hospital	2	1.33	1.50	0.18, 5.42	Similar
Upper Connecticut Valley	†	†	†	†	†
Valley Regional Hospital	1	1.27	0.79	0.02, 4.39	Similar
Weeks Medical Center	†	†	†	†	†
Wentworth-Douglass	3	5.12	0.59	0.12, 1.71	Similar
State Total	85	141.38	0.60	0.48, 0.75	Lower

† Data are not shown for hospitals with less than one expected infection.

FIGURE 8: Surgical site infections standardized infection ratios, Jan 1–Dec 31, 2011



Note: Data are not shown for hospitals with less than one expected infection.

Overall surgical site infections: Comparison to 2010 Data

Overall, in 2011 the statewide SSI SIR was similar to 2010. Though not statistically significant, there appears to be a decrease in SSI SIR since 2009 (Figure 9). The analysis presented in Table 14 shows that all 19 hospitals for which data are shown observed similar numbers of infections in 2011 and 2010.

Figures 13, 14 and 15 (Pg. 51) show the standardized infection ratio for each procedure from 2009 to 2011. There was a decrease in the SIR for both coronary artery bypass graft (Figure 13) and colon procedures (Figure 14) and a slight increase in the SIR for knee arthroplasty (Figure 15) from 2009 to 2011. These differences are not statistically significant. From 2009-2011, NH had lower SSI SIRs when compared to national data and no significant change across reporting years.

FIGURE 9: Overall surgical site infection standardized infection ratios (SIR) by year, 2009-2011

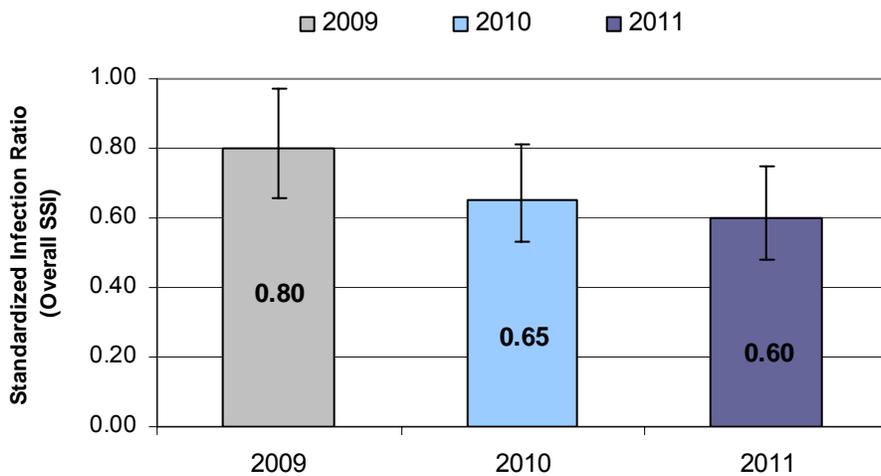


TABLE 14: Surgical site infections standardized infection ratios, comparison between 2010 and 2011

Hospital	Standardized Infection Ratio (SIR) 2011	95% Confidence Interval 2011	Standardized Infection Ratio (SIR) 2010	95% Confidence Interval 2010	2010 Compared to 2010
Alice Peck Day Memorial	†	†	†	†	†
Androscoggin Valley	0.00	- , 3.50	0.62	0.01 , 3.46	Similar
Catholic Medical Center	0.42	0.17 , 0.86	0.20	0.04 , 0.57	Similar
Cheshire Medical Center	1.10	0.23 , 3.22	0.31	- , 1.73	Similar
Concord Hospital	0.45	0.17 , 0.99	0.37	0.12 , 0.85	Similar
Cottage Hospital	†	†	†	†	†
DHMC	0.46	0.28 , 0.72	0.41	0.23 , 0.66	Similar
Elliot Hospital	0.47	0.15 , 1.11	1.26	0.67 , 2.16	Similar
Exeter Hospital	0.66	0.14 , 1.93	1.29	0.52 , 2.66	Similar
Franklin Regional	†	†	†	†	†
Frisbie Memorial	0.00	- , 2.11	0.00	- , 1.34	Similar
Huggins Hospital	0.00	- , 1.84	0.32	- , 1.76	Similar
Lakes Region General	0.72	0.20 , 1.83	0.62	0.13 , 1.81	Similar
Littleton Regional	1.40	0.29 , 4.08	0.46	0.01 , 2.56	Similar
Monadnock Community	0.53	0.01 , 2.93	1.60	0.18 , 5.77	Similar
New London Hospital	†	†	0.00	- , 2.85	†
Parkland Medical Center	0.94	0.11 , 3.39	2.42	0.89 , 5.28	Similar
Portsmouth Regional	1.12	0.60 , 1.92	1.67	1.01 , 2.61	Similar
Southern NH Medical	0.62	0.17 , 1.59	0.79	0.29 , 1.72	Similar
Speare Memorial Hospital	†	†	3.72	1.00 , 9.53	†
St. Joseph Hospital	0.51	0.11 , 1.48	0.00	- , 0.72	Similar
The Memorial Hospital	1.50	0.18 , 5.42	0.00	- , 3.10	Similar
Upper Connecticut Valley	†	†	†	†	†
Valley Regional Hospital	0.79	0.02 , 4.39	0.66	0.01 , 3.67	Similar
Weeks Medical Center	†	†	†	†	†
Wentworth-Douglass	0.59	0.12 , 1.71	0.30	0.03 , 1.09	Similar
State Total	0.60	0.48 , 0.75	0.65	0.53 , 0.81	Similar

† Data are not shown for hospitals with less than one expected infection.

TABLE 15: Coronary artery bypass graft procedure-associated surgical site infections standardized infection ratios, Jan 1–Dec 31, 2011

Hospital	Observed Infections	Expected Infections	Standardized Infection Ratio (SIR)	95% Confidence Interval	Comparison to Expected Number of Infections
Catholic Medical	2	7.14	0.28	0.03, 1.01	Similar
Concord Hospital	0	2.14	0.00	- , 1.72	Similar
DHMC	4*	6.47	0.62	0.17, 1.58	Similar
Portsmouth Regional	4	4.25	0.94	0.26, 2.41	Similar
State Total	10	20.01	0.50	0.24, 0.92	Lower

*Secondary infections at the donor site (where the vessel was taken from) are not included in the SIR. DHMC observed five secondary infections, which are not included in the table above. Note: This includes procedures with and without donor vessel grafts.

FIGURE 10: Coronary artery bypass graft procedure-associated surgical site infections standardized infection ratios, Jan 1–Dec 31, 2011

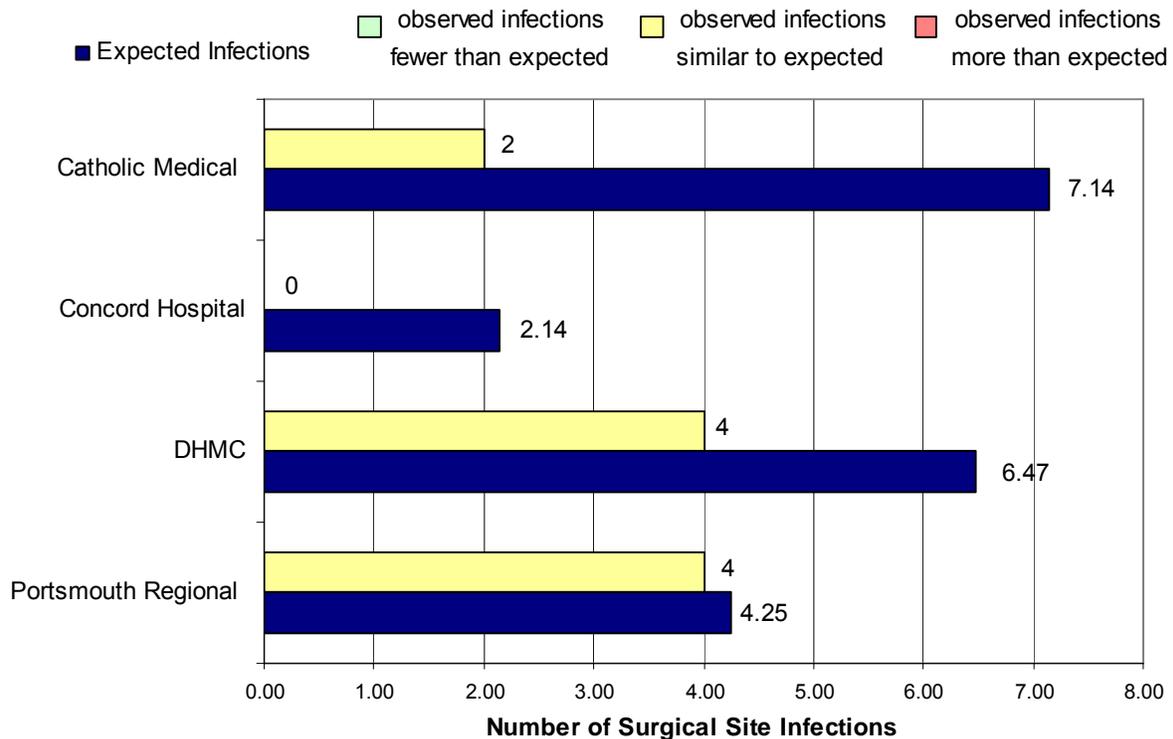
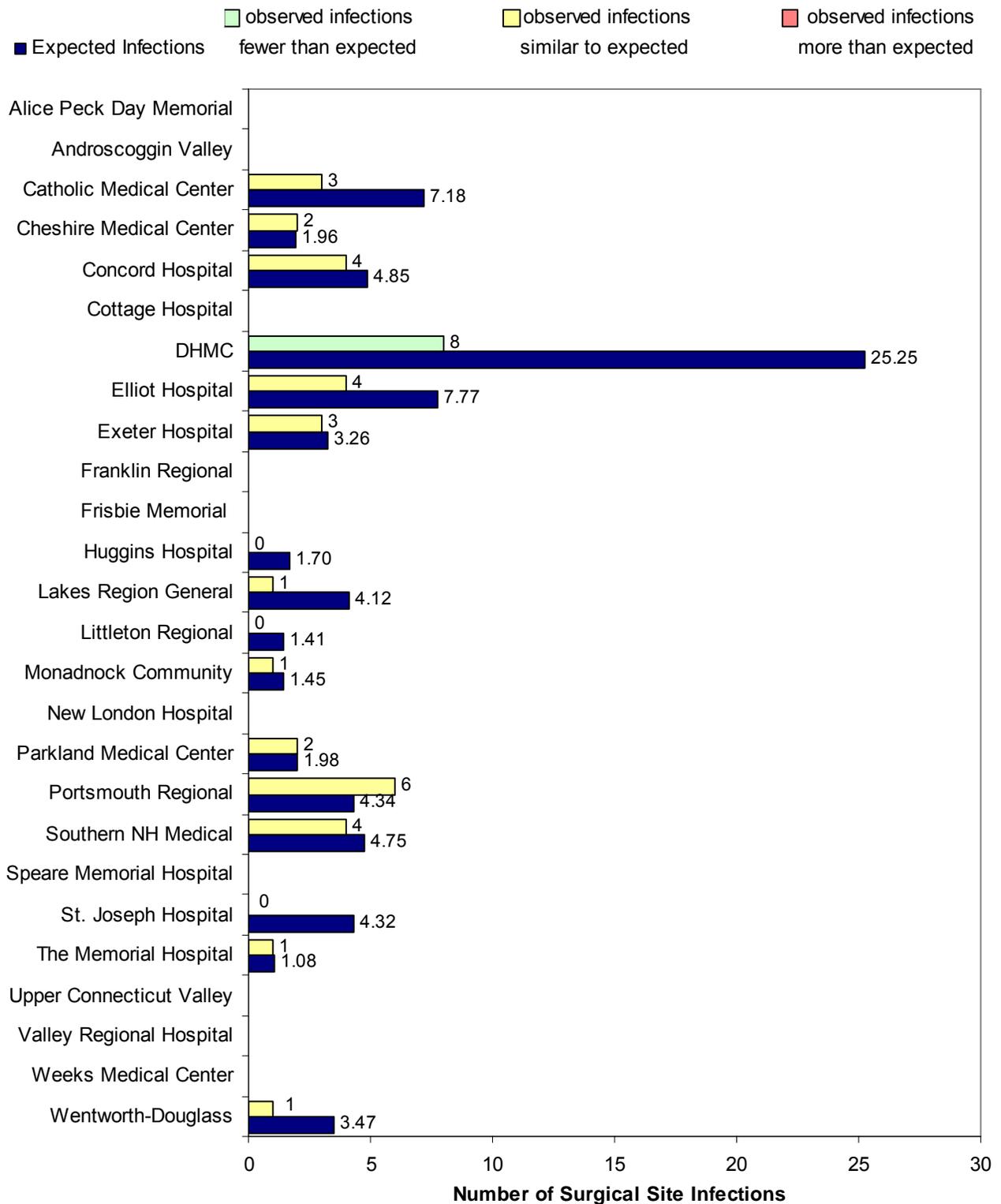


TABLE 16: Colon procedure-associated surgical site infections standardized infection ratios, Jan 1– Dec 31, 2011

Hospital	Observed Infections	Expected Infections	Standardized Infection Ratio (SIR)	95% Confidence Interval	Comparison to Expected Number of Infections
Alice Peck Day Memorial	†	†	†	†	†
Androscoggin Valley	†	†	†	†	†
Catholic Medical Center	3	7.18	0.42	0.09 , 1.22	Similar
Cheshire Medical Center	2	1.96	1.02	0.12 , 3.68	Similar
Concord Hospital	4	4.85	0.83	0.23 , 2.11	Similar
Cottage Hospital	†	†	†	†	†
DHMC	8	25.25	0.32	0.14 , 0.62	Lower
Elliot Hospital	4	7.77	0.52	0.14 , 1.32	Similar
Exeter Hospital	3	3.26	0.92	0.19 , 2.69	Similar
Franklin Regional	†	†	†	†	†
Frisbie Memorial	†	†	†	†	†
Huggins Hospital	0	1.70	0.00	- , 2.17	Similar
Lakes Region General	1	4.12	0.24	0.01 , 1.35	Similar
Littleton Regional	0	1.41	0.00	- , 2.62	Similar
Monadnock Community	1	1.45	0.69	0.02 , 3.84	Similar
New London Hospital	†	†	†	†	†
Parkland Medical Center	2	1.98	1.01	0.12 , 3.65	Similar
Portsmouth Regional	6	4.34	1.38	0.51 , 3.01	Similar
Southern NH Medical	4	4.75	0.84	0.23 , 2.16	Similar
Speare Memorial Hospital	†	†	†	†	†
St. Joseph Hospital	0	4.32	0.00	- , 0.85	Lower
The Memorial Hospital	1	1.08	0.92	0.02 , 5.15	Similar
Upper Connecticut Valley	†	†	†	†	†
Valley Regional Hospital	†	†	†	†	†
Weeks Medical Center	†	†	†	†	†
Wentworth-Douglass	1	3.47	0.29	0.01 , 1.60	Similar
State Total	45	84.44	0.53	0.39 , 0.72	Lower

† Data are not shown for hospitals with less than one expected infection.

FIGURE 11: Colon procedure-associated surgical site infections standardized infection ratios, Jan 1–Dec 31, 2011



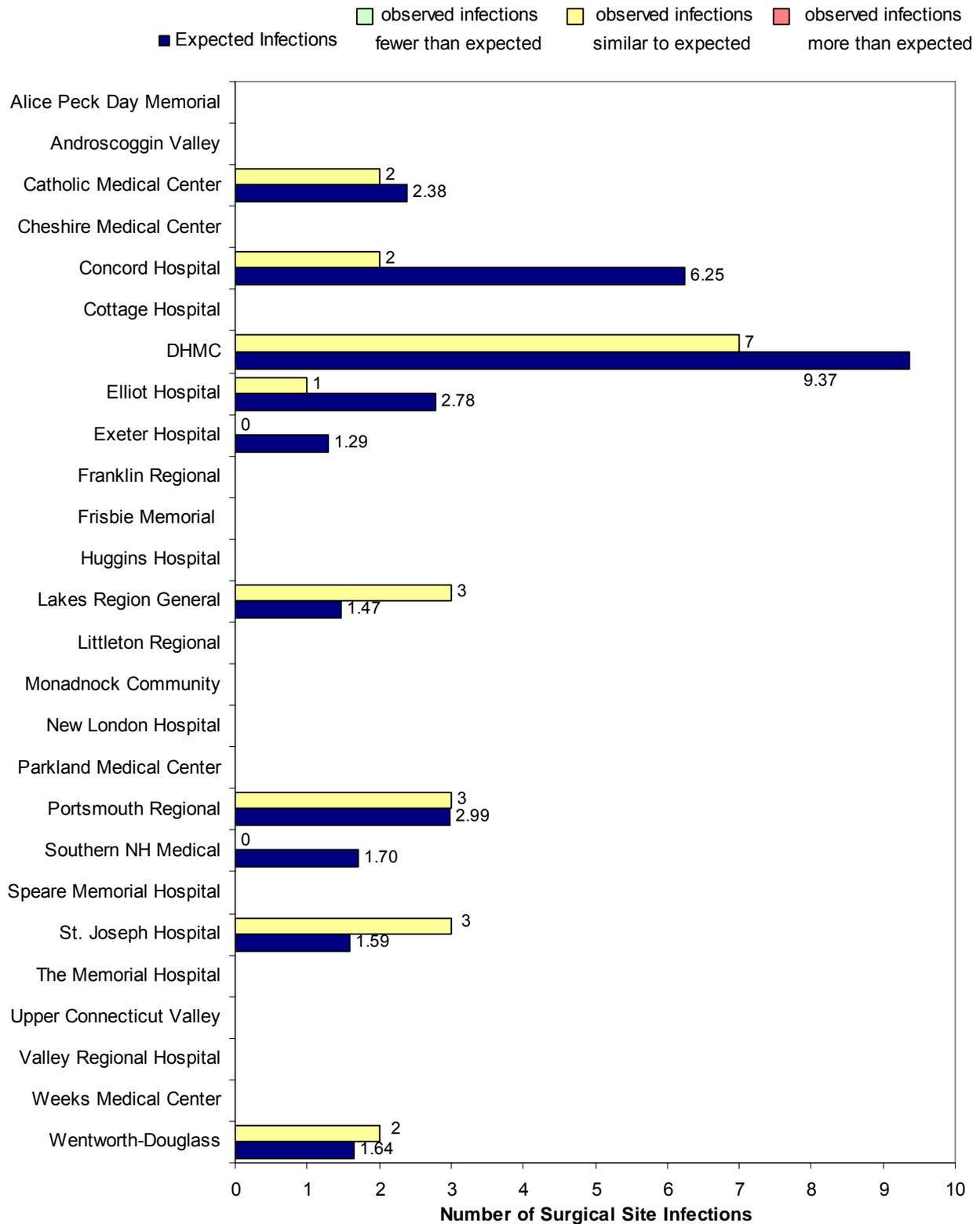
Note: Data are not shown for hospitals with less than one expected infection.

TABLE 17: Knee arthroplasty procedure-associated surgical site infections standardized infection ratios, Jan 1–Dec 31, 2011

Hospital	Observed Infections	Expected Infections	Standardized Infection Ratio (SIR)	95% Confidence Interval	Comparison to Expected Number of Infections
Alice Peck Day Memorial	†	†	†	†	†
Androscoggin Valley	†	†	†	†	†
Catholic Medical Center	2	2.38	0.84	0.10 , 3.03	Similar
Cheshire Medical Center	†	†	†	†	†
Concord Hospital	2	6.25	0.32	0.04 , 1.16	Similar
Cottage Hospital	†	†	†	†	†
DHMC	7	9.37	0.75	0.30 , 1.54	Similar
Elliot Hospital	1	2.78	0.36	0.01, 2.01	Similar
Exeter Hospital	0	1.29	0.00	- , 2.86	Similar
Franklin Regional	†	†	†	†	†
Frisbie Memorial	†	†	†	†	†
Huggins Hospital	†	†	†	†	†
Lakes Region General	3	1.47	2.04	0.42 , 5.95	Similar
Littleton Regional	†	†	†	†	†
Monadnock Community	†	†	†	†	†
New London Hospital	†	†	†	†	†
Parkland Medical Center	†	†	†	†	†
Portsmouth Regional	3	2.99	1.00	0.22 , 2.93	Similar
Southern NH Medical	0	1.70	0.00	- , 2.17	Similar
Speare Memorial Hospital	†	†	†	†	†
St. Joseph Hospital	3	1.59	1.88	0.39 , 5.50	Similar
The Memorial Hospital	†	†	†	†	†
Upper Connecticut Valley	†	†	†	†	†
Valley Regional Hospital	†	†	†	†	†
Weeks Medical Center	†	†	†	†	†
Wentworth-Douglass	2	1.64	1.22	0.15 , 4.40	Similar
State Total	30	36.93	0.81	0.54 , 1.17	Similar

† Data are not shown for hospitals with less than one expected infection.

FIGURE 12: Knee arthroplasty procedure-associated surgical site infections standardized infection ratios, Jan 1–Dec 31, 2011



Note: Data are not shown for hospitals with less than one expected infection

FIGURE 13: Overall coronary artery bypass graft procedure standardized infection ratios (SIR) by year, 2009-2011

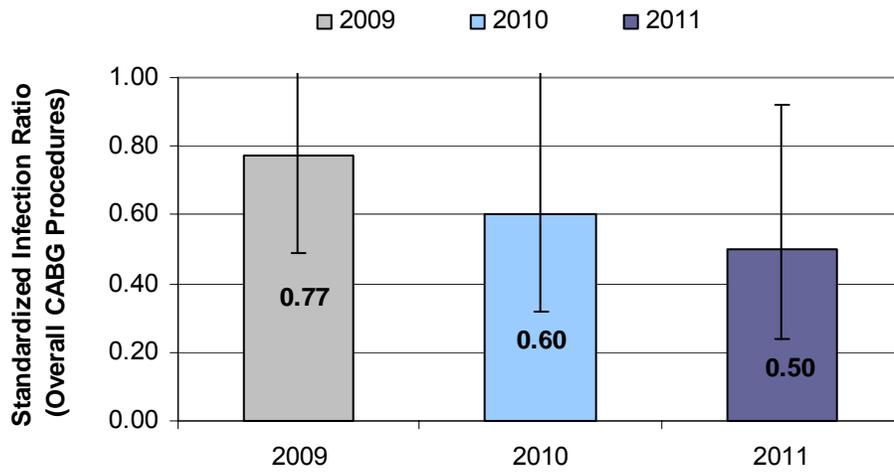


FIGURE 14: Overall colon procedure standardized infection ratios (SIR) by year, 2009-2011

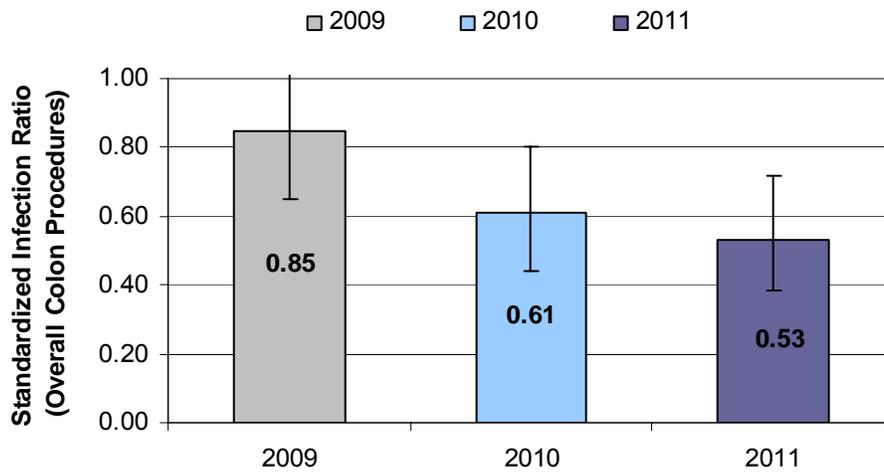


FIGURE 15: Overall knee arthroplasty standardized infection ratios (SIR) by year, 2009-2011

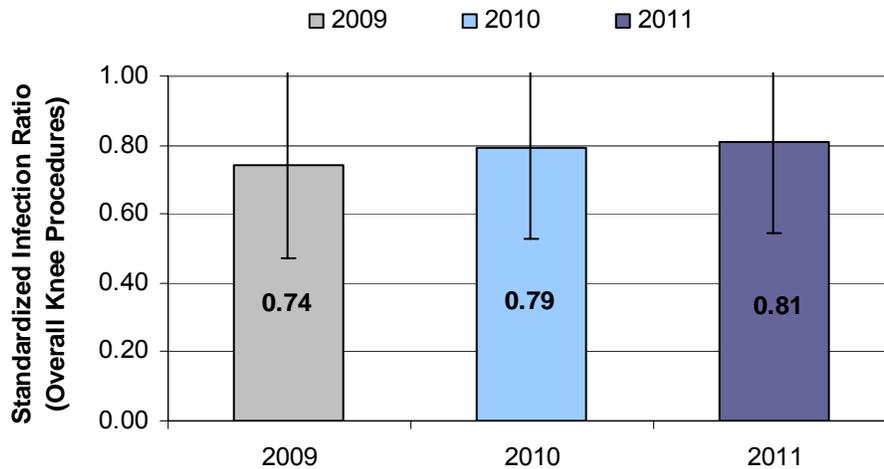


TABLE 18: Post-discharge surveillance methods and percentage of SSIs detected post-discharge in NH hospitals, 2009-2010.

Hospital	Post-Discharge Surveillance Methods	% SSIs Identified Post-Discharge	Compared to State
Alice Peck Day Memorial	Surgeon Letters	20.0	Similar
Androscoggin Valley	Surgeon Letters, Culture Reports, Outpatient Clinic	0.0	Similar
Catholic Medical Center	Surgeon Letters, Culture Reports	0.0	Lower
Cheshire Medical Center	Culture Reports, Outpatient Clinic	33.3	Similar
Concord Hospital	Culture Reports	0.0	Lower
Cottage Hospital	Surgeon Letters, Culture Reports, Outpatient Clinic	0.0	Similar
DHMC	Surgeon Letters, Culture Reports, Outpatient Clinic	36.8	Similar
Elliot Hospital	Surgeon Letters, Culture Reports	4.5	Lower
Exeter Hospital	Surgeon Letters	23.5	Similar
Franklin Regional	Surgeon Letters, Culture Reports	†	†
Frisbie Memorial	Surgeon Letters, Outpatient Clinic	†	†
Huggins Hospital	Surgeon Letters, Culture Reports, Patient Follow-up	33.3	Similar
Lakes Region General	Surgeon Letters, Culture Reports	25.0	Similar
Littleton Regional	Surgeon Letters, Culture Reports, Outpatient Clinic	50.0	Similar
Monadnock Community	Surgeon Letters, Culture Reports	40.0	Similar
New London Hospital	Surgeon Letters, Culture Reports, Outpatient Clinic	†	†
Parkland Medical Center	Surgeon Letters, Culture Reports	22.2	Similar
Portsmouth Regional	Surgeon Letters	52.5	Higher
Southern NH Medical	Surgeon Letters, Culture Reports	33.3	Similar
Spear Memorial Hospital	Surgeon Letters	60.0	Similar
St. Joseph Hospital	Surgeon Letters, Culture Reports, Outpatient Clinic	†	†
The Memorial Hospital	Surgeon Letters, Culture Reports	0.0	Similar
Upper Connecticut Valley	Surgeon Letters, Culture Reports, Patient Follow-up	100.0	Similar
Valley Regional Hospital	Surgeon Letters, Culture Reports, Outpatient Clinic	100.0	Similar
Weeks Medical Center	Surgeon Letters, Culture Reports, Outpatient Clinic	†	†
Wentworth-Douglass	Surgeon Letters, Culture Reports	25.0	Similar

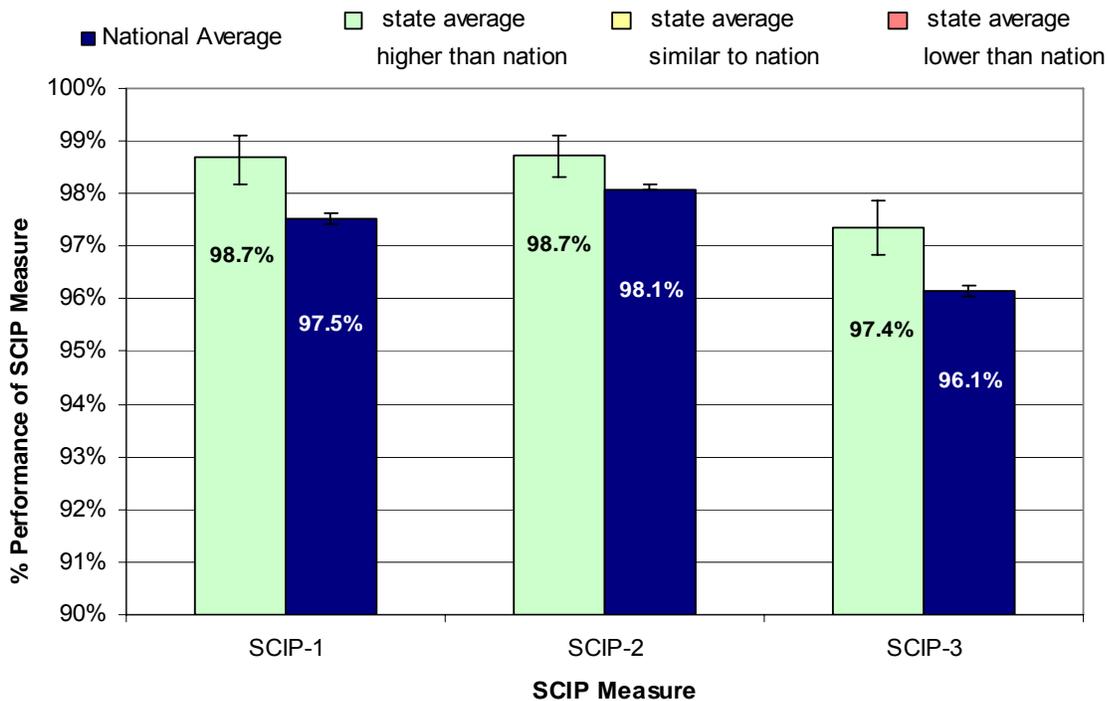
†No SSIs reported or expected number of infections is less than one during this time period.

Note: These data are for 2009-2010 and are not directly comparable to the rest of the data in this report. These data are shown to assess the effectiveness of the post-discharge surveillance system implemented at each facility. Two years of data are used since the numbers of reported infections at many facilities are small.

Surgical Antimicrobial Prophylaxis Administration

Overall, New Hampshire hospitals perform surgical antimicrobial prophylaxis correctly more often than the national average. For SCIP measure 1, 98.7% of patients in New Hampshire received prophylactic antibiotic within one hour prior to surgery compared with 97.5% nationally. For SCIP measure 2, 98.7% of patients in New Hampshire received the appropriate prophylactic antibiotic compared with 98.1% nationally. For SCIP measure 3, 97.4% of patients in New Hampshire had his or her prophylactic antibiotic discontinued within 24 hours after surgery compared with 96.1% nationally. The analysis presented in Table 18 shows that four observed lower SCIP-1 adherence and the other 22 observed similar SCIP-1 adherence compared to the state data. Table 19 (SCIP-2) shows that one hospital observed higher adherence and the other 25 observed similar adherence to the state average. Table 20 (SCIP-3) displays that two hospitals observed higher adherence, three hospitals observed lower adherence, and 21 hospitals observed similar adherence to the state average. See methods section for additional information on how this information is collected.

FIGURE 16: Statewide Performance of Surgical Care Improvement Project (SCIP) measures, Jan 1–Dec 31, 2011



SCIP-1: Percentage of patients who received prophylactic antibiotic within one hour prior to surgery

SCIP-2: Percentage of patients who received the appropriate prophylactic antibiotic

SCIP-3: Percentage of patients whose prophylactic antibiotic was discontinued within 24 hours after surgery

Additional surgical antimicrobial prophylaxis data by hospital with state and national comparison data through December 2011 are available at: <http://www.nhqualitycare.org/reports.php?id=sip>.

Surgical Antimicrobial prophylaxis data by hospital for January 1–December 31, 2011 are reproduced in the following tables with comparisons to the state average.

TABLE 19: Performance of Surgical Care Improvement Project (SCIP) measure 1 by hospital, Jan 1–Dec 31, 2011

Hospital	Number of Patients Prophylaxed	Total Number of Patients	% Adherence	95% Confidence Interval	Hospital % Compared to State %
Alice Peck Day Memorial	39	42	92.9	81.8 , 98.2	Lower
Androscoggin Valley	32	32	100.0	91.1 , -	Similar
Catholic Medical Center	341	342	99.7	98.6 , -	Similar
Cheshire Medical Center	162	164	98.8	96.0 , 99.8	Similar
Concord Hospital	336	339	99.1	97.6 , 99.8	Similar
Cottage Hospital	22	25	88.0	70.7 , 96.9	Lower
DHMC	607	611	99.3	98.4 , 99.8	Similar
Elliot Hospital	250	255	98.0	95.7 , 99.3	Similar
Exeter Hospital	277	281	98.6	96.6 , 99.6	Similar
Franklin Regional	6	6	100.0	60.7 , -	Similar
Frisbie Memorial	161	162	99.4	97.0 , -	Similar
Huggins Hospital	37	37	100.0	92.2 , -	Similar
Lakes Region General	251	257	97.7	95.2 , 99.1	Similar
Littleton Regional	161	164	98.2	95.1 , 99.5	Similar
Monadnock Community	74	75	98.7	93.6 , 99.9	Similar
New London Hospital	80	85	94.1	87.5 , 97.8	Lower
Parkland Medical Center	69	70	98.6	93.2 , 99.9	Similar
Portsmouth Regional	390	392	99.5	98.3 , 99.1	Similar
Southern NH Medical	358	359	99.7	98.6 , -	Similar
Speare Memorial Hospital	43	43	100.0	93.3 , -	Similar
St. Joseph Hospital	179	186	96.2	92.7 , 98.3	Lower
The Memorial Hospital	59	62	95.2	87.4 , 98.8	Similar
Upper Connecticut Valley	1	1	100.0	5.0 , -	Similar
Valley Regional Hospital	69	70	98.6	93.2 , 99.9	Similar
Weeks Medical Center	21	21	100.0	86.7 , -	Similar
Wentworth-Douglass	267	268	99.6	98.2 , -	Similar
State Total	4292	4349	98.7	98.4 , 99.0	

SCIP-1: Percentage of patients who received prophylactic antibiotic within one hour prior to surgery
 Note: Statistics cannot be calculated for hospitals with 0 number of patients given prophylaxis.

TABLE 20: Performance of Surgical Care Improvement Project (SCIP) measure 2 by hospital, Jan 1–Dec 31, 2011

Hospital	Number of Patients Prophylaxed	Total Number of Patients	% Adherence	95% Confidence Interval	Hospital % Compared to State %
Alice Peck Day Memorial	41	42	97.6	88.8 , 98.9	Similar
Androscoggin Valley	32	32	100.0	91.1 , -	Similar
Catholic Medical Center	354	357	99.2	97.7 , 99.8	Similar
Cheshire Medical Center	162	163	99.4	97.0 , -	Similar
Concord Hospital	334	342	97.7	95.6 , 98.9	Similar
Cottage Hospital	24	25	96.0	81.8 , 99.8	Similar
DHMC	608	624	97.4	96.0 , 98.5	Similar
Elliot Hospital	254	262	96.9	94.3 , 98.6	Similar
Exeter Hospital	282	283	99.6	98.3 , 100.0	Similar
Franklin Regional	5	6	83.3	40.9 , 99.2	Similar
Frisbie Memorial	160	162	98.8	96.0 , 99.8	Similar
Huggins Hospital	37	37	100.0	92.2 , -	Similar
Lakes Region General	250	257	97.3	94.7 , 98.8	Similar
Littleton Regional	166	166	100.0	98.2 , -	Similar
Monadnock Community	76	76	100.0	96.1 , -	Similar
New London Hospital	86	86	100.0	96.6 , -	Similar
Parkland Medical Center	69	70	98.6	93.2 , 99.9	Similar
Portsmouth Regional	420	421	99.8	98.8 , 100.0	Similar
Southern NH Medical	363	363	100.0	99.2 , -	Higher
Speare Memorial Hospital	45	45	100.0	93.6 , -	Similar
St. Joseph Hospital	189	190	99.5	97.4 , 100.0	Similar
The Memorial Hospital	62	62	100.0	95.3 , -	Similar
Upper Connecticut Valley	1	1	100.0	5.0 , -	Similar
Valley Regional Hospital	70	70	100.0	95.8 , -	Similar
Weeks Medical Center	20	21	95.2	78.7 , 99.8	Similar
Wentworth-Douglass	263	267	98.5	96.4 , 99.5	Similar
State Total	4373	4430	98.7	98.4 , 99.0	

SCIP-2: Percentage of patients who received the correct prophylactic antibiotic.

Note: Statistics cannot be calculated for hospitals with 0 number of patients given prophylaxis.

TABLE 21: Performance of Surgical Care Improvement Project (SCIP) measure 3 by hospital, Jan 1– Dec 31, 2011

Hospital	Number of Patients Prophylaxed	Total Number of Patients	% Adherence	95% Confidence Interval	Hospital % Compared to State %
Alice Peck Day Memorial	42	42	100.0	93.1 , -	Similar
Androscoggin Valley	29	30	96.7	84.6 , 99.8	Similar
Catholic Medical Center	324	333	97.3	95.1 , 98.7	Similar
Cheshire Medical Center	159	163	97.5	94.2 , 99.2	Similar
Concord Hospital	311	336	92.6	89.4 , 95.0	Lower
Cottage Hospital	21	24	87.5	69.6 , 96.7	Lower
DHMC	559	595	93.9	91.8 , 95.7	Lower
Elliot Hospital	244	250	97.6	95.1 , 99.0	Similar
Exeter Hospital	278	279	99.6	98.3 , 100.0	Higher
Franklin Regional	6	6	100.0	60.7 , -	Similar
Frisbie Memorial	154	157	98.1	94.9 , 99.5	Similar
Huggins Hospital	37	37	100.0	92.2 , -	Similar
Lakes Region General	245	259	94.6	91.3 , 96.9	Similar
Littleton Regional	163	164	99.4	97.0 , 100.0	Similar
Monadnock Community	71	73	97.3	91.2 , 99.5	Similar
New London Hospital	81	82	98.8	94.1 , 99.9	Similar
Parkland Medical Center	66	69	95.7	88.6 , 98.9	Similar
Portsmouth Regional	374	379	98.7	97.1 , 99.5	Similar
Southern NH Medical	355	358	99.2	97.7 , 99.8	Similar
Speare Memorial Hospital	41	41	100.0	93.0 , -	Similar
St. Joseph Hospital	183	183	100.0	98.4 , -	Higher
The Memorial Hospital	59	62	95.2	87.4 , 98.8	Similar
Upper Connecticut Valley	1	1	100.0	5.0 , -	Similar
Valley Regional Hospital	69	69	100.0	95.8 , -	Similar
Weeks Medical Center	20	21	95.2	78.7 , 99.8	Similar
Wentworth-Douglass	263	265	99.2	97.5 , 99.9	Similar
State Total	4155	4268	97.4	96.9 , 97.8	

SCIP-3: Percentage of patients whose prophylactic antibiotic was discontinued within 24 hours after surgery.
 Note: Statistics cannot be calculated for hospitals with 0 number of patients given prophylaxis.

Surgical antimicrobial prophylaxis: Comparison to 2010 Data

Overall, in 2011 the statewide adherence to SCIP-1 measure was higher when compared to 2010 and adherence to SCIP-2 and SCIP-3 was similar when compared to 2010. Further analysis showed that two hospitals (DHMC and New London Hospital) had significantly increased SCIP-1 compliance, one hospital (Lakes Region General) had significantly increased SCIP-2 compliance, and one hospital (Exeter Hospital) had significantly increased SCIP-3 compliance from 2010 to 2011. All other hospitals had similar SCIP adherence in 2011 when compared to 2010. Overall, statewide adherence to SCIP measures in NH hospitals has improved significantly since 2005.

TABLE 22: Performance of Surgical Care Improvement Project (SCIP) measures, comparison between 2010 and 2011

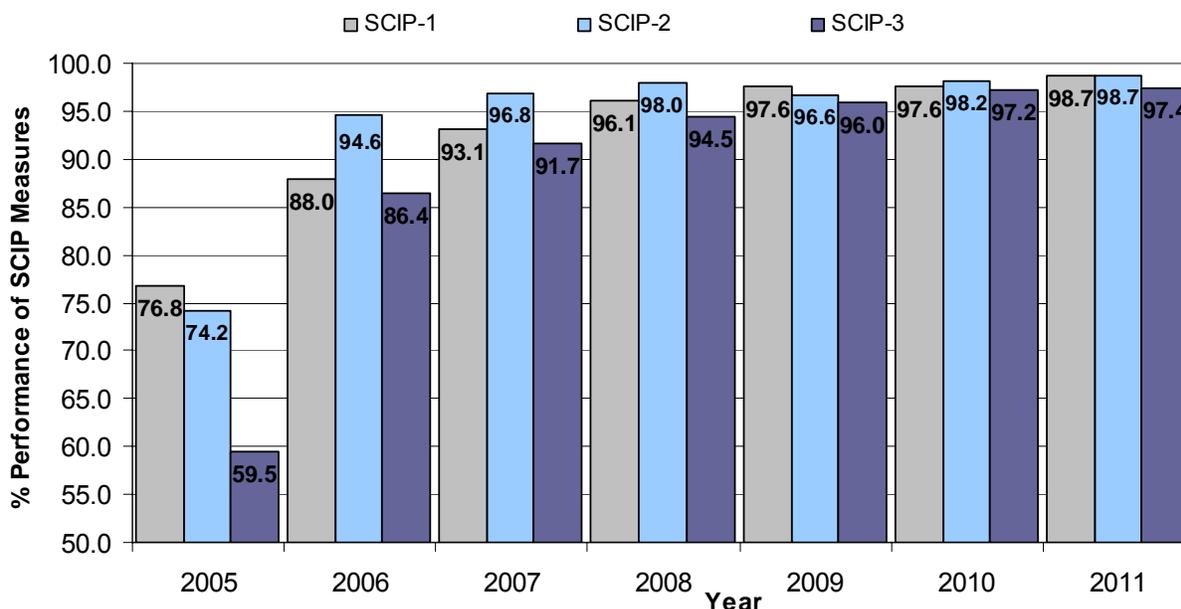
SCIP Measure	% Adherence 2011	95% Confidence Interval 2011	% Adherence 2010	95% Confidence Interval 2010	2011 Compared to 2010
SCIP-1	98.7	98.4 , 99.0	97.6	97.1 , 98.0	Higher
SCIP-2	98.7	98.4 , 99.0	98.2	97.8 , 98.6	Similar
SCIP-3	97.4	96.9 , 97.8	97.2	96.7 , 97.7	Similar

SCIP-1: Percentage of patients who received prophylactic antibiotic within one hour prior to surgery

SCIP-2: Percentage of patients who received the appropriate prophylactic antibiotic

SCIP-3: Percentage of patients whose prophylactic antibiotic was discontinued within 24 hours after surgery

FIGURE 17: Statewide Performance of Surgical Care Improvement Project (SCIP) measures, 2005 - 2011



SCIP-1: Percentage of patients who received prophylactic antibiotic within one hour prior to surgery

SCIP-2: Percentage of patients who received the appropriate prophylactic antibiotic

SCIP-3: Percentage of patients whose prophylactic antibiotic was discontinued within 24 hours after surgery

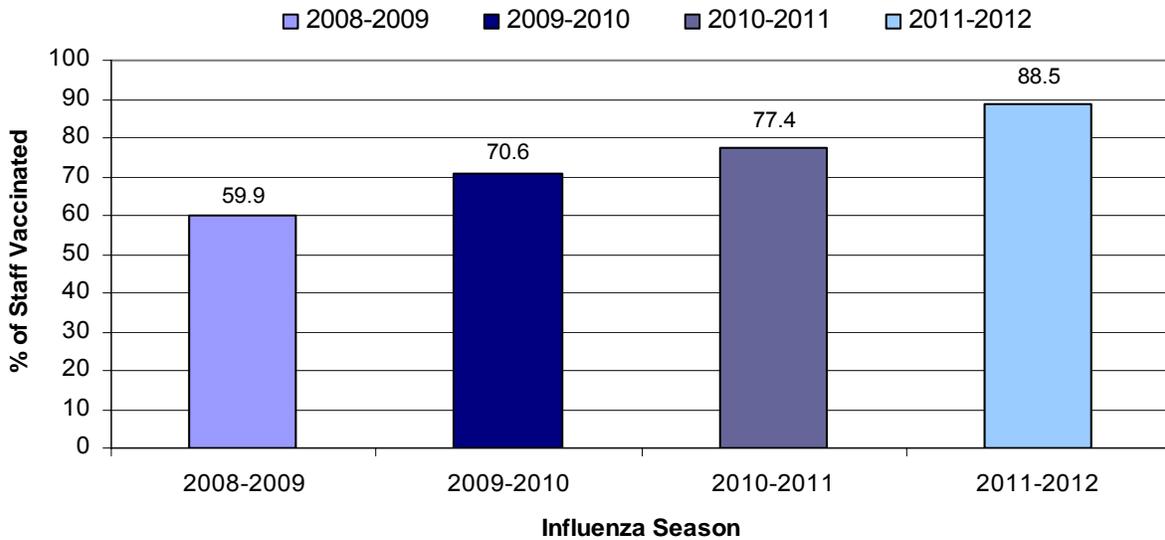
Additional surgical antimicrobial prophylaxis data by hospital with state and national comparison data through December 2011 are available at: <http://www.nhqualitycare.org/reports.php?id=sip>.

Influenza Vaccination Rates

Healthcare workers can become infected with the influenza virus through contact with infected patients and can transmit influenza to patients and other staff. Despite documented benefits of healthcare worker influenza vaccination on patient outcomes and healthcare worker absenteeism nationally, vaccination coverage among healthcare workers remains low. In a CDC survey, influenza vaccination coverage in healthcare workers nationally was 67% during the 2011-2012 influenza season.⁸ Because healthcare workers provide care to patients at high risk for complications of influenza, they should be offered influenza vaccine each year. Currently there are no regulations requiring vaccination in New Hampshire, and healthcare workers are free to decline vaccination for any reason. However, some hospitals do have policies requiring mandatory staff vaccination. Vaccination rates in hospital staff have been monitored in New Hampshire for several years. See methods section for additional information on data collection.

Table 23 below shows the total number of staff and the number of staff vaccinated against seasonal influenza at each hospital during the 2011–2012 influenza season. Vaccination rates by hospital ranged from 52.8% to 98.5%, and the overall State rate was 88.5%. A confidence interval is provided to assess any statistically significant differences in staff vaccination between hospitals. The analysis presented in Table 23 shows that 11 hospitals had vaccination percentages similar to the overall State vaccination percentage, seven hospitals reported vaccination percentages that were significantly higher than the overall State vaccination percentage, and 13 hospitals reported vaccination percentages that were significantly lower than the overall State vaccination percentage.

FIGURE 18: Statewide influenza vaccination rates for hospital staff by influenza season



2008-2009 season reports on staff between October 1st, 2008 and April 30th, 2009

2009-2010 season reports on staff between October 1st, 2009 and March 31st, 2010

2010-2011 season reports on staff between October 1st, 2010 and March 31st, 2011

2011-2012 season reports on staff between October 1st, 2011 and March 31st, 2012

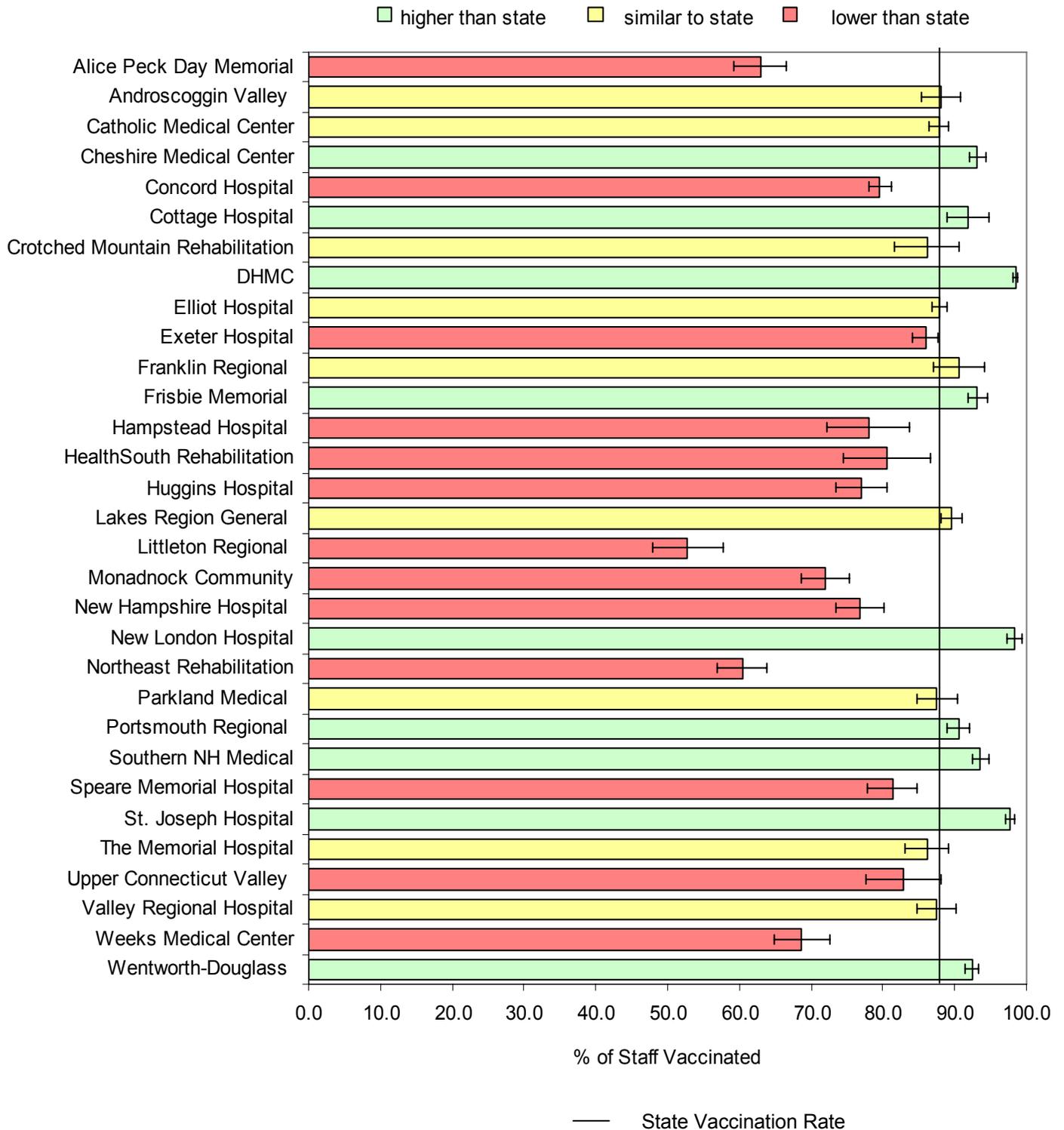
⁸ CDC. Influenza Vaccination Coverage Among Health-Care Personnel — 2011–12 Influenza Season, United States. Morbidity and Mortality Weekly Report; 61(38);753-757.

<http://www.cdc.gov/mmwr/preview/mmwrhtml/mm6138a1.htm>

TABLE 23: Influenza vaccination rates for hospital staff by hospital, 2010–2011 influenza season, October 1, 2011–March 31, 2012)

Hospital	Staff Vaccinated	Total Staff	% Vaccinated	95% Confidence Interval	Hospital % Compared to State %
Alice Peck Day Memorial	416	661	62.9	59.2 , 66.6	Lower
Androscoggin Valley	461	523	88.1	85.3 , 90.9	Similar
Catholic Medical Center	1992	2270	87.8	86.5 , 89.1	Similar
Cheshire Medical Center	1513	1623	93.2	92.0 , 94.4	Higher
Concord Hospital	1811	2274	79.6	77.9 , 81.3	Lower
Cottage Hospital	314	342	91.8	88.9 , 94.7	Higher
DHMC	6322	6420	98.5	98.2 , 98.8	Higher
Elliot Hospital	3024	3440	87.9	86.8 , 89.0	Similar
Exeter Hospital	1386	1614	85.9	84.2 , 87.6	Lower
Franklin Regional	242	267	90.6	87.1 , 94.1	Similar
Frisbie Memorial	1103	1183	93.2	91.8 , 94.6	Higher
Huggins Hospital	404	520	77.7	74.1 , 81.3	Lower
Lakes Region General	1519	1696	89.6	88.1 , 91.1	Similar
Littleton Regional	216	409	52.8	48.0 , 57.6	Lower
Monadnock Community	494	687	71.9	68.5 , 75.3	Lower
New London Hospital	557	566	98.4	97.4 , 99.4	Higher
Parkland Medical Center	464	530	87.5	84.7 , 90.3	Similar
Portsmouth Regional	1351	1493	90.5	89.0 , 92.0	Higher
Southern NH Medical	1717	1834	93.6	92.5 , 94.7	Higher
Speare Memorial Hospital	387	476	81.3	77.8 , 84.8	Lower
St. Joseph Hospital	1958	2004	97.7	97.0 , 98.4	Higher
The Memorial Hospital	427	496	86.1	83.1 , 89.1	Similar
Upper Connecticut Valley	164	198	82.8	77.5 , 88.1	Lower
Valley Regional Hospital	505	578	87.4	84.7 , 90.1	Similar
Weeks Medical Center	364	530	68.7	64.8 , 72.6	Lower
Wentworth-Douglass	2481	2686	92.4	91.4 , 93.4	Higher
Crotched Mountain Rehabilitation	198	230	86.1	81.6 , 90.6	Similar
HealthSouth Rehabilitation	133	165	80.6	74.6 , 86.6	Lower
Northeast Rehabilitation	451	747	60.4	56.9 , 63.9	Lower
Hampstead Hospital	156	200	78.0	72.3 , 83.7	Lower
New Hampshire Hospital	461	600	76.8	73.4 , 80.2	Lower
State Total	32,991	37,262	88.5	88.2 , 88.9	

FIGURE 19: Influenza vaccination rates for hospital staff by hospital, 2011–2012 influenza season, (October 1, 2011–March 31, 2012)



Influenza vaccination rates: Comparison to 2010 and 2011 Data

The overall statewide hospital staff vaccination rate increased significantly from 2008–2009 to 2009–2010, which may have been explained by overall increased interest in influenza vaccination as a result of the 2009 H1N1 pandemic. However, the influenza vaccination rate continued to increase between the 2009–2010 and 2011–2012 seasons suggesting other influences, such as the public reporting of influenza vaccination rates and mandatory vaccination policies. The analysis presented in Table 24 shows that overall, 19 hospitals increased staff influenza vaccination in 2011–2012 compared to 2010–2011, 8 hospitals had similar vaccination rates, and two hospitals decreased influenza vaccination rates.

FIGURE 20: Influenza vaccination rates for hospital staff by hospital, 2010–2011 and 2011–2012 influenza seasons

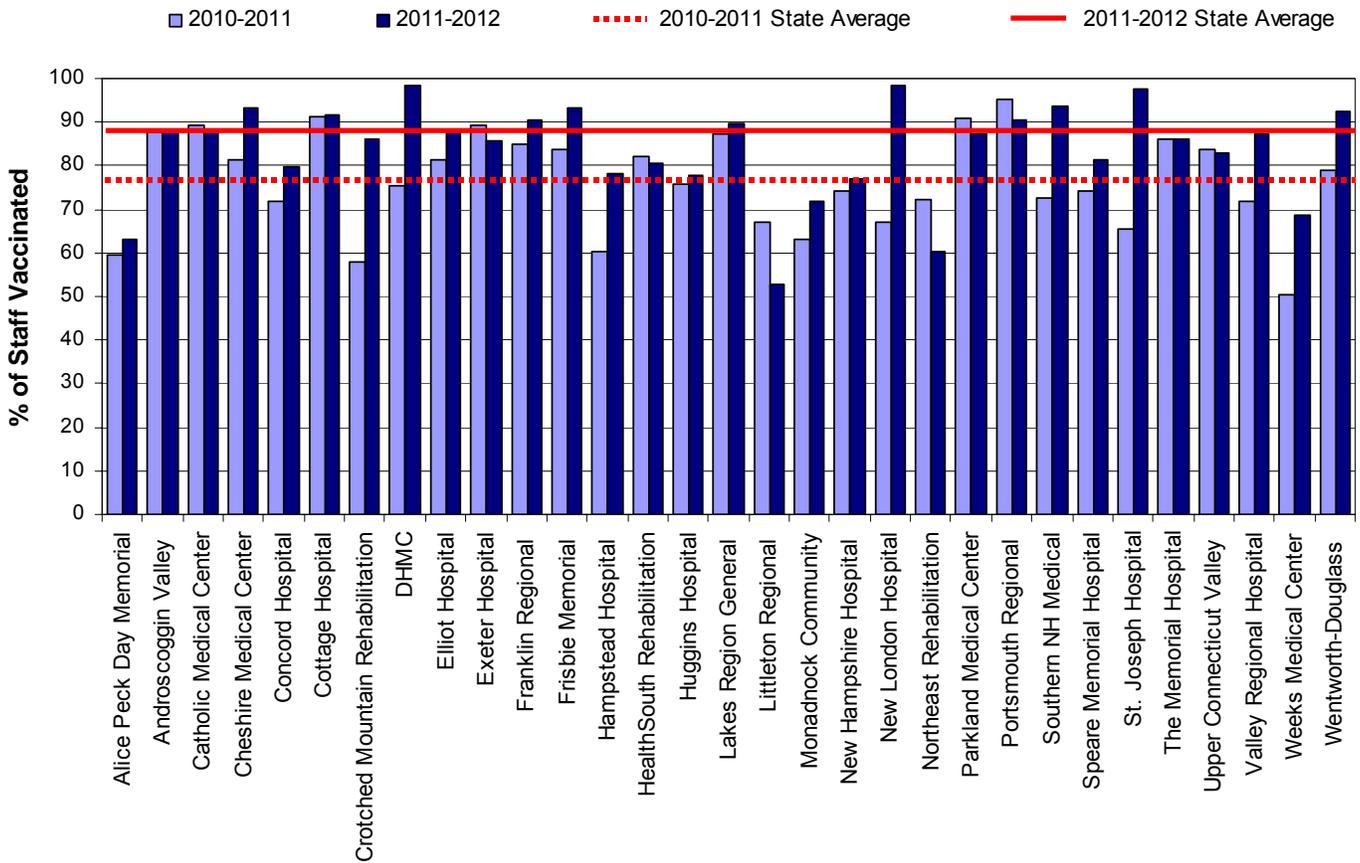


TABLE 24: Influenza vaccination rates for hospital staff by hospital, comparison between 2010-2011 and 2011-2012 influenza seasons

Hospital	% Vaccinated 2011	95% Confidence Interval 2011	% Vaccinated 2010	95% Confidence Interval 2010	2011 Compared to 2010
Alice Peck Day Memorial	62.9	59.2 , 66.6	59.7	55.7 , 63.7	Similar
Androscoggin Valley	88.1	85.3 , 90.9	87.8	84.8 , 90.8	Similar
Catholic Medical Center	87.8	86.5 , 89.1	89.0	87.7 , 90.3	Similar
Cheshire Medical Center	93.2	92.0 , 94.4	81.4	79.4 , 83.4	Higher
Concord Hospital	79.6	77.9 , 81.3	71.7	69.9 , 73.5	Higher
Cottage Hospital	91.8	88.9 , 94.7	91.2	87.7 , 94.9	Similar
DHMC	98.5	98.2 , 98.8	75.3	74.2 , 76.4	Higher
Elliot Hospital	87.9	86.8 , 89.0	81.3	80.0 , 82.6	Higher
Exeter Hospital	85.9	84.2 , 87.6	89.3	87.8 , 90.8	Lower
Franklin Regional	90.6	87.1 , 94.1	84.9	80.6 , 89.2	Similar
Frisbie Memorial	93.2	91.8 , 94.6	83.8	81.5 , 86.1	Higher
Huggins Hospital	77.7	74.1 , 81.3	75.9	72.2 , 79.6	Similar
Lakes Region General	89.6	88.1 , 91.1	87.3	85.5 , 89.1	Similar
Littleton Regional	52.8	48.0 , 57.6	67.0	63.3 , 70.7	Lower
Monadnock Community	71.9	68.5 , 75.3	63.2	59.6 , 66.8	Higher
New London Hospital	98.4	97.4 , 99.4	67.2	63.2 , 71.2	Higher
Parkland Medical Center	87.5	84.7 , 90.3	91.0	88.5 , 93.5	Similar
Portsmouth Regional	90.5	89.0 , 92.0	95.1	93.8 , 96.4	Lower
Southern NH Medical	93.6	92.5 , 94.7	72.8	70.6 , 75.0	Higher
Speare Memorial Hospital	81.3	77.8 , 84.8	74.4	70.7 , 78.1	Similar
St. Joseph Hospital	97.7	97.0 , 98.4	65.3	62.9 , 67.7	Higher
The Memorial Hospital	86.1	83.1 , 89.1	86.1	82.9 , 89.3	Similar
Upper Connecticut Valley	82.8	77.5 , 88.1	83.8	78.1 , 89.7	Similar
Valley Regional Hospital	87.4	84.7 , 90.1	72.0	68.3 , 75.7	Higher
Weeks Medical Center	68.7	64.8 , 72.6	50.2	45.7 , 54.7	Higher
Wentworth-Douglass	92.4	91.4 , 93.4	79.1	77.4 , 80.8	Higher
Crotched Mountain Rehabilitation	86.1	81.6 , 90.6	58.1	54.9 , 61.3	Higher
HealthSouth Rehabilitation	80.6	74.6 , 86.6	82.3	76.5 , 88.1	Similar
Northeast Rehabilitation	60.4	56.9 , 63.9	72.3	68.9 , 75.7	Lower
Hampstead Hospital	78.0	72.3 , 83.7	60.5	53.9 , 67.1	Higher
New Hampshire Hospital	76.8	73.4 , 80.2	74.4	71.3 , 77.5	Similar
State Total	88.5	88.2 , 88.8	77.4	77.0 , 77.8	Higher

Mandatory Influenza Vaccination Policies for Healthcare Personnel

During the 2011-2012 influenza season, 18 (58%) of 31 hospitals had a healthcare personnel (HCP) vaccination policy in place, 6 (19%) did not have one, and 7 (23%) were considering one. Among 18 hospitals with a policy, 5 (29%) allowed for only medical and religious exemptions and 3 additional hospitals also accepted philosophical exemptions; the remaining 10 (59%) allowed exemption for any reason. All 18 (100%) hospitals required unvaccinated HCP with an approved exemption to wear a mask and 3 (18%) terminated unvaccinated HCP without an approved medical or religious exemption. Hospitals with vaccination policies had significantly higher rates of influenza vaccination as a whole (93%) than hospitals without mandatory policies (78%). Hospitals that terminated unvaccinated employees without an exemption had a significantly higher vaccination rate (98%) than hospitals that required unvaccinated employees to wear a mask (90%).

FIGURE 21: Influenza vaccination rates for hospital with and without vaccination policies.

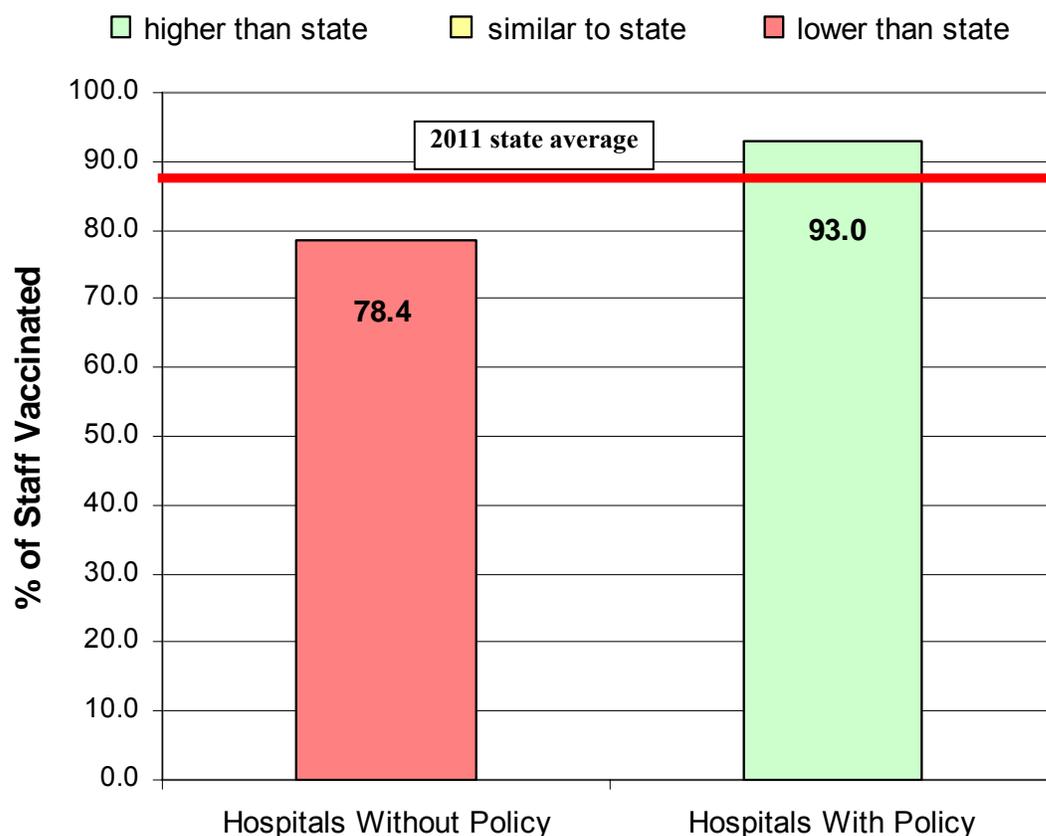


TABLE 25: Mandatory influenza vaccination policies and consequences for healthcare personnel (HCP) by hospitals, 2011-2012 influenza season

Hospital	Exemptions Allowed in Policy*	Consequences for Unvaccinated HCP <u>Without</u> Accepted Exemption	Precautions for Unvaccinated HCP <u>With</u> Accepted Exemption
Androscoggin Valley Hospital	Medical, Philosophical, Religious	Wear a Mask	Wear a Mask
Catholic Medical Center	Medical, Religious	Wear a Mask	Wear a Mask
Cheshire Medical Center	Any Reason	Wear a Mask	Wear a Mask
Cottage Hospital	Any Reason	Wear a Mask	Wear a Mask
DHMC	Medical, Religious	Termination	Wear a Mask
Exeter Hospital	Medical, Religious	Wear a Mask	Wear a Mask
Franklin Regional	Any reason	Wear a Mask	Wear a Mask
Frisbie Memorial	Any reason	Wear a Mask	Wear a Mask
Lakes Region General	Any reason	Wear a Mask	Wear a Mask
New London Hospital	Medical, Religious	Termination	Wear a Mask
Parkland Medical Center	Medical, Philosophical, Religious	Wear a Mask	Wear a Mask
Portsmouth Regional	Any Reason	Wear a Mask	Wear a Mask
Southern NH Medical	Any Reason	Wear a Mask	Wear a Mask
Spere Memorial Hospital	Any Reason	Wear a Mask	Wear a Mask
St. Joseph Hospital	Medical, Religious	Termination	Wear a Mask
Valley Regional Hospital	Any Reason	Wear a Mask	Wear a Mask
Wentworth-Douglass	Any Reason	Wear a Mask	Wear a Mask
Crotched Mountain Rehabilitation	Medical, Philosophical, Religious	Wear a Mask	Wear a Mask

*Exemptions include Medical, Religious, Philosophical, or Any Reason.

Note: Six hospitals (Alice Peck Day, Huggins Hospital, The Memorial Hospital, Upper Connecticut Valley, Weeks Medical Center, and Northeast Rehabilitation) did not have mandatory vaccination policies during the 2011-2012 influenza season but were considering mandatory vaccination policies at the time of the survey. Seven hospitals (Concord Hospital, Elliot Hospital, Littleton Regional, Monadnock Community, HealthSouth Rehabilitation, Hampstead Hospital, and New Hampshire Hospital) did not have mandatory vaccination policies during 2011-2012 season or were considering policies at the time of the survey.

CONCLUSIONS

This third report on HAI surveillance data displays progress toward the goal of eliminating HAIs in New Hampshire. This report provides a picture of selected HAI data that can be used by healthcare facilities to identify areas for improvement and prevention, as well as healthcare consumers to make informed healthcare decisions.

Key findings described in this report include the following:

- All 31 licensed hospitals in New Hampshire complied with the HAI mandatory reporting law in 2011.
- Overall, New Hampshire hospitals reported fewer HAIs associated with central lines and selected surgeries than expected based on national data, this difference was statistically significant.
- All 26 hospitals have infection rates that are lower or similar to national rates. While all hospitals should continue to work to eliminate HAIs, this report highlights a few hospitals that have significantly lowered infection rates.
- Overall statewide adherence to all four infection-prevention practices during central line insertions was 95.7%, which represents a slight decrease from 2010 (96.8%). Some CLIP adherence rates decreased, suggesting that current hospital practices or data collection methods should be reviewed. Since 2009, hospitals have made improvement and should continue to work toward the goal of 100% adherence.
- Overall, New Hampshire hospitals performed surgical antimicrobial prophylaxis correctly more often than the national average. Compared to 2010, the percentage of patients who received prophylactic antibiotic within one hour prior to surgery (SCIP-1) increased. The percentage of patients who received the appropriate prophylactic antibiotic (SCIP-2) and whose prophylactic antibiotic was discontinued within 24 hours after surgery (SCIP-3) did not significantly increase or decrease.
- Vaccination rates by hospital during the 2011–2012 influenza season ranged from 52.8% to 98.5%. The overall State rate was 88.5%, which represents a significant increase from the 2010–2011 influenza season when the statewide vaccination rate was 77.4% (in 2008-2009 the vaccination rate was 59.9%).
- Seventeen NH hospitals had mandatory influenza vaccination policies for healthcare personnel during the 2011-2012 season. Overall, hospitals with vaccination policies had significantly higher rates of influenza vaccination as a whole (93.0%) than hospitals without mandatory policies (78.4%).

While this report only includes information on a subset of HAIs, the information provided can be used as an important indicator of healthcare quality and infection prevention efforts in New Hampshire hospitals. Although data in this report have not been independently validated to assess reporting accuracy, this process is ongoing and will be the subject of a future report.

Healthcare consumers can discuss the information provided in this report with their healthcare provider and should review Appendix 3 for information on what individual patients can do to prevent healthcare-associated infections.

ACUTE CARE HOSPITAL REPORTS

Because data must be broken down into categories for risk adjustment and because rates must be suppressed if data are too sparse, data that can be presented for New Hampshire facilities may be limited. Due to restrictions on presenting data if not enough central line days or procedures were performed, there are several hospitals for which hospital-specific infections data cannot be presented. See technical notes for additional information on data restriction and presentation.



ALICE PECK DAY MEMORIAL

Lebanon, New Hampshire

Not-for-profit

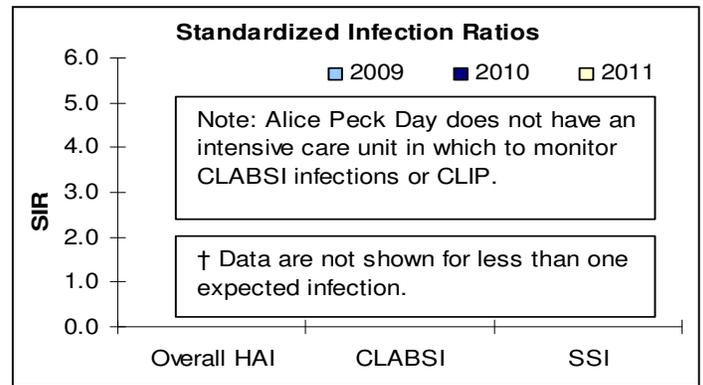
of Admissions: 1,322

of Beds: 25

of ICU Beds: 0

of Patient-days: 5,980

2011 HAI DATA REPORT



STANDARDIZED INFECTION RATIOS (SIR)

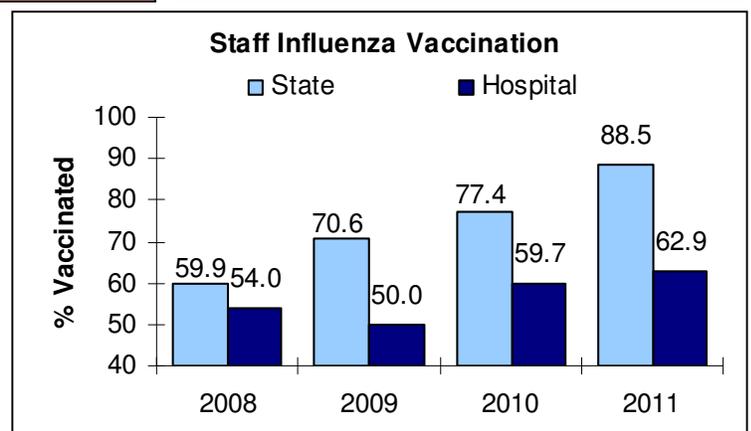
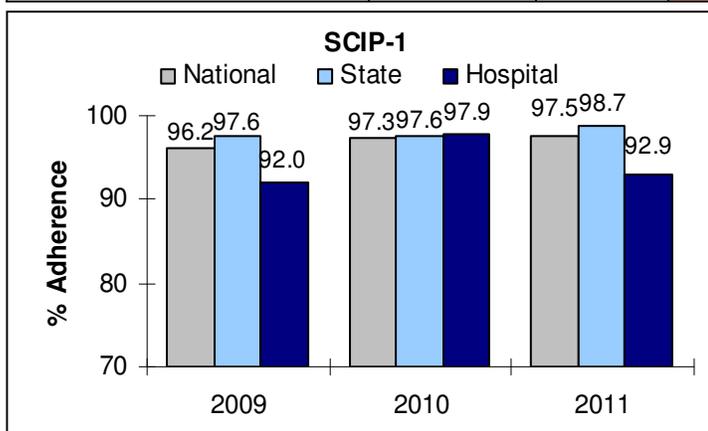
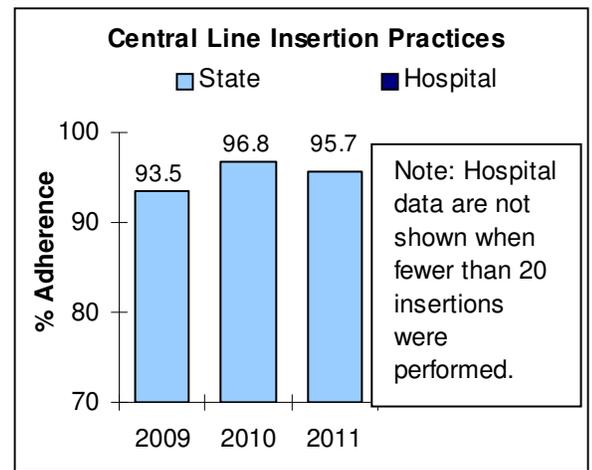
Measure	Observed Infections	Expected Infections	Standardized Infection Ratio (SIR)	95% Confidence Interval	Comparison to Expected Infections
Overall HAI	†	†	†	†	†
CLABSI	†	†	†	†	†
SSI	†	†	†	†	†
CABG	†	†	†	†	†
COLO	†	†	†	†	†
KPRO	†	†	†	†	†

CENTRAL LINE-ASSOCIATED BLOODSTREAM INFECTIONS RATES

Type of Unit	Number of Infections	Number of Central-line Days	Rate per 1,000 Central-line Days	National Rate	Comparison to National Rate
No ICU	†	†	†	†	†

PROCESS MEASURES

Measure	Percent Adherence	State Average	Comparison to State Average
CLIP	†	95.7	†
SCIP-1	92.0	98.7	Lower
SCIP-2	97.6	98.7	Similar
SCIP-3	100.0	97.2	Similar
Measure	Percent Vaccinated	State Average	Comparison to State Average
Staff Influenza Vaccination	62.9	88.5	Lower



HAI: Healthcare-Associated Infections CLABSI: Central line-associated bloodstream infection SSI: Surgical site infection COLO: Colon procedures CABG: Coronary artery bypass procedures KPRO: Knee arthroplasty SCIP: Surgical Care Improvement Project CLIP: Central line insertion practices



ANDROSCOGGIN VALLEY

Berlin, New Hampshire

Not-for-profit

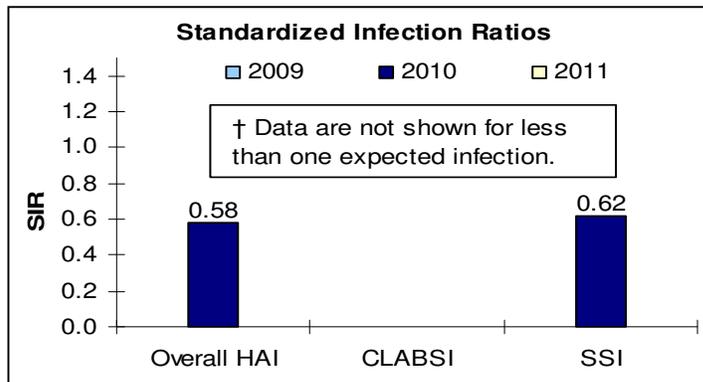
of Admissions: 1,470

of Beds: 25

of ICU Beds: 5

of Patient-days: 5,948

2011 HAI DATA REPORT



STANDARDIZED INFECTION RATIOS (SIR)

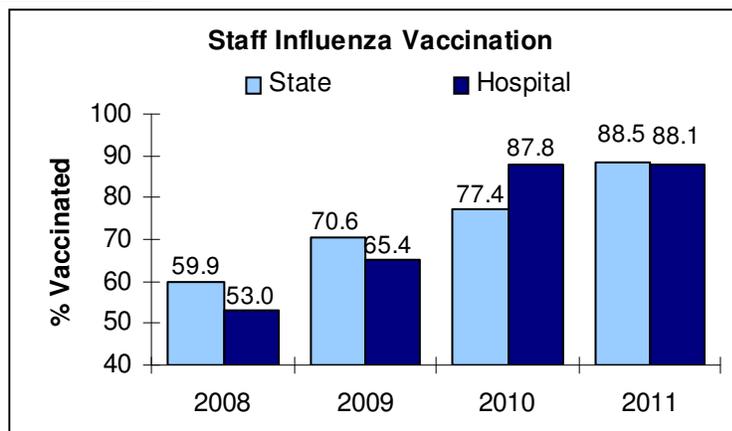
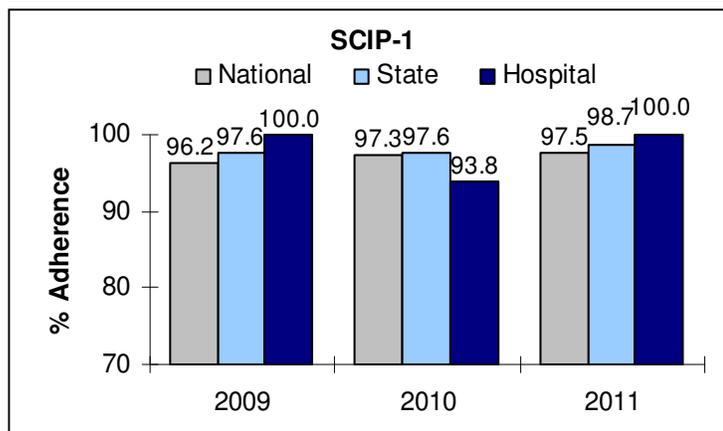
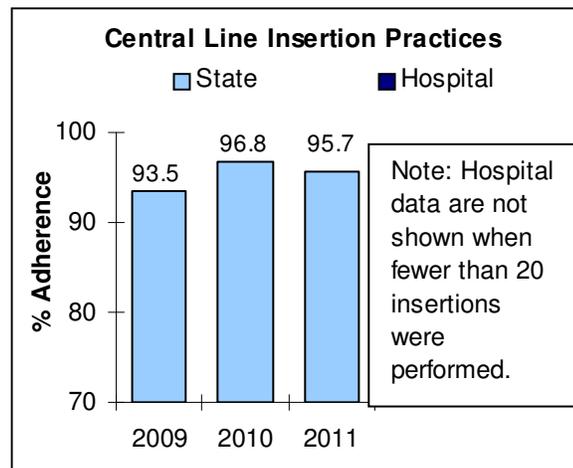
Measure	Observed Infections	Expected Infections	Standardized Infection Ratio (SIR)	95% Confidence Interval	Comparison to Expected Infections
Overall HAI	0	1.18	0.00	- , 3.12	Similar
CLABSI	†	†	†	†	†
SSI	0	1.05	0.00	- , 3.500	Similar
CABG					
COLO	†	†	†	†	†
KPRO	†	†	†	†	†

CENTRAL LINE-ASSOCIATED BLOODSTREAM INFECTIONS RATES

Type of Unit	Number of Infections	Number of Central-line Days	Rate per 1,000 Central-line Days	National Rate	Comparison to National Rate
Medical/Surgical ICU	0	81	0.0	1.1	Similar

PROCESS MEASURES

Measure	Percent Adherence	State Average	Comparison to State Average
CLIP	†	95.7	†
SCIP-1	100.0	98.7	Similar
SCIP-2	100.0	98.7	Similar
SCIP-3	96.7	97.2	Similar
Measure	Percent Vaccinated	State Average	Comparison to State Average
Staff Influenza Vaccination	88.1	88.5	Similar



HAI: Healthcare-Associated Infections CLABSI: Central line-associated bloodstream infection SSI: Surgical site infection COLO: Colon procedures CABG: Coronary artery bypass procedures KPRO: Knee arthroplasty SCIP: Surgical Care Improvement Project CLIP: Central line insertion practices



CATHOLIC MEDICAL CENTER

Manchester, New Hampshire

Not-for-profit

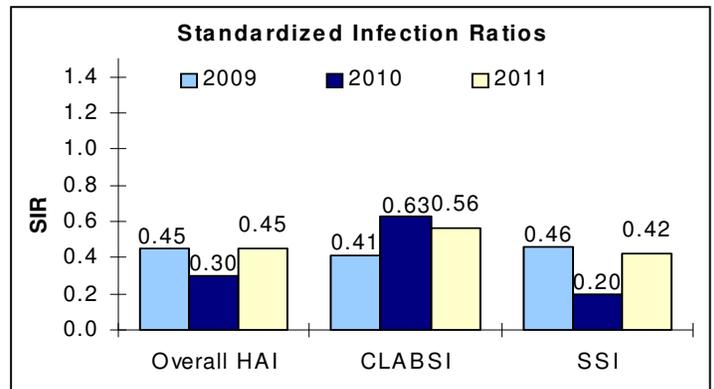
of Admissions: 9,772

of Beds: 235

of ICU Beds: 20

of Patient-days: 50,669

2011 HAI DATA REPORT



STANDARDIZED INFECTION RATIOS (SIR)

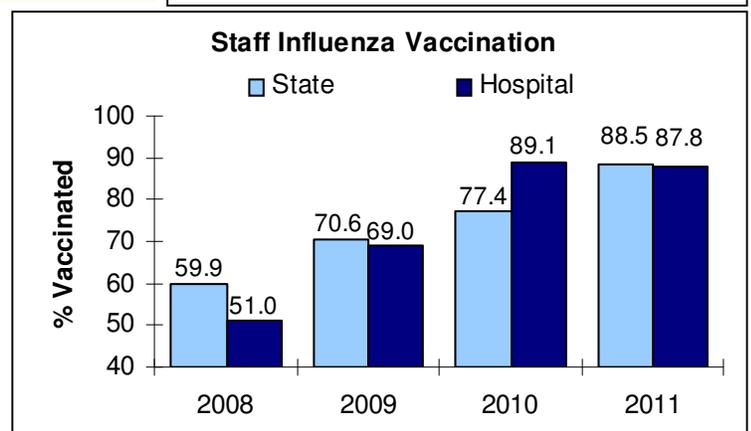
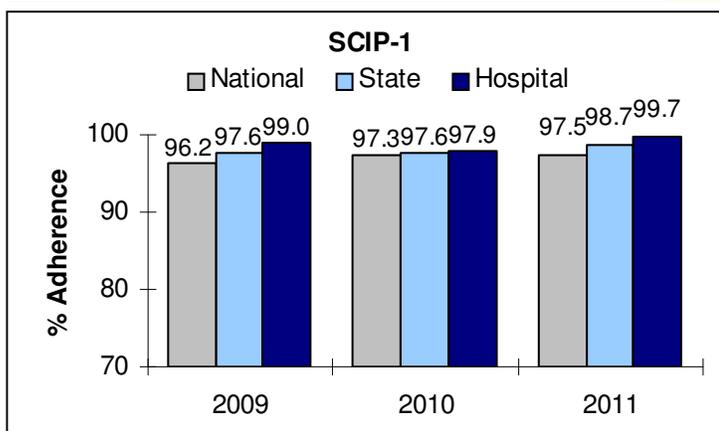
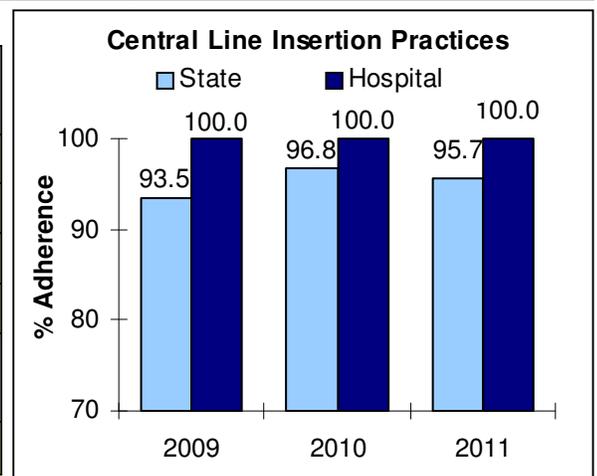
Measure	Observed Infections	Expected Infections	Standardized Infection Ratio (SIR)	95% Confidence Interval	Comparison to Expected Infections
Overall HAI	10	22.03	0.45	0.22 , 0.83	Lower
CLABSI	3	5.33	0.56	0.12 , 1.66	Similar
SSI	7	16.71	0.42	0.17, 0.86	Lower
CABG	2	7.14	0.28	0.03 , 1.01	Similar
COLO	3	7.18	0.42	0.09 , 1.22	Similar
KPRO	2	2.38	0.84	0.10 , 3.03	Similar

CENTRAL LINE-ASSOCIATED BLOODSTREAM INFECTIONS RATES

Type of Unit	Number of Infections	Number of Central-line Days	Rate per 1,000 Central-line Days	National Rate	Comparison to National Rate
Medical/Surgical ICU	3	3551	0.8	1.0	Similar

PROCESS MEASURES

Measure	Percent Adherence	State Average	Comparison to State Average
CLIP	100.0	95.7	Similar
SCIP-1	99.7	98.7	Similar
SCIP-2	99.2	98.7	Similar
SCIP-3	97.3	97.2	Similar
Measure	Percent Vaccinated	State Average	Comparison to State Average
Staff Influenza Vaccination	87.8	88.5	Similar



HAI: Healthcare-Associated Infections CLABSI: Central line-associated bloodstream infection SSI: Surgical site infection COLO: Colon procedures CABG: Coronary artery bypass procedures KPRO: Knee arthroplasty SCIP: Surgical Care Improvement Project CLIP: Central line insertion practices



CHESHIRE MEDICAL CENTER

Keene, New Hampshire

Not-for-profit

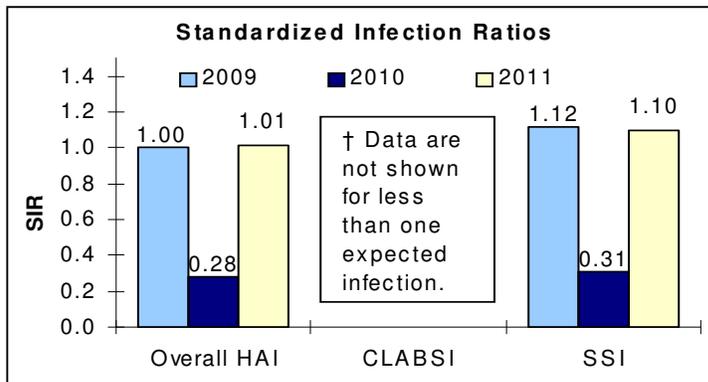
of Admissions: 4,922

of Beds: 167

of ICU Beds: 10

of Patient-days: 21,174

2011 HAI DATA REPORT



STANDARDIZED INFECTION RATIOS (SIR)

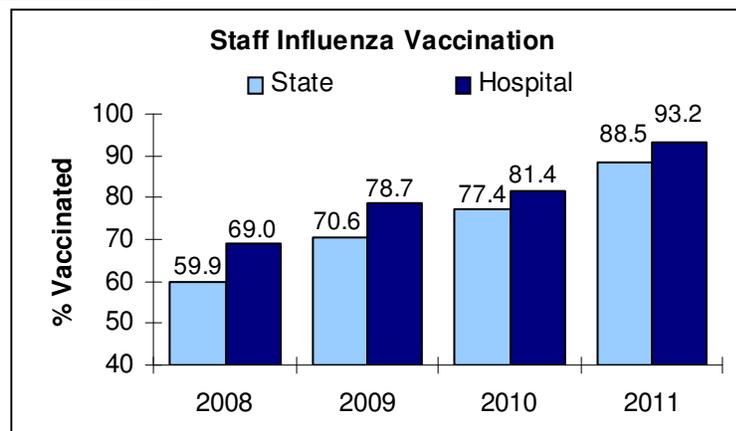
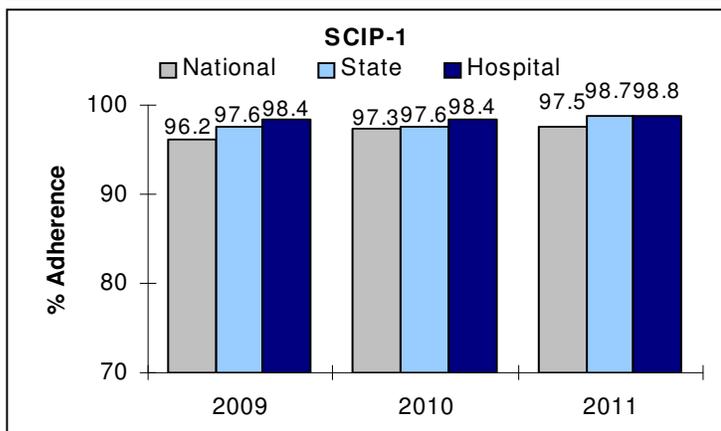
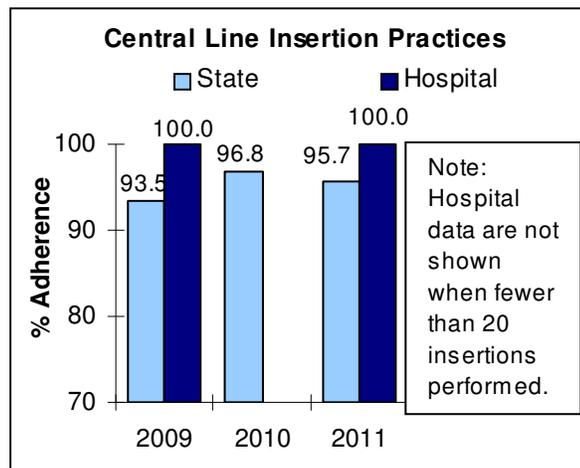
Measure	Observed Infections	Expected Infections	Standardized Infection Ratio (SIR)	95% Confidence Interval	Comparison to Expected Infections
Overall HAI	3	2.97	1.01	0.20 , 2.95	Similar
CLABSI	†	†	†	†	†
SSI	3	2.72	1.10	0.23 , 3.22	Similar
CABG					
COLO	2	1.96	1.02	0.12 , 3.68	Similar
KPRO	†	†	†	†	†

CENTRAL LINE-ASSOCIATED BLOODSTREAM INFECTIONS RATES

Type of Unit	Number of Infections	Number of Central-line Days	Rate per 1,000 Central-line Days	National Rate	Comparison to National Rate
Medical ICU	0	130	0.0	1.3	Similar

PROCESS MEASURES

Measure	Percent Adherence	State Average	Comparison to State Average
CLIP	100.0	95.7	Similar
SCIP-1	98.8	98.7	Similar
SCIP-2	99.4	98.7	Similar
SCIP-3	97.5	97.2	Similar
Measure	Percent Vaccinated	State Average	Comparison to State Average
Staff Influenza Vaccination	93.2	88.5	Higher



HAI: Healthcare-Associated Infections CLABSI: Central line-associated bloodstream infection SSI: Surgical site infection COLO: Colon procedures CABG: Coronary artery bypass procedures KPRO: Knee arthroplasty SCIP: Surgical Care Improvement Project CLIP: Central line insertion practices



CONCORD HOSPITAL

Concord, New Hampshire

Not-for-profit

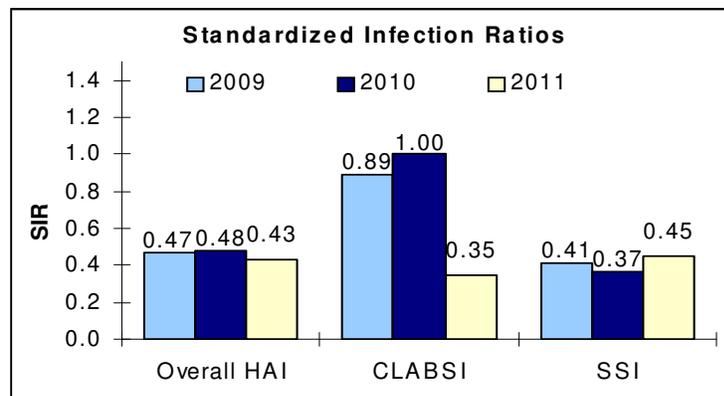
of Admissions: 14,338

of Beds: 238

of ICU Beds: 18

of Patient-days: 58,172

2011 HAI DATA REPORT



STANDARDIZED INFECTION RATIOS (SIR)

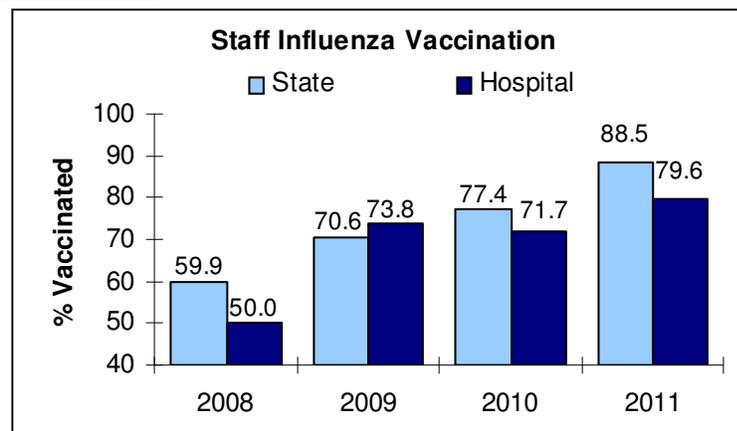
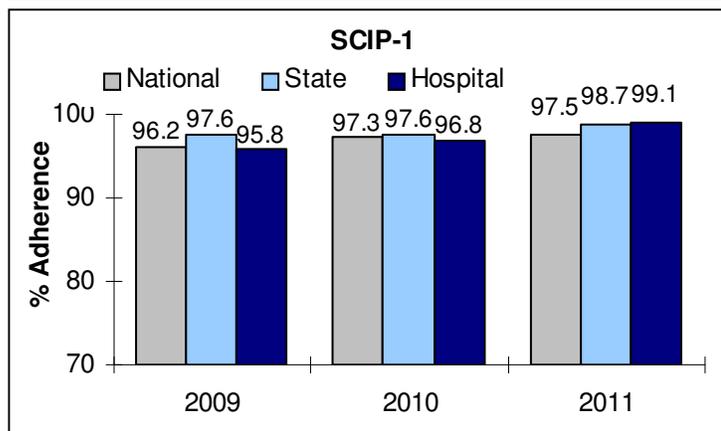
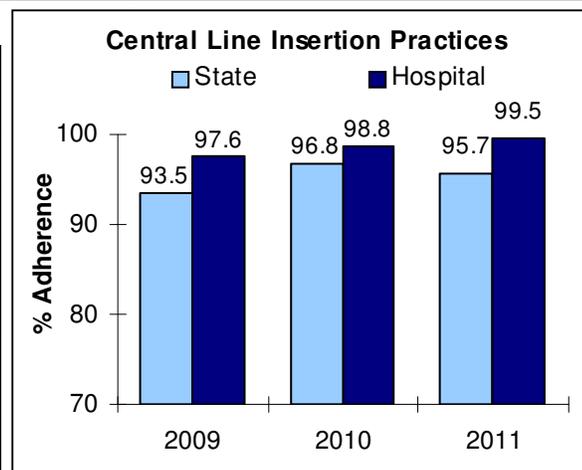
Measure	Observed Infections	Expected Infections	Standardized Infection Ratio (SIR)	95% Confidence Interval	Comparison to Expected Infections
Overall HAI	7	16.13	0.43	0.17 , 0.89	Lower
CLABSI	1	2.89	0.35	0.01 , 1.95	Similar
SSI	6	13.23	0.45	0.17, 0.99	Lower
CABG	0	2.14	0.00	- , 1.72	Similar
COLO	4	4.85	0.83	0.23 , 2.11	Similar
KPRO	2	6.25	0.32	0.04 , 1.16	Similar

CENTRAL LINE-ASSOCIATED BLOODSTREAM INFECTIONS RATES

Type of Unit	Number of Infections	Number of Central-line Days	Rate per 1,000 Central-line Days	National Rate	Comparison to National Rate
Medical/Surgical ICU	1	1929	0.5	1.0	Similar

PROCESS MEASURES

Measure	Percent Adherence	State Average	Comparison to State Average
CLIP	99.5	95.7	Higher
SCIP-1	99.1	98.7	Similar
SCIP-2	97.7	98.7	Similar
SCIP-3	92.6	97.2	Lower
Measure	Percent Vaccinated	State Average	Comparison to State Average
Staff Influenza Vaccination	79.6	88.5	Lower



HAI: Healthcare-Associated Infections CLABSI: Central line-associated bloodstream infection SSI: Surgical site infection COLO: Colon procedures CABG: Coronary artery bypass procedures KPRO: Knee arthroplasty SCIP: Surgical Care Improvement Project CLIP: Central line insertion practices



COTTAGE HOSPITAL

Woodsville, New Hampshire

Not-for-profit

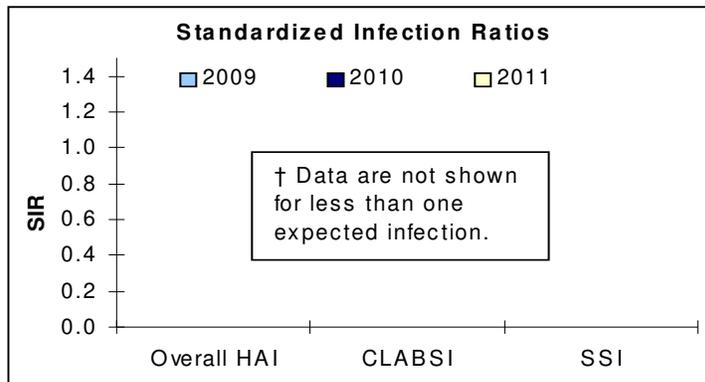
of Admissions: 1,222

of Beds: 25

of ICU Beds: 3

of Patient-days: 5,261

2011 HAI DATA REPORT



STANDARDIZED INFECTION RATIOS (SIR)

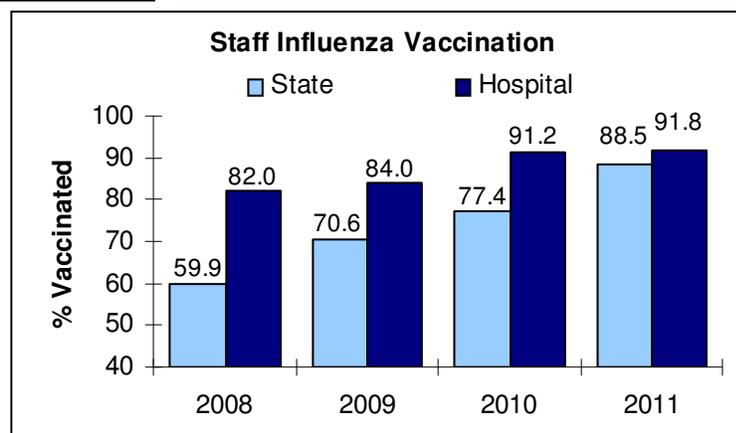
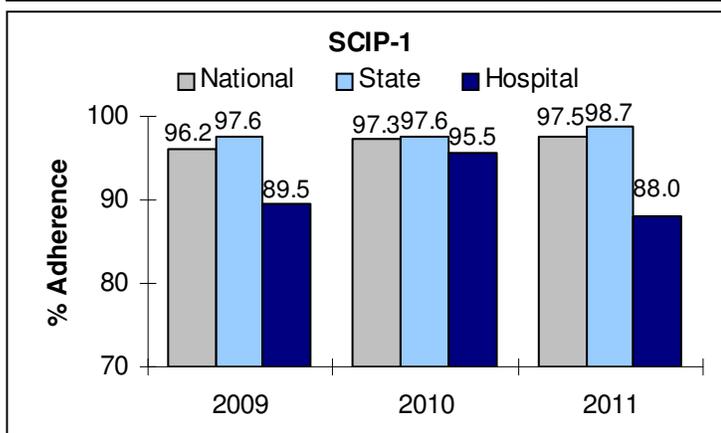
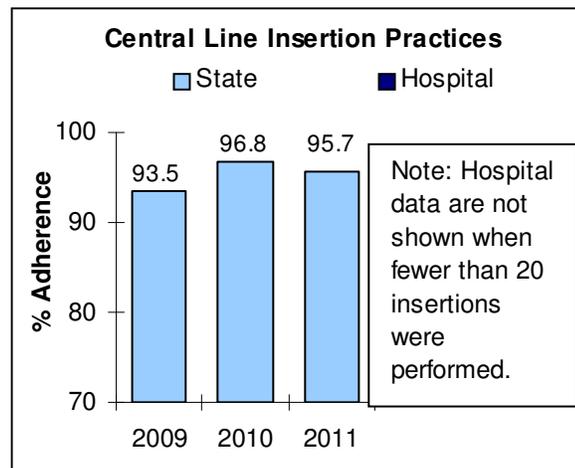
Measure	Observed Infections	Expected Infections	Standardized Infection Ratio (SIR)	95% Confidence Interval	Comparison to Expected Infections
Overall HAI	†	†	†	†	†
CLABSI	†	†	†	†	†
SSI	†	†	†	†	†
CABG					
COLO	†	†	†	†	†
KPRO	†	†	†	†	†

CENTRAL LINE-ASSOCIATED BLOODSTREAM INFECTIONS RATES

Type of Unit	Number of Infections	Number of Central-line Days	Rate per 1,000 Central-line Days	National Rate	Comparison to National Rate
Medical/Surgical ICU	0	86	0.0	1.1	Similar

PROCESS MEASURES

Measure	Percent Adherence	State Average	Comparison to State Average
CLIP	†	95.7	†
SCIP-1	88.0	98.7	Lower
SCIP-2	96.0	98.7	Similar
SCIP-3	87.5	97.2	Lower
Measure	Percent Vaccinated	State Average	Comparison to State Average
Staff Influenza Vaccination	91.8	88.5	Similar



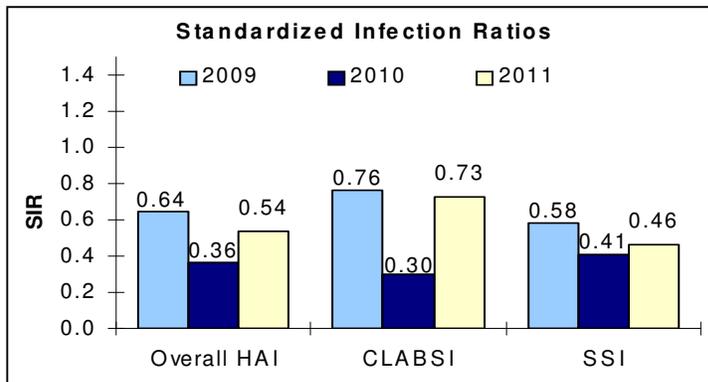
HAI: Healthcare-Associated Infections CLABSI: Central line-associated bloodstream infection SSI: Surgical site infection COLO: Colon procedures CABG: Coronary artery bypass procedures KPRO: Knee arthroplasty SCIP: Surgical Care Improvement Project CLIP: Central line insertion practices

DARTMOUTH-HITCHCOCK MEDICAL CENTER



Lebanon, New Hampshire
 Not-for-profit
 # of Admissions: 22,915
 # of Beds: 398
 # of ICU Beds: 75
 # of Patient-days: 120,716

2011 HAI DATA REPORT



STANDARDIZED INFECTION RATIOS (SIR)

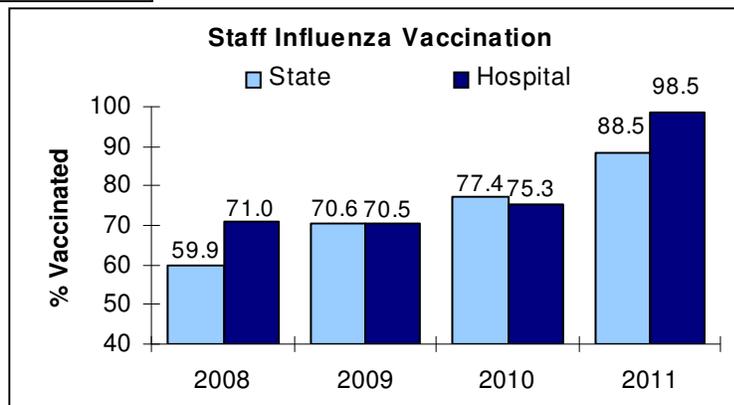
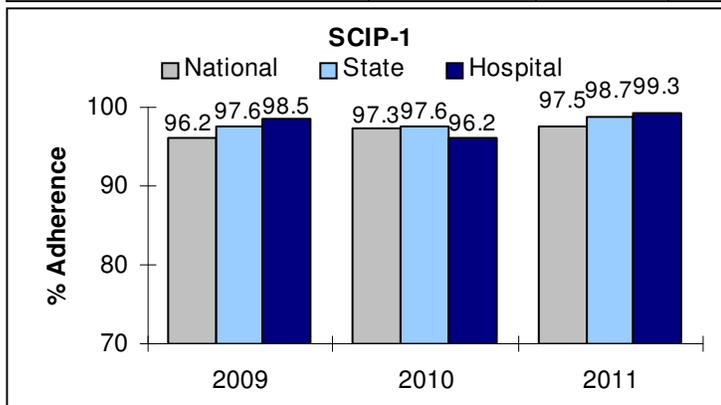
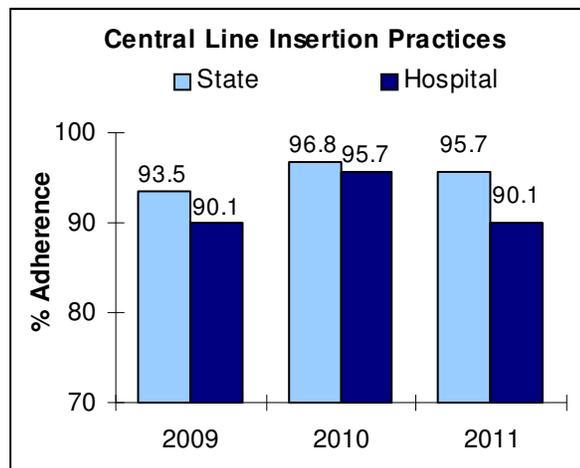
Measure	Observed Infections	Expected Infections	Standardized Infection Ratio (SIR)	95% Confidence Interval	Comparison to Expected Infections
Overall HAI	32	59.00	0.54	0.37 , 0.77	Lower
CLABSI	13	17.91	0.73	0.39 , 1.24	Similar
SSI	19	41.09	0.46	0.28 , 0.72	Lower
CABG	4	6.47	0.62	0.17 , 1.58	Similar
COLO	8	25.25	0.32	0.14 , 0.62	Lower
KPRO	7	9.37	0.75	0.30 , 1.54	Similar

CENTRAL LINE-ASSOCIATED BLOODSTREAM INFECTIONS RATES

Type of Unit	Number of Infections	Number of Central-line Days	Rate per 1,000 Central-line Days	National Rate	Comparison to National Rate
Medical/Surgical ICU	8	6375	1.3	1.4	Similar
Med Cardiac ICU	5	2263	2.2	1.3	Similar

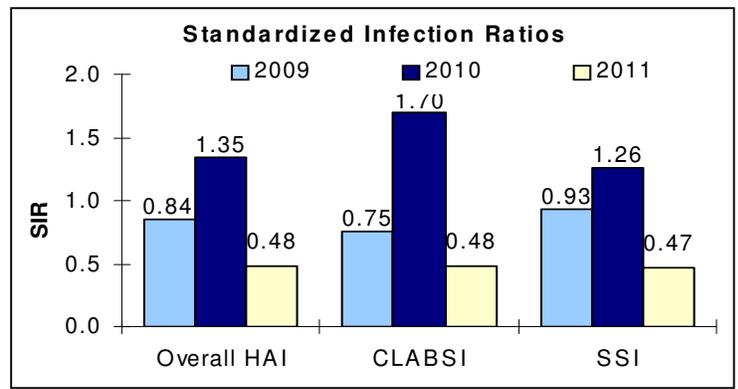
PROCESS MEASURES

Measure	Percent Adherence	State Average	Comparison to State Average
CLIP	90.1	95.7	Lower
SCIP-1	99.3	98.7	Similar
SCIP-2	97.4	98.7	Similar
SCIP-3	93.9	97.2	Lower
Measure	Percent Vaccinated	State Average	Comparison to State Average
Staff Influenza Vaccination	98.5	88.5	Higher





ELLIOT HOSPITAL
 Manchester, New Hampshire
 Not-for-profit
 # of Admissions: 14,783
 # of Beds: 281
 # of ICU Beds: 40
 # of Patient-days: 65,655
2011 HAI DATA REPORT



STANDARDIZED INFECTION RATIOS (SIR)

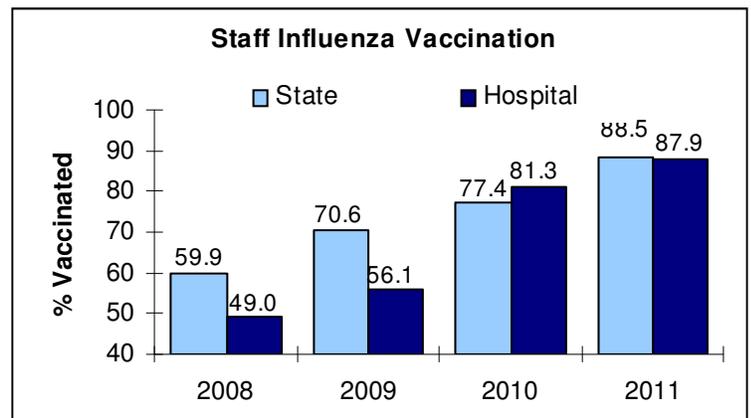
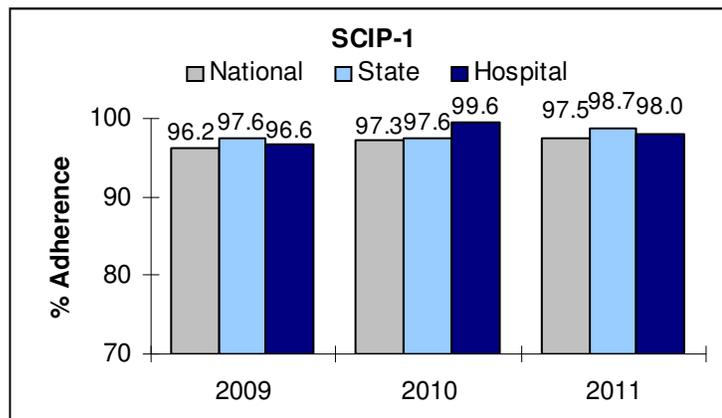
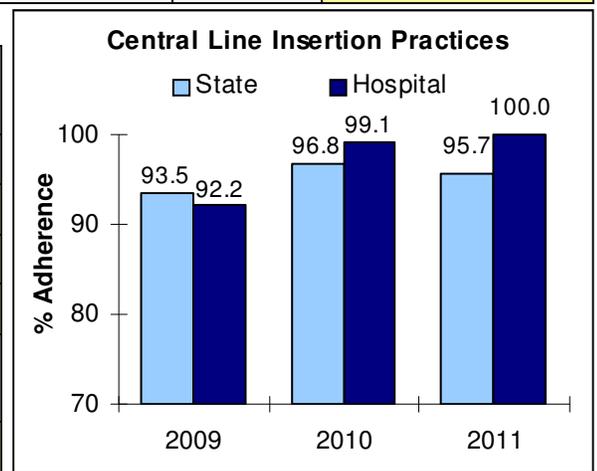
Measure	Observed Infections	Expected Infections	Standardized Infection Ratio (SIR)	95% Confidence Interval	Comparison to Expected Infections
Overall HAI	7	14.68	0.48	0.19 , 0.98	Lower
CLABSI	2	4.14	0.48	0.06 , 1.76	Similar
SSI	5	10.55	0.47	0.15 , 1.11	Similar
CABG					
COLO	4	7.77	0.52	0.14 , 1.32	Similar
KPRO	1	2.78	0.36	0.01, 2.01	Similar

CENTRAL LINE-ASSOCIATED BLOODSTREAM INFECTIONS RATES

Type of Unit	Number of Infections	Number of Central-line Days	Rate per 1,000 Central-line Days	National Rate	Comparison to National Rate
Medical/Surgical ICU	2	1827	1.1	1.0	Similar
Med Cardiac ICU	0	699	0.0	1.3	Similar

PROCESS MEASURES

Measure	Percent Adherence	State Average	Comparison to State Average
CLIP	100.0	95.7	Higher
SCIP-1	98.0	98.7	Similar
SCIP-2	96.9	98.7	Similar
SCIP-3	97.6	97.2	Similar
Measure	Percent Vaccinated	State Average	Comparison to State Average
Staff Influenza Vaccination	87.9	88.5	Similar



HAI: Healthcare-Associated Infections CLABSI: Central line-associated bloodstream infection SSI: Surgical site infection COLO: Colon procedures CABG: Coronary artery bypass procedures KPRO: Knee arthroplasty SCIP: Surgical Care Improvement Project CLIP: Central line insertion practices



EXETER HOSPITAL

Exeter, New Hampshire

Not-for-profit

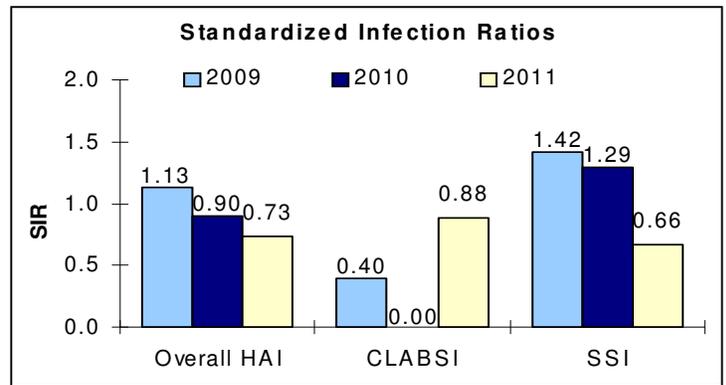
of Admissions: 5,512

of Beds: 100

of ICU Beds: 10

of Patient-days: 22,845

2011 HAI DATA REPORT



STANDARDIZED INFECTION RATIOS (SIR)

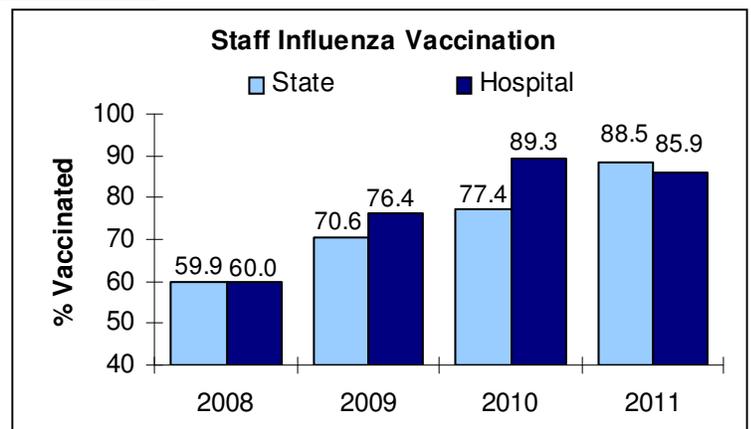
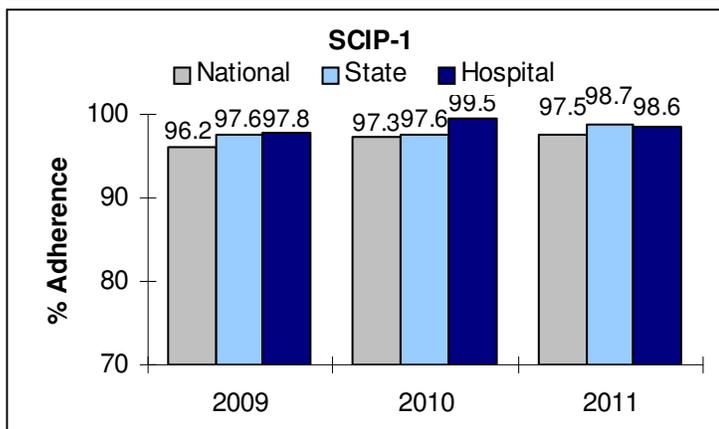
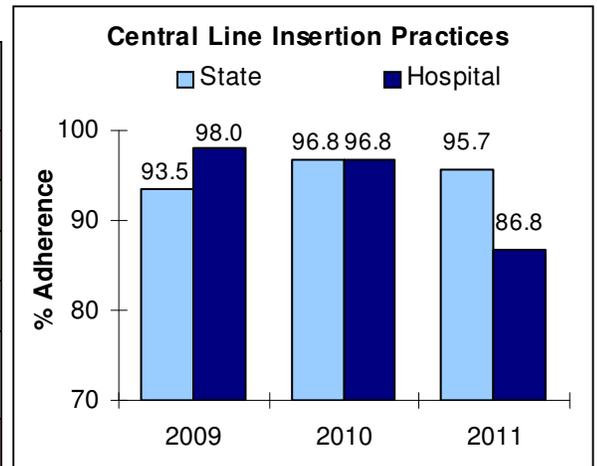
Measure	Observed Infections	Expected Infections	Standardized Infection Ratio (SIR)	95% Confidence Interval	Comparison to Expected Infections
Overall HAI	5	6.82	0.73	0.24 , 1.71	Similar
CLABSI	2	2.27	0.88	0.11 , 3.18	Similar
SSI	3	4.55	0.66	0.14 , 1.93	Similar
CABG					
COLO	3	3.26	0.92	0.19 , 2.69	Similar
KPRO	0	1.29	0.00	- , 2.86	Similar

CENTRAL LINE-ASSOCIATED BLOODSTREAM INFECTIONS RATES

Type of Unit	Number of Infections	Number of Central-line Days	Rate per 1,000 Central-line Days	National Rate	Comparison to National Rate
Medical/Surgical ICU	2	1513	1.3	1.1	Similar

PROCESS MEASURES

Measure	Percent Adherence	State Average	Comparison to State Average
CLIP	86.8	95.7	Lower
SCIP-1	98.6	98.7	Similar
SCIP-2	99.6	98.7	Similar
SCIP-3	99.6	97.2	Higher
Measure	Percent Vaccinated	State Average	Comparison to State Average
Staff Influenza Vaccination	85.9	88.5	Lower



HAI: Healthcare-Associated Infections CLABSI: Central line-associated bloodstream infection SSI: Surgical site infection COLO: Colon procedures CABG: Coronary artery bypass procedures KPRO: Knee arthroplasty SCIP: Surgical Care Improvement Project CLIP: Central line insertion practices



FRANKLIN REGIONAL

Franklin, New Hampshire

Not-for-profit

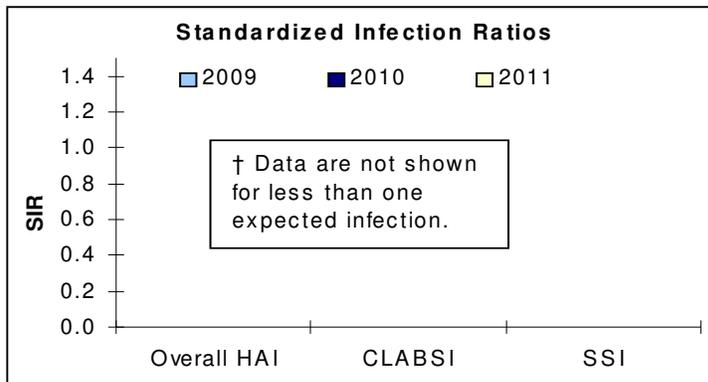
of Admissions: 1194

of Beds: 25

of ICU Beds: 5

of Patient-days: 5,453

2011 HAI DATA REPORT



STANDARDIZED INFECTION RATIOS (SIR)

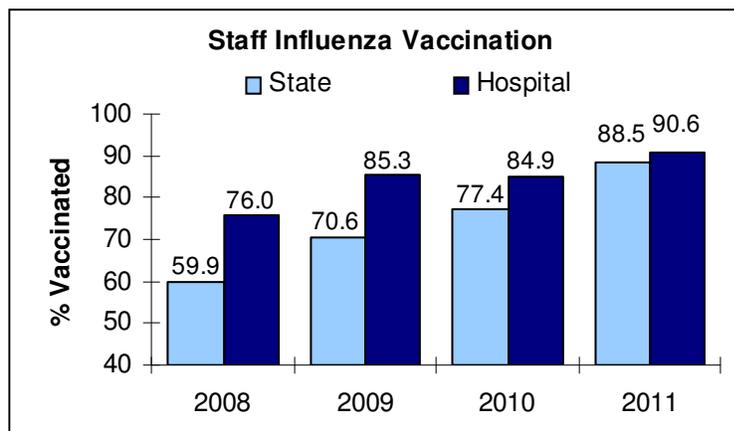
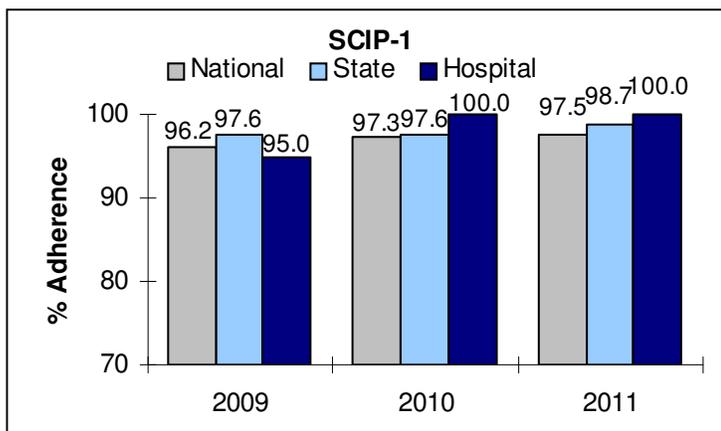
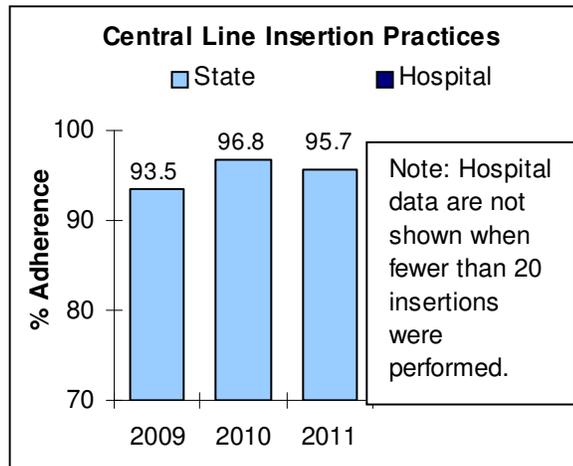
Measure	Observed Infections	Expected Infections	Standardized Infection Ratio (SIR)	95% Confidence Interval	Comparison to Expected Infections
Overall HAI	†	†	†	†	†
CLABSI	†	†	†	†	†
SSI	†	†	†	†	†
CABG					
COLO	†	†	†	†	†
KPRO	†	†	†	†	†

CENTRAL LINE-ASSOCIATED BLOODSTREAM INFECTIONS RATES

Type of Unit	Number of Infections	Number of Central-line Days	Rate per 1,000 Central-line Days	National Rate	Comparison to National Rate
Medical/Surgical ICU	†	†	†	1.1	†

PROCESS MEASURES

Measure	Percent Adherence	State Average	Comparison to State Average
CLIP	†	95.7	†
SCIP-1	100	98.7	Similar
SCIP-2	83.3	98.7	Similar
SCIP-3	100.0	97.2	Similar
Measure	Percent Vaccinated	State Average	Comparison to State Average
Staff Influenza Vaccination	90.6	88.5	Similar

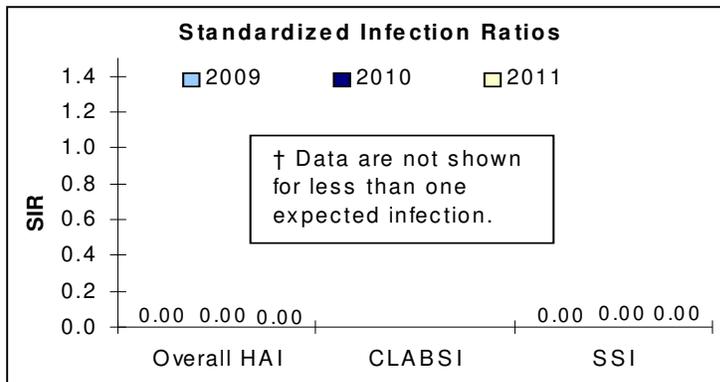


HAI: Healthcare-Associated Infections CLABSI: Central line-associated bloodstream infection SSI: Surgical site infection COLO: Colon procedures CABG: Coronary artery bypass procedures KPRO: Knee arthroplasty SCIP: Surgical Care Improvement Project CLIP: Central line insertion practices



FRISBIE MEMORIAL
 Rochester, New Hampshire
 Not-for-profit
 # of Admissions: 3,586
 # of Beds: 52
 # of ICU Beds: 8
 # of Patient-days: 14,927

2011 HAI DATA REPORT



STANDARDIZED INFECTION RATIOS (SIR)

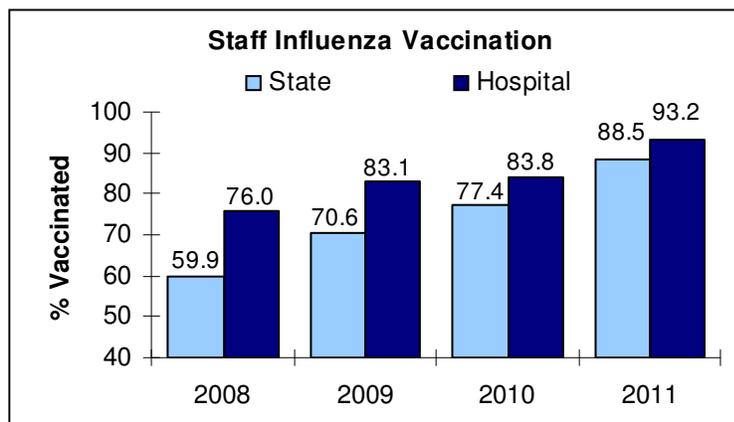
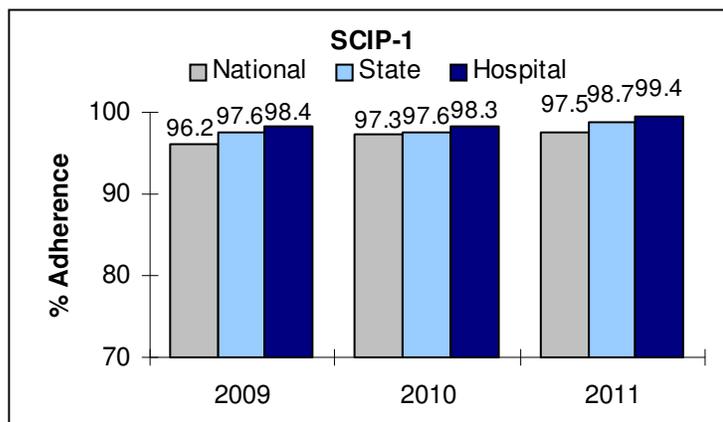
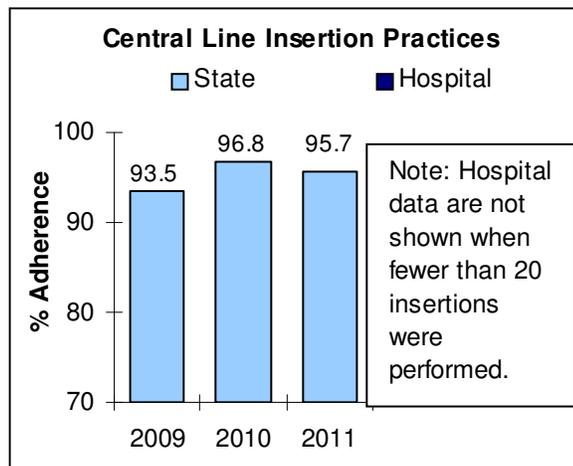
Measure	Observed Infections	Expected Infections	Standardized Infection Ratio (SIR)	95% Confidence Interval	Comparison to Expected Infections
Overall HAI	0	2.19	0.00	- , 1.68	Similar
CLABSI	†	†	†	†	†
SSI	0	1.75	0.00	- , 2.109	Similar
CABG					
COLO	†	†	†	†	†
KPRO	†	†	†	†	†

CENTRAL LINE-ASSOCIATED BLOODSTREAM INFECTIONS RATES

Type of Unit	Number of Infections	Number of Central-line Days	Rate per 1,000 Central-line Days	National Rate	Comparison to National Rate
Medical/Surgical ICU	0	293	0.0	1.1	Similar

PROCESS MEASURES

Measure	Percent Adherence	State Average	Comparison to State Average
CLIP	†	95.7	†
SCIP-1	99.4	98.7	Similar
SCIP-2	98.8	98.7	Similar
SCIP-3	98.1	97.2	Similar
Measure	Percent Vaccinated	State Average	Comparison to State Average
Staff Influenza Vaccination	93.2	88.5	Higher



HAI: Healthcare-Associated Infections CLABSI: Central line-associated bloodstream infection SSI: Surgical site infection COLO: Colon procedures CABG: Coronary artery bypass procedures KPRO: Knee arthroplasty SCIP: Surgical Care Improvement Project CLIP: Central line insertion practices



HUGGINS HOSPITAL

Wolfeboro, New Hampshire

Not-for-profit

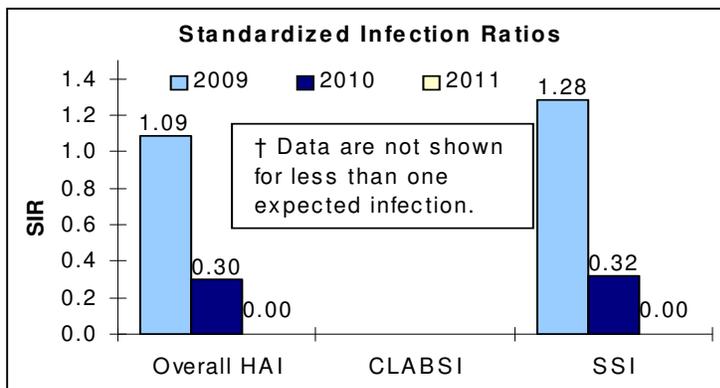
of Admissions: 1,273

of Beds: 25

of ICU Beds: 4

of Patient-days: 4,706

2011 HAI DATA REPORT



STANDARDIZED INFECTION RATIOS (SIR)

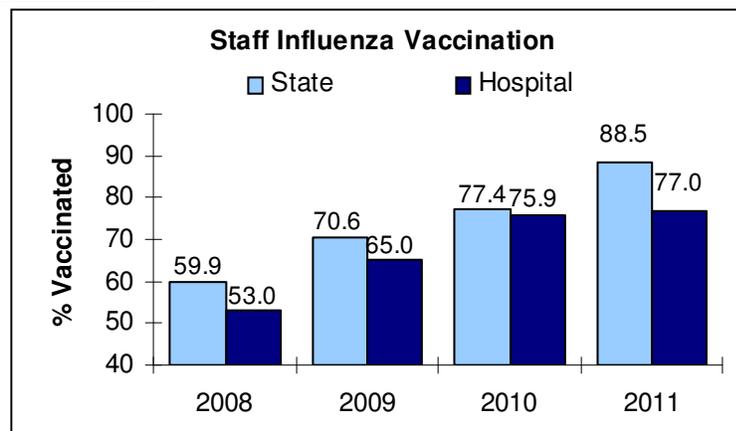
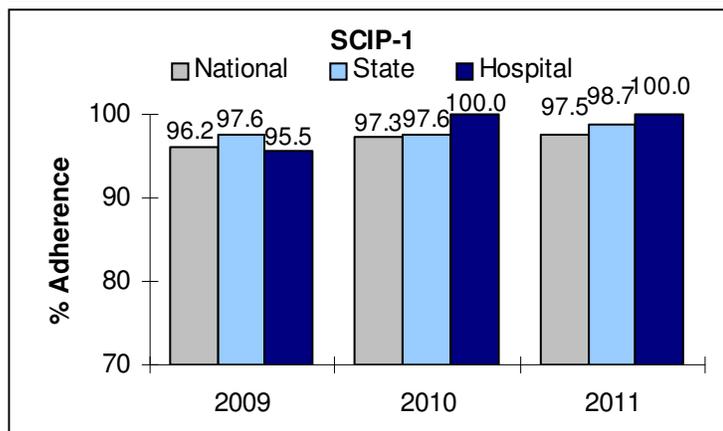
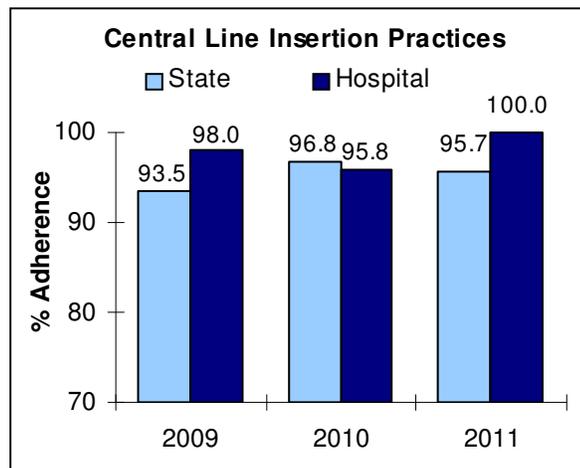
Measure	Observed Infections	Expected Infections	Standardized Infection Ratio (SIR)	95% Confidence Interval	Comparison to Expected Infections
Overall HAI	0	2.29	0.00	- , 1.60	Similar
CLABSI	†	†	†	†	†
SSI	0	2.01	0.00	- , 1.840	Similar
CABG					
COLO	0	1.70	0.00	- , 2.17	Similar
KPRO	†	†	†	†	†

CENTRAL LINE-ASSOCIATED BLOODSTREAM INFECTIONS RATES

Type of Unit	Number of Infections	Number of Central-line Days	Rate per 1,000 Central-line Days	National Rate	Comparison to National Rate
Medical/Surgical ICU	0	192	0.0	1.1	Similar

PROCESS MEASURES

Measure	Percent Adherence	State Average	Comparison to State Average
CLIP	100.0	95.7	Similar
SCIP-1	100.0	98.7	Similar
SCIP-2	100.0	98.7	Similar
SCIP-3	100.0	97.2	Similar
Measure	Percent Vaccinated	State Average	Comparison to State Average
Staff Influenza Vaccination	77.0	88.5	Lower



HAI: Healthcare-Associated Infections CLABSI: Central line-associated bloodstream infection SSI: Surgical site infection COLO: Colon procedures CABG: Coronary artery bypass procedures KPRO: Knee arthroplasty SCIP: Surgical Care Improvement Project CLIP: Central line insertion practices



LAKES REGION GENERAL

Laconia, New Hampshire

Not-for-profit

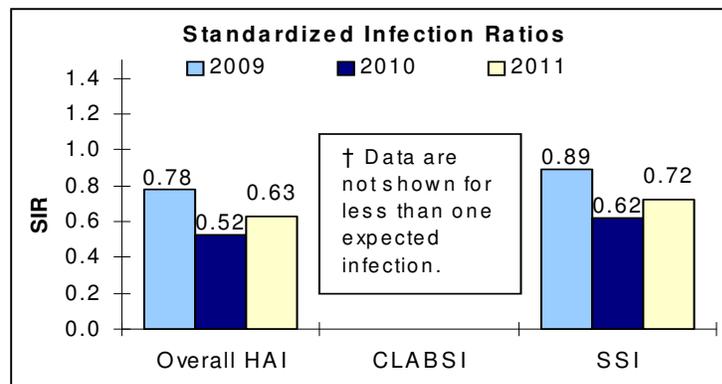
of Admissions: 4,802

of Beds: 137

of ICU Beds: 8

of Patient-days: 21,478

2011 HAI DATA REPORT



STANDARDIZED INFECTION RATIOS (SIR)

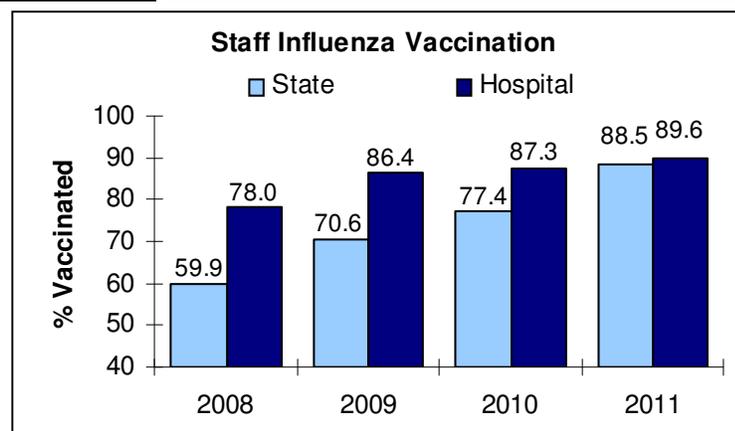
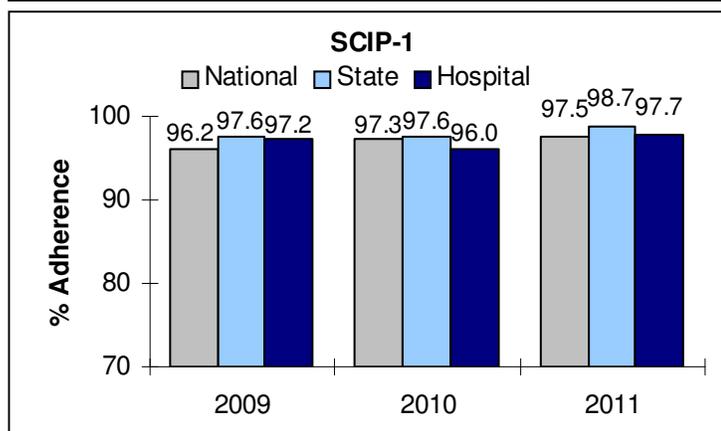
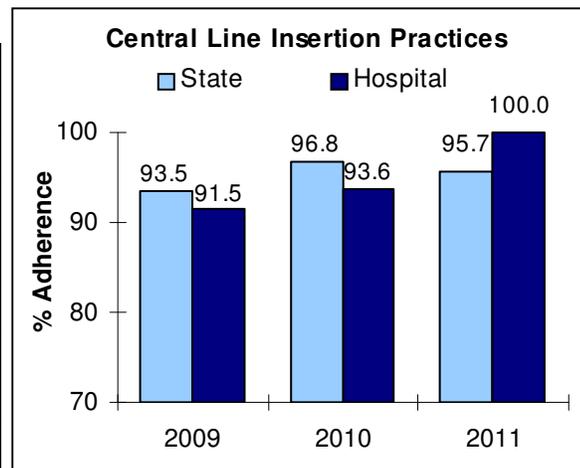
Measure	Observed Infections	Expected Infections	Standardized Infection Ratio (SIR)	95% Confidence Interval	Comparison to Expected Infections
Overall HAI	4	6.34	0.63	0.17 , 1.61	Similar
CLABSI	†	†	†	†	†
SSI	4	5.59	0.72	0.20 , 1.83	Similar
CABG					
COLO	1	4.12	0.24	0.01 , 1.35	Similar
KPRO	3	1.47	2.04	0.42 , 5.95	Similar

CENTRAL LINE-ASSOCIATED BLOODSTREAM INFECTIONS RATES

Type of Unit	Number of Infections	Number of Central-line Days	Rate per 1,000 Central-line Days	National Rate	Comparison to National Rate
Medical/Surgical ICU	0	501	0.0	1.1	Similar

PROCESS MEASURES

Measure	Percent Adherence	State Average	Comparison to State Average
CLIP	100.0	95.7	Similar
SCIP-1	97.7	98.7	Similar
SCIP-2	97.3	98.7	Similar
SCIP-3	94.6	97.2	Similar
Measure	Percent Vaccinated	State Average	Comparison to State Average
Staff Influenza Vaccination	89.6	88.5	Similar



HAI: Healthcare-Associated Infections CLABSI: Central line-associated bloodstream infection SSI: Surgical site infection COLO: Colon procedures CABG: Coronary artery bypass procedures KPRO: Knee arthroplasty SCIP: Surgical Care Improvement Project CLIP: Central line insertion practices



LITTLETON REGIONAL

Littleton, New Hampshire

Not-for-profit

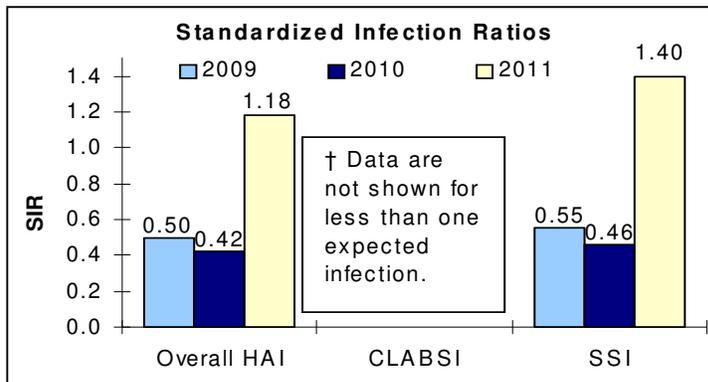
of Admissions: 2,072

of Beds: 25

of ICU Beds: 4

of Patient-days: 7,697

2011 HAI DATA REPORT



STANDARDIZED INFECTION RATIOS (SIR)

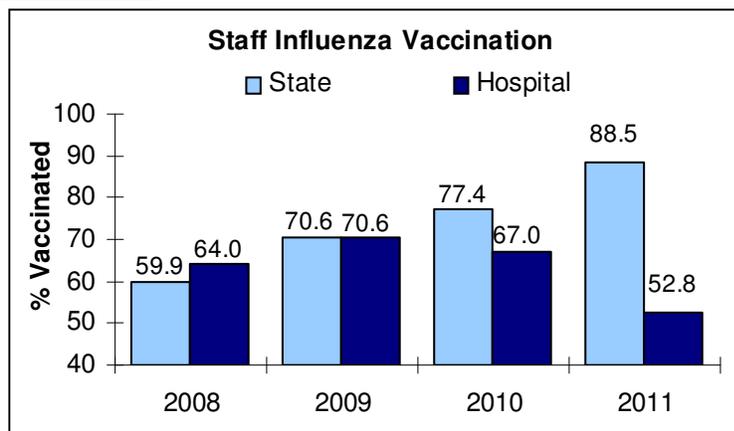
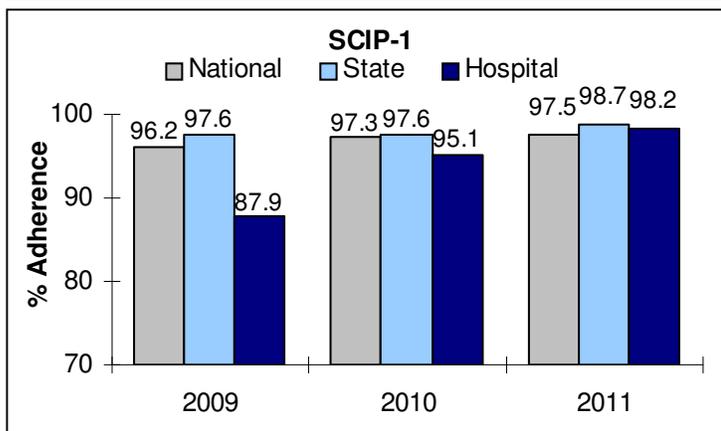
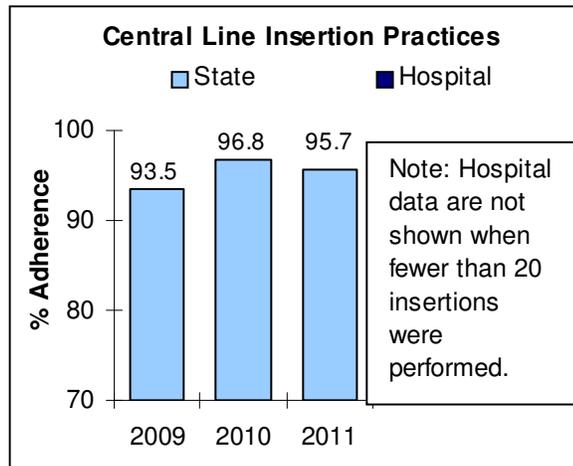
Measure	Observed Infections	Expected Infections	Standardized Infection Ratio (SIR)	95% Confidence Interval	Comparison to Expected Infections
Overall HAI	3	2.54	1.18	0.24 , 3.45	Similar
CLABSI	†	†	†	†	†
SSI	3	2.15	1.40	0.29 , 4.08	Similar
CABG					
COLO	0	1.41	0.00	- , 2.62	Similar
KPRO	†	†	†	†	†

CENTRAL LINE-ASSOCIATED BLOODSTREAM INFECTIONS RATES

Type of Unit	Number of Infections	Number of Central-line Days	Rate per 1,000 Central-line Days	National Rate	Comparison to National Rate
Medical/Surgical ICU	0	261	0.0	1.1	Similar

PROCESS MEASURES

Measure	Percent Adherence	State Average	Comparison to State Average
CLIP	†	95.7	†
SCIP-1	98.2	98.7	Similar
SCIP-2	100.0	98.7	Similar
SCIP-3	99.4	97.2	Similar
Measure	Percent Vaccinated	State Average	Comparison to State Average
Staff Influenza Vaccination	52.8	88.5	Lower



HAI: Healthcare-Associated Infections CLABSI: Central line-associated bloodstream infection SSI: Surgical site infection COLO: Colon procedures CABG: Coronary artery bypass procedures KPRO: Knee arthroplasty SCIP: Surgical Care Improvement Project CLIP: Central line insertion practices



MONADNOCK COMMUNITY

Peterborough, New Hampshire

Not-for-profit

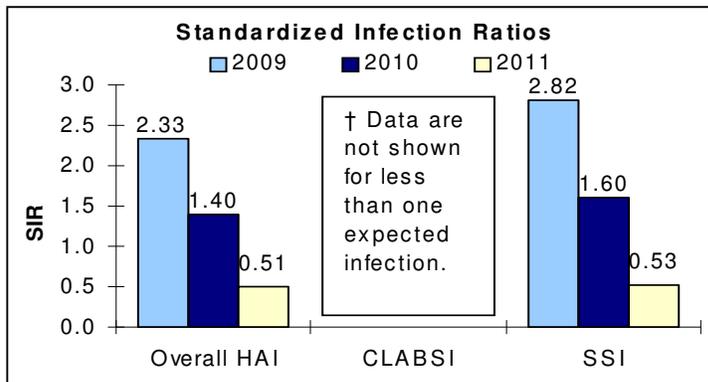
of Admissions: 1,412

of Beds: 25

of ICU Beds: 4

of Patient-days: 4,813

2011 HAI DATA REPORT



STANDARDIZED INFECTION RATIOS (SIR)

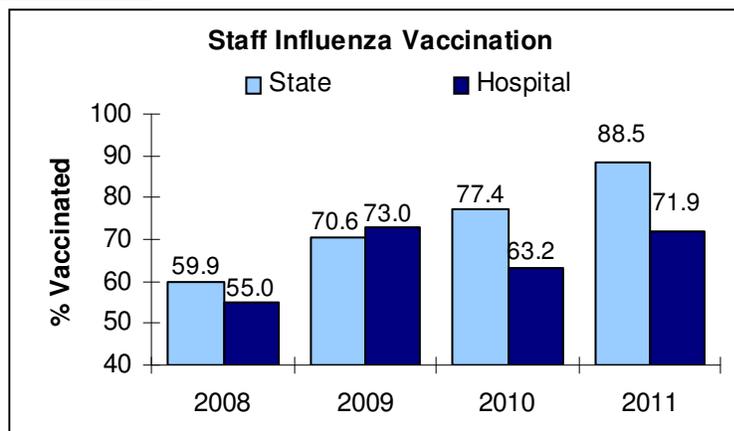
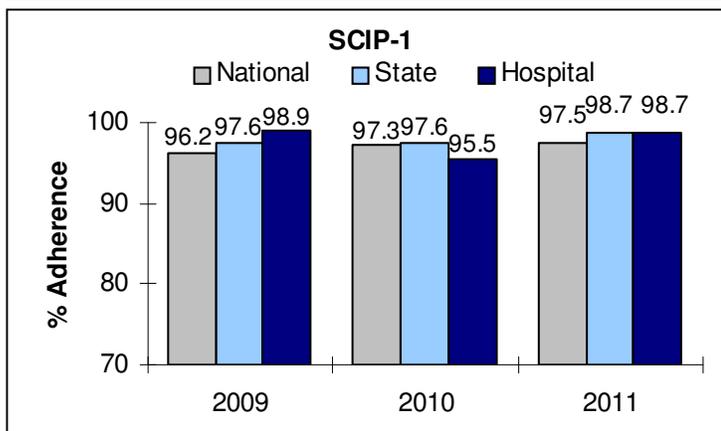
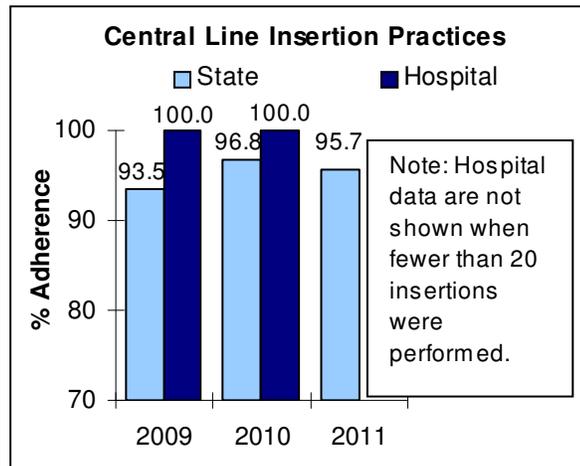
Measure	Observed Infections	Expected Infections	Standardized Infection Ratio (SIR)	95% Confidence Interval	Comparison to Expected Infections
Overall HAI	1	1.98	0.51	0.01 , 2.81	Similar
CLABSI	†	†	†	†	†
SSI	1	1.90	0.53	0.013 , 2.93	Similar
CABG					
COLO	1	1.45	0.69	0.02 , 3.84	Similar
KPRO	†	†	†	†	†

CENTRAL LINE-ASSOCIATED BLOODSTREAM INFECTIONS RATES

Type of Unit	Number of Infections	Number of Central-line Days	Rate per 1,000 Central-line Days	National Rate	Comparison to National Rate
Medical/Surgical ICU	0	52	0.0	1.1	Similar

PROCESS MEASURES

Measure	Percent Adherence	State Average	Comparison to State Average
CLIP	†	95.7	†
SCIP-1	98.7	98.7	Similar
SCIP-2	100.0	98.7	Similar
SCIP-3	97.3	97.2	Similar
Measure	Percent Vaccinated	State Average	Comparison to State Average
Staff Influenza Vaccination	71.9	88.5	Lower



HAI: Healthcare-Associated Infections CLABSI: Central line-associated bloodstream infection SSI: Surgical site infection COLO: Colon procedures CABG: Coronary artery bypass procedures KPRO: Knee arthroplasty SCIP: Surgical Care Improvement Project CLIP: Central line insertion practices



NEW LONDON HOSPITAL

New London, New Hampshire

For-profit

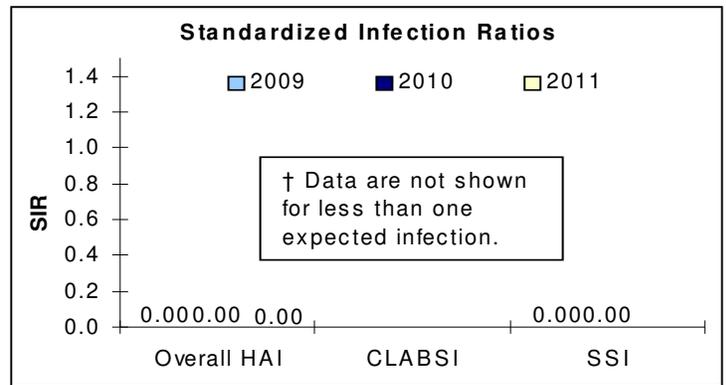
of Admissions: 1,130

of Beds: 25

of ICU Beds: 4

of Patient-days: 3,950

2011 HAI DATA REPORT



STANDARDIZED INFECTION RATIOS (SIR)

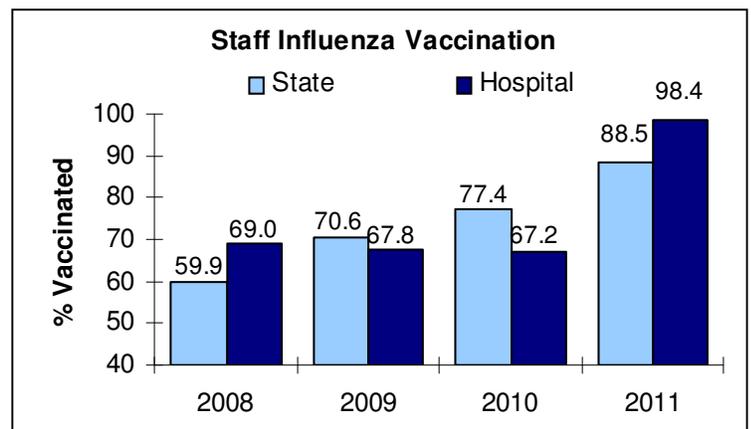
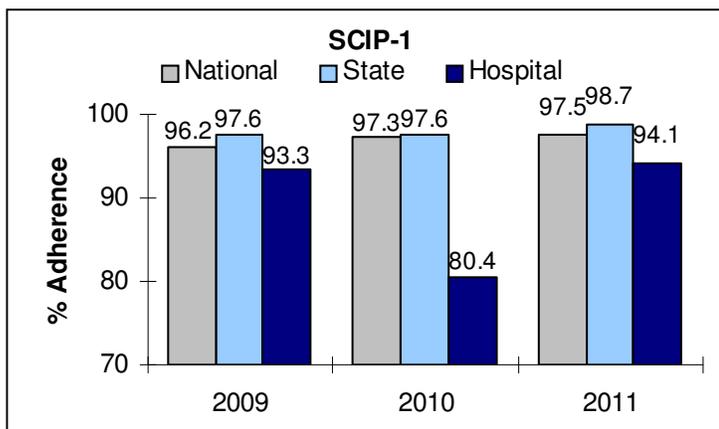
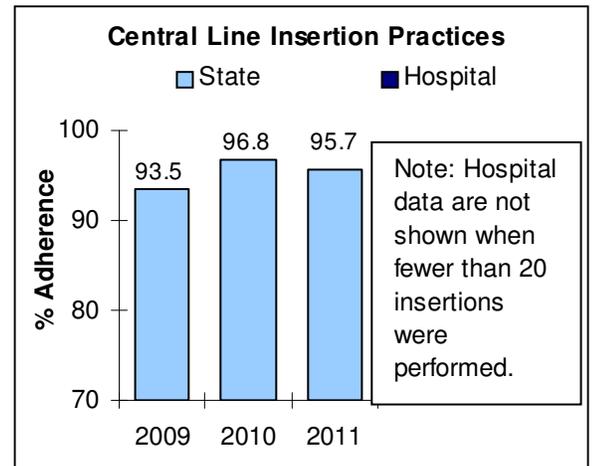
Measure	Observed Infections	Expected Infections	Standardized Infection Ratio (SIR)	95% Confidence Interval	Comparison to Expected Infections
Overall HAI	0	1.03	0.00	- , 3.58	Similar
CLABSI	†	†	†	†	†
SSI	†	†	†	†	†
CABG					
COLO	†	†	†	†	†
KPRO	†	†	†	†	†

CENTRAL LINE-ASSOCIATED BLOODSTREAM INFECTIONS RATES

Type of Unit	Number of Infections	Number of Central-line Days	Rate per 1,000 Central-line Days	National Rate	Comparison to National Rate
Medical/Surgical ICU	0	57	0.0	1.1	Similar

PROCESS MEASURES

Measure	Percent Adherence	State Average	Comparison to State Average
CLIP	†	95.7	†
SCIP-1	94.1	98.7	Lower
SCIP-2	100.0	98.7	Similar
SCIP-3	98.8	97.2	Similar
Measure	Percent Vaccinated	State Average	Comparison to State Average
Staff Influenza Vaccination	98.4	88.5	Higher



HAI: Healthcare-Associated Infections CLABSI: Central line-associated bloodstream infection SSI: Surgical site infection COLO: Colon procedures CABG: Coronary artery bypass procedures KPRO: Knee arthroplasty SCIP: Surgical Care Improvement Project CLIP: Central line insertion practices



PARKLAND MEDICAL CENTER

Derry, New Hampshire

For-profit

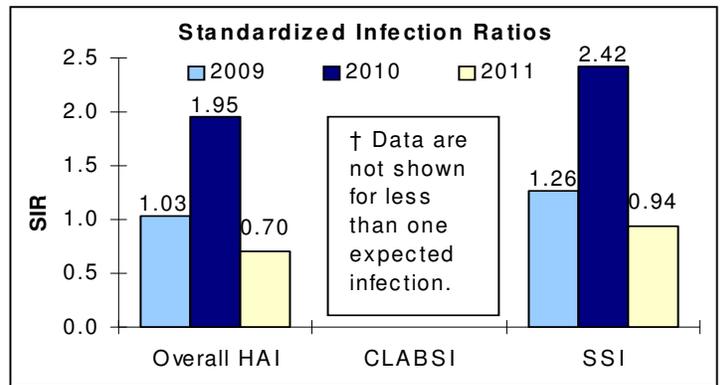
of Admissions: 3,161

of Beds: 86

of ICU Beds: 8

of Patient-days: 11,620

2011 HAI DATA REPORT



STANDARDIZED INFECTION RATIOS (SIR)

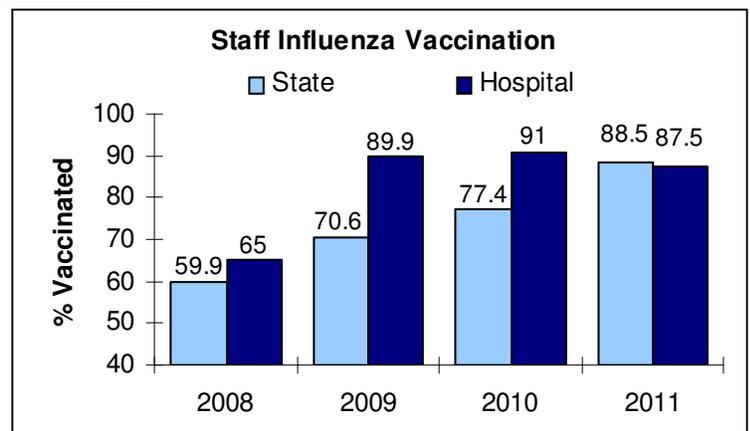
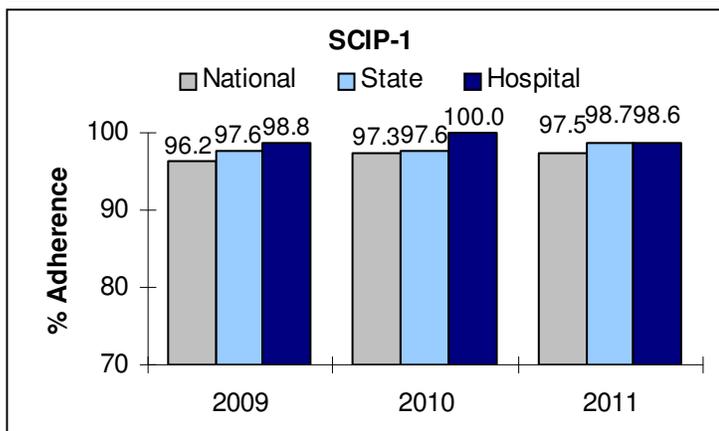
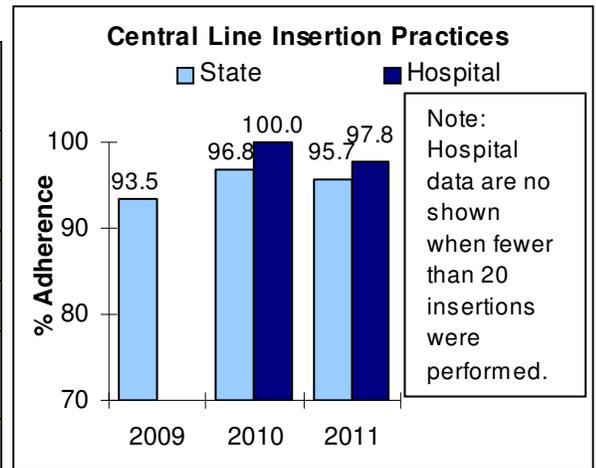
Measure	Observed Infections	Expected Infections	Standardized Infection Ratio (SIR)	95% Confidence Interval	Comparison to Expected Infections
Overall HAI	2	2.85	0.70	0.08 , 2.53	Similar
CLABSI	†	†	†	†	†
SSI	2	2.13	0.94	0.11 , 3.39	Similar
CABG					
COLO	2	1.98	1.01	0.12 , 3.65	Similar
KPRO	†	†	†	†	†

CENTRAL LINE-ASSOCIATED BLOODSTREAM INFECTIONS RATES

Type of Unit	Number of Infections	Number of Central-line Days	Rate per 1,000 Central-line Days	National Rate	Comparison to National Rate
Medical/Surgical ICU	0	482	0.0	1.1	Similar

PROCESS MEASURES

Measure	Percent Adherence	State Average	Comparison to State Average
CLIP	97.8	95.7	Similar
SCIP-1	98.6	98.7	Similar
SCIP-2	98.6	98.7	Similar
SCIP-3	95.7	97.2	Similar
Measure	Percent Vaccinated	State Average	Comparison to State Average
Staff Influenza Vaccination	87.5	88.5	Similar



HAI: Healthcare-Associated Infections CLABSI: Central line-associated bloodstream infection SSI: Surgical site infection COLO: Colon procedures CABG: Coronary artery bypass procedures KPRO: Knee arthroplasty SCIP: Surgical Care Improvement Project CLIP: Central line insertion practices



PORTSMOUTH REGIONAL

Portsmouth, New Hampshire

For-profit

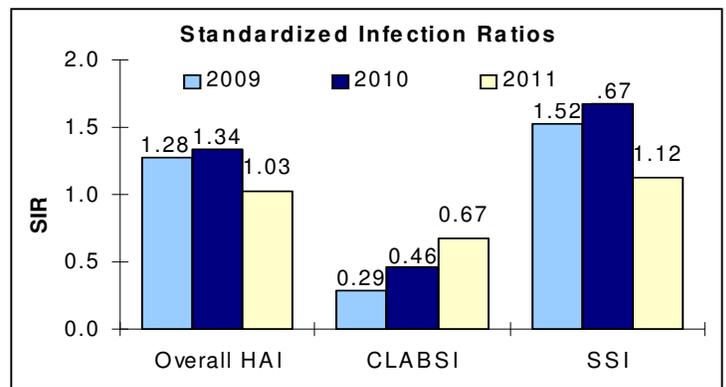
of Admissions: 7,380

of Beds: 254

of ICU Beds: 14

of Patient-days: 35,373

2011 HAI DATA REPORT



STANDARDIZED INFECTION RATIOS (SIR)

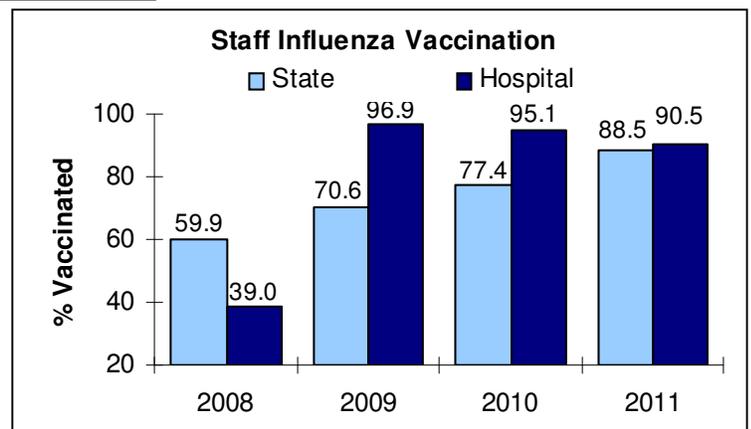
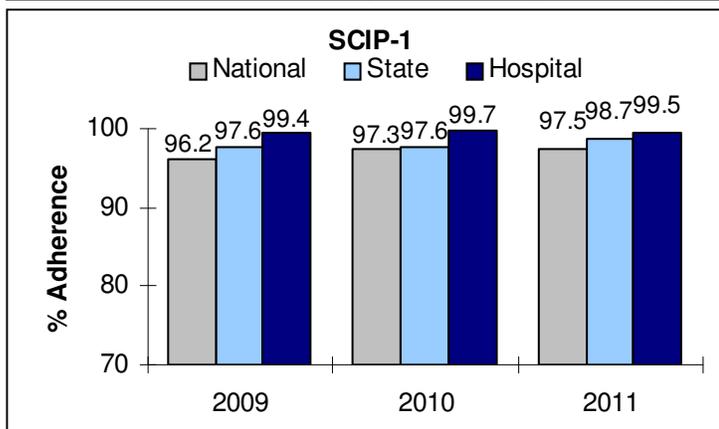
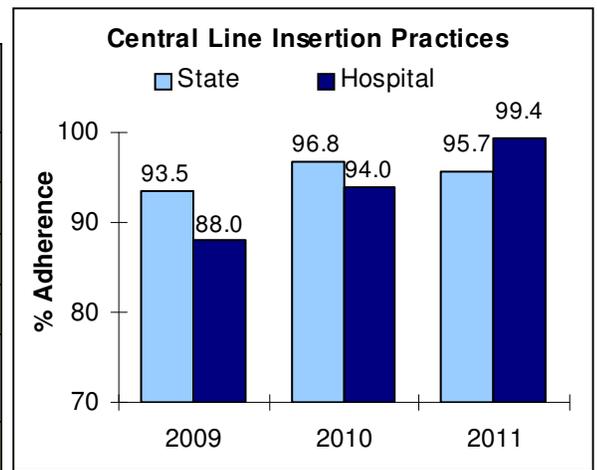
Measure	Observed Infections	Expected Infections	Standardized Infection Ratio (SIR)	95% Confidence Interval	Comparison to Expected Infections
Overall HAI	15	14.58	1.03	0.58 , 1.70	Similar
CLABSI	2	3.00	0.67	0.08 , 2.41	Similar
SSI	13	11.59	1.12	0.60 , 1.92	Similar
CABG	4	4.25	0.94	0.26 , 2.41	Similar
COLO	6	4.34	1.38	0.51 , 3.01	Similar
KPRO	3	2.99	1.00	0.21 , 2.93	Similar

CENTRAL LINE-ASSOCIATED BLOODSTREAM INFECTIONS RATES

Type of Unit	Number of Infections	Number of Central-line Days	Rate per 1,000 Central-line Days	National Rate	Comparison to National Rate
Cardiothoracic ICU	2	2140	0.9	0.9	Similar

PROCESS MEASURES

Measure	Percent Adherence	State Average	Comparison to State Average
CLIP	99.4	95.7	Higher
SCIP-1	99.5	98.7	Similar
SCIP-2	99.8	98.7	Similar
SCIP-3	98.7	97.2	Similar
Measure	Percent Vaccinated	State Average	Comparison to State Average
Staff Influenza Vaccination	90.5	88.5	Similar



HAI: Healthcare-Associated Infections CLABSI: Central line-associated bloodstream infection SSI: Surgical site infection COLO: Colon procedures CABG: Coronary artery bypass procedures KPRO: Knee arthroplasty SCIP: Surgical Care Improvement Project CLIP: Central line insertion practices



SOUTHERN NH MEDICAL

Nashua, New Hampshire

Not-for-profit

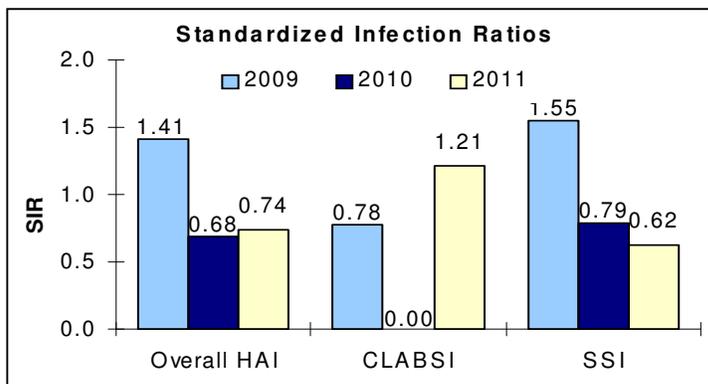
of Admissions: 9,785

of Beds: 149

of ICU Beds: 20

of Patient-days: 38,238

2011 HAI DATA REPORT



STANDARDIZED INFECTION RATIOS (SIR)

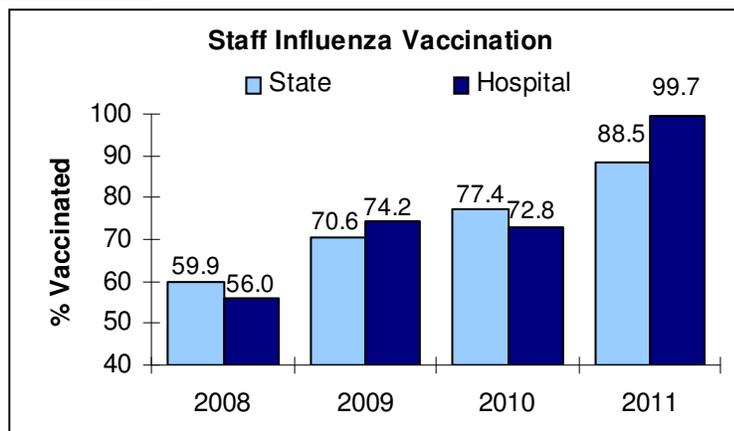
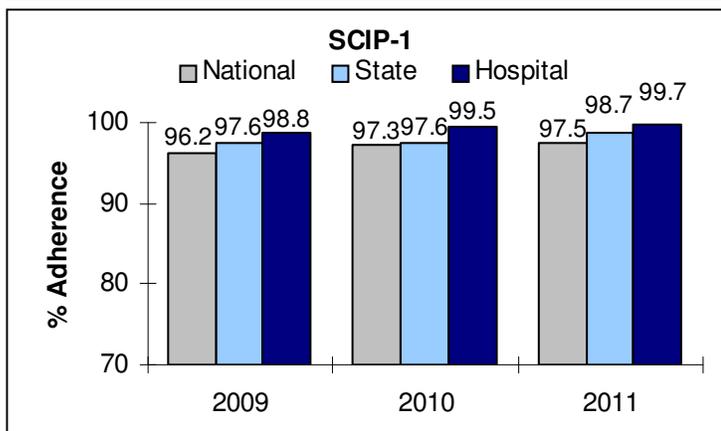
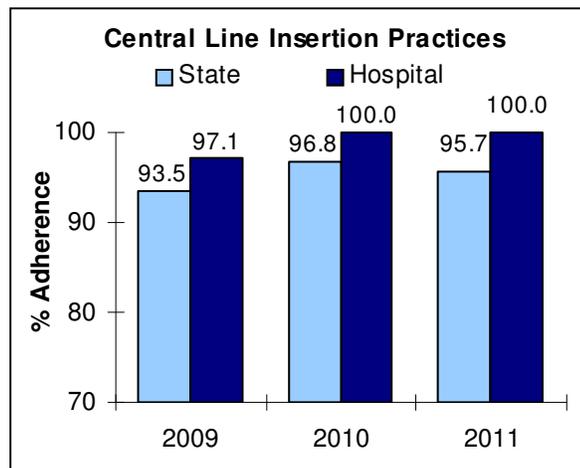
Measure	Observed Infections	Expected Infections	Standardized Infection Ratio (SIR)	95% Confidence Interval	Comparison to Expected Infections
Overall HAI	6	8.10	0.74	0.27 , 1.61	Similar
CLABSI	2	1.65	1.21	0.15 , 4.37	Similar
SSI	4	6.45	0.62	0.17 , 1.59	Similar
CABG					
COLO	4	4.75	0.84	0.23, 2.16	Similar
KPRO	0	1.70	0.00	- , 2.17	Similar

CENTRAL LINE-ASSOCIATED BLOODSTREAM INFECTIONS RATES

Type of Unit	Number of Infections	Number of Central-line Days	Rate per 1,000 Central-line Days	National Rate	Comparison to National Rate
Medical/Surgical ICU	2	1101	1.8	1.1	Similar

PROCESS MEASURES

Measure	Percent Adherence	State Average	Comparison to State Average
CLIP	100.0	95.7	Higher
SCIP-1	99.7	98.7	Similar
SCIP-2	100.0	98.7	Higher
SCIP-3	99.2	97.2	Similar
Measure	Percent Vaccinated	State Average	Comparison to State Average
Staff Influenza Vaccination	93.6	88.5	Higher



HAI: Healthcare-Associated Infections CLABSI: Central line-associated bloodstream infection SSI: Surgical site infection COLO: Colon procedures CABG: Coronary artery bypass procedures KPRO: Knee arthroplasty SCIP: Surgical Care Improvement Project CLIP: Central line insertion practices



SPEARE MEMORIAL HOSPITAL

Plymouth, New Hampshire

Not-for-profit

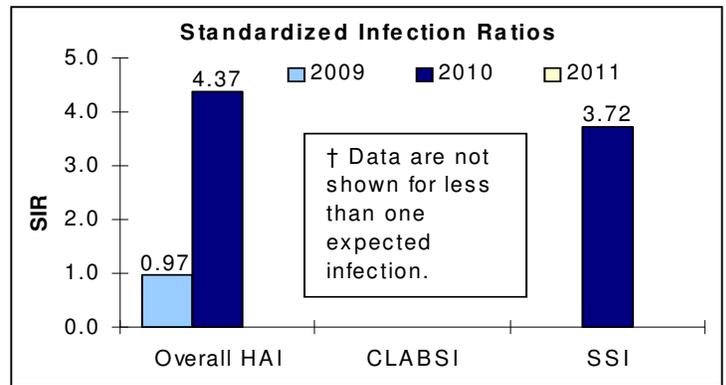
of Admissions: 1,484

of Beds: 25

of ICU Beds: 4

of Patient-days: 4,905

2011 HAI DATA REPORT



STANDARDIZED INFECTION RATIOS (SIR)

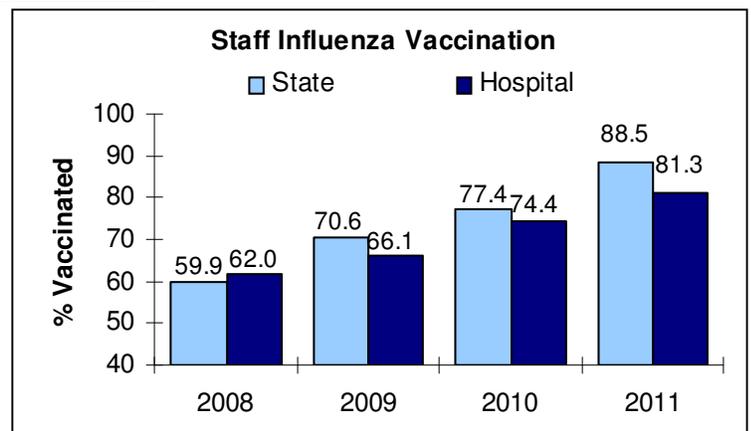
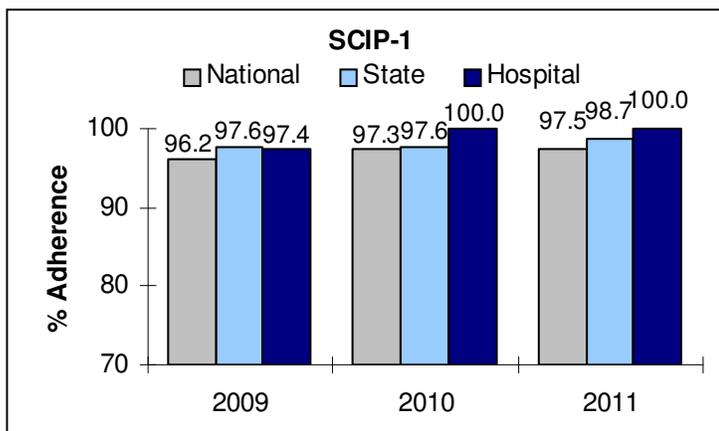
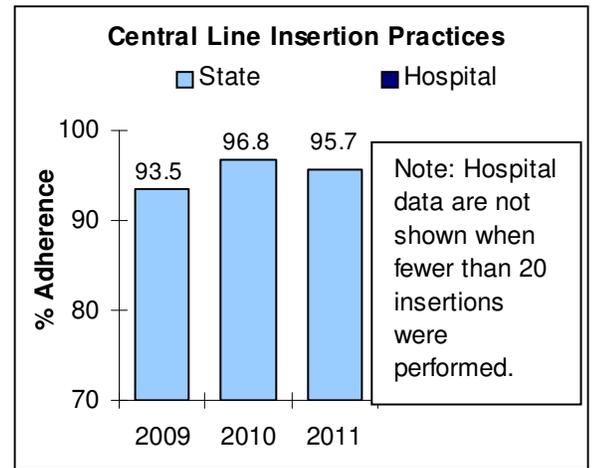
Measure	Observed Infections	Expected Infections	Standardized Infection Ratio (SIR)	95% Confidence Interval	Comparison to Expected Infections
Overall HAI	†	†	†	†	†
CLABSI	†	†	†	†	†
SSI	†	†	†	†	†
CABG					
COLO	†	†	†	†	†
KPRO	†	†	†	†	†

CENTRAL LINE-ASSOCIATED BLOODSTREAM INFECTIONS RATES

Type of Unit	Number of Infections	Number of Central-line Days	Rate per 1,000 Central-line Days	National Rate	Comparison to National Rate
Medical/Surgical ICU	†	†	†	1.1	†

PROCESS MEASURES

Measure	Percent Adherence	State Average	Comparison to State Average
CLIP	†	95.7	†
SCIP-1	100.0	98.7	Similar
SCIP-2	100.0	98.7	Similar
SCIP-3	100.0	97.2	Similar
Measure	Percent Vaccinated	State Average	Comparison to State Average
Staff Influenza Vaccination	81.3	88.5	Lower



HAI: Healthcare-Associated Infections CLABSI: Central line-associated bloodstream infection SSI: Surgical site infection COLO: Colon procedures CABG: Coronary artery bypass procedures KPRO: Knee arthroplasty SCIP: Surgical Care Improvement Project CLIP: Central line insertion practices



ST. JOSEPH HOSPITAL

Nashua, New Hampshire

Not-for-profit

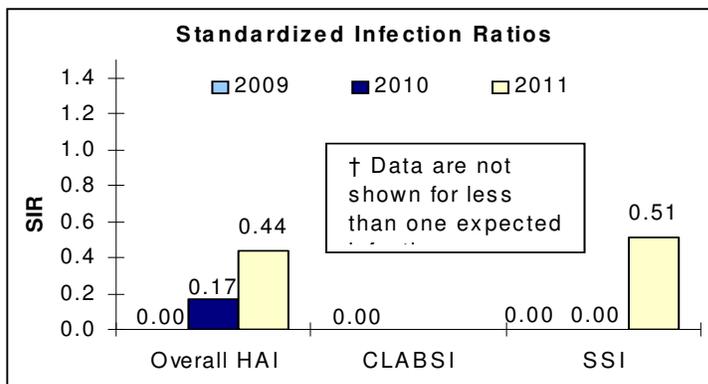
of Admissions: 6,490

of Beds: 208

of ICU Beds: 11

of Patient-days: 35,519

2011 HAI DATA REPORT



STANDARDIZED INFECTION RATIOS (SIR)

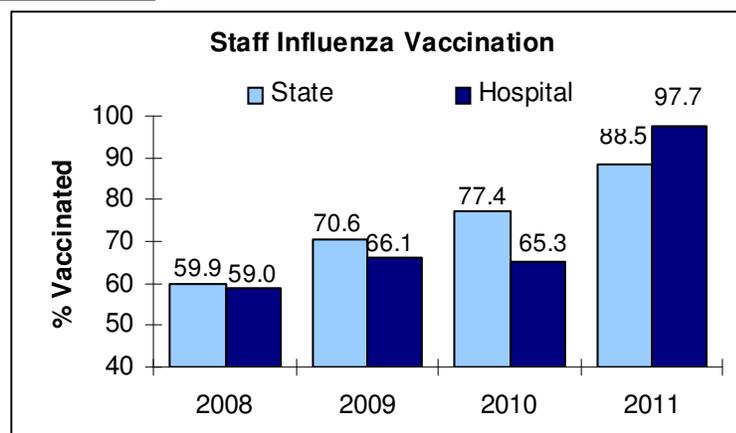
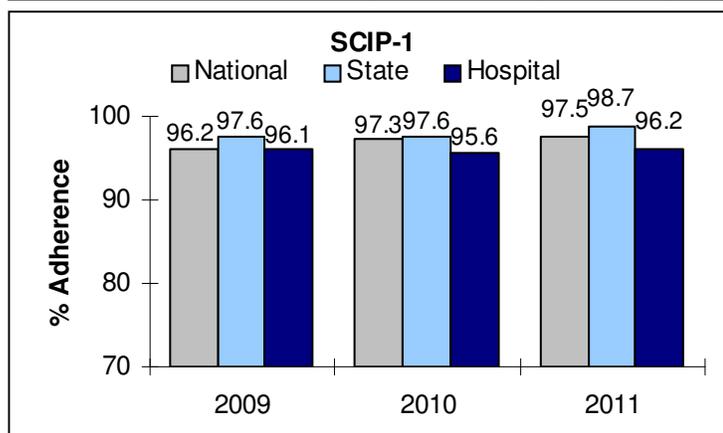
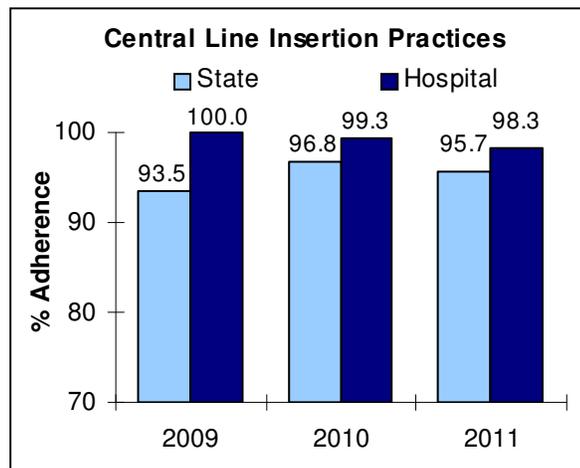
Measure	Observed Infections	Expected Infections	Standardized Infection Ratio (SIR)	95% Confidence Interval	Comparison to Expected Infections
Overall HAI	3	6.78	0.44	0.09 , 1.29	Similar
CLABSI	†	†	†	†	†
SSI	3	5.92	0.51	0.11 , 1.48	Similar
CABG					
COLO	0	4.32	0.00	- , 0.85	Lower
KPRO	3	1.59	1.88	0.39 , 5.50	Similar

CENTRAL LINE-ASSOCIATED BLOODSTREAM INFECTIONS RATES

Type of Unit	Number of Infections	Number of Central-line Days	Rate per 1,000 Central-line Days	National Rate	Comparison to National Rate
Medical/Surgical ICU	0	574	0.0	1.1	Similar

PROCESS MEASURES

Measure	Percent Adherence	State Average	Comparison to State Average
CLIP	98.3	95.7	Similar
SCIP-1	96.2	98.7	Lower
SCIP-2	99.5	98.7	Similar
SCIP-3	100.0	97.2	Higher
Measure	Percent Vaccinated	State Average	Comparison to State Average
Staff Influenza Vaccination	97.7	88.5	Higher



HAI: Healthcare-Associated Infections CLABSI: Central line-associated bloodstream infection SSI: Surgical site infection COLO: Colon procedures CABG: Coronary artery bypass procedures KPRO: Knee arthroplasty SCIP: Surgical Care Improvement Project CLIP: Central line insertion practices



THE MEMORIAL HOSPITAL

Conway, New Hampshire

Not-for-profit

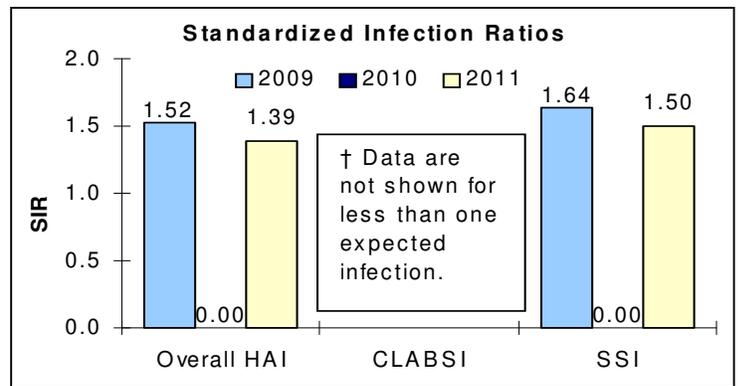
of Admissions: 1,425

of Beds: 25

of ICU Beds: 3

of Patient-days: 4,657

2011 HAI DATA REPORT



STANDARDIZED INFECTION RATIOS (SIR)

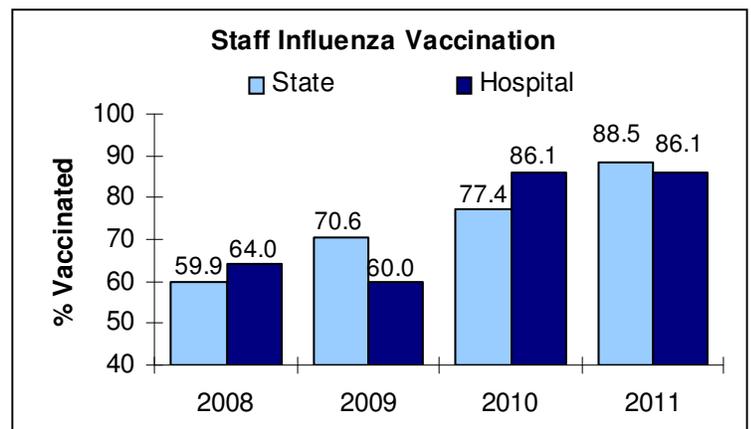
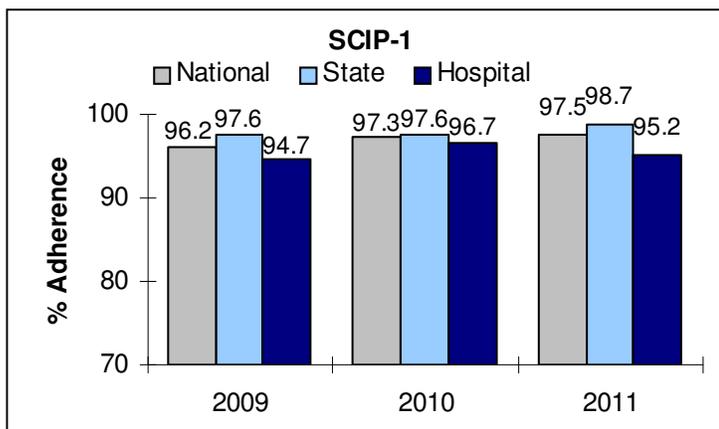
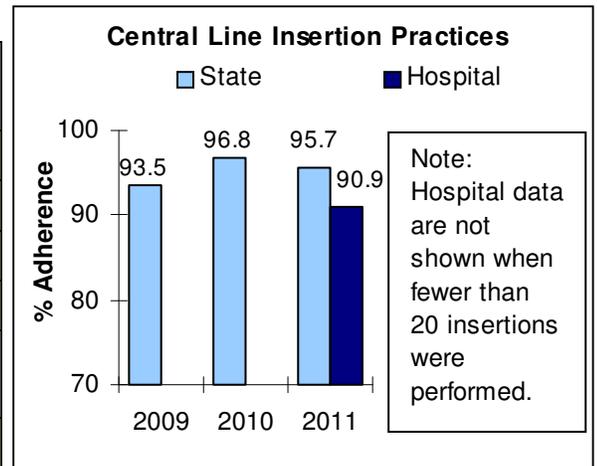
Measure	Observed Infections	Expected Infections	Standardized Infection Ratio (SIR)	95% Confidence Interval	Comparison to Expected Infections
Overall HAI	2	1.44	1.39	0.16 , 5.03	Similar
CLABSI	†	†	†	†	†
SSI	2	1.33	1.50	0.18 , 5.42	Similar
CABG					
COLO	1	1.08	0.92	0.02 , 5.15	Similar
KPRO	†	†	†	†	†

CENTRAL LINE-ASSOCIATED BLOODSTREAM INFECTIONS RATES

Type of Unit	Number of Infections	Number of Central-line Days	Rate per 1,000 Central-line Days	National Rate	Comparison to National Rate
Medical ICU	0	54	0.0	1.3	Similar

PROCESS MEASURES

Measure	Percent Adherence	State Average	Comparison to State Average
CLIP	90.9	95.7	Similar
SCIP-1	95.2	98.7	Similar
SCIP-2	100.0	98.7	Similar
SCIP-3	95.2	97.2	Similar
Measure	Percent Vaccinated	State Average	Comparison to State Average
Staff Influenza Vaccination	86.1	88.5	Similar



HAI: Healthcare-Associated Infections CLABSI: Central line-associated bloodstream infection SSI: Surgical site infection COLO: Colon procedures CABG: Coronary artery bypass procedures KPRO: Knee arthroplasty SCIP: Surgical Care Improvement Project CLIP: Central line insertion practices



UPPER CONNECTICUT VALLEY

Colebrook, New Hampshire

Not-for-profit

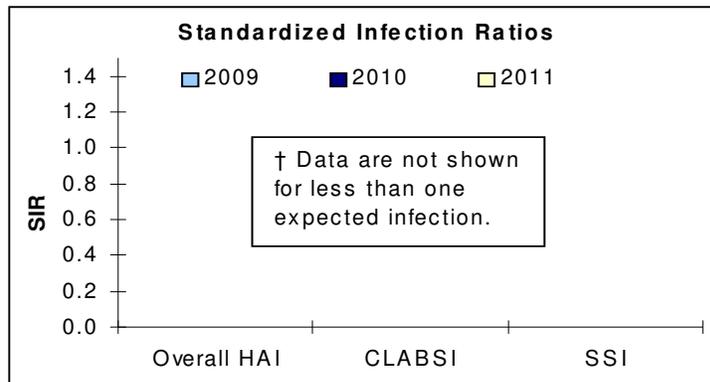
of Admissions: 411

of Beds: 16

of ICU Beds: 0

of Patient-days: 1,853

2011 HAI DATA REPORT



STANDARDIZED INFECTION RATIOS (SIR)

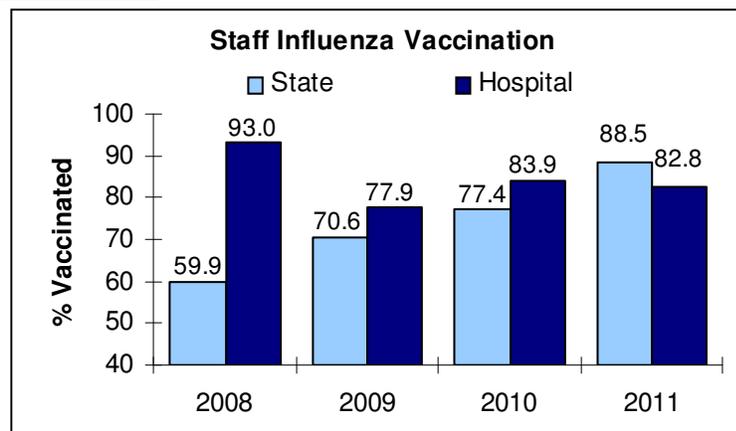
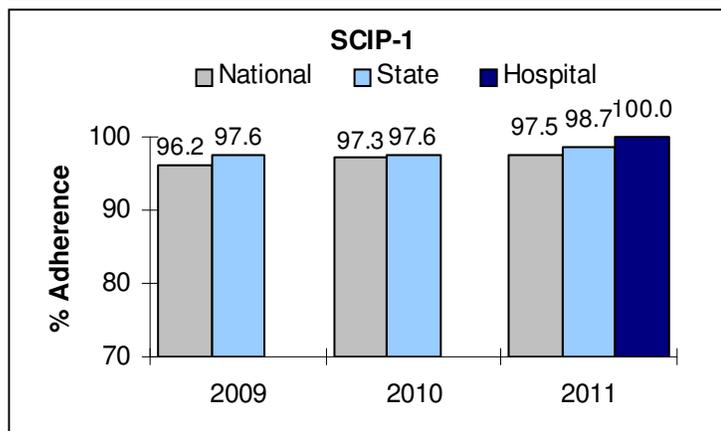
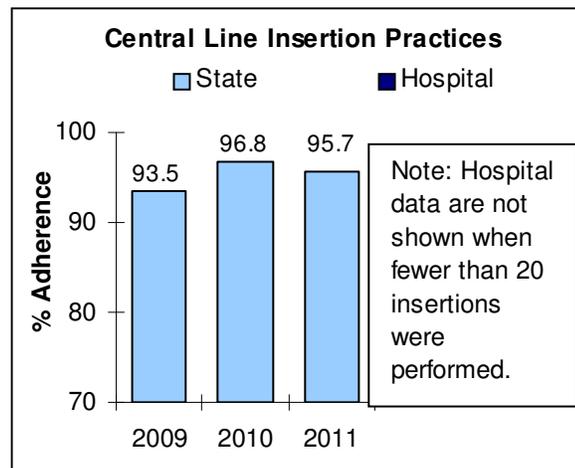
Measure	Observed Infections	Expected Infections	Standardized Infection Ratio (SIR)	95% Confidence Interval	Comparison to Expected Infections
Overall HAI	†	†	†	†	†
CLABSI	†	†	†	†	†
SSI	†	†	†	†	†
CABG					
COLO	†	†	†	†	†
KPRO	†	†	†	†	†

CENTRAL LINE-ASSOCIATED BLOODSTREAM INFECTIONS RATES

Type of Unit	Number of Infections	Number of Central-line Days	Rate per 1,000 Central-line Days	National Rate	Comparison to National Rate
Medical/Surgical ICU	†	†	†	†	†

PROCESS MEASURES

Measure	Percent Adherence	State Average	Comparison to State Average
CLIP	†	95.7	†
SCIP-1	100.0	98.7	Similar
SCIP-2	100.0	98.7	Similar
SCIP-3	100.0	97.2	Similar
Measure	Percent Vaccinated	State Average	Comparison to State Average
Staff Influenza Vaccination	82.8	88.5	Lower

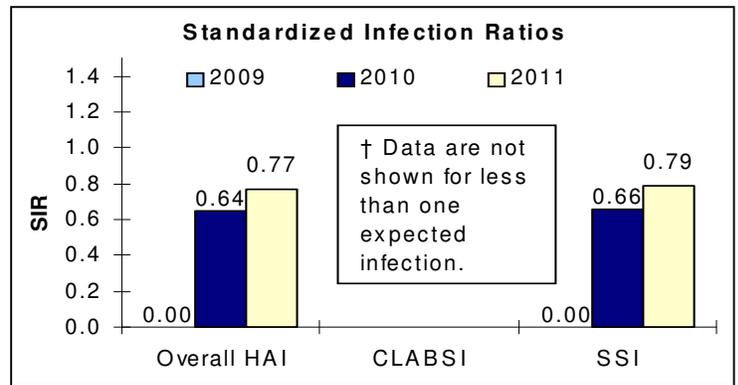


HAI: Healthcare-Associated Infections CLABSI: Central line-associated bloodstream infection SSI: Surgical site infection COLO: Colon procedures CABG: Coronary artery bypass procedures KPRO: Knee arthroplasty SCIP: Surgical Care Improvement Project CLIP: Central line insertion practices



VALLEY REGIONAL
 Claremont, New Hampshire
 Not-for-profit
 # of Admissions: 1,287
 # of Beds: 25
 # of ICU Beds: 5
 # of Patient-days: 4,928

2011 HAI DATA REPORT



STANDARDIZED INFECTION RATIOS (SIR)

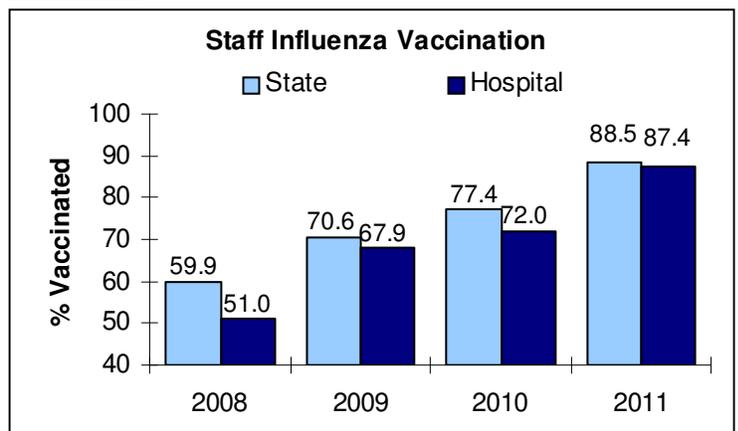
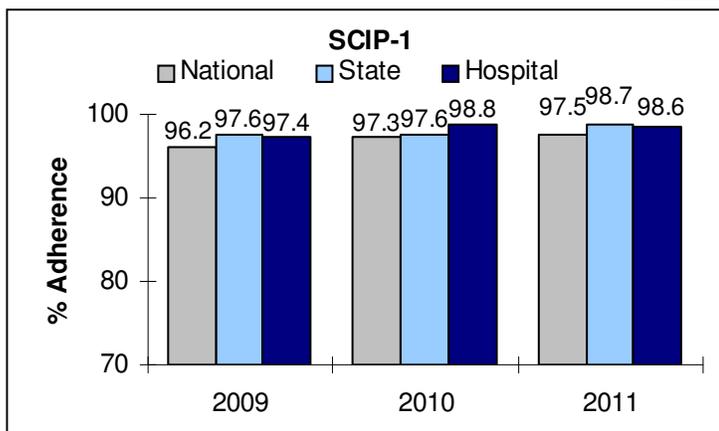
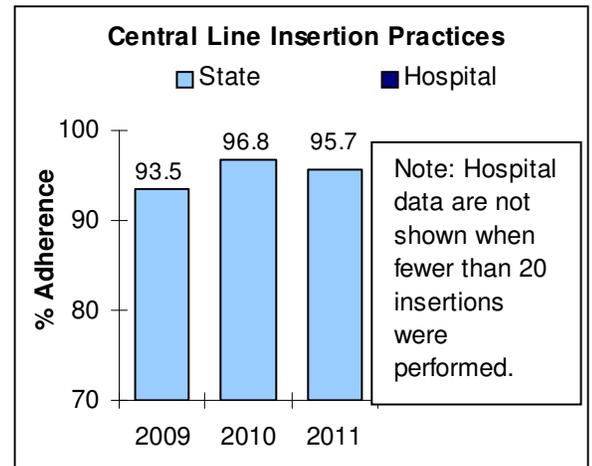
Measure	Observed Infections	Expected Infections	Standardized Infection Ratio (SIR)	95% Confidence Interval	Comparison to Expected Infections
Overall HAI	1	1.30	0.77	0.01 , 4.27	Similar
CLABSI	†	†	†	†	†
SSI	1	1.27	0.79	0.02 , 4.39	Similar
CABG					
COLO	†	†	†	†	†
KPRO	†	†	†	†	†

CENTRAL LINE-ASSOCIATED BLOODSTREAM INFECTIONS RATES

Type of Unit	Number of Infections	Number of Central-line Days	Rate per 1,000 Central-line Days	National Rate	Comparison to National Rate
Medical/Surgical ICU	†	†	†	1.1	†

PROCESS MEASURES

Measure	Percent Adherence	State Average	Comparison to State Average
CLIP	†	95.7	†
SCIP-1	98.6	98.7	Similar
SCIP-2	100.0	98.7	Similar
SCIP-3	100.0	97.2	Similar
Measure	Percent Vaccinated	State Average	Comparison to State Average
Staff Influenza Vaccination	87.4	88.5	Similar



HAI: Healthcare-Associated Infections CLABSI: Central line-associated bloodstream infection SSI: Surgical site infection COLO: Colon procedures CABG: Coronary artery bypass procedures KPRO: Knee arthroplasty SCIP: Surgical Care Improvement Project CLIP: Central line insertion practices



WEEKS MEDICAL CENTER

Lancaster, New Hampshire

Not-for-profit

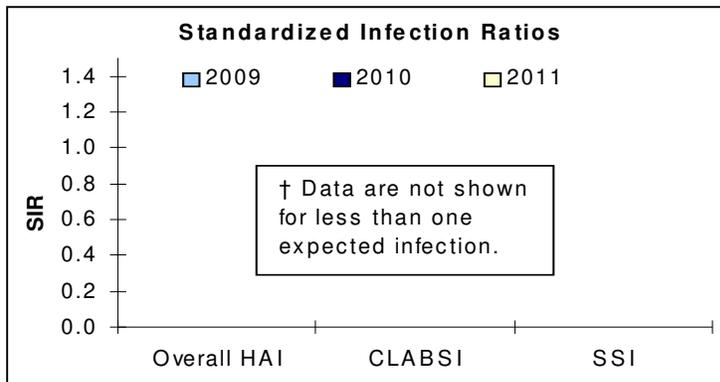
of Admissions: 802

of Beds: 25

of ICU Beds: 3

of Patient-days: 3,637

2011 HAI DATA REPORT



STANDARDIZED INFECTION RATIOS (SIR)

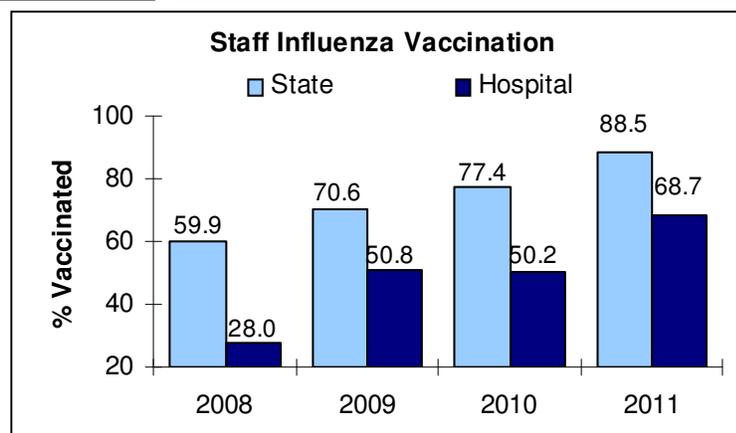
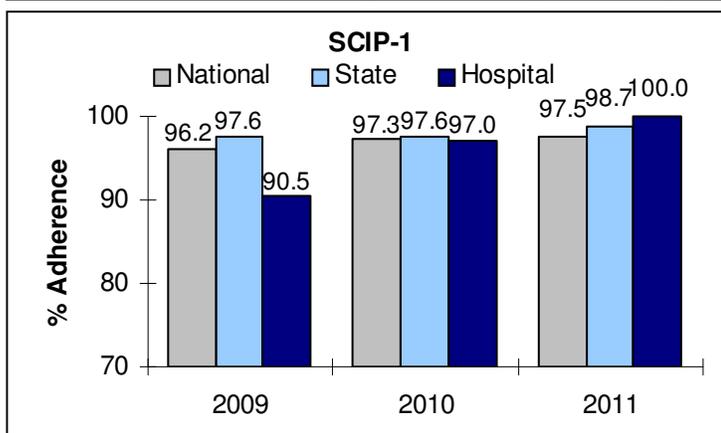
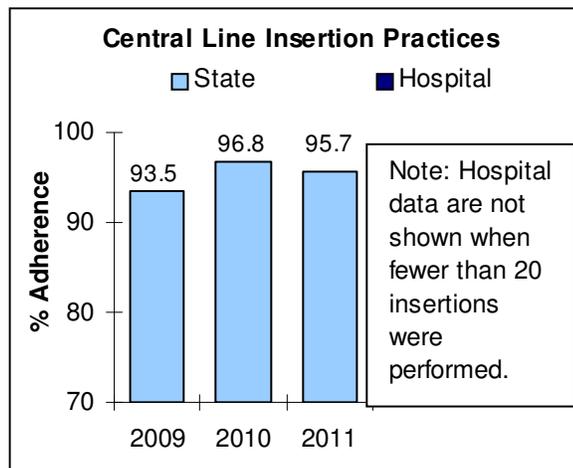
Measure	Observed Infections	Expected Infections	Standardized Infection Ratio (SIR)	95% Confidence Interval	Comparison to Expected Infections
Overall HAI	†	†	†	†	†
CLABSI	†	†	†	†	†
SSI	†	†	†	†	†
CABG					
COLO	†	†	†	†	†
KPRO	†	†	†	†	†

CENTRAL LINE-ASSOCIATED BLOODSTREAM INFECTIONS RATES

Type of Unit	Number of Infections	Number of Central-line Days	Rate per 1,000 Central-line Days	National Rate	Comparison to National Rate
Medical/Surgical ICU	†	†	†	1.1	†

PROCESS MEASURES

Measure	Percent Adherence	State Average	Comparison to State Average
CLIP	†	95.7	†
SCIP-1	100.0	98.7	Similar
SCIP-2	95.2	98.7	Similar
SCIP-3	95.2	97.2	Similar
Measure	Percent Vaccinated	State Average	Comparison to State Average
Staff Influenza Vaccination	68.7	88.5	Lower



HAI: Healthcare-Associated Infections CLABSI: Central line-associated bloodstream infection SSI: Surgical site infection COLO: Colon procedures CABG: Coronary artery bypass procedures KPRO: Knee arthroplasty SCIP: Surgical Care Improvement Project CLIP: Central line insertion practices



WENTWORTH-DOUGLASS

Dover, New Hampshire

Not-for-profit

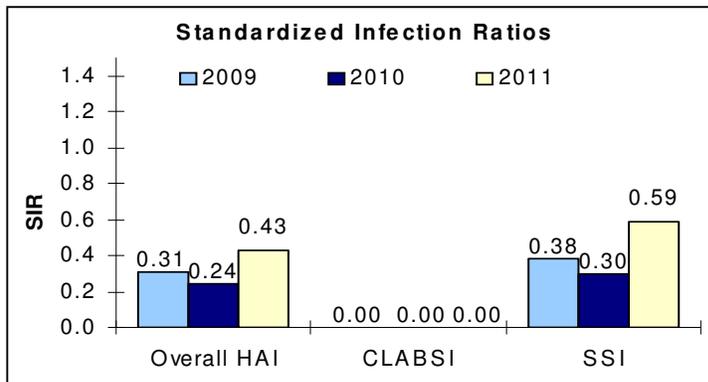
of Admissions: 7,905

of Beds: 119

of ICU Beds: 11

of Patient-days: 30,782

2011 HAI DATA REPORT



STANDARDIZED INFECTION RATIOS (SIR)

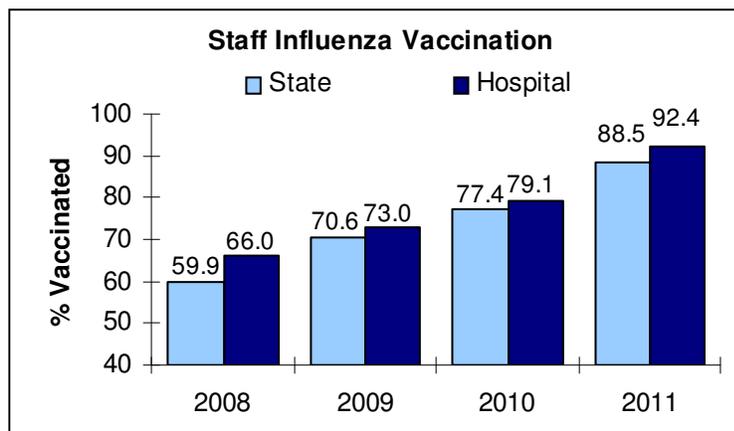
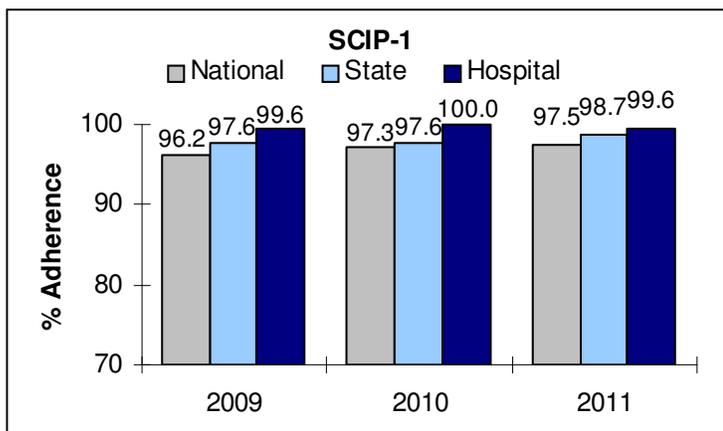
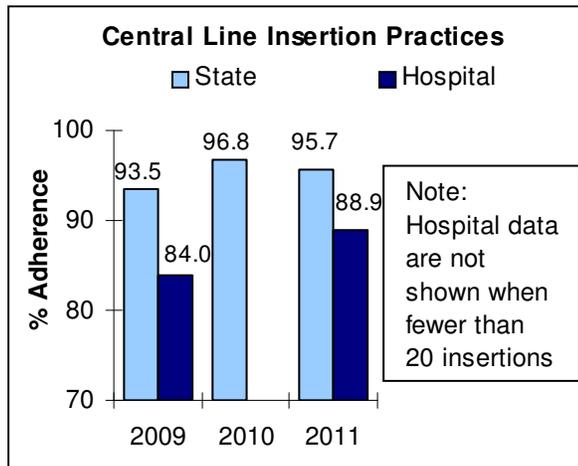
Measure	Observed Infections	Expected Infections	Standardized Infection Ratio (SIR)	95% Confidence Interval	Comparison to Expected Infections
Overall HAI	3	6.94	0.43	0.09 , 1.26	Similar
CLABSI	0	1.83	0.00	- , 2.02	Similar
SSI	3	5.12	0.59	0.12 , 1.71	Similar
CABG					
COLO	1	3.47	0.29	0.01, 1.60	Similar
KPRO	2	1.64	1.22	0.15 , 4.40	Similar

CENTRAL LINE-ASSOCIATED BLOODSTREAM INFECTIONS RATES

Type of Unit	Number of Infections	Number of Central-line Days	Rate per 1,000 Central-line Days	National Rate	Comparison to National Rate
Medical/Surgical ICU	0	1218	0.0	1.1	Similar

PROCESS MEASURES

Measure	Percent Adherence	State Average	Comparison to State Average
CLIP	88.9	95.7	Similar
SCIP-1	99.6	98.7	Similar
SCIP-2	98.5	98.7	Similar
SCIP-3	99.2	97.2	Similar
Measure	Percent Vaccinated	State Average	Comparison to State Average
Staff Influenza Vaccination	92.4	88.5	Higher



HAI: Healthcare-Associated Infections CLABSI: Central line-associated bloodstream infection SSI: Surgical site infection COLO: Colon procedures CABG: Coronary artery bypass procedures KPRO: Knee arthroplasty SCIP: Surgical Care Improvement Project CLIP: Central line insertion practices

APPENDIX 1: Technical Notes

1. Data in this report were extracted from NHSN on 09/25/2012. Changes or new infections reported by hospitals after this date are not reflected in this report.
2. The SSI and CLABSI national comparison data used in this report come from the 2009 NHSN Report and 2010 NHSN report, respectively. The 2009 NHSN report summarizes data reported to NHSN from 2006–2008. The 2010 NHSN report summarizes device-associated data reported to NHSN January- December 2010. These reports are available at:
 - a. <http://www.cdc.gov/nhsn/PDFs/dataStat/2009NHSNReport.pdf>
 - b. http://www.cdc.gov/nhsn/PDFs/dataStat/NHSN-Report_2010-Data-Summary.pdf
3. Rate data were appropriately risk-adjusted according to standard NHSN recommendations. Rates were only presented if appropriately risk-adjusted as follows:
 - a. CLABSI: rate data must be broken down and aggregated only by the same type of unit.
 - b. CLIP: currently there are no CDC recommendations for risk-adjusting CLIP data.
 - c. SSI: beginning in 2010, rates are no longer presented in accordance with CDC recommendations and changes to NHSN methodology.
4. Rates for any grouping were not presented if data were insufficient to generate a stable rate.
 - a. CLABSI: there must be at least 50 central line days in the denominator to present a rate.
 - b. CLIP: there must be at least 20 insertions in the denominator to present a rate.
 - c. SSI: beginning in 2010, rates are no longer presented in accordance with CDC recommendations and changes to NHSN methodology.
5. Standardized Infection Ratios for any grouping were not presented if less than one infection was expected.
6. All confidence intervals presented in this report are 95% confidence intervals. A confidence interval is a measure of certainty (usually with 95% confidence) of an estimate (such as a percentage). Because we can never obtain a hospital's true "population" data (e.g., all patients for all time), we use statistical procedures to "estimate" various measurements using "sample" data. Since estimates have "variability" we use 95% confidence limits to describe the variability around the estimate. The confidence interval (CI) gives us the range within which the TRUE value will fall 95% of the time, assuming that the sample data are reflective of the true population. If the confidence intervals for the two rates overlap, then it is reasonably possible that the REAL rates are not different from one another.
7. Statistical significance is affected by sample size. If a value is almost or just barely significant, just a few additional observations can push significance one-way or the other (i.e., not significant or significant).

Standardized Infection Ratios

8. Calculating a standardized infection ratio (SIR): The standardized infection ratio is the number of observed infections divided by the number of expected infections based on most recent national data. In order to calculate an SIR, it is recommended that there be at least one expected number of infections. See Appendix 2 for more information on the SIR.
9. Interpreting a standardized infection ratio (SIR): The resulting SIR is a comparison between the number of observed infections and the number expected.

- a. An SIR of 1.0 means that exactly the same number of infections was observed as was expected.
 - b. An SIR of less than one means that fewer infections were observed than was expected (for example, SIR = 0.70 would be interpreted as 30% fewer infections observed than expected).
 - c. An SIR of more than one means that fewer infections were observed than was expected (for example, SIR = 1.30 would be interpreted as 30% more infections observed than expected).
10. Calculating a corresponding confidence interval for a standardized infection ratio: All hospital-specific SIRs and corresponding confidence intervals in this report were generated directly by NHSN using statistical methods similar to those described in Liddell FD. Simple exact analysis of the standardised mortality ratio. *Journal of Epidemiology and Community Health*, 1984; 38:85-88.⁹
11. Interpreting a standardized infection ratio confidence interval (CI): A confidence interval is a measure of certainty (usually with 95% confidence) of an estimate (such as a Standardized Infection Ratio). Confidence intervals can be used to assess whether differences in the number of observed and expected infections is statistically significant (or significantly different).
- a. For CIs that contain the value 1.0, the observed number of infections will be considered "Similar" to the expected number of infections based on national data (e.g., 0.27–1.49).
 - b. For CIs that are lower than and do not contain the value 1.0, the observed number of infections will be considered "Lower" than the expected number of infections based on national data (e.g., 0.13–0.74).
 - c. For CIs that are higher than and do not contain the value 1.0, the observed number of infections will be considered "Higher" than the expected number of infections based on national data (e.g., 1.09–2.63).

Infection Rates

12. Calculating a central line-associated bloodstream infection rate: CLABSI rates are presented as the number of infections per 1,000 central line days.

$$\text{CLABSI rate} = (\text{number of infections} / \text{number of central line days}) \times 1,000$$

13. Interpreting a p-value: All hospital-specific rates and corresponding p-values in this report were generated directly by NHSN using Poisson statistical methods. State level rates and corresponding p-values were calculated by DHHS using exact methods. A p-value provides a statistical comparison of two values in order to determine whether those values are statistically different or similar. In this report, p-values are used to assess whether hospital infection rates are similar or different to national infection rates. A p-value of <0.05 would indicate the hospital rate is significantly different than the national rate.
- a. If the p-value is ≥ 0.05 , then the hospital rate would be considered statistically "Similar" to the national rate.
 - b. If the hospital rate is lower than the national rate and the p-value is <0.05, then the hospital rate would be considered significantly "Lower" than the national rate.
 - c. If the hospital rate is higher than the national rate and the p-value is <0.05, then the hospital rate would be considered significantly "Higher" than the national rate.

⁹ Liddell FD. Simple exact analysis of the standardised mortality ratio. *Journal of Epidemiology and Community Health*, 1984; 38:85-88.

Process Measure Percentages

14. Calculating a central line insertion practices adherence percentage: CLIP adherence percentages are presented as the number of insertions that met the adherence criteria divided by the total number of insertions expressed as a percent.

CLIP Adherence (%) = (number of insertions that met adherence criteria / total number of insertions) x 100

15. Calculating an influenza vaccination percentage: Influenza vaccination percentages are presented as the number of persons vaccinated divided by the total number of persons expressed as a percent.

Influenza Vaccination (%) = (number of persons vaccinated / total number of persons) x 100

16. Calculating a surgical antimicrobial prophylaxis adherence percentage: Surgical antimicrobial prophylaxis adherence percentages are presented as the number of persons whose treatment adhered to the measure (SCIP-1, SCIP-2, or SCIP-3) divided by the total number of persons undergoing a surgical procedure expressed as a percent.

Surgical antimicrobial prophylaxis adherence (%) = (number of persons whose treatment adhered to the measure / total number of persons) x 100

17. Calculating a corresponding confidence interval (CI) for a central line insertion practices adherence percentage: Confidence intervals calculated for central line insertion practices data presented in this report are mid-p exact 95% confidence intervals, which were calculated using a statistical software program.

18. Calculating a corresponding confidence interval (CI) for an influenza vaccination percentage: Confidence intervals calculated for influenza vaccination data presented in this report are Wald normal approximation 95% confidence intervals, which were calculated using the following equation:

95% CI = $\pm 1.96[(p \times 1-p)/n]^{0.5}$ where p = the percentage and n = the total number of staff

19. Calculating a corresponding confidence interval (CI) for a surgical antimicrobial prophylaxis adherence percentage: Confidence intervals calculated for SCIP data presented in this report are Wald normal approximation 95% confidence intervals for national and state data (formula in 18 above), and mid-p exact 95% confidence intervals for hospital data, which were calculated using a statistical software program.

20. Interpreting a proportion confidence interval (CI) for central line insertion and vaccination data: A confidence interval is a measure of certainty (usually with 95% confidence) of an estimate (such as a percentage). Confidence intervals can be used to assess whether differences in the percentages observed for each group (for example, hospital vs. state) is statistically significant (or significantly different).

- a. CIs that overlap the state confidence interval are considered "Similar" to the overall state percentage.
- b. CIs that are lower than and do not overlap the state confidence interval are considered "Lower" than the overall state percentage.
- c. CIs that are higher than and do not overlap the state confidence interval are considered "Higher" than the overall state percentage.

APPENDIX 2: Understanding the Relationship between Healthcare-Associated Infection Rates and Standardized Infection Ratio Comparison Metrics

HAI Elimination Metrics are very useful for performing evaluations. Several metrics are based on the science employed in the NHSN. While national aggregate CLABSI data are published in the annual NHSN Reports, these rates must be stratified by types of locations to be risk-adjusted. This scientifically sound risk-adjustment strategy creates a practical challenge to summarizing this information nationally, regionally, or even for an individual healthcare facility. For instance, when comparing CLABSI rates, there may be quite a number of different types of locations for which a CLABSI rate could be reported. This raises the need for a way to combine CLABSI rate data across locations.

A standardized infection ratio (SIR) can be used as an indirect standardization method for summarizing HAI experience across any number of stratified groups of data. To illustrate the method for using an SIR as an HAI comparison metric, the following example data are displayed below:

Risk Group Stratifier	Observed CLABSI Rates			NHSN CLABSI Rates for 2008 (Standard Population)		
Location Type	#CLABSI	#Central line-days	CLABSI rate*	#CLABSI	#Central line-days	CLABSI rate*
ICU	170	100,000	1.7	1200	600,000	2.0
WARD	58	58,000	1.0	600	400,000	1.5
$\text{SIR} = \frac{\text{observed}}{\text{expected}} = \frac{170 + 58}{100,000 \times \left(\frac{2}{1000}\right) + 58,000 \times \left(\frac{1.5}{1000}\right)} = \frac{228}{200 + 87} = \frac{228}{287} = 0.79 \quad 95\% \text{CI} = (0.628, 0.989)$						

*Defined as the number of CLABSIs per 1000 central line-days

In the table above, there are two strata to illustrate risk-adjustment by location type for which national data exist from NHSN. The SIR calculation is based on dividing the total number of observed CLABSI events by an “expected” number using the CLABSI rates from the standard population. This “expected” number is calculated by multiplying the national CLABSI rate from the standard population by the observed number of central line-days for each stratum, which can also be understood as a prediction or projection. If the observed data represented a follow-up period, such as 2009, one would state that an SIR of 0.79 implies that there was a 21% reduction in CLABSIs overall for the nation, region, or facility.

The SIR concept and calculation is completely based on the underlying CLABSI rate data that exist across a potentially large group of strata. Thus, the SIR provides a single metric for performing comparisons rather than attempting to perform multiple comparisons across many strata which makes the task cumbersome.

The SIR concept and calculation can be applied equitably to other HAI metrics. This is especially true for HAI metrics for which national data are available and reasonably precise using a measurement system such as the NHSN. The SIR calculation methods differ in the risk group stratification only.

The SSI SIR uses improved risk adjustment calculated through logistic modeling. This allows for all available risk factors to be procedure specific. See the following logistic equation and SSI predictive risk factors that are used for calculating SSI SIRs, respectively.

$$\text{logit}(p) = \alpha + \beta_1 X_1 + \beta_2 X_2 + \beta_3 X_3 + \beta_4 X_4 = -5.448 + 0.520 (\text{Age} \leq 44^*) + 0.425 (\text{ASA } 3/4/5^*) + 0.501 (\text{Duration} > 100^*) + 1.069 (\text{Med school affiliation}^*)$$

**For these risk factors, if present = 1; if not = 0*

Procedure Code	SSI Predictive Risk Factors From SSI Logistic Models
CABG and CBGC	Age, ASA, Duration, Gender, Hospital Bed Size
COLO	Age, Anesthesia, ASA, Duration, Endoscope, Medical School Affiliation, Hospital Bed Size, Wound Class
KPRO	Age, Anesthesia, ASA, Duration, Gender, Revision, Hospital Bed Size, Trauma

Detailed descriptions of the new SIR in NHSN are available at: http://www.cdc.gov/nhsn/PDFs/Newsletters/NHSN_NL_OCT_2010SE_final.pdf

There are clear advantages to reporting and comparing a single number for prevention assessment. In addition to the simplicity of the SIR concept and the advantages listed above, it is important to note another benefit of using an SIR comparison metric for HAI data. If there was need at any level of aggregation (national, regional, facility-wide, etc.) to combine the SIR values across mutually exclusive data one could do so. The below table demonstrates how the example data from the previous two metric settings could be summarized.

HAI Metric	Observed HAIs			Expected HAIs		
	#CLABSI	#SSI [†]	#Combined HAI	#CLABSI	#SSI [†]	#Combined HAI
CLABSI 1	228			287		
SSI 1		636			853.8	
Combined HAI			228 + 636 = 864			287 + 853.8 = 1140.8
$\text{SIR} = \frac{\text{observed}}{\text{expected}} = \frac{228 + 636}{287 + 853.8} = \frac{864}{1140.8} = 0.76 \quad 95\% \text{CI} = (0.673, 0.849)$						

[†] SSI, surgical site infection

APPENDIX 3: Preventing Healthcare-Associated Infections

What You Can Do to Prevent Healthcare-Associated Infections

There are several prevention tips you can follow all the time to reduce your chance of getting an infection or spreading your infection to others.

1. Clean your hands.

- Use soap and warm water. Rub your hands really well for at least 15 seconds. Rub your palms, fingernails, in between your fingers, and the backs of your hands.
- If your hands do not look dirty, you can clean them with alcohol-based hand sanitizers. Rub the sanitizer all over your hands, especially under your nails and between your fingers, until your hands are dry.
- Clean your hands before touching or eating food. Clean them after you use the bathroom, take out the trash, change a diaper, visit someone who is ill, or play with a pet.

2. Make sure healthcare providers clean their hands first, even if they wear gloves for a procedure.

- Doctors, nurses, dentists, and other healthcare providers come into contact with many bacteria and viruses. So if you do not see your healthcare provider wash their hands or use an alcohol-based hand sanitizer before they treat you, ask them if they have cleaned their hands.
- Healthcare providers should wear clean gloves when they perform tasks such as taking throat cultures, pulling teeth, taking blood, touching wounds or body fluids, while suctioning tubes, and examining your mouth or private parts. Don't be afraid to ask if they should wear gloves.

3. Cover your mouth and nose.

- Many diseases are spread through sneezes and coughs. When you sneeze or cough, the germs can travel 3 feet or more. Cover your mouth and nose to prevent the spread of infection to others.
- Use a tissue. Keep tissues handy at home, at work, and in your pocket. Be sure to throw away used tissues and clean your hands after coughing or sneezing.
- If you don't have a tissue, cover your mouth and nose with the bend of your elbow or hands. If you use your hands, clean them right away.

4. If you are sick, avoid close contact with others.

- If you are sick, stay away from other people or stay home. Don't shake hands or touch others.
- When you go for medical treatment, call ahead and ask if there is anything you can do to avoid infecting people in the waiting room.

5. Get shots to avoid disease and fight the spread of infection.

- Make sure that your vaccinations are current—even for adults. Check with your doctor about shots you may need.

6. If you are prescribed an antibiotic for an illness, take them exactly as directed by your doctor.

- Don't take half-doses or stop before you complete your prescribed course even if you feel better. Not taking them as directed can lead to infections that become resistant to antibiotics, making them more difficult to treat.

What You Can Do to Help Prevent a Catheter-Associated Bloodstream Infection

- Ask your doctors and nurses to explain why you need the catheter and how long you will have it.
- Ask your doctors and nurses what infection prevention methods they will use during the catheter insertion.
- 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.
- If the bandage comes off or becomes wet or dirty, tell your nurse or doctor immediately.
- Inform your nurse or doctor if the area around your catheter is sore or red.
- Do not let family and friends who visit touch the catheter or the tubing.
- Make sure family and friends clean their hands with soap and water or an alcohol-based hand rub before and after visiting you.
- Some patients are sent home from the hospital with a catheter in order to continue their treatment. If you go home with a catheter, your doctors and nurses will explain everything you need to know about taking care of your catheter.
 - Make sure you understand how to care for the catheter before leaving the hospital. For example, ask for instructions on showering or bathing with the catheter and how to change the catheter dressing.
 - Make sure you know who to contact if you have questions after you get home.
 - Make sure you wash your hands with soap and water or an alcohol-based hand rub before handling your catheter.
 - Watch for the signs and symptoms of catheter-associated bloodstream infection, such as soreness or redness at the catheter site or fever, and call your healthcare provider immediately if any occur.

What Hospitals Do to Prevent Catheter-Associated Bloodstream Infections

To prevent catheter-associated bloodstream infections doctors and nurses will:

- Choose a vein where the catheter can be safely inserted and where risk for infection is small.
- Clean hands with soap and water or alcohol-based hand rub before putting in the catheter.
- Wear a mask, cap, sterile gown, and sterile gloves when putting in the catheter to keep it sterile. The patient will be covered with a sterile sheet.
- Clean the patient's skin with an antiseptic cleanser before putting in the catheter.
- Clean hands, wear gloves, and clean the catheter opening with an antiseptic solution before using the catheter 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 catheter enters the skin.
- Decide every day if the patient still needs to have the catheter. The catheter will be removed as soon as it is no longer needed.

What You Can Do to Help Prevent Catheter-Associated Urinary Tract Infections

- Ask doctors to explain why you need the catheter and how long you will have it.
- Make sure that your doctors and nurses caring for you clean their hands and use sterile gloves for catheter insertion.
- Make sure the tubing or bag is not on the floor. If it drops or is on the floor, ask for new tubing or a bag.
- Ask doctors and nurses what infection prevention methods they will use during the catheter insertion.
- Ask your doctors and nurses if you still need the catheter each day.
- Always clean your hands before and after doing catheter care.
- Always keep your urine bag below the level of your bladder.
- Do not tug or pull on the tubing.

What Hospitals Do to Prevent Catheter-Associated Urinary Tract Infections

To prevent catheter-associated urinary tract infections doctors and nurses will:

- Put in catheters only when necessary and are removed as soon as possible.
- Clean hands with soap and water or alcohol-based hand rub and put on sterile gloves before putting in the catheter.
- Clean the skin where the catheter will be inserted.
- Clean their hands before and after touching your catheter. If you do not see your providers clean their hands, please ask them to do so.
- Avoid disconnecting the catheter and drain tube.
- The catheter is secured to the leg to prevent pulling on the catheter.
- Avoid twisting or kinking the catheter.
- Keep the bag lower than the bladder.
- Empty the bag regularly.

What You Can Do to Help Prevent Surgical Site Infections

- Tell your doctor about other medical problems you may have. Health problems such as allergies, diabetes, and obesity could affect your surgery and your treatment.
- Quit smoking. Patients who smoke get more infections. Talk to your doctor about how you can quit before your surgery.
- Do not shave near where you will have surgery. Shaving with a razor can irritate your skin and make it easier to develop an infection.
- You may have some of your hair removed immediately before your surgery using electric clippers if the hair is in the same area where the procedure will occur, however you should not be shaved with a razor. 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.

- Ask if you will get antibiotics before surgery.
- After your surgery, make sure that your healthcare providers clean their hands before 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 who visit you should not touch the surgical wound or dressings and prevent pets from coming into contact with your wound.
- 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 do so.
- Before you go home, your doctor or nurse should explain everything you need to know about taking care of your wound. Make sure you understand how to care for your wound before you leave the hospital. If you do develop an infection at the hospital, be sure to ask what type of bacteria you have, whether you need antibiotics for it, what steps you should take to prevent it from spreading, and make plans for follow up care for the infection.
- Always clean your hands before and after caring for your wound.
- Before you go home, make sure you know who to contact if you have questions or problems after you get home.
- If you have any symptoms of an infection, such as redness and pain at the surgery site, drainage, or fever, call your doctor immediately.

What Hospitals Do to Prevent Surgical Site Infections

To prevent surgical site infections, doctors, nurses, and other healthcare providers:

- Clean their hands and arms up to their elbows with an antiseptic agent before the surgery.
- Clean their hands with soap and water or an alcohol-based hand rub before and after caring for each patient.
- 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.
- Wear special hair covers, masks, gowns, and gloves during surgery to keep the surgery area clean.
- Give you antibiotics before your surgery starts. In most cases, you should get antibiotics within 60 minutes before the surgery starts and the antibiotics should be stopped within 24 hours after surgery.
- Clean the skin at the site of your surgery with a special soap that kills germs.

This prevention information was adapted from materials developed by the Centers for Disease Control and Prevention, the Association for Professionals in Infection Control and Epidemiology, the Joint Commission, and Society of Healthcare Epidemiology of America. This information can be accessed at the following websites:

http://www.cdc.gov/ncidod/dhqp/HAI_shea_idsa.html

http://www.jointcommission.org/PatientSafety/SpeakUp/speak_up_ic.htm

http://www.apic.org/AM/Template.cfm?Section=Education_Resources&Template=/TaggedPage/TaggedPageDisplay.cfm&TPLID=91&ContentID=8738

<http://www.shea-online.org/ForPatients.aspx>

Other useful resources:

<http://www.dhhs.nh.gov/dphs/cdcs/hai/index.htm>

<http://www.nhqualitycare.org/index.php>

<http://www.cdc.gov/HAI/>

<http://www.cdc.gov/HAI/patientSafety/patient-safety.html>

<http://www.qualityforum.org/Home.aspx>

<http://www.ahrq.gov/>

<http://www.shea-online.org/about/patientguides.cfm>

<http://www.jointcommission.org/>