DELAWARE HEALTH AND SOCIAL SERVICES

Division of Public Health

Delaware Healthcare-Associated Infections Annual Report 2012

Delaware Health and Social Services
Division of Public Health
Infectious Disease Prevention and Control Section
Office of Infectious Disease Epidemiology
Healthcare-Associated Infections Program

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Acronyms

CAUTI	Catheter-Associated Urinary Tract Infection
CDC	Centers for Disease Control and Prevention
CI	Confidence Interval
CL	Confidence Limit
CLABSI	Central Line-Associated Bloodstream Infection
CMS	Centers for Medicare and Medicaid Services
DHSS	Delaware Department of Health and Social Services
HAI	Healthcare-Associated Infection
HAIAC	Healthcare-Associated Infections Advisory Committee
ICU	Intensive Care Unit
IP	Infection Preventionist
NHSN	National Healthcare Safety Network
SSI	Surgical Site Infection
UTI	Urinary Tract Infection

Executive Summary

Title 16 Chapter 10a of the *Delaware Code* established the "Hospital Infections Disclosure Act" in 2007. The law requires hospitals to report healthcare-associated infections (HAIs) to the Department of Health and Social Services (DHSS) by using the Centers for Disease Control and Prevention's (CDC) National Healthcare Safety Network (NHSN). The law's purpose is to make information available to the public about the occurrence of HAIs in Delaware healthcare facilities. The Healthcare-Associated Infections Advisory Committee (HAIAC) was created to oversee implementation of the "Hospital Infections Disclosure Act." The committee determined that Delaware would follow the healthcare facility reporting requirements of the Centers for Medicare and Medicaid Services (CMS).

As of 2012, acute care hospitals are required to report data for catheter-associated urinary tract infections (CAUTI), central line-associated bloodstream infections (CLABSI), and surgical site infections (SSI) for inpatient colon surgeries and hysterectomies. These infections are a threat to patient safety and are a significant cause of illness and death. Development and implementation of strategies to reduce and prevent HAIs are a priority for the HAIAC.

HAI SIRs for DELAWARE

Compared to standard population

Intensive Care Units
CLABSI: Lower (0.44, 0.30-0.61)
CAUTI: Modestly higher (1.3, 1.0-1.7)

Acute Care Hospitals
SSI Colon Surgery: Lower (0.71, 0.51-0.96)
SSI Hysterectomy: Modestly higher (1.2, 0.71-1.9)

In 2012, the rate of CLABSIs for acute care hospitals (ICUs) in Delaware was lower than the CLABSI of similar hospitals in U.S (SIR= 0.44, 95% CI: 0.30-0.61). The rate of CAUTI for acute care hospitals (ICUs) in Delaware was modestly higher than the rate of CAUTI in similar hospitals in the U.S. (SIR= 1.3, 95% CI: 1.0-1.7). The rate of SSIs for colon surgery was lower than the SSIs in similar hospitals in the U.S. (SIR= 0.71, 95% CI: 0.51-0.96). The SIR for hysterectomy SSIs was modestly higher than the rate of SSIs in similar hospitals in the U.S. (SIR= 1.2, 95% CI: 0.71-1.9). Low numbers of procedures and device days for nearly all hospitals result in estimates that are imprecise and therefore statistically unreliable.

Although these estimates are not statistically significant, it is important to note that healthcare facilities in Delaware actively implement prevention initiatives to reduce the overall observed number of HAIs in their facilities.

Background

Healthcare-associated infections (HAIs) are infections that patients acquire during the course of receiving treatment for other conditions within a healthcare setting. These HAIs can worsen illnesses or prolong hospital stays. HAIs have an enormous impact on our society. One out of every 20 hospitalized patients in the nation contracts an HAI. The most recent official estimates indicate that 1.7 million patients in U. S. hospitals were infected with an HAI in a single year, accounting for nearly 99,000 deaths.[1]

The Delaware General Assembly passed House Bill 47 in 2007, establishing the "Hospital Infections Disclosure Act" (Title 16 Chapter 10A of the *Delaware Code*).[2] The law requires hospitals to report HAIs to the Department of Health and Social Services (DHSS) by using the Centers for Disease Control and Prevention's (CDC) National Healthcare Safety Network (NHSN). NHSN is an internet-based surveillance system that collects data from U.S. healthcare facilities. It provides facilities with risk-adjusted data that can be used for inter-facility comparisons and local quality improvement activities.[3]

The law requires DHSS to submit an annual report to the legislature. This report serves that purpose for HAIs reported in 2012. As required by law, this annual report is published alongside quarterly reports on the Division of Public Health Web site and will be made available to anyone upon request.

A Healthcare-Associated Infections Advisory Committee (HAIAC) was appointed by the Secretary of DHSS in 2007 (Appendix A). The committee assisted DHSS in the development of regulations,[4] reviewed the NHSN requirements, and selected reporting requirements.

Beginning in mid-2012, the HAIAC determined that Delaware would follow the reporting requirements of the Centers for Medicare and Medicaid Services (CMS). This became effective as of September 1, 2013.

CMS's requirements in 2012 meant that acute care hospitals reported catheter-associated urinary tract infections (CAUTI), central line-associated bloodstream infections (CLABSI), and surgical site infections (SSI) for colon surgeries and hysterectomies.

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[1] Letter to Senate Appropriation Subcommittee Chairman from CSTE, SHEA and APIC.
[2] http://delcode.delaware.gov/title16/c010a/index.shtml
[3] http://www.cdc.gov/nhsn/
[4] http://regulations.delaware.gov/documents/May2009c.pdf

Methods

Reporting HAIs in Delaware

There are 8 acute care hospitals in Delaware, all of which report HAIs using the National Healthcare Safety Network (NHSN). NHSN is a secure, internet-based surveillance system managed by the CDC that is available for use by all types of healthcare facilities in the United States, including acute care hospitals, long term acute care hospitals, psychiatric hospitals, rehabilitation hospitals, outpatient dialysis centers, and ambulatory surgery centers. Appendix B provides a list of hospital profiles for those facilities required to report HAIs by the "Hospital Infections Disclosure Act," required by law.

What HAIs are reported in Delaware?

CLABSI and CAUTI infections occurring in adult, pediatric, and neonatal intensive care units (ICUs) and SSIs, specifically infections resulting from surgical procedures of colon surgery and hysterectomy, are reported by each acute care hospital in Delaware and are included in this report.

Catheter-Associated Urinary Tract Infections (CAUTI)

A urinary tract infection (UTI) is an infection involving any part of the urinary system including the urethra, bladder, ureters, and kidney. Urinary catheters are tubes inserted into the bladder through the urethra to drain urine. One out of four hospitalized patients receives urinary catheters during their hospital stay.

Central Line-Associated Bloodstream Infections (CLABSI)

A "central line" is a tube that is placed into a patient's large vein or artery, usually in the neck, chest, arm, or groin. The catheter is often used as a device to draw blood, to give fluids, or to administer medications and may not be removed for several weeks. A bloodstream infection can occur when bacteria or other germs travel down a "central line" and enter the blood.

Surgical Site Infections (SSI)

A surgical site infection is an infection that occurs after surgery in the part of the body where the surgery took place. Surgical site infections can sometimes be superficial infections involving the skin only while others are more serious and can involve tissues under the skin, organs, or implanted material.

What statistics are used to report HAIs?

Standardized infection ratios and confidence intervals.

Standardized Infection Ratio (SIR)

HAIs are reported using standardized infection ratios (SIRs). A SIR is a summary measure used to compare the number of infections observed at each hospital to the number of "predicted" infections, as standardized using the rate of infections in similar US hospitals. In addition to computing SIR estimates, 95% confidence intervals (CIs) are used to indicate the level of statistical reliability of the SIR estimate

Interpretation of the Standardized Infection Ratio (SIR)

- A **ratio of less than 1** means the hospital's HAI rate was lower than the HAI rate of the standard population.
- A **ratio of 1** means that the hospital's HAI rate was similar to the HAI rate of the standard population.
- A **ratio of more than 1** means that the hospital's HAI rate was higher than the HAI rate of the standard population.

The SIR is not calculated when the "predicted" number of infections is less than 1, which is usually due to small numbers of devices or procedures. Please note that the "predicted" number of HAIs does not mean that one would expect to get an infection when hospitalized; rather it reflects the anticipated number of infections based on the frequency of infections previously reported to the NHSN.

Notably, the infection rate of a hospital may change from year to year, which may lead to considerable annual variation in the SIR, particularly for a small hospital. For example, if one HAI were diagnosed in a small hospital for 2009 and three diagnosed in 2010, the SIR for that hospital might change dramatically. Such dramatic variation is less likely to affect the SIRs in larger hospitals. Nonetheless, the overall HAI rate for Delaware may fluctuate as a result of the relatively few hospitals that contribute HAI data compared to states with more or larger hospitals.

Confidence Interval (CI)

In addition to computing an SIR estimate, we also attempt to understand uncertainty of this SIR estimate by looking at its confidence interval or confidence limits (i.e. endpoints of the confidence interval)**.** A confidence interval is a range of values that accounts for random error in the estimation of the SIR.[7] The width of the confidence interval depends on the amount of random variability in the data-collection process. We typically calculate 95% confidence intervals (95% CI), an arbitrary level that specifies the degree of compatibility between the limits of the interval and the data.[5] Wider confidence intervals imply greater imprecision (e.g. a CI of 1.3 – 10.3 is less precise than a CI of 1.3– 2.6), and thus the more uncertain we are when interpreting the SIR estimate.[6]

Statistical significance is not an indication of the validity of the SIR; it is a function of sample size (or total number of device days or procedures) and thus does not tell us whether the SIR reported is a valid estimate based on quality data. External validation methods are used to assess the validity of the data reported to NHSN.

[5] Rothman KJ, Greenland S, Lash TL. Study Design and Conduct. Modern Epidemiology. 3rd ed. Philadelphia, PA: Lippincott Williams & Wilkins; 2008.

[6] Savitz DA. Interpreting Epidemiologic Evidence: Strategies for Study Design & Analysis. New York: Oxford Press, 2003.

Results

Summary of HAI SIRs in Delaware hospitals

Below is a summary of HAI data for Delaware hospitals presented by infection type. As detailed in the National HAI report, "SIRs are not intended to serve as comprehensive and conclusive HAI measures for all uses and users of HAI data. More specific data at the state and healthcare facility levels are needed to target specific HAI problems and monitor impact of prevention programs."7

Central Line-associated Bloodstream Infections (CLABSI)

HAI SIRs for DELAWARE

Compared to standard population

Intensive Care Units
CLABSI: Lower (0.44, 0.30-0.61)
CAUTI: Modestly higher (1.3, 1.0-1.7)

Acute Care Hospitals
SSI Colon Surgery: Lower (0.71, 0.51-0.96)
SSI Hysterectomy: Modestly higher (1.2, 0.71-1.9)

The standardized infection ratio of CLABSIs for Delaware was lower than the standard population (SIR= 0.44, 95% CL: 0.30, 0.61) and ranged from 0 (95% CL: ---, 2.9) to 0.91 (95% CL: 0.11, 3.3). SIRs for AI Dupont and Christiana were lower than the standard population with estimates that were more precise because of a relatively large number of device days compared with the hospitals that had a small number of device days. Small numbers of devices for 6 hospitals (Beebe, Kent General, Milford, Nanticoke, St. Francis, and Wilmington) contributed to imprecise SIR estimates making it difficult to interpret these with a high level of confidence since they may be subject to a relatively high level of statistical random variability.

Catheter-Associated Urinary Tract Infections (CAUTI)

The standardized infection ratio of CAUTIs for Delaware was modestly higher than the standard population (SIR= 1.3, 95% CL: 1.0, 1.7) and ranged from 0 (95% CL: ---, 1.1) to 1.6 (95% CL: Christiana= 1.2, 2.1; Nanticoke= 0.34, 4.7). Small numbers of procedures or devices for nearly all hospitals contributed to imprecise SIR estimates making it difficult to interpret these with a high level of confidence since they may be subject to a relatively high level of statistical random variability.

Surgical Site Infections (SSI)

Colon Surgery

The standardized infection ratio of SSIs for colon surgery in Delaware was lower than the standard population (SIR= 0.71, 95% CL: 0.51, 0.96) and ranged from 0 (95% CL: ---, 2.4) to 2.4

[7] Centers for Disease Control and Prevention. National Center for Emerging and Zoonotic Infectious Diseases. National and State Healthcare-Associated Infections Standardized Infection Ratio Report: Using Data Reported to the National Healthcare Safety Network, January – December 2010. Available at http://www.cdc.gov/hai/pdfs/SIR/national-SIR-Report_03_29_2012.pdf; Accessed on December 12, 2012.

(0.9, 5.3). SIRs for SSI varied widely by hospital; some hospital with rates lower than the standard population and other hospitals with rates higher than the standard population. The SIR estimate was lower than the standard population for Christiana. Although SIRs for Beebe, Kent General, and St. Francis were lower than the standard population, they were imprecise and difficult to interpret because reports of 1 or 2 HAIs may change the interpretation of the SIR. Likewise, small numbers of procedures for Nanticoke and Milford resulted in imprecise SIR estimates.

Hysterectomy

The standardized infection ratio of SSIs for hysterectomy in Delaware was modestly higher than the standard population (SIR= 1.2, 95% CL: 0.71, 1.9). SIRs for 1 hospital (Kent General) was 0 with wide confidence intervals making it difficult to interpret these estimates accurately. The SIR for Christiana was higher than the standard population, although modestly imprecise (SIR= 1.6, 95% CL: 0.90, 2.6). SIRs for Beebe, Milford, Nanticoke, St. Francis, and Wilmington were not estimated because the expected number of infections was less than 1.

Table 1. Number of device days and inpatient surgical procedures by healthcare facility, January 1, 2012 – December 31, 2012.

	Device days		Inpatient[a] procedures	
Hospital	**Central Line**	**Catheter**	**Colon**	**Hysterectomy**
Statewide	29,834	24,561	1,041	994
A.I. Dupont	7,272	1,477	N/A	N/A
Beebe	2,801	2,728	98	39
Christiana	13,151	12,235	635	606
Kent General	2,769	3,365	153	183
Milford	858	876	44	28
Nanticoke	1,213	1,421	54	40
St. Francis	1,152	1,296	24	61
Wilmington	618	1,163	33	37
Median (IQR)[b]	1,991 (932-6,154)	1,449 (1,196-3,205)	54 (33-153)	40 (37-183)

[a.] Inpatient procedure= A procedure that is performed on a patient whose date of admission the healthcare facility and the date of discharge are different calendar days and takes place during an operation.

[b.] IQR= Interquartile range is a measure of spread of the data representing the middle 50% of device days or procedures; the lower end of the range is the 25th percentile and the higher end of the range is the 75th percentile. The IQR is less affected by extreme values than other measures of data dispersion (e.g. a large number of colon surgeries are performed at Christiana and the IQR is less affected by this more extreme number of procedures compared to other healthcare facilities in Delaware).

The pie charts below depict the number and the relative proportion of total (inpatient and outpatient; Figure 1) and inpatient only (Figure 2) colon surgeries and inpatient hysterectomies performed at each healthcare facility. There were a total of 1,059 inpatient colon surgeries and 1,307 hysterectomies performed in 2012. Of these, there were 1,041 inpatient colon surgeries and 994 inpatient hysterectomies performed in 2012. More than half of these procedures were performed at Christiana. A smaller proportion of inpatient colon surgeries and hysterectomies were performed at other healthcare facilities in Delaware.

Figure 1. Number of total surgical procedures (inpatient and outpatient) by healthcare facility, January 1, 2012 – December 31, 2012.

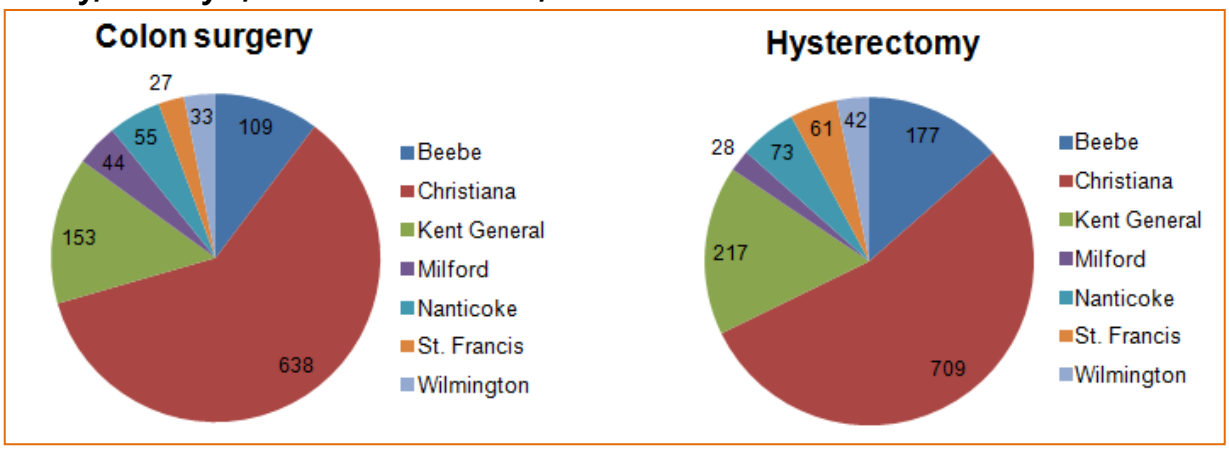


Figure 2. Number inpatient surgical procedures by healthcare facility, January 1, 2012 – December 31, 2012.

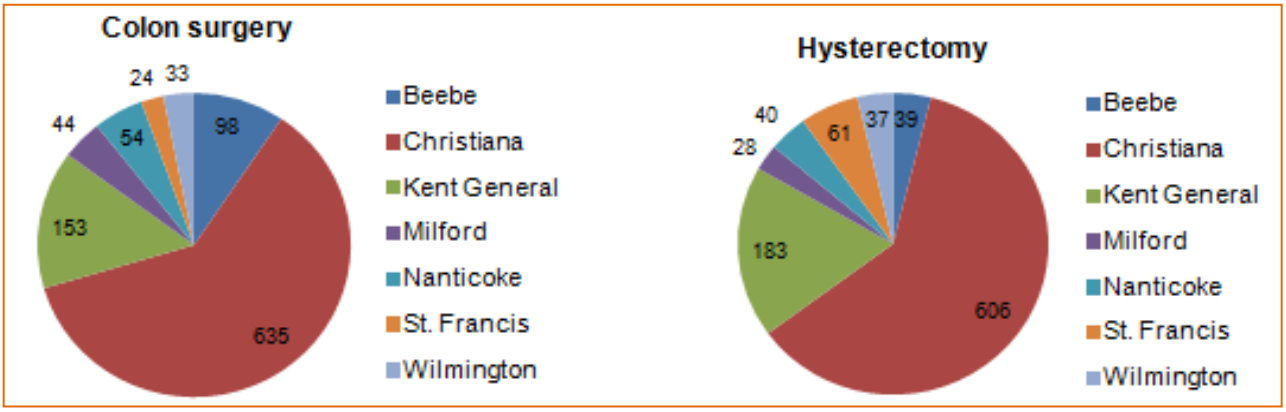
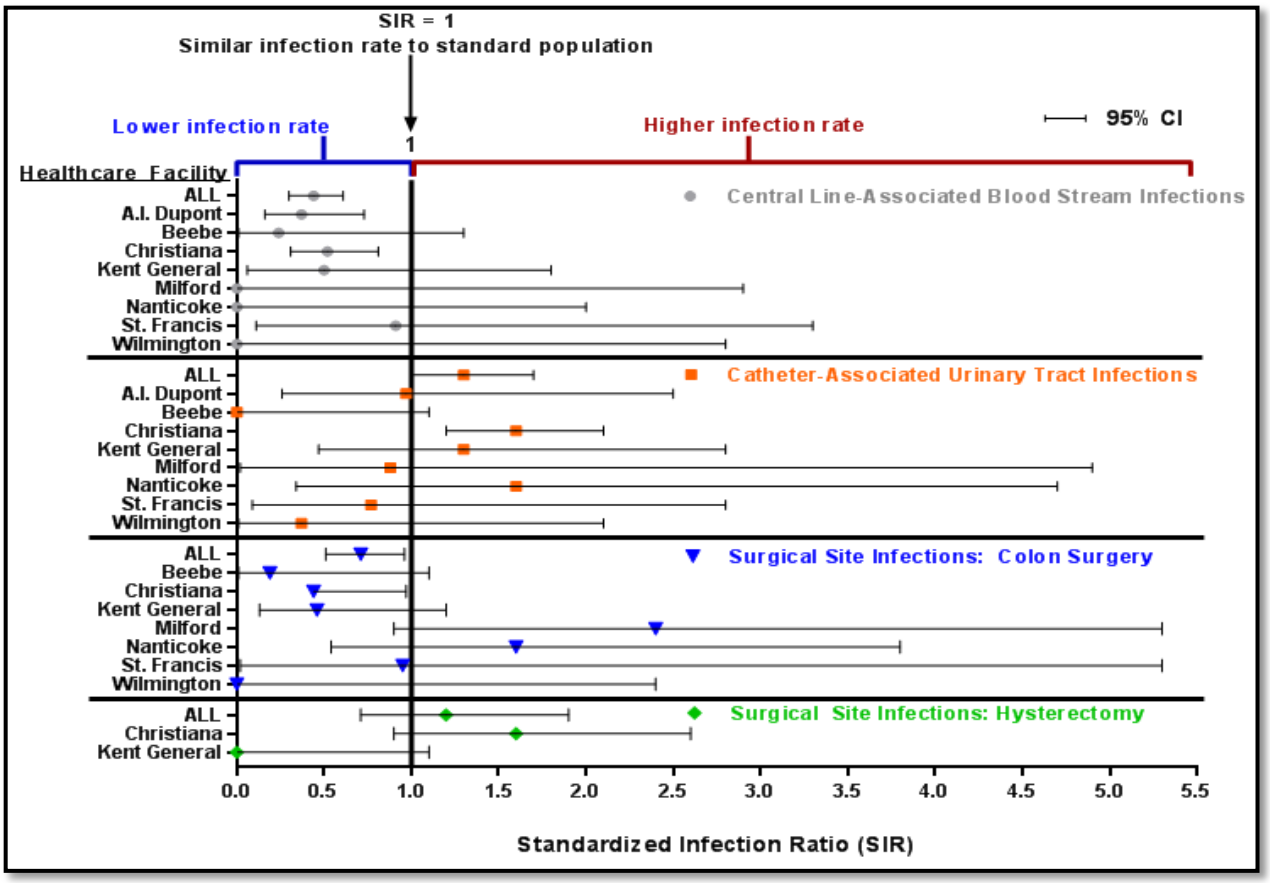


Figure 3. Device- and procedure-related healthcare-associated infections (HAIs) from all intensive care units (ICUs) and acute care hospitals, respectively, reported as standardized infection ratios (SIRs) for hospitals participating in the National Healthcare Safety Network (NHSN) in Delaware, January 1, 2012 – December 31, 2012.



Interpretation of Figure 3

Facilities were not included in this figure when SIRs were not calculated because the Expected number was less than 1 (see Table 1). The symbols in the figure represent the value of the SIR that is estimated using data reported by the hospitals participating in the NHSN and the standard population calculated by CDC. The width of the confidence interval provides an indication of the precision of the SIRs; the wider the confidence interval, the less precise the estimate and the less certain we are regarding the compatibility of the reported data with the estimated SIR. The confidence interval is also affected by factors such as the number of facilities reporting data from the relevant patient care locations and the number of device days or operative procedures that were reported. SIRs estimated for smaller hospitals with fewer device days or observed and/or expected number of infections will be less precise compared to larger hospitals with more device days and observed and/or expected number of infections. Imprecision should not be interpreted as statistical significance. For SIR estimates of HAIs in Delaware, a Confidence Limit Ratio (CLR= Upper Limit/Lower Limit) of greater than or equal to 5.0 is considered to be relatively imprecise.

Table 2. Device- and procedure-related healthcare-associated infections (HAIs) from all intensive care units (ICUs) and acute care hospitals, respectively, reported as standardized infection ratios (SIRs) for hospitals participating in the National Healthcare Safety Network (NHSN) in Delaware, January 1, 2012 – December 31, 2012.

Central Line-Associated Bloodstream Infections (CLABSI) in ICUs						
Hospital	Number of infections		SIR	95% CL[a]		Interpretation[b]
	Observed	Expected		Lower[c]	Upper	Data collected by the hospital are more compatible with an infection rate lower/higher/similar to the standard population[d].
ALL	32	73.0	0.44	0.30	0.61	Lower
A.I. Dupont	8	21.5	0.37	0.16	0.73	Lower
Beebe	1	4.2	0.24	0.01	1.3	Lower but too imprecise to interpret accurately
Christiana	19	36.7	0.52	0.31	0.81	Lower
Kent General	2	4.0	0.50	0.06	1.8	Lower but too imprecise to interpret accurately
Milford	0	1.3	0	---	2.9	Lower but too imprecise to interpret accurately
Nanticoke	0	1.8	0	---	2.0	Lower but too imprecise to interpret accurately
St. Francis	2	2.2	0.91	0.11	3.3	Modestly lower but too imprecise to interpret accurately
Wilmington	0	1.3	0	---	2.8	Lower but too imprecise to interpret accurately
Catheter-Associated Urinary Tract Infections (CAUTI) in ICUs						
	Number of Infections		SIR	95% CL[a]		Interpretation[b]
	Observed	Expected		Lower[c]	Upper	Data collected by the hospital are more compatible with an infection rate lower/higher/similar to the standard population[d].
ALL	71	54.0	1.3	1.0	1.7	Modestly higher
A.I. Dupont	4	4.1	0.97	0.26	2.5	Modestly lower but too imprecise to interpret accurately
Beebe	0	3.3	0	---	1.1	Lower but too imprecise to interpret accurately
Christiana	54	33.6	1.6	1.2	2.1	Higher
Kent General	6	4.7	1.3	0.47	2.8	Modestly higher but too imprecise to interpret accurately
Milford	1	1.1	0.88	0.02	4.9	Lower but too imprecise to interpret accurately
Nanticoke	3	1.8	1.6	0.34	4.7	Higher but too imprecise to interpret accurately
St. Francis	2	2.6	0.77	0.09	2.8	Lower but too imprecise to interpret accurately
Wilmington	1	2.7	0.37	0.01	2.1	Lower but too imprecise to interpret accurately
Surgical Site Infections (SSI)[f]						

Combined SIR estimates for Colon Surgeries and Hysterectomies						
	Number of Infections		**SIR**	**95% CL[a]**		**Interpretation[b]**
	Observed	**Expected**		**Lower[c]**	**Upper**	Data collected by the hospital are more compatible with an infection rate lower/higher/similar to the standard population[d].
ALL[g]	61	76.0	0.80	0.61	1.0	Lower
Beebe	1	5.8	0.17	0	0.95	Lower but too imprecise to interpret accurately
Christiana	42	47.7	0.88	0.63	1.2	Lower
Kent General	4	11.9	0.34	0.09	0.86	Lower but too imprecise to interpret accurately
Milford	7	2.9	2.4	0.97	5.0	Higher
Nanticoke	5	3.6	1.4	0.45	3.2	Modestly higher but too imprecise to interpret accurately
St. Francis	1	2.0	0.49	0.01	2.7	Lower but too imprecise to interpret accurately
Wilmington	1	1.9	0.52	0.01	2.9	Lower but too imprecise to interpret accurately
Colon Surgery						
	Number of Infections		**SIR**	**95% CL[a]**		**Interpretation[b]**
	Observed	**Expected**		**Lower[c]**	**Upper**	Data collected by the hospital are more compatible with an infection rate lower/higher/similar to the standard population[d].
ALL[g]	43	61.0	0.71	0.51	0.96	Lower
Beebe	1	5.3	0.19	0.01	1.1	Lower but too imprecise to interpret accurately.
Christiana	26	39.0	0.67	0.44	0.97	Lower
Kent General	4	8.6	0.46	0.13	1.2	Lower but too imprecise to interpret accurately
Milford	6	2.5	2.4	0.90	5.3	Higher but too imprecise to interpret accurately
Nanticoke	5	3.0	1.6	0.54	3.8	Higher but too imprecise to interpret accurately
St. Francis	1	1.1	0.95	0.02	5.3	Modestly lower but too imprecise to interpret accurately
Wilmington	0	1.5	0	---	2.4	Lower but too imprecise to interpret accurately
Hysterectomy						
	Number of Infections		**SIR**	**95% CL[a]**		**Interpretation[b]**
	Observed	**Expected**		**Lower[c]**	**Upper**	Data collected by the hospital are more compatible with an infection rate lower/higher/similar to the standard population[d].
ALL[g]	18	14.9	1.2	0.71	1.9	Modestly higher
Beebe	0	0.55	---	---	---	Numbers too low to calculate SIR[e]
Christiana	16	10.2	1.6	0.90	2.6	Higher
Kent General	0	3.2	0	---	1.1	Lower but too imprecise to interpret accurately
Milford	1	0.45	---	---	---	Numbers too low to calculate SIR[e]
Nanticoke	0	0.58	---	---	---	Numbers too low to calculate SIR[e]
St. Francis	0	0.99	---	---	---	Numbers too low to calculate SIR[e]
Wilmington	1	0.39	---	---	---	Numbers too low to calculate SIR[e]

a. CL=Confidence Limits are the **endpoints of the confidence interval, which** is a range of values that accounts for random error in the estimation of the SIR.

b. Interpretation of the Standardized Infection Ratio (SIR): A **ratio of less than 1** means the hospital's HAI rate was lower than the standard population; A **ratio of 1** means that the hospital's HAI rate was similar to the standard population; A **ratio of more than 1** means that the hospital's number of reported HAIs was higher than the standard population. Small

numbers of devices or procedures contribute to imprecision (wide confidence intervals). Wider confidence intervals imply greater imprecision (e.g. a CI of 1.3 – 2.6 is more precise than a CI of 1.3– 10.3), and thus the more uncertain we are when interpreting the second SIR estimate's CI. Imprecision should not be interpreted as statistical significance. Furthermore, statistical significance is not an indication of the validity of the SIR; it is a function of sample size (or total number of device days or procedures) and thus does not tell us whether the SIR reported is a valid estimate based on quality data. For SIR estimates of HAIs in Delaware, a Confidence Limit Ratio (CLR= Upper Limit/Lower Limit) of greater than or equal to 5.0 is considered to be relatively imprecise.

c. Lower= Lower bound of 95% Confidence Interval only calculated if Observed is greater than 0.
d. The standard population is derived from historical data reported to the NHSN by similar healthcare facilities in the United States.
e. Numbers too low to calculate SIR= SIR values are only calculated if the Expected number is greater than or equal to 1.
f. Surgical site infections include colon surgery and hysterectomy (abdominal approach with uterine removal).
g. Al Dupont is not included in the statewide SIR estimate for SSIs because colon surgeries and hysterectomies are not procedures routinely performed at this hospital (i.e. pediatric population).

Summary of HAI Prevention Activities in Delaware

Delaware hospitals are working to reduce HAIs through prevention, surveillance (monitoring and detection), and response activities. To deliver better outcomes, they partner with the Delaware Division of Public Health, Centers for Medicare and Medicaid Services, Centers for Disease Control and Prevention, and regional quality improvement organizations such as Quality Insights of Delaware.

Delaware HAI prevention activities include but are not limited to:

- Collaborating with local and regional partners to identify specific targets to reduce HAIs in Delaware healthcare facilities. Partners include state hospital associations, professional societies for infection control and healthcare epidemiology, academic organizations, laboratorians, networks of acute care hospitals and long term care facilities.
- Improving overall use of surveillance data to identify and prevent HAI outbreaks or transmission in healthcare settings.
- Developing and disseminating provider and patient education materials.
- Conducting validation studies to assess the quality of HAI data reported.
- Providing consumers access to useful healthcare quality measures through quarterly reports.

Prevention of HAIs is of the utmost importance among healthcare and public health communities. Ongoing efforts to reduce the occurrence of HAIs occur routinely at hospitals and other healthcare facilities across Delaware.

APPENDICES

Appendix A

Delaware Healthcare-Associated Infections Advisory Committee

Name	Position in Code[31]	Affiliation
Awele Maduka-Ezeh	Medical Director	Division of Public Health
Brenda Johnson	Hospital Infection Control	Nanticoke Memorial Hospital
Donna Anderson	Hospital Infection Control	Beebe Medical Center
Ehtesham Hamid	Dialysis	Fresenius Medical Care
Eileen Sherman	Hospital Infection Control	A.I. DuPont/Nemours
Helene Paxton	Hospital Infection Control	St. Francis hospital
Holly Helmick	Hospital Infection Control	Bayhealth Medical Center
Jean Stipe	Hospital Infection Control	Wilmington VA Medical Center
Joann Hasse	Consumer Organization	Self
Joel Chua, MD	Infectious Disease Physician	Bayhealth Medical Center
Kathleen Wroten	Hospital Infection Control	Christiana Care Health System
Kelly Gardner (Chair)	Hospital Infection Control	BayHealth Hospitals
Marci Drees, MD	Infectious Disease Physician	Christiana Care Health System
Maria Eckart	Infectious Disease Expert	Genesis Healthcare
Michele Dennis	Direct Care Nursing Staff	Delaware Health Care Facilities Association
Omo Olurin, MD	Health Insurer	Aetna
Stephen Eppes	Infectious Disease Physician	A.I. DuPont/Nemours
Tabatha Offutt-Powell	HAI Specialist	Division of Public Health
Thomas Mulhern	Surgical Center	Limestone Medical Center, Inc.
Valerie Devereaux	Psychiatric Hospital	Delaware Psychiatric Center
Veronica Wilbur	Academic Researcher	Wilmington University
Yrene Waldron	Hospital Infection Control	Delaware Health Care Facilities Association

[31] As defined by Title 16 Chapter 10A of the Delaware Code. Other categories specified in legislation are organized labor and purchasers of health insurance, such as employers.

Appendix B

Hospital Profiles

Hospital Profile	
Hospital Name: A.I. duPont Hospital for Children and Pediatric Children's Clinics/Nemours	
Address: 1600 Rockland Road Wilmington, Delaware 19803 Telephone: 302-651-4000 County: New Castle County Link to Facility Website Homepage: http://home.nemours.org/index.html	Hospital Type: Pediatric Medical/Surgical Annual Admissions 2011: 9,063 Number of Licensed Beds 2010: 200

Hospital Services/Characteristics:

Service		Service Available (Yes or No)
Adult Open Heart		NA
Bariatric Services		Yes
Blood & Bone Marrow Transplant Unit		Yes
Burn Unit		No
Comprehensive Cancer Services		Yes
Critical Care/Intensive Care Services		Yes
Dialysis		Yes
Emergency Services		Yes
Extended Rehabilitation Care		Yes
Inpatient Acute Care		Yes
Inpatient Pediatrics Unit		Yes
Mental Health		Yes
Neonatal Intensive Care Unit (NICU)		Yes
Organ Transplant		Yes
Pediatric Open Heart		Yes
Primary Stroke Center		NA
Surgical Services		Yes
Teaching Hospital		Yes
Trauma Center		Yes
Women's Health/Maternity		NA
Wound Care Center		No

1.

Hospital Profile

Hospital Name: Christiana Health Care System – Christiana Hospital

Address: 4755 Ogletown–Stanton Rd Newark, Delaware 19718 **Telephone:** 302-733-1000 **County:** New Castle **Link to Facility Website Homepage:** www.christianacare.org	**Hospital Type:** Major Teaching Medical/Surgical **Annual Admissions 2011:** 43,085 **Adult:** 42,396 **Pediatric:** 689 **Number of Licensed Beds 2011:** 903

Hospital Services/Characteristics:

Service		Service Available (Yes or No)
Adult Open Heart		Yes
Bariatric Services		Yes
Blood & Bone Marrow Transplant Unit		Yes
Burn Unit		No
Comprehensive Cancer Services		Yes
Critical Care/Intensive Care Services		Yes
Dialysis		Yes
Emergency Services		Yes
Extended Rehabilitation Care		Yes
Inpatient Acute Care		Yes
Inpatient Pediatrics Unit		Yes
Mental Health		No
Neonatal Intensive Care Unit (NICU)		Yes
Organ Transplant		Yes
Pediatric Open Heart		No
Primary Stroke Center		Yes
Surgical Services		Yes
Teaching Hospital		Yes
Trauma Center		Yes
Women's Health/Maternity		Yes
Wound Care Center		No

2.

Hospital Profile

Hospital Name: Christiana Health Care System - Wilmington Hospital

Address: 501 W 14th St.
Wilmington Delaware, 19801

Telephone: 302-733-1000

County: New Castle

Link to Facility Website Homepage: www.christianacare.org

Hospital Type: Major Teaching Medical/Surgical

Annual Admissions 2011: 9,799
Adult: 9,799

Number of Licensed Beds 2011: 240

Hospital Services/Characteristics:

Service		Service Available (Yes or No)
Adult Open Heart		No
Bariatric Services		No
Blood & Bone Marrow Transplant Unit		No
Burn Unit		No
Comprehensive Cancer Services		No
Critical Care/Intensive Care Services		Yes
Dialysis		Yes
Emergency Services		Yes
Extended Rehabilitation Care		Yes
Inpatient Acute Care		Yes
Inpatient Pediatrics Unit		No
Mental Health		Yes
Neonatal Intensive Care Unit (NICU)		No
Organ Transplant		No
Pediatric Open Heart		No
Primary Stroke Center		No
Surgical Services		Yes
Teaching Hospital		Yes
Trauma Center		Yes
Women's Health/Maternity		Yes
Wound Care Center		No

3.

Hospital Profile

Hospital Name: St. Francis Hospital

Address: 701 N Clayton St Wilmington, De 19805	**Hospital Type:** Medical/Surgical
Telephone: 302-421-4100	**Annual Admissions 2011:** 6,859 **Adult:** 6,137 **Pediatric:** 722
County: New Castle	
Link to Facility Website Homepage: http://www.stfrancishealthcare.org/	**Number of Licensed Beds 2011:** 395

Hospital Services/Characteristics:

Service		Service Available (Yes or No)
Adult Open Heart		Yes
Bariatric Services		Yes
Blood & Bone Marrow Transplant Unit		No
Burn Unit		No
Comprehensive Cancer Services		Yes
Critical Care/Intensive Care Services		Yes
Dialysis		Yes
Emergency Services		Yes
Extended Rehabilitation Care		Yes
Inpatient Acute Care		Yes
Inpatient Pediatrics Unit		No
Mental Health		No
Neonatal Intensive Care Unit (NICU)		Yes
Organ Transplant		No
Pediatric Open Heart		No
Primary Stroke Center		No
Surgical Services		Yes
Teaching Hospital		Yes
Trauma Center		No
Women's Health/Maternity		Yes
Wound Care Center		Yes

4.

Hospital Profile

Hospital Name: BayHealth Medical Center-Kent Campus

Address: 640 South State Street, Dover DE, 19901	Hospital Type: Medical/Surgical
Telephone: 302-744-7023	Annual Admissions 2011: 20,361
County: Kent	Number of Licensed Beds 2011: 221
Link to Facility Website Homepage: www.Bayhealth.org	

Hospital Services/Characteristics:

Service		Service Available (Yes or No)
Adult Open Heart		Yes
Bariatric Services		No
Blood & Bone Marrow Transplant Unit		No
Burn Unit		No
Comprehensive Cancer Services		Yes
Critical Care/Intensive Care Services		Yes
Dialysis		Yes
Emergency Services		Yes
Extended Rehabilitation Care		No
Inpatient Acute Care		Yes
Inpatient Pediatrics Unit		Yes
Mental Health		No
Neonatal Intensive Care Unit (NICU)		Yes
Organ Transplant		No
Pediatric Open Heart		No
Primary Stroke Center		Yes
Surgical Services		Yes
Teaching Hospital		No
Trauma Center		Yes
Women's Health/Maternity		Yes
Wound Care Center		Yes

5.

Hospital Profile

Hospital Name: BayHealth Medical Center-Milford Campus

Address: 21 West Clark Ave, Milford DE, 19963	Hospital Type: Medical/Surgical
Telephone: 302-422-3311	Annual Admissions 2011: 8,824
County: Sussex	Number of Licensed Beds 2011: 168
Link to Facility Website Homepage: www.Bayhealth.org	

Hospital Services/Characteristics:

Service		Service Available (Yes or No)
Adult Open Heart		No
Bariatric Services		Yes
Blood & Bone Marrow Transplant Unit		No
Burn Unit		No
Comprehensive Cancer Services		Yes
Critical Care/Intensive Care Services		Yes
Dialysis		Yes
Emergency Services		Yes
Extended Rehabilitation Care		Yes
Inpatient Acute Care		Yes
Inpatient Pediatrics Unit		Yes
Mental Health		No
Neonatal Intensive Care Unit (NICU)		No
Organ Transplant		No
Pediatric Open Heart		No
Primary Stroke Center		No
Surgical Services		Yes
Teaching Hospital		No
Trauma Center		Yes
Women's Health/Maternity		Yes
Wound Care Center		No

Hospital Profile

Hospital Name: Beebe Medical Center

Address: 424 Savannah Rd
Lewes, DE 19958

Telephone: 302-645-3100

County:Sussex

Link to Facility Website Homepage:
www.beebemed.org

Hospital Type: Medical/Surgery

Annual Admissions 2012: 8,617
Adult: 8838
Pediatric: 1001

Number of Licensed Beds 2012: 210

Hospital Services/Characteristics:

Service Available	Yes/No
Adult Open Heart	Yes
Bariatric Services	Yes
Blood & Bone Marrow Transplant Unit	No
Burn Unit	No
Comprehensive Cancer Services	Yes
Critical Care/Intensive Care Services	Yes
Dialysis	Yes
Emergency Services	Yes
Extended Rehabilitation Care	No
Inpatient Acute Care	Yes
Inpatient Pediatrics Unit	Yes
Mental Health	No
Neonatal Intensive Care Unit (NICU)	No
Organ Transplant	No
Pediatric Open Heart	No
Primary Stroke Center	Yes
Surgical Services	Yes
Teaching Hospital	No
Trauma Center	Yes
Women's Health/Maternity	Yes
Wound Care Center	Yes

Hospital Profile

Hospital Name: Nanticoke Memorial Hospital

Address: 801 Middleford Road Seaford, DE 19973	Hospital Type: Medical/Surgical
Telephone: 302-629-6611	Annual Admissions 2011: 5,229 Adult: N/A Pediatric: N/A
County: Sussex	
Link to Facility Website Homepage: http://www.nanticoke.org/	Number of Licensed Beds 2011: 139

Hospital Services/Characteristics:

Service		Service Available (Yes or No)
Adult Open Heart		No
Bariatric Services		No
Blood & Bone Marrow Transplant Unit		No
Burn Unit		No
Comprehensive Cancer Services		Yes
Critical Care/Intensive Care Services		Yes
Dialysis		Yes
Emergency Services		Yes
Extended Rehabilitation Care		No
Inpatient Acute Care		Yes
Inpatient Pediatrics Unit		Yes
Mental Health		No
Neonatal Intensive Care Unit (NICU)		No
Organ Transplant		No
Pediatric Open Heart		No
Primary Stroke Center		No
Surgical Services		Yes
Teaching Hospital		No
Trauma Center		No
Women's Health/Maternity		Yes
Wound Care Center		Yes

Appendix C

Hospital Comments[32] (Not for Publication)

[32] Title 16 Chapter 10A of the Delaware Code "allows hospitals to comment on performance improvement and changes in patient population and risk factors. The information contained in this report shall be considered proprietary information and shall be used by the Department {of Health and Social Services} and shall not be made available in the Public Report and shall not be subject to disclosure under the State's Freedom of Information Act.

Delaware Health and Social Services
Division of Public Health
Infectious Disease Prevention and Control Section
Office of Infectious Disease Epidemiology

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