HOSPITAL-ACQUIRED INFECTIONS

New York State

2011

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Executive Summary

This report summarizes hospital-acquired infection (HAI) rates in New York State (NYS) hospitals in 2011. It is the fifth annual report to be issued since reporting began in 2007 following implementation of Public Health Law 2819. All New York State (NYS) HAI reports are available at the following web site:

http://www.health.ny.gov/statistics/facilities/hospital/hospital_acquired_infections/

HAIs are infections acquired as a result of treatment in a hospital. According to the Centers for Disease Control and Prevention (CDC), there were an estimated 1.7 million healthcare-associated infections and 99,000 deaths from those infections in 2002.[1] A recent CDC report estimated the annual medical costs of healthcare-associated infections in U.S. hospitals to be between $28 and $45 billion, adjusted to 2007 dollars.[2]

In 2011, NYS hospitals were required to report central line-associated blood stream infections (CLABSIs) in intensive care units (ICUs), surgical site infections (SSIs) following colon, hip replacement, and coronary artery bypass graft (CABG) surgeries, and *Clostridium difficile* (*C. difficile*) infections. In 2011, 177 acute care hospitals reported HAI data.

Hospitals report to NYS using the Centers for Disease Control and Prevention's (CDC's) National Healthcare Safety Network (NHSN). This online system allows hospitals, NYS, and CDC to concurrently monitor the same data. The NHSN has become the standard for reporting in the United States, with 28 states using the NHSN for mandatory reporting. All states use the same surveillance definitions when reporting via NHSN. Additional information about the NHSN can be found at http://www.cdc.gov/nhsn/.

Surgical Site Infection (SSI) Rates

SSIs are infections that occur after an operation in the part of the body where the surgery took place.

- Colon surgery is a procedure performed on the lower part of the digestive tract, which is called the large intestine or colon. In 2011, the NYS colon SSI rate was 5.3 infections per 100 procedures; this rate was 10% lower than the NYS 2007 baseline rate of 5.9 infections per 100 procedures. This decline occurred in 2008, and the NYS colon SSI rate has been stable since then.

- Coronary artery bypass graft (CABG) surgery is a procedure performed for heart disease in which a vein or artery from the chest or another part of the body (termed the "donor site") is used to create an alternate path for blood to flow to the heart, bypassing a blocked artery. In 2011, the NYS CABG chest site SSI rate was 1.9 infections per 100 procedures; this rate was 29% lower than the NYS 2007 baseline rate of 2.7 infections per 100 procedures. In 2011, the NYS CABG donor site SSI rate was 0.7 infections per 100 procedures; this rate was 39% lower than the NYS 2007 baseline rate of 1.1 infections per 100 procedures.

- Hip replacement or revision surgery involves removing damaged cartilage and bone from the hip joint and replacing or resurfacing them with new, man-made parts. In 2011, the NYS hip SSI rate was 1.2 infections per 100 procedures; this rate has not changed since reporting began in 2008.

Central Line-Associated Blood Stream Infection (CLABSI) Rates

A central line is a tube that is placed into a large vein, usually in the neck, chest, arm or groin, that is used to give fluids and medications, withdraw blood, and monitor the patient's condition. A CLABSI occurs when bacteria or other organisms enter the bloodstream through this line. CLABSI rates are monitored in eight types of intensive care units (ICUs). NYS hospitals have demonstrated dramatic improvement in CLABSI rates since reporting began. The 2011 CLABSI rates and progress compared to the NYS 2007 baselines follow:

- Cardiothoracic surgery ICU: 0.9 CLABSI per 1,000 central line days; 46% reduction
- Coronary ICU: 1.4 CLABSI per 1,000 central line days; 25% reduction
- Medical ICU: 1.5 CLABSI per 1,000 central line days; 45% reduction
- Medical-surgical ICU: 1.4 CLABSI per 1,000 central line days; 34% reduction
- Neurosurgical ICU: 1.3 CLABSI per 1,000 central line days; 48% reduction
- Surgical ICU: 1.4 CLABSI per 1,000 central line days; 57% reduction
- Pediatric ICU: 2.2 CLABSI per 1,000 central line days; 31% reduction
- Neonatal ICUs
    - Regional Perinatal Centers: 1.8 CLABSI per 1,000 central line days; 49% reduction
    - Level 3 and 2/3 ICUs: 2.9 CLABSI per 1,000 central line days; 17% reduction

Clostridium difficile Infection Rates

C. difficile is a type of bacteria that causes diarrhea, most commonly among the elderly and those who have recently taken antibiotics. Diagnosis of *C. difficile* infection is made when an

individual has a positive laboratory test performed on stool and compatible symptoms. *C. difficile* cases are separated into reporting categories based upon whether the onset of illness occurred in the community or in a hospital. Cases termed "community-onset not my hospital" are cases in which the positive stool sample was obtained during the first three days of the patient's hospital admission and more than 4 weeks after any previous discharge from that same hospital. These cases are presumed unrelated to the patient's stay in that hospital. Cases termed "community-onset possibly related to my hospital" are cases in which a patient who was discharged from the same hospital within the previous 4 weeks is readmitted to that hospital with a new positive *C. difficile* test during the first three days of admission. In these cases, it is not certain whether the *C. difficile* infection occurred as a result of the recent hospitalization or whether it is related to other exposures outside of the hospital. Hospital-onset cases are cases in which a positive stool sample was obtained on day four or later during the hospital stay.

In 2011 hospitals reported a total of 21,374 cases of *C. difficile* among 2.3 million hospital admissions. 10,381 of the reported *C. difficile* cases were hospital-onset cases, for a hospital-onset incidence rate of 8.5 cases per 10,000 patient days in 2011. This was a 3% increase compared to 2010. Part of this increase may be secondary to an increase in the number of hospitals using highly sensitive tests to detect *C. difficile*. There are many approved methods available to laboratories to test for the presence of *C. difficile* in stool. The optimal approach will vary by hospital and depends on hospitals' choices regarding sensitivity (ability to detect a true positive), specificity (ability to detect a true negative), timeliness, and cost of their testing strategy. Highly sensitive testing methods are more likely to detect *C. difficile* in the stool. Between January 2010 and December 2011, the percent of hospitals using certain highly sensitive tests increased from 10% to 41%.

Cost of Hospital-Acquired Infections

HAIs vary in severity. For example, deep SSIs are more complicated and expensive than superficial SSIs. For this reason, ranges are used to estimate the approximate costs of HAIs and cost savings since the inception of the HAI program[2]. Overall SSI rates decreased by 13% between 2007 and 2011, resulting in a cost savings estimated to be between $9 million and $27 million since 2007. Overall CLABSI rates decreased by 41% between 2007 and 2011, resulting in a cost savings estimated to be between $12 million and $48 million since 2007. For *C. difficile*, no cost savings were achieved because the hospital-onset *C. difficile* rate increased by 3%. However, the *C. difficile* statewide baseline rate is not yet stable because many hospitals are adopting more sensitive laboratory testing methods.

Infection Prevention Resources

To measure the impact of mandatory HAI reporting on infection prevention personnel and programs, an infection prevention resource survey is conducted annually. In 2011, the average infection preventionist in NYS was responsible for 130 acute care beds. Staffing levels have been stable over the past four years.

Data Validation

The NYS Department of Health (NYSDOH) ensures the accuracy of the data by performing monthly checks for data consistency and by reviewing medical records during audits. NYS HAI staff attempt to audit most hospitals every year, but because of recent staffing shortages the percent of hospitals audited has declined from 97%, 89%, 89%, 74%, to 68% between 2007 and 2011. NYSDOH developed a process to conduct some audits via off-site access to electronic medical records (EMRs). In 2011, off-site audits were accomplished in 20 hospitals in the Western and Central regions, saving travel time and money. The 2011 audit results will be summarized in the next annual report. In 2010, NYSDOH staff reviewed over 7,000 records, and agreed with the hospital-reported infection status 94% of the time. Disagreements were discussed and corrected in NHSN. The data validation process slightly increases HAI rates, since missed infections are identified and entered into NHSN, and training efforts increase the skills of the hospital IPs, leading to better identification of HAIs.

Hospital Rate Summary

The following table (Table 1) summarizes HAI rates by hospital in 2010 and 2011. The 2010 data are included again this year both because there have been some modifications as a result of further auditing of the data and in order to visualize patterns of repeated high and low performance.

For SSIs and CLABSIs, this table highlights hospitals that performed significantly better (shaded blue) or worse (shaded red) than the NYS average, after adjusting for differences in patients' risk for infection. For *C. difficile*, hospital rates are not compared to the state average because insufficient data exists to perform risk-adjustment. Hospital rates may differ because of different patient risk factors and different hospital testing methods, and thus cannot be fairly compared. *C. difficile* rates are intended to be used by hospitals as a baseline for tracking *C. difficile* within their own hospital over time. Therefore, the 2011 rate for each hospital is compared to that hospital's 2010 baseline rate. Because of the impact changes in test methods can have on rates, a

statistical comparison was not made for the 34 hospitals that changed to a more sensitive test during this time period.

Table 1 provides a summary of all the hospital rates at a glance. More detailed figures in the body of this report plot each hospital rate along with a bar showing the precision of the rate; those graphs can make it easier to understand why similar rates may or may not be flagged as significantly different. Generally, only hospitals that perform a lot of procedures or use a lot of central lines can be highlighted as significantly higher or lower than the state average.

In most cases, hospitals are only flagged as significantly better or worse than average in one or two categories. In addition, it is uncommon for a hospital to be flagged in the same category for multiple years. NYSDOH is developing a policy to address repeated under-performance.

Lessons Learned

Changing *C. difficile* laboratory testing practices may influence an individual hospital's rates, and the ability to assess trends over time both within a hospital and statewide. The increase in *C. difficile* rates in NYS was likely related in part to increased use of more sensitive testing methods. Continued annual surveys of laboratory and reporting practices are important to assess the stability of the *C. difficile* baseline rate.

Hospitals with elevated HAI rates were routinely provided with feedback by telephone and through written summaries of their data and infection rates over time. Most infection preventionists from these hospitals indicated that they shared this additional input with their clinical staff and hospital administration. The prevention efforts were consistently multidisciplinary, which engaged clinicians (intensive care, surgical, and other), support staff, and administration. These infection rates often declined in the following one to two years, which suggests that the use of NHSN data and public reporting is useful to drive efforts to reduce infection rates.

By auditing the HAI data of 20 hospitals through off-site access to electronic medical records (EMRs), NYSDOH learned that data could be effectively and efficiently validated through off-site audits. Infection preventionists who participated in this process endorsed this method, and communication and education were successfully provided through phone conferences. Regional differences in health information exchange systems affect the capability to perform off-site audits throughout NYS.

Many groups (such as NYS, NHSN, Centers for Medicaid and Medicare Services (CMS), Agency for Healthcare Research and Quality (AHRQ), LeapFrog, and Consumer Reports) are now publically reporting HAI data. In some cases, these reports are based on similar underlying

data, yet result in different conclusions. It is important that all reports accurately describe the underlying data and the methods used for analysis.

Recommendations and Next Steps

In 2013, NYSDOH will continue to track the same indicators that were reported in 2012. Also, NYSDOH plans to monitor voluntarily reported catheter-associated urinary tract infection (CAUTI) data beginning in 2013. Monitoring of CAUTIs will initially be via data use agreement with CDC, which allows use of the data by State departments of health for quality improvement purposes. Individual hospital-identified data obtained via data use agreement will not be included in the NYSDOH annual report. Depending on the progress made in decreasing CAUTIs in NYS, this indicator may be selected for inclusion in NYS mandatory reporting in the future, at which time it would be included in the annual report. Because almost all hospitals have already been reporting this indicator to CMS since 2012, this will place no extra burden on those hospitals.

The NYSDOH will continue to conduct audits to verify appropriate use of surveillance definitions and assess accuracy of reporting. The process will be examined in relation to needs for efficiency, fair comparison of hospital performance within NYS and fair comparison of NYS to national rates. Efficiencies will be sought through the use of EMRs and other alternative methods.

In addition, the NYSDOH will continue to:

- Focus on hospitals with the highest and lowest infection rates to identify risk factors for infection and opportunities for improvement.
- Develop and disseminate to hospitals a policy describing how NYSDOH will respond when hospitals have high HAI rates for multiple years.
- Monitor the accuracy and timeliness of data being submitted, discuss findings with hospitals, ensure corrective action is taken, and provide technical assistance as needed.
- Provide hospitals with education and information about risk factors, strategies, and interventions and encourage adoption of policies and procedures to reduce risk and enhance patient safety.
- Evaluate and monitor the effect of prevention practices on infection rates and seek opportunities to enhance patient safety.
- Provide HAI data electronically on METRIX, and further develop the presentation of the data on the DOH website.
- Collaborate with other NYSDOH staff to investigate outbreaks and evaluate emerging trends.

- Consult with infection preventionists, hospital epidemiologists, surgeons, neonatologists, and the Cardiac Advisory Committee to identify risk factors and prevention strategies to reduce infections.
- Monitor HAI prevention projects for compliance with program objectives, fiscal responsibility and potential applicability to other hospitals or healthcare settings.
- Work with the TAW and seek guidance on the selection of reporting indicators, evaluation of system modifications, evaluation of potential risk factors, methods of risk adjustment and presentation of hospital-identified data.

Conclusion

Since NYS hospitals have been reporting HAIs to the NYSDOH, it has become clear that the NHSN is a useful tool to monitor HAI rates and evaluate the effectiveness of prevention strategies. Hospitals have continuous access to their own data and can compare their rates to national levels and monitor trends over time. In addition, the NYSDOH has continuous access to the data reported by the hospitals for consistent real-time surveillance, identification of trends, and provision of technical assistance as needed. The collected data for the HAIs selected for mandatory reporting in NYS are made available to the public annually, allowing the public to review hospitals' performance for these particular procedures.

Decisions regarding healthcare quality should not be based on these data alone. Consumers should consult with doctors, healthcare facilities, health insurance carriers, and reputable healthcare websites before deciding where to receive care.

The public reporting of HAIs, which began in 2007, has been a factor in significant reductions in SSIs and CLABSIs. NYS surveillance of *C. difficile* is still new, hospitals are adjusting to advances in laboratory methodology, and *C. difficile* rates are increasing. While part of the increase is due to more sensitive laboratory methods, additional education and collaborative efforts are needed to reduce *C. difficile* rates. NYSDOH will continue to address trends and support strategies to further reduce the incidence of HAIs.

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Table 1: Summary of Hospital-Acquired Infection Data by Hospital, New York State 2010-2011

		Surgical Site Infections									Blood Stream Infections																		*C. difficile*	
		Colon		Hip		CABG Chest		CABG Donor		All SSI	Coronary ICU		Cardiothoracic ICU		Medical ICU		Medical Surgical		Surgical ICU		Neurosurgical ICU		Pediatric ICU		Neonatal ICU		All BSI	Hospital Onset	
Hospital	Yr	SSI/ procs	Adj. Rate	SSI/ procs	Adj. Rate	SSI/ procs	Adj. Rate	SSI/ procs	Adj. Rate	SIR	CLABSI/ CLDays	Rate	CLABSI/ CLDays	Rate	CLABSI/ CLDays	Rate	CLABSI/ CLDays	Rate	CLABSI/ CLDays	Rate	CLABSI/ CLDays	Rate	CLABSI/ CLDays	Rate	CLABSI/ CLDays	Adj rate	SIR	C.diff/ patdays	Rate
	10	4.8		1.1		2.2		0.8		1.0	1.7		1.0		1.9		Teaching/Non 0.9/1.5		1.5		2.1		2.1		RPC/Lev3/Lev2-3 1.7/2.5/3.8		1.0	8.2	
State Average	11	4.9		1.1		1.9		0.6		1.0	1.4		0.9		1.5		Teaching/Non 1.4/1.3		1.4		1.3		2.1		RPC/Lev3/Lev2-3 1.8/2.3/4.4		1.0	8.5	
AO Fox Memorial	10	0/ 28	* 0.0	0/ 21	* 0.0					* 0.00							0/ 376	* 0.0									* 0.00	6/ 16553	3.6
	11	NA	NA	NA	NA					* 0.00							1/ 415	2.4									1.86	8/ 15564	5.1
Adirondack Medical	10	1/ 34	2.6	1/ 64	1.3					0.74							0/ 269	* 0.0									* 0.00	7/ 13817	5.1
	11	5/ 86	5.8	1/ 49	1.6					1.22							0/ 321	* 0.0									* 0.00	5/ 13988	3.6
Albany Medical	10	21/376	5.5	0/ 256	* 0.0	9/ 372	2.0	0/ 344	** 0.0	0.88	2/2210	0.9	0/2994	* 0.0	5/2952	1.7			4/5053	0.8	0/1203	* 0.0	5/2122	2.4	6/5727	1.1	**0.61	91/168962	5.4
	11	21/335	6.7	2/ 302	0.6	3/ 354	0.8	0/ 315	* 0.0	0.93	2/2278	0.9	1/3311	0.3	4/2720	1.5			5/5429	0.9	1/1211	0.8	2/2202	0.9	3/4440	0.7	**0.56	147/173406	8.5
Albany Memorial	10	5/ 99	5.3	0/ 89	* 0.0					0.89							2/ 712	2.8									1.84	4/ 23672	1.7
	11	5/ 76	8.3	0/ 71	* 0.0					1.32							4/ 636	^^ 6.3									^^4.85	11/ 24844	4.4
Alice Hyde	10	0/ 40	* 0.0	0/ 30	* 0.0					* 0.00							0/ 151	* 0.0									* 0.00	2/ 11785	1.7
	11	1/ 33	3.0	1/ 24	4.9					1.09							0/ 112	* 0.0									* 0.00	0/ 10971	0.0
Arnot Ogden	10	2/ 80	2.3	1/ 182	0.5	4/ 102	3.2	6/ 97	^^ 4.8	1.30							2/3525	0.6							2/ 983	2.4	0.54	27/ 47920	5.6
	11	7/ 77	8.2	3/ 184	1.5	5/ 99	^^ 6.0	1/ 84	1.0	^^1.87							4/3369	1.2							1/1224	1.3	0.81	32/ 51052	6.3
Auburn Memorial	10	0/ 50	* 0.0	0/ 33	* 0.0					* 0.00							0/ 707	* 0.0									* 0.00	14/ 26989	5.2
	11	0/ 47	* 0.0	0/ 39	* 0.0					* 0.00							0/ 648	* 0.0									* 0.00	8/ 29785	2.7
Bellevue Hospital	10	20/107	^^16.8	1/ 85	0.8	0/ 148	** 0.0	0/ 147	* 0.0	^^1.88	5/1144	4.4	1/1075	0.9	10/1758	^^ 5.7			3/2181	1.4	1/ 882	1.1	1/ 164	6.1	1/ 655	1.5	^^1.69	104/224549	4.6
	11	10/ 99	9.0	1/ 66	1.2	3/ 107	2.1	1/ 95	1.4	1.59	5/1006	^^ 5.0	1/1033	1.0	3/1441	2.1			8/1831	^^ 4.4	1/ 688	1.5	0/ 141	* 0.0	1/ 924	1.1	^^1.93	96/224537	4.3
Benedictine Hospital	10	0/ 32	* 0.0	0/ 77	* 0.0					* 0.00							0/ 613	* 0.0									* 0.00	12/ 37937	3.2
	11	0/ 33	* 0.0	0/ 130	* 0.0					** 0.00							0/ 154	* 0.0									* 0.00	8/ 19966	4.0
Bertrand Chaffee	10										NA	NA															NA	1/ 3886	2.6
	11										NA	NA															NA	4/ 3475	11.5
Beth Israel Kings	10	1/ 73	1.3	0/ 58	* 0.0					0.21							3/1504	2.0									1.31	105/ 69879	15.0
	11	4/ 63	5.2	1/ 55	1.6					1.11							4/1331	3.0									2.32	108/ 71392	15.1
Beth Israel Petrie	10	13/263	5.0	3/ 350	0.9	4/ 252	1.6	1/ 225	0.5	0.91	0/ 756	* 0.0	1/1245	0.8	3/3259	0.9			2/1859	1.1			0/ 56	* 0.0	1/ 338	2.7	0.53	193/223675	8.6
	11	7/274	2.6	1/ 414	0.3	3/ 209	1.5	3/ 186	1.6	0.64	1/ 747	1.3	0/1089	* 0.0	6/3195	1.9			2/1733	1.2			0/ 77	* 0.0	0/ 363	* 0.0	0.82	170/231123	7.4
Bon Secours	10	2/ 26	8.2	NA	NA					1.39							0/ 455	* 0.0									* 0.00	20/ 28825	6.9
	11	1/ 30	4.4	NA	NA					1.59							0/ 288	* 0.0									* 0.00	7/ 27806	▼2.5

Hospital SSI and CLABSI rates were compared to the state average. **Significantly lower than state average. ^^Signif. higher than state average. *Zero infections, not signif. NA: Fewer than 20 procedures or 50 line days.
Hospital 2011 *C. difficile* rates were compared to hospital 2010 rates if there was no change in laboratory testing methods. ▲Signif. increased compared to 2010. ▼Signif. decreased compared to 2010.

Table 1: Summary of Hospital-Acquired Infection Data by Hospital, New York State 2010-2011

		Surgical Site Infections									Blood Stream Infections																		*C. difficile*	
		Colon		Hip		CABG Chest		CABG Donor		All SSI	Coronary ICU		Cardiothoracic ICU		Medical ICU		Medical Surgical		Surgical ICU		Neurosurgical ICU		Pediatric ICU		Neonatal ICU		All BSI	Hospital Onset	
Hospital	Yr	SSI/ procs	Adj. Rate	SSI/ procs	Adj. Rate	SSI/ procs	Adj. Rate	SSI/ procs	Adj. Rate	SIR	CLABSI/ CLDays	Rate	CLABSI/ CLDays	Rate	CLABSI/ CLDays	Rate	CLABSI/ CLDays	Rate	CLABSI/ CLDays	Rate	CLABSI/ CLDays	Rate	CLABSI/ CLDays	Rate	CLABSI/ CLDays	Adj rate	SIR	C.diff/ patdays	Rate
	10	4.8		1.1		2.2		0.8		1.0	1.7		1.0		1.9		Teaching/Non 0.9/1.5		1.5		2.1		2.1		RPC/Lev3/Lev2-3 1.7/2.5/3.8		1.0	8.2	
State Average	11	4.9		1.1		1.9		0.6		1.0	1.4		0.9		1.5		Teaching/Non 1.4/1.3		1.4		1.3		2.1		RPC/Lev3/Lev2-3 1.8/2.3/4.4		1.0	8.5	
Bronx Lebanon	10	1/ 62	1.7	2/ 64	2.9					0.85	0/ 246	* 0.0					4/3884	1.0							6/ 557	^^ 9.6	1.26	93/173482	5.4
	11	4/ 64	5.9	6/ 65	^^ 6.8					^^2.33	0/ 376	* 0.0					5/3957	1.3							4/ 435	7.2	1.29	58/163115	▼3.6
Brookdale Hospital	10	2/ 66	2.7	NA	NA					0.50	2/ 563	3.6			11/2651	^^ 4.1			7/1698	^^ 4.1	3/ 856	3.5	0/ 173	* 0.0	5/ 681	^^ 7.9	^^2.26	59/114922	5.1
	11	3/ 67	4.1	0/ 27	* 0.0					0.76	1/ 732	1.4			5/2596	1.9			6/1274	^^ 4.7	1/ 681	1.5	0/ 87	* 0.0	3/ 459	7.7	^^1.86	56/105434	5.3
Brookhaven Memorial	10	11/129	7.8	1/ 119	0.6					1.41	4/1315	3.0			2/1578	1.3			5/1837	2.7							1.37	146/ 90081	16.2
	11	9/116	8.0	0/ 91	* 0.0					1.32	3/1234	2.4			1/1252	0.8			3/1839	1.6							1.14	144/ 90835	15.9
Brooklyn Hospital Downtown	10	13/ 80	^^14.1	1/ 25	1.8					^^2.79					0/1939	** 0.0			1/1232	0.8					4/1240	3.3	0.58	59/ 89279	6.6
	11	20/105	^^16.4	1/ 33	1.9					^^3.21					2/2294	0.9			0/1364	* 0.0			1/ 90	11.1	5/1243	4.0	0.95	85/ 88325	▲ 9.6
Brooks Memorial	10	3/ 22	14.2	2/ 96	2.3					2.55							0/ 163	* 0.0									* 0.00	4/ 10984	3.6
	11	0/ 22	* 0.0	1/ 93	1.3					0.52							0/ 243	* 0.0									* 0.00	6/ 10976	5.5
Buffalo General	10	8/157	4.5	7/ 687	1.1	15/ 439	3.5	5/ 410	1.2	1.24	1/ 916	1.1	1/1905	0.5	5/3441	1.5			3/2088	1.4							0.76	119/126660	9.4
	11	19/141	^^12.3	11/ 699	1.4	5/ 357	1.5	0/ 329	* 0.0	1.41	1/ 956	1.0	0/1556	* 0.0	4/3851	1.0			6/2233	2.7							0.95	126/128362	9.8
Canton-Potsdam	10	2/ 57	3.1	1/ 70	1.0					0.72							0/ 123	* 0.0									* 0.00	3/ 15695	1.9
	11	4/ 48	7.4	0/ 69	* 0.0					1.10							0/ 111	* 0.0									* 0.00	5/ 14768	3.4
Carthage Area	10	NA	NA							NA																		3/ 6598	4.5
	11	NA	NA							NA																		3/ 6319	4.7
Catskill Regional	10	0/ 54	* 0.0	0/ 35	* 0.0					** 0.00							0/ 624	* 0.0									* 0.00	12/ 17735	6.8
	11	1/ 40	2.6	0/ 22	* 0.0					0.46							0/ 448	* 0.0									* 0.00	9/ 16876	5.3
Cayuga Medical Cntr	10	7/ 55	^^13.5	1/ 77	1.1					2.30							0/1106	* 0.0									* 0.00	6/ 28834	2.1
	11	9/ 67	^^13.1	0/ 104	* 0.0					2.01							2/1310	1.5									1.18	13/ 29650	4.4
Champlain Valley	10	10/ 69	^^14.0	0/ 102	* 0.0	1/ 109	0.8	0/ 104	* 0.0	1.31							3/2104	1.4									0.93	16/ 66503	2.4
	11	4/ 79	5.4	1/ 112	0.8	1/ 97	1.2	0/ 95	* 0.0	0.85							0/2037	* 0.0									* 0.00	17/ 66820	2.5
Chenango Memorial	10	NA	NA	0/ 40	* 0.0					* 0.00							0/ 130	* 0.0									* 0.00	0/ 8876	0.0
	11	NA	NA	1/ 41	2.5					^^3.78							0/ 106	* 0.0									* 0.00	2/ 8737	2.3
Claxton-Hepburn	10	0/ 31	* 0.0	NA	NA					* 0.00							0/ 378	* 0.0									* 0.00	5/ 16267	3.1
	11	0/ 23	* 0.0	0/ 21	* 0.0					* 0.00							1/ 358	2.8									2.15	4/ 23027	1.7

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Hospital	Yr	SSI/ procs	Adj. Rate	SSI/ procs	Adj. Rate	SSI/ procs	Adj. Rate	SSI/ procs	Adj. Rate	SIR	CLABSI/ CLDays	Rate	CLABSI/ CLDays	Rate	CLABSI/ CLDays	Rate	CLABSI/ CLDays	Rate	CLABSI/ CLDays	Rate	CLABSI/ CLDays	Rate	CLABSI/ CLDays	Rate	CLABSI/ CLDays	Adj rate	SIR	C.diff/ patdays	Rate
	10	4.8		1.1		2.2		0.8		1.0	1.7		1.0		1.9		Teaching/Non 0.9/1.5		1.5		2.1		2.1		RPC/Lev3/Lev2-3 1.7/2.5/3.8		1.0	8.2	
State Average	11	4.9		1.1		1.9		0.6		1.0	1.4		0.9		1.5		Teaching/Non 1.4/1.3		1.4		1.3		2.1		RPC/Lev3/Lev2-3 1.8/2.3/4.4		1.0	8.5	
Clifton Springs	10	4/ 29	16.9	2/ 96	2.5					^^2.99							1/ 509	2.0									1.29	9/ 13609	6.6
	11	6/ 30	^^25.1	2/ 86	3.2					^^4.27							0/ 285	* 0.0									* 0.00	8/ 11941	6.7
Columbia Memorial	10	0/ 65	** 0.0	2/ 70	2.0					0.48							3/ 637	4.7									3.08	20/ 31584	6.3
	11	2/ 52	4.2	0/ 80	* 0.0					0.59							1/ 657	1.5									1.17	9/ 31688	2.8
Community Memorial	10	NA	NA	1/ 212	0.7					0.55							0/ 112	* 0.0									* 0.00	5/ 7862	6.4
	11	NA	NA	0/ 194	* 0.0					* 0.00							0/ 53	* 0.0									* 0.00	1/ 6078	1.6
Coney Island	10	2/ 45	3.8	1/ 83	0.7					0.75	0/ 152	* 0.0			8/1277	^^ 6.3			4/ 930	4.3							^^2.91	68/121766	5.6
	11	2/ 48	3.4	3/ 76	2.5					1.19	0/ 275	* 0.0			4/1397	2.9			5/ 798	^^ 6.3							^^2.53	97/113554	▲8.5
Corning Hospital	10	1/ 36	2.7	0/ 43	* 0.0					0.38							0/ 377	* 0.0									* 0.00	2/ 14258	1.4
	11	0/ 32	* 0.0	0/ 44	* 0.0					* 0.00							0/ 227	* 0.0									* 0.00	7/ 15099	4.6
Cortland Reg Med	10	1/ 36	2.5	0/ 21	* 0.0					0.45					0/ 713	* 0.0											* 0.00	17/ 24692	6.9
	11	1/ 33	3.0	0/ 27	* 0.0					0.53					2/ 802	2.5											1.69	15/ 21917	6.8
Crouse Hospital	10	10/238	4.6	3/ 275	1.1					0.97							3/3317	0.9							6/4469	1.4	0.73	65/ 82253	7.9
	11	7/243	2.8	1/ 264	0.4					0.54							4/3117	1.3							6/3443	1.8	0.98	58/ 87241	6.6
DeGraff Memorial	10	2/ 32	7.2	0/ 51	* 0.0					0.91							0/ 376	* 0.0									* 0.00	21/ 17233	12.2
	11	2/ 38	5.6	0/ 30	* 0.0					0.97							1/ 319	3.1									2.42	25/ 17336	14.4
EJ Noble Hospital	10	NA	NA							NA																		0/ 6180	0.0
	11	NA	NA							NA																		4/ 6399	6.3
Eastern Long Island	10	NA	NA	NA	NA					1.36							0/ 105	* 0.0									* 0.00	1/ 20628	0.5
	11	NA	NA	NA	NA					* 0.00							0/ 83	* 0.0									* 0.00	0/ 19605	0.0
Ellis Hospital	10	5/259	2.3	0/ 217	** 0.0	6/ 241	2.5	1/ 229	0.5	0.59							1/4542	** 0.2									**0.14	33/ 98403	3.4
	11	7/205	3.8	2/ 260	0.6	0/ 207	** 0.0	0/ 196	* 0.0	**0.52							3/4949	0.6									0.47	43/ 96003	4.5
Elmhurst	10	3/ 52	5.7	0/ 35	* 0.0					0.94	1/ 251	4.0			2/1029	1.9			6/1604	3.7					5/ 441	10.5	^^2.12	61/142577	4.3
	11	2/ 55	3.6	0/ 54	* 0.0					0.55	0/ 300	* 0.0			3/ 921	3.3			4/1229	3.3					6/ 630	9.5	^^2.08	50/141003	3.5
Erie Medical Center	10	4/ 75	5.1	0/ 133	* 0.0	6/ 105	5.7	2/ 83	2.8	1.42	0/1210	* 0.0	0/ 448	* 0.0	2/2354	0.8											0.28	80/ 80696	9.9
	11	1/ 66	1.4	0/ 154	* 0.0	4/ 90	4.5	0/ 66	* 0.0	0.68	2/ 549	3.6	0/ 643	* 0.0	3/2890	1.0											0.89	108/ 70369	15.3

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Hospital	Yr	SSI/ procs	Adj. Rate	SSI/ procs	Adj. Rate	SSI/ procs	Adj. Rate	SSI/ procs	Adj. Rate	SIR	CLABSI/ CLDays	Rate	CLABSI/ CLDays	Rate	CLABSI/ CLDays	Rate	CLABSI/ CLDays	Rate	CLABSI/ CLDays	Rate	CLABSI/ CLDays	Rate	CLABSI/ CLDays	Rate	CLABSI/ CLDays	Adj rate	SIR	C.diff/ patdays	Rate
	10	4.8		1.1		2.2		0.8		1.0	1.7		1.0		1.9		Teaching/Non 0.9/1.5		1.5		2.1		2.1		RPC/Lev3/Lev2-3 1.7/2.5/3.8		1.0	8.2		
State Average	11	4.9		1.1		1.9		0.6		1.0	1.4		0.9		1.5		Teaching/Non 1.4/1.3		1.4		1.3		2.1		RPC/Lev3/Lev2-3 1.8/2.3/4.4		1.0	8.5		
FF Thompson	10	0/ 20	* 0.0	0/ 130	* 0.0					* 0.00							0/ 422	* 0.0									* 0.00	11/ 26249	4.2
	11	4/ 32	13.7	2/ 136	2.0					2.36							1/ 481	2.1									1.60	12/ 34387	3.5
Faxton St. Lukes	10	5/111	4.0	2/ 142	0.9					0.84	3/2745	1.1					2/2787	0.7									0.56	136/ 84750	16.0
	11	4/ 94	3.9	3/ 124	1.7					1.01	2/2580	0.8					0/1898	* 0.0									0.33	105/ 74570	14.1
Flushing Hospital	10	5/ 74	6.5	1/ 27	3.1					1.50	1/ 462	2.2			3/1389	2.2			0/ 550	* 0.0					3/1739	1.8	0.82	93/ 73858	12.6
	11	4/ 72	5.4	1/ 37	2.4					1.23	3/ 516	5.8			7/1323	^^ 5.3			2/ 629	3.2					3/1407	2.3	^^2.29	93/ 74073	12.6
Forest Hills Hosp	10	10/ 92	^^10.7	3/ 100	2.4					^^2.21							5/2847	1.8									1.15	126/ 80783	15.6
	11	5/134	3.6	1/ 120	0.6					0.71							4/3156	1.3									0.98	102/ 80024	12.7
Franklin	10	3/ 61	4.9	3/ 122	2.1					1.34							3/2461	1.2									0.80	51/ 65128	7.8
	11	2/ 81	2.4	1/ 95	1.0					0.57							3/2393	1.3									0.97	56/ 56053	10.0
Geneva General	10	0/ 46	* 0.0	0/ 59	* 0.0					** 0.00							1/ 963	1.0									0.68	28/ 18631	15.0
	11	3/ 71	4.0	1/ 85	0.9					0.82							1/ 614	1.6									1.25	15/ 16868	8.9
Glen Cove Hospital	10	1/ 52	1.7	2/ 416	0.6					0.48							0/1747	* 0.0									* 0.00	29/ 34071	8.5
	11	1/ 41	2.4	1/ 486	0.2					0.30							0/1543	* 0.0									* 0.00	32/ 34442	9.3
Glens Falls	10	2/130	2.1	7/ 202	^^ 3.1					1.27							3/1938	1.5									1.01	20/ 76927	2.6
	11	4/164	3.2	3/ 181	1.6					0.85							0/1840	* 0.0									* 0.00	16/ 73490	2.2
Good Samar. Suffern	10	0/ 89	** 0.0	1/ 61	1.7	1/ 159	0.6	2/ 150	1.3	0.40			0/ 940	* 0.0			2/1432	1.4	1/ 821	1.2							0.69	79/ 58064	13.6
	11	1/ 82	1.1	1/ 68	1.8	3/ 147	2.0	3/ 138	1.9	0.88			0/ 913	* 0.0	2/1401	1.4			0/ 702	* 0.0							0.52	38/ 59930	▼ 6.3
Good Samar. W Islip	10	10/279	3.9	3/ 112	1.7					0.93							9/4776	1.9					0/ 101	* 0.0	0/ 776	* 0.0	0.96	76/129318	5.9
	11	13/228	6.1	4/ 117	2.5					1.40							6/5022	1.2					1/ 216	4.6	0/ 490	* 0.0	0.84	99/130118	7.6
Harlem Hospital	10	2/ 38	4.7	NA	NA					1.42	0/ 481	* 0.0					7/2145	3.3					NA	NA	1/ 645	1.3	1.31	24/ 74143	3.2
	11	1/ 55	1.6	NA	NA					0.31	0/ 244	* 0.0					3/1664	1.8					0/ 127	* 0.0	0/ 633	* 0.0	0.69	17/ 65498	2.6
Highland Hospital	10	10/168	6.3	8/ 717	1.1					1.18							2/2754	0.7									0.82	76/ 73776	10.3
	11	5/174	2.9	5/ 766	0.7					0.62							3/2801	1.1									0.79	85/ 74993	11.3
Hosp for Spec Surg	10			12/3828	** 0.5					**0.48																		14/ 53515	2.6
	11			11/4068	** 0.4					**0.38																		20/ 52664	3.8

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Hospital	Yr	SSI/ procs	Adj. Rate	SSI/ procs	Adj. Rate	SSI/ procs	Adj. Rate	SSI/ procs	Adj. Rate	SIR	CLABSI/ CLDays	Rate	CLABSI/ CLDays	Rate	CLABSI/ CLDays	Rate	CLABSI/ CLDays	Rate	CLABSI/ CLDays	Rate	CLABSI/ CLDays	Rate	CLABSI/ CLDays	Rate	CLABSI/ CLDays	Adj rate	SIR	C.diff/ patdays	Rate
	10	4.8		1.1		2.2		0.8		1.0	1.7		1.0		1.9		Teaching/Non 0.9/1.5		1.5		2.1		2.1		RPC/Lev3/Lev2-3 1.7/2.5/3.8		1.0	8.2	
State Average	11	4.9		1.1		1.9		0.6		1.0	1.4		0.9		1.5		Teaching/Non 1.4/1.3		1.4		1.3		2.1		RPC/Lev3/Lev2-3 1.8/2.3/4.4		1.0	8.5	
Hudson Valley	10	2/ 67	2.7	0/ 86	* 0.0					0.43							0/1406	* 0.0									* 0.00	19/ 33286	5.7
	11	4/ 50	8.5	0/ 120	* 0.0					0.93							1/1537	0.7									0.50	5/ 34220	▼1.5
Huntington	10	4/122	3.1	6/ 228	2.4					1.12	2/ 688	2.9					0/1056	* 0.0									0.72	68/ 81546	8.3
	11	5/130	4.0	5/ 214	2.5					1.19	2/ 709	2.8					0/1087	* 0.0									0.83	70/ 80596	8.7
Intercomm. Newfane	10	NA	NA	NA	NA					2.64							0/ 187	* 0.0									* 0.00	4/ 9368	4.3
	11	NA	NA	NA	NA					NA							0/ 69	* 0.0									* 0.00	8/ 9868	8.1
Interfaith Medical	10	0/ 28	* 0.0	NA	NA					0.72							2/2241	0.9									0.58	15/ 96169	1.6
	11	4/ 39	9.0	NA	NA					1.78							9/2237	^^ 4.0									^^3.10	15/ 92127	1.6
Ira Davenport	10														NA	NA											NA	0/ 3427	0.0
	11	NA	NA							NA					NA	NA											NA	0/ 2405	0.0
JT Mather	10	10/121	8.9	3/ 85	2.8					^^1.99	3/1113	2.7					2/1531	1.3									1.19	67/ 68714	9.8
	11	6/125	5.2	2/ 68	3.0					1.26	1/ 952	1.1					1/1444	0.7									0.62	56/ 61757	9.1
Jacobi Medical	10	7/ 55	11.6	3/ 53	3.4					^^2.60	3/ 989	3.0			4/1809	2.2			3/ 951	3.2			0/ 241	* 0.0	9/1889	^^ 4.2	^^1.78	65/128420	5.1
	11	2/ 42	4.3	0/ 47	* 0.0					0.67	0/ 591	* 0.0			3/1673	1.8			0/ 780	* 0.0			0/ 356	* 0.0	10/1554	^^ 6.4	1.63	63/135000	4.7
Jamaica Hospital	10	6/ 60	8.8	2/ 44	2.2					1.87					1/1604	0.6			4/1387	2.9					3/ 907	2.9	1.03	65/ 91812	7.1
	11	2/ 51	3.7	2/ 51	2.1					1.09					6/2203	2.7			9/1712	^^ 5.3					4/ 630	7.2	^^2.74	59/ 88386	6.7
Jones Memorial	10	NA	NA							NA							0/ 229	* 0.0									* 0.00	10/ 7506	13.3
	11	NA	NA							NA							0/ 276	* 0.0									* 0.00	3/ 7947	3.8
Kenmore Mercy	10	2/116	2.1	7/ 365	2.6					1.19							1/1616	0.6									0.41	29/ 38032	7.6
	11	6/120	5.7	5/ 383	2.0					1.38							1/1472	0.7									0.52	36/ 36531	9.9
Kings County	10	6/ 83	6.2	NA	NA					1.23	2/ 857	2.3			8/1062	^^ 7.5			0/ 865	* 0.0	1/ 764	1.3	1/ 103	9.7	6/1638	3.3	1.33	19/ 99378	1.9
	11	5/ 63	6.8	NA	NA					1.26	4/1159	3.5			5/1376	3.6			5/1222	4.1	5/1089	^^ 4.6	0/ 99	* 0.0	8/1168	6.4	^^2.17	23/101877	2.3
Kingsbrook Jewish	10	3/ 48	5.7	3/ 22	^^ 7.3					2.04	3/1249	2.4					2/1477	1.4									1.15	39/ 53758	7.3
	11	0/ 39	* 0.0	NA	NA					* 0.00	1/1100	0.9					1/1597	0.6									0.55	19/ 53545	▼3.5
Kingston Hospital	10	0/ 78	** 0.0	0/ 59	* 0.0					** 0.00							1/1976	0.5									0.33	19/ 38876	4.9
	11	0/ 85	** 0.0	0/ 53	* 0.0					** 0.00							1/1847	0.5									0.42	48/ 45667	▲10.5

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Hospital	Yr	SSI/ procs	Adj. Rate	SSI/ procs	Adj. Rate	SSI/ procs	Adj. Rate	SSI/ procs	Adj. Rate	SIR	CLABSI/ CLDays	Rate	CLABSI/ CLDays	Rate	CLABSI/ CLDays	Rate	CLABSI/ CLDays	Rate	CLABSI/ CLDays	Rate	CLABSI/ CLDays	Rate	CLABSI/ CLDays	Rate	CLABSI/ CLDays	Adj rate	SIR	C.diff/ patdays	Rate
	10	4.8		1.1		2.2		0.8		1.0	1.7		1.0		1.9		Teaching/Non 0.9/1.5		1.5		2.1		2.1		RPC/Lev3/Lev2-3 1.7/2.5/3.8		1.0	8.2	
State Average	11	4.9		1.1		1.9		0.6		1.0	1.4		0.9		1.5		Teaching/Non 1.4/1.3		1.4		1.3		2.1		RPC/Lev3/Lev2-3 1.8/2.3/4.4		1.0	8.5	
Lakeside Memorial	10	0/ 22	* 0.0	0/ 25	* 0.0					* 0.00					0/ 262	* 0.0											* 0.00	4/ 11018	3.6
	11	1/ 26	4.0	0/ 45	* 0.0					0.58					0/ 231	* 0.0											* 0.00	12/ 11572	10.4
Lawrence	10	6/ 85	7.5	0/ 88	* 0.0					1.27					10/1065	^^ 9.4											^^4.86	43/ 38873	11.1
	11	5/ 89	6.7	0/ 98	* 0.0					1.06					11/1923	^^ 5.7											^^3.87	59/ 41604	14.2
Lenox Hill	10	6/152	4.1	6/ 566	1.1	10/ 414	2.3	7/ 339	1.7	1.10	2/1786	1.1	3/2676	1.1			7/3179	^^ 2.2							3/ 825	3.6	1.29	102/140989	7.2
	11	6/138	4.7	5/ 596	0.9	6/ 321	1.9	1/ 239	0.4	0.89	3/1391	2.2	2/1826	1.1			7/2833	2.5	6/1977	3.0					5/ 960	5.4	^^1.62	82/133478	6.1
Lewis County	10	NA	NA	0/ 25	* 0.0					2.41							0/ 72	* 0.0									* 0.00	1/ 6224	1.6
	11	1/ 23	3.7	NA	NA					0.68							0/ 129	* 0.0									* 0.00	1/ 6033	1.7
Lincoln Medical	10	3/ 64	3.8	1/ 25	2.0					0.92	1/ 881	1.1			0/1685	** 0.0			2/ 935	2.1			NA	NA	2/ 741	2.5	0.61	22/ 96847	2.3
	11	2/ 69	2.2	NA	NA					0.43	0/ 951	* 0.0			0/1689	* 0.0			1/ 992	1.0			NA	NA	1/ 894	0.8	**0.25	7/ 92884	▼0.8
Lockport Memorial	10	NA	NA	1/ 23	4.3					1.85							0/ 313	* 0.0									* 0.00	4/ 18049	2.2
	11	0/ 26	* 0.0	NA	NA					* 0.00							0/ 244	* 0.0									* 0.00	12/ 18479	6.5
Long Beach	10	NA	NA	NA	NA					0.63							0/ 647	* 0.0									* 0.00	27/ 18893	14.3
	11	NA	NA	NA	NA					0.81							1/ 529	1.9									1.40	46/ 19793	23.2
Long Island Jewish	10	14/308	4.2	4/ 297	1.3	6/ 241	2.4	0/ 240	* 0.0	0.88	0/ 722	* 0.0	0/1235	* 0.0	1/1364	0.7			0/2196	** 0.0			7/2322	3.0	12/5935	2.0	0.86	215/193336	11.1
	11	9/326	2.6	6/ 284	1.5	8/ 217	3.3	0/ 177	* 0.0	0.85	0/ 669	* 0.0	1/1306	0.8	3/2318	1.3			0/2180	** 0.0			3/2540	1.2	4/4607	0.9	**0.49	245/197578	12.4
Lutheran Medical	10	3/170	1.6	0/ 156	* 0.0					**0.27					4/2512	1.6			4/1645	2.4							1.09	134/117967	11.4
	11	5/154	3.1	3/ 152	1.7					0.81					7/2328	3.0			1/1892	0.5							1.32	103/100266	10.3
Maimonides	10	11/124	8.9	1/ 151	0.5	7/ 308	2.0	1/ 291	0.3	1.05	2/ 332	6.0	4/2450	1.6	3/2620	1.1			6/1456	^^ 4.1			0/ 406	* 0.0	1/2682	0.3	0.99	269/218648	12.3
	11	3/ 91	3.2	4/ 152	1.7	3/ 318	0.8	1/ 300	0.3	0.68	2/ 557	3.6	1/2250	0.4	1/3525	0.3			2/1512	1.3			0/ 341	* 0.0	4/2028	1.8	0.68	229/203207	11.3
Mary Imogene Bassett	10	3/ 95	3.0	8/ 186	^^ 3.1	0/ 95	* 0.0	0/ 89	* 0.0	1.02							2/2641	0.8									0.86	13/ 48496	2.7
	11	4/ 96	3.7	2/ 217	0.7	0/ 82	* 0.0	0/ 71	* 0.0	0.58							2/2848	0.7									0.52	24/ 49616	4.8
Massena Memorial	10	NA	NA	NA	NA					NA							NA	NA									NA	9/ 9846	9.1
	11	NA	NA	NA	NA					NA							NA	NA									NA	10/ 10302	9.7
Medina Memorial	10	2/ 24	9.2	NA	NA					1.58							2/ 72	^^27.8									^^18.19	3/ 24496	1.2
	11	1/ 21	4.9	NA	NA					1.72							1/ 161	6.2									4.79	11/ 24498	4.5

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Hospital 2011 *C. difficile* rates were compared to hospital 2010 rates if there was no change in laboratory testing methods. ▲Signif. increased compared to 2010. ▼Signif. decreased compared to 2010.

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		Surgical Site Infections									Blood Stream Infections																		*C. difficile*	
		Colon		Hip		CABG Chest		CABG Donor		All SSI	Coronary ICU		Cardiothoracic ICU		Medical ICU		Medical Surgical		Surgical ICU		Neurosurgical ICU		Pediatric ICU		Neonatal ICU		All BSI	Hospital Onset	
Hospital	Yr	SSI/ procs	Adj. Rate	SSI/ procs	Adj. Rate	SSI/ procs	Adj. Rate	SSI/ procs	Adj. Rate	SIR	CLABSI/ CLDays	Rate	CLABSI/ CLDays	Rate	CLABSI/ CLDays	Rate	CLABSI/ CLDays	Rate	CLABSI/ CLDays	Rate	CLABSI/ CLDays	Rate	CLABSI/ CLDays	Rate	CLABSI/ CLDays	Adj rate	SIR	C.diff/ patdays	Rate
	10	4.8		1.1		2.2		0.8		1.0	1.7		1.0		1.9		Teaching/Non 0.9/1.5		1.5		2.1		2.1		RPC/Lev3/Lev2-3 1.7/2.5/3.8		1.0	8.2	
State Average	11	4.9		1.1		1.9		0.6		1.0	1.4		0.9		1.5		Teaching/Non 1.4/1.3		1.4		1.3		2.1		RPC/Lev3/Lev2-3 1.8/2.3/4.4		1.0	8.5	
Mem. Sloan Kettering	10	24/606	3.6	3/ 80	2.5					0.82							12/5253	2.3									1.50	134/140612	9.5
	11	32/547	5.1	2/ 89	1.1					1.05							10/5239	1.9									1.47	241/136227	17.7
Mercy Buffalo	10	13/276	5.7	1/ 194	0.4	22/ 422	^^ 5.9	2/ 383	0.6	^^1.55	5/1513	3.3	0/1225	* 0.0			7/2327	3.0									1.64	61/ 96965	6.3
	11	21/306	^^ 8.0	1/ 179	0.4	9/ 446	2.4	3/ 402	0.9	1.38	5/1373	3.6	0/1289	* 0.0			6/2337	2.6									1.80	78/ 91552	8.5
Mercy Medical	10	2/108	1.7	2/ 121	2.2					0.60							8/2137	^^ 3.7							1/ 367	3.4	^^2.25	18/ 42368	4.2
	11	4/ 94	3.8	1/ 107	1.3					0.83							1/1556	0.6							0/ 447	* 0.0	0.36	39/ 43547	9.0
Metropolitan	10	1/ 21	4.6	0/ 29	* 0.0					0.70					7/1019	^^ 6.9			1/ 496	2.0					5/ 591	9.3	^^2.74	18/ 79491	2.3
	11	NA	NA	1/ 24	3.8					1.64					3/1242	2.4			0/ 273	* 0.0					1/ 471	2.2	0.95	18/ 77815	2.3
Millard Fillmore Suburb	10	14/208	6.7	5/ 396	1.3					1.35							10/4323	2.3									1.51	92/ 75242	12.2
	11	8/154	5.4	4/ 354	1.2					1.10							7/3275	2.1									1.65	84/ 76752	10.9
Montefiore Einstein	10	6/ 93	6.3	2/ 206	0.9	12/ 234	^^ 4.9	1/ 195	0.5	1.50			0/2015	* 0.0			3/3659	0.8							4/3021	1.2	0.66	80/124083	6.4
	11	6/ 96	5.4	1/ 181	0.5	8/ 256	3.2	2/ 203	1.0	1.24			1/1789	0.6			7/2529	2.8							5/2170	2.2	1.41	125/120746	▲10.4
Montefiore Moses	10	8/168	4.3	3/ 213	1.1	6/ 276	2.0	2/ 241	0.9	0.94	3/1026	2.9	3/2389	1.3	3/3884	0.8			1/2113	0.5			5/2563	2.0			0.75	361/257909	14.0
	11	7/142	4.8	3/ 149	1.4	5/ 229	2.0	0/ 200	* 0.0	0.97	0/1217	* 0.0	3/2835	1.1	1/4191	** 0.2			4/2344	1.7			4/2373	1.7			0.64	335/260082	12.9
Montifiore North	10	0/ 35	* 0.0	0/ 24	* 0.0					* 0.00							1/2673	0.4							0/ 480	* 0.0	0.24	79/ 74301	10.6
	11	4/ 27	14.5	0/ 31	* 0.0					2.27							0/2955	** 0.0							4/ 628	6.3	0.59	70/ 59746	11.7
Mount Sinai	10	4/171	2.5	3/ 279	0.9	25/ 481	^^ 5.5	6/ 481	1.5	^^1.53	3/1919	1.6	4/3423	1.2	5/2840	1.8			8/4042	2.0	6/1619	3.7	9/2604	3.5	13/2846	^^ 4.3	^^1.50	244/275567	8.9
	11	1/158	** 0.6	8/ 319	1.7	25/ 467	^^ 5.3	5/ 467	1.0	^^1.58	4/1947	2.1	5/3789	1.3	2/3224	0.6			4/3952	1.0	0/1991	* 0.0	8/2441	3.3	10/3255	3.1	1.10	248/256328	9.7
Mount Sinai Queens	10	6/ 83	6.9	5/ 54	^^ 5.8					^^2.16							3/1512	2.0									1.30	52/ 55345	9.4
	11	8/ 84	9.4	2/ 61	2.5					1.99							1/1587	0.6									0.49	81/ 54674	14.8
Mount St. Marys	10	1/ 63	1.5	1/ 85	0.9					0.46					0/ 388	* 0.0											* 0.00	23/ 23060	10.0
	11	1/ 58	1.6	3/ 91	2.9					0.97					0/ 396	* 0.0											* 0.00	13/ 25846	5.0
Mount Vernon	10	1/ 26	3.4	NA	NA					0.58							0/ 301	* 0.0									* 0.00	16/ 27608	5.8
	11	NA	NA	NA	NA					* 0.00							0/ 262	* 0.0									* 0.00	17/ 22893	7.4
NY Community Brooklyn	10	5/ 50	8.9	NA	NA					1.71							1/ 801	1.2									0.82	60/ 44138	13.6
	11	0/ 36	* 0.0	0/ 48	* 0.0					* 0.00							0/ 616	* 0.0									* 0.00	43/ 44736	9.6

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		Colon		Hip		CABG Chest		CABG Donor		All SSI	Coronary ICU		Cardiothoracic ICU		Medical ICU		Medical Surgical		Surgical ICU		Neurosurgical ICU		Pediatric ICU		Neonatal ICU		All BSI	Hospital Onset	
Hospital	Yr	SSI/ procs	Adj. Rate	SSI/ procs	Adj. Rate	SSI/ procs	Adj. Rate	SSI/ procs	Adj. Rate	SIR	CLABSI/ CLDays	Rate	CLABSI/ CLDays	Rate	CLABSI/ CLDays	Rate	CLABSI/ CLDays	Rate	CLABSI/ CLDays	Rate	CLABSI/ CLDays	Rate	CLABSI/ CLDays	Rate	CLABSI/ CLDays	Adj rate	SIR	C.diff/ patdays	Rate
	10	4.8		1.1		2.2		0.8		1.0	1.7		1.0		1.9		Teaching/Non 0.9/1.5		1.5		2.1		2.1		RPC/Lev3/Lev2-3 1.7/2.5/3.8		1.0	8.2	
State Average	11	4.9		1.1		1.9		0.6		1.0	1.4		0.9		1.5		Teaching/Non 1.4/1.3		1.4		1.3		2.1		RPC/Lev3/Lev2-3 1.8/2.3/4.4		1.0	8.5	
NY Downtown	10	1/ 50	1.7	1/ 57	1.1					0.53							1/2585	0.4									0.25	34/ 43356	7.8
	11	3/ 52	5.1	1/ 58	1.0					1.02							1/2997	0.3									0.26	39/ 41526	9.4
NY Med Ctr Queens	10	15/243	6.7	4/ 241	1.2	1/ 129	0.9	2/ 122	1.8	1.23	1/1198	0.8	0/ 915	* 0.0	0/2204	** 0.0			0/1710	* 0.0			0/ 102	* 0.0	2/ 584	3.4	**0.26	213/161399	13.2
	11	24/261	^^ 9.7	5/ 265	1.5	0/ 113	* 0.0	0/ 107	* 0.0	^^1.57	0/1258	* 0.0	0/1068	* 0.0	0/2070	** 0.0			1/1610	0.6			0/ 52	* 0.0	1/ 406	2.3	**0.22	295/158255	18.6
NY Methodist	10	5/148	3.4	2/ 152	0.7	1/ 124	0.8	1/ 120	0.9	0.66	0/ 596	* 0.0	1/1080	0.9			6/4478	1.3					0/ 143	* 0.0	4/1983	1.8	0.75	167/161076	10.4
	11	4/132	2.9	3/ 169	1.1	5/ 106	4.7	2/ 104	2.2	1.14	1/ 533	1.9	3/1046	2.9			7/4554	1.5					0/ 130	* 0.0	4/1153	2.9	1.34	196/171083	11.5
NYP- Allen	10	3/ 45	6.7	2/ 39	4.0					1.86							1/ 540	1.9									2.10	43/ 53629	8.0
	11	4/ 43	8.5	2/ 41	3.8					2.09							3/ 727	4.1									3.06	37/ 52016	7.1
NYP- Columbia	10	15/196	7.4	3/ 285	1.2	13/ 529	2.4	1/ 430	0.2	1.14	9/3542	2.5	10/6942	1.4			9/4209	^^ 2.1	2/3172	0.6	8/2642	3.0					1.41	292/202882	14.4
	11	12/202	5.8	3/ 272	1.2	11/ 618	1.7	2/ 493	0.4	0.99	5/4475	1.1	11/7138	1.5			10/4604	2.2	3/3216	0.9	6/3145	1.9					1.27	280/202697	13.8
NYP- Morgan Stanley	10	1/ 24	4.1							0.85													8/4883	1.6	16/7228	2.1	1.06	40/ 55797	7.2
	11	0/ 30	* 0.0							* 0.00													18/6177	2.9	11/7413	1.5	1.10	29/ 56325	5.1
NYP- Weill Cornell	10	31/552	6.1	3/ 95	2.7	9/ 326	3.2	0/ 310	* 0.0	1.28	10/3298	3.0	4/4068	1.0	6/3023	2.0			8/2631	3.0	4/2003	2.0	4/2544	1.6	1/2949	0.3	1.09	260/254671	10.2
	11	20/603	3.6	4/ 112	2.3	2/ 314	0.7	2/ 289	0.8	0.79	2/3550	0.6	6/4218	1.4	9/3602	2.5			7/3272	2.1	3/2111	1.4	3/2720	1.1	6/3855	1.5	1.05	232/268341	8.6
NYU Joint Disease	10			11/1082	1.1					0.96																		21/ 32166	6.5
	11			10/1117	0.9					0.81																		21/ 31478	6.7
NYU Medical Center	10	12/335	3.4	0/ 115	* 0.0	5/ 207	2.6	3/ 191	1.7	0.81			1/1252	0.8	9/3958	2.3			11/4607	2.4	0/ 540	* 0.0	3/1242	2.4	3/2189	1.4	1.17	205/172508	11.9
	11	8/325	** 2.3	2/ 108	1.0	7/ 214	3.6	2/ 198	0.9	0.78			2/1316	1.5	7/3877	1.8			4/4057	1.0	2/ 824	2.4	4/1434	2.8	9/3045	3.1	1.27	214/194367	11.0
Nassau University	10	4/ 37	9.4	1/ 51	1.2					1.69	1/ 908	1.1			3/1595	1.9			1/ 800	1.3			0/ 157	* 0.0	1/ 405	2.9	0.85	15/ 49587	3.0
	11	2/ 36	5.8	0/ 60	* 0.0					0.79	1/ 670	1.5			0/1313	* 0.0			1/ 643	1.6			NA	NA	3/ 623	4.3	1.10	10/ 71006	1.4
Nathan Littauer	10	NA	NA	0/ 34	* 0.0					* 0.00							0/ 118	* 0.0									* 0.00	15/ 15358	9.8
	11	NA	NA	0/ 32	* 0.0					* 0.00							0/ 147	* 0.0									* 0.00	10/ 15207	6.6
Newark Wayne	10	3/ 37	8.2	1/ 51	2.0					1.75							0/1028	* 0.0									* 0.00	23/ 20219	11.4
	11	0/ 35	* 0.0	2/ 57	4.9					1.02							3/ 963	3.1									2.40	20/ 19001	10.5
Niagara Falls	10	NA	NA	0/ 23	* 0.0					0.83							0/ 832	* 0.0									* 0.00	23/ 35190	6.5
	11	1/ 24	4.1	0/ 24	* 0.0					0.68							0/ 630	* 0.0									* 0.00	6/ 31860	▼1.9

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	10	4.8		1.1		2.2		0.8		1.0	1.7		1.0		1.9		Teaching/Non 0.9/1.5		1.5		2.1		2.1		RPC/Lev3/Lev2-3 1.7/2.5/3.8		1.0	8.2	
State Average	11	4.9		1.1		1.9		0.6		1.0	1.4		0.9		1.5		Teaching/Non 1.4/1.3		1.4		1.3		2.1		RPC/Lev3/Lev2-3 1.8/2.3/4.4		1.0	8.5	
North Central Bronx	10	NA	NA							NA							2/ 540	3.7									2.43	12/ 47660	2.5
	11	NA	NA							NA							2/ 566	3.5									2.72	9/ 50837	1.8
North Shore	10	24/560	3.8	10/ 391	^^ 2.3	16/ 656	2.5	7/ 649	1.0	1.05	1/1026	1.0	3/3876	0.8	4/3622	1.1			3/2932	1.0	4/1658	2.4	2/ 262	7.6	3/3007	1.0	0.77	321/259020	12.4
	11	22/485	4.1	4/ 377	0.9	14/ 466	3.0	5/ 403	1.2	1.05	2/ 950	2.1	5/2776	1.8	6/3648	1.6			8/2863	2.8	3/1850	1.6	1/ 329	3.0	5/2692	1.9	1.42	340/257492	13.2
Northern Dutchess	10	1/ 24	5.0	0/ 224	* 0.0					0.33							0/ 338	* 0.0									* 0.00	9/ 14749	6.1
	11	NA	NA	1/ 200	0.6					0.37							0/ 365	* 0.0									* 0.00	8/ 15144	5.3
Northern Westchester	10	6/141	4.9	1/ 141	0.9					0.99							2/1140	1.8							0/ 99	* 0.0	1.04	15/ 42711	3.5
	11	6/128	5.9	2/ 188	1.2					1.17							0/1153	* 0.0							NA	NA	* 0.00	13/ 44723	2.9
Noyes Memorial	10	2/ 30	6.6	1/ 40	2.6					1.61							1/ 242	4.1									2.71	2/ 9015	2.2
	11	1/ 20	5.0	0/ 59	* 0.0					0.61							1/ 217	4.6									3.55	3/ 8768	3.4
Nyack Hospital	10	0/106	** 0.0	7/ 161	^^ 4.1					1.13					0/1363	* 0.0			0/ 655	* 0.0							** 0.00	61/ 64055	9.5
	11	1/105	1.1	0/ 121	* 0.0					**0.17					1/1459	0.7			3/1032	2.9							1.11	58/ 64885	8.9
Olean General	10	5/ 55	9.0	0/ 77	* 0.0					1.37							0/ 807	* 0.0									* 0.00	10/ 32778	3.1
	11	4/ 67	5.9	1/ 66	1.3					1.21							0/ 865	* 0.0									* 0.00	15/ 35382	4.2
Oneida Healthcare	10	0/ 59	* 0.0	0/ 34	* 0.0					* 0.00							0/ 297	* 0.0									* 0.00	18/ 12950	13.9
	11	2/ 75	3.2	0/ 26	* 0.0					0.61							0/ 404	* 0.0									* 0.00	7/ 13167	5.3
Orange Reg Goshen & Middeltown	10	6/138	4.4	4/ 239	1.8					1.13							5/3109	1.6									1.05	123/ 83338	14.8
	11	5/138	3.7	4/ 203	2.0					1.01							8/3095	2.6									1.99	79/ 82761	▼ 9.5
Oswego Hospital	10	0/ 24	* 0.0	NA	NA					* 0.00					0/ 679	* 0.0											* 0.00	19/ 25855	7.3
	11	1/ 33	2.6	NA	NA					0.47					0/ 511	* 0.0											* 0.00	12/ 22603	5.3
Our Lady of Lourdes	10	10/168	5.9	3/ 270	1.0					1.14							3/1385	2.2									1.42	15/ 50248	3.0
	11	6/134	4.3	2/ 261	0.6					0.77							2/1659	1.2									0.93	13/ 50452	2.6
Peconic Bay Medical	10	0/ 61	* 0.0	3/ 145	1.7					0.62							2/ 622	3.2									2.11	40/ 29979	13.3
	11	0/ 58	* 0.0	3/ 211	1.3					0.55							0/ 517	* 0.0									* 0.00	30/ 32396	9.3
Phelps Memorial	10	3/ 55	6.1	2/ 198	1.2					1.21							4/ 973	4.1									2.69	25/ 57409	4.4
	11	1/ 66	1.9	1/ 229	0.6					0.45							1/ 722	1.4									1.07	40/ 62289	6.4

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		Colon		Hip		CABG Chest		CABG Donor		All SSI	Coronary ICU		Cardiothoracic ICU		Medical ICU		Medical Surgical		Surgical ICU		Neurosurgical ICU		Pediatric ICU		Neonatal ICU		All BSI	Hospital Onset	
Hospital	Yr	SSI/ procs	Adj. Rate	SSI/ procs	Adj. Rate	SSI/ procs	Adj. Rate	SSI/ procs	Adj. Rate	SIR	CLABSI/ CLDays	Rate	CLABSI/ CLDays	Rate	CLABSI/ CLDays	Rate	CLABSI/ CLDays	Rate	CLABSI/ CLDays	Rate	CLABSI/ CLDays	Rate	CLABSI/ CLDays	Rate	CLABSI/ CLDays	Adj rate	SIR	C.diff/ patdays	Rate
	10	4.8		1.1		2.2		0.8		1.0	1.7		1.0		1.9		Teaching/Non 0.9/1.5		1.5		2.1		2.1		RPC/Lev3/Lev2-3 1.7/2.5/3.8		1.0	8.2	
State Average	11	4.9		1.1		1.9		0.6		1.0	1.4		0.9		1.5		Teaching/Non 1.4/1.3		1.4		1.3		2.1		RPC/Lev3/Lev2-3 1.8/2.3/4.4		1.0	8.5	
Plainview Hospital	10	10/155	6.5	1/ 139	0.5					1.16							3/3292	0.9									0.60	96/ 67296	14.3
	11	9/148	5.9	4/ 137	2.5					1.41							4/3260	1.2									0.95	91/ 63591	14.3
Putnam Hospital	10	0/ 91	** 0.0	0/ 213	* 0.0					** 0.00							0/ 534	* 0.0									* 0.00	22/ 40335	5.5
	11	0/109	** 0.0	0/ 213	* 0.0					** 0.00							0/ 646	* 0.0									* 0.00	23/ 37352	6.2
Queens Hospital	10	3/ 41	6.2							1.30							4/1324	3.0							1/ 393	2.3	1.61	16/ 52826	3.0
	11	1/ 36	2.5							0.52							2/1320	1.5							3/ 858	2.6	1.14	27/ 51891	5.2
Richmond Univ	10	7/132	5.0	3/ 76	3.4					1.32	1/1547	0.6			0/2291	** 0.0			0/1087	* 0.0			NA	NA	1/1428	0.7	**0.16	110/ 81835	13.4
	11	5/ 92	5.1	0/ 91	* 0.0					0.83	1/ 605	1.7			2/2378	0.8			0/1365	* 0.0			NA	NA	3/ 927	3.0	0.69	71/ 76604	▼9.3
Rochester General	10	12/296	4.9	2/ 397	0.6	3/ 492	** 0.7	4/ 478	1.1	0.76			4/2495	1.6	4/3668	1.1			0/1912	* 0.0							0.64	159/182998	8.7
	11	11/289	4.7	1/ 368	0.4	2/ 473	** 0.4	1/ 454	0.2	**0.59			3/2685	1.1	1/3202	0.3			1/1953	0.5							0.51	194/181480	10.7
Rome Memorial	10	0/ 66	** 0.0	0/ 30	* 0.0					** 0.00							0/1161	* 0.0									* 0.00	15/ 19485	7.7
	11	2/ 44	4.7	0/ 34	* 0.0					0.80							0/ 919	* 0.0									* 0.00	17/ 17878	9.5
Roswell Park	10	7/144	4.8							1.01							3/1972	1.5									1.73	23/ 36652	6.3
	11	9/143	6.2							1.27							2/1932	1.0									0.77	19/ 35486	5.4
Samaritan-Troy	10	2/ 72	2.9	0/ 48	* 0.0					0.52							1/ 744	1.3									0.88	13/ 47324	2.7
	11	4/ 80	5.6	0/ 58	* 0.0					0.94							2/ 949	2.1									1.62	14/ 46342	3.0
Samaritan-Watertown	10	4/ 76	5.4	1/ 136	0.9					1.04							2/1281	1.6									1.02	24/ 28864	8.3
	11	2/ 77	2.5	0/ 122	* 0.0					0.38							1/ 977	1.0									0.79	11/ 27697	4.0
Saratoga Hospital	10	7/120	6.8	2/ 198	1.0					1.28							1/1134	0.9									0.58	17/ 47652	3.6
	11	6/ 98	7.2	2/ 239	0.9					1.22							2/1215	1.6									1.27	6/ 48339	▼1.2
Seton Health	10	7/ 84	9.0	3/ 111	2.3					1.94							4/1314	3.0									1.99	24/ 38773	6.2
	11	6/ 64	9.4	3/ 94	2.2					1.92							1/ 927	1.1									0.83	24/ 35315	6.8
Sisters of Charity	10	4/ 74	5.5	2/ 165	1.3					1.18							1/1776	0.6							2/1174	1.8	0.54	27/ 48505	5.6
	11	1/107	1.0	2/ 170	1.4					0.45							3/1915	1.6							2/1113	1.9	1.02	16/ 49153	3.3
Sound Shore Medical	10	6/ 45	^^13.6	2/ 152	1.1					1.96							2/1068	1.9							0/ 53	* 0.0	1.16	46/ 43209	10.6
	11	6/ 52	11.2	3/ 144	1.9					2.06							1/1282	0.8							0/ 78	* 0.0	0.58	57/ 44724	12.7

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Hospital	Yr	SSI/ procs	Adj. Rate	SSI/ procs	Adj. Rate	SSI/ procs	Adj. Rate	SSI/ procs	Adj. Rate	SIR	CLABSI/ CLDays	Rate	CLABSI/ CLDays	Rate	CLABSI/ CLDays	Rate	CLABSI/ CLDays	Rate	CLABSI/ CLDays	Rate	CLABSI/ CLDays	Rate	CLABSI/ CLDays	Rate	CLABSI/ CLDays	Adj rate	SIR	C.diff/ patdays	Rate
State Average	**10**	**4.8**		**1.1**		**2.2**		**0.8**		**1.0**	**1.7**		**1.0**		**1.9**		**Teaching/Non 0.9/1.5**		**1.5**		**2.1**		**2.1**		**RPC/Lev3/Lev2-3 1.7/2.5/3.8**		**1.0**	**8.2**	
	11	**4.9**		**1.1**		**1.9**		**0.6**		**1.0**	**1.4**		**0.9**		**1.5**		**Teaching/Non 1.4/1.3**		**1.4**		**1.3**		**2.1**		**RPC/Lev3/Lev2-3 1.8/2.3/4.4**		**1.0**	**8.5**	
South Nassau Comm.	10	15/158	8.4	5/ 313	1.2					1.53							6/2617	2.3									1.50	89/113954	7.8
	11	16/169	^^ 8.9	11/ 342	^^ 2.5					^^1.96							10/2821	^^ 3.5									^^2.73	117/ 98224	▲11.9
Southampton	10	0/ 37	* 0.0	0/ 28	* 0.0					* 0.00							4/ 973	4.1									2.69	19/ 19344	9.8
	11	2/ 34	5.8	NA	NA					1.09					2/ 996	2.0											1.36	23/ 19403	11.9
Southside	10	1/122	0.9	2/ 186	0.9					0.38							2/2517	0.8									0.52	53/ 70643	7.5
	11	7/137	5.3	1/ 160	0.6	7/ 189	3.2	0/ 128	* 0.0	1.12			1/1308	0.8			2/2485	0.8									0.68	47/ 76989	6.1
St Anthony	10	NA	NA	0/ 29	* 0.0					1.72							0/ 535	* 0.0									* 0.00	25/ 12126	20.6
	11	NA	NA	0/ 31	* 0.0					* 0.00							0/ 493	* 0.0									* 0.00	7/ 11824	▼5.9
St Barnabas	10	3/ 70	3.7	NA	NA					0.72							1/1291	0.8							1/ 384	3.0	0.83	115/ 94798	12.1
	11	4/ 64	5.6	NA	NA					1.05							2/1541	1.3							1/ 386	2.6	0.80	89/ 93722	9.5
St Catherine Siena	10	8/146	5.7	2/ 105	1.9					1.28	1/1443	0.7					2/1684	1.2									0.60	68/ 85051	8.0
	11	4/ 53	7.4	1/ 84	1.1					1.37	2/1444	1.4					4/1645	2.4									1.45	84/ 84673	9.9
St Charles Hospital	10	2/ 36	4.6	6/ 198	^^ 4.7					2.31					2/1041	1.9											1.00	26/ 45445	5.7
	11	3/ 62	4.3	4/ 182	2.8					1.40					0/1498	* 0.0											* 0.00	6/ 31975	▼1.9
St Elizabeth Medical	10	7/ 83	9.0	2/ 202	1.1	2/ 287	0.7	0/ 261	* 0.0	0.80			1/2012	0.5			4/2725	1.5									0.81	66/ 57545	11.5
	11	6/ 87	7.1	0/ 222	* 0.0	8/ 277	2.8	1/ 235	0.4	1.12			1/1808	0.6			1/2309	0.4									0.43	70/ 58045	12.1
St Francis-Poughkeepsie	10	2/ 39	4.8	0/ 145	* 0.0					0.60							0/2132	** 0.0									** 0.00	13/ 55285	2.4
	11	1/ 47	2.0	0/ 119	* 0.0					0.27							2/1955	1.0									0.79	12/ 56485	2.1
St Francis-Roslyn	10	5/ 72	8.2	1/ 68	1.2	21/1132	2.0	16/1061	^^ 1.4	1.18			4/5648	0.7	9/5964	1.5			5/3020	1.7							0.83	111/104868	10.6
	11	6/ 73	9.6	1/ 138	0.6	11/ 997	1.2	11/ 935	1.2	1.02			2/5631	0.4	2/5396	** 0.4			2/3158	0.6							**0.34	119/108571	11.0
St James Mercy	10	3/ 32	8.8	1/ 24	2.3					1.90							3/ 565	5.3									3.48	3/ 9620	3.1
	11	NA	NA	NA	NA					NA							0/ 422	* 0.0									* 0.00	0/ 5835	0.0
St Johns Episcopal	10	2/ 29	5.7	0/ 23	* 0.0					0.96	2/ 873	2.3			3/1161	2.6											1.35	5/ 52083	1.0
	11	2/ 35	5.1	1/ 21	3.4					1.33	3/1009	3.0			2/1305	1.5											1.50	29/ 53152	5.5
St Johns Riverside	10	5/ 78	6.6	2/ 75	1.9					1.47							11/1917	^^ 5.7									^^3.76	30/ 94387	3.2
	11	7/ 78	9.9	1/ 80	1.0					1.75							5/1500	3.3									2.57	30/109651	2.7

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Hospital	Yr	SSI/ procs	Adj. Rate	SSI/ procs	Adj. Rate	SSI/ procs	Adj. Rate	SSI/ procs	Adj. Rate	SIR	CLABSI/ CLDays	Rate	CLABSI/ CLDays	Rate	CLABSI/ CLDays	Rate	CLABSI/ CLDays	Rate	CLABSI/ CLDays	Rate	CLABSI/ CLDays	Rate	CLABSI/ CLDays	Rate	CLABSI/ CLDays	Adj rate	SIR	C.diff/ patdays	Rate
	10	4.8		1.1		2.2		0.8		1.0	1.7		1.0		1.9		Teaching/Non 0.9/1.5		1.5		2.1		2.1		RPC/Lev3/Lev2-3 1.7/2.5/3.8		1.0	8.2	
State Average	11	4.9		1.1		1.9		0.6		1.0	1.4		0.9		1.5		Teaching/Non 1.4/1.3		1.4		1.3		2.1		RPC/Lev3/Lev2-3 1.8/2.3/4.4		1.0	8.5	
St Joseph Bethpage	10	0/ 57	** 0.0	1/ 138	0.7					0.21							5/2172	2.3									1.51	43/ 39236	11.0
	11	2/ 60	3.3	0/ 96	* 0.0					0.51							1/2089	0.5									0.37	56/ 36852	15.2
St Joseph Cheektow.	10	4/ 68	5.5	0/ 135	* 0.0					0.83							1/1459	0.7									0.45	42/ 30627	13.7
	11	4/ 77	4.9	1/ 138	0.9					0.95							2/1534	1.3									1.00	31/ 30104	10.3
St Josephs-Elmira	10	NA	NA	0/ 34	* 0.0					1.22							3/ 836	3.6									2.35	17/ 19790	8.6
	11	NA	NA	2/ 37	4.1					2.80							2/ 842	2.4									1.83	20/ 17460	11.5
St Josephs-Syracuse	10	9/292	3.0	7/ 524	1.3	18/ 694	2.3	6/ 615	0.9	0.93					7/3184	2.2			2/5127	** 0.4					0/ 376	* 0.0	0.60	135/122323	11.0
	11	19/302	6.4	9/ 668	1.5	11/ 540	2.0	0/ 504	** 0.0	1.12					5/3389	1.5			5/5837	0.9					0/ 279	* 0.0	0.70	151/125896	12.0
St Josephs-Yonkers	10	NA	NA	0/ 39	* 0.0					* 0.00							4/ 436	^^ 9.2									^^6.01	17/ 49669	3.4
	11	NA	NA	2/ 21	7.3					3.61							1/ 804	1.2									0.96	24/ 48913	4.9
St Lukes-Roosevelt	10	9/174	5.0	2/ 100	1.9					1.13							0/1391	* 0.0			1/ 754	1.3	1/ 77	13.0	2/2365	0.9	0.48	78/115226	6.8
	11	9/167	5.3	1/ 127	0.6					0.99							1/1611	0.6			1/ 973	1.0	1/ 116	8.6	2/2499	0.9	0.56	52/113293	▼4.6
St Lukes-St Lukes	10	4/ 57	6.5	3/ 130	2.6	2/ 141	1.4	0/ 118	* 0.0	1.09					5/1784	2.8	0/1692	* 0.0	1/ 735	1.4							0.99	64/110326	5.8
	11	5/ 73	6.6	2/ 134	1.5	3/ 159	1.8	2/ 137	1.5	1.31					5/2187	2.3	3/1581	1.9	0/ 960	* 0.0							1.19	83/121989	6.8
St Lukes Newburgh& Conwall	10	1/100	1.0	1/ 80	0.9					0.35							3/1749	1.7									1.12	33/ 51937	6.4
	11	0/ 87	** 0.0	9/ 151	^^ 4.4					1.43							4/2023	2.0									1.52	46/ 49895	9.2
St Marys Amsterdam	10	5/ 67	9.6	0/ 100	* 0.0					1.46							0/ 155	* 0.0									* 0.00	17/ 27590	6.2
	11	2/ 42	6.5	2/ 87	3.1					1.80							0/ 173	* 0.0									* 0.00	14/ 29424	4.8
St Peters Hospital	10	13/368	4.3	5/ 756	1.0	1/ 450	** 0.2	0/ 424	** 0.0	**0.57	0/1000	* 0.0	4/2238	1.8			6/2745	2.2							2/1262	1.6	1.07	40/112023	3.6
	11	15/389	4.6	10/ 842	1.6	2/ 403	** 0.5	3/ 388	0.8	0.92	2/1148	1.7	4/2270	1.8			4/2409	1.7							0/1184	* 0.0	1.07	44/112803	3.9
Staten Island U N&S	10	11/246	4.5	3/ 181	1.3	6/ 380	1.9	1/ 349	0.4	0.90	0/2312	** 0.0	4/2211	1.8			1/4676	0.2					0/ 91	* 0.0	3/ 677	4.1	0.65	172/161800	10.6
	11	16/229	6.7	5/ 224	1.7	6/ 331	2.1	2/ 306	0.8	1.33	0/2362	** 0.0	4/2148	1.9			1/4388	** 0.2					0/ 69	* 0.0	2/ 684	2.7	0.54	149/156011	9.6
Stony Brook Univ.Hos	10	14/159	7.4	0/ 230	* 0.0	1/ 346	** 0.3	1/ 308	0.3	0.74	0/1002	* 0.0	4/2007	2.0	0/1957	** 0.0			3/2732	1.1			1/ 983	1.0	5/2743	2.0	0.73	184/169588	10.8
	11	10/173	4.7	4/ 261	1.3	5/ 302	1.6	4/ 270	1.4	1.07	0/1722	* 0.0	2/1740	1.1	2/3363	0.6			0/2351	** 0.0			2/ 985	2.0	3/1897	1.6	**0.51	268/176439	▲15.2
Strong Memorial	10	14/324	4.1	1/ 55	0.9	6/ 401	1.7	2/ 363	0.7	0.83			9/4124	^^ 2.2	9/2979	3.0			5/2972	1.7			2/2579	0.8	10/6386	1.6	1.17	263/205628	12.8
	11	11/294	3.8	0/ 61	* 0.0	3/ 344	0.9	2/ 306	0.7	0.69			4/3642	1.1	4/3100	1.3			4/2879	1.4			5/2880	1.7	6/6060	1.0	0.80	212/209268	▼10.1

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	10	4.8		1.1		2.2		0.8		1.0	1.7		1.0		1.9		Teaching/Non 0.9/1.5		1.5		2.1		2.1		RPC/Lev3/Lev2-3 1.7/2.5/3.8		1.0	8.2	
State Average	11	4.9		1.1		1.9		0.6		1.0	1.4		0.9		1.5		Teaching/Non 1.4/1.3		1.4		1.3		2.1		RPC/Lev3/Lev2-3 1.8/2.3/4.4		1.0	8.5	
Syosset Hospital	10	1/ 57	2.4	0/ 24	* 0.0					0.40							0/ 558	* 0.0									* 0.00	17/ 15360	11.1
	11	2/ 43	6.1	1/ 26	3.6					1.56							0/ 832	* 0.0									* 0.00	18/ 14835	12.1
TLC Lake Shore	10	NA	NA	0/ 63	* 0.0					* 0.00							0/ 85	* 0.0									* 0.00	5/ 7916	6.3
	11	NA	NA	2/ 47	5.5					2.81							NA	NA									NA	2/ 6720	3.0
U Health Bing/Wilson	10	9/125	8.4	1/ 221	0.5	2/ 243	0.9	1/ 222	0.5	0.94	0/1625	* 0.0	1/2060	0.5			0/ 676	* 0.0							1/ 506	2.6	**0.28	25/ 71021	3.5
	11	6/ 94	7.7	6/ 262	2.4	2/ 201	1.1	0/ 197	* 0.0	1.24	1/1410	0.7	0/2166	* 0.0			0/ 465	* 0.0							1/ 352	3.1	0.33	40/ 75704	5.3
U Hosp Brooklyn LICH	10	6/ 81	6.8	0/ 72	* 0.0					1.13	1/ 336	3.0					2/2370	0.8					NA	NA	5/ 881	5.8	1.08	90/ 63496	14.2
	11	8/ 74	8.8	1/ 61	1.1					1.66	4/ 564	^^ 7.1					1/2460	0.4					NA	NA	5/ 944	5.4	1.25	53/ 57164	▼9.3
U Hosp SUNY Downstate	10	1/ 37	2.5	2/ 68	3.4	1/ 68	0.9	0/ 64	* 0.0	0.69	0/ 361	* 0.0	0/1080	* 0.0			0/2157	* 0.0					2/ 583	3.4	3/1086	2.2	0.71	46/109373	4.2
	11	0/ 39	* 0.0	0/ 55	* 0.0	1/ 87	0.9	0/ 80	* 0.0	**0.17	0/ 363	* 0.0	1/1141	0.9			2/1914	1.0					2/ 286	7.0	2/1219	1.5	0.98	29/ 99534	2.9
United Memorial	10	2/ 24	7.4	2/ 76	2.6					1.89							0/ 428	* 0.0									* 0.00	17/ 19956	8.5
	11	NA	NA	3/ 85	3.4					2.69							0/ 602	* 0.0									* 0.00	31/ 22524	13.8
Unity Hosp Rochester	10	0/143	** 0.0	9/ 499	^^ 2.5					0.91							0/2290	** 0.0									** 0.00	57/ 65201	8.7
	11	0/109	** 0.0	11/ 638	2.1					1.04							2/3116	0.6									0.49	90/ 73326	12.3
Upst. Community Gen	10	6/114	5.1	5/ 554	1.2					1.06							1/1143	0.9									0.57	28/ 41263	6.8
	11	4/115	3.3	0/ 408	** 0.0					0.43							1/1307	0.8									0.59	34/ 40799	8.3
Upst. Univ.Hosp. SUNY	10	6/102	5.7	2/ 145	1.1	2/ 166	0.8	1/ 133	0.4	0.76	2/1198	1.7	4/2513	1.6	8/3999	2.0	0/ 570	* 0.0	1/2989	0.3	3/2201	1.4	1/ 796	1.3			0.81	106/113130	9.4
	11	5/149	3.1	5/ 157	2.5	2/ 194	0.8	1/ 149	0.6	0.83	0/1270	* 0.0	0/2317	* 0.0	5/3488	1.4	1/ 539	1.9	0/2733	** 0.0	1/2100	0.5	6/ 765	^^ 7.8			0.72	138/116690	11.8
Vassar Brothers	10	2/ 92	2.2	0/ 63	* 0.0	1/ 271	** 0.3	0/ 260	* 0.0	**0.21	1/1226	0.8	0/ 919	* 0.0			0/1606	* 0.0							0/ 479	* 0.0	**0.13	73/ 91404	8.0
	11	2/ 71	2.5	0/ 26	* 0.0	0/ 295	** 0.0	1/ 295	0.3	**0.23	0/1257	* 0.0	0/ 962	* 0.0			0/1577	* 0.0							0/ 397	* 0.0	**0.00	58/ 94033	6.2
Westchester Medical	10	4/108	3.2	0/ 114	* 0.0	13/ 362	3.8	2/ 346	0.6	1.04	2/ 674	3.0	1/3060	0.3	15/2882	^^ 5.2			5/1460	3.4	4/1603	2.5	6/1800	3.3	5/5100	1.0	1.39	175/173196	10.1
	11	7/ 89	6.5	2/ 91	1.2	8/ 306	2.3	0/ 295	* 0.0	1.10	3/ 797	3.8	3/2887	1.0	6/2806	2.1			0/1116	* 0.0	1/1722	0.6	3/1848	1.6	6/6110	1.0	0.83	147/175828	8.4
Westchester Square	10	0/ 79	** 0.0	0/ 39	* 0.0					** 0.00	5/ 632	^^ 7.9							0/ 775	* 0.0							2.24	55/ 44382	12.4
	11	0/ 62	* 0.0	2/ 35	3.7					0.61	1/ 434	2.3							0/ 661	* 0.0							0.66	41/ 38377	10.7
White Plains	10	5/104	5.5	1/ 197	0.5					0.91							3/2488	1.2							2/ 361	5.0	1.04	57/ 77636	7.3
	11	5/ 90	7.3	0/ 218	* 0.0					0.91							4/2587	1.5							0/ 262	* 0.0	1.01	77/ 78000	9.9

Hospital SSI and CLABSI rates were compared to the state average. **Significantly lower than state average. ^^Signif. higher than state average. *Zero infections, not signif. NA: Fewer than 20 procedures or 50 line days.
Hospital 2011 *C. difficile* rates were compared to hospital 2010 rates if there was no change in laboratory testing methods. ▲Signif. increased compared to 2010. ▼Signif. decreased compared to 2010.

Table 1: Summary of Hospital-Acquired Infection Data by Hospital, New York State 2010-2011

		Surgical Site Infections									Blood Stream Infections																		*C. difficile*	
		Colon		Hip		CABG Chest		CABG Donor		All SSI	Coronary ICU		Cardiothoracic ICU		Medical ICU		Medical Surgical		Surgical ICU		Neurosurgical ICU		Pediatric ICU		Neonatal ICU		All BSI	Hospital Onset	
Hospital	Yr	SSI/ procs	Adj. Rate	SSI/ procs	Adj. Rate	SSI/ procs	Adj. Rate	SSI/ procs	Adj. Rate	SIR	CLABSI/ CLDays	Rate	CLABSI/ CLDays	Rate	CLABSI/ CLDays	Rate	CLABSI/ CLDays	Rate	CLABSI/ CLDays	Rate	CLABSI/ CLDays	Rate	CLABSI/ CLDays	Rate	CLABSI/ CLDays	Adj rate	SIR	C.diff/ patdays	Rate
State Average	**10**	**4.8**		**1.1**		**2.2**		**0.8**		**1.0**	**1.7**		**1.0**		**1.9**		**Teaching/Non 0.9/1.5**		**1.5**		**2.1**		**2.1**		**RPC/Lev3/Lev2-3 1.7/2.5/3.8**		**1.0**	**8.2**	
	11	**4.9**		**1.1**		**1.9**		**0.6**		**1.0**	**1.4**		**0.9**		**1.5**		**Teaching/Non 1.4/1.3**		**1.4**		**1.3**		**2.1**		**RPC/Lev3/Lev2-3 1.8/2.3/4.4**		**1.0**	**8.5**	
Winthrop University	10	10/318	3.3	2/ 198	0.7	11/ 316	3.3	3/ 303	0.9	0.94					5/2020	2.5			7/4414	1.6	3/ 859	3.5	0/ 264	* 0.0	0/2217	** 0.0	0.92	165/156169	10.6
	11	8/305	2.7	2/ 228	0.7	11/ 372	3.0	2/ 334	0.6	0.86					6/2270	2.6			2/4314	0.5	0/ 721	* 0.0	0/ 333	* 0.0	5/2101	2.3	0.87	151/157671	9.6
Woman and Childrens	10	0/ 22	* 0.0							* 0.00													4/2540	1.6	12/5485	2.3	1.14	8/ 35575	2.2
	11	0/ 26	* 0.0							* 0.00													3/2341	1.3	15/5152	2.9	1.26	8/ 35317	2.3
Womans Christian	10	4/ 71	6.1	1/ 80	0.9					1.16							2/1146	1.7									1.14	14/ 27261	5.1
	11	2/ 49	4.3	1/ 76	1.1					0.91							3/ 999	3.0									2.31	23/ 27114	8.5
Woodhull Medical	10	3/ 53	4.8	0/ 22	* 0.0					0.88							13/4098	^^ 3.2							1/ 484	2.1	1.75	17/109308	1.6
	11	14/ 49	^^22.9	NA	NA					^^4.78							4/2838	1.4							0/ 513	* 0.0	0.67	31/100129	▲ 3.1
Wyckoff Heights	10	3/ 58	5.0	0/ 23	* 0.0					0.94							13/2185	^^ 5.9							3/ 496	6.7	^^3.58	55/ 84963	6.5
	11	3/ 48	5.7	0/ 20	* 0.0					1.01							8/2163	^^ 3.7							1/ 293	3.2	^^2.55	66/ 82222	8.0
Wyoming County Comm.	10	NA	NA	1/ 31	2.5					1.48							0/ 101	* 0.0									* 0.00	3/ 13941	2.2
	11	1/ 25	4.2	2/ 21	5.4					1.90							0/ 51	* 0.0									* 0.00	10/ 13414	7.5

SSI Data reported as of July 19, 2012. CLABSI and *C. difficile* data reported as of July 26, 2012.

SSI notes: SSI: Surgical Site Infection; Procs: Procedures; Adj. Rate: Risk Adjusted Rate: # infections per 100 procedures if the state had the same risk distribution as the hospital. SSI data exclude non-readmitted cases identified using post discharge surveillance.
Colon data adjusted using ASA score, duration, and wound class/ laparoscope.
CABG chest data adjusted using diabetes, body mass index, gender, end stage renal disease, congestive heart failure, peripheral artery disease, and duration.
CABG donor data adjusted using body mass index, gender, age, and duration.
Hip data adjusted using ASA score, duration, trauma, and type of procedure.
SIR: Standardized Infection Ratio: compares observed number of colon, CABG, and hip infections to the statistically expected number of infections based on the NYS 2011 average, after adjusting for the risk factors listed above.

CLABSI notes: CLABSI: Central Line-Associated Blood Stream Infection; CLDays: Central Line Days. CLABSI data exclude cases in which multiple blood cultures were obtained, only one specimen was positive, the one positive was considered a contaminant and no treatment was given. Adult CLABSI rates are # infections per 1000 line days; no additional adjustment is performed because the data are stratified by ICU type. Neonatal CLABSI rates include Umbilical Catheter-Associated Blood Stream Infections. Neonatal CLABSI rates are adjusted by birth weight. SIR: compares observed number of CLABSI to statistically expected number of infections based on the NYS 2011 average infection rate in each ICU/birth weight group.

C. difficile notes: *C. difficile:* Number of hospital-onset infections; Patdays = Inpatient days, excluding newborns and NICU; Rate is per 10,000 patient days.

Each hospital-specific adjusted SSI and CLABSI rate should only be compared with the New York State average in that category in that year.
Each hospital-specific 2011 *C. difficile* rate should only be compared with the 2010 *C. difficile* rate for that hospital in 2010.

Hospital SSI and CLABSI rates were compared to the state average. **Significantly lower than state average. ^^Signif. higher than state average. *Zero infections, not signif. NA: Fewer than 20 procedures or 50 line days.
Hospital 2011 *C. difficile* rates were compared to hospital 2010 rates if there was no change in laboratory testing methods. ▲Signif. increased compared to 2010. ▼Signif. decreased compared to 2010.

Background

A hospital-acquired infection (HAI) is an infection acquired as a result of treatment in a hospital. In accordance with Public Health Law 2819, New York State (NYS) has been tracking HAIs since 2007. This law was created to provide the public with fair, accurate, and reliable HAI data to compare hospital infection rates, and to support quality improvement and infection prevention activities in hospitals.

Hospitals report to NYS using CDC's National Healthcare Safety Network (NHSN). This online system allows hospitals, NYS, and CDC to concurrently monitor the same data. The NHSN has become the standard for reporting in the United States, with 28 states using the NHSN for mandatory reporting. All states follow the same surveillance methods. Additional information about the NHSN can be found at http://www.cdc.gov/nhsn/.

NYSDOH evaluates which HAI indicators should be reported annually with the help of a Technical Advisory Workgroup, a panel of experts in the prevention and reporting of HAIs. In 2007, hospitals were required to report central line-associated blood stream infections (CLABSIs) in intensive care units (ICUs), and surgical site infections (SSIs) following colon and coronary artery bypass graft (CABG) surgeries. In 2008, hip SSIs were added. 2010 was the first complete year of reporting *Clostridium difficile* (*C. difficile*) infections. In 2012, abdominal hysterectomy SSIs were added. Table 2 summarizes the progression of reporting.

This report summarizes HAI rates in 177 acute care hospitals in NYS in 2011. Rates are provided by individual hospital, region, and state. This report, as well as reports from previous years, is available on the NYSDOH website, at:

http://www.health.ny.gov/statistics/facilities/hospital/hospital_acquired_infections/

Table 2: Hospital Acquired Infections Reported by New York State Hospitals, by Year

Type of Infection	2007	2008	2009	2010	2011	2012
ICU central line-associated blood stream infections	✓	✓	✓	✓	✓	✓
Colon surgical site infections	✓	✓	✓	✓	✓	✓
Coronary artery bypass graft surgical site infections	✓	✓	✓	✓	✓	✓
Hip replacement surgical site infections		✓	✓	✓	✓	✓
Clostridium difficile infections				✓	✓	✓
Abdominal hysterectomy surgical site infections						✓

Hospital-Acquired Surgical Site Infections

Surgical Site Infections (SSIs) are infections that occur after an operation in the part of the body where the surgery took place. Most SSIs only involve the skin surrounding the incision; others may be deeper and more serious. Infections related to the following types of surgery were reported by NYS hospitals:

- Colon: Colon surgery is a procedure performed on the lower part of the digestive tract, which is called the large intestine or colon. Colon SSIs, regardless of the extent/depth, are infections that occur within 30 days of the initial procedure.

- Coronary artery bypass graft (CABG): CABG surgery is a procedure performed for heart disease in which a vein or artery from the chest or another part of the body (termed the "donor site") is used to create an alternate path for blood to flow to the heart, bypassing a blocked artery. CABG SSIs that involve the skin surrounding the chest and donor site incisions are reported if they occur within 30 days of the initial procedure. Chest incision SSIs that extend to deeper tissues below superficial skin are reported if they occur within one year from the initial procedure.

- Hip: Hip replacement or revision surgery involves removing damaged cartilage and bone from the hip joint and replacing or resurfacing them with new, man-made parts. SSIs that involve the skin surrounding the incision are reported if they occur within 30 days of the initial procedure. SSIs that extend to deeper tissues below the superficial skin are reported if they occur within one year from the initial procedure.

These surgeries were selected because of the frequency of infections, severity of infection-related complications, ability to perform risk adjustment, and potential for quality improvement.

For each type of SSI, the following pages describe:

- statewide time trends;
- severity (depth) of infections;
- microorganisms involved; and
- individual hospitals' risk-adjusted infection rates compared to the state average.

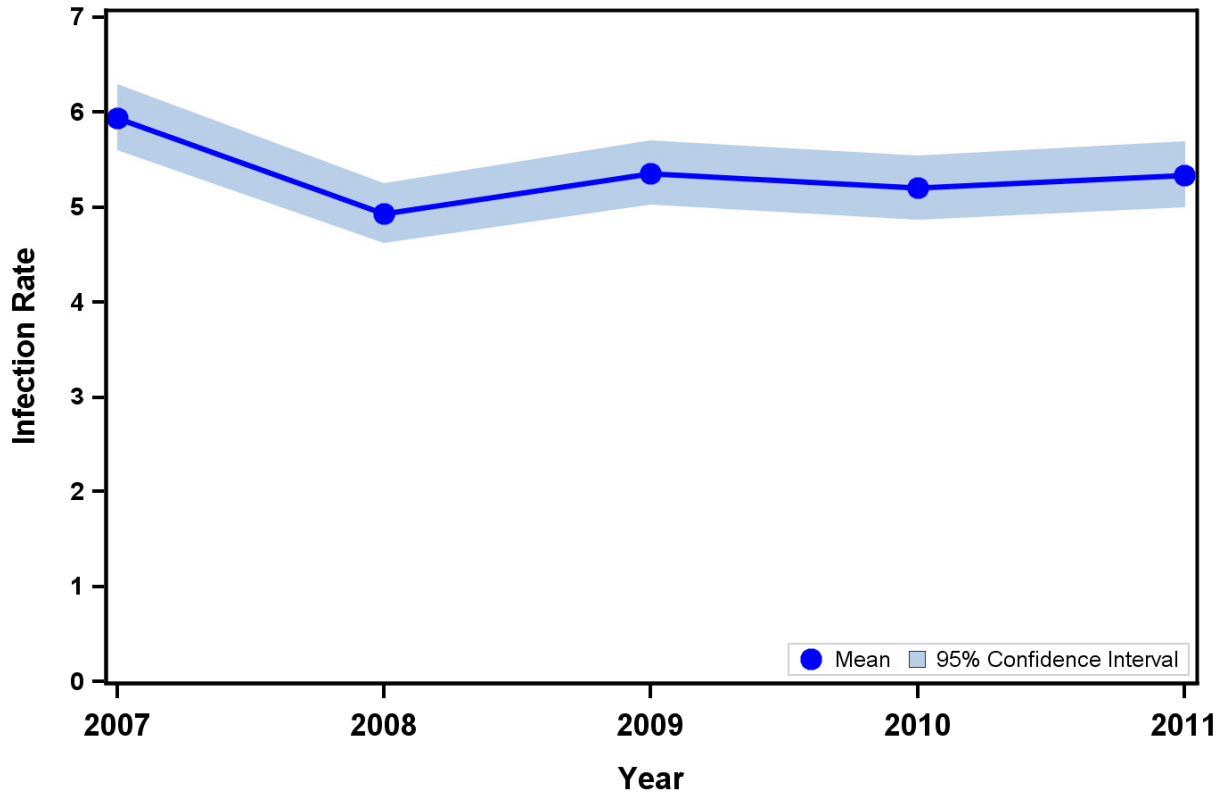
At the end of this section, overall trends in SSIs are summarized.

Colon Surgical Site Infections

Time Trends in Colon SSIs

In 2011, 173 hospitals reported colon surgical procedures. Between 2007 and 2011, the NYS colon surgical site infection rate declined 10.1%, from 5.9 infections per 100 procedures in 2007, to 5.3 infections per 100 procedures in 2011 (Figure 1). The decrease occurred during the second year of reporting, and rates have been stable over the past three years.

Figure 1. Trend in Colon Surgical Site Infection Rates, New York State 2007-2011



Year	# Hospitals	# Infections	# Procedures	Infection Rate and 95% Confidence Interval
2007	183	1,067	17,965	5.94 (5.60, 6.29)
2008	179	894	18,135	4.93 (4.62, 5.25)
2009	174	934	17,439	5.36 (5.03, 5.70)
2010	173	878	16,880	5.20 (4.87, 5.55)
2011	173	868	16,260	5.34 (5.00, 5.69)

New York State Data reported as of July 19, 2012.
Infection rate is the number of infections divided by the number of procedures, multiplied by 100.
Due to continued auditing of the data, the 2010 infection rate reported in the previous annual report increased from 4.99 to 5.20.

Depth of Colon SSIs

Of the 868 colon SSIs reported in 2011, 413 (48%) were superficial, 162 (19%) were deep, and 293 (34%) were organ/space (Table 3). The majority of the SSIs (59%) were detected during the initial hospitalization; 31% were identified upon readmission to the same hospital; 0.8% involved readmission to another hospital; and 9% were detected in outpatient locations. The majority of the infections detected in outpatient locations were superficial. Detection of SSIs in outpatient locations (using post discharge surveillance [PDS]) is labor intensive and is not standardized across hospitals; therefore, the NYSDOH did not include these 76 infections for hospital-specific comparisons. The detection and depth of colon SSIs is consistent with previous published NYS HAI public reports.

Table 3. Method of Detection of Colon Surgical Site Infection by Depth of Infection, New York State 2011

Extent (Row%) (Column%)	When Detected				
	Initial Hospitalization	Readmitted to the Same Hospital	Readmitted to Another Hospital	Detected in Outpatient Settings	Total
Superficial Incisional	268 (64.9%) (52.0%)	76 (18.4%) (28.1%)	1 (0.2%) (14.3%)	68 (16.5%) (89.5%)	413 (47.6%)
Deep Incisional	91 (56.2%) (17.7%)	61 (37.7%) (22.6%)	3 (1.9%) (42.9%)	7 (4.3%) (9.2%)	162 (18.7%)
Organ/Space	156 (53.2%) (30.3%)	133 (45.4%) (49.3%)	3 (1.0%) (42.9%)	1 (0.3%) (1.3%)	293 (33.8%)
Total	515 (59.3%)	270 (31.1%)	7 (0.8%)	76 (8.8%)	868

New York State data reported as of July 19, 2012.

Microorganisms Associated with Colon SSIs

In NYS, the most common microorganisms associated with colon SSIs were Enterococci, *Escherichia spp.,* and *Staphylococcus aureus* (Table 4). The distribution of microorganisms associated with colon SSIs is consistent with previously published NYS HAI public reports.

Table 4. Microorganisms Identified in Colon Surgical Site Infections, New York State 2011

Microorganism	Number of Isolates	Percent of Infections
Enterococci	261	30.1
(VRE)	(52)	(6.0)
Escherichia spp.	240	27.6
Staphylococcus aureus	92	10.6
(MRSA)	(44)	(5.1)
(MSSA)	(42)	(4.8)
Pseudomonas spp.	91	10.5
Bacteroides	70	8.1
Coagulase-negative staphylococci	61	7.0
Klebsiella spp.	61	7.0
Enterobacter spp.	46	5.3
Streptococci	45	5.2
Citrobacter spp.	25	2.9
Proteus spp.	24	2.8
Yeast	24	2.8
Morganella morganii	15	1.7
Clostridium spp.	7	0.8
Diphtheroids	5	0.6
Serratia spp.	5	0.6
Other	26	3.0

New York State data reported as of July 19, 2012
Out of 868 infections (includes post-discharge surveillance)
No microorganisms identified for 183 infections
VRE: vancomycin-resistant enterococcus
MRSA: methicillin-resistant *Staphylococcus aureus*
MSSA: methicillin-susceptible *Staphylococcus aureus*
spp: multiple species

Risk-Adjustment for Colon SSIs

Certain patient and procedure-specific factors increased the risk of developing an SSI following colon surgery. Patient age, differences in general anesthesia, hospital status as a major teaching hospital, and hospital surgical volume were not associated with the risk of SSIs. In 2011, after excluding SSIs reported as part of PDS methods that did not result in hospitalization, the following risk factors were associated with SSIs, and included in the risk-adjustment model.

- Patients with an American Society of Anesthesiologists (ASA) score of 3, 4, or 5 were 1.4 times more likely to develop an SSI than patients with an ASA score of 1 or 2.
- Procedures with duration greater than approximately 3 hours were 1.6 times more likely to result in SSI than procedures of shorter duration.

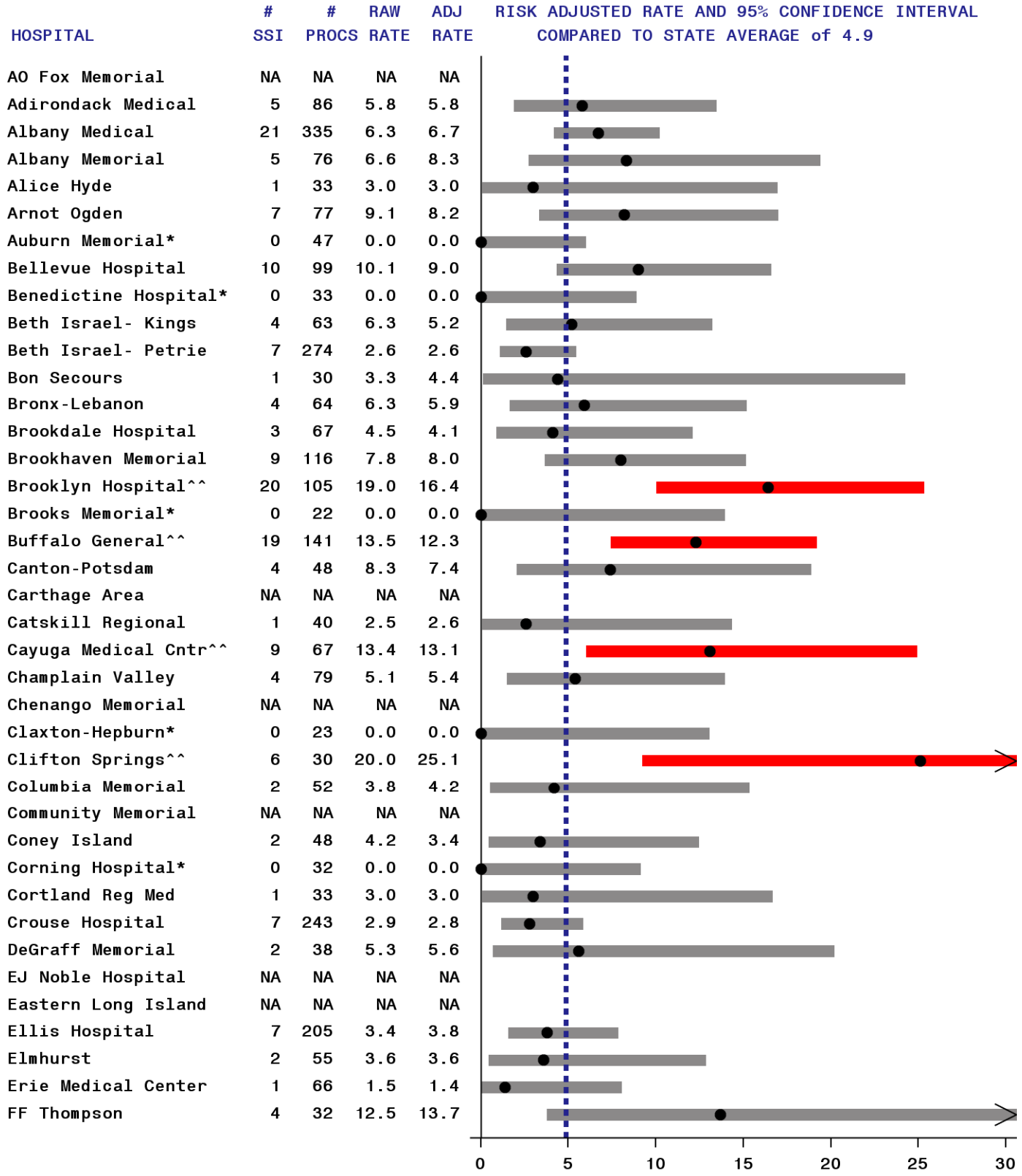
- Procedures performed entirely with a laparoscopic instrument on clean-contaminated intraoperative surgical sites were 0.5 times less likely to result in SSI than procedures that were contaminated or dirty or involved traditional surgical incisions.

Hospital-Specific Colon SSI Rates

Risk-adjusted hospital-specific colon SSI rates were calculated after deleting the 76 infections that were detected using PDS and did not result in hospitalization. This changed the NYS colon SSI rate from 5.34% to 4.87%.

Of the 173 hospitals performing colon surgery in 2011, 22 performed fewer than 20 procedures and were not compared to the state average. Hospital-specific colon SSI rates are provided in Figure 2. Refer to Appendix 3, Figure 30 for more information about reading Figure 2. Eight hospitals (5%) had colon SSI rates that were statistically higher than the state average. Six hospitals (3%) had rates that were statistically lower than the state average; two were significantly lower for three years in a row (2009-2011).

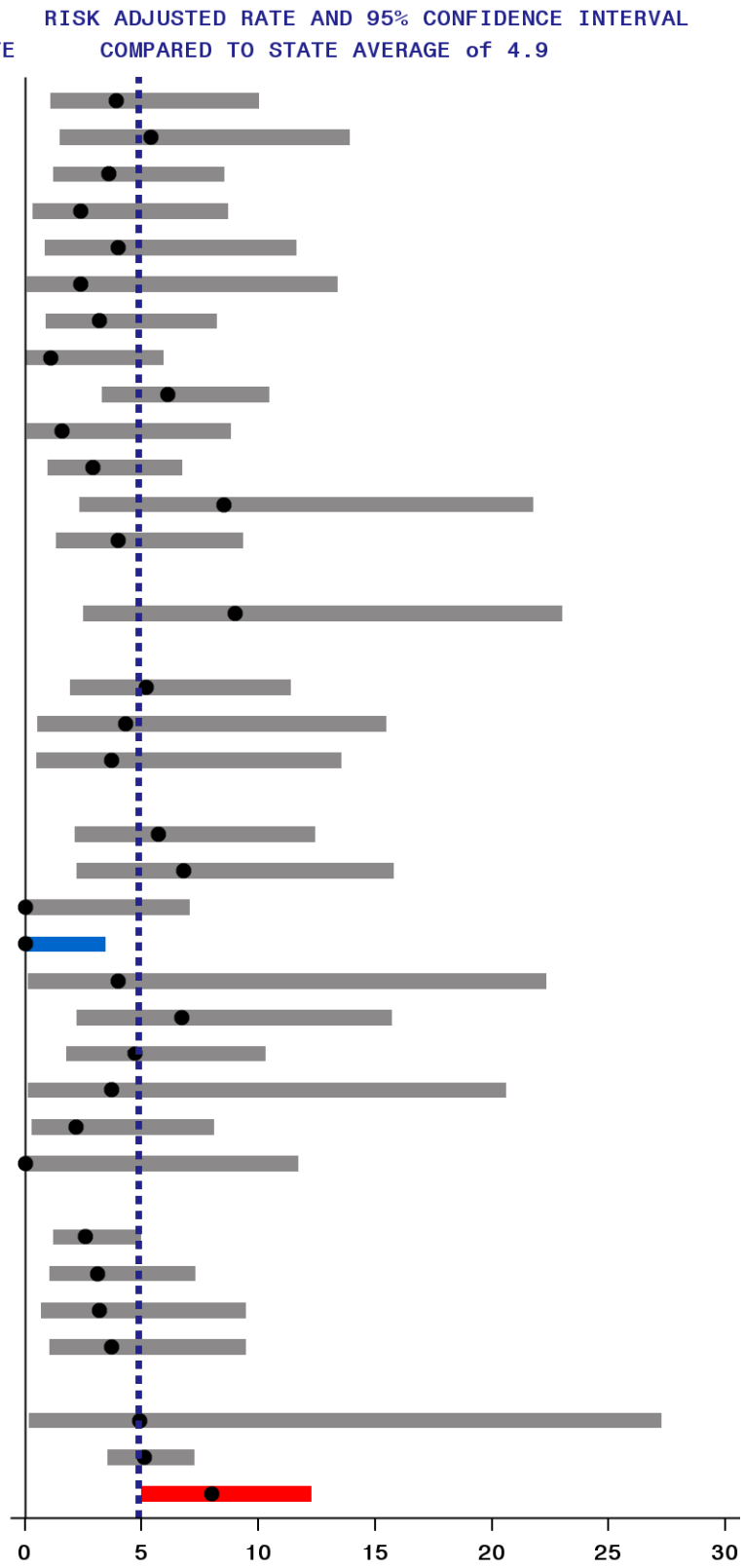
Figure 2. Colon Surgical Site Infection Rates, New York 2011 (page 1 of 5)



State average. ●Risk-adjusted infection rate. > Upper confidence limit exceeds graph area. —^^Significantly higher than state average. —**Significantly lower than state average. —Average. —*Zero infections, not significant. NA: Hospitals with less than 20 procedures.
SSI: surgical site infections, Procs: procedures. Rates are per 100 procedures.
Data reported as of July 19, 2012. Excludes non-readmitted cases identified using post discharge surveillance.
Adjusted using ASA score, duration, contamination of intraoperative site, and laparoscope.

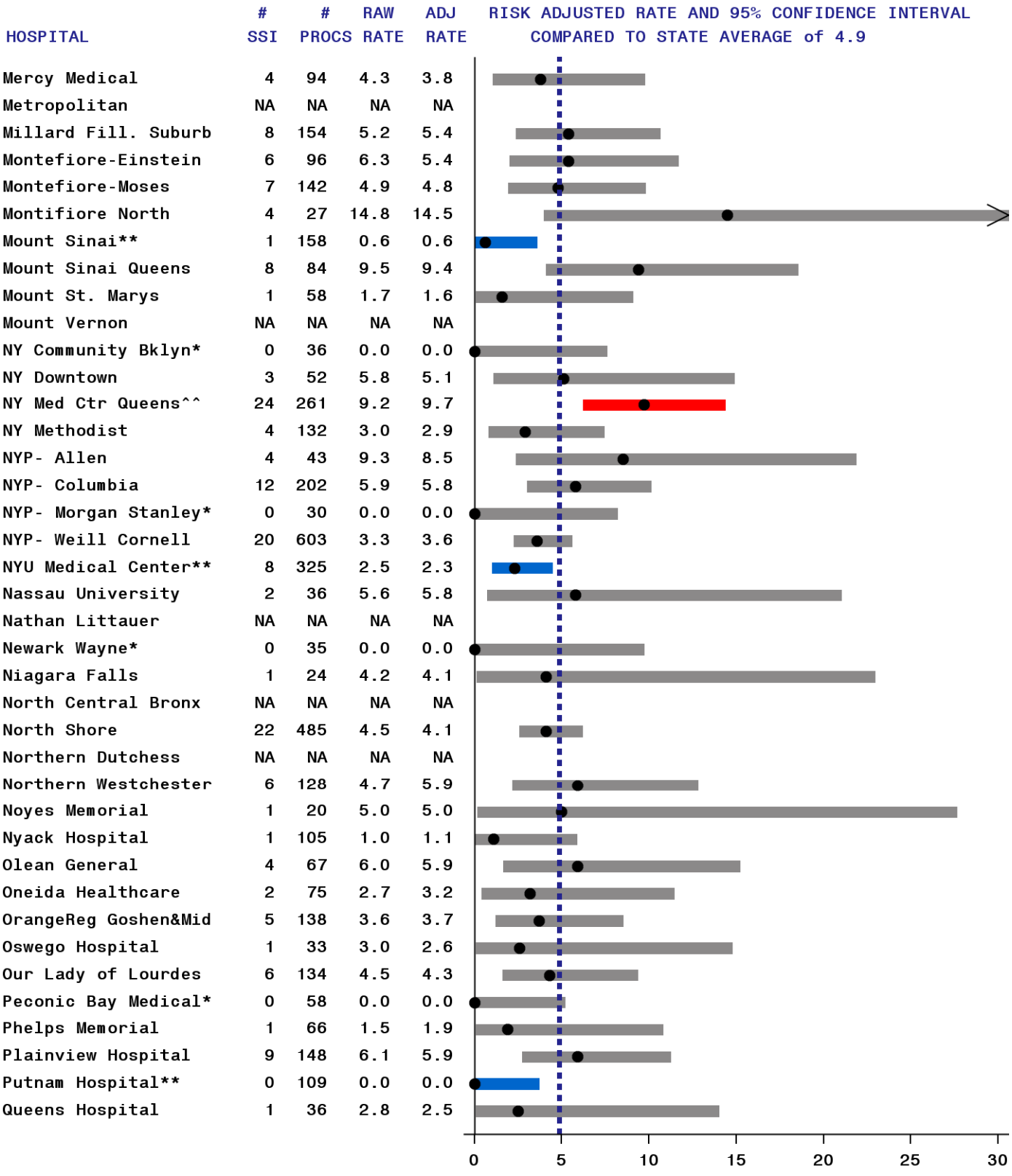
Figure 2. Colon Surgical Site Infection Rates, New York 2011 (page 2 of 5)

HOSPITAL	# SSI	# PROCS	RAW RATE	ADJ RATE
Faxton St. Lukes	4	94	4.3	3.9
Flushing Hospital	4	72	5.6	5.4
Forest Hills Hosp	5	134	3.7	3.6
Franklin	2	81	2.5	2.4
Geneva General	3	71	4.2	4.0
Glen Cove Hospital	1	41	2.4	2.4
Glens Falls	4	164	2.4	3.2
Good Samar. Suffern	1	82	1.2	1.1
Good Samar. W Islip	13	228	5.7	6.1
Harlem Hospital	1	55	1.8	1.6
Highland Hospital	5	174	2.9	2.9
Hudson Valley	4	50	8.0	8.5
Huntington	5	130	3.8	4.0
Intercomm. Newfane	NA	NA	NA	NA
Interfaith Medical	4	39	10.3	9.0
Ira Davenport	NA	NA	NA	NA
JT Mather	6	125	4.8	5.2
Jacobi Medical	2	42	4.8	4.3
Jamaica Hospital	2	51	3.9	3.7
Jones Memorial	NA	NA	NA	NA
Kenmore Mercy	6	120	5.0	5.7
Kings County	5	63	7.9	6.8
Kingsbrook Jewish*	0	39	0.0	0.0
Kingston Hospital**	0	85	0.0	0.0
Lakeside Memorial	1	26	3.8	4.0
Lawrence	5	89	5.6	6.7
Lenox Hill	6	138	4.3	4.7
Lewis County	1	23	4.3	3.7
Lincoln Medical	2	69	2.9	2.2
Lockport Memorial*	0	26	0.0	0.0
Long Beach	NA	NA	NA	NA
Long Island Jewish	9	326	2.8	2.6
Lutheran Medical	5	154	3.2	3.1
Maimonides	3	91	3.3	3.2
Mary Imogene Bassett	4	96	4.2	3.7
Massena Memorial	NA	NA	NA	NA
Medina Memorial	1	21	4.8	4.9
Mem. Sloan Kettering	32	547	5.9	5.1
Mercy Buffalo^^	21	306	6.9	8.0



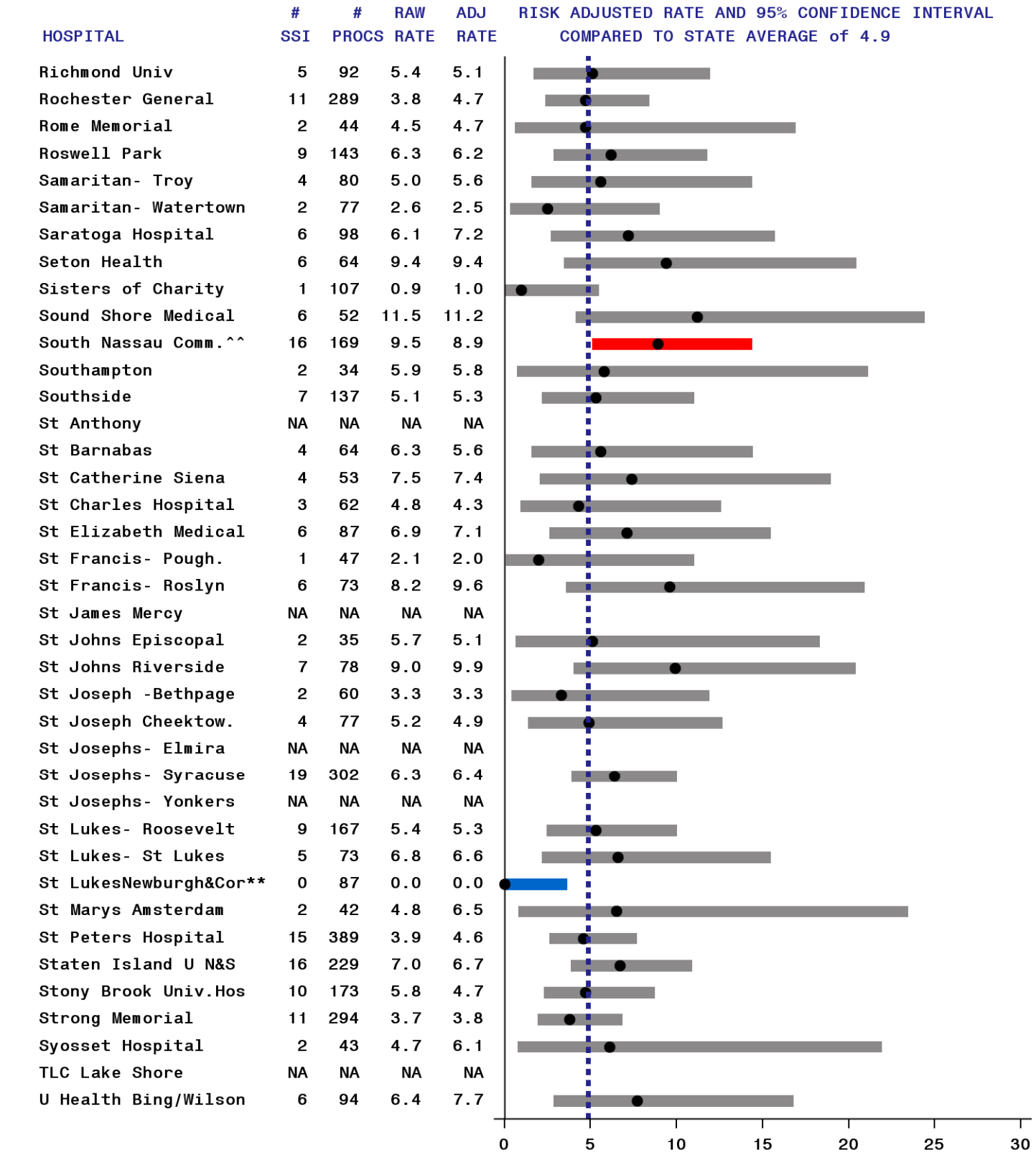
State average. ●Risk-adjusted infection rate. > Upper confidence limit exceeds graph area. ^^Significantly higher than state average. **Significantly lower than state average. Average. *Zero infections, not significant. NA: Hospitals with less than 20 procedures.
SSI: surgical site infections, Procs: procedures. Rates are per 100 procedures.
Data reported as of July 19, 2012. Excludes non-readmitted cases identified using post discharge surveillance.
Adjusted using ASA score, duration, contamination of intraoperative site, and laparoscope.

Figure 2. Colon Surgical Site Infection Rates, New York 2011 (page 3 of 5)



State average. ●Risk-adjusted infection rate. > Upper confidence limit exceeds graph area. —^^Significantly higher than state average. —**Significantly lower than state average. —Average. —*Zero infections, not significant. NA: Hospitals with less than 20 procedures.
SSI: surgical site infections, Procs: procedures. Rates are per 100 procedures.
Data reported as of July 19, 2012. Excludes non-readmitted cases identified using post discharge surveillance.
Adjusted using ASA score, duration, contamination of intraoperative site, and laparoscope.

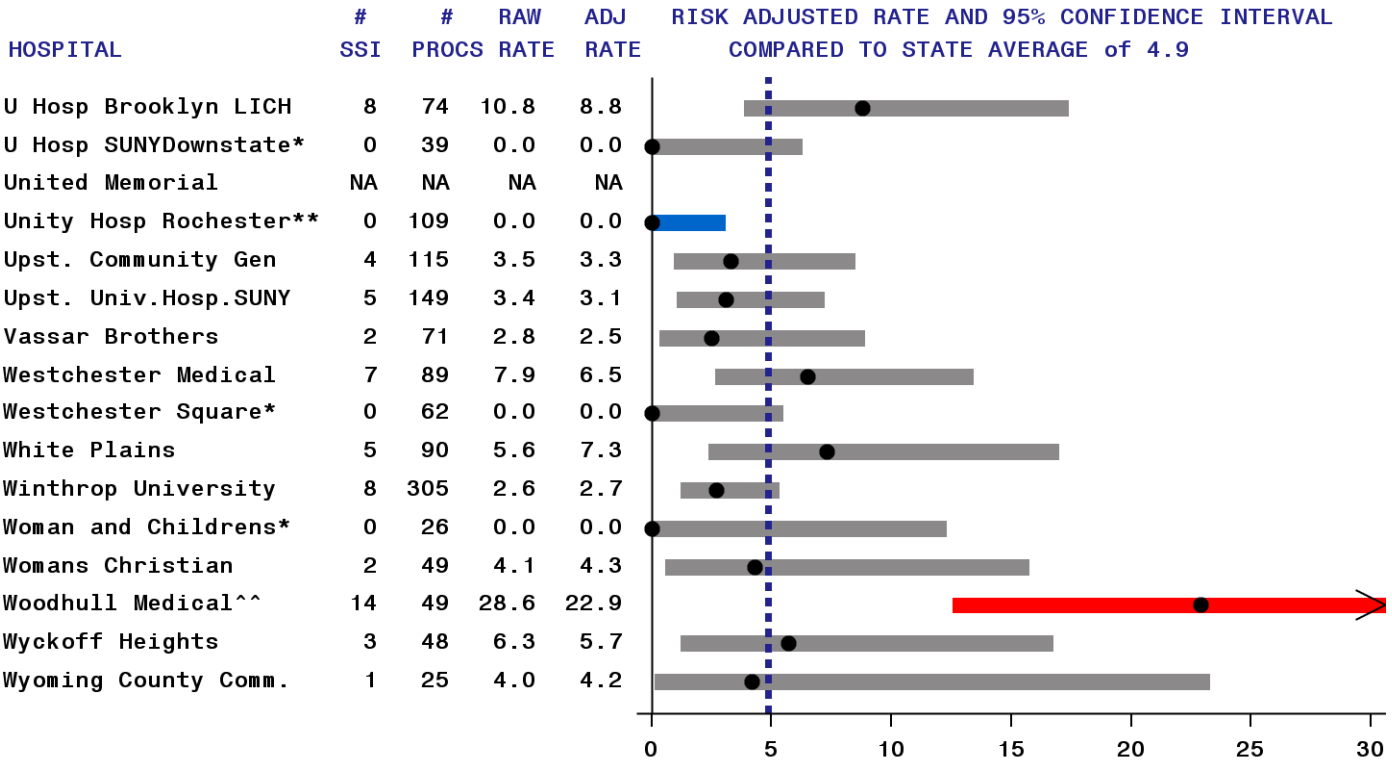
Figure 2. Colon Surgical Site Infection Rates, New York 2011 (page 4 of 5)



HOSPITAL	# SSI	# PROCS	RAW RATE	ADJ RATE
Richmond Univ	5	92	5.4	5.1
Rochester General	11	289	3.8	4.7
Rome Memorial	2	44	4.5	4.7
Roswell Park	9	143	6.3	6.2
Samaritan- Troy	4	80	5.0	5.6
Samaritan- Watertown	2	77	2.6	2.5
Saratoga Hospital	6	98	6.1	7.2
Seton Health	6	64	9.4	9.4
Sisters of Charity	1	107	0.9	1.0
Sound Shore Medical	6	52	11.5	11.2
South Nassau Comm.^^	16	169	9.5	8.9
Southampton	2	34	5.9	5.8
Southside	7	137	5.1	5.3
St Anthony	NA	NA	NA	NA
St Barnabas	4	64	6.3	5.6
St Catherine Siena	4	53	7.5	7.4
St Charles Hospital	3	62	4.8	4.3
St Elizabeth Medical	6	87	6.9	7.1
St Francis- Pough.	1	47	2.1	2.0
St Francis- Roslyn	6	73	8.2	9.6
St James Mercy	NA	NA	NA	NA
St Johns Episcopal	2	35	5.7	5.1
St Johns Riverside	7	78	9.0	9.9
St Joseph -Bethpage	2	60	3.3	3.3
St Joseph Cheektow.	4	77	5.2	4.9
St Josephs- Elmira	NA	NA	NA	NA
St Josephs- Syracuse	19	302	6.3	6.4
St Josephs- Yonkers	NA	NA	NA	NA
St Lukes- Roosevelt	9	167	5.4	5.3
St Lukes- St Lukes	5	73	6.8	6.6
St LukesNewburgh&Cor**	0	87	0.0	0.0
St Marys Amsterdam	2	42	4.8	6.5
St Peters Hospital	15	389	3.9	4.6
Staten Island U N&S	16	229	7.0	6.7
Stony Brook Univ.Hos	10	173	5.8	4.7
Strong Memorial	11	294	3.7	3.8
Syosset Hospital	2	43	4.7	6.1
TLC Lake Shore	NA	NA	NA	NA
U Health Bing/Wilson	6	94	6.4	7.7

State average. ●Risk-adjusted infection rate. > Upper confidence limit exceeds graph area. —^^Significantly higher than state average. —**Significantly lower than state average. —Average. —*Zero infections, not significant. NA: Hospitals with less than 20 procedures.
SSI: surgical site infections, Procs: procedures. Rates are per 100 procedures.
Data reported as of July 19, 2012. Excludes non-readmitted cases identified using post discharge surveillance.
Adjusted using ASA score, duration, contamination of intraoperative site, and laparoscope.

Figure 2. Colon Surgical Site Infection Rates, New York 2011 (page 5 of 5)



State average. ●Risk-adjusted infection rate. > Upper confidence limit exceeds graph area. —^^Significantly higher than state average. —**Significantly lower than state average. —Average. —*Zero infections, not significant. NA: Hospitals with less than 20 procedures.
SSI: surgical site infections, Procs: procedures. Rates are per 100 procedures.
Data reported as of July 19, 2012. Excludes non-readmitted cases identified using post discharge surveillance.
Adjusted using ASA score, duration, contamination of intraoperative site, and laparoscope.

Coronary Artery Bypass Graft (CABG) Surgical Site Infections

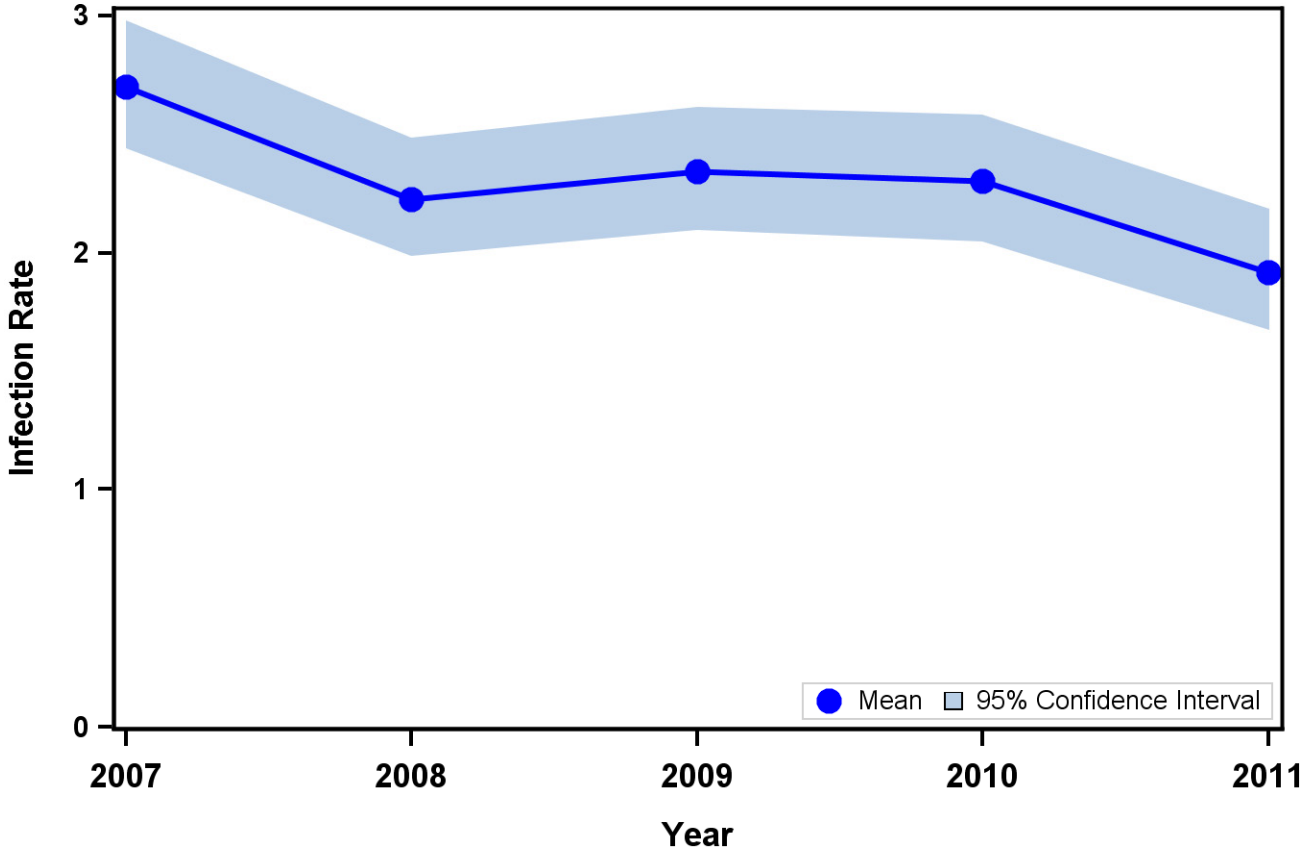
CABG surgery usually involves two surgical sites: a chest incision and a separate site to harvest donor vessels. Because infections can occur at either incision site the SSI rates are presented separately.

CABG Chest Infections

Time Trends in CABG Chest SSIs

In 2011, 40 hospitals performed CABG procedures. Between 2007 and 2011, the NYS CABG chest incision SSI rate significantly declined 29%, from 2.70 infections per 100 procedures in 2007, to 1.92 infections per 100 procedures in 2011 (Figure 3).

Figure 3. Trend in Coronary Artery Bypass Graft Chest Site Infection Rates, New York State 2007-2011



Year	# Hospitals	# Infections	# Procedures	Infection Rate and 95% Confidence Interval
2007	40	385	14,266	2.70 (2.44, 2.98)
2008	40	311	13,967	2.23 (1.99, 2.49)
2009	40	315	13,438	2.34 (2.09, 2.61)
2010	39	286	12,410	2.30 (2.05, 2.58)
2011	40	221	11,527	1.92 (1.67, 2.18)

New York State Data reported as of July 19, 2012.
Infection rate is the number of infections divided by the number of procedures, multiplied by 100.
Due to continued auditing of the data and newly identified infections occurring up to one year after the procedure, the 2010 infection rate reported in the previous annual report increased from 2.23 to 2.30.

Depth of CABG Chest SSIs

Of the 221 CABG Chest SSIs reported in 2011, 60 (27%) were superficial, 80 (36%) were deep, and 81 (37%) were organ/space. The majority of the SSIs (77%) were detected during readmission to the same hospital, 18% were identified during the initial hospitalization, 3% involved readmission to another hospital, and 2% were detected in outpatient locations. All infections detected in outpatient locations were superficial. Detection of SSIs in outpatient locations using PDS is labor intensive and is not standardized across hospitals; therefore, the NYSDOH did not include these five infections (Table 5) in hospital-specific comparisons. Between 2007 and 2011, the percent of infections detected on readmission to the same hospital has steadily increased, from 65% to 77%, while the depth of infection has not changed.

Table 5. Method of Detection of Coronary Artery Bypass Graft Chest Site Infection by Depth of Infection, New York State 2011

	When Detected				
Extent (Row%) (Column%)	**Initial Hospitalization**	**Readmitted to the Same Hospital**	**Readmitted to Another Hospital**	**Detected in Outpatient Settings**	**Total**
Superficial Incisional	15 (25.0%) (38.5%)	38 (63.3%) (22.4%)	2 (3.3%) (28.6%)	5 (8.3%) (100.0%)	60 (27.1%)
Deep Incisional	12 (15.0%) (30.8%)	64 (80.0%) (37.6%)	4 (5.0%) (57.1%)	0 (0.0%) (0.0%)	80 (36.2%)
Organ/Space	12 (14.8%) (30.8%)	68 (84.0%) (40.0%)	1 (1.2%) (14.3%)	0 (0.0%) (0.0%)	81 (36.7%)
Total	39 (17.7%)	170 (76.9%)	7 (3.2%)	5 (2.3%)	221

New York State data reported as of July 19, 2012.

Microorganisms Associated with CABG Chest SSIs

In NYS, the most common microorganisms associated with CABG Chest SSIs were *Staphylococcus aureus* and coagulase-negative staphylococci. Methicillin-resistant *Staphylococcus aureus* (MRSA) accounted for 14 percent of CABG Chest SSIs (Table 6). The distribution of microorganisms associated with CABG chest SSIs is consistent with previously published NYS HAI public reports.

Table 6. Microorganisms Identified in Coronary Artery Bypass Chest Site Infections, New York State 2011

Microorganism	Number of Isolates	Percent of Infections
Staphylococcus aureus	82	37.1
(MSSA)	(50)	(22.6)
(MRSA)	(30)	(13.6)
Coagulase-negative staphylococci	50	22.6
Pseudomonas spp.	18	8.1
Klebsiella spp.	17	7.7
Serratia spp.	16	7.2
Enterobacter spp.	13	5.9
Enterococci	12	5.4
(VRE)	(4)	(1.8)
Escherichia spp.	11	5.0
Proteus spp.	7	3.2
Streptococci	6	2.7
Other	20	9.0

New York State data reported as of July 19, 2012
Out of 221 infections (includes post-discharge surveillance).
No microorganisms identified for 19 infections
VRE: vancomycin-resistant enterococcus
MRSA: methicillin-resistant *Staphylococcus aureus*
MSSA: methicillin-susceptible *Staphylococcus aureus*
spp: multiple species

Risk Adjustment for CABG Chest SSIs

Certain patient and procedure-specific risk factors increased the risk of developing a chest SSI following CABG surgery. In 2011, after excluding SSIs reported through PDS methods that did not result in hospitalization, the following risk factors were associated with SSI. These variables had the following impacts on hospital-specific rates and were included in the risk-adjustment:

- Patients with diabetes were 1.7 times more likely to develop an SSI than patients without diabetes
- Very obese patients (with body mass index [BMI] greater than or equal to 40) were 3.9 times more likely to develop an SSI, and obese patients (with BMI between 30 and 39) were 1.2 times more likely to develop an SSI than patients with BMI less than 30.
- Females were 1.6 times more likely to develop an SSI than males.
- Patients with renal failure were 1.1 times more likely to develop an SSI than patients without renal failure.
- Patients with congestive heart failure (CHF) were 1.7 times more likely to develop an SSI than patients without CHF.

- Patients with peripheral artery disease (PAD) were 1.6 times more likely to develop an SSI than patients without PAD.
- Patients who underwent procedures with a total duration longer than approximately 5 hours (exact time depending on whether a separate donor incision was used) were 1.4 times more likely to develop an SSI than patients undergoing shorter procedures.

Patient age, chronic obstructive pulmonary disease, myocardial infarction, cerebrovascular disease, Medicaid status, intraoperative surgical site contamination, emergency/trauma surgery, use of donor vessels, teaching hospitals, and hospital surgical volume were not associated with increased risk of infection.

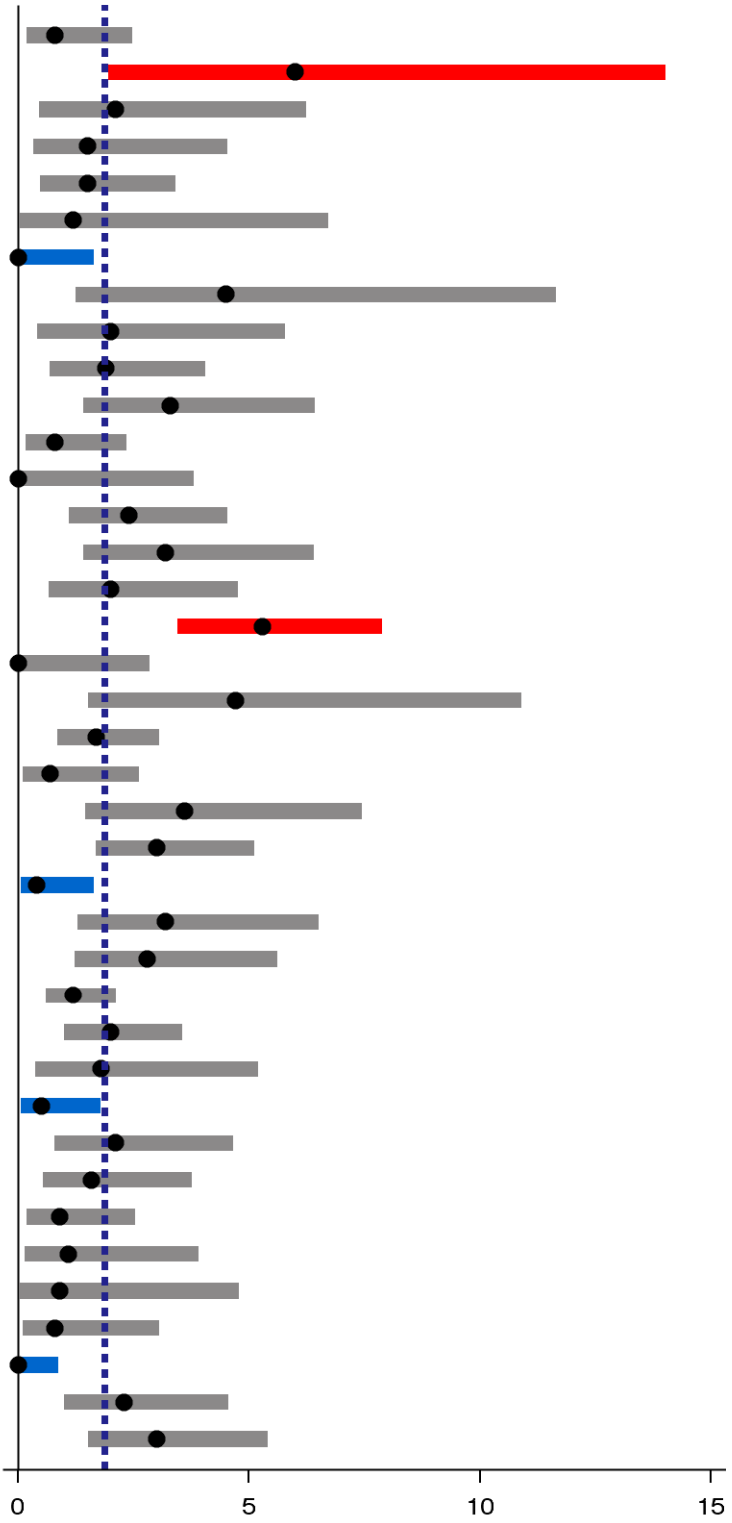
Hospital-Specific CABG Chest SSI Rates

Risk-adjusted hospital-specific CABG chest SSI rates were calculated after deleting the 5 infections that were detected using PDS and did not result in hospitalization. This changed the State CABG chest SSI rate from 1.92% to 1.87%.

Hospital-specific CABG chest SSI rates are provided in Figure 4. Refer to Appendix 3, Figure 30 for more information about reading Figure 4. In 2011 of the 40 reporting hospitals, two (5%) had CABG chest SSI rates that were statistically higher than the state average; one was significantly higher for the previous three years as well. Four hospitals (10%) had rates that were statistically lower than the state average; one was significantly lower four years in a row (2008-2011), and one was significantly lower for three years (2009-2011).

Figure 4. Coronary Artery Bypass Graft Chest Site Infection Rates, New York 2011 (page 1 of 1)

HOSPITAL	# SSI	# PROCS	RAW RATE	ADJ RATE
Albany Medical	3	354	0.8	0.8
Arnot Ogden^^	5	99	5.1	6.0
Bellevue Hospital	3	107	2.8	2.1
Beth Israel- Petrie	3	209	1.4	1.5
Buffalo General	5	357	1.4	1.5
Champlain Valley	1	97	1.0	1.2
Ellis Hospital**	0	207	0.0	0.0
Erie Medical Center	4	90	4.4	4.5
Good Samar. Suffern	3	147	2.0	2.0
Lenox Hill	6	321	1.9	1.9
Long Island Jewish	8	217	3.7	3.3
Maimonides	3	318	0.9	0.8
Mary Imogene Bassett*	0	82	0.0	0.0
Mercy Buffalo	9	446	2.0	2.4
Montefiore-Einstein	8	256	3.1	3.2
Montefiore-Moses	5	229	2.2	2.0
Mount Sinai^^	25	467	5.4	5.3
NY Med Ctr Queens*	0	113	0.0	0.0
NY Methodist	5	106	4.7	4.7
NYP- Columbia	11	618	1.8	1.7
NYP- Weill Cornell	2	314	0.6	0.7
NYU Medical Center	7	214	3.3	3.6
North Shore	14	466	3.0	3.0
Rochester General**	2	473	0.4	0.4
Southside	7	189	3.7	3.2
St Elizabeth Medical	8	277	2.9	2.8
St Francis- Roslyn	11	997	1.1	1.2
St Josephs- Syracuse	11	540	2.0	2.0
St Lukes- St Lukes	3	159	1.9	1.8
St Peters Hospital**	2	403	0.5	0.5
Staten Island U N&S	6	331	1.8	2.1
Stony Brook Univ.Hos	5	302	1.7	1.6
Strong Memorial	3	344	0.9	0.9
U Health Bing/Wilson	2	201	1.0	1.1
U Hosp SUNYDownstate	1	87	1.1	0.9
Upst. Univ.Hosp.SUNY	2	194	1.0	0.8
Vassar Brothers**	0	295	0.0	0.0
Westchester Medical	8	306	2.6	2.3
Winthrop University	11	372	3.0	3.0



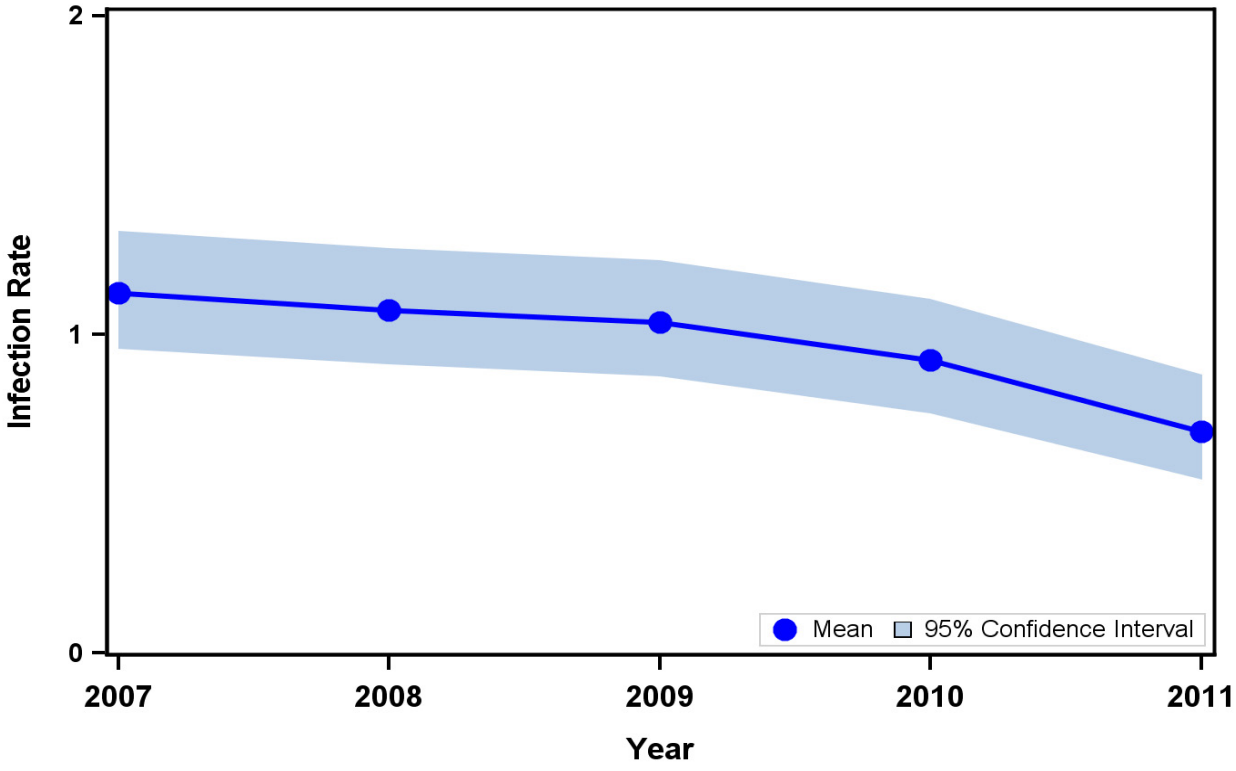
State average. ●Risk-adjusted infection rate. > Upper confidence limit exceeds graph area. ^^Significantly higher than state average. **Significantly lower than state average. Average. *Zero infections, not significant.
SSI: surgical site infections. Procs: procedures. Rates are per 100 procedures.
Data reported as of July 19, 2012. NHSN Codes CBGB and CBGC. Excludes non-readmitted cases identified using post discharge surveillance. Adjusted using diabetes, body mass index, gender, end stage renal disease, CHF, peripheral artery disease, and duration.

CABG Donor Site infections

Time Trends in CABG Donor SSIs

Between 2007 and 2011, the NYS CABG donor surgical site infection rate significantly declined 39%, from 1.1 infections per 100 procedures in 2007 to 0.7 infections per 100 procedures in 2011 (Figure 5).

Figure 5. Trend in Coronary Artery Bypass Graft Donor Site Infection Rates, New York State 2007-2011



Year	# Hospitals	# Infections	# Procedures	Infection Rate and 95% Confidence Interval
2007	40	149	13,203	1.13 (0.96, 1.32)
2008	40	139	12,905	1.08 (0.91, 1.27)
2009	40	129	12,416	1.04 (0.87, 1.23)
2010	39	105	11,430	0.92 (0.75, 1.11)
2011	40	72	10,365	0.69 (0.54, 0.87)

New York State Data reported as of July 19, 2012.
Infection rate is the number of infections divided by the number of procedures, multiplied by 100.
Due to continued auditing of the data, the 2010 infection rate reported in the previous annual report increased from 0.87 to 0.92.

Severity of CABG Donor SSIs

Of the 72 CABG Donor SSIs reported in 2011, 58 (81%) were superficial, while 14 (19%) were deep. The majority of the SSIs (74%) were detected during readmission to the same hospital, 14% were identified during the initial hospitalization, 3% involved readmission to another hospital, and 10% were detected in outpatient locations. All infections detected in outpatient locations were superficial. Detection of SSIs in outpatient locations using PDS is labor intensive, and is not standardized across hospitals; therefore, the NYSDOH did not include these nine infections (Table 7) in hospital-specific comparisons. The detection and the depth of CABG donor site SSIs is consistent with previously published NYS HAI public reports, with the exception of the decrease in SSIs identified in outpatient locations. Between 2007 and 2011, the percent of infections detected on readmission to the same hospital has increased, from 55% to 74%, while the depth of infection has not changed.

Table 7. Method of Detection for Coronary Artery Bypass Graft Donor Site Infection by Depth of Infection, New York State 2011

	When Detected				
Extent (Row%) (Column%)	**Initial Hospitalization**	**Readmitted to the Same Hospital**	**Readmitted to Another Hospital**	**Detected in Outpatient Settings**	**Total**
Superficial Incisional	7 (12.0%) (70.0%)	43 (74.1%) (81.1%)	1 (1.7%) (50.0%)	7 (12.1%) (100.0%)	58 (80.6%)
Deep Incisional	3 (21.4%) (30.0%)	10 (71.4%) (18.9%)	1 (7.1%) (50.0%)	0 (0.0%) (0.0%)	14 (19.4%)
Total	10 (13.9%)	53 (73.6%)	2 (2.8%)	7 (9.7%)	72

New York State data reported as of July 19, 2012.

Microorganisms Associated with CABG Donor SSIs

In NYS, the most common microorganisms associated with CABG Donor SSIs were *Staphylococcus aureus,* coagulase-negative staphylococci, and enterococci (Table 8). The distribution of microorganisms associated with CABG donor site SSIs are similar to previous NYS HAI public reports.

Table 8. Microorganisms Identified in Coronary Artery Bypass Donor Site Infections, New York State 2011

Microorganism	Number of Isolates	Percent of Infections
Staphylococcus aureus	17	23.6
(MSSA)	(10)	(13.9)
(MRSA)	(6)	(8.3)
Coagulase negative staphylococci	13	18.1
Enterococci	11	15.3
Pseudomonas spp.	8	11.1
Enterobacter spp.	6	8.3
Proteus spp.	6	8.3
Escherichia spp.	5	6.9
Morganella morganii	5	6.9
Other	13	18.1

New York State data reported as of July 19, 2012
Out of 72 infections (includes post-discharge surveillance).
No microorganisms identified for 16 infections
VRE: vancomycin-resistant enterococcus
MRSA: methicillin-resistant *Staphylococcus aureus*
spp: multiple species

Risk Adjustment for CABG Donor SSIs

Certain patient and procedure-specific factors increased the risk of developing a donor-site SSI following CABG surgery. In 2011, after excluding SSIs identified using PDS that did not result in hospitalization, the following risk factors were associated with SSI. These variables were used to risk-adjust hospital-specific rates:

- Very obese patients (with body mass index (BMI) greater than or equal to 40) were 3.4 times more likely to develop an SSI, and obese patients (with BMI between 30 and 39) were 2.0 times more likely to develop an SSI than patients with BMI less than 30.
- Females were 2.0 times more likely to develop an SSI than males.
- Procedures with a total duration longer than approximately 5 hours were 1.8 times more likely to result in an SSI than shorter procedures.
- Patients older than 75 were 1.8 times more likely to develop an SSI.

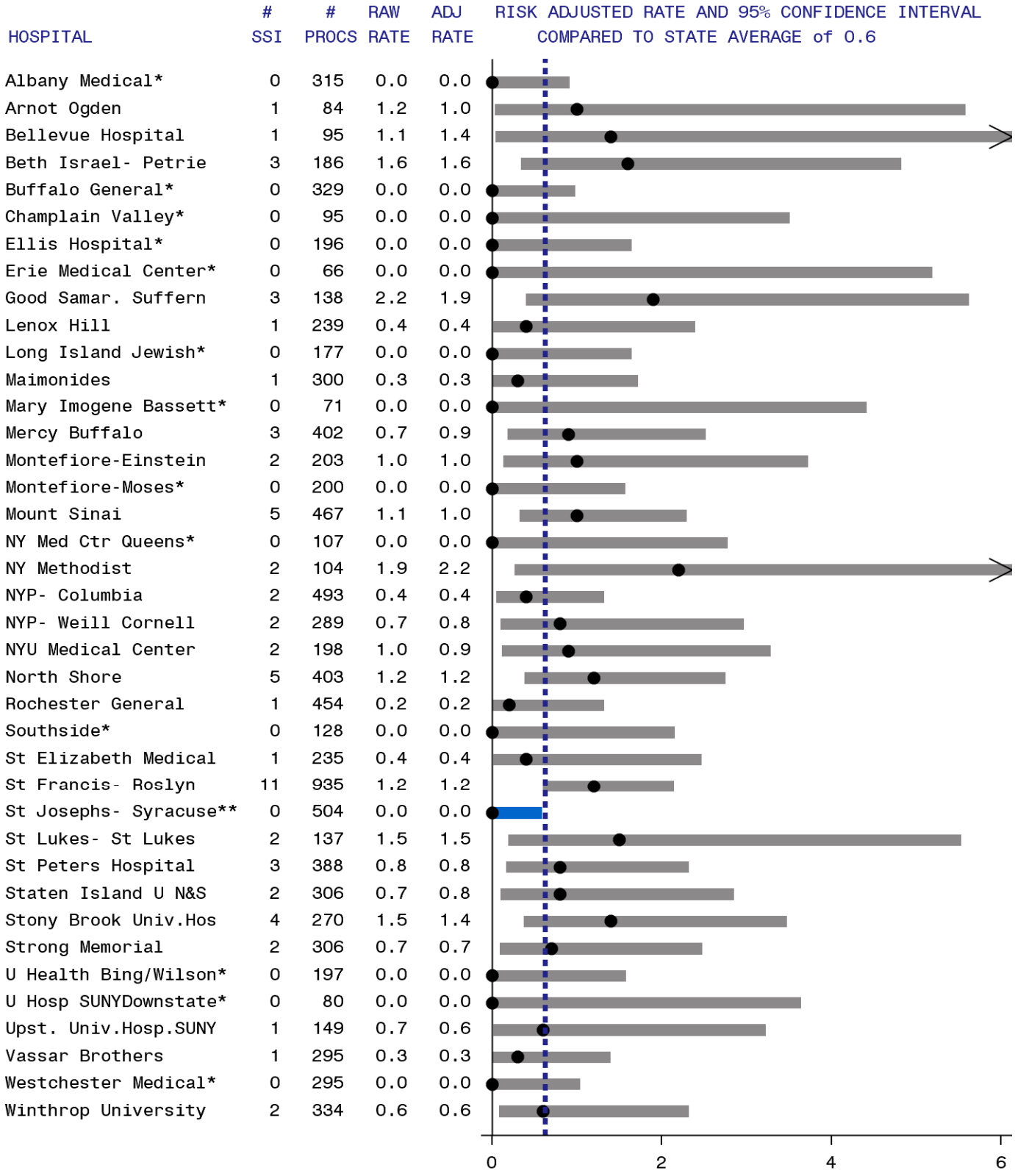
Renal failure, myocardial infarction, cerebrovascular disease, COPD, CHF, PAD, Medicaid status, intraoperative surgical site contamination, emergency/trauma surgery, use of donor vessels, hospital surgical volume, and status as a major-teaching hospital were not associated with increased risk of infection.

Hospital-Specific CABG Donor SSI rates

Risk-adjusted hospital-specific CABG donor SSI rates were calculated after deleting the seven infections that were detected using PDS and did not result in hospitalization. This changed the State CABG donor site SSI rate from 0.69% to 0.63%.

Hospital-specific CABG donor-site SSI rates are provided in Figure 6. Refer to Appendix 3, Figure 30 for more information about reading Figure 6. In 2011, of the 40 hospitals reporting, one (2.5%) had a CABG donor-site SSI rates that was statistically lower than the state average, and none had a CABG donor-site SSI rate that was statistically higher than the state average.

Figure 6. Coronary Artery Bypass Graft Donor Site Infection Rates, New York 2011 (page 1 of 1)



State average. ●Risk-adjusted infection rate. > Upper confidence limit exceeds graph area. ^^Significantly higher than state average. **Significantly lower than state average. —Average. —*Zero infections, not significant.

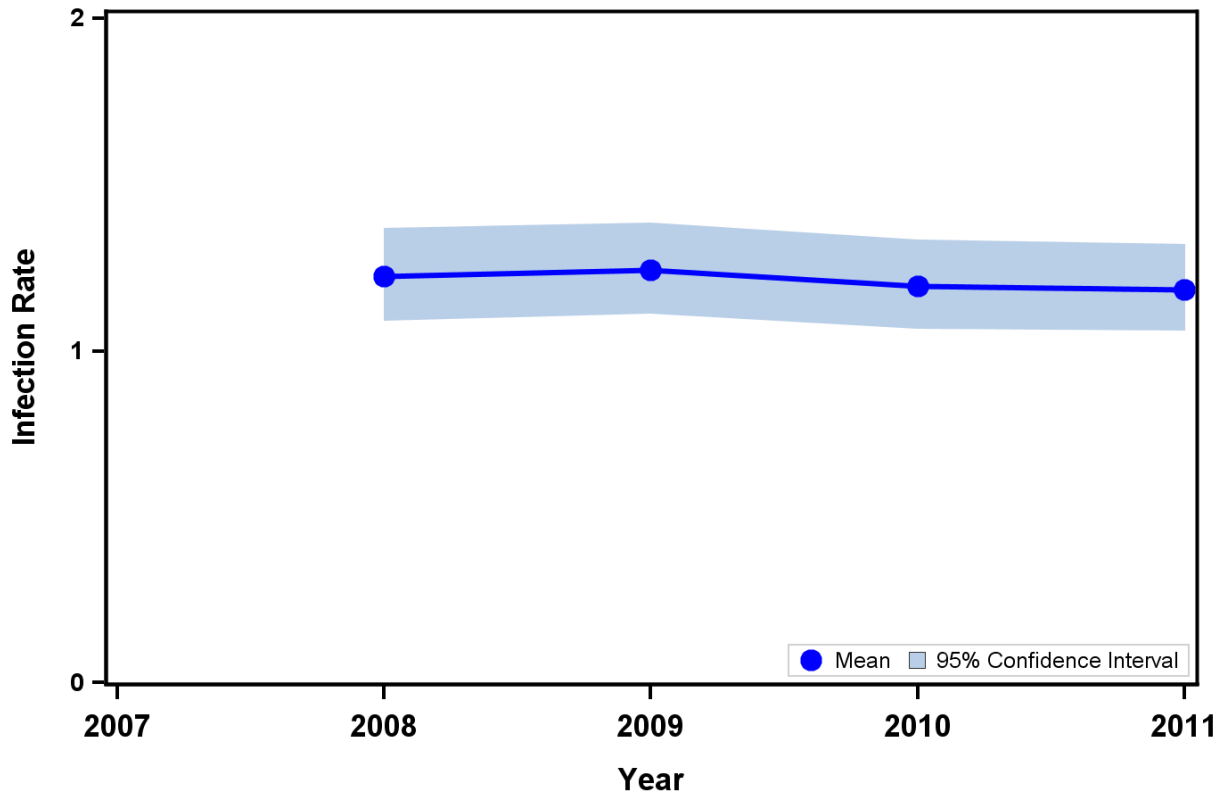
SSI: surgical site infections. Procs: procedures. Rates are per 100 procedures. Only one donor site infection per person is counted. Data Reported as of July 18, 2012. NHSN Code CBGB. Excludes non-readmitted cases identified using post discharge surveillance. Adjusted using age, body mass index, gender, and duration.

Hip Replacement/Revision Surgical Site Infections

Time Trends in Hip SSIs

In 2011, 167 hospitals reported both total and partial hip joint replacement/revision procedures. Between 2008 and 2011, there was no significant change in the NYS hip replacement/revision surgical site infection rate of 1.2 infections per 100 procedures. (Figure 7)

Figure 7. Trend in Hip Surgical Site Infection Rates, New York State 2008-2011



Year	# Hospitals	# Infections	# Procedures	Infection Rate and 95% Confidence Interval*
2008	172	298	24,357	1.22 (1.09, 1.37)
2009	169	321	25,847	1.24 (1.11, 1.38)
2010	167	314	26,287	1.19 (1.07, 1.33)
2011	167	323	27,270	1.18 (1.06, 1.32)

New York State data reported as of July 19, 2012.
Infection rate is the number of infections divided by the number of procedures, multiplied by 100.
Due to continued auditing of the data and newly identified infections occurring up to one year after the procedure, the 2010 infection rate reported in the previous annual report increased from 1.12 to 1.19.

Depth of Hip Replacement/Revision SSIs

Of the 323 hip SSI reported in 2011, 96 (30%) were superficial, 139 (43%) were deep, and 88 (27%) were organ/space. The majority of the SSIs (86%) were detected upon readmission to the same hospital, 7% were identified during the initial hospitalization, 2% involved readmission to another hospital, and 5% were detected in outpatient settings. All infections detected in outpatient locations were superficial. Detection of SSIs in outpatient locations using PDS is labor intensive, and is not standardized across hospitals; therefore, NYSDOH did not include these 17 infections (Table 9) in hospital-specific comparisons. Between 2007 and 2011, the percent of infections detected on readmission to the same hospital has steadily increased, from 77% to 86%, while the depth of infection has not changed.

Table 9. Method of Detection of Hip Surgical Site Infection by Depth of Infection, New York State 2011

	When Detected				
Extent (Row%) (Column%)	**Initial Hospitalization**	**Readmitted to the Same Hospital**	**Readmitted to Another Hospital**	**Detected in Outpatient Settings**	**Total**
Superficial Incisional	11 (11.5%) (52.4%)	67 (69.8%) (24.0%)	1 (1.0%) (16.7%)	17 (17.7%) (100.0%)	96 (29.7%)
Deep Incisional	5 (3.6%) (23.8%)	132 (95.0%) (47.3%)	2 (1.4%) (33.3%)	0 (0.0%) (0.0%)	139 (43.0%)
Organ/Space	5 (5.7%) (23.8%)	80 (90.9%) (28.7%)	3 (3.4%) (50.0%)	0 (0.0%) (0.0%)	88 (27.2%)
Total	21 (6.5%)	279 (86.4%)	6 (1.9%)	17 (5.3%)	323

New York State data reported as of July 19, 2012.

Microorganisms Associated with Hip SSIs

The most common microorganisms associated with hip SSIs were *Staphylococcus aureus,* coagulase-negative staphylococci, and enterococci (Table 10). The distribution of microorganisms associated with hip replacement SSIs are consistent with previous NYS HAI public reports

Table 10. Microorganisms Identified in Hip Replacement Surgical Site Infections, New York State 2011

Microorganism	Number of Isolates	Percent of Infections
Staphylococcus aureus	167	51.7
(MSSA)	(80)	(24.8)
(MRSA)	(79)	(24.5)
Coagulase negative staphylococci	51	15.8
Enterococci	38	11.8
(VRE)	(11)	(3.4)
Pseudomonas spp.	29	9.0
Escherichia spp.	21	6.5
Enterobacter spp.	14	4.3
Proteus spp.	14	4.3
Streptococci	11	3.4
Klebsiella spp.	9	2.8
Acinetobacter spp.	7	2.2
Morganella morganii	5	1.5
Other	17	5.3

New York State data reported as of July 19, 2012
Out of 323 infections (includes post-discharge surveillance).
No microorganisms identified for 30 infections
VRE: vancomycin-resistant enterococcus
MRSA: methicillin-resistant *Staphylococcus aureus*
MSSA: methicillin-susceptible *Staphylococcus aureus*
spp: multiple species

Risk Adjustment for Hip Surgical Site Infections

Certain patient and procedure-specific factors increased the risk of developing an SSI following hip surgery. Patient age, hospital surgical volume, and hospital teaching status were not significantly associated with increased risk of infection. In 2011, after excluding SSIs identified using PDS that did not result in hospitalization, the following risk factors were associated with SSIs. These variables were used to risk-adjust hospital-specific rates.

- Patients with an ASA score of 3, 4, or 5 were 2.6 times more likely to develop an SSI than patients with an ASA score of 1 or 2.
- The risk of SSI varied by type of hip procedure. Compared to total primary hip replacement procedures, partial revisions were 4.0 times more likely to result in an SSI, total revisions were 2.8 times more likely to result in an SSI, and partial primary were 1.2 times more likely to result in an SSI.
- Procedures with duration longer than 99-168 minutes (by type of hip procedure) were 1.9 times more likely to result in an SSI than procedures of shorter duration.
- Procedures that were the result of a broken hip bone/joint or other traumatic injury to the patient were 1.1 times more likely to result in an SSI than elective surgeries.

Hospital-Specific Hip SSI Rates

Risk-adjusted hospital-specific hip SSI rates were calculated after deleting the 17 infections that were detected using PDS and did not result in hospitalization. This changed the NYS hip replacement/revision SSI rate from 1.18% to 1.12%. Hospital-specific hip SSI rates are provided in Figure 8. Refer to Appendix 3, Figure 30 for more information about reading Figure 8. In 2011, three hospitals (2%) had hip SSI rates that were statistically higher than the state average. Two hospitals (1%) had SSI rates that were significantly lower than the state average; one of these was significantly lower in all of the past four years (2008-2011).

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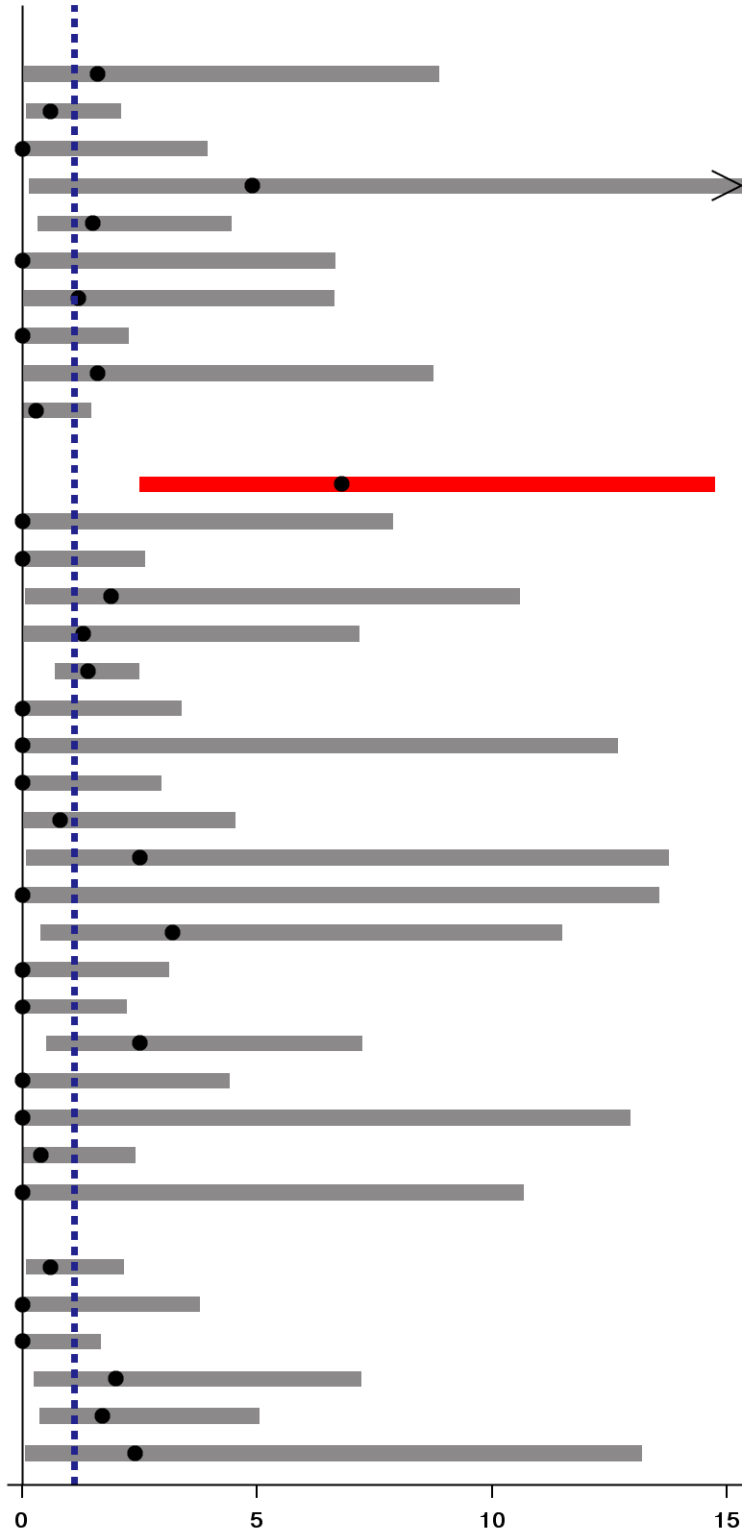
Figure 8. Hip Replacement Surgical Site Infection Rates, New York 2011 (page 1 of 5)

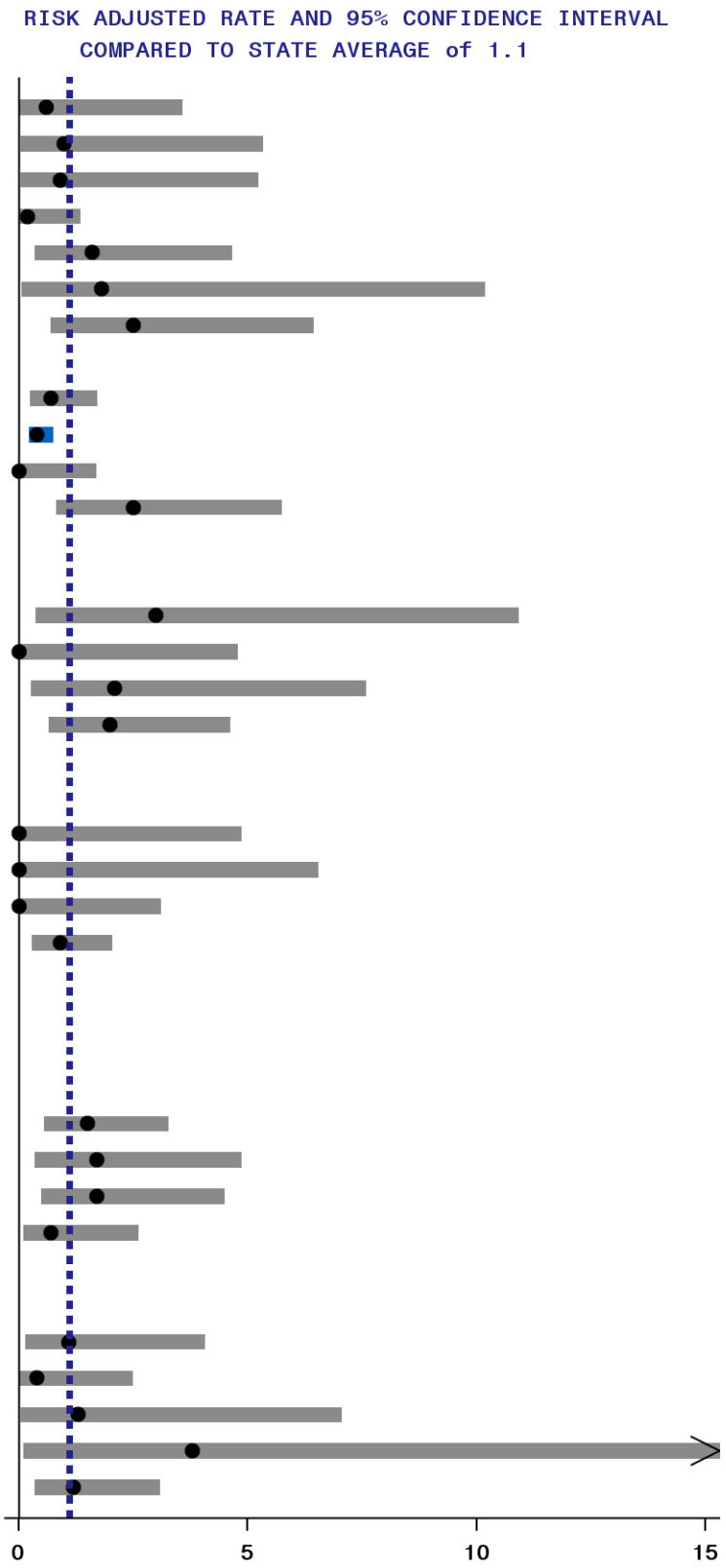
HOSPITAL	# SSI	# PROCS	RAW RATE	ADJ RATE
AO Fox Memorial	NA	NA	NA	NA
Adirondack Medical	1	49	2.0	1.6
Albany Medical	2	302	0.7	0.6
Albany Memorial*	0	71	0.0	0.0
Alice Hyde	1	24	4.2	4.9
Arnot Ogden	3	184	1.6	1.5
Auburn Memorial*	0	39	0.0	0.0
Bellevue Hospital	1	66	1.5	1.2
Benedictine Hospital*	0	130	0.0	0.0
Beth Israel- Kings	1	55	1.8	1.6
Beth Israel- Petrie	1	414	0.2	0.3
Bon Secours	NA	NA	NA	NA
Bronx-Lebanon^^	6	65	9.2	6.8
Brookdale Hospital*	0	27	0.0	0.0
Brookhaven Memorial*	0	91	0.0	0.0
Brooklyn Hospital	1	33	3.0	1.9
Brooks Memorial	1	93	1.1	1.3
Buffalo General	11	699	1.6	1.4
Canton-Potsdam*	0	69	0.0	0.0
Catskill Regional*	0	22	0.0	0.0
Cayuga Medical Cntr*	0	104	0.0	0.0
Champlain Valley	1	112	0.9	0.8
Chenango Memorial	1	41	2.4	2.5
Claxton-Hepburn*	0	21	0.0	0.0
Clifton Springs	2	86	2.3	3.2
Columbia Memorial*	0	80	0.0	0.0
Community Memorial*	0	194	0.0	0.0
Coney Island	3	76	3.9	2.5
Corning Hospital*	0	44	0.0	0.0
Cortland Reg Med*	0	27	0.0	0.0
Crouse Hospital	1	264	0.4	0.4
DeGraff Memorial*	0	30	0.0	0.0
Eastern Long Island	NA	NA	NA	NA
Ellis Hospital	2	260	0.8	0.6
Elmhurst*	0	54	0.0	0.0
Erie Medical Center*	0	154	0.0	0.0
FF Thompson	2	136	1.5	2.0
Faxton St. Lukes	3	124	2.4	1.7
Flushing Hospital	1	37	2.7	2.4



State average. ●Risk-adjusted infection rate. > Upper confidence limit exceeds graph area. ^^Significantly higher than state average. **Significantly lower than state average. Average. *Zero infections, not significant. NA: Hospitals with less than 20 procedures.
SSI: surgical site infections. Procs: procedures. Rates are per 100 procedures.
Data reported as of July 19, 2012. Excludes non-readmitted cases identified using post discharge surveillance.
Adjusted using ASA score, procedure type (initial/revision, total/partial), duration, and trauma.

Figure 8. Hip Replacement Surgical Site Infection Rates, New York 2011 (page 2 of 5)

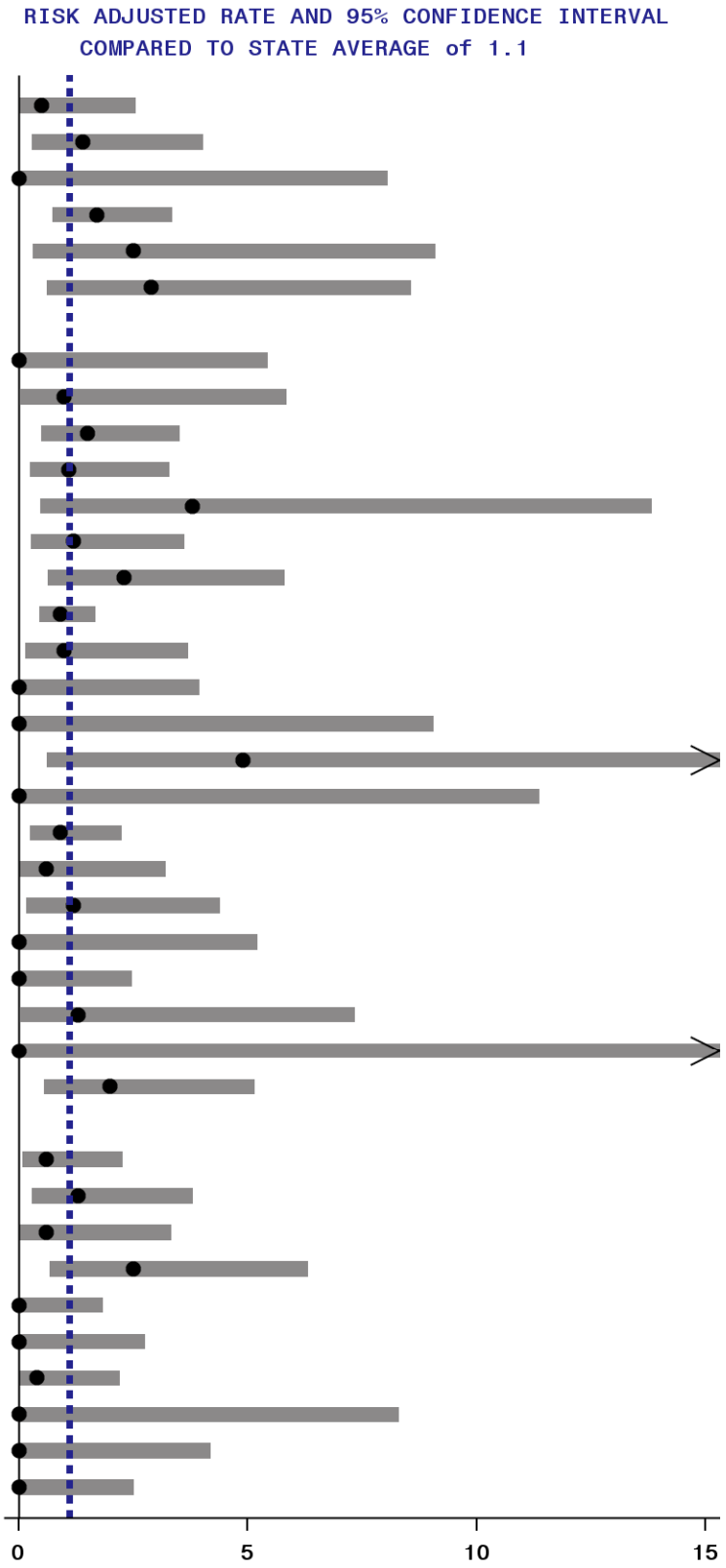
HOSPITAL	# SSI	# PROCS	RAW RATE	ADJ RATE
Forest Hills Hosp	1	120	0.8	0.6
Franklin	1	95	1.1	1.0
Geneva General	1	85	1.2	0.9
Glen Cove Hospital	1	486	0.2	0.2
Glens Falls	3	181	1.7	1.6
Good Samar. Suffern	1	68	1.5	1.8
Good Samar. W Islip	4	117	3.4	2.5
Harlem Hospital	NA	NA	NA	NA
Highland Hospital	5	766	0.7	0.7
Hosp for Spec Surg**	11	4068	0.3	0.4
Hudson Valley*	0	120	0.0	0.0
Huntington	5	214	2.3	2.5
Intercomm. Newfane	NA	NA	NA	NA
Interfaith Medical	NA	NA	NA	NA
JT Mather	2	68	2.9	3.0
Jacobi Medical*	0	47	0.0	0.0
Jamaica Hospital	2	51	3.9	2.1
Kenmore Mercy	5	383	1.3	2.0
Kings County	NA	NA	NA	NA
Kingsbrook Jewish	NA	NA	NA	NA
Kingston Hospital*	0	53	0.0	0.0
Lakeside Memorial*	0	45	0.0	0.0
Lawrence*	0	98	0.0	0.0
Lenox Hill	5	596	0.8	0.9
Lewis County	NA	NA	NA	NA
Lincoln Medical	NA	NA	NA	NA
Lockport Memorial	NA	NA	NA	NA
Long Beach	NA	NA	NA	NA
Long Island Jewish	6	284	2.1	1.5
Lutheran Medical	3	152	2.0	1.7
Maimonides	4	152	2.6	1.7
Mary Imogene Bassett	2	217	0.9	0.7
Massena Memorial	NA	NA	NA	NA
Medina Memorial	NA	NA	NA	NA
Mem. Sloan Kettering	2	89	2.2	1.1
Mercy Buffalo	1	179	0.6	0.4
Mercy Medical	1	107	0.9	1.3
Metropolitan	1	24	4.2	3.8
Millard Fill. Suburb	4	354	1.1	1.2



State average. ●Risk-adjusted infection rate. > Upper confidence limit exceeds graph area. ^^Significantly higher than state average. **Significantly lower than state average. —Average. *Zero infections, not significant. NA: Hospitals with less than 20 procedures.
SSI: surgical site infections. Procs: procedures. Rates are per 100 procedures.
Data reported as of July 19, 2012. Excludes non-readmitted cases identified using post discharge surveillance.
Adjusted using ASA score, procedure type (initial/revision, total/partial), duration, and trauma.

Figure 8. Hip Replacement Surgical Site Infection Rates, New York 2011 (page 3 of 5)

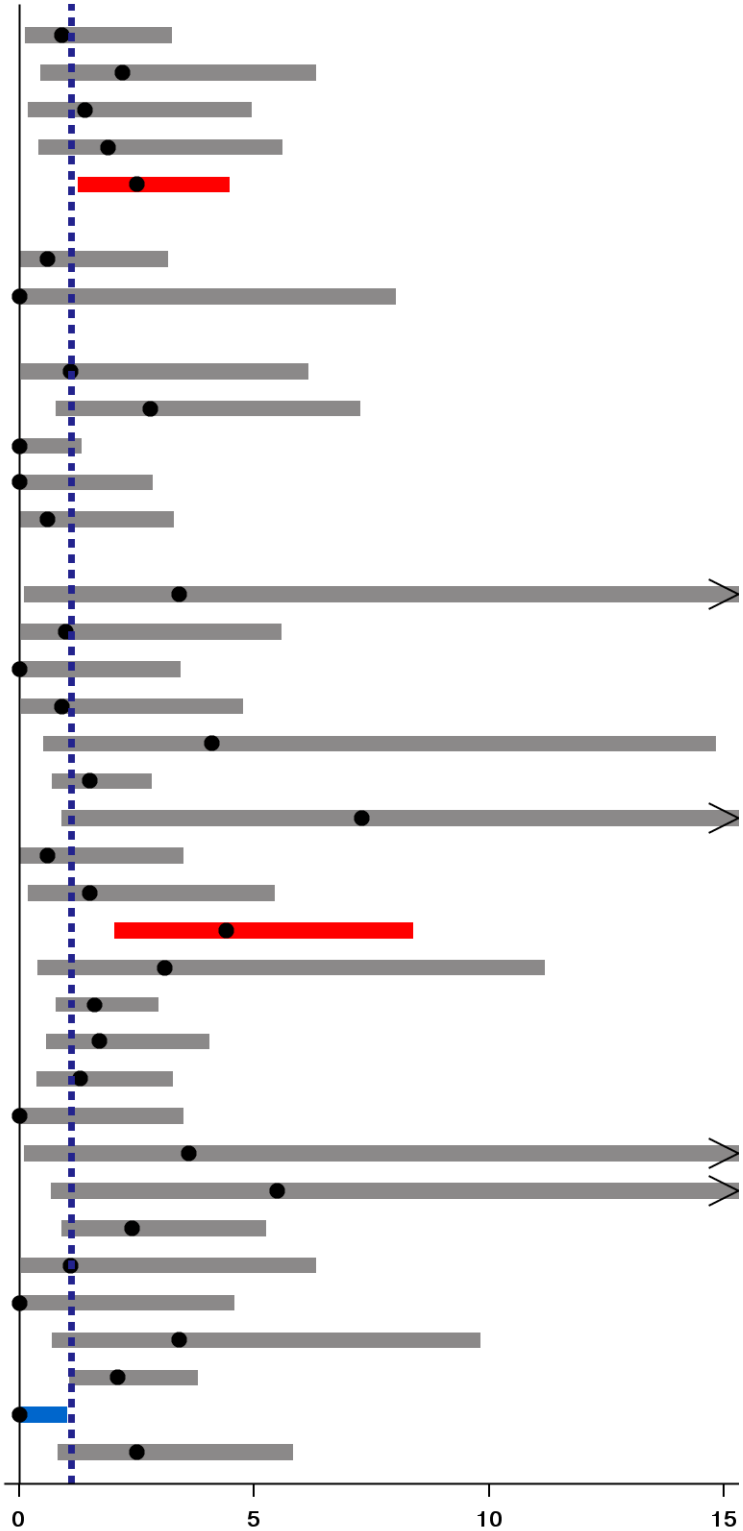
HOSPITAL	# SSI	# PROCS	RAW RATE	ADJ RATE
Montefiore-Einstein	1	181	0.6	0.5
Montefiore-Moses	3	149	2.0	1.4
Montifiore North*	0	31	0.0	0.0
Mount Sinai	8	319	2.5	1.7
Mount Sinai Queens	2	61	3.3	2.5
Mount St. Marys	3	91	3.3	2.9
Mount Vernon	NA	NA	NA	NA
NY Community Bklyn*	0	48	0.0	0.0
NY Downtown	1	58	1.7	1.0
NY Med Ctr Queens	5	265	1.9	1.5
NY Methodist	3	169	1.8	1.1
NYP- Allen	2	41	4.9	3.8
NYP- Columbia	3	272	1.1	1.2
NYP- Weill Cornell	4	112	3.6	2.3
NYU Joint Disease	10	1117	0.9	0.9
NYU Medical Center	2	108	1.9	1.0
Nassau University*	0	60	0.0	0.0
Nathan Littauer*	0	32	0.0	0.0
Newark Wayne	2	57	3.5	4.9
Niagara Falls*	0	24	0.0	0.0
North Shore	4	377	1.1	0.9
Northern Dutchess	1	200	0.5	0.6
Northern Westchester	2	188	1.1	1.2
Noyes Memorial*	0	59	0.0	0.0
Nyack Hospital*	0	121	0.0	0.0
Olean General	1	66	1.5	1.3
Oneida Healthcare*	0	26	0.0	0.0
OrangeReg Goshen&Mid	4	203	2.0	2.0
Oswego Hospital	NA	NA	NA	NA
Our Lady of Lourdes	2	261	0.8	0.6
Peconic Bay Medical	3	211	1.4	1.3
Phelps Memorial	1	229	0.4	0.6
Plainview Hospital	4	137	2.9	2.5
Putnam Hospital*	0	213	0.0	0.0
Richmond Univ*	0	91	0.0	0.0
Rochester General	1	368	0.3	0.4
Rome Memorial*	0	34	0.0	0.0
Samaritan- Troy*	0	58	0.0	0.0
Samaritan- Watertown*	0	122	0.0	0.0



State average. ●Risk-adjusted infection rate. > Upper confidence limit exceeds graph area. ^^Significantly higher than state average. **Significantly lower than state average. —Average. *Zero infections, not significant. NA: Hospitals with less than 20 procedures.
SSI: surgical site infections. Procs: procedures. Rates are per 100 procedures.
Data reported as of July 19, 2012. Excludes non-readmitted cases identified using post discharge surveillance.
Adjusted using ASA score, procedure type (initial/revision, total/partial), duration, and trauma.

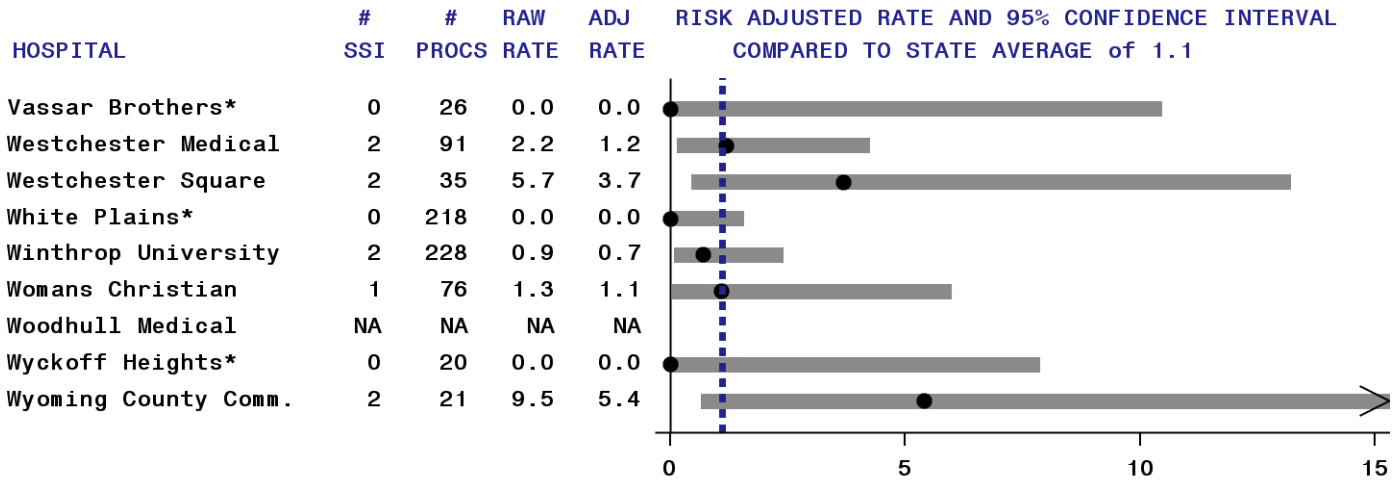
Figure 8. Hip Replacement Surgical Site Infection Rates, New York 2011 (page 4 of 5)

HOSPITAL	# SSI	# PROCS	RAW RATE	ADJ RATE
Saratoga Hospital	2	239	0.8	0.9
Seton Health	3	94	3.2	2.2
Sisters of Charity	2	170	1.2	1.4
Sound Shore Medical	3	144	2.1	1.9
South Nassau Comm.^^	11	342	3.2	2.5
Southampton	NA	NA	NA	NA
Southside	1	160	0.6	0.6
St Anthony*	0	31	0.0	0.0
St Barnabas	NA	NA	NA	NA
St Catherine Siena	1	84	1.2	1.1
St Charles Hospital	4	182	2.2	2.8
St Elizabeth Medical*	0	222	0.0	0.0
St Francis- Pough.*	0	119	0.0	0.0
St Francis- Roslyn	1	138	0.7	0.6
St James Mercy	NA	NA	NA	NA
St Johns Episcopal	1	21	4.8	3.4
St Johns Riverside	1	80	1.3	1.0
St Joseph -Bethpage*	0	96	0.0	0.0
St Joseph Cheektow.	1	138	0.7	0.9
St Josephs- Elmira	2	37	5.4	4.1
St Josephs- Syracuse	9	668	1.3	1.5
St Josephs- Yonkers	2	21	9.5	7.3
St Lukes- Roosevelt	1	127	0.8	0.6
St Lukes- St Lukes	2	134	1.5	1.5
St LukesNewburgh&Cor^^	9	151	6.0	4.4
St Marys Amsterdam	2	87	2.3	3.1
St Peters Hospital	10	842	1.2	1.6
Staten Island U N&S	5	224	2.2	1.7
Stony Brook Univ.Hos	4	261	1.5	1.3
Strong Memorial*	0	61	0.0	0.0
Syosset Hospital	1	26	3.8	3.6
TLC Lake Shore	2	47	4.3	5.5
U Health Bing/Wilson	6	262	2.3	2.4
U Hosp Brooklyn LICH	1	61	1.6	1.1
U Hosp SUNYDownstate*	0	55	0.0	0.0
United Memorial	3	85	3.5	3.4
Unity Hosp Rochester	11	638	1.7	2.1
Upst. Community Gen**	0	408	0.0	0.0
Upst. Univ.Hosp.SUNY	5	157	3.2	2.5



State average. ●Risk-adjusted infection rate. > Upper confidence limit exceeds graph area. ^^Significantly higher than state average. **Significantly lower than state average. —Average. *Zero infections, not significant. NA: Hospitals with less than 20 procedures.
SSI: surgical site infections. Procs: procedures. Rates are per 100 procedures.
Data reported as of July 19, 2012. Excludes non-readmitted cases identified using post discharge surveillance.
Adjusted using ASA score, procedure type (initial/revision, total/partial), duration, and trauma.

Figure 8. Hip Replacement Surgical Site Infection Rates, New York 2011 (page 5 of 5)



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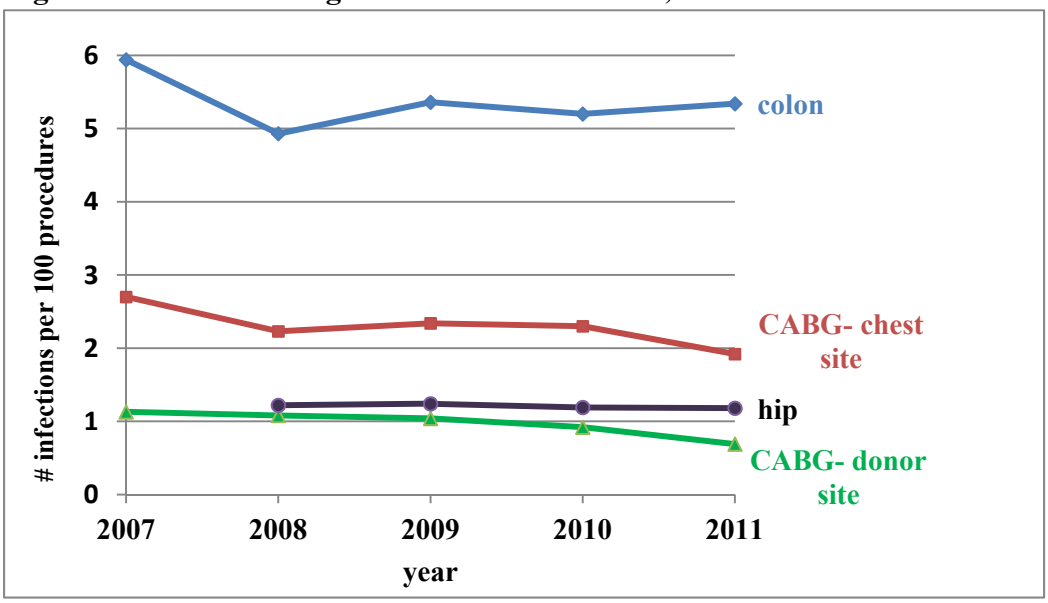
Data reported as of July 19, 2012. Excludes non-readmitted cases identified using post discharge surveillance.
Adjusted using ASA score, procedure type (initial/revision, total/partial), duration, and trauma.

Summary of Trends in SSI Rates

Combining the trend data shown on the previous pages into one graph (Figure 9) shows that colon SSIs rates are higher than SSI rates at other body sites.

Figure 9. Trends in Surgical Site Infection Rates, New York State 2007-2011



Colon, CABG, and hip replacement SSI data were combined into one indicator, the Standardized Infection Ratio (SIR), to summarize the overall improvement in SSI rates across procedure types over time. Since the start of HAI surveillance in NYS, there has been a 13% reduction in SSIs (Table 11). This reduction occurred primarily between 2007 and 2008. As described in the earlier sections of this report, most of the reduction occurred for CABG chest and donor site SSIs.

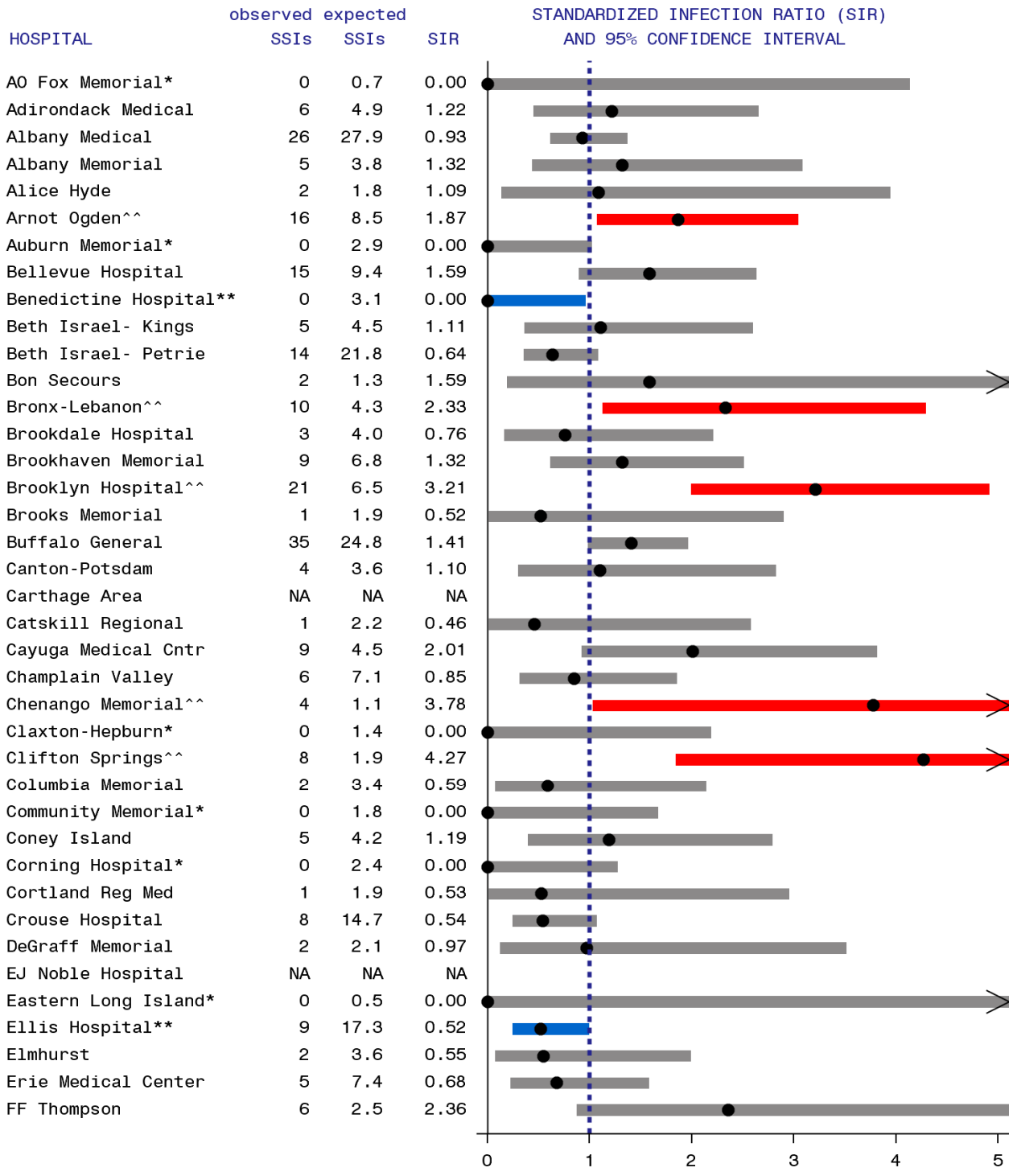
Table 11. Summary of Trend in all NYS SSI Data

	Summary of all SSI data			
Year	# observed infections	# expected infections based on NYS Baseline	Standardized Incidence Ratio (95% CI)	Interpretation
2007	1600	N/A	1.0	NYS Baseline
2008	1640	1891.2	0.87 (0.83, 0.91)	13% reduction since 2007
2009	1698	1827.7	0.93 (0.89, 0.97)	7% reduction since 2007
2010	1582	1762.4	0.90 (0.85, 0.94)	10% reduction since 2007
2011	1484	1710.9	0.87 (0.82, 0.91)	13% reduction since 2007

Includes colon and CABG (chest and donor site) SSI since 2007, and hip SSI since 2008. Adjusted for patient risk factors. Data as of July 19, 2012.

Figure 10 provides hospital-specific SSI SIRs for each hospital. Since the SSI SIRs combine results across the four different types of SSIs, it shows the average performance of each hospital for SSIs. In three cases, hospitals that received no individual area performance flag were significantly lower than the state average overall; combining data results in narrower confidence intervals, so hospitals that perform slightly better in many areas may look significantly better than the state average overall. On the other hand, nine hospitals that received a performance flag for one type of procedure had average SIRs; combining data can smooth away unusual performance in one area.

Figure 10. Surgical Site Infection (SSI) Summary for Colon, Coronary Artery, and Hip Procedures Standardized Infection Ratio (SIR), New York 2011 (page 1 of 5)



State average. ●SIR. > Upper confidence limit exceeds graph area. —^^Significantly higher than state average. —**Significantly lower than state average. —Average. —*Zero Infections,not significant. NA: Hospitals with < 20 procedures.
Data reported as of July 19, 2012. Expected based on NYS 2011 average, adjusting for patient risk factors.
Excludes non-readmitted cases identified using post discharge surveillance.

Figure 10. Surgical Site Infection (SSI) Summary for Colon, Coronary Artery, and Hip Procedures Standardized Infection Ratio (SIR), New York 2011 (page 2 of 5)

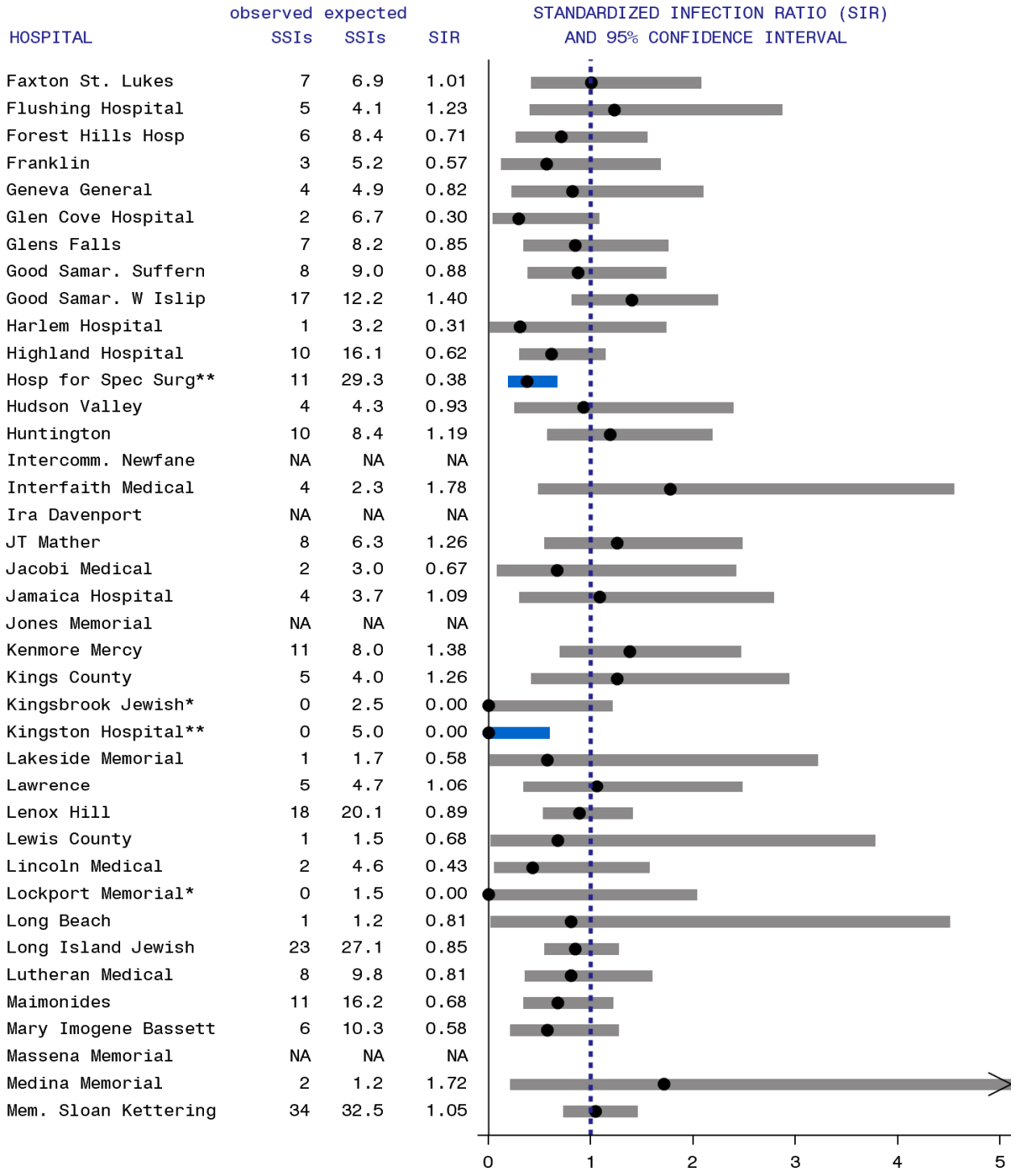


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Figure 10. Surgical Site Infection (SSI) Summary for Colon, Coronary Artery, and Hip Procedures Standardized Infection Ratio (SIR), New York 2011 (page 3 of 5)

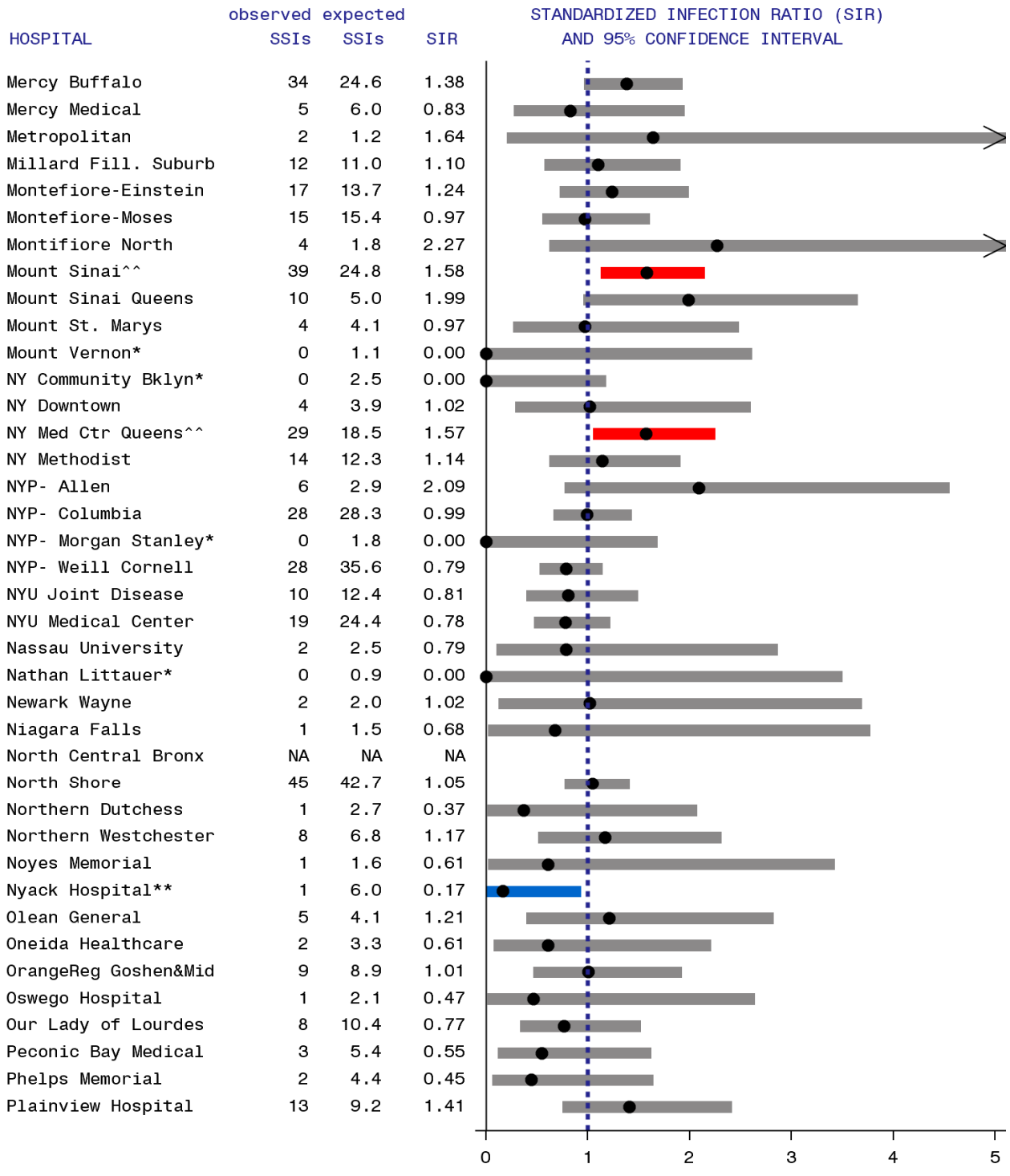

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Figure 10. Surgical Site Infection (SSI) Summary for Colon, Coronary Artery, and Hip Procedures Standardized Infection Ratio (SIR), New York 2011 (page 4 of 5)

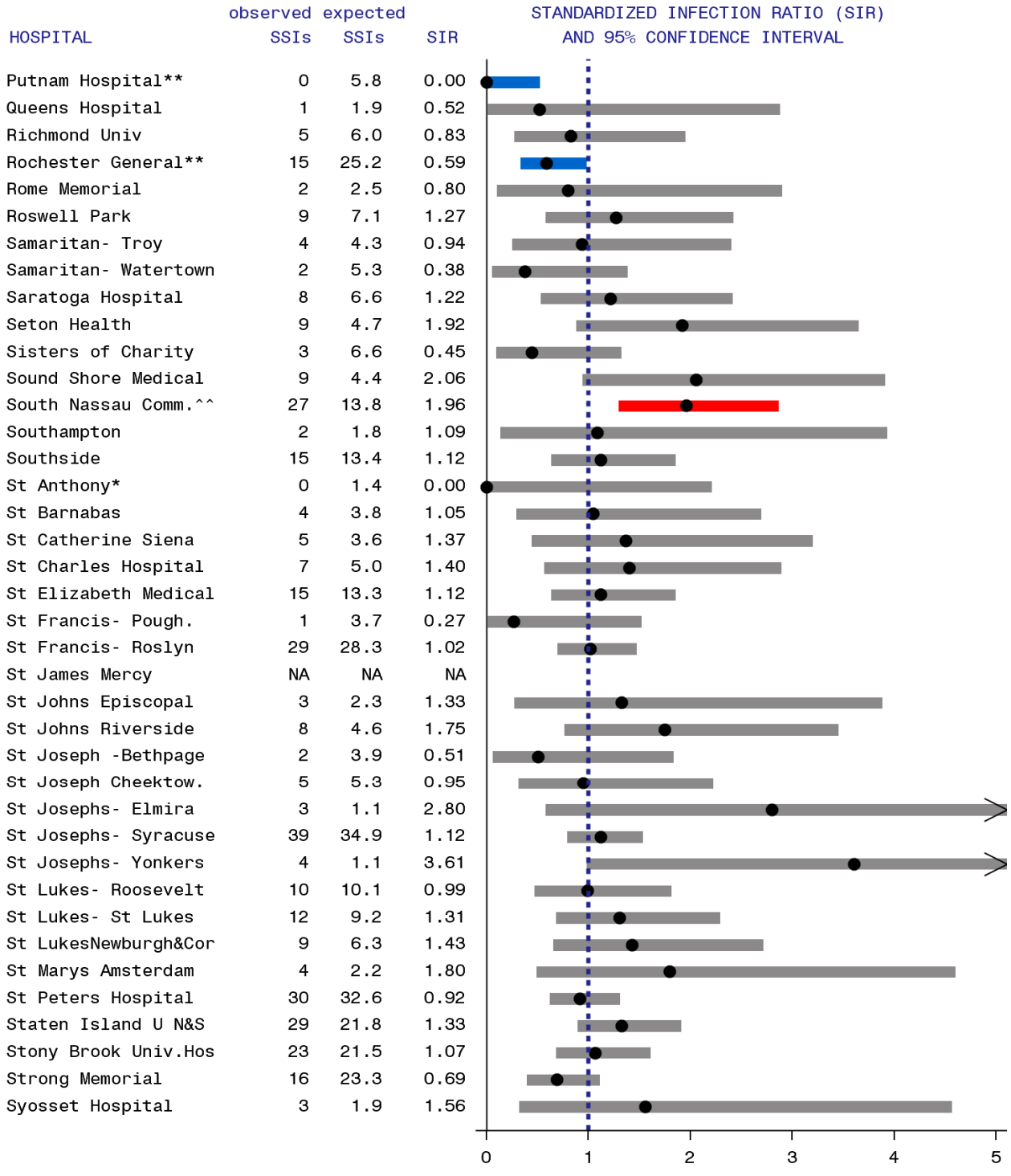

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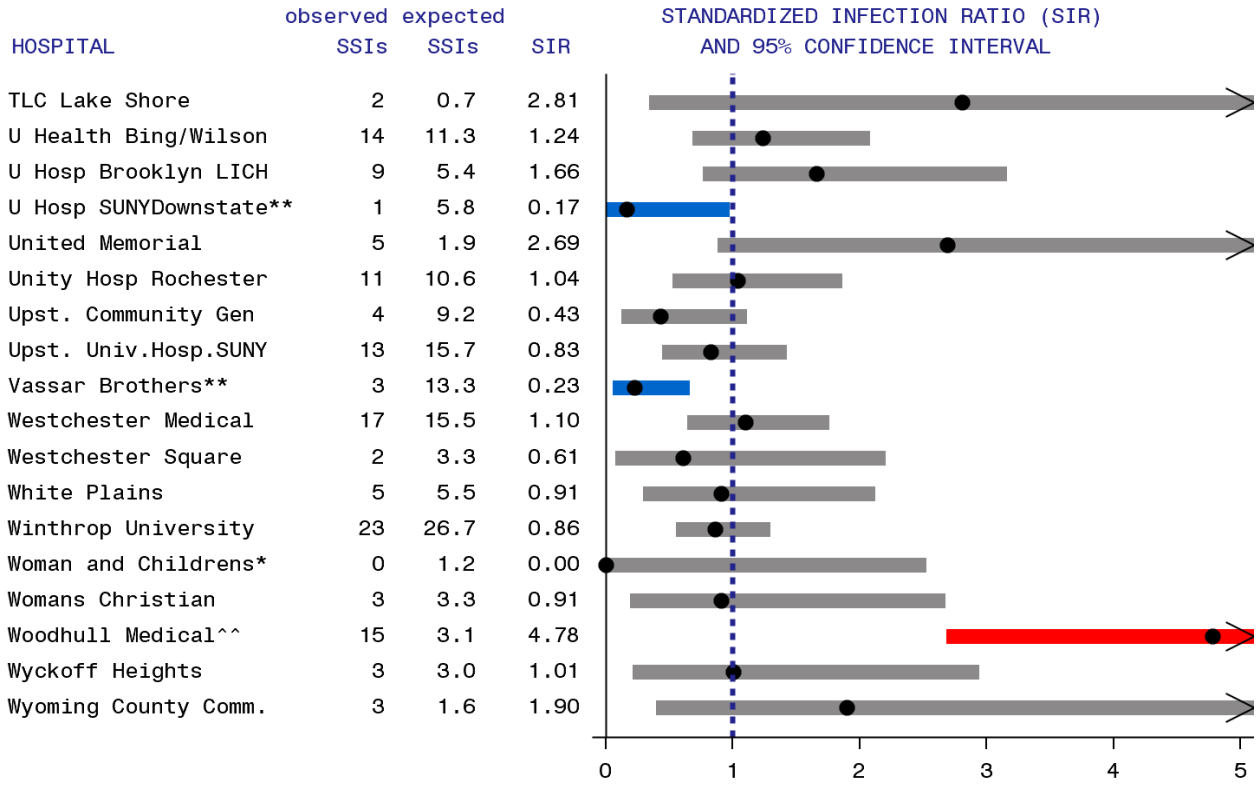
Figure 10. Surgical Site Infection (SSI) Summary for Colon, Coronary Artery, and Hip Procedures Standardized Infection Ratio (SIR), New York 2011 (page 5 of 5)



HOSPITAL	observed SSIs	expected SSIs	SIR
TLC Lake Shore	2	0.7	2.81
U Health Bing/Wilson	14	11.3	1.24
U Hosp Brooklyn LICH	9	5.4	1.66
U Hosp SUNYDownstate**	1	5.8	0.17
United Memorial	5	1.9	2.69
Unity Hosp Rochester	11	10.6	1.04
Upst. Community Gen	4	9.2	0.43
Upst. Univ.Hosp.SUNY	13	15.7	0.83
Vassar Brothers**	3	13.3	0.23
Westchester Medical	17	15.5	1.10
Westchester Square	2	3.3	0.61
White Plains	5	5.5	0.91
Winthrop University	23	26.7	0.86
Woman and Childrens*	0	1.2	0.00
Womans Christian	3	3.3	0.91
Woodhull Medical^^	15	3.1	4.78
Wyckoff Heights	3	3.0	1.01
Wyoming County Comm.	3	1.6	1.90

State average. ●SIR. > Upper confidence limit exceeds graph area. —^^Significantly higher than state average. —**Significantly lower than state average. —Average. —*Zero Infections,not significant. NA: Hospitals with < 20 procedures.
Data reported as of July 19, 2012. Expected based on NYS 2011 average, adjusting for patient risk factors.
Excludes non-readmitted cases identified using post discharge surveillance.

Central Line-Associated Blood Stream Infections (CLABSIs)

A central line (CL) is a tube that is placed into a large vein, usually in the neck, chest, arm or groin that is used to give fluids and medications, withdraw blood, and monitor the patient's condition. A CL is different than a standard intravenous line because it goes farther into the body, terminating near the heart, and because it may be used for weeks or even months. In newborns, a CL is sometimes initially inserted into the umbilical cord or may also be inserted in another large vein. A bloodstream infection can occur when microorganisms (e.g., bacteria, fungi) travel around or through the tube, attach and multiply on the tubing or in fluid administered through the tubing, and then enter the blood.

CLABSIs are not monitored throughout the hospital, but rather, in selected intensive care units (ICUs). ICUs are hospital units that provide intensive observation and treatment for patients either suffering from, or at risk of developing life threatening problems. ICUs are described by the types of patients in the unit. In 2011, 173 hospitals reported CLABSIs from one to several types of ICUs as follows:

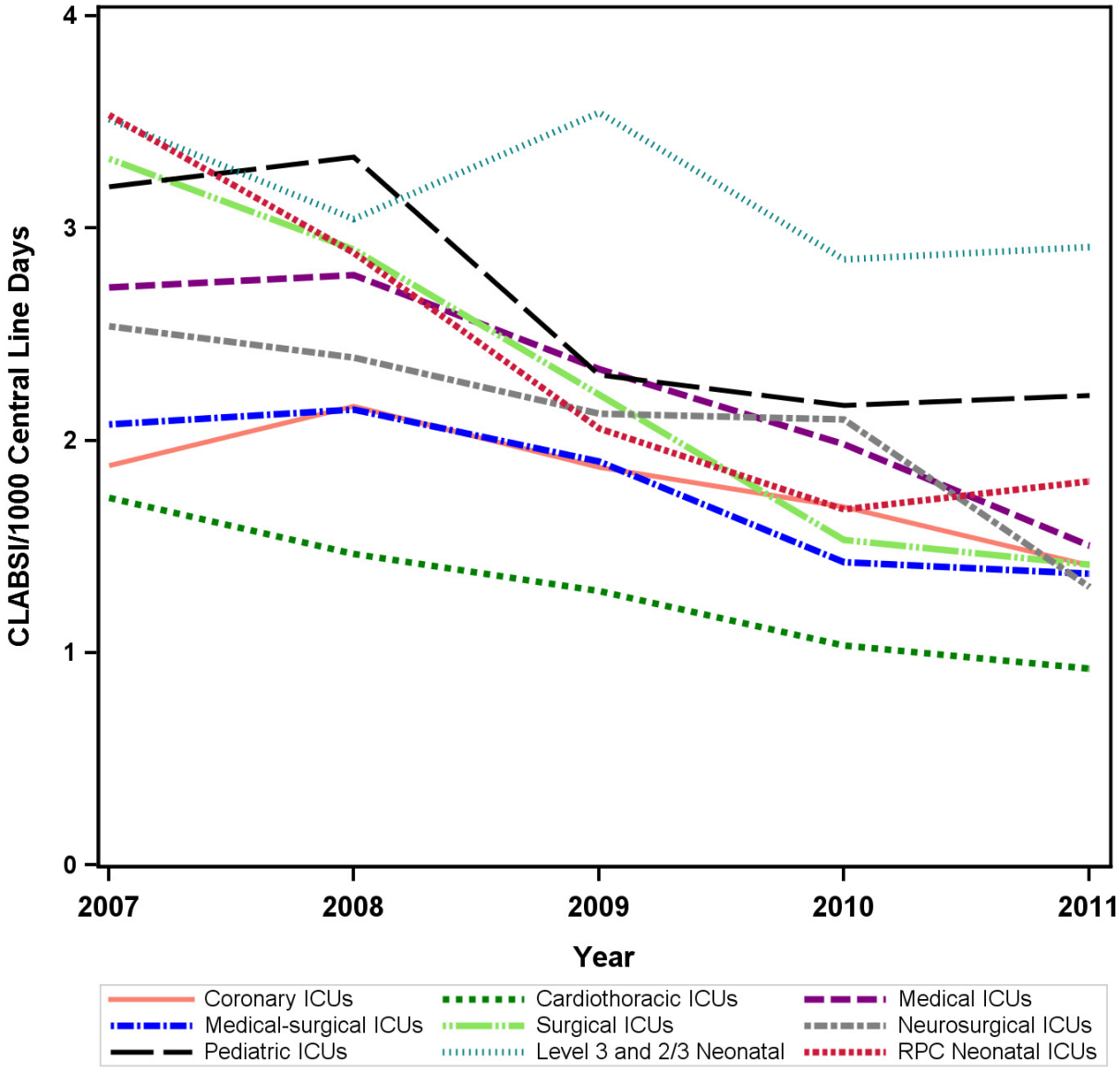
- Cardiothoracic Surgery (33 ICUs)
- Coronary (45)
- Medical (48)
- Medical-surgical (123)
- Neurosurgical (14)
- Pediatric (32)
- Surgical (40)
- Neonatal (53)

Newborns may need different levels of intensive care and are placed in one of three designated NICU types: Regional Perinatal Center (RPC, 18 hospitals), Level III (23 hospitals) or combined Level II/III (12 hospitals). Each hospital has only one type of designated NICU. Data on CLABSIs and UCABSIs (umbilical catheter-associated blood stream infection) are collected from all NICUs. The combined CLABSI plus UCABSI rate is called a CLABSI rate in this report, and is grouped by one of the three NICU types.

Time Trends for Intensive Care Unit CLABSIs

In 2011, 944 CLABSIs were reported from medical, surgical, medical/surgical, coronary, cardiothoracic, neurosurgical, pediatric, and neonatal ICUs. Time trends in CLABSI rates are summarized in Figure 11 and Table 12. Significant decreases occurred in all types of ICUs except Level 3 and Level 2/3 NICUs.

Figure 11. Trend in Central Line-Associated Blood Stream Infection Rates in Intensive Care Units, New York State 2007-2011



New York State data reported as of July 26, 2012.

Table 12. Central Line Associated Blood Stream Infection Data Summary, New York State 2007-2011

	Coronary ICU				Cardiothoracic ICU				Neurosurgical ICU				Pediatric ICU			
Year	# Hosp	# CLABSI	# CLDays	Rate	# Hosp	# CLABSI	# CLDays	Rate	# Hosp	# CLABSI	# CLDays	Rate	# Hosp	# CLABSI	# CLDays	Rate
2007	45	74	39,344	1.88	30	109	62,962	1.73	13	37	14,580	2.54	30	90	28,173	3.19
2008	47	110	50,858	2.16	32	108	73,679	1.47	15	42	17,577	2.39	30	99	29,698	3.33
2009	46	95	50,707	1.87	33	97	75,195	1.29	15	40	18,798	2.13	30	71	30,738	2.31
2010	45	85	50,327	1.69	32	77	74,555	1.03	14	39	18,577	2.10	31	65	30,001	2.17
2011	45	71	50,236	1.41	33	68	73,359	0.93	14	26	19,847	1.31	32	70	31,630	2.21

	Medical ICU				Medical Surgical Teaching ICU				Medical Surgical Non-Teach. ICU				Surgical ICU			
Year	# Hosp	# CLABSI	# CLDays	Rate	# Hosp	# CLABSI	# CLDays	Rate	# Hosp	# CLABSI	# CLDays	Rate	# Hosp	# CLABSI	# CLDays	Rate
2007	42	191	70,157	2.72	18	100	47,447	2.11	121	339	164,104	2.07	37	221	66,400	3.33
2008	43	244	87,785	2.78	17	117	48,030	2.44	117	360	174,136	2.07	37	219	75,544	2.90
2009	47	231	98,917	2.34	16	68	40,755	1.67	113	319	162,628	1.96	40	171	77,169	2.22
2010	46	194	97,888	1.98	15	31	34,051	0.91	110	239	155,205	1.54	40	123	80,350	1.53
2011	48	160	106,306	1.51	15	47	33,332	1.41	108	201	147,171	1.37	40	116	81,917	1.42

	Level II III NICU				Level III NICU				Regional Perinatal Center NICU			
Year	# Hosp	# CLABSI	# CLDays	Rate	# Hosp	# CLABSI	# CLDays	Rate	# Hosp	# CLABSI	# CLDays	Rate
2007	13	32	5,958	5.37	21	30	11,678	2.57	18	216	61,096	3.54
2008	14	50	10,386	4.81	22	33	16,892	1.95	18	175	60,670	2.88
2009	14	39	10,122	3.85	22	60	17,801	3.37	18	136	66,152	2.06
2010	12	28	7,423	3.77	23	50	19,916	2.51	18	110	65,614	1.68
2011	12	31	7,091	4.37	23	42	17,973	2.34	18	112	61,965	1.81

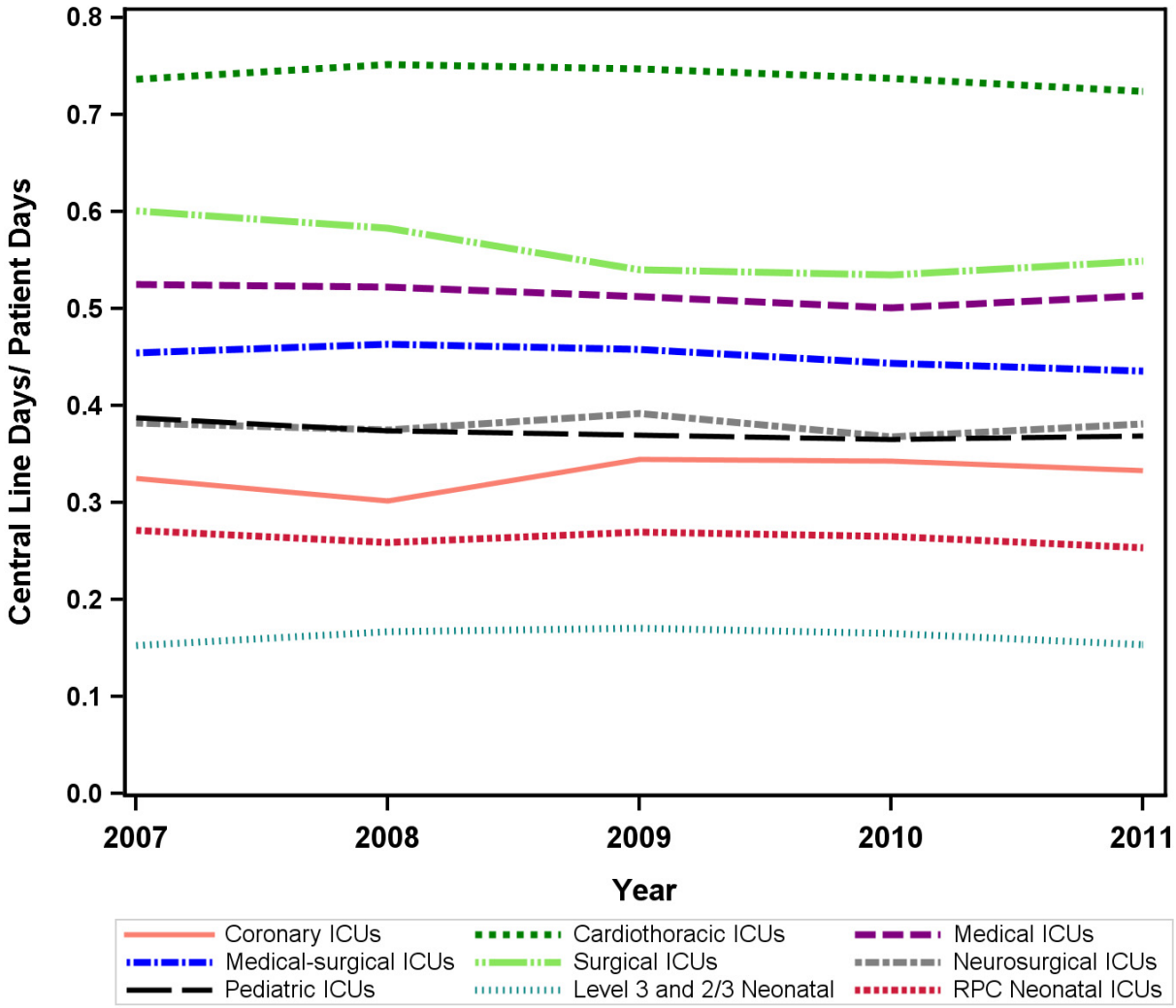
New York State data as of July 26, 2012. Rates are per 1,000 Central Line Days.

*The number of central line days is lower in 2007 because hospitals with four or more adult and pediatric ICUs were only required to perform BSI surveillance for three consecutive months in each ICU; the majority of facilities chose to report the entire year. Beginning in 2008, BSI surveillance in all ICUs was required for the entire year.

Central Line Device Utilization

The Device Utilization (DU) ratio is the number of central line days divided by the number of patient days. This ratio is helpful in evaluating the frequency of central line usage in a specific patient care unit and monitoring increasing or decreasing CLABSI rates. DU ratios have several purposes but can be helpful in assessing whether CLABSI rates have been impacted as a result of implementing infection prevention patient care practices or as a result of increased or decreased usage of CLs. If the DU ratio is constant but the CLABSI rate has decreased, this can signify a positive impact from infection prevention initiatives implemented to reduce CLABSIs. The DU ratio has been remarkably constant in NYS hospitals between 2007 and 2011 (Figure 12), while the CLABSI rates have continued to decline since 2007.

Figure 12. Central Line Utilization Ratio in Intensive Care Units, New York State 2007-2011



New York State data as of July 26, 2012.

Microorganisms Associated with CLABSIs

The most common microorganisms identified in adult/pediatric ICU-related CLABSIs were Enterococci, coagulase-negative staphylococci, yeast, and *Staphylococcus aureus* (Table 13). MRSA accounted for only 4% of adult/pediatric CLABSIs. The distribution of microorganisms associated with CLABSIs is consistent with previously published NYS HAI public reports.

Table 13. Microorganisms Identified in Central Line-Associated Blood Stream Infections, Adult and Pediatric Intensive Care Units, New York State, 2011

Microorganism	Number of Isolates	Percent of Infections
Enterococci	186	24.5
(VRE)	(94)	(12.4)
Coagulase-negative staphylococci	147	19.4
Yeast	137	18.1
Staphylococcus aureus	84	11.1
(MSSA)	(50)	(6.6)
(MRSA)	(27)	(3.6)
Klebsiella spp.	64	8.4
Pseudomonas spp.	40	5.3
Acinetobacter spp.	38	5.0
Enterobacter spp.	25	3.3
Serratia spp.	20	2.6
Escherichia spp.	18	2.4
Streptococci	13	1.7
Other	47	6.2

New York State data reported as of July 26, 2012
Out of 759 infections.
VRE: vancomycin-resistant enterococcus
MRSA: methicillin-resistant *Staphylococcus aureus*
MSSA: methicillin-susceptible *Staphylococcus aureus*
spp: multiple species

The most common microorganisms identified in NICU-related CLABSIs and UCABSIs were coagulase-negative staphylococci and *Staphylococcus aureus* (Table 14). The distribution of microorganisms associated with CLABSIs is consistent with previously published NYS HAI public reports.

Table 14. Microorganisms Associated with Central Line-Associated and Umbilical Catheter-Associated Blood Stream Infections, Neonatal Intensive Care Units, New York State 2011

Microorganism	Number of Isolates	Percent of Infections
Coagulase negative staphylococci	60	32.4
Staphylococcus aureus	43	23.2
(MSSA)	(30)	(16.2)
(MRSA)	(11)	(5.9)
Yeast	16	8.6
Escherichia spp.	15	8.1
Klebsiella spp..	14	7.6
Enterococi spp.	12	6.5
Enterobacter spp.	11	5.9
Serratia spp.	6	3.2
Other	14	7.6

New York State data reported as of July 26, 2012
Out of 185 infections.
VRE: vancomycin-resistant enterococcus
MRSA: methicillin-resistant *Staphylococcus aureus*
MSSA: methicillin-susceptible *Staphylococcus aureus*
spp: multiple species

Risk Factors for CLABSIs

Hospitals do not collect patient-specific risk factors for CLABSIs in adult and pediatric ICUs; the NHSN requires reporting of only the total number of patient days and total number of central line days per month within each type of ICU. CLABSI rates are stratified by type of ICU. Medical-surgical ICUs are further stratified into Major Teaching Hospitals and non-Major Teaching hospitals. For BSIs in NICUs, the data are collected by birth weight group, since lower birth weight babies are more susceptible to CLABSIs than higher birth weight babies.

According to the 2011 NYSDOH HAI Program hospital survey, hospitals reported that they used the CL insertion bundle in 91% of adult, pediatric, and neonatal ICUs. In addition, the CL maintenance bundle was used in 64% of ICUs.

Hospital-Specific, ICU-Specific CLABSI Rates

A custom field is included in the reporting system to allow NYS hospitals to document reported CLABSIs that meet NHSN surveillance criteria but are more likely contaminants than CLABSIs. These blood stream events involve situations in which multiple blood cultures were obtained, only one blood specimen was positive for a single pathogen, and no treatment was given. There were 22 contaminants reported in 2011, representing 2.3% of all reported CLABSIs. This is an increase from the percent of contaminants reported in the past. These contaminants were excluded from NYS hospital-specific rates.

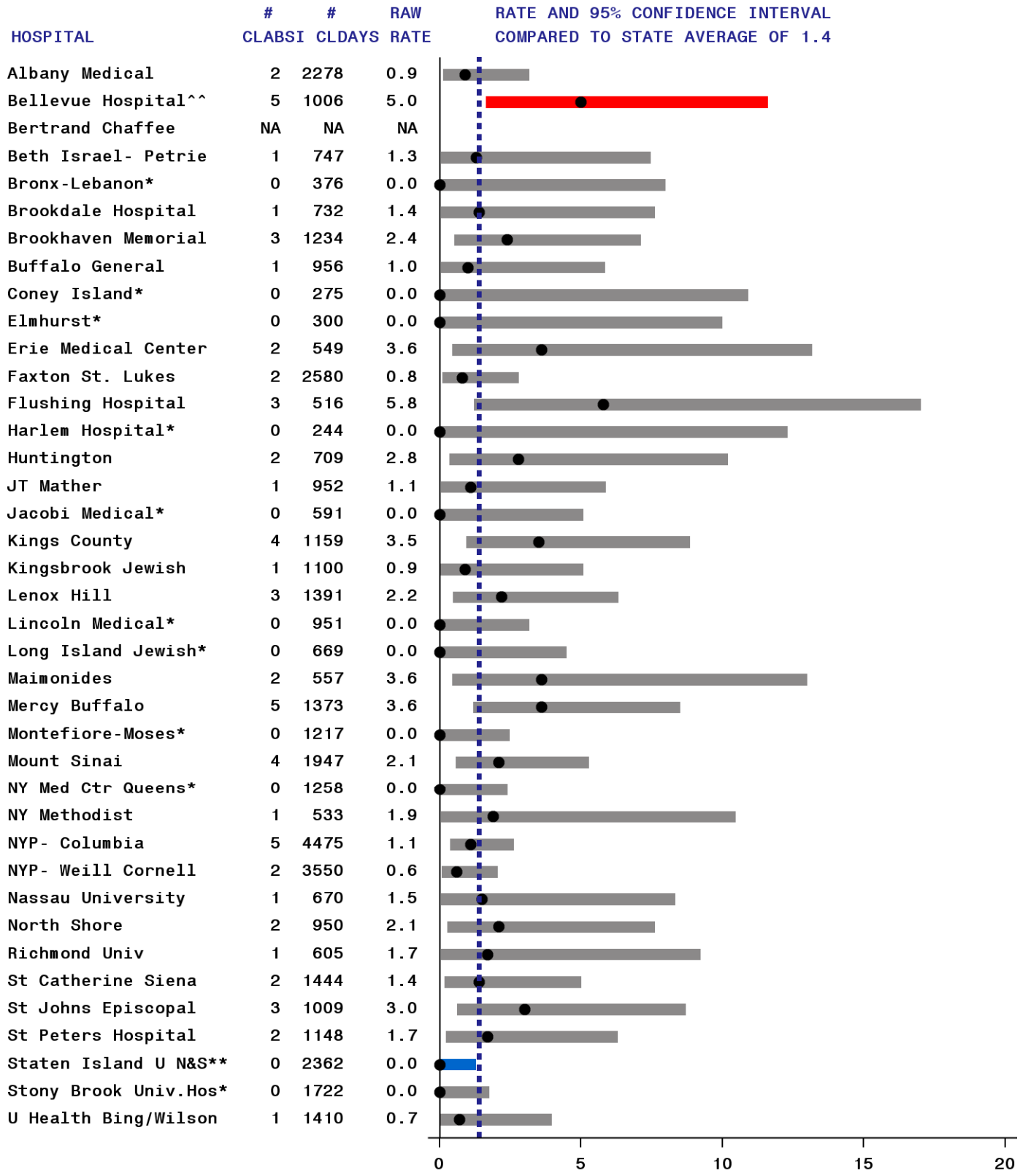
Within NYS, hospital-specific CLABSI rates were compared to the state average for the specific type of ICU. If CLABSI rates are statistically lower than the state average the bar is blue, and if statistically higher, the bar is red (Figures 13). Refer to Appendix 3, Figure 30 for more information about reading Figures 13. The following statistically significant differences were seen in 2011 (Table 15):

Table 15. Summary of Variation in Hospital-Specific CLABSI Rates by Type of ICU

Type of ICU (n) = number of hospitals	# (%) significantly higher than state average	# (%) significantly lower than state average
Cardiothoracic (33)	0 (0%)	0 (0%)
Coronary (45)	2 (4%)	1 (2%)
Medical (48)	2 (4%)	3 (6%)
Medical/Surgical (123)	4 (3%)	2 (2%)
Surgical (40)	4 (10%)	3 (8%)
Neurosurgical (14)	1 (7%)	0 (0%)
Pediatric (32)	1 (3%)	0 (0%)
Neonatal CLABSI (53)	1 (2%)	0 (0%)

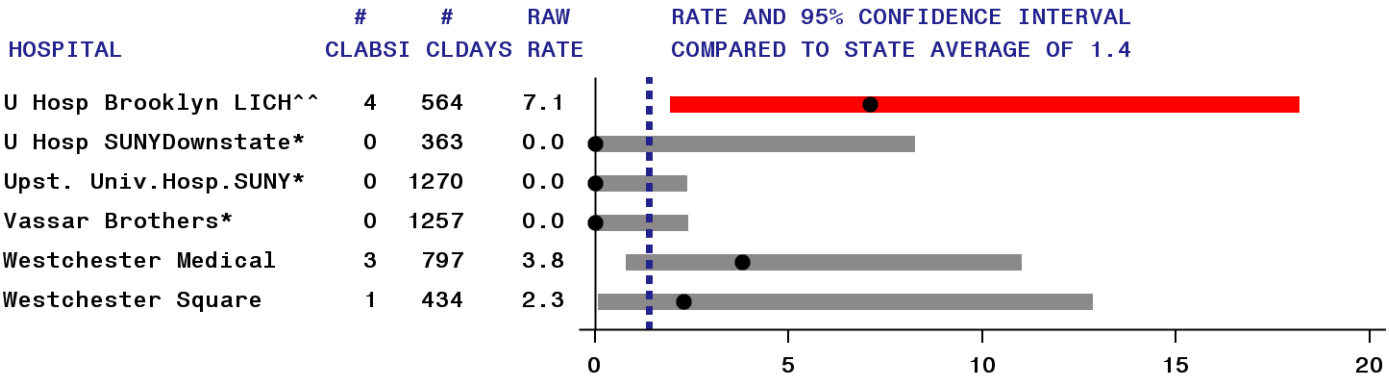
One hospital had high rates in a medical ICU for four years in a row (2008-2011). Between 2007 and 2011, the overall percentage of ICUs receiving ‘high’ and ‘low’ flags has decreased.

Figure 13. Central Line-Associated Blood Stream Infection (CLABSI) Rates
Coronary Intensive Care Units, New York 2011 (page 1 of 2)



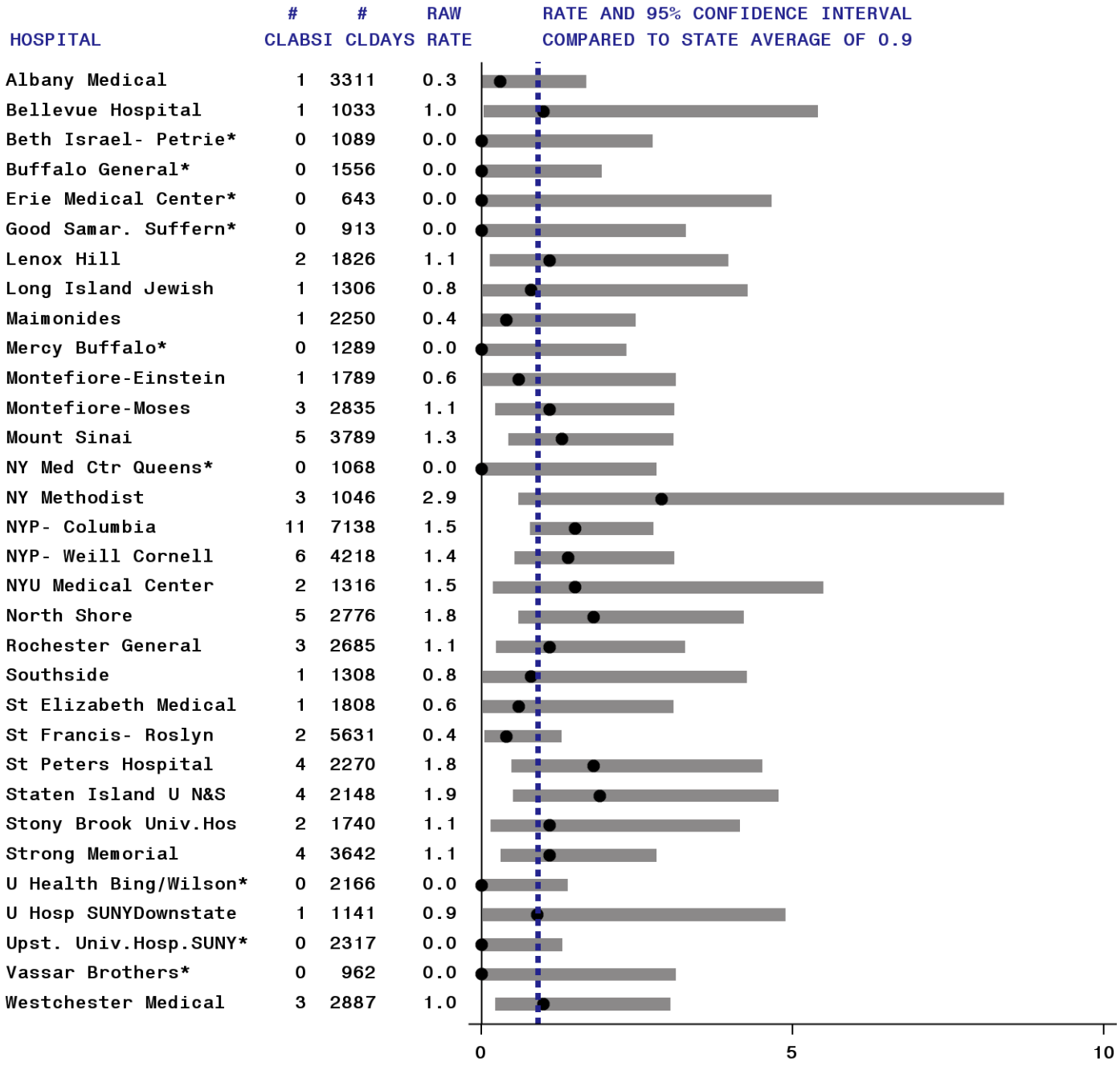
State average. ●Infection rate. > Upper confidence limit exceeds graph area. —^^Significantly higher than state average. —**Significantly lower than state average. —Average. —*Zero infections, not significant. NA: Hospitals with < 50 central line days.
Data reported as of July 26, 2012. Rates are per 1000 central line days (CLDAYS).
Excludes untreated events with a single-pathogen contaminated specimen.

Figure 13. Central Line-Associated Blood Stream Infection (CLABSI) Rates
Coronary Intensive Care Units, New York 2011 (page 2 of 2)



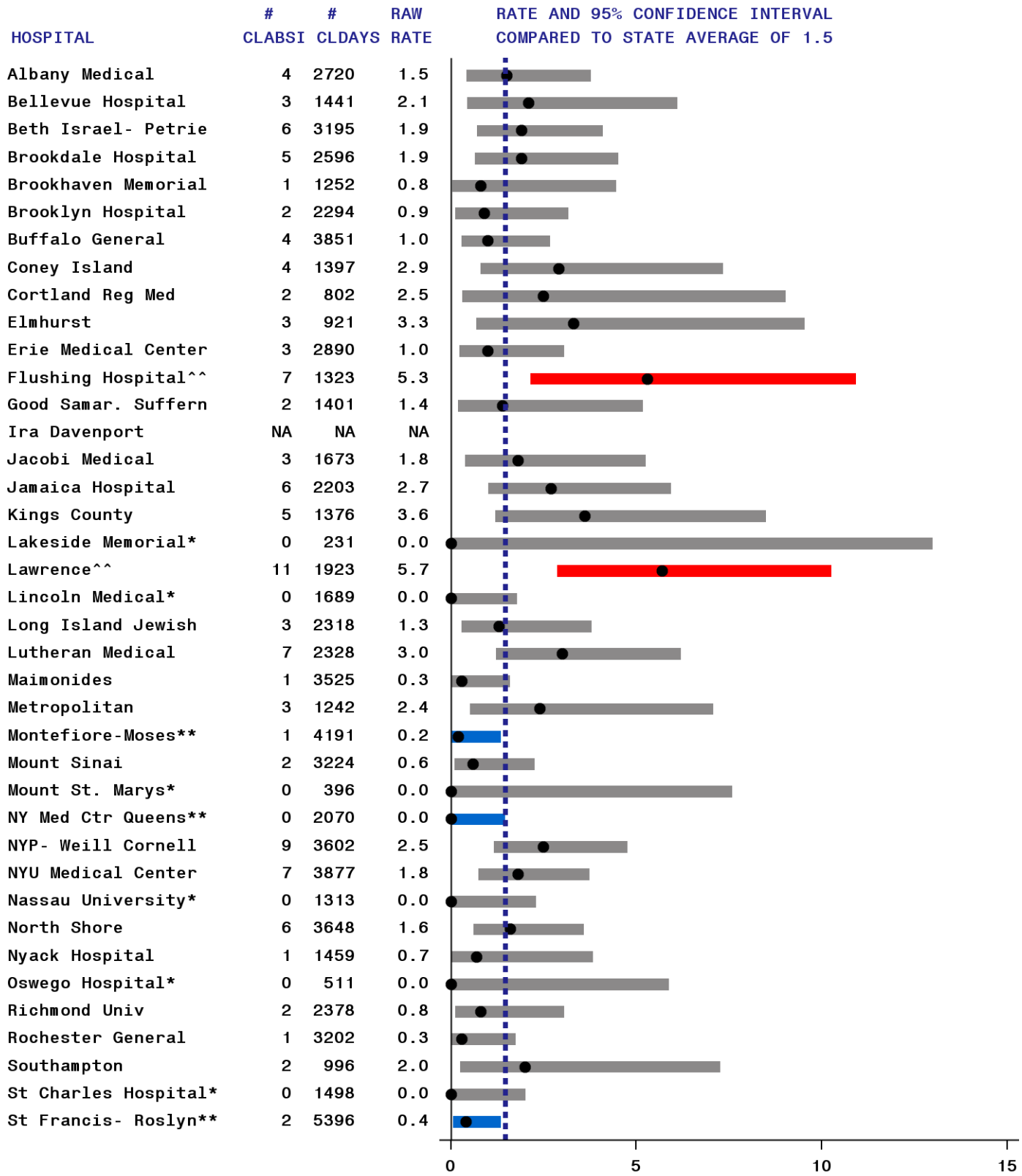
State Average. ●Infection rate. > Upper confidence limit exceeds graph area. —^^Significantly higher than state average. —**Significantly lower than state average. —Average. —*Zero infections, not significant. NA: Hospitals with < 50 central line days.
Data reported as of July 26,2012. Rates are per 1000 central line days (CLDAYS).
Excludes untreated events with a single-pathogen contaminated specimen.

Figure 14. Central Line-Associated Blood Stream Infection (CLABSI) Rates Cardiothoracic Intensive Care Units, New York 2011 (page 1 of 1)



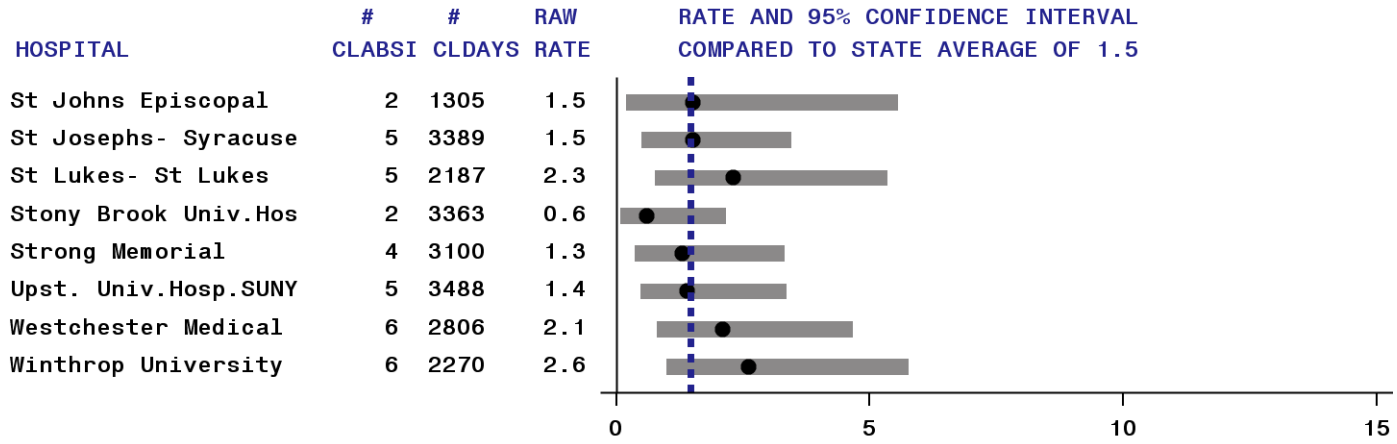
State Average. ●Infection rate. > Upper confidence limit exceeds graph area. —^^Significantly higher than state average. —**Significantly lower than state average. —Average. —*Zero infections, not significant. NA: Hospitals with < 50 central line days.
Data reported as of July 26,2012. Rates are per 1000 central line days (CLDAYS).
Excludes untreated events with a single-pathogen contaminated specimen.

Figure 15. Central Line-Associated Blood Stream Infection (CLABSI) Rates
Medical Intensive Care Units, New York 2011 (page 1 of 2)



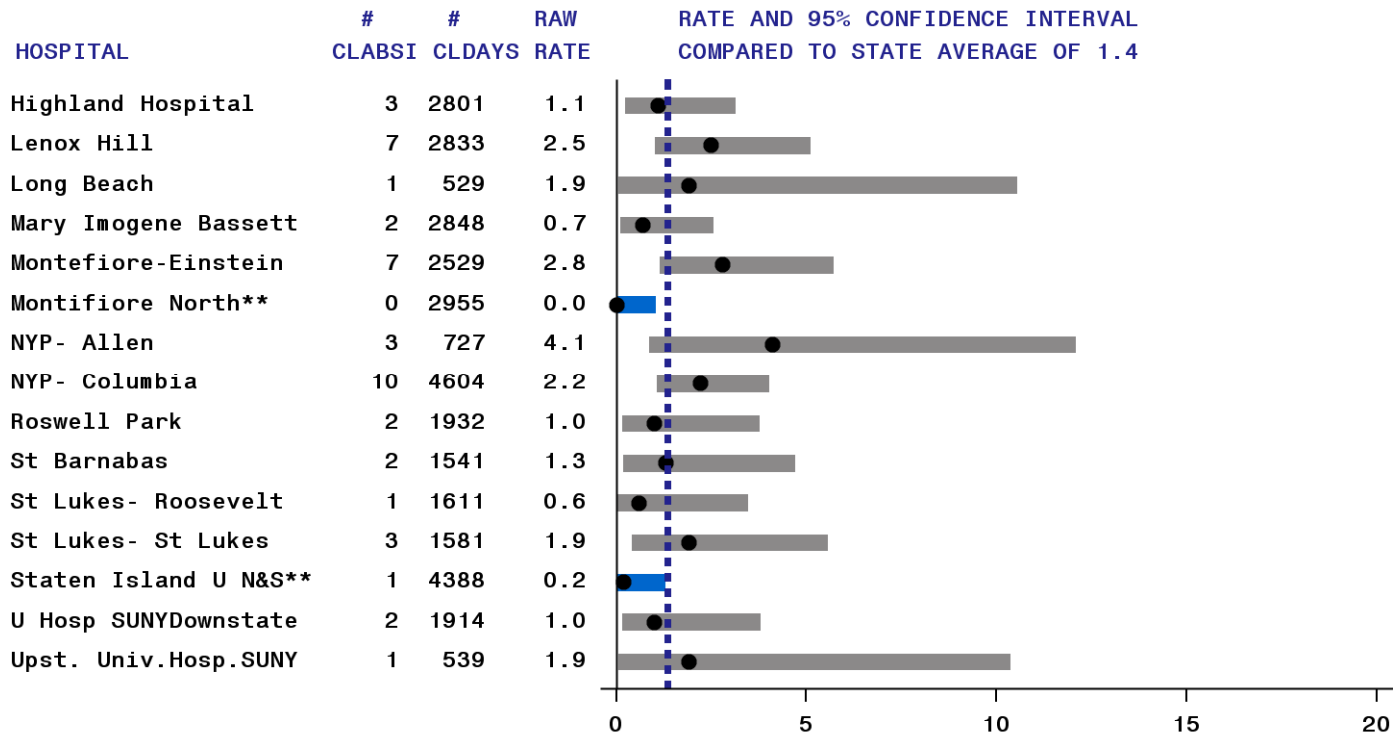
State Average. ●Infection rate. > Upper confidence limit exceeds graph area. ^^Significantly higher than state average.
**Significantly lower than state average. Average. *Zero infections, not significant. NA: Hospitals with < 50 central line days.
Data reported as of July 26,2012. Rates are per 1000 central line days (CLDAYS).
Excludes untreated events with a single-pathogen contaminated specimen.

Figure 15. Central Line-Associated Blood Stream Infection (CLABSI) Rates
Medical Intensive Care Units, New York 2011 (page 2 of 2)



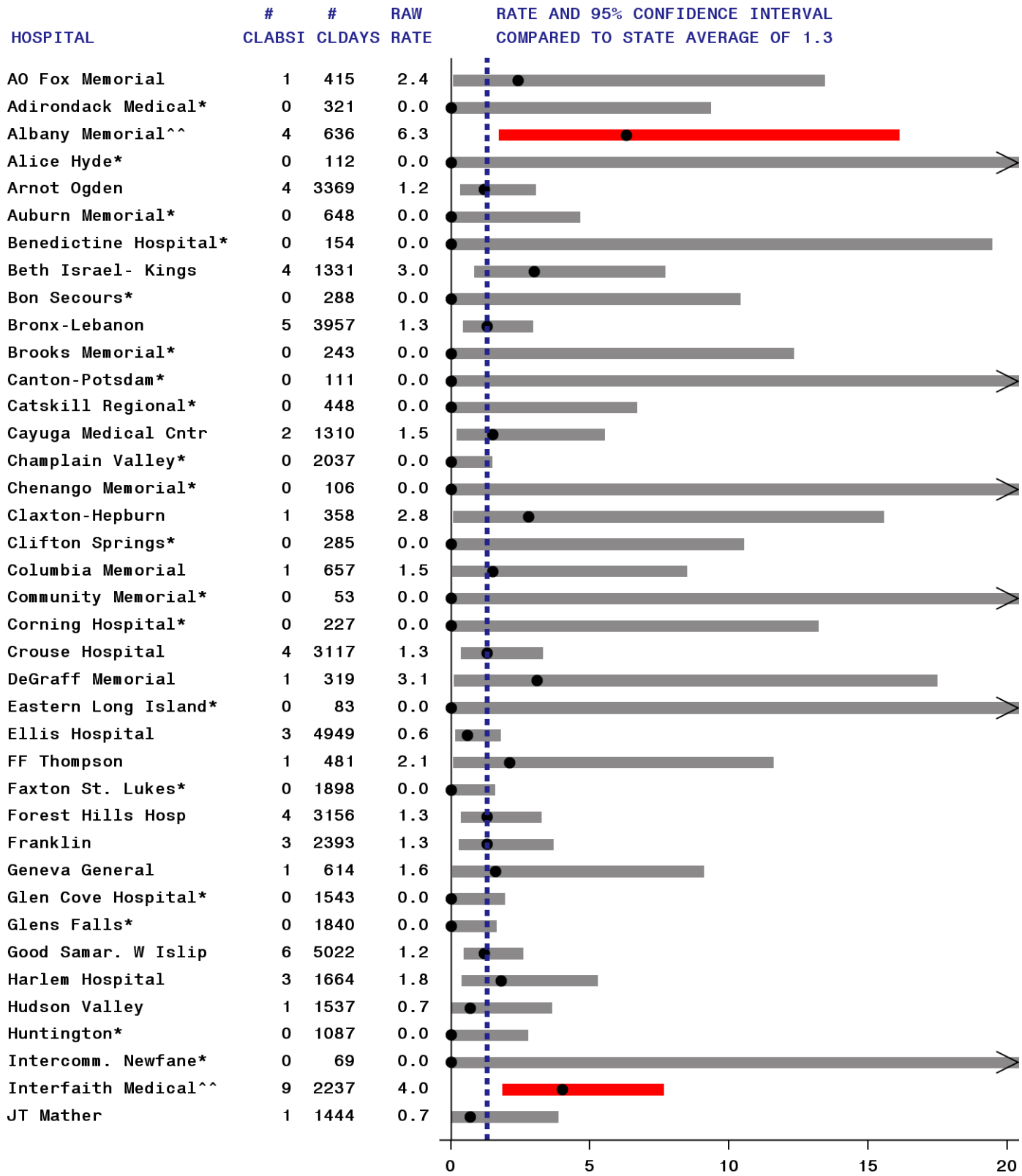
State Average. ●Infection rate. > Upper confidence limit exceeds graph area. —^^Significantly higher than state average. —**Significantly lower than state average. —Average. —*Zero infections, not significant. NA: Hospitals with < 50 central line days.
Data reported as of July 26,2012. Rates are per 1000 central line days (CLDAYS).
Excludes untreated events with a single-pathogen contaminated specimen.

Figure 16. Central Line-Associated Blood Stream Infection (CLABSI) Rates
Medical-Surgical Intensive Care Units in Major Teaching Hospitals, New York 2011



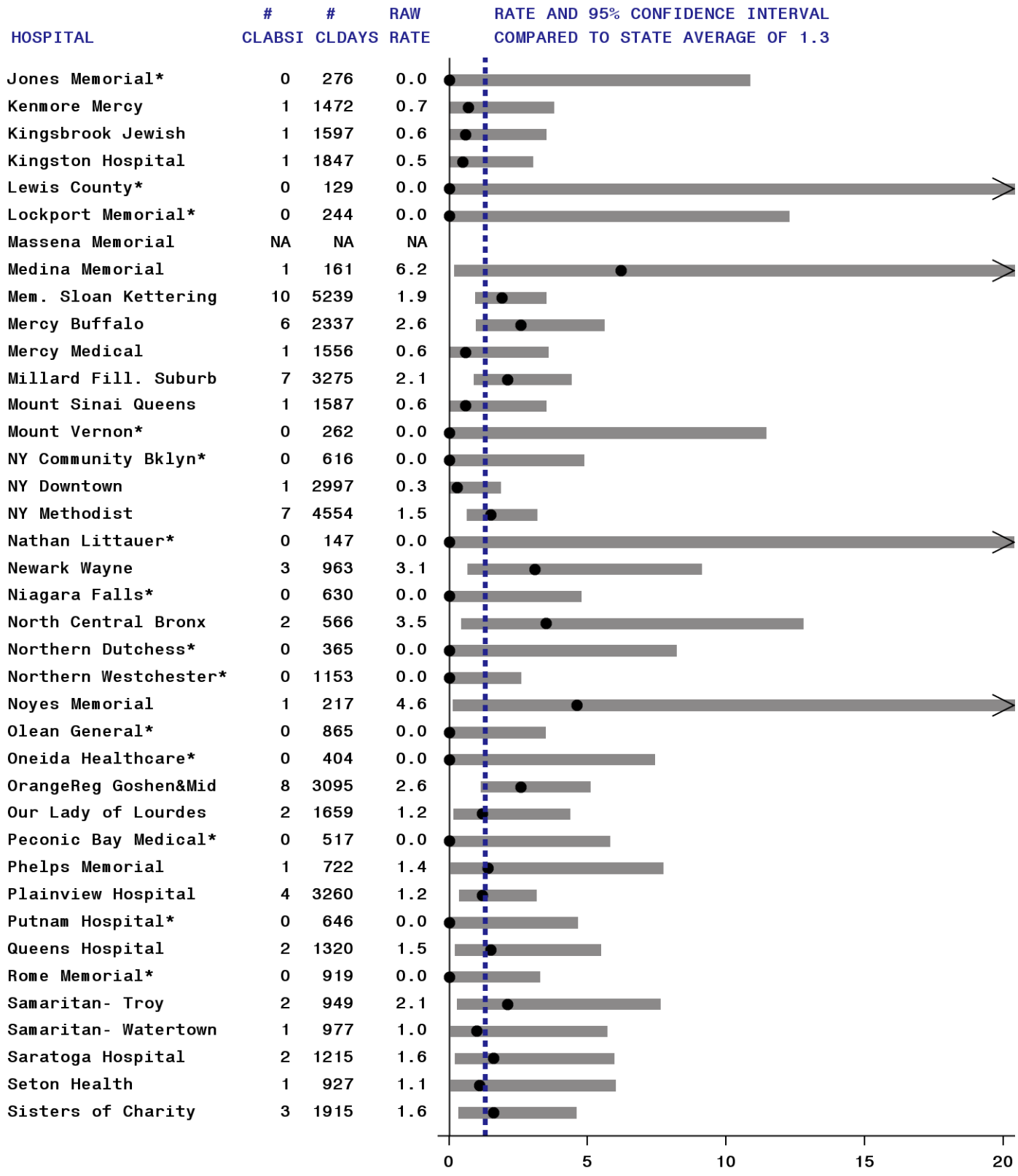
State Average. ●Infection rate. > Upper confidence limit exceeds graph area. ^^Significantly higher than state average. **Significantly lower than state average. Average. *Zero infections, not significant. NA: Hospitals with < 50 central line days.
Data reported as of July 26,2012. Rates are per 1000 central line days (CLDAYS).
Excludes untreated events with a single-pathogen contaminated specimen.

Figure 17. Central Line-Associated Blood Stream Infection (CLABSI) Rates
Medical-Surgical Intensive Care Units in Non-Major Teaching Hospitals, New York 2011 (page 1 of 3)



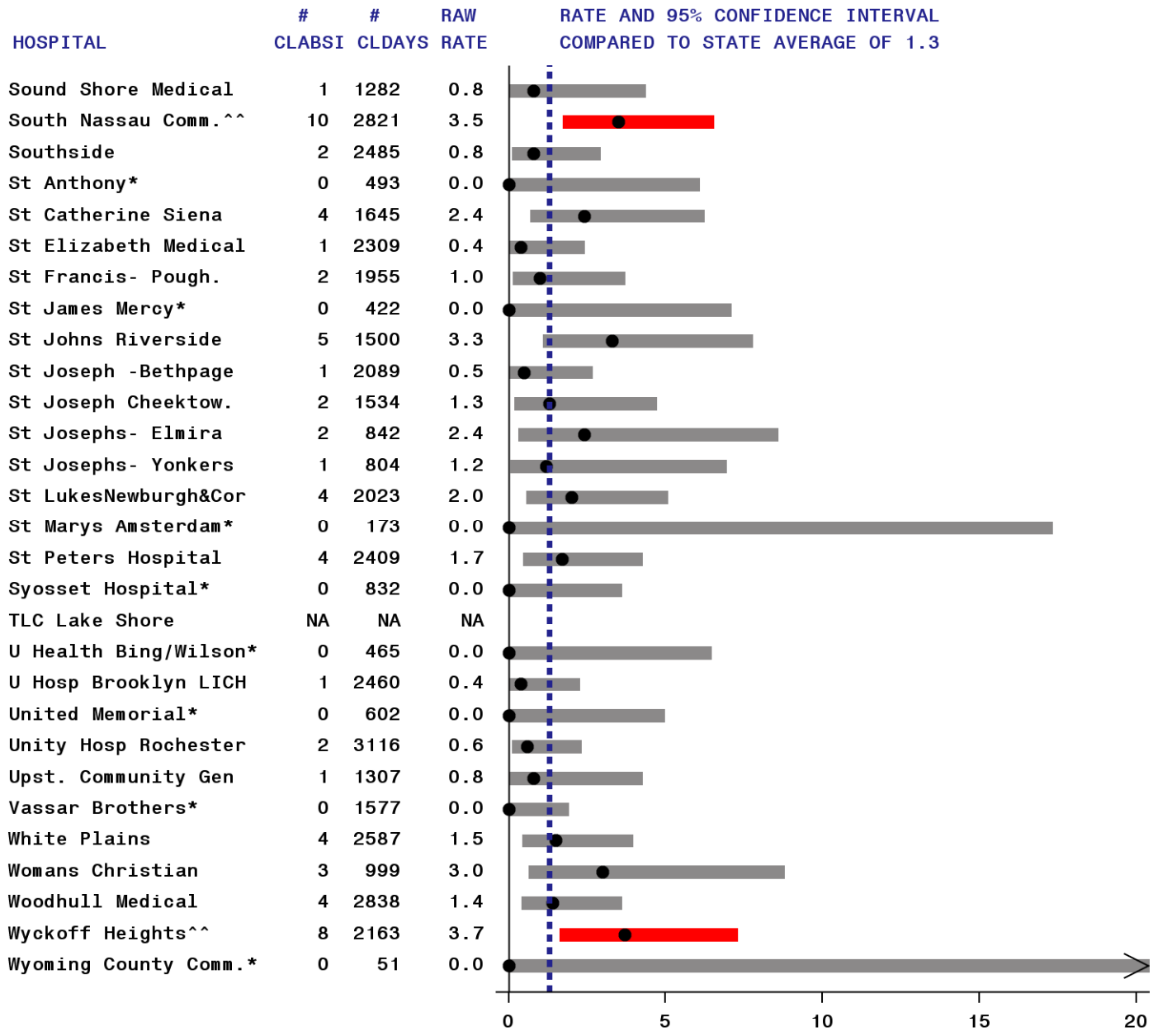
State Average. ●Infection rate. > Upper confidence limit exceeds graph area. —^^Significantly higher than state average.
—**Significantly lower than state average. —Average. —*Zero infections, not significant. NA: Hospitals with < 50 central line days.
Data reported as of July 26,2012. Rates are per 1000 central line days (CLDAYS).
Excludes untreated events with a single-pathogen contaminated specimen.

Figure 17. Central Line-Associated Blood Stream Infection (CLABSI) Rates
Medical-Surgical Intensive Care Units in Non-Major Teaching Hospitals, New York 2011 (page 2 of 3)



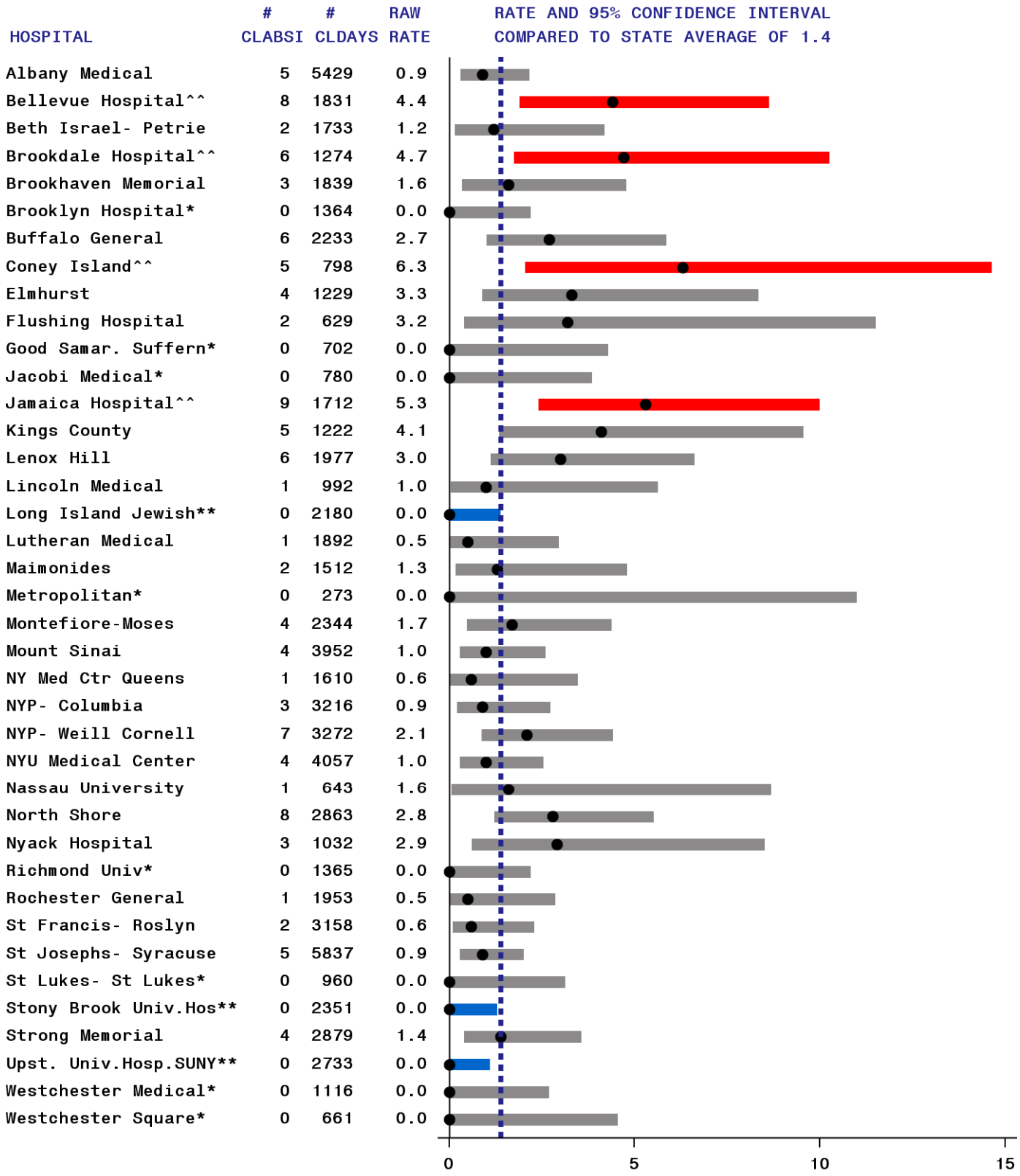
State Average. ●Infection rate. > Upper confidence limit exceeds graph area. ^^Significantly higher than state average. **Significantly lower than state average. Average. *Zero infections, not significant. NA: Hospitals with < 50 central line days.
Data reported as of July 26,2012. Rates are per 1000 central line days (CLDAYS).
Excludes untreated events with a single-pathogen contaminated specimen.

Figure 17. Central Line-Associated Blood Stream Infection (CLABSI) Rates
Medical-Surgical Intensive Care Units in Non-Major Teaching Hospitals, New York 2011 (page 3 of 3)



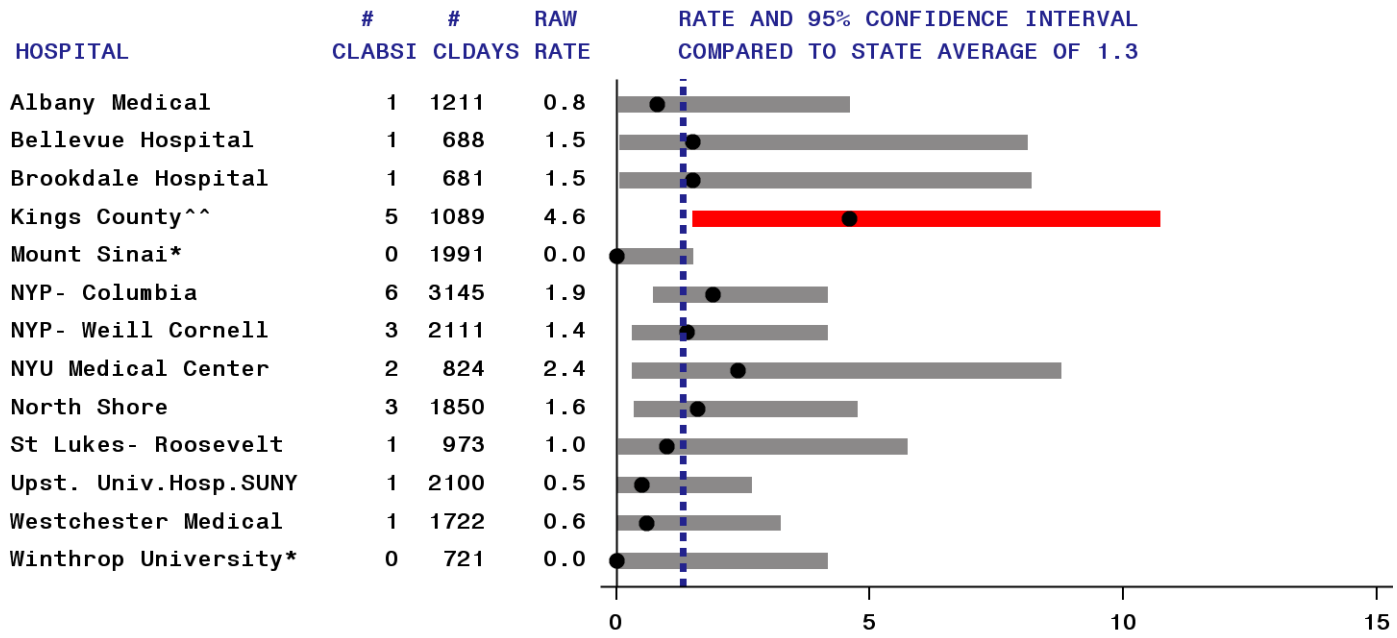
State Average. ●Infection rate. > Upper confidence limit exceeds graph area. —^^Significantly higher than state average.
—**Significantly lower than state average. —Average. —*Zero infections, not significant. NA: Hospitals with < 50 central line days.
Data reported as of July 26,2012. Rates are per 1000 central line days (CLDAYS).
Excludes untreated events with a single-pathogen contaminated specimen.

Figure 18. Central Line-Associated Blood Stream Infection (CLABSI) Rates
Surgical Intensive Care Units, New York 2011 (page 1 of 1)



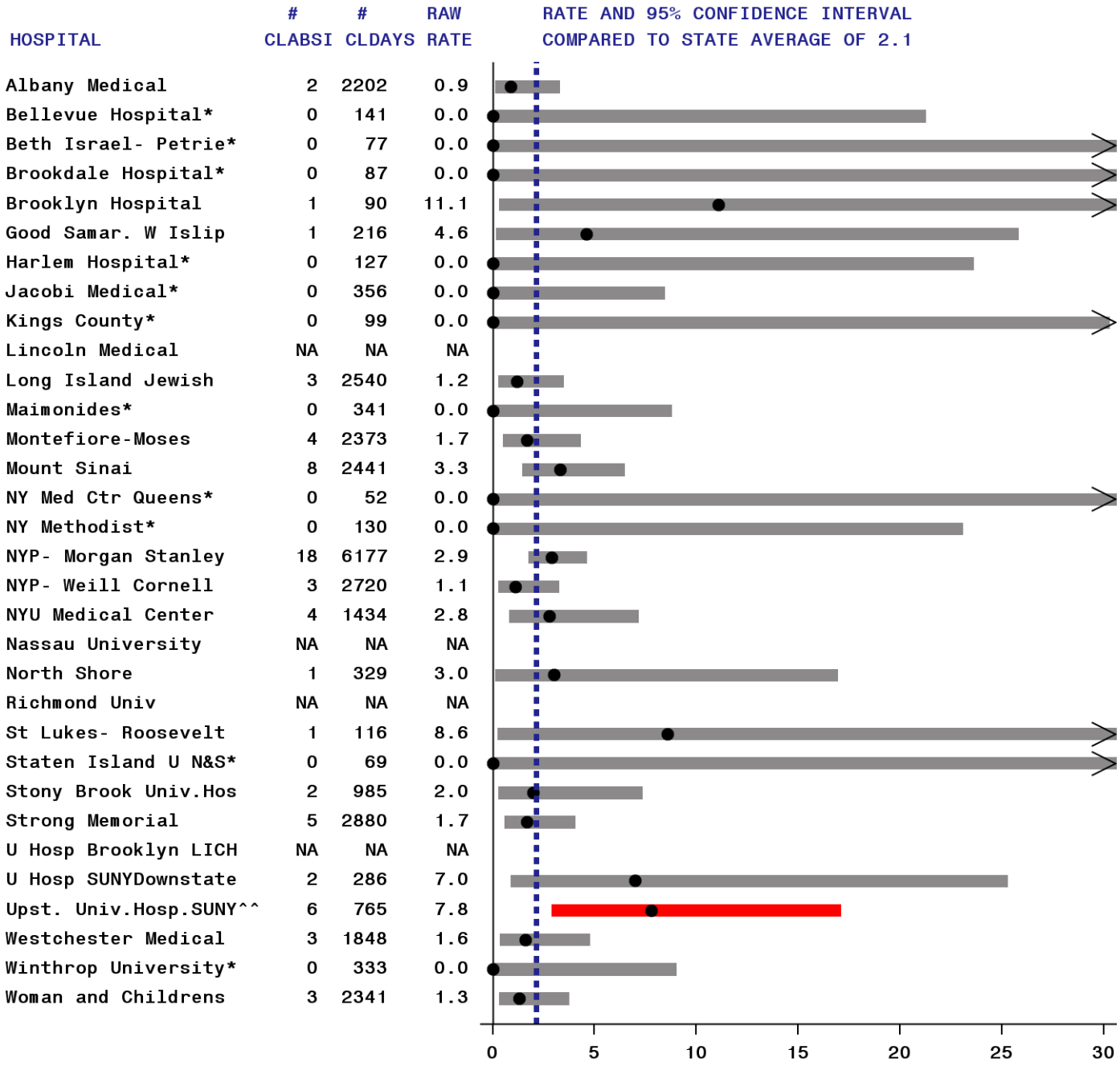
State Average. ●Infection rate. > Upper confidence limit exceeds graph area. —^^Significantly higher than state average. —**Significantly lower than state average. —Average. —*Zero infections, not significant. NA: Hospitals with < 50 central line days.
Data reported as of July 26,2012. Rates are per 1000 central line days (CLDAYS).
Excludes untreated events with a single-pathogen contaminated specimen.

Figure 19. Central Line-Associated Blood Stream Infection (CLABSI) Rates Neurosurgical Intensive Care Units, New York 2011 (page 1 of 1)



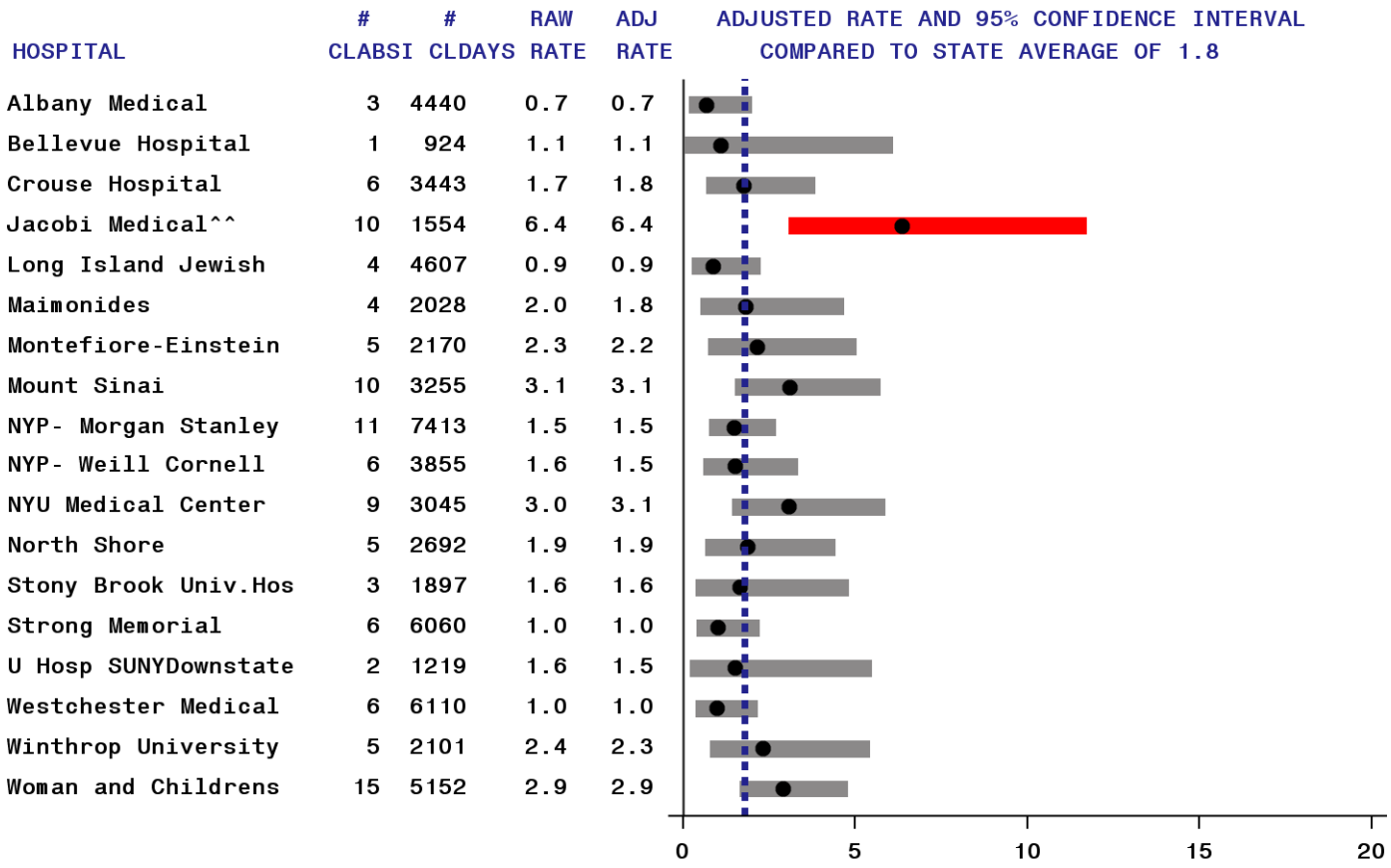
State Average. ●Infection rate. > Upper confidence limit exceeds graph area. —^^Significantly higher than state average. —**Significantly lower than state average. —Average. —*Zero infections, not significant. NA: Hospitals with < 50 central line days.
Data reported as of July 26,2012. Rates are per 1000 central line days (CLDAYS).
Excludes untreated events with a single-pathogen contaminated specimen.

Figure 20. Central Line-Associated Blood Stream Infection (CLABSI) Rates
Pediatric Intensive Care Units, New York 2011 (page 1 of 1)



State Average. ●Infection rate. > Upper confidence limit exceeds graph area. —^^Significantly higher than state average.
—**Significantly lower than state average. —Average. —*Zero infections, not significant. NA: Hospitals with < 50 central line days.
Data reported as of July 26,2012. Rates are per 1000 central line days (CLDAYS).
Excludes untreated events with a single-pathogen contaminated specimen.

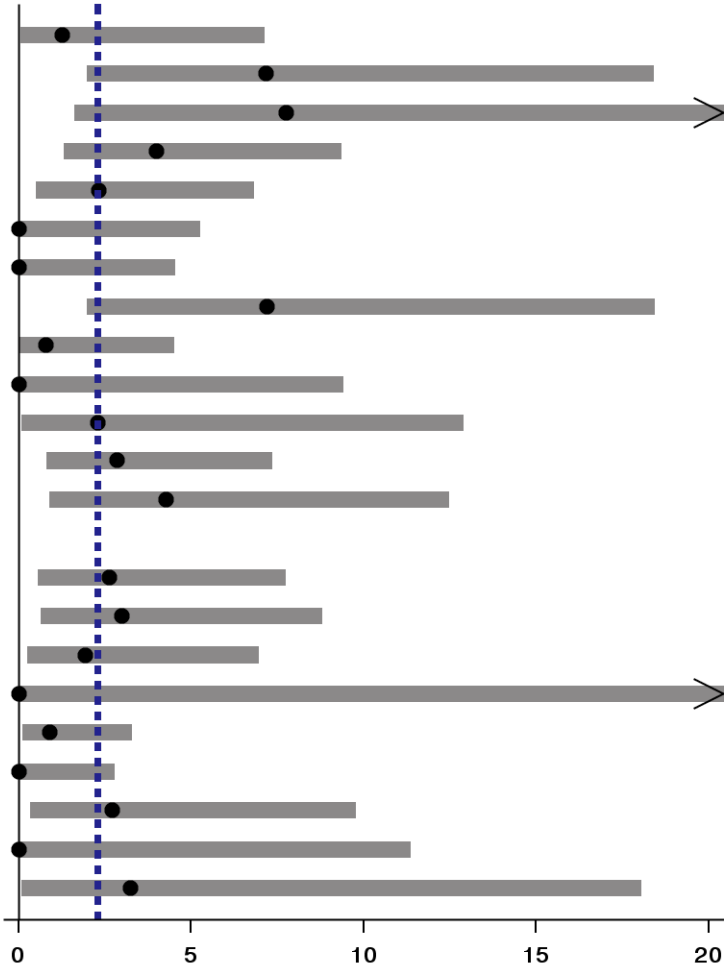
Figure 21. Central Line-Associated Blood Stream Infection (CLABSI) Rates
Regional Perinatal Center Intensive Care Units, New York 2011



State average. ●Risk-adjusted infection rate. > Upper confidence limit exceeds graph area. ^^Significantly higher than state average. **Significantly lower than state average. Average. *Zero infections, not significant.
NA: Hospitals with less than 50 central line days. Adj Rate: Adjusted by NHSN Birth Weight Category.
Data reported as of July 26,2012. Rates are per 1000 central line days (CLDAYS).
Excludes untreated events with a single-pathogen contaminated specimen.

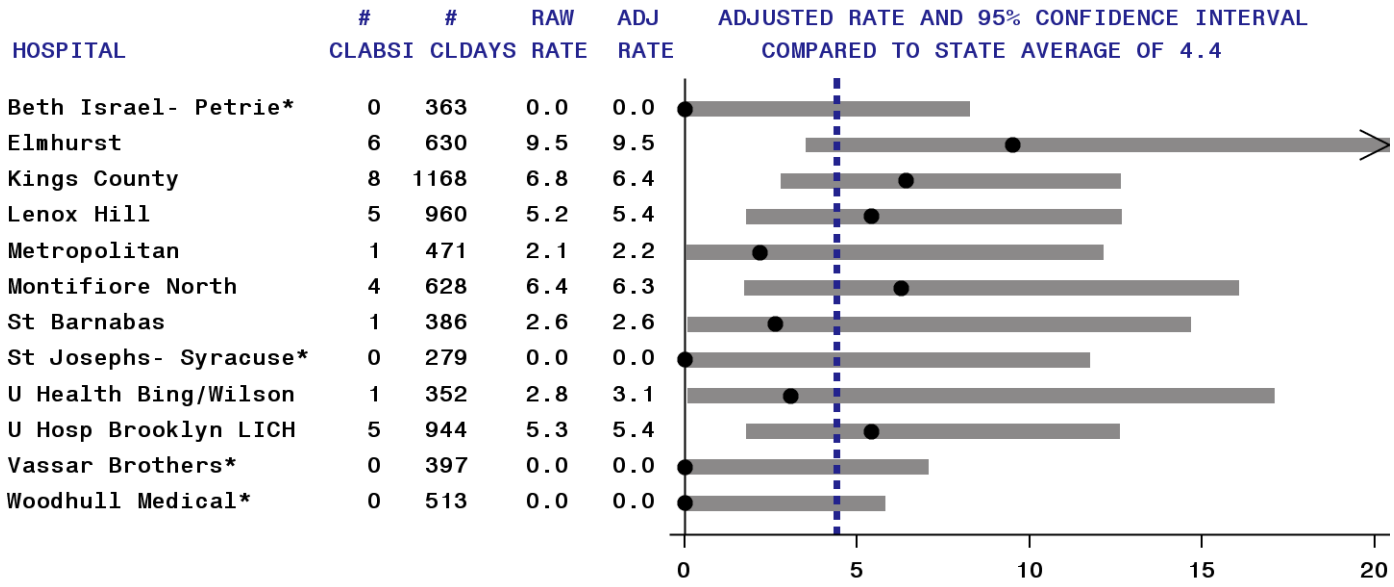
Figure 22. Central Line-Associated Blood Stream Infection (CLABSI) Rates
Level III Neonatal Intensive Care Units, New York 2011

HOSPITAL	# CLABSI	# CLDAYS	RAW RATE	ADJ RATE
Arnot Ogden	1	1224	0.8	1.3
Bronx-Lebanon	4	435	9.2	7.2
Brookdale Hospital	3	459	6.5	7.7
Brooklyn Hospital	5	1243	4.0	4.0
Flushing Hospital	3	1407	2.1	2.3
Good Samar. W Islip*	0	490	0.0	0.0
Harlem Hospital*	0	633	0.0	0.0
Jamaica Hospital	4	630	6.3	7.2
Lincoln Medical	1	894	1.1	0.8
Mercy Medical*	0	447	0.0	0.0
NY Med Ctr Queens	1	406	2.5	2.3
NY Methodist	4	1153	3.5	2.9
Nassau University	3	623	4.8	4.3
Northern Westchester	NA	NA	NA	NA
Queens Hospital	3	858	3.5	2.6
Richmond Univ	3	927	3.2	3.0
Sisters of Charity	2	1113	1.8	1.9
Sound Shore Medical*	0	78	0.0	0.0
St Lukes- Roosevelt	2	2499	0.8	0.9
St Peters Hospital*	0	1184	0.0	0.0
Staten Island U N&S	2	684	2.9	2.7
White Plains*	0	262	0.0	0.0
Wyckoff Heights	1	293	3.4	3.2



State average. ●Risk-adjusted infection rate. > Upper confidence limit exceeds graph area. —^^Significantly higher than state average. —**Significantly lower than state average. —Average. —*Zero infections, not significant.
NA: Hospitals with less than 50 central line days. Adj Rate: Adjusted by NHSN Birth Weight Category.
Data reported as of July 26,2012. Rates are per 1000 central line days (CLDAYS).
Excludes untreated events with a single-pathogen contaminated specimen.

Figure 23. Central Line-Associated Blood Stream Infection (CLABSI) Rates
Level II/III Neonatal Intensive Care Units, New York 2011



State average. ●Risk-adjusted infection rate. > Upper confidence limit exceeds graph area. ^^Significantly higher than state average. **Significantly lower than state average. Average. *Zero infections, not significant.
NA: Hospitals with less than 50 central line days. Adj Rate: Adjusted by NHSN Birth Weight Category.
Data reported as of July 26,2012. Rates are per 1000 central line days (CLDAYS).
Excludes untreated events with a single-pathogen contaminated specimen.

Summary of Trends in CLABSI Rates

Since reporting began in 2007, there has been a 41% reduction in CLABSI rates, after adjusting for ICU type (and birth weight in NICUs) (Table 16).

Table 16. Summary of Trend in all NYS CLABSI Data

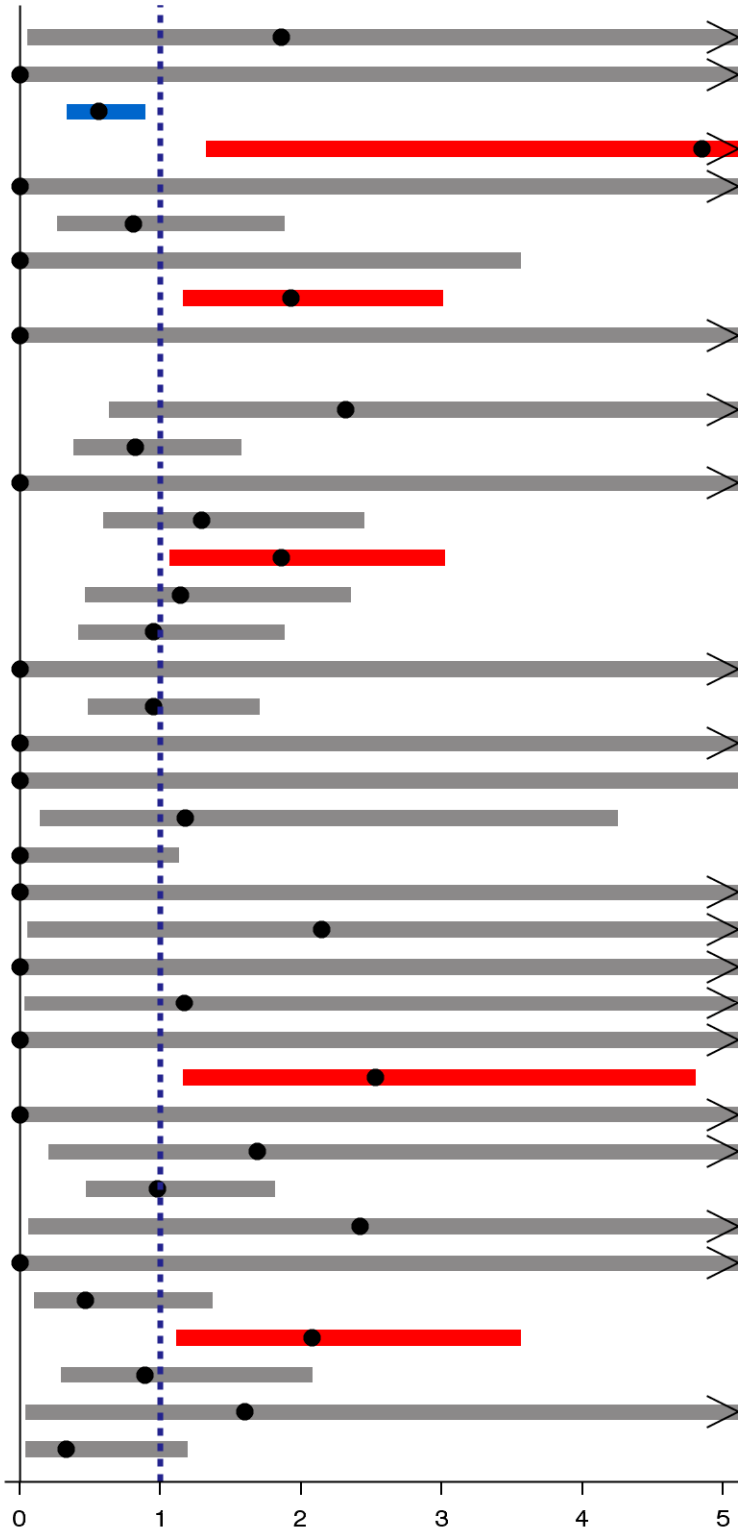
	Summary of all ICU data listed above			
Year	# observed infections	# expected infections based on NYS Baseline	Standardized Incidence Ratio (95% CI)	Interpretation
2007	1439	N/A	1.0	NYS Baseline
2008	1557	1628.0	0.96 (0.91, 1.01)	4% reduction since 2007
2009	1327	1657.8	0.80 (0.76, 0.84)	20% reduction since 2007
2010	1041	1618.3	0.64 (0.60, 0.68)	36% reduction since 2007
2011	944	1612.7	0.59 (0.55, 0.62)	41% reduction since 2007

New York State data as of July 26, 2012.

Figure 24 provides hospital-specific CLABSI SIRs for each hospital. Since the CLABSI SIRs combine results across the eight different types of ICUs, it shows the average performance of each hospital for CLABSIs. In five cases, hospitals that received no individual area performance flag were significantly higher or lower than the state average overall; combining data results in narrower confidence intervals, so hospitals that perform slightly better in many areas may look significantly better than the state average overall. On the other hand, six hospitals that received a performance flag for one type of ICU had average SIRs; combining data can smooth away unusual performance in one area. Two hospitals had significantly high CLABSI SIRs for the past four years, one hospital had a significantly high CLABSI SIR for the past three years, one hospital had a significantly low CLABSI SIR for the past four years, and one hospital had a significantly low CLABSI SIR for the past three years.

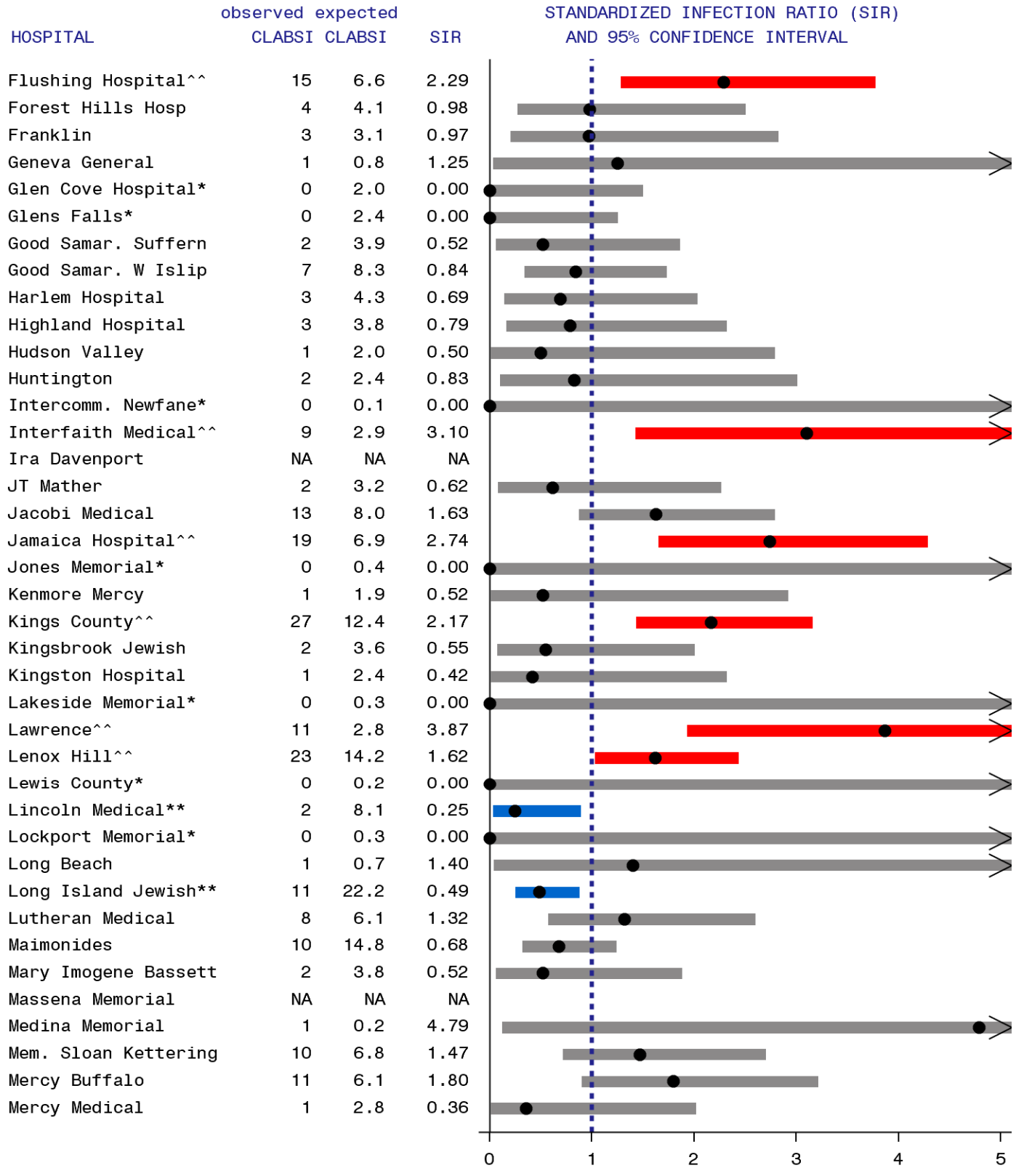
Figure 24. Central Line-Associated Blood Stream Infection (CLABSI) Summary for Adult, Pediatric, and Neonatal ICUs: Standardized Infection Ratio (SIR), New York 2011 (page 1 of 5)

HOSPITAL	observed CLABSI	expected CLABSI	SIR
AO Fox Memorial	1	0.5	1.86
Adirondack Medical*	0	0.4	0.00
Albany Medical**	18	32.0	0.56
Albany Memorial^^	4	0.8	4.85
Alice Hyde*	0	0.1	0.00
Arnot Ogden	5	6.2	0.81
Auburn Memorial*	0	0.8	0.00
Bellevue Hospital^^	19	9.9	1.93
Benedictine Hospital*	0	0.2	0.00
Bertrand Chaffee	NA	NA	NA
Beth Israel- Kings	4	1.7	2.32
Beth Israel- Petrie	9	10.9	0.82
Bon Secours*	0	0.4	0.00
Bronx-Lebanon	9	7.0	1.29
Brookdale Hospital^^	16	8.6	1.86
Brookhaven Memorial	7	6.1	1.14
Brooklyn Hospital	8	8.4	0.95
Brooks Memorial*	0	0.3	0.00
Buffalo General	11	11.5	0.95
Canton-Potsdam*	0	0.1	0.00
Catskill Regional*	0	0.6	0.00
Cayuga Medical Cntr	2	1.7	1.18
Champlain Valley*	0	2.6	0.00
Chenango Memorial*	0	0.1	0.00
Claxton-Hepburn	1	0.5	2.15
Clifton Springs*	0	0.4	0.00
Columbia Memorial	1	0.9	1.17
Community Memorial*	0	0.1	0.00
Coney Island^^	9	3.6	2.53
Corning Hospital*	0	0.3	0.00
Cortland Reg Med	2	1.2	1.69
Crouse Hospital	10	10.2	0.98
DeGraff Memorial	1	0.4	2.42
Eastern Long Island*	0	0.1	0.00
Ellis Hospital	3	6.4	0.47
Elmhurst^^	13	6.2	2.08
Erie Medical Center	5	5.6	0.89
FF Thompson	1	0.6	1.60
Faxton St. Lukes	2	6.1	0.33



State average. ●SIR. > Upper confidence limit exceeds graph area. —^^Significantly higher than state average.
—**Significantly lower than state average. —Average. —*Zero Infections,not significant. NA: Hospitals with <50 central line days.
Data reported as of July 26, 2012. Expected based on NYS 2011 average, adjusting for ICU type and birthweight.
Excludes clinical sepsis and untreated event with single pathogen contaminated specimen.

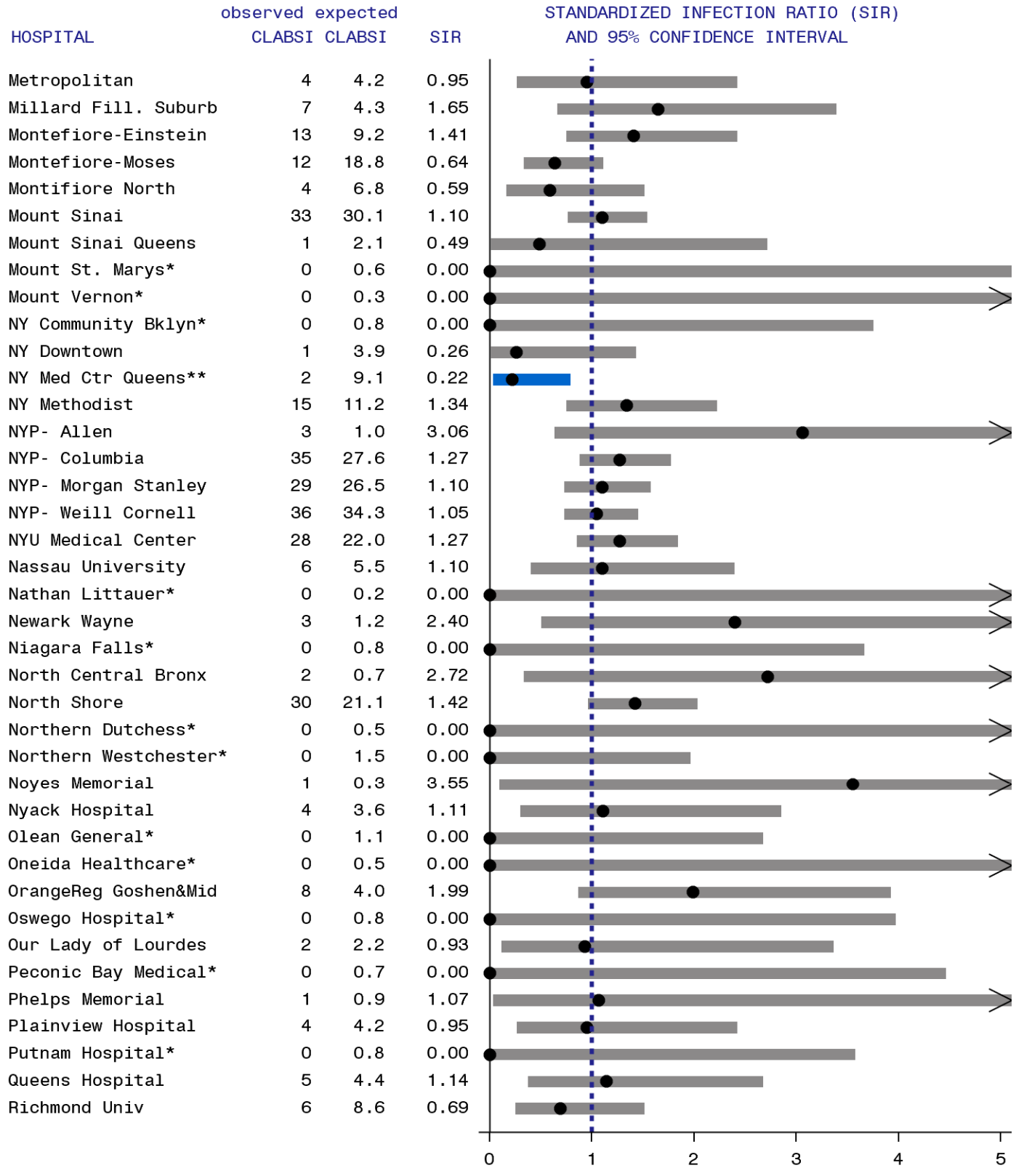
Figure 24. Central Line-Associated Blood Stream Infection (CLABSI) Summary for Adult, Pediatric, and Neonatal ICUs: Standardized Infection Ratio (SIR), New York 2011 (page 2 of 5)



HOSPITAL	observed CLABSI	expected CLABSI	SIR
Flushing Hospital^^	15	6.6	2.29
Forest Hills Hosp	4	4.1	0.98
Franklin	3	3.1	0.97
Geneva General	1	0.8	1.25
Glen Cove Hospital*	0	2.0	0.00
Glens Falls*	0	2.4	0.00
Good Samar. Suffern	2	3.9	0.52
Good Samar. W Islip	7	8.3	0.84
Harlem Hospital	3	4.3	0.69
Highland Hospital	3	3.8	0.79
Hudson Valley	1	2.0	0.50
Huntington	2	2.4	0.83
Intercomm. Newfane*	0	0.1	0.00
Interfaith Medical^^	9	2.9	3.10
Ira Davenport	NA	NA	NA
JT Mather	2	3.2	0.62
Jacobi Medical	13	8.0	1.63
Jamaica Hospital^^	19	6.9	2.74
Jones Memorial*	0	0.4	0.00
Kenmore Mercy	1	1.9	0.52
Kings County^^	27	12.4	2.17
Kingsbrook Jewish	2	3.6	0.55
Kingston Hospital	1	2.4	0.42
Lakeside Memorial*	0	0.3	0.00
Lawrence^^	11	2.8	3.87
Lenox Hill^^	23	14.2	1.62
Lewis County*	0	0.2	0.00
Lincoln Medical**	2	8.1	0.25
Lockport Memorial*	0	0.3	0.00
Long Beach	1	0.7	1.40
Long Island Jewish**	11	22.2	0.49
Lutheran Medical	8	6.1	1.32
Maimonides	10	14.8	0.68
Mary Imogene Bassett	2	3.8	0.52
Massena Memorial	NA	NA	NA
Medina Memorial	1	0.2	4.79
Mem. Sloan Kettering	10	6.8	1.47
Mercy Buffalo	11	6.1	1.80
Mercy Medical	1	2.8	0.36

State average. ●SIR. > Upper confidence limit exceeds graph area. —^^Significantly higher than state average.
—**Significantly lower than state average. —Average. —*Zero Infections,not significant. NA: Hospitals with <50 central line days.
Data reported as of July 26, 2012. Expected based on NYS 2011 average, adjusting for ICU type and birthweight.
Excludes clinical sepsis and untreated event with single pathogen contaminated specimen.

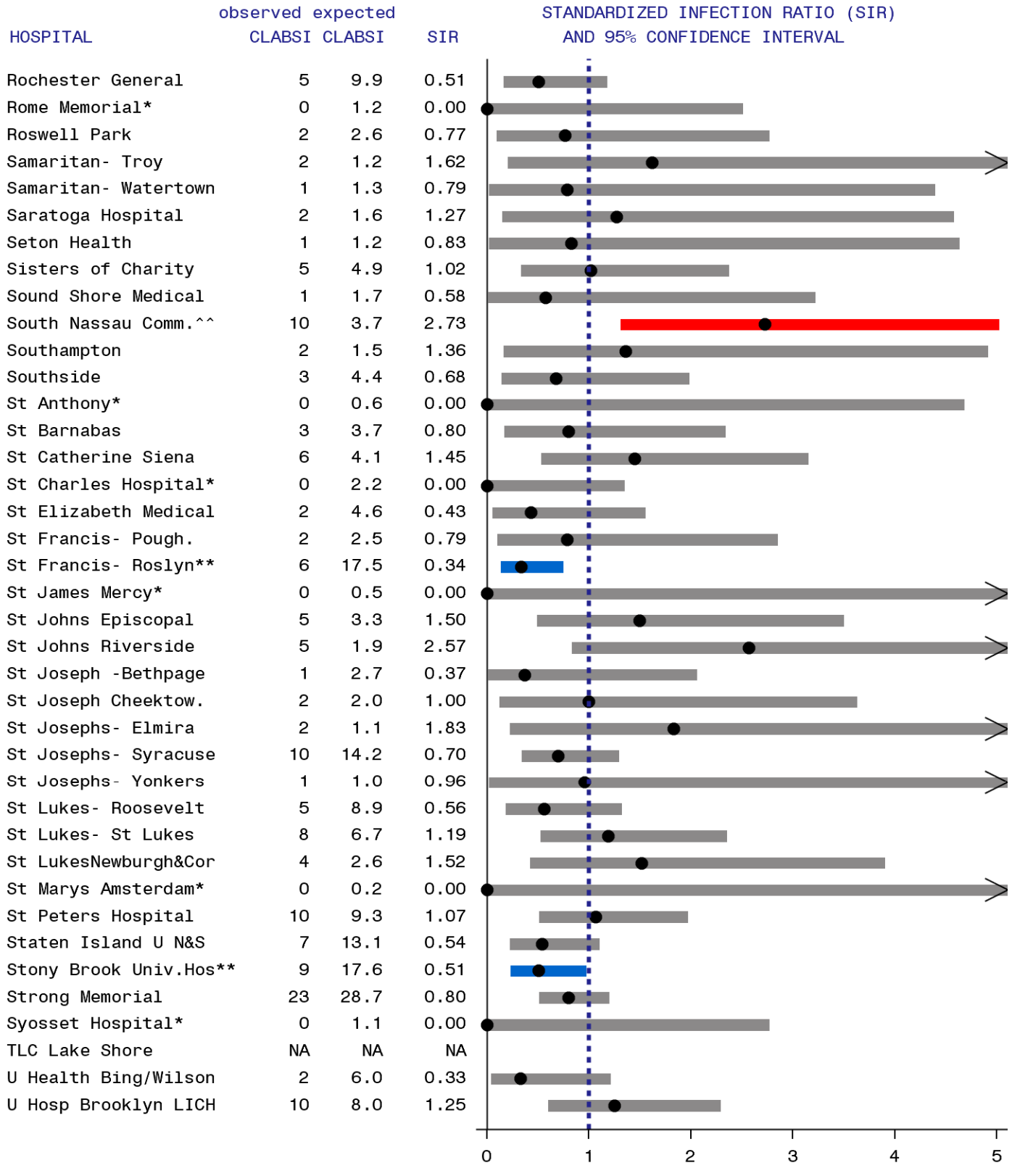
Figure 24. Central Line-Associated Blood Stream Infection (CLABSI) Summary for Adult, Pediatric, and Neonatal ICUs: Standardized Infection Ratio (SIR), New York 2011 (page 3 of 5)



HOSPITAL	observed CLABSI	expected CLABSI	SIR
Metropolitan	4	4.2	0.95
Millard Fill. Suburb	7	4.3	1.65
Montefiore-Einstein	13	9.2	1.41
Montefiore-Moses	12	18.8	0.64
Montifiore North	4	6.8	0.59
Mount Sinai	33	30.1	1.10
Mount Sinai Queens	1	2.1	0.49
Mount St. Marys*	0	0.6	0.00
Mount Vernon*	0	0.3	0.00
NY Community Bklyn*	0	0.8	0.00
NY Downtown	1	3.9	0.26
NY Med Ctr Queens**	2	9.1	0.22
NY Methodist	15	11.2	1.34
NYP- Allen	3	1.0	3.06
NYP- Columbia	35	27.6	1.27
NYP- Morgan Stanley	29	26.5	1.10
NYP- Weill Cornell	36	34.3	1.05
NYU Medical Center	28	22.0	1.27
Nassau University	6	5.5	1.10
Nathan Littauer*	0	0.2	0.00
Newark Wayne	3	1.2	2.40
Niagara Falls*	0	0.8	0.00
North Central Bronx	2	0.7	2.72
North Shore	30	21.1	1.42
Northern Dutchess*	0	0.5	0.00
Northern Westchester*	0	1.5	0.00
Noyes Memorial	1	0.3	3.55
Nyack Hospital	4	3.6	1.11
Olean General*	0	1.1	0.00
Oneida Healthcare*	0	0.5	0.00
OrangeReg Goshen&Mid	8	4.0	1.99
Oswego Hospital*	0	0.8	0.00
Our Lady of Lourdes	2	2.2	0.93
Peconic Bay Medical*	0	0.7	0.00
Phelps Memorial	1	0.9	1.07
Plainview Hospital	4	4.2	0.95
Putnam Hospital*	0	0.8	0.00
Queens Hospital	5	4.4	1.14
Richmond Univ	6	8.6	0.69

State average. ●SIR. > Upper confidence limit exceeds graph area. ^^Significantly higher than state average.
**Significantly lower than state average. Average. *Zero Infections,not significant. NA: Hospitals with <50 central line days.
Data reported as of July 26, 2012. Expected based on NYS 2011 average, adjusting for ICU type and birthweight.
Excludes clinical sepsis and untreated event with single pathogen contaminated specimen.

Figure 24. Central Line-Associated Blood Stream Infection (CLABSI) Summary for Adult, Pediatric, and Neonatal ICUs: Standardized Infection Ratio (SIR), New York 2011 (page 4 of 5)



State average. ●SIR. > Upper confidence limit exceeds graph area. —^^Significantly higher than state average.
—**Significantly lower than state average. —Average. —*Zero Infections,not significant. NA: Hospitals with <50 central line days.
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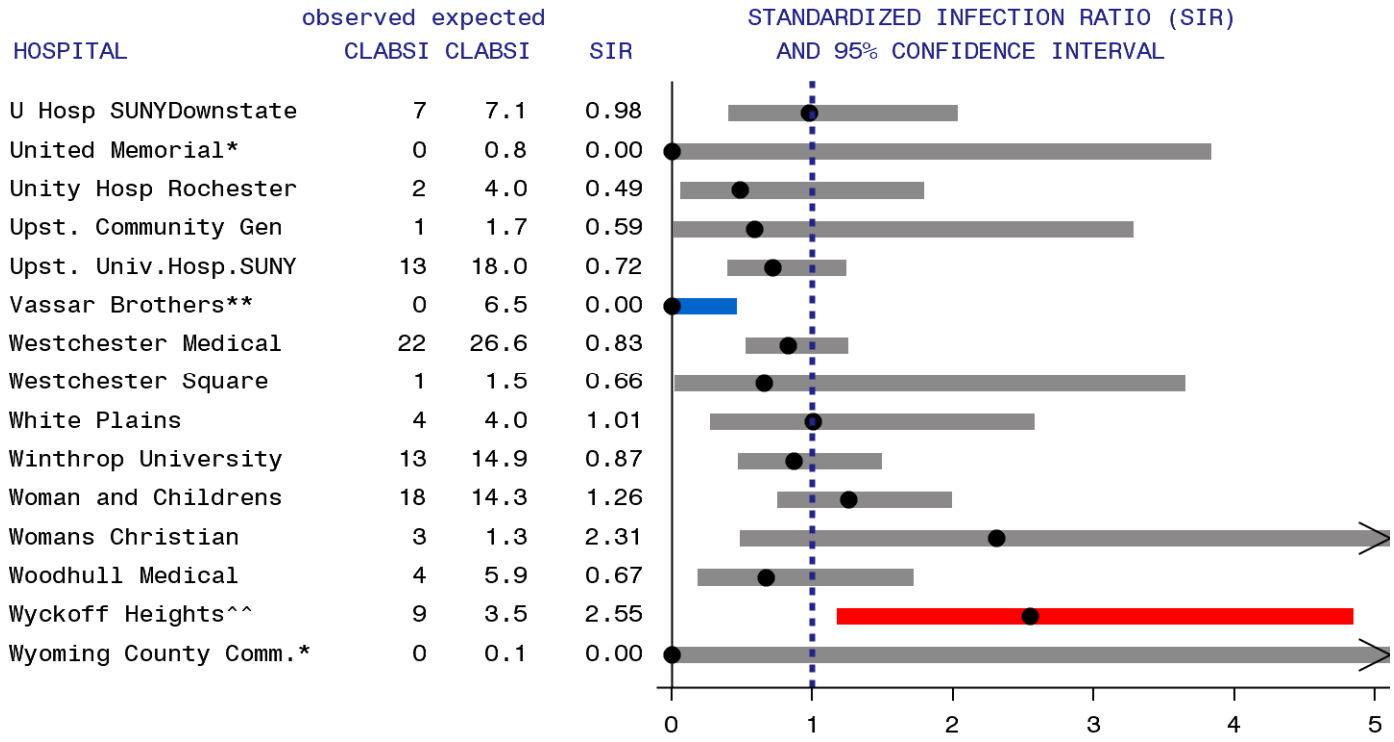
Figure 24. Central Line-Associated Blood Stream Infection (CLABSI) Summary for Adult, Pediatric, and Neonatal ICUs: Standardized Infection Ratio (SIR), New York 2011 (page 5 of 5)



State average. ●SIR. > Upper confidence limit exceeds graph area. —^^Significantly higher than state average.
—**Significantly lower than state average. —Average. —*Zero Infections,not significant. NA: Hospitals with <50 central line days.
Data reported as of July 26, 2012. Expected based on NYS 2011 average, adjusting for ICU type and birthweight.
Excludes clinical sepsis and untreated event with single pathogen contaminated specimen.

Clostridium difficile Infections

Clostridium difficile (*C. difficile*) is a common cause of diarrhea acquired in healthcare settings. In a small percentage of people, the *C. difficile* bacterium lives along with other types of bacteria normally found in the intestinal tract (bowels) and does not cause any symptoms or problems. The elderly and those who have recently taken antibiotics are at the greatest risk for developing *C. difficile* infection. Antibiotics can disrupt normal bowel bacteria populations and produce an overgrowth of *C. difficile*, resulting in infection. In addition to antibiotics being associated with developing *C. difficile* infection, patients can also become infected if they touch their mouth after touching contaminated environmental surfaces or patient care items. When the *C. difficile* bacterium crowds out the other naturally occurring bowel bacteria populations, it excretes a toxin into the intestines that may result in symptoms of infection ranging from abdominal cramping and mild diarrhea, to severe diarrhea and bowel damage, which in some instances can result in death.

To identify and report inpatient *C. difficile* cases, hospitals follow the NHSN "*C. difficile* Laboratory ID" surveillance protocol. Hospitals count *C. difficile* cases in all inpatient areas of the hospital except newborn nurseries. The diagnosis of *C. difficile* infection is usually made by performing a laboratory test on a liquid stool sample. Patients are not tested for *C. difficile* unless they have symptoms of infection. Hospitals are required to report infections both in patients newly admitted with a laboratory-confirmed *C. difficile* infection and in patients who acquire a laboratory-confirmed *C. difficile* infection during their hospitalization.

C. difficile cases are separated into reporting categories depending upon whether the onset of illness occurred in the community or in a hospital. Cases termed "community-onset not my hospital" (CO-NMH) are cases in which the positive stool sample was obtained during the first three days of the patient's hospital admission and more than 4 weeks after any previous discharge from that same hospital. These cases are presumed unrelated to the patient's stay in that hospital. Cases termed "community-onset possibly related to my hospital" (CO-PMH) are cases in which a patient who was discharged from the same hospital within the previous 4 weeks is readmitted to that hospital with a new positive *C. difficile* test during the first three days of admission. In CO-PMH cases, it is not certain whether the *C. difficile* infection occurred as a result of the recent hospitalization or whether it is related to other exposures outside of the hospital. Hospital-onset (HO) cases are cases in which the positive stool sample was obtained on day four or later during the hospital stay. HO and CO-PMH cases are sometimes combined into one category called "hospital-associated" cases, as the "worst case" estimate of the *C. difficile* cases associated with that facility.

Time Trends in *C. difficile* Rates

In 2011, hospitals reported 21,379 cases of *C. difficile* among 2.3 million hospital admissions. Between 2010 and 2011, the total *C. difficile* infection rate increased 4.2%, from 0.89 cases to 0.93 cases per 100 admissions (Table 17).

Table 17: Trend in total *C. difficile* infection rate, New York State 2010-2011

Year	# Hospitals	# Infections Total	# Admissions	Total *C. difficile* Infection Rate
2010	177	20,631	2,317,274	0.89
2011	177	21,379	2,304,586	0.93

New York State Data reported as of July 26, 2012.
Rate is the number of infections per 100 hospital admissions.

Table 18 summarizes the incidence of hospital-onset and hospital-associated *C. difficile*. The longer a person stays in the hospital, the higher the total risk of acquiring an infection in the hospital, so incidence rates are reported using a denominator of patient days rather than admissions. In 2011, 10,383 of the reported *C. difficile* cases were new hospital-onset cases. NYS inpatients acquired *C. difficile* in the hospital at a rate of 8.5 cases per 10,000 patient days in 2011. This was a 3% increase compared to 2010. Assuming that all CO-PMH cases were associated with the previous hospitalization, the hospital-associated *C. difficile* infection rate would be 10.9 cases per 10,000 patient days.

Table 18: Trend in incidence of *C. difficile*, New York State 2010-2011

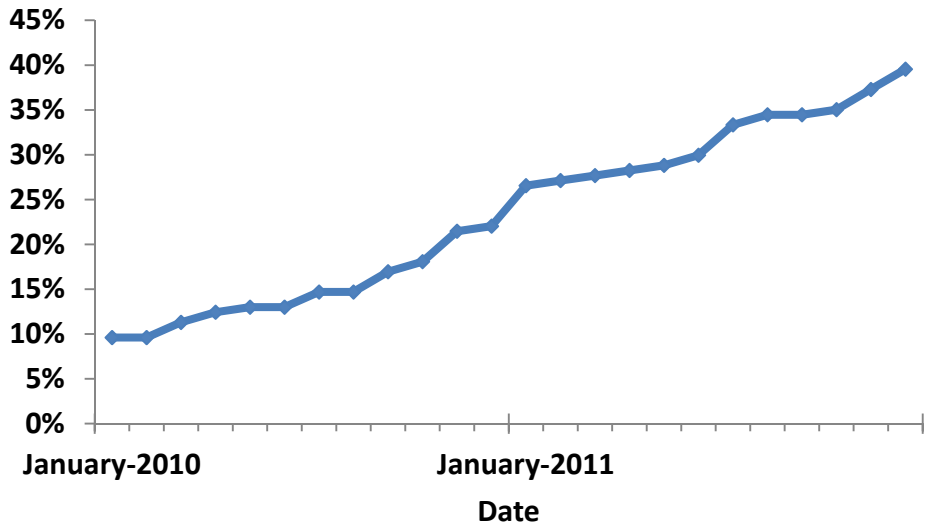
Year	# Hospitals	# Hospital Onset Infections	# Community Onset Possibly My Hospital Infections	# Patient Days	Hospital Onset Incidence Rate	Hospital-Associated Incidence Rate
2010	177	10,186	3,067	12,348,002	8.25	10.73
2011	177	10,383	2,946	12,242,504	8.48	10.89

New York State Data reported as of July 26, 2012.
Incidence rates are number of new cases per 10,000 patient days. New cases occur more than 8 weeks after a previous positive test at the same hospital. Hospital-associated cases are hospital onset plus community onset-possibly my hospital cases

The increase in the *C. difficile* rates may be due in part to increased use of more sensitive testing methods. There are many approved methods available to laboratories to test for the presence of

C. difficile in stool. The optimal approach will vary by hospital and depends on hospitals' choices regarding sensitivity (ability to detect a true positive), specificity (ability to detect a true negative), timeliness, and cost. Many laboratories in NYS have recently switched to a more sensitive test, such as polymerase chain reaction (PCR) or loop-mediated isothermal amplification (LAMP). Highly sensitive testing methods are more likely to detect *C. difficile* in the stool. Between January 2010 and December 2011, the percent of hospitals using these tests as the primary test method increased from 10% to 41% (Figure 25).

Figure 25. Percentage of hospitals using highly sensitive test for *C. difficile*



Data reported from NYS Annual *C. difficile* surveys. Percent of hospitals using polymerase chain reaction (PCR) or loop-mediated isothermal amplification (LAMP) as primary test method, or three step glutamate dehydrogenase (GDH) plus Toxin A/B, confirming discrepancies with PCR or culture.

Among hospitals that switched from the enzyme immunoassay (EIA) Toxin A/B antibody test to PCR, LAMP, or 3-step glutamate dehydrogenase (GDH) -Toxin A/B-PCR, HO rates increased by an average of 50%. In contrast, no change in rate was observed among the group of hospitals that did not change testing methods. Because these comparisons are based on a limited amount of data, and there was substantial variation between hospitals, it is unclear to what extent the increase in *C. difficile* in 2011 is attributable to changes in testing methods.

Hospital-Specific *C. difficile* Rates

The LabID *C. difficile* rates are intended to be used by hospitals as a baseline for tracking *C. difficile* within their own hospital over time. These data should not be used to compare rates between hospitals or to the state average. Some of the reasons are as follows:

- Because data are not available on potential risk factors for *C. difficile* among the hospital's entire patient population from which *C. difficile* infections are being reported, it is not possible to use risk adjustment to compare rates between hospitals. For example, we could not account for differences in average patient age between hospitals. Hospitals that see older patients might have higher rates merely because the patient population is more susceptible to the infection.

- Laboratory testing methods vary between hospitals. Hospitals that use more sensitive tests might have higher reported rates.

- The categorization of *C. difficile* cases with regard to where the patients acquired the infection is a best estimate, but we cannot know with certainty where people acquire *C. difficile*. It sometimes takes weeks to develop symptoms of infection after a patient acquires the bacteria. Elderly patients may move in and out of their homes and facilities such as hospitals, nursing homes, and assisted living and could be exposed to *C. difficile* in any location.

The hospital-specific *C. difficile* rate table (Figure 26) is different from all other rate tables in this report because the 2011 rate for each hospital is compared to that hospital's 2010 baseline rate rather than to the current state average. Refer to Appendix 3, Figure 31 for more information about reading Figure 26.

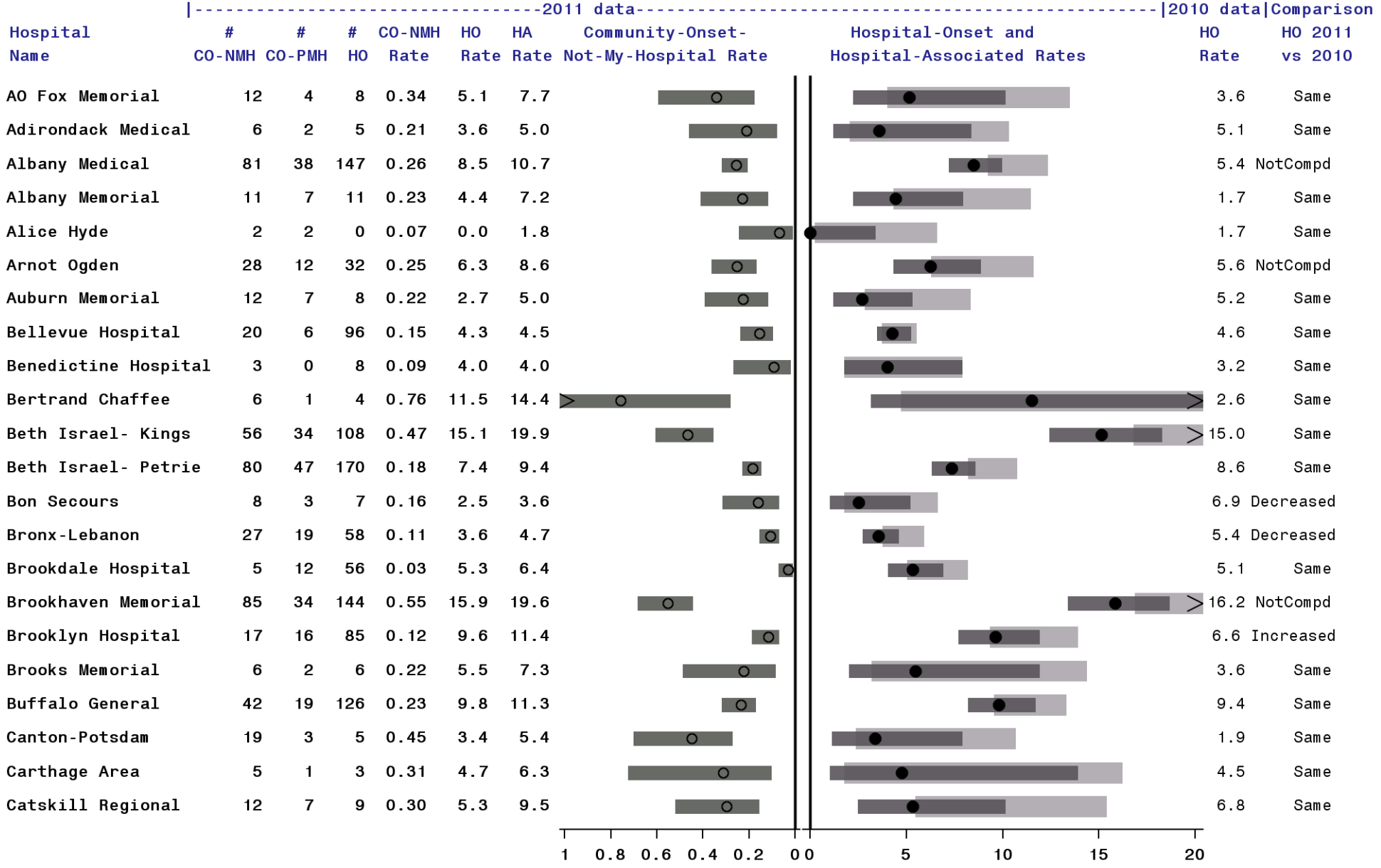
Because of the impact changes in test methods might have on rates, a statistical comparison was not made for 34 hospitals that changed to a more sensitive test between April 2010 and September 2011. Fifteen hospitals reported significant reductions in HO *C. difficile*. They attributed these decreases to a variety of factors, including changing from shared to private rooms, improvement in room cleaning procedures, improvement in hand cleaning procedures and contact precautions, earlier identification of *C. difficile* cases and use of isolation, improvement in antibiotic stewardship, and increased education. Eight hospitals reported significant increases HO *C. difficile.* These hospitals are implementing changes to try to reduce the rates.

Each year, NYSDOH surveys the hospitals on their *C. difficile* prevention and control practices. Key findings from the 2011 survey include:

- 90% of hospitals place patients with unexplained diarrhea on contact precautions prior to laboratory confirmation of *C. difficile* infection
- 50% of hospitals always place *C. difficile* patients in a private room; an additional 45% place the patients in a private room if it is available
- 72% of hospitals use a unique *C. difficile* contact precautions sign
- 90% of hospitals use dedicated non-critical medical items (such as blood pressure cuffs or stethoscopes) for patients with *C. difficile* infection

- 96% of hospitals use soap and water (rather than alcohol gel, etc.) for hand hygiene with patients with *C. difficile* infection
- 88% of hospitals routinely use a bleach product for cleaning rooms in which patients with *C. difficile* infection stayed
- 70% of hospitals have a specific person responsible for reviewing antibiotic utilization with the goal of promoting the judicious use of antimicrobial agents
- 70% of hospitals restrict the use of some antibiotics
- 85% of hospitals have an education program for staff on reducing the transmission of *C. difficile*
- 79% of respondents strongly agreed that prevention and control of *C. difficile* is a priority at their hospital

Figure 26: *C. difficile* rates, New York State 2011 with comparison to 2010 (page 1 of 8)



community-onset-not-my-hospital (CO-NMH) rate and 95% confidence interval = # CO-NMH cases per 100 admissions (state average = 0.30).
hospital-onset (HO) rate and 95% confidence interval = # HO cases per 10,000 patient days (state average = 8.5)
95% confidence interval of hospital-associated (HA) rate = # HO plus community-onset-possibly-my-hospital cases (CO-PMH) per 10,000 patient days (state average = 10.9)
> Upper confidence limit exceeds graph area. NotCompd: HO rates not compared because hospital changed testing method. NYS data as of July 26, 2012.

Figure 26: *C. difficile* rates, New York State 2011 with comparison to 2010 (page 2 of 8)

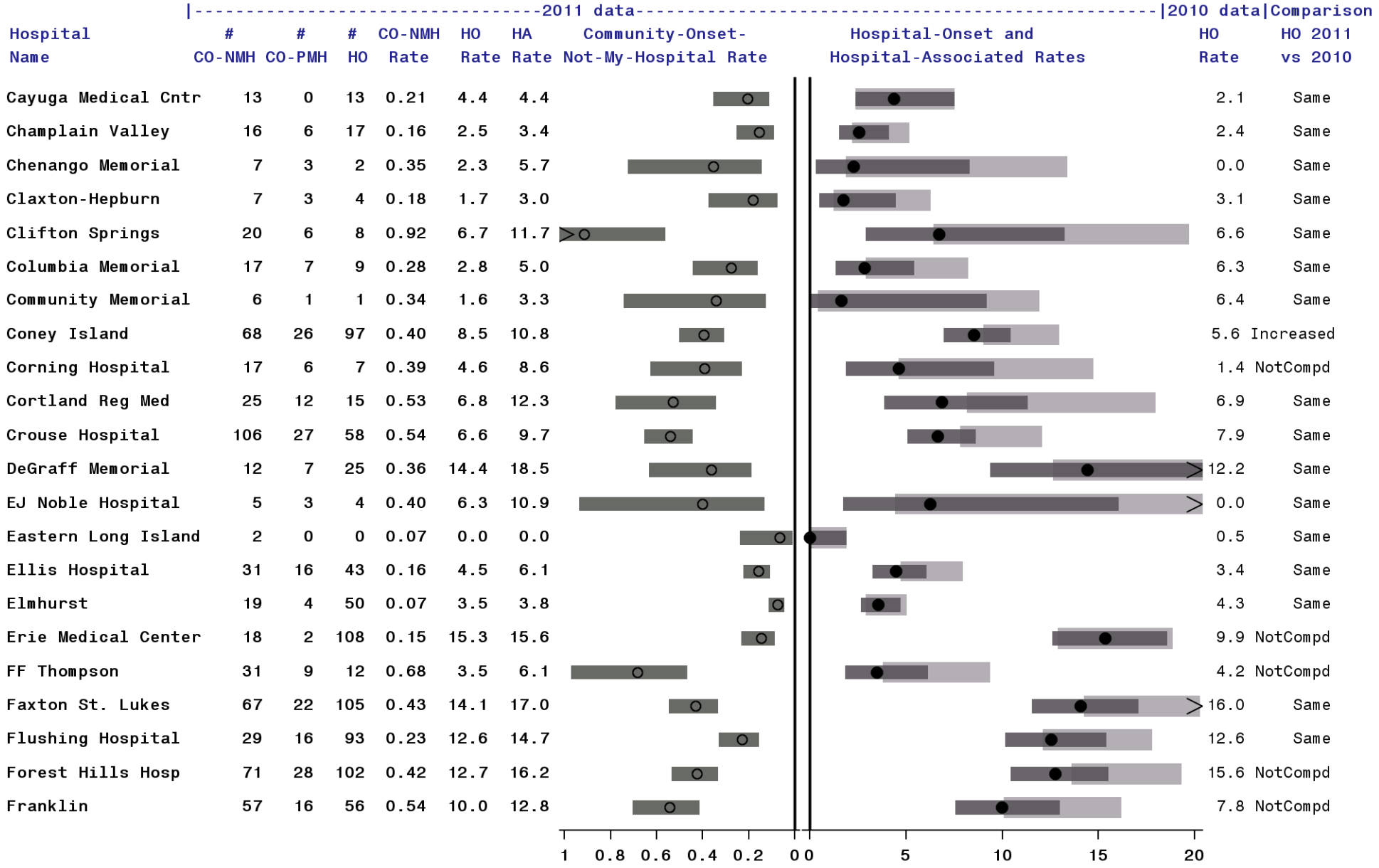


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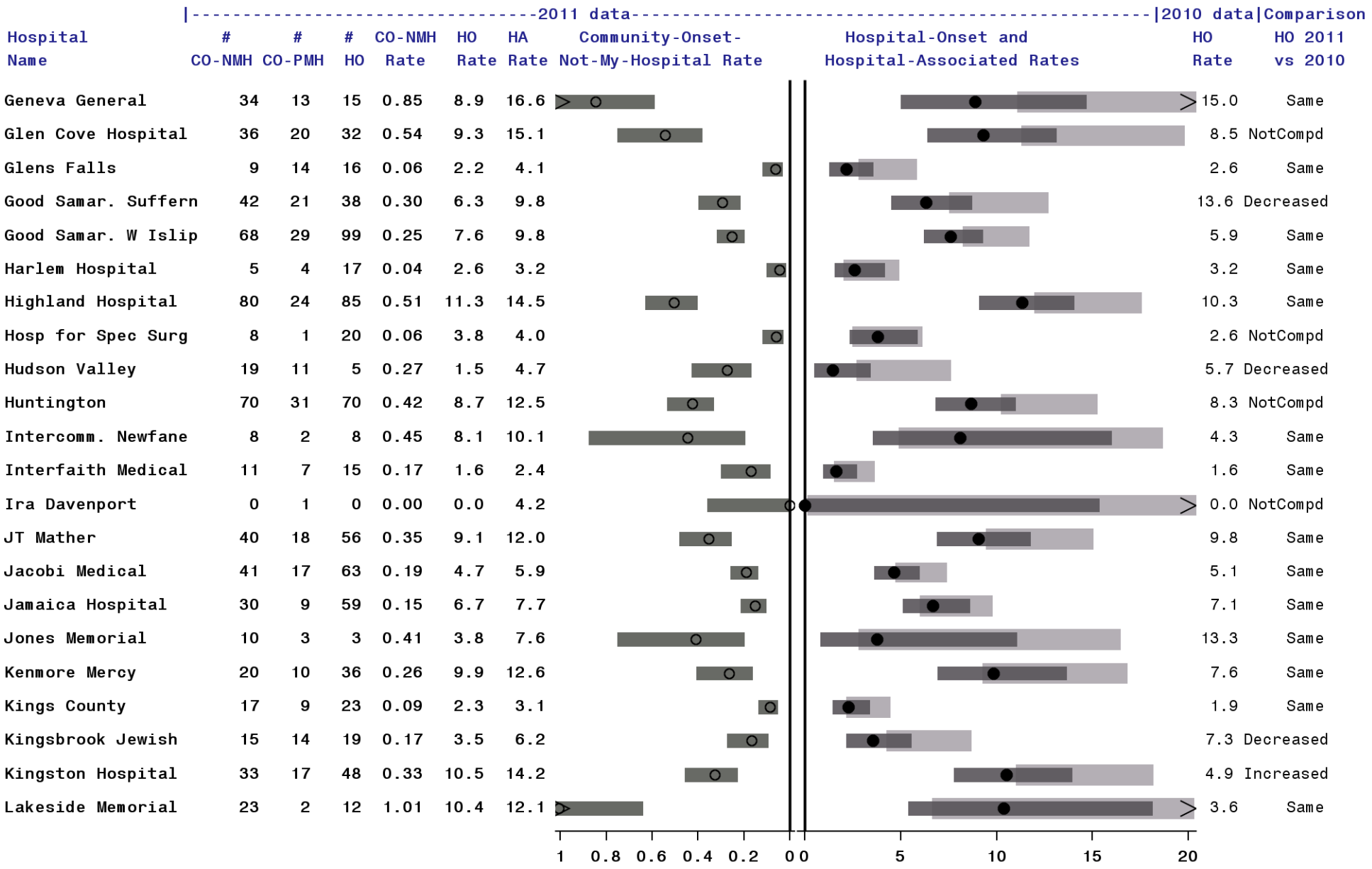
Figure 26: *C. difficile* rates, New York State 2011 with comparison to 2010 (page 3 of 8)



Hospital Name	# CO-NMH	# CO-PMH	# HO	CO-NMH Rate	HO Rate	HA Rate	2010 HO Rate	Comparison HO 2011 vs 2010
Geneva General	34	13	15	0.85	8.9	16.6	15.0	Same
Glen Cove Hospital	36	20	32	0.54	9.3	15.1	8.5	NotCompd
Glens Falls	9	14	16	0.06	2.2	4.1	2.6	Same
Good Samar. Suffern	42	21	38	0.30	6.3	9.8	13.6	Decreased
Good Samar. W Islip	68	29	99	0.25	7.6	9.8	5.9	Same
Harlem Hospital	5	4	17	0.04	2.6	3.2	3.2	Same
Highland Hospital	80	24	85	0.51	11.3	14.5	10.3	Same
Hosp for Spec Surg	8	1	20	0.06	3.8	4.0	2.6	NotCompd
Hudson Valley	19	11	5	0.27	1.5	4.7	5.7	Decreased
Huntington	70	31	70	0.42	8.7	12.5	8.3	NotCompd
Intercomm. Newfane	8	2	8	0.45	8.1	10.1	4.3	Same
Interfaith Medical	11	7	15	0.17	1.6	2.4	1.6	Same
Ira Davenport	0	1	0	0.00	0.0	4.2	0.0	NotCompd
JT Mather	40	18	56	0.35	9.1	12.0	9.8	Same
Jacobi Medical	41	17	63	0.19	4.7	5.9	5.1	Same
Jamaica Hospital	30	9	59	0.15	6.7	7.7	7.1	Same
Jones Memorial	10	3	3	0.41	3.8	7.6	13.3	Same
Kenmore Mercy	20	10	36	0.26	9.9	12.6	7.6	Same
Kings County	17	9	23	0.09	2.3	3.1	1.9	Same
Kingsbrook Jewish	15	14	19	0.17	3.5	6.2	7.3	Decreased
Kingston Hospital	33	17	48	0.33	10.5	14.2	4.9	Increased
Lakeside Memorial	23	2	12	1.01	10.4	12.1	3.6	Same

community-onset-not-my-hospital (CO-NMH) rate and 95% confidence interval = # CO-NMH cases per 100 admissions (state average = 0.30).
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Figure 26: *C. difficile* rates, New York State 2011 with comparison to 2010 (page 4 of 8)

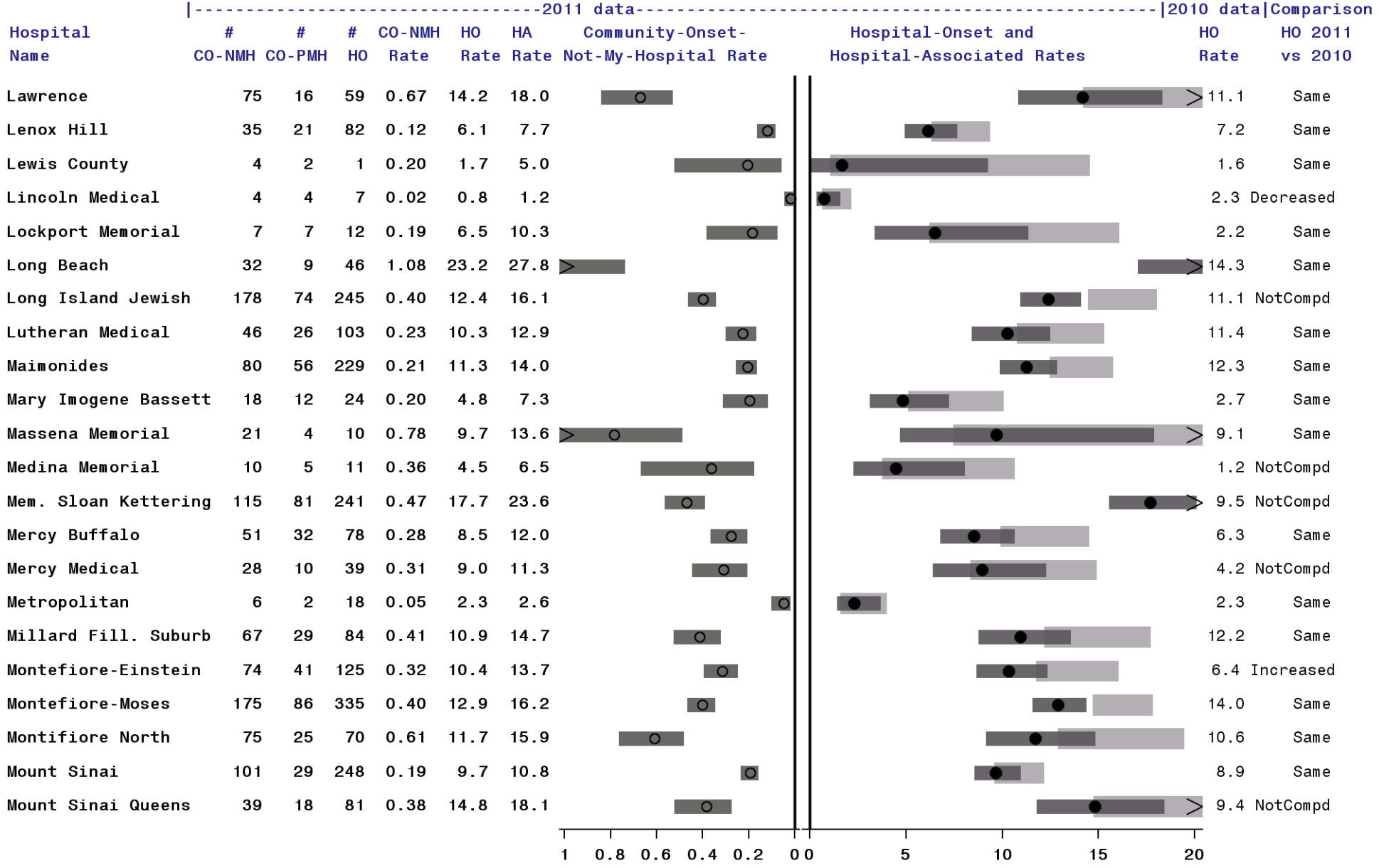

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Figure 26: *C. difficile* rates, New York State 2011 with comparison to 2010 (page 5 of 8)

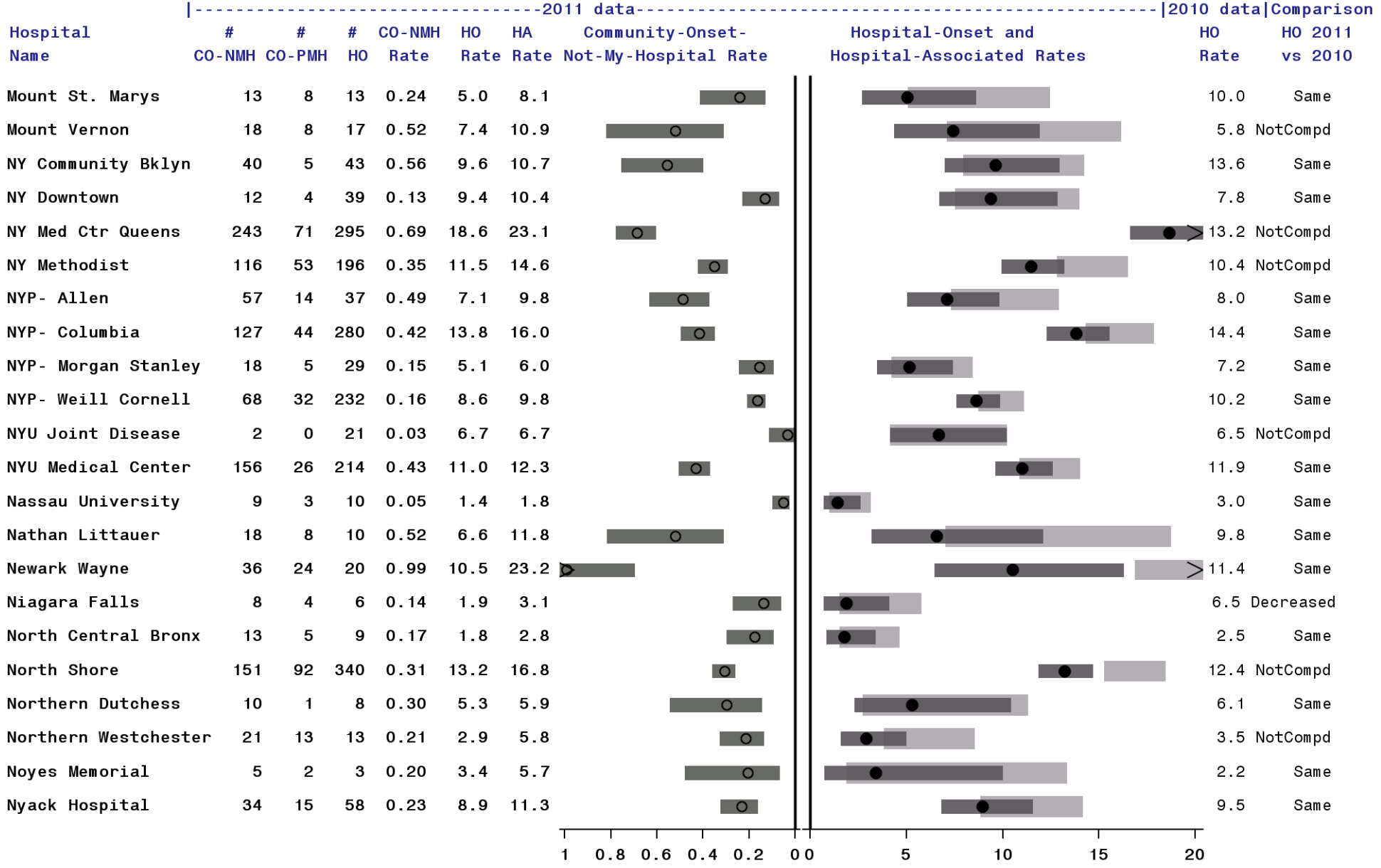

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Figure 26: *C. difficile* rates, New York State 2011 with comparison to 2010 (page 6 of 8)

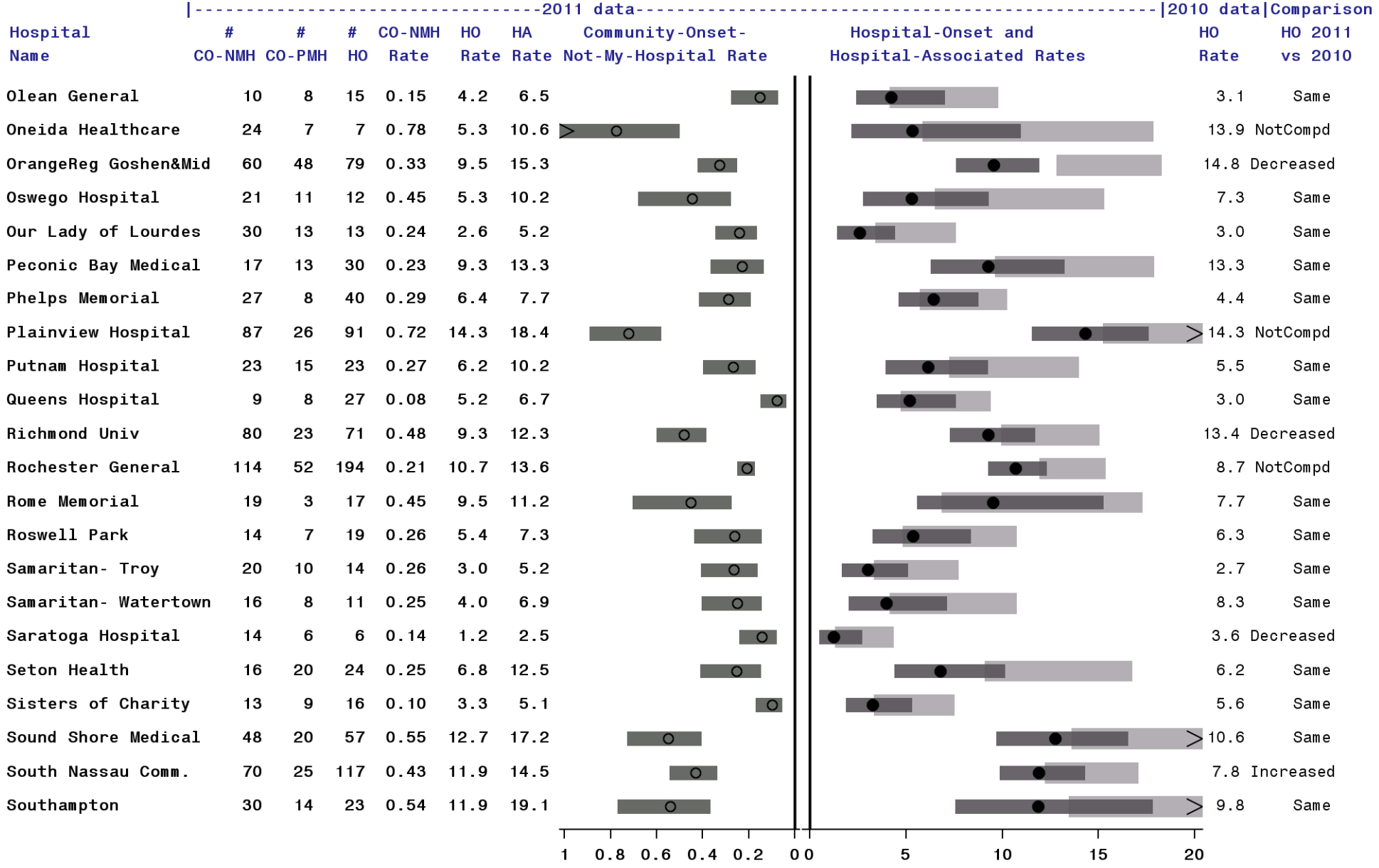

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Figure 26: *C. difficile* rates, New York State 2011 with comparison to 2010 (page 7 of 8)

Hospital Name	# CO-NMH	# CO-PMH	# HO	CO-NMH Rate	HO Rate	HA Rate	2011 data: Community-Onset-Not-My-Hospital Rate / Hospital-Onset and Hospital-Associated Rates	2010 data: HO Rate	Comparison: HO 2011 vs 2010
Southside	54	14	47	0.36	6.1	7.9		7.5	NotCompd
St Anthony	11	4	7	0.42	5.9	9.3		20.6	Decreased
St Barnabas	29	10	89	0.14	9.5	10.6		12.1	Same
St Catherine Siena	50	33	84	0.35	9.9	13.8		8.0	Same
St Charles Hospital	11	5	6	0.15	1.9	3.4		5.7	Decreased
St Elizabeth Medical	30	33	70	0.25	12.1	17.7		11.5	Same
St Francis- Pough.	6	0	12	0.07	2.1	2.1		2.4	Same
St Francis- Roslyn	62	21	119	0.35	11.0	12.9		10.6	Same
St James Mercy	2	2	0	0.12	0.0	3.4		3.1	Same
St Johns Episcopal	15	6	29	0.19	5.5	6.6		1.0	NotCompd
St Johns Riverside	32	15	30	0.18	2.7	4.1		3.2	Same
St Joseph -Bethpage	47	26	56	0.66	15.2	22.3		11.0	Same
St Joseph Cheektow.	31	14	31	0.57	10.3	14.9		13.7	Same
St Josephs- Elmira	17	10	20	0.51	11.5	17.2		8.6	NotCompd
St Josephs- Syracuse	147	58	151	0.62	12.0	16.6		11.0	Same
St Josephs- Yonkers	12	4	24	0.19	4.9	5.7		3.4	Same
St Lukes- Roosevelt	33	12	52	0.14	4.6	5.6		6.8	Decreased
St Lukes- St Lukes	44	18	83	0.21	6.8	8.3		5.8	Same
St LukesNewburgh&Cor	31	18	46	0.28	9.2	12.8		6.4	Same
St Marys Amsterdam	28	6	14	0.46	4.8	6.8		6.2	Same
St Peters Hospital	28	16	44	0.11	3.9	5.3		3.6	Same
Staten Island U N&S	102	49	149	0.28	9.6	12.7		10.6	Same

community-onset-not-my-hospital (CO-NMH) rate and 95% confidence interval = # CO-NMH cases per 100 admissions (state average = 0.30).
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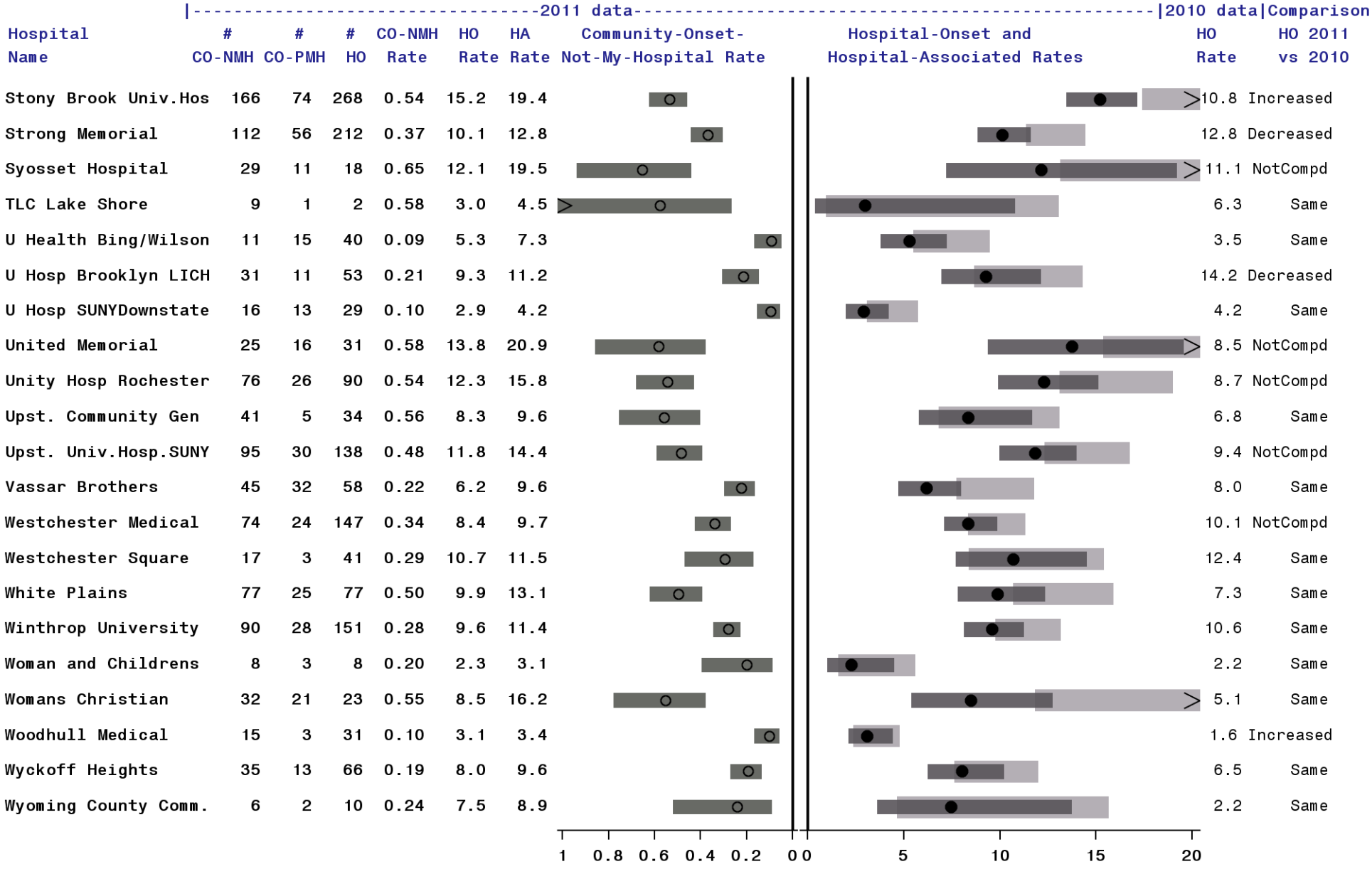
Figure 26: *C. difficile* rates, New York State 2011 with comparison to 2010 (page 8 of 8)



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Comparison of NYS HAI Rates with National HAI Rates

To compare the performance of NYS with the national average, the most recently published national data were identified and compared to NYS data from a comparable time period.

For CLABSIs, 2010 NYS rates were compared to 2010 national rates (Table 19). Overall, NYS CLABSI rates were 24% higher than national rates, after adjusting for ICU type and birthweight within neonatal ICUs. Only 16 states audited CLABSI data in 2010.[3]

Table 19. Comparison of NYS and National CLABSI Rates, 2010

	National*			NYS			Comparison		
Location	CLABSI	Central Line days	Rate	CLABSI	Central Line days	Rate	NYS Expected	SIR (95% CI)	Result
Coronary ICU	503	376,962	1.3	85	50,327	1.7	67.2	1.27 (1.01, 1.57)	^H
Cardiothoracic ICU	519	554,719	0.9	77	74,555	1.0	69.8	1.10 (0.87, 1.38)	OK
Medical ICU	1,167	756,859	1.5	194	97,888	2.0	154.1	1.26 (1.09, 1.45)	^H
Med/surg nonteaching ICU	2,140	2,018,334	1.1	239	155,205	1.5	165.4	1.44 (1.27, 1.64)	^H
Med/surg teaching ICU	578	417,461	1.4	31	34,051	0.9	47.1	0.66 (0.45, 0.93)	*L
Neurosurgical ICU	207	154,375	1.3	39	18,577	2.1	24.9	1.57 (1.11, 2.14)	^H
Pediatric ICUs	688	373,536	1.8	65	30,001	2.2	53.7	1.21 (0.93, 1.54)	OK
Surgical ICU	636	525,195	1.2	123	80,350	1.5	98.7	1.25 (1.04, 1.49)	^H
Level II/III NICU	455	277,213	1.6	28	7,423	3.8	14.8	1.90 (1.26, 2.74)	^H
Level III and RPC NICU	891	546,831	1.6	160	85,530	1.9	143.4	1.12 (0.95, 1.30)	OK
TOTAL	7,784	6,001,485	1.3	1,041	633,907	1.6	839.1	1.24 (1.17, 1.32)	^H

*Dudeck et. al 2011. NHSN Report, data summary for 2010, device-associated module. Am J Infect Control 2011;39:798-816. Data downloaded July 26, 2012. Rates are per 1,000 central line days.
^H: NYS significantly higher than National, *L: NYS significantly lower than National, OK: NYS not significantly different.

For SSI data, the most recently available national averages are from 2006-8[4]. As published in the 2010 NYS HAI report using these data, NYS 2007-8 rates were 16% higher than national rates for CABG chest SSI and 19% higher for donor SSI. NYS rates were the same as national rates for colon and hip SSI.

The 2010 national average hospital-onset *C. difficile* rate was published in the Morbidity and Mortality Weekly Report[5]. However, this rate is only based on 711 hospitals in 28 states, because LabID *C. difficile* surveillance is new. The NYS 2010 average CDI rate of 8.2

infections per 10,000 patient days is significantly higher than the national 2010 average of 7.4 infections per 10,000 patient days.

NYS rates may appear higher than national rates because NYS has had a strong data validation program since 2007, while states that have more recently implemented reporting mandates have not yet begun data validation. The data validation process is likely to increase HAI rates because missed infections are identified and entered into the NHSN and training efforts increase the skills of the hospital IPs, leading to better identification of HAIs. Additionally, the presence of a validation process in a state might encourage increased care and thoroughness in reporting, which might result in higher pre-audit HAI rates. In summary, states with data validation programs might appear to have higher rates because of their validation efforts, because they truly have a higher rate, or both.

Cost of Hospital-Acquired Infections and Savings from Reductions

Since NYS public reporting of HAIs began in 2007, the reductions in colon, CABG, and hip replacement SSI rates, as well as ICU-related CLABSIs, have resulted in cost savings. A recent CDC report provided a range of estimates for the direct hospital cost of treating HAIs[2]. Ranges were provided because HAIs vary in severity. For example, a deep chest infection following CABG surgery is more complicated and expensive than a superficial site infection following CABG surgery. Additionally, studies upon which the CDC report is based differ somewhat in their cost estimates. Until more precise estimates are available, these ranges have been used to estimate comparative costs of HAIs and cost savings since the inception of the HAI program (Table 20).

Table 20. Estimated Costs and Cost Savings of HAIs, New York State

a) CLABSI costs and cost savings

Year	# infections observed in year	Minimum Direct Cost (millions of dollars)	Maximum Direct Cost (millions of dollars)	# infections expected using 2007 NYS baseline	# infections avoided	Minimum Estimated Cost Savings, millions (in 2007 dollars)	Maximum Estimated Cost Savings, millions (in 2007 dollars)
2008	1,557	11.3	45.4	1,628	71	0.5	2.1
2009	1,327	9.7	38.7	1,658	331	2.4	9.6
2010	1,041	7.6	30.4	1,618	577	4.2	16.8
2011	944	6.9	27.5	1,613	669	4.9	19.5
TOTAL	4,869	35.5	142.0	6,517	1,648	12.0	48.0

Based on surveillance of CLABSIs in Medical, Surgical, Medical/Surgical, Cardiac, Cardiothoracic, Neurosurgical, Pediatric, and Neonatal Intensive Care Units beginning in 2007. Direct costs per CLABSI* minimum = $ 7,288 ; maximum = $ 29,156

b) SSI costs and cost savings

Year	# infections observed in year	Minimum Direct Cost (millions of dollars)	Maximum Direct Cost (millions of dollars)	# infections expected using NYS baseline	# infections avoided	Minimum Estimated Cost Savings, millions (in 2007 dollars)	Maximum Estimated Cost Savings, millions (in 2007 dollars)
2008	1,640	19.5	56.9	1,891	251	3.0	8.7
2009	1,698	20.2	58.9	1,828	130	1.5	4.5
2010	1,582	18.8	54.8	1,762	180	2.1	6.3
2011	1,484	17.6	51.5	1,711	227	2.7	7.9
TOTAL	6,404	76.0	222.0	7,192	788	9.4	27.3

Based on surveillance of Colon and Coronary Artery Bypass Graft procedures beginning in 2007, and Hip Procedures beginning in 2008. Direct costs per SSI* minimum = $11,874; maximum = $ 34,670

c) *C. difficile* costs

Year	# infections observed in year	Minimum Direct Cost (millions)	Maximum Direct Cost (millions)
2010	10,186	65.3	92.9
2011	10,383	66.5	94.7

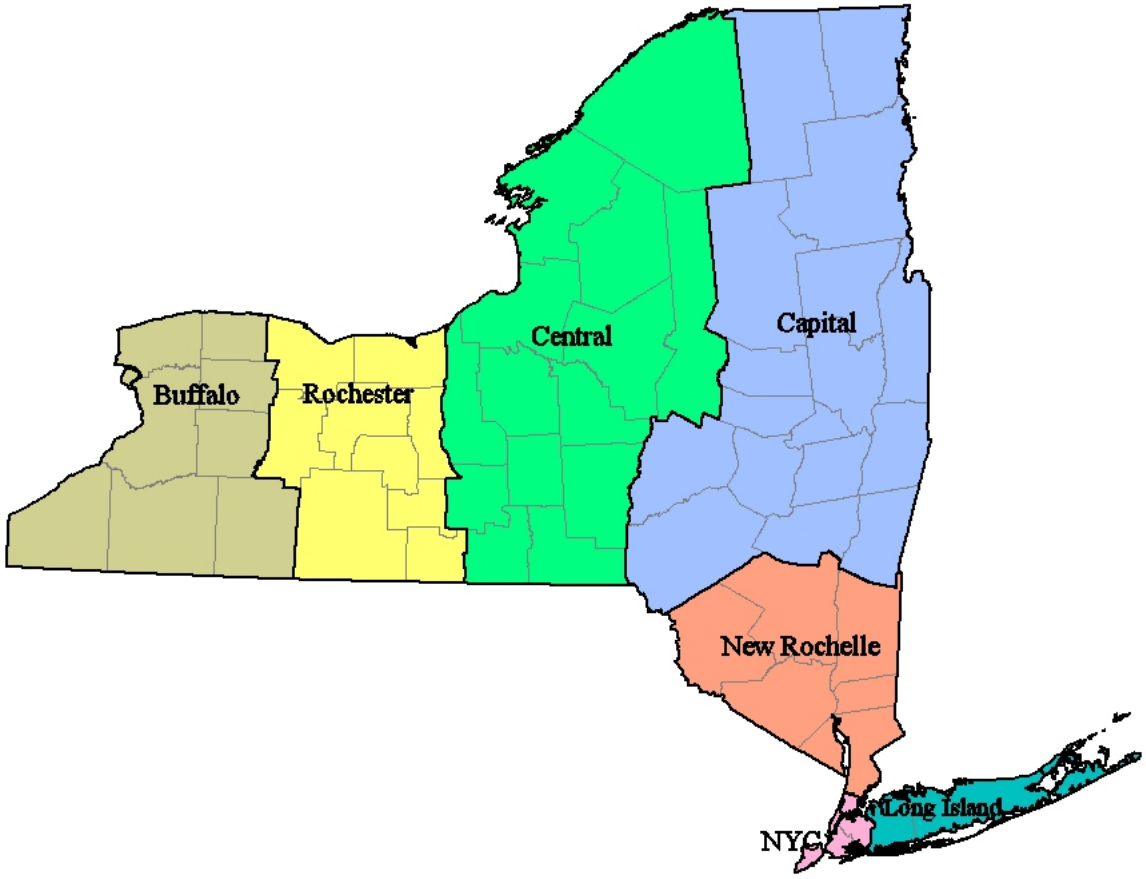
Based on surveillance of hospital-onset C. difficile infections beginning in 2010.
Direct costs per infection* minimum = $ 6,408; maximum = $ 9,124

Overall, SSI rates decreased by 13% between 2007 and 2011, resulting in a cost savings estimated to be between $9 million and $27 million since 2007. Overall, CLABSI rates decreased by 41% between 2007 and 2011, resulting in a cost savings estimated to be between $12 million and $48 million since 2007. The cost of the hospital onset *C. difficile* infections in 2011 is estimated to range between $66 and $95 million. No cost savings were achieved, as HO *C. difficile* increased by 3%. However, the *C. difficile* baseline rate is not yet stable because many hospitals are adopting more sensitive laboratory testing methods.

Regional Differences

The following map (Figure 27) shows NYS divided into seven regions.

Figure 27. **Regional Map**



Hospital-specific risk adjusted rates were summarized by region using the standardized infection ratio method (Table 21). 2011 regional trends were similar to 2010 regional trends. For surgical site infections, rates were 19% higher than the state average in the Buffalo region and 20% lower than the state average in the New Rochelle region. For CLABSIs, rates were 15% higher than the state average in the NYC region and 33% and 31% lower than the state average in the Central and Capital regions respectively.

There was more variation in *C. difficile* rates. Community-onset *C. difficile* rates were highest in the Central region (32% higher than the state average), Rochester region (26% higher than the state average), and Long Island (27% higher than the state average), and lowest in the Capital region (28% lower than the state average) and NYC region (14% lower than the state average). Hospital-onset rates were 27% higher in Long Island and 14% higher in Rochester, while 45%

lower in the Capital region and 18% lower in New Rochelle. The regional variation in *C. difficile* rates may be related in part to differences in testing methods.

Table 21. Regional Differences in Hospital-Acquired Infections, New York State 2011: Standardized Infection Ratios and 95% confidence intervals compared to NYS 2011 average

Region	Surgical Site Infections	Central Line Associated Blood Stream Infections	Community-Onset *C. difficile*	Hospital Onset *C. difficile*
Buffalo	1.19 (1.00 , 1.39) ***H**	1.12 (0.88 , 1.41)	0.98 (0.91 , 1.05)	1.00 (0.93 , 1.07)
Rochester	0.91 (0.73 , 1.11)	0.79 (0.58 , 1.05)	1.26 (1.18 , 1.34) ***H**	1.14 (1.06 , 1.23) ***H**
Central	0.90 (0.75 , 1.06)	0.67 (0.50 , 0.89) ***L**	1.32 (1.24 , 1.41) ***H**	0.97 (0.90 , 1.05)
Capital	0.91 (0.75 , 1.08)	0.69 (0.50 , 0.93) ***L**	0.72 (0.66 , 0.78) ***L**	0.55 (0.49 , 0.60) ***L**
New Rochelle	0.80 (0.65 , 0.98) ***L**	0.94 (0.73 , 1.19)	1.04 (0.98 , 1.10)	0.82 (0.77 , 0.88) ***L**
NYC	1.03 (0.95 , 1.13)	1.15 (1.05 , 1.25) ***H**	0.86 (0.84 , 0.89) ***L**	1.01 (0.98 , 1.04)
Long Island	1.09 (0.96 , 1.23)	0.87 (0.72 , 1.05)	1.27 (1.22 , 1.33) ***H**	1.27 (1.21 , 1.33) ***H**

*H significantly higher than the state average.
*L significantly lower than the state average.

Infection Prevention Resources

To measure the impact of mandatory HAI reporting on infection prevention personnel and programs, an infection prevention resource survey is conducted annually. Information is obtained on the number of infection preventionists (IPs) and hospital epidemiologists (HEs); IP/HE educational background and certification; infection control program support services; activities and responsibilities of infection prevention and control program staff; and an estimate of time dedicated to various activities, including surveillance. This section summarizes the highlights of the survey.

To compare staffing levels between hospitals and track trends over time, it is important to adjust for the number of IP hours worked and the number of patients the IP staff oversee. This report includes two measures which adjust for these factors:

1) acute care (AC) beds per one full-time-equivalent (FTE) infection preventionist; and
2) aggregate beds per one FTE IP – this measure combines acute care beds, ICU beds, long term care beds, dialysis centers, ambulatory surgery centers, ambulatory clinics and private physician offices using the following formula: 1 ICU bed = 2 acute care beds; 1 long term care bed = ½ an acute care bed; 1 dialysis facility = 50 acute care beds; 1 ambulatory surgery center = 50 acute care beds; 1 ambulatory clinic = 10 acute care beds; and a private physician's office = 5 acute care beds.

In 2011, the average FTE infection preventionist in NYS was responsible for 130 acute care beds or an aggregate measure equivalent to 245 AC beds. Staffing levels have been stable over the past four years (Figure 28). Staffing levels were not associated with infection rates or audit accuracy.

Figure 29 summarizes the staffing levels by hospital. Hospitals in the lowest 15th percentile using either infection prevention staffing measure were designated with a "Low" for low IP resources.

Figure 28. Hospital Beds per One Full Time Equivalent Infection Preventionist in New York State, 2007-2011

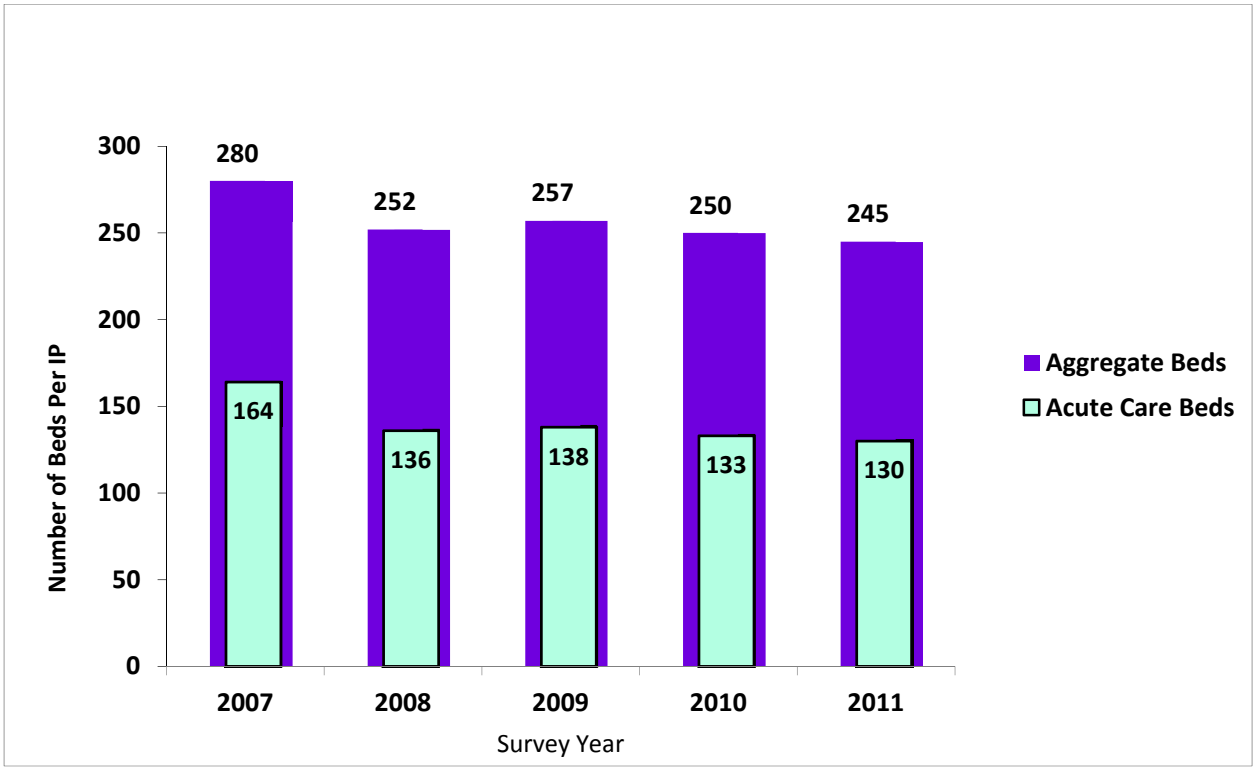
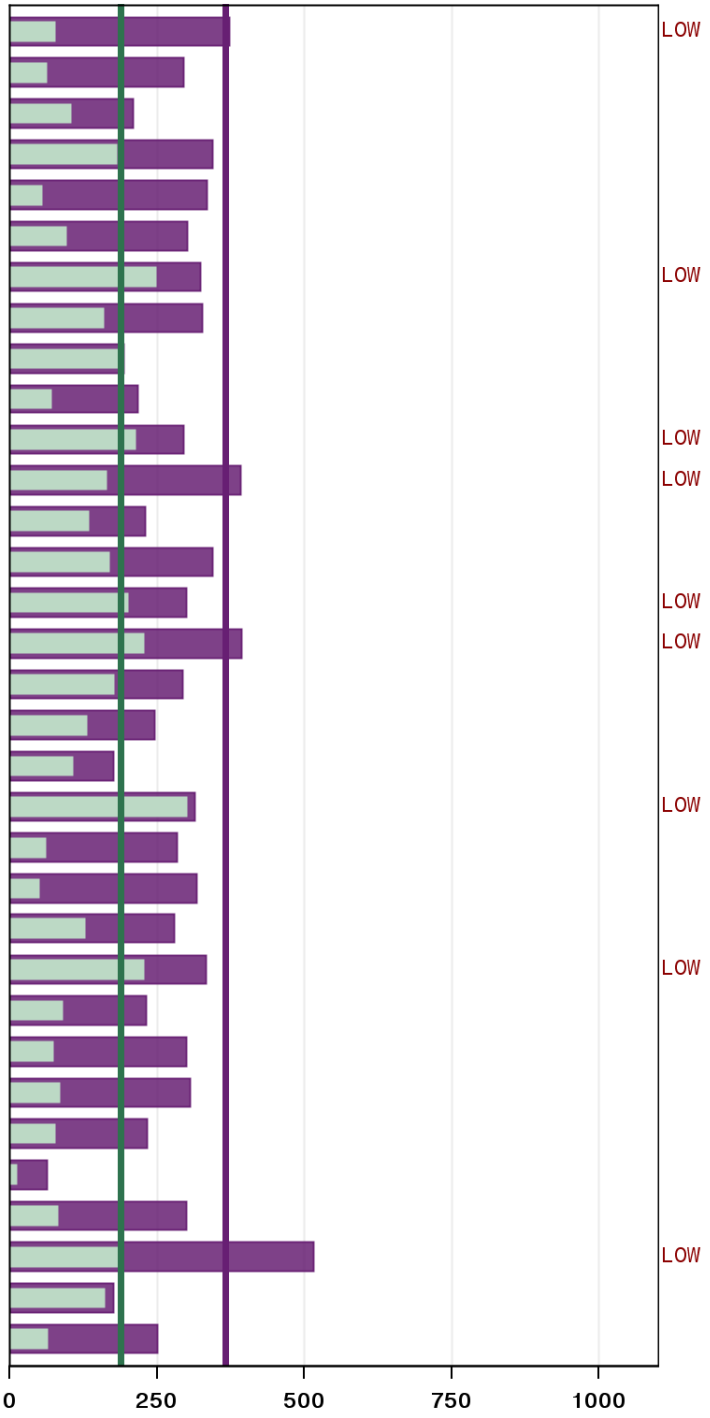


Figure 29. Infection Preventionist Personnel Resources in NYS Hospitals, 2011 (page 1 of 6)

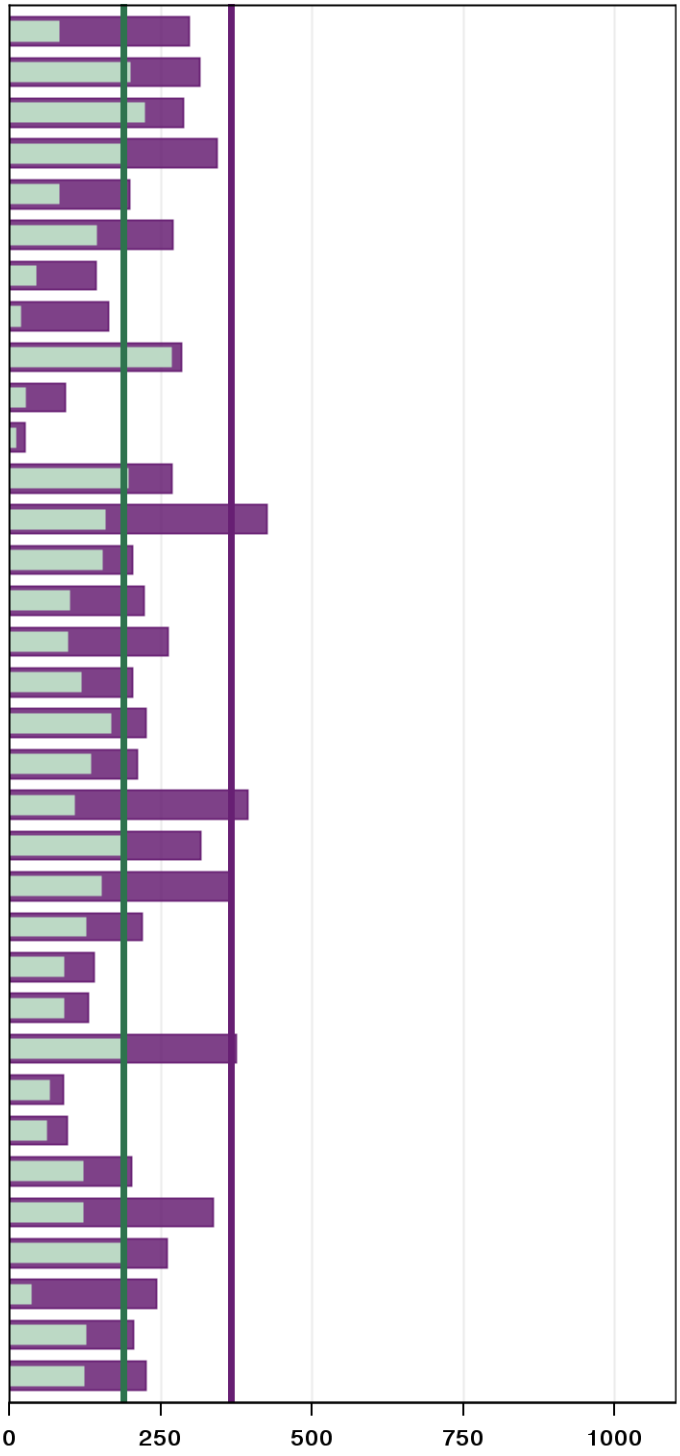
Hospital	FTE for IPs	Acute Care Beds	Acute Beds Per IP	Add. Bed EQ	Add. Bed EQ Per IP	LOW Resources Flag
AO Fox Memorial	0.8	60	75	238	298	LOW
Adirondack Medical	0.9	52	61	198	233	
Albany Medical	6.1	616	102	645	107	
Albany Memorial	0.5	90	180	82	164	
Alice Hyde	1.0	53	53	281	281	
Arnot Ogden	2.3	219	95	472	205	
Auburn Memorial	0.4	99	248	30	75	LOW
Bellevue Hospital	5.0	788	158	848	170	
Benedictine Hospital	0.8	150	188	5	6	
Bertrand Chaffee	0.4	24	69	52	149	
Beth Israel- Kings	1.0	212	212	82	82	LOW
Beth Israel- Petrie	5.0	814	163	1146	229	LOW
Bon Secours	0.6	80	133	58	97	
Bronx-Lebanon	3.0	504	168	526	175	
Brookdale Hospital	2.0	400	200	200	100	LOW
Brookhaven Memorial	1.4	306	227	224	166	LOW
Brooklyn Downtown	2.0	350	175	235	118	
Brooks Memorial	0.5	65	130	58	116	
Buffalo General	3.1	330	106	214	69	
Calvary Hospital	0.8	225	300	10	13	LOW
Canton-Potsdam	1.0	60	60	224	224	
Carthage Area	1.0	48	48	269	269	
Catskill Regional	1.0	127	127	152	152	
Cayuga Medical Center	0.9	204	227	96	107	LOW
Champlain Valley	2.1	185	88	299	142	
Chenango Memorial	0.8	58	73	181	226	
Claxton-Hepburn	0.9	75	83	200	222	
Clifton Springs	0.8	61	76	125	156	
Clifton-Fine Hospital	0.3	3	10	16	53	
Cobleskill Regional	0.5	40	80	110	220	
Columbia Memorial	1.1	192	183	349	332	LOW
Community General	1.0	160	160	16	16	
Community Memorial	0.4	25	63	75	188	



Acute care beds per One FTE Infection Preventionist, state average is 130
Aggregate (acute and other) beds per One FTE Infection Preventionist, state average is 245
FTE = Full Time Equivalent; Add. Bed EQ = Additional Bed Equivalent; IP = Infection Preventionist; AC = Acute Care
The following equivalents were used: ICU bed = 2 AC beds; long term care bed = ½ an AC bed; dialysis facility = 50 AC beds; ambulatory surgery center = 50 AC beds; ambulatory clinic = 10 AC beds; and a private physician's office = 5 AC beds.
Vertical reference lines indicate low resources: below the 15th percentile in either Acute- or Aggregate- Beds Per FTE Measure.

Figure 29. Infection Preventionist Personnel Resources in NYS Hospitals, 2011 (page 2 of 6)

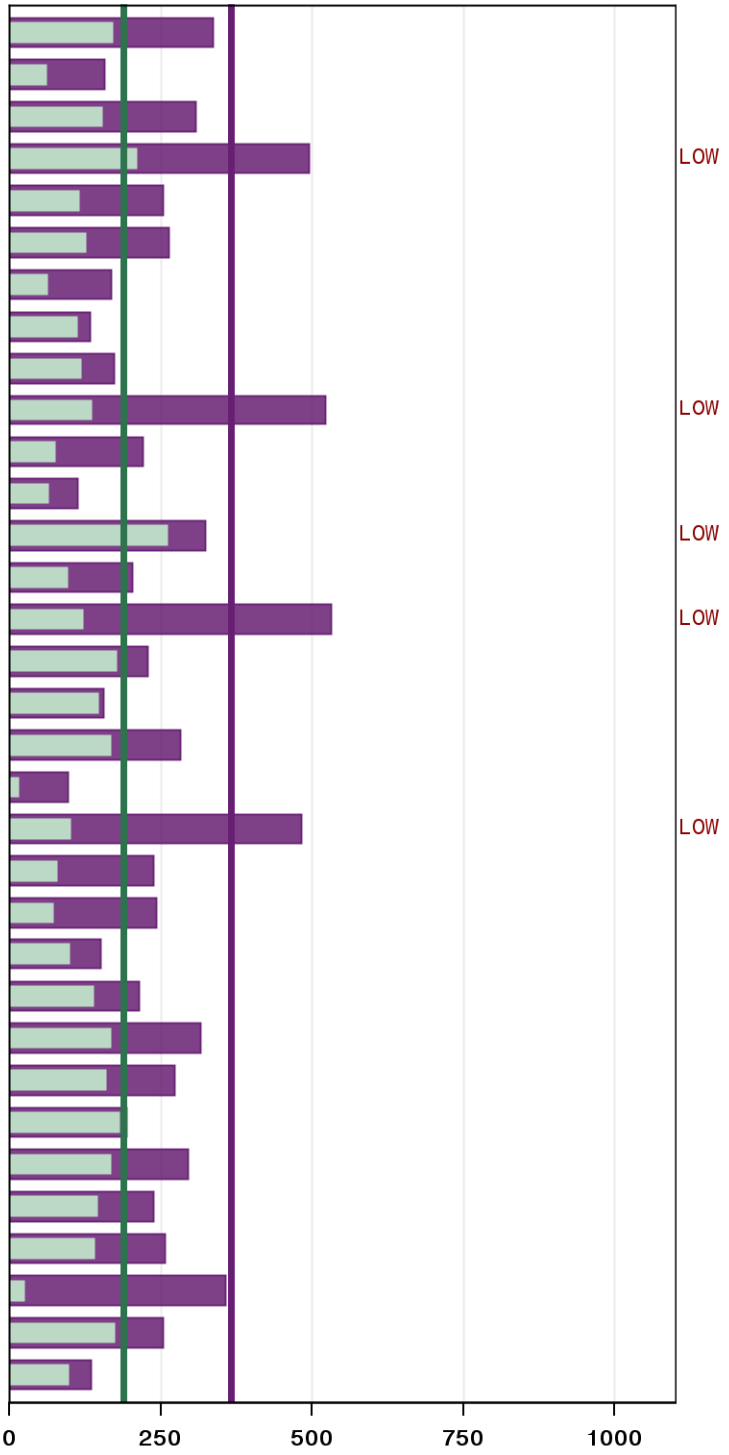
Hospital	FTE for IPs	Acute Care Beds	Acute Beds Per IP	Add. Bed EQ	Add. Bed EQ Per IP	LOW Resources Flag
Coney Island Hospital	4.5	363	81	967	215	
Corning Hospital	0.5	99	198	58	116	LOW
Cortland Reg Med	0.8	177	221	52	65	LOW
Crouse Hospital	2.0	377	189	307	154	LOW
Cuba Memorial	0.3	20	80	30	118	
DeGraff Memorial	0.5	71	142	64	128	
Delaware Valley	0.6	25	42	60	100	
EJ Noble Hospital	0.9	15	17	132	147	
Eastern Long Island	0.3	80	267	5	17	LOW
Elizabethtown	0.6	15	25	40	67	
Ellenville Regional	3.0	25	8	50	17	
Ellis Hospital	2.0	381	195	142	73	LOW
Elmhurst	3.5	545	156	943	269	LOW
Erie Medical Center	2.8	425	152	140	50	
FF Thompson Hospital	1.2	113	98	142	123	
Faxton - St. Lukes	2.7	250	94	442	167	
Flushing Hospital	2.5	293	117	215	86	
Forest Hills Hospital	1.5	249	166	88	59	
Franklin Hospital	1.5	200	133	116	77	
Geneva General	1.3	132	106	360	288	LOW
Glen Cove Hospital	1.0	187	187	128	128	
Glens Falls Hospital	2.0	300	150	427	214	
Good Samaritan Suffern	2.0	250	125	186	93	
Good Samaritan W Islip	4.0	355	89	200	50	
Harlem Hospital Center	3.3	286	88	136	42	
Highland Hospital	1.4	261	186	262	187	LOW
Hosp for Special Surg	2.9	188	65	70	24	
Hudson Valley	2.0	120	60	70	35	
Huntington Hospital	2.3	275	120	186	81	
Intercomm. Newfane	0.3	30	120	54	216	
Interfaith Medical	1.5	287	191	103	69	LOW
Ira Davenport	0.4	12	34	73	209	
JT Mather	2.0	248	124	160	80	
Jacobi Medical	3.8	457	122	385	103	



Acute care beds per One FTE Infection Preventionist, state average is 130
Aggregate (acute and other) beds per One FTE Infection Preventionist, state average is 245
FTE = Full Time Equivalent; Add. Bed EQ = Additional Bed Equivalent; IP = Infection Preventionist; AC = Acute Care
The following equivalents were used: ICU bed = 2 AC beds; long term care bed = ½ an AC bed; dialysis facility = 50 AC beds; ambulatory surgery center = 50 AC beds; ambulatory clinic = 10 AC beds; and a private physician's office = 5 AC beds.
Vertical reference lines indicate low resources: below the 15th percentile in either Acute- or Aggregate- Beds Per FTE Measure.

Figure 29. Infection Preventionist Personnel Resources in NYS Hospitals, 2011 (page 3 of 6)

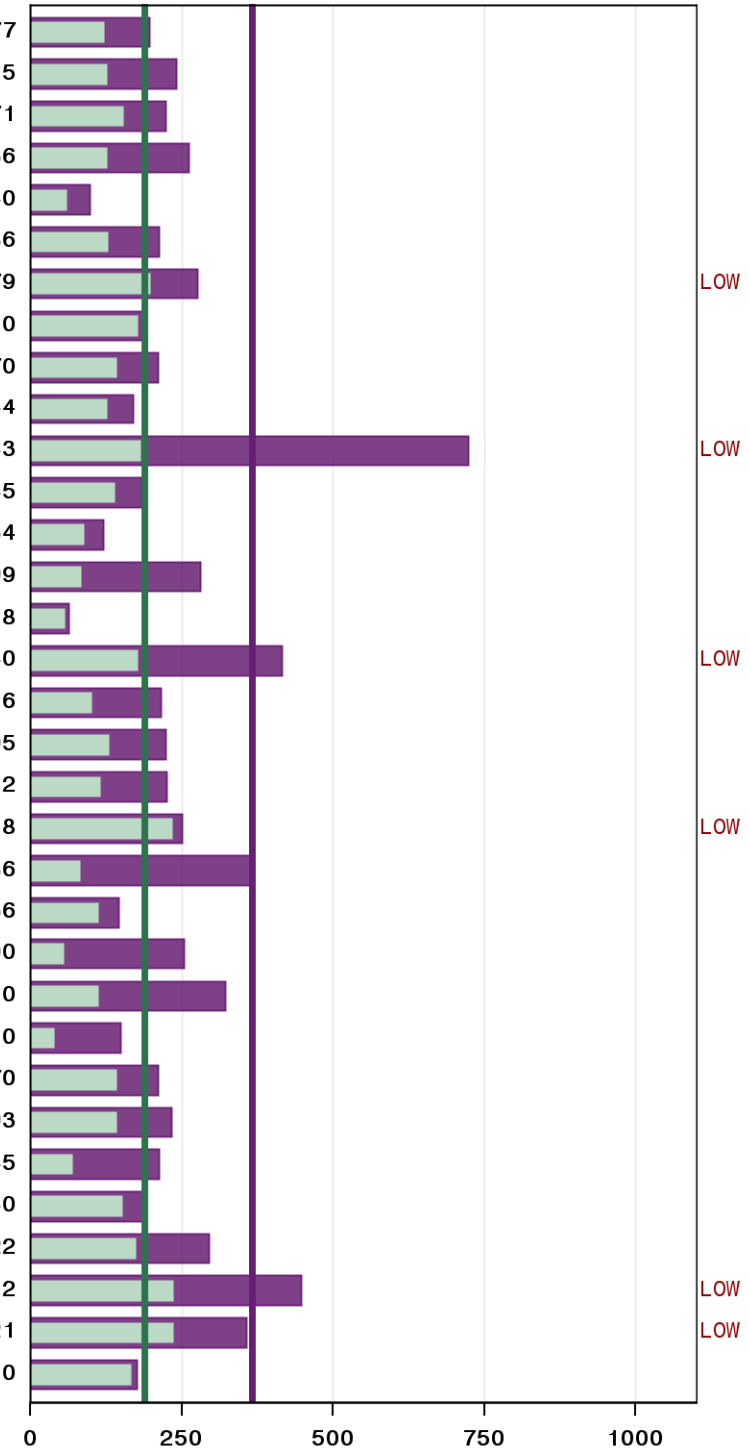
Hospital	FTE for IPs	Acute Care Beds	Acute Beds Per IP	Add. Bed EQ	Add. Bed EQ Per IP	LOW Resources Flag
Jamaica Hospital	2.5	423	169	417	167	
Jones Memorial	1.0	60	60	96	96	
Kenmore Mercy	1.0	152	152	156	156	
Kings County Hospital	3.0	627	209	859	286	LOW
Kingsbrook Jewish	2.9	326	114	398	140	
Kingston Hospital	1.2	150	125	165	138	
Lakeside Memorial	1.0	61	61	107	107	
Lawrence Hospital	1.8	200	111	38	21	
Lenox Hill	4.0	467	117	220	55	
Lewis County General	0.4	54	135	155	386	LOW
Lincoln Medical	5.0	372	74	730	146	
Little Falls Hospital	0.4	25	63	20	50	
Lockport Memorial	0.3	65	260	16	64	LOW
Long Beach Medical	1.0	95	95	108	108	
Long Island College	2.0	239	120	825	413	LOW
Long Island Jewish	5.0	880	176	261	52	
Lutheran Medical	3.0	435	145	32	11	
Maimonides	4.0	666	167	465	116	
Margaretville Hospital	0.6	8	13	50	83	
Mary Imogene Bassett	1.4	140	100	534	381	LOW
Massena Memorial	0.7	50	77	104	160	
Medina Memorial	1.0	70	70	172	172	
Mercy Hospital-Buffalo	3.5	344	98	184	53	
Mercy Medical Center	1.6	220	138	123	77	
Metropolitan	2.3	373	166	336	149	
Millard Fill. Gates	1.2	189	158	138	115	
Millard Fill. Suburban	1.5	270	180	20	13	
Montefiore-Einstein	2.4	390	166	303	129	
Montefiore-Moses	5.4	767	143	503	94	
Montifiore-North	2.3	321	140	268	117	
Moses-Ludington	0.3	7	23	100	333	
Mount Sinai Hospital	6.5	1125	173	523	80	
Mount Sinai Queens	2.0	192	96	78	39	



Acute care beds per One FTE Infection Preventionist, state average is 130
Aggregate (acute and other) beds per One FTE Infection Preventionist, state average is 254
FTE = Full Time Equivalent; Add. Bed EQ = Additional Bed Equivalent; IP = Infection Preventionist; AC = Acute Care
The following equivalents were used: ICU bed = 2 AC beds; long term care bed = ½ an AC bed; dialysis facility = 50 AC beds; ambulatory surgery center = 50 AC beds; ambulatory clinic = 10 AC beds; and a private physician's office = 5 AC beds.
Vertical reference lines indicate low resources: below the 15th percentile in either Acute- or Aggregate- Beds Per FTE Measure.

Figure 29. Infection Preventionist Personnel Resources in NYS Hospitals, 2011 (page 4 of 6)

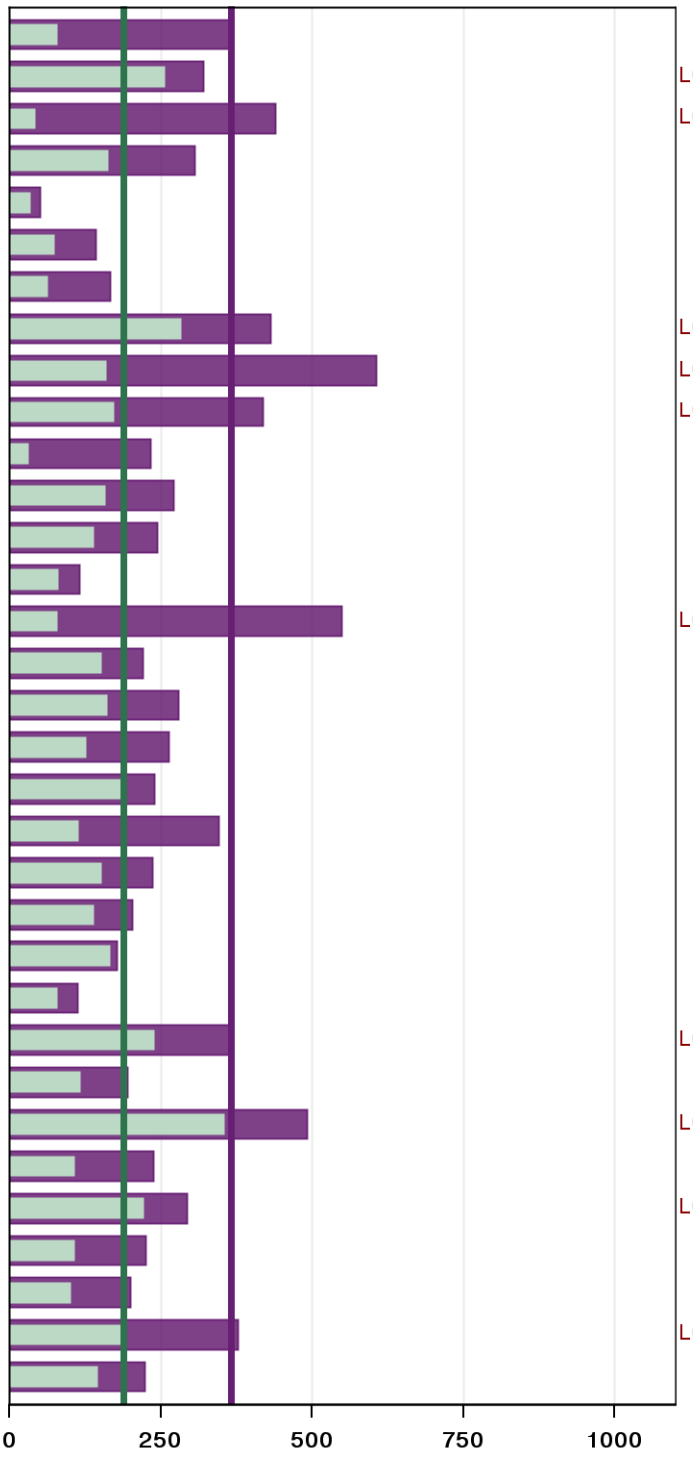
Hospital	FTE for IPs	Acute Care Beds	Acute Beds Per IP	Add. Bed EQ	Add. Bed EQ Per IP	LOW Resources Flag
Mount St. Marys	1.0	120	120	77	77	
Mount Vernon	1.0	125	125	115	115	
NY Community Brooklyn	0.8	122	153	57	71	
NY Downtown	1.0	125	125	136	136	
NY Eye And Ear	1.0	58	58	40	40	
NY Med Ctr Queens	4.1	519	127	351	86	
NY Methodist	3.0	591	197	236	79	LOW
NYP- Allen	1.2	201	175	12	10	
NYP- Columbia	7.0	981	141	484	70	
NYP- Weill Cornell	7.0	871	124	311	44	
NYU Joint Diseases	1.1	190	181	570	543	LOW
NYU Medical Center	5.0	684	138	221	45	
Nassau University	5.0	430	86	168	34	
Nathan Littauer	0.9	74	82	179	199	
Newark Wayne	1.0	55	55	8	8	
Niagara Falls	0.8	140	175	192	240	LOW
North Central Bronx	2.3	223	99	262	116	
North Shore	6.4	815	128	603	95	
Northern Dutchess	0.6	68	113	67	112	
Northern Westchester	1.0	232	232	18	18	LOW
Noyes Memorial	0.5	40	80	143	286	
Nyack Hospital	2.0	220	110	72	36	
O'Connor Hospital	0.3	16	53	60	200	
Olean General	0.9	100	111	189	210	
Oneida Healthcare	1.1	40	38	116	110	
Orange Reg- Goshen	2.0	280	140	140	70	
Oswego Hospital	1.0	140	140	93	93	
Our Lady of Lourdes	2.0	135	68	290	145	
Peconic Bay Medical	1.0	150	150	40	40	
Peninsula Hospital	1.0	173	173	122	122	
Phelps Memorial	1.0	235	235	212	212	LOW
Plainview Hospital	1.0	235	235	121	121	LOW
Putnam Hospital	1.0	165	165	10	10	



Acute care beds per One FTE Infection Preventionist, state average is 130
Aggregate (acute and other) beds per One FTE Infection Preventionist, state average is 245
FTE = Full Time Equivalent; Add. Bed EQ = Additional Bed Equivalent; IP = Infection Preventionist; AC = Acute Care
The following equivalents were used: ICU bed = 2 AC beds; long term care bed = ½ an AC bed; dialysis facility = 50 AC beds; ambulatory surgery center = 50 AC beds; ambulatory clinic = 10 AC beds; and a private physician's office = 5 AC beds.
Vertical reference lines indicate low resources: below the 15th percentile in either Acute- or Aggregate- Beds Per FTE Measure.

Figure 29. Infection Preventionist Personnel Resources in NYS Hospitals, 2011 (page 5 of 6)

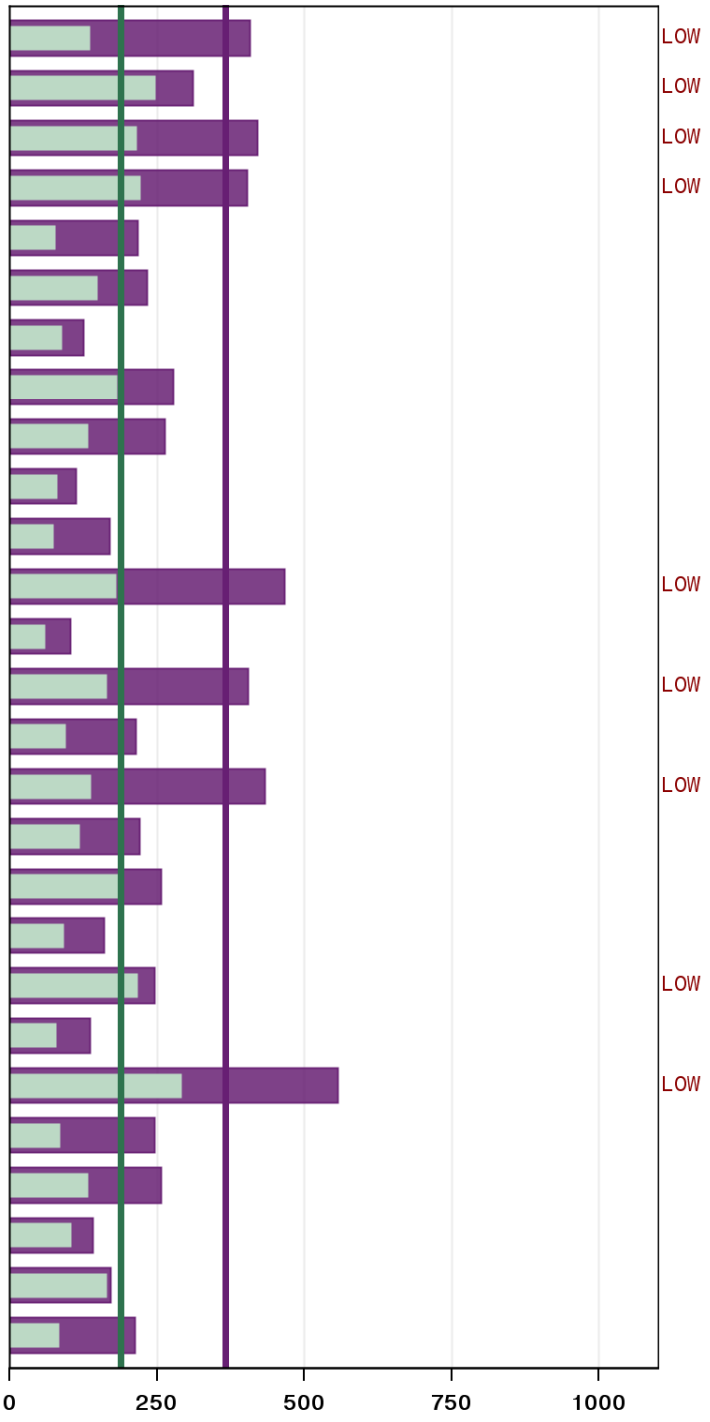
Hospital	FTE for IPs	Acute Care Beds	Acute Beds Per IP	Add. Bed EQ	Add. Bed EQ Per IP	LOW Resources Flag
Queens Hospital	4.0	306	77	1150	288	
Richmond Univ	2.0	510	255	131	66	LOW
River Hospital	0.2	6	40	60	400	LOW
Rochester General	3.3	525	162	470	145	
Rockefeller University	0.6	20	33	10	17	
Rome Memorial	1.8	126	72	123	70	
Roswell Park	2.0	121	61	210	105	
Samaritan- Troy	0.6	155	282	82	149	LOW
Samaritan- Watertown	1.0	158	158	448	448	LOW
Saratoga Hospital	1.0	171	171	247	247	LOW
Schyuler Hospital	0.8	22	29	153	204	
Seton Hlth- St Mary's	1.3	196	157	142	114	
Sisters of Charity	1.8	240	137	186	106	
Sloan Kettering	6.0	470	78	220	37	
Soldiers And Sailors	0.5	35	78	212	471	LOW
Sound Shore Medical	1.0	150	150	70	70	
South Nassau Comm.	2.0	320	160	237	119	
Southampton Hospital	1.0	125	125	138	138	
Southside Hospital	2.0	371	186	106	53	
St Anthony Community	0.4	45	113	93	233	
St Barnabas Hospital	3.0	450	150	256	85	
St Catherine of Siena	2.3	311	138	143	64	
St Charles Hospital	1.4	231	165	16	11	
St Elizabeth Medical	2.6	201	77	90	35	
St Francis-Poughkeeps.	1.0	238	238	125	125	LOW
St Francis-Roslyn	2.6	300	115	205	79	
St James Mercy	0.5	177	354	69	138	LOW
St Johns Episcopal	2.0	212	106	263	131	
St Johns Riverside	1.9	407	220	136	74	LOW
St Joseph- Bethpage	1.0	105	105	120	120	
St Joseph- Cheektowaga	1.3	125	100	124	99	
St Josephs- Elmira	0.5	91	182	98	196	LOW
St Josephs- Syracuse	3.0	431	144	238	79	



Acute care beds per One FTE Infection Preventionist, state average is 130
Aggregate (acute and other) beds per One FTE Infection Preventionist, state average is 245
FTE = Full Time Equivalent; Add. Bed EQ = Additional Bed Equivalent; IP = Infection Preventionist; AC = Acute Care
The following equivalents were used: ICU bed = 2 AC beds; long term care bed = ½ an AC bed; dialysis facility = 50 AC beds; ambulatory surgery center = 50 AC beds; ambulatory clinic = 10 AC beds; and a private physician's office = 5 AC beds.
Vertical reference lines indicate low resources: below the 15th percentile in either Acute- or Aggregate- Beds Per FTE Measure.

Figure 29. Infection Preventionist Personnel Resources in NYS Hospitals, 2011 (page 6 of 6)

Hospital	FTE for IPs	Acute Care Beds	Acute Beds Per IP	Add. Bed EQ	Add. Bed EQ Per IP	LOW Resources Flag
St Josephs- Yonkers	1.0	134	134	273	273	LOW
St Lukes - Newburgh	1.5	367	245	98	65	LOW
St Lukes- Roosevelt	1.5	320	213	310	207	LOW
St Lukes- St Lukes	1.5	330	220	275	183	LOW
St Marys Amsterdam	1.1	80	76	147	140	
St Peters Hospital	3.0	442	147	255	85	
Staten Island U-North	6.0	522	87	231	39	
Staten Island U-South	1.0	181	181	96	96	
Strong Memorial	5.6	735	131	737	132	
Syosset Hospital	1.0	79	79	33	33	
TLC Lake Shore	0.6	40	73	53	96	
U Health- Wilson	2.0	356	178	578	289	LOW
United Memorial- North	1.9	111	58	85	45	
Unity Hosp Rochester	2.0	327	164	480	240	LOW
Univ Hosp Brooklyn	4.0	365	92	480	122	
Univ Hosp SUNY Upst.	3.0	409	136	891	297	LOW
Univ Hosp StonyBrook	5.0	584	117	520	104	
Vassar Brothers	2.0	365	183	147	74	
Westchester Medical	6.1	549	90	424	70	
Westchester Square	0.7	140	215	20	31	LOW
White Plains Hospital	3.0	230	77	176	59	
Winthrop University	2.0	581	291	534	267	LOW
Woman and Childrens	2.0	168	84	324	162	
Womans Christian Assoc	1.0	131	131	125	125	
Woodhull Medical	3.3	337	102	126	38	
Wyckoff Heights	2.0	325	163	16	8	
Wyoming County Comm.	0.6	45	82	72	131	



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Vertical reference lines indicate low resources: below the 10th percentile in either Acute- or Aggregate- Beds Per FTE Measure.

NYSDOH Funded HAI Prevention Projects

In August 2007, the NYSDOH issued a Request for Applications from non-profit health care organizations to develop, implement, and evaluate strategies to reduce or eliminate targeted hospital-acquired infections. The HAI reporting program is responsible for the evaluation, selection, and oversight of the projects. HAI Prevention Projects began in FY 2008-2009 and continued in FY 2009-2010, FY 2010-2011, and FY 2011-2012. There is continued funding in FY 2012-2013.

Continuum Health Partners, New York City, FY 2011-2012 - $142,500
Year four of this project focused on the continued reduction of CLABSIs in patients with a specific type of central line referred to as a peripherally inserted central catheter (PICC). Patients often leave the hospital with these catheters in place. This infection prevention collaborative was conducted in four acute care hospitals in New York City and has achieved the following results:

- PICC infection rates decreased significantly from 2.8 infections per 1000 PICC line days (2009 baseline) to 1.5 per 1000 PICC line days in 2011, resulting in a cost savings of approximately $376,050.
- Patient readmissions because of PICC line infections decreased from 8.5% to 3.8%.
- Compliance with using the PICC insertion and maintenance bundle check lists remained high at 98% and 76% respectively.
- A PICC instructional DVD developed for patients and staff has been an important educational tool in reducing PICC CLABSIs. The DVD won the 2012 Videographer Award of Distinction for outstanding achievement in video and digital production.

University of Rochester School of Medicine & Dentistry, FY 2011-2012 - $142,500
This project was designed to reduce CLABSIs outside the ICU using evidence-based protocols for central line (CL) insertion and care. Six facilities are part of this Rochester Infection Prevention Group: a tertiary care hospital, a large community hospital, a university hospital, and three community hospitals. The project includes thirty-seven nursing units from these six facilities. The focus in year four was to continue to monitor/sustain CLABSI reductions in non-ICU patient care locations and expand infection prevention efforts/lessons learned to hospitals outside the Rochester area. Findings and accomplishments include:

- The overall CLABSI rate continued to decline. The post-intervention CLABSI rate of 1.46 per 1,000 CL days was significantly lower than the pre-intervention rate of 2.9 per 1,000 CL days.

- Maintaining compliance among infection control staff on use of the CL maintenance protocol is highly dependent on involvement of leadership and nurse champions to continuously promote a "culture change."
- Efforts to expand CLABSI infection prevention protocols and lessons learned to two hospitals outside the Rochester area are underway.
- The web-based interactive CLABSI training module developed in 2009 continues to play an important role in maintaining the focus on efforts to reduce CLABSI rates. The module was recently updated and has been widely used by healthcare facilities, hospital associations and quality improvement organizations across NYS, and recently gained national recognition by other states and Association for Professionals in Infection Control and Epidemiology (APIC) Chapters as a successful education tool for CLABSI prevention.

North Shore University Hospital, FY 2011-2012 - $142,500

The fourth year of this project focused on (1) continued evaluation of the impact chlorhexidine gluconate (CHG) bathing on MRSA transmission rates in the ICU at three community hospitals and (2) evaluating the impact of discontinuing use of contact precautions and nasal molecular screening at a university teaching hospital on the MRSA transmission rate. Findings reported include:

- CHG baths may be effective in reducing MRSA transmission. A decline in MRSA transmission was reported in two hospitals, and no change in MRSA transmission was reported at the third hospital.
- Discontinued use of contact precautions and nasal molecular screening did not result in an increase in MRSA transmission and provided a cost savings of $170,455 in 2011. Adherence to uniform practices such as hand hygiene and environmental disinfection for all patients may be an opportunity to decrease MRSA transmission.

Westchester County Healthcare Corporation, FY 2011-2012 - $142,500

This collaborative, involving five downstate hospitals, has implemented several projects to reduce the incidence of CLABSIs. The following updated results were reported:

- CHG bathing was associated with significant reductions in CLABSIs in ICUs, and these reductions were sustained during the fourth year of the collaborative. CHG bathing continued to be well tolerated by patients.
- All hospitals instituted house-wide CLABSI surveillance to identify high risk units and establish baseline infection rates outside of ICUs

- Westchester Medical Center initiated a randomized double-blind study of CHG baths in an adult oncology unit in November 2010. Overall CLABSI rates have decreased, and data collection will continue through year 5.

CDC Funded HAI Prevention Projects

New York State Long Term Care *C. difficile* Collaborative

The NYSDOH Bureau of Healthcare Associated Infections is engaged in a prevention project to reduce *C. difficile* rates within communities of health care facilities. The project involves the formation of *C. difficile* prevention collaboratives, including infection control staff from long term care (LTC) facilities surrounding and sharing patients with one acute care hospital. Project activities are geared toward facilitating the implementation of evidence based best practices for infection prevention and control within communities of LTC facilities that frequently share patients with a local hospital and with each other. The goal is to reduce *C. difficile* rates in LTC facilities, and potentially in the acute care facilities to which their patients are admitted, through improved implementation of well-established and routinely recommended infection control practices in the participating LTC facilities.

The New York State Perinatal Quality Collaborative

The NYS Perinatal Quality Collaborative (NYSPQC) aims to improve maternal and newborn outcomes and improve capability within NYS for ongoing quality improvement and transformation of healthcare by applying evidence-based healthcare system change interventions in Obstetrical and Neonatal Intensive Care Units (NICUs). In October 2011, the NYSDOH was one of three national recipients of a three-year grant from the CDC supporting such collaborative quality improvement initiatives. One of the NYSPQC's goals is to expand on the prior collaborative work of the NYSDOH HAI Program and NYS's Regional Perinatal Centers (RPCs), which demonstrated the effectiveness of Central Line (CL) care bundle and checklist use in preventing CL infections in NICUs. The NYSPQC CLABSI-reduction intervention, to begin in the fall of 2012, will focus similar efforts on the Level III and II/III NICU hospitals whose CLABSI rates are currently higher than those of the RPCs. The process will use the Institute for Health Improvement's learning model to promote team work, increase communication, enhance knowledge of the value of CL care bundle insertion and maintenance checklists, and track progress toward reducing CLABSI using data submitted to the NHSN.

Lessons Learned

Hospitals with elevated infection rates were routinely provided with feedback by telephone and through written summaries of their data and infection rates over time. Most infection preventionists from these hospitals described that they shared this additional input with their clinical staff and hospital administration. The prevention efforts were consistently multidisciplinary, which engaged clinicians (intensive care, surgical, and other), support staff, and administration. These infection rates often declined in the following one to two years. This suggests that the use of NHSN data and public reporting is useful to drive efforts to reduce infection rates.

Many groups (such as NYS, NHSN, Centers for Medicaid and Medicare Services (CMS), Agency Healthcare Research and Quality (AHRQ), LeapFrog, and Consumer Reports) are now publically reporting HAI data. In some cases, these reports are based on similar underlying data, yet result in different conclusions. It is important that all reports accurately describe the underlying data and the methods used for analysis.

By auditing the HAI data of 20 hospitals through off-site access to electronic medical records (EMRs), NYSDOH learned that

- Data was effectively validated through off-site audits.
- Off-site auditing was an efficient use of time and resources.
- Communication of audit results, review of compliance issues, and education was successfully provided through phone conference.
- Infection preventionists that participated in this audit process approved and endorsed this method of auditing.
- When complete EMRs were not available, the missing documents (i.e. coding summaries, intra-operative reports and vital signs) were effectively obtained by mail, allowing the use of partial EMRs.
- There are regional differences in health information exchange systems, including the type of data available, who is allowed to access the data, and if patient information is uploaded only after patient consent.
- Regional health information systems are more valuable than independent hospital systems because they allow for complete follow-up of patients post-discharge through various facilities in the region.
- Preferentially selecting records for audit that had indications of possible infection resulted in identifying a larger number of unreported HAIs. These errors were corrected in NHSN. Changes in the audit record selection process over time may impact interpretation of trends in HAI rates. In addition, differences in auditing practices between states may impact comparison of HAI rates between states.

Changing *C. difficile* laboratory testing practices may influence an individual hospital's rates and the ability to assess trends over time both within a hospital and statewide. It is unclear to what extent the increase in *C. difficile* rates in NYS was related to these changes. Continued annual surveys of laboratory and reporting practices are important to assess the stability of the *C. difficile* baseline rate.

Next Steps

In 2013, the NYSDOH will continue to track the same indicators that were reported in 2012. Also, NYSDOH plans to monitor voluntarily-reported catheter-associated urinary tract infection (CAUTI) data beginning in 2013. Monitoring of these data will initially be via data use agreement with CDC, which allows use of the data by State departments of health for quality improvement purposes. Individual hospital-identified data obtained via data use agreement will not be included in the NYSDOH annual report. Depending on the progress made in decreasing CAUTIs in NYS, this indicator may be selected for inclusion in NYS mandatory reporting in the future, at which time it would be included in the annual report. Because almost all hospitals have already been reporting this indicator to CMS since 2012, this will place no extra burden on those hospitals.

As staffing levels allow, the NYSDOH will continue to conduct audits to verify appropriate use of surveillance definitions and assess accuracy of reporting. The process will be examined in relation to needs for efficiency, fair comparison of hospital performance within NYS, and fair comparison of NYS to national rates. Efficiencies will be sought through the use of EMRs and other alternative methods.

In addition, the NYSDOH will continue to:

- Focus on hospitals with the highest and lowest infection rates to identify risk factors for infection and opportunities for improvement.
- Develop and disseminate to hospitals a policy describing how NYSDOH will respond when hospitals have high HAI rates for multiple years.
- Monitor the accuracy and timeliness of data being submitted, discuss findings with hospitals, ensure corrective action is taken, and provide technical assistance as needed.
- Provide hospitals with education and information about risk factors, strategies and interventions and to encourage adoption of policies and procedures to reduce risk and enhance patient safety.
- Evaluate and monitor the effect of prevention practices on infection rates and seek opportunities to enhance patient safety.

- Provide HAI data electronically on METRIX, and further develop the presentation of the data on the DOH website.
- Collaborate with other NYSDOH staff to investigate outbreaks and evaluate emerging trends.
- Consult with infection preventionists, hospital epidemiologists, surgeons, neonatologists, and the Cardiac Advisory Committee to identify risk factors and prevention strategies to reduce infections.
- Monitor HAI prevention projects for compliance with program objectives, fiscal responsibility and potential applicability to other hospitals or healthcare settings.
- Work with the TAW and seek guidance on the selection of reporting indicators, evaluation of system modifications, evaluation of potential risk factors, methods of risk adjustment and presentation of hospital-identified data.

Appendix 1: List of Abbreviations

AC – Acute Care
APIC – Association for Professionals in Infection Control and Epidemiology
ASA – American Society of Anesthesiologists' Classification of Physical Status
ASP – Antimicrobial Stewardship Program
BSI – Bloodstream Infection
CABG – Coronary Artery Bypass Graft Surgery
CAUTI – Catheter Associated Urinary Tract Infection
CDC – Centers for Disease Control and Prevention
C. difficile- Clostridium difficile
CEOs – Chief Executive Officers
CHF – Congestive Heart Failure
CI – Confidence Interval
CL – Central Line
CLABSI – Central Line-Associated Bloodstream Infection
CMS – Centers for Medicare and Medicaid Services
CNS – Coagulase Negative Staphylococcus
CO-Community Onset
CO-NMH − Community Onset Not My Hospital
CO-PMH − Community Onset Possibly My Hospital
COPD − Chronic Obstructive Pulmonary Disease
CPI – Consumer Price Index
CSRS – Cardiac Surgery Reporting System[6]
DIP – Deep Incisional Infection at the Primary Surgical Site (for CABG procedures, this would be the chest site)
DIS – Deep Incisional Infection at the Secondary Surgical Site (for CABG procedures, this would be the donor vessel site)
DOH – New York State Department of Health
DU- Device Utilization
FTE – Full-Time Equivalent
FY – State Fiscal Year, starts in April
GNYHA – Greater New York Hospital Association
HA – Hospital Associated
HAI – Hospital-Acquired Infection
HE – Hospital Epidemiologist
HO- Hospital Onset
IC – Infection Control
ICD-9 – International Classification of Diseases, Ninth Revision
ICP – Infection Prevention and Control Specialist
ICU – Intensive Care Unit
IP – Infection Preventionist
IT – Information Technology
LCBI – Laboratory Confirmed Bloodstream Infection
LTC – Long Term Care

MDRO – Multi-Drug Resistant Organism
METRIX- Maximizing Essential Tools for Research Innovation and Excellence
MRSA – Methicillin-Resistant *Staphylococcus aureus*
MSSA – Methicillin-Sensitive *Staphylococcus aureus*
NICU – Neonatal Intensive Care Unit
NHSN – National Healthcare Safety Network
NYS – New York State
NYSDOH – New York State Department of Health
OR – Operating Room
OR – Odds Ratio (statistical term)
OS – Organ/Space Infection
PAD – Peripheral Artery Disease
PDS – Post-Discharge Surveillance
PHL – Public Health Law
RPC – Regional Perinatal Center (Level IV – highest level of NICU care)
SHEA – Society for Healthcare Epidemiology of America
SIP – Superficial Incisional Infection at the Primary Surgical Site (for CABG procedures, this would be the chest site)
SIR – Standardized Infection Ratio
SIS – Superficial Incisional Infection at the Secondary Surgical Site (for CABG procedures, this would be the donor vessel site)
SPARCS - Statewide Planning and Research Cooperative System[7]
SSI – Surgical Site Infection
TAW – Technical Advisory Workgroup
UC – Umbilical Catheter
UCABSI – Umbilical Catheter-Associated Blood Stream Infection
VAP – Ventilator-Associated Pneumonia
VRE – Vancomycin-Resistant Enterococci

Appendix 2: Glossary of Terms

Active Surveillance: A system used by a trained infection preventionist (IP) to look for infections during a patient's hospital stay. A variety of tools are used to identify infections and determine if they are related to the patient's hospital stay or if an infection was present on hospital admission. These tools may include, but are not limited to, information from laboratory, radiology, operation, pharmacy reports and nursing care units and/or patient treatment areas.

ASA Score: This is a scale used by the anesthesiologist to classify the patient's physical condition prior to surgery. It uses the American Society of Anesthesiologist (ASA) Classification of Physical Status. It is one of the factors that help determine a patient's risk of possibly developing a SSI. Here is the ASA scale:

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.

Birth Weight Categories: Birth weight refers to the weight of the infant at the time of birth. Infants remain in their birth weight category even if they gain weight. Birth weight category is important because the lower the birth weight, the higher the risk of developing an infection.

Body Mass Index (BMI): BMI is a measure of the relationship between a person's weight and their height. It is calculated with the following formula: kg/m^2.

Central Line: A Central Line is a long thin tube that is placed into a large vein, usually in the neck, chest, arm, groin or umbilical cord. A central line is used to give fluids or medication, withdraw blood, and monitor the patient's condition.

Central Line-Associated Bloodstream Infection (CLABSI): A bloodstream infection can occur when microorganisms travel around and through a central line or umbilical catheter and then enter the blood.

Central Line-Associated Bloodstream Infection (CLABSI) Rate: To get this rate, divide the total number of central line-associated bloodstream infections by the number of central line days. That result is then multiplied by 1,000. Lower rates are better.

Central Line Days (Device Days): This is the total number of days a central line is used for patients in an ICU or a NICU. A daily count of patients with a central line in place is performed at the same time each day. Each patient with one or more central lines at the time the daily count is performed is counted as one central line day.

Central line Device Utilization Ratio: This ratio is obtained by dividing the number of central line-days by the number of patient-days. It is also referred to as the device utilization (DU) ratio.

***Clostridium difficile*:** A bacterium that naturally resides in the bowels of some people without symptoms of infection**.** Overgrowth of *C. difficile* in the bowel, sometimes resulting from a

patient's taking antibiotics, or touching their mouth after coming in contact with contaminated environmental surfaces or patient care items, allows this bacterium to produce a toxin in the bowel causing infection symptoms, which range from mild to severe diarrhea and in some instances death.

Colon Surgery: Colon surgery is a procedure performed on the lower part of the digestive tract also known as the large intestine or colon.

Community Onset-Not-My-Hospital (CO-NMH): Documented infection occurring within 3 days of hospital admission or more than 4 weeks after discharge from the same hospital Not associated with being acquired while hospitalized.

Community Onset-Possibly-My-Hospital (CO-PMH): Documented new infection within three days of readmission to the same hospital when a discharge from the same hospital occurred within the last four weeks.

Confidence Intervals: The confidence interval for a hospital's infection rate is the range of possible rates within which there is a 95% confidence that the real infection rate for that hospital lies, given the number of infections and procedures that were observed in that hospital in a specific time period.

Coronary Artery Bypass Graft (CABG) Surgery: A treatment for heart disease in which a vein or artery from another part of the body is used to create an alternate path for blood to flow to the heart, bypassing a blocked artery.

Diabetes: A disease in which the body does not produce or properly use insulin. Insulin is needed to control the amount of sugar normally released into the blood.

Donor Incision Site for Coronary Artery By-pass Graft (CABG): CABG surgery with a chest incision and donor site incisions (donor sites include the patient's leg or arm) from which a blood vessel is removed to create a new path for blood to flow to the heart. CABG surgical incision site infections involving the donor incision site are reported separately from CABG surgical chest incision site infections.

Duration Cut Point: The cut point of an operation is the typical time between skin incision (cut) and stitching or stapling the skin closed. The duration cut point is the time assigned to that type of surgical operation procedure. Infection risks may increase because of a longer than expected surgical procedure time.

Higher than State Average: The risk adjusted rate for each hospital is compared to the state average to determine if it is significantly higher or lower than the state average. A rate is significantly higher than the state average if the confidence interval around the risk adjusted rate falls entirely above the state average.

Hip Replacement Surgery: Hip replacement surgery involves removing damaged cartilage and bone from the hip joint and replacing them with new, man-made parts.

Hospital-Acquired Infection (HAI): A hospital acquired infection is an infection that occurs in a patient as a result of being in a hospital setting after having medical or surgical treatments. It is termed "hospital onset" if the documented new infection occurs during the hospital stay and prior to discharge from the hospital.

Infection control / prevention processes: These are routine measures to prevent infections that can be used in all healthcare settings. These steps or principles can be expanded to meet the needs of specialized types of hospitals. Some hospitals make the processes mandatory. Examples include:

- Complete and thorough hand washing.
- Use of personal protective equipment such as gloves, gowns, and/or masks when caring for patients in selected situations to prevent the spread of infections.
- Use of an infection prevention checklist when putting central lines in patients. The list reminds healthcare workers to clean their hands thoroughly; clean the patient's skin before insertion with the right type of skin cleanser; wear the recommended sterile gown, gloves and mask; and place sterile barriers around the insertion site, etc.
- Monitoring to ensure that employees, doctors and visitors are following the proper infection prevention procedures.

Infection Preventionist (IP): Health professional that has special training in infection prevention and monitoring.

Inpatient: A patient whose date of admission to the healthcare facility and the date of discharge are different calendar days.

Intensive Care Unit (ICU): Intensive Care Units are hospital units that provide intensive observation and treatment for patients (adult, pediatric or newborn) either suffering from, or at risk of developing life threatening problems. ICUs are described by the types of patients cared for. Many hospitals typically care for patients with both medical and surgical conditions in a combined medical/surgical ICU, while others have separate ICUs for medical, surgical and other specialty ICUs based on the patient care services provided by the hospital.

Lower than State Average: The risk adjusted rate for each hospital is compared to the state average to determine if it is significantly higher or lower than the state average. A rate is significantly lower than the state average if the confidence interval around the risk adjusted rate falls entirely below the state average.

National Healthcare Safety Network (NHSN): This is a standardized data reporting system that NYS hospitals must use to identify and report select HAIs and enter required data on uninfected patients. NHSN is a secure, internet-based surveillance (monitoring and reporting) system. The NHSN is managed by the CDC's Division of Healthcare Quality Promotion.

Neonatal Intensive Care Units: Patient care units that provide care to newborns.

- **Level II/III Units**: provide care to newborns at Level II (moderate risk) and Level III (requiring increasingly complex care).

- **Level III Units:** provide highly specialized care to newborns with serious illness, including premature birth and low birth weight and newborns under the supervision of a neonatologist.
- **Regional Perinatal Centers (RPC):** Level IV units, providing all the services and expertise required by the most acutely sick or at-risk pregnant women and newborns. RPCs provide or coordinate maternal-fetal and newborn transfers of high-risk patients from their affiliate hospitals to the RPC, and are responsible for support, education, consultation and improvements in the quality of care in the affiliate hospitals within their region.

NHSN Patient Safety Protocol Manual: This document contains standardized definitions and data collection methods that are essential for consistent, fair reporting of hospital infection rates.

Obesity: Obesity, defined as greater than 20% of a person's ideal body weight, is a condition in which a person has too much body fat that can lower the likelihood of good health. It is commonly defined as a body mass index (BMI) of 30 kg/m^2 or higher.

Operative Procedure: An operation that takes place during one single trip to the operating room (OR) where a surgeon makes at least one incision (cut) through the skin or mucous membrane, and stitches or staples the incision before the patient leaves the OR.

Outcome Data: HAI outcome data are derived from reports based on data submitted by NYS hospitals into the NHSN. NHSN is a secure, internet-based surveillance (monitoring and reporting) system.

Post discharge surveillance: This is the process IPs use to seek out infections after patients have been discharged from the hospital. It includes screening a variety of data sources, including re-admissions, emergency department visits and/or contacting the patient's doctor.

Raw Rate: Raw rates are not adjusted to account for differences in the patient populations.

- **Blood Stream Infections:** Raw rate is the number of infections (the numerator) divided by the number of line days (the denominator) or the number of umbilical catheter days (denominator) then multiplied by 1000 to give the number of infections per 1000 line days or per 1000 umbilical catheter days.
- **Surgical Procedures:** Raw rate is the number of infections (the numerator) divided by the number of procedures (the denominator) then multiplied by 100 to give the number of infections per 100 operative procedures.

Risk Adjustment: Risk adjustment accounts for differences in patient populations and allows hospitals to be compared. A hospital that performs a large number of complex procedures on very sick patients would be expected to have a higher infection rate than a hospital that performs more routine procedures on healthier patients.

Risk-Adjusted Rate:

- For surgical site infections, the risk-adjusted rate is based on a comparison of the actual (observed) rate and the rate that would be expected if, statewide, the patients had the same distribution of risk factors as the hospital.
- For CLABSIs, the adjusted rate is a comparison of the actual rate and the expected rate based on statewide rates for each ICU or within birth weight categories for neonates.

SPARCS: The Statewide Planning and Research Cooperative System (SPARCS) is a comprehensive data reporting system established in 1979 as a result of cooperation between the health care industry and government. Initially created to collect information on discharges from hospitals, SPARCS currently collects patient level detail on patient characteristics, diagnoses and treatments, services, and charges for every hospital discharge, ambulatory surgery procedure and emergency department admission in NYS.

Standardized Incidence Ratio (SIR): The SIR compares infection rates in one population (such as NYS) with infection rates in a standard population (such as the entire United States), after adjusting for risk factors that might affect the chance of developing an infection. The SIR is the actual number of infections in the smaller group (i.e. a hospital), divided by the number of infections that would be statistically expected if the standard population (i.e. NYS) had the same risk distribution as the observed population.

- A SIR of 1.0 means the observed number of infections is equal to the number of predicted infections.
- A SIR above 1.0 means that the infection rate is higher than that found in the standard population. The difference above 1.0 is the percentage by which the infection rate exceeds that of the standard population.
- A SIR below 1.0 means that the infection rate is lower than that of the standard population. The difference below 1.0 is the percentage by which the infection rate is lower than that experienced by the standard population.

Surgical Implant: A nonhuman-derived object, material, or tissue that is permanently placed in a patient during an operation. Examples include: heart valves, metal rods, mesh, wires, screws, cements, hip replacements and other devices.

Surgical Site Infection (SSI): An infection that occurs after the operation in the part of the body where the surgery took place (incision).

Surgical Site Infection (SSI) Rate: Surgical site infection rates per 100 operative procedures are found by dividing the number of SSIs by the total number of specific operative procedures within a given reporting period. The results are then multiplied by 100. These calculations are performed separately for each type of surgical procedure.

Surgical Site Infection (SSI) Risk Index: This is a score used to predict a patient's risk of acquiring a surgical site infection. The risk index score, ranging from 0 to 3, reveals how many of these risk factors are present: the anesthesiologist has given the patient an American Society of Anesthesiologists' (ASA) physical status score of 3, 4, or 5 (see "ASA score" above); the operation site is determined to be contaminated or dirty / infected at the time of the procedure and the operation lasts longer than expected (the duration cut point time).

Umbilical Catheter: A small thin tube that is inserted through the umbilical blood vessel in a newborn.

Umbilical Catheter Days (Device Days): Total number of days umbilical catheters are present in newborns in a NICU. The count is performed at the same time each day. Each newborn with both an umbilical catheter and a central line is counted as one umbilical catheter day.

Validation: A way of making sure the HAI data reported to NYS are complete and accurate. Complete reporting of HAIs, total numbers of surgical procedures performed, central line days, and patient information to assign risk scores must all be validated. The accuracy of reporting is evaluated by visiting hospitals and reviewing patient records. The purpose of the validation visits are to:

- Assess the accuracy and quality of the data submitted to NYS.
- Provide hospitals with information to help them use the data to improve and decrease HAIs.
- Provide education to the IPs and other hospital employees and doctors, to improve reporting accuracy and quality.
- Look for unreported HAIs.
- Make recommendations for improving data accuracy and/or patient care quality issues.

Wound Class: An assessment of how clean or dirty the operation body site is at the time of the operation. Wounds 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.

Appendix 3: Methods

For more details on the HAI surveillance protocols used to collect this data, please see the NHSN website at http://www.cdc.gov/nhsn/. This section of the report focuses on NYS-specific methods and provides additional information helpful for interpreting the results.

Data Validation

Data reported to the NHSN are validated by the NYSDOH using a number of methods.

1) Point of entry checks - The NHSN is a web-based data reporting and analysis program that includes validation routines for many data elements, reducing common data entry errors. Hospitals can view, edit, and analyze their data at any time.

2) Monthly checks for internal consistency - Each month, NYS HAI staff download the data from the NHSN and run it through a computerized data validation code. Data that are missing, unusual, inconsistent, or duplicate are identified and investigated through email or telephone communication with hospital staff. Hospitals are given the opportunity to verify and/or correct the data.

3) Audits – Audits of a sample of medical records are conducted by the NYSDOH to assess compliance with reporting requirements. In addition, the purposes of the audit are to:
    a. Enhance the reliability and consistency of applying the surveillance definitions;
    b. Evaluate the adequacy of surveillance methods to detect infections; and
    c. Evaluate intervention strategies designed to reduce or eliminate specific infections.

    NYS HAI staff attempt to audit most hospitals every year, but due to recent staffing shortages, the percent of hospitals audited has declined from 97%, 89%, 89%, 74%, to 68% between 2007 and 2011.

    NYSDOH developed a process to conduct these audits via off-site access to electronic medical records (EMRs). In 2011, off-site audits were accomplished in 20 hospitals in 2011 in the Western and Central regions. EMR access varies across the state, and may be available as part of a Regional Health Information Organization (RHIO) (i.e. HealtheLink in Western NY), or within an individual hospital. Availability of EMRs continues to grow, and NYSDOH will continue to leverage this resource to increase audit efficiency in the future.

The 2011 audit results will be summarized in the next annual report. In 2010, NYSDOH staff reviewed over 7,000 records and agreed with the hospital-reported infection status 94% of the time. Disagreements were discussed and corrected in NHSN.

For CLABSI audits, staff reviewed the medical records of patients identified as having a positive blood culture during a specified time period. For *C. difficile* audits, staff reviewed a laboratory list of positive *C. difficile* cases during a specified time period. For SSI audits, staff reviewed a targeted selection of medical records in an attempt to efficiently identify underreporting. Specifically, the SPARCS database was used to preferentially select patients with an infection reported to the SPARCS billing database but not NHSN.

The most recent audit results available are for 2010 data. The following table (Table 22) summarizes the number of inconsistencies in reporting infections out of the total number of records reviewed.

Table 22. Brief Summary of 2010 HAI Audit

Type of Infection	# Agreements	# Records Reviewed	% Agreement
Colon SSI	1,030	1,140	90.4%
CABG SSI	347	368	94.3%
Hip SSI	1,303	1,321	98.6%
CLABSI	1,126	1,196	94.1%
C. difficile	3,256	3,499	93.1%
TOTAL	**7,062**	**7,524**	**93.9%**

When data inconsistencies were identified, discrepancies were discussed, surveillance methods improved, and data modified by the hospitals as needed. The targeted selection of SSI charts increased the number of inconsistencies identified. For the 2009 and 2010 data, 24% of infections were initially unreported in the targeted sample, compared to 1% unreported among the remaining records reviewed[8]. A similar trend was observed in the CLABSI audit, in that more infections were missed than were overreported[9]. As some of these infections were identified after the publication of the previous NYS HAI report, the HAI rates have increased slightly in this updated report (see Table 23).

4) Checks for completeness in reporting - NYS HAI staff match the NHSN data to other NYSDOH data sets to assess the completeness of the data reported to the NHSN.

a. NHSN CABG data are linked to the Cardiac Surgery Reporting System[6] (CSRS) database. The cardiac services program collects and analyzes risk factor information for patients undergoing cardiac surgery and uses the information to monitor and report hospital and physician-specific mortality rates.
b. NHSN colon and hip data are linked to the Statewide Planning and Research Cooperative System[7] (SPARCS) database. SPARCS is an administrative billing database that contains details on patient diagnoses and treatments, services, and charges for every hospital discharge in NYS.

Thresholds for Reporting Hospital-Specific Infection Rates

This report contains data from 177 hospitals reporting complete data for 2011 (Appendix 4). Two hospitals that closed in 2012 are not listed in hospital-specific tables. Only hospitals that perform the selected surgical procedures or provide ICU care are required to report the designated indicator data. Hospitals that perform very few procedures or have ICUs with very few patients with central lines have infection rates that fluctuate greatly over time. This is because even a few cases of infection will yield a numerically high rate in the rate calculation when the denominator is small. To assure a fair and representative set of data, the NYSDOH adopted minimum thresholds.

- For surgical site infections, there must be a minimum of 20 patients undergoing a surgical procedure.
- For CLABSIs there must be a minimum of 50 central line days. Central line days are the total number of days central lines are used for each patient in an ICU over a given period of time.

Updated data

SSI data were downloaded from the NHSN on July 19, 2012. CLABSI and *C. difficile* data were downloaded on July 26, 2012. There have been some changes to the 2010 data since the publishing of the 2010 report. These changes are due to ongoing auditing of the 2010 data. In addition, for CABG chest and hip SSI data, some SSIs may occur and not be identified for up to one year following the initial procedures, thus a small percentage of these infections are not reported by the date of data download. For these reasons, the 2010 hospital HAI rates have been recalculated and updated in this report (Table 23).

Table 23. Comparison of 2010 NYS HAI Rates Published in 2010 Report and Updated in 2011 Report

Indicator	Original 2010 Rate	Updated 2010 Rate
CABG-Chest SSI	2.23	2.30
CABG-Donor SSI	0.87	0.92
Colon SSI	4.99	5.20
Hip SSI	1.12	1.19
Cardiothoracic ICU CLABSI	1.02	1.03
Coronary ICU CLABSI	1.67	1.69
Medical-Surgical Non-Teaching ICU	1.48	1.54
Medical-Surgical Teaching ICU CLABSI	1.02	0.91
Medical ICU CLABSI	1.97	1.98
Neonatal ICU CLABSI	1.98	2.02
Neurosurgical ICU CLABSI	2.05	2.10
Pediatric ICU CLABSI	1.93	2.17
Surgical ICU CLABSI	1.46	1.53
Hospital Onset *C. difficile*	8.18	8.25

Rates are based on NHSN definitions, which include post-discharge surveillance SSI cases and CLABSI contaminants

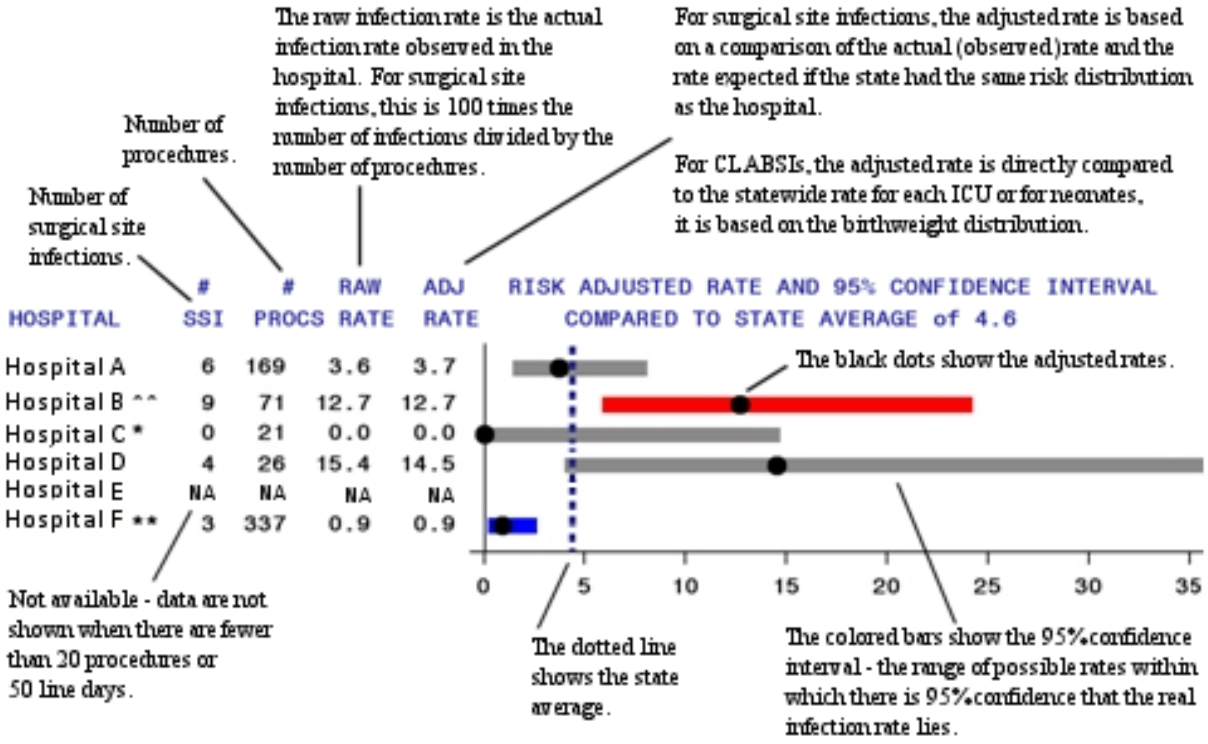
Rates increased for all indicators except medical-surgical CLABSIs in teaching hospitals; this difference occurred because a hospital redesignated its medical-surgical ICU as a medical ICU. The increase in SSI rates is larger than we have seen in other years, and may be related to the intense auditing performed on the 2010 data. The increase in HAI rates due to delayed identification of HAIs creates bias in our assessment of trends. In the 2010 report, we reported a 15% decrease in SSI rates between 2007 and 2010; if we looked at the same data today, we would report only a 10% decline. The impact on CLABSI was smaller; in the 2010 report we reported a 37% decrease in CLABSI rates between 2007 and 2010; if we looked at the same data today, we would report a 36% decline.

Risk Adjustment

Risk adjustment is a statistical technique that allows hospitals to be more fairly compared. The adjustment takes into account the differences in patient populations related to severity of illness and other factors that may affect the risk of developing an HAI. A hospital that performs a large number of complex procedures on very sick patients would be expected to have a higher infection rate than a hospital that performs more routine procedures on healthier patients. Therefore, before comparing the infection rates of hospitals, it is important to adjust for the proportion of high and low risk patients.

Risk-adjusted infection rates for SSIs in each hospital were calculated using a two step method. First, all the data for the state were pooled to develop a logistic regression model predicting the risk of infection based on patient-specific risk factors. Second, that model was used to calculate the expected number of infections for each hospital. The observed infection rate was then divided by the hospital's expected infection rate. If the resulting ratio is larger than one, the provider has a higher infection rate than expected on the basis of its patient mix. If it is smaller than one, the provider has a lower infection rate than expected from its patient mix. For each hospital, the ratio is then multiplied by the overall statewide infection rate to obtain the hospital's risk-adjusted rate. This method of risk adjustment is called "indirect adjustment." Hospitals with risk-adjusted rates significantly higher or lower than the state average were identified using exact two-sided 95% Poisson confidence intervals. The Poisson distribution is used for rates based on rare events. All data analyses were performed using SAS versions 9.2 or 9.3 (SAS Institute, Cary NC). Figure 30 provides an example of how to interpret the hospital-specific SSI and CLABSI infection rate tables.

Figure 30. How to Read Hospital-Specific Infection Rate Tables



- Hospital A had an adjusted infection rate very similar to the state average. The grey bar (95% confidence interval) goes over the dotted line representing the state average, indicating no statistical difference in the rates.

- Hospital B has an adjusted infection rate that is significantly higher than the state average, because the red bar is entirely to the right (representing higher rates) of the dotted line.

- Hospital C had zero infections, but this was not considered to be statistically lower than the state average because the grey bar goes over the dotted line. All hospitals that observed zero infections get a *, because they do deserve acknowledgement for achieving zero infections.

- Hospital D had the highest infection rate, but this was not statistically higher than the state average.

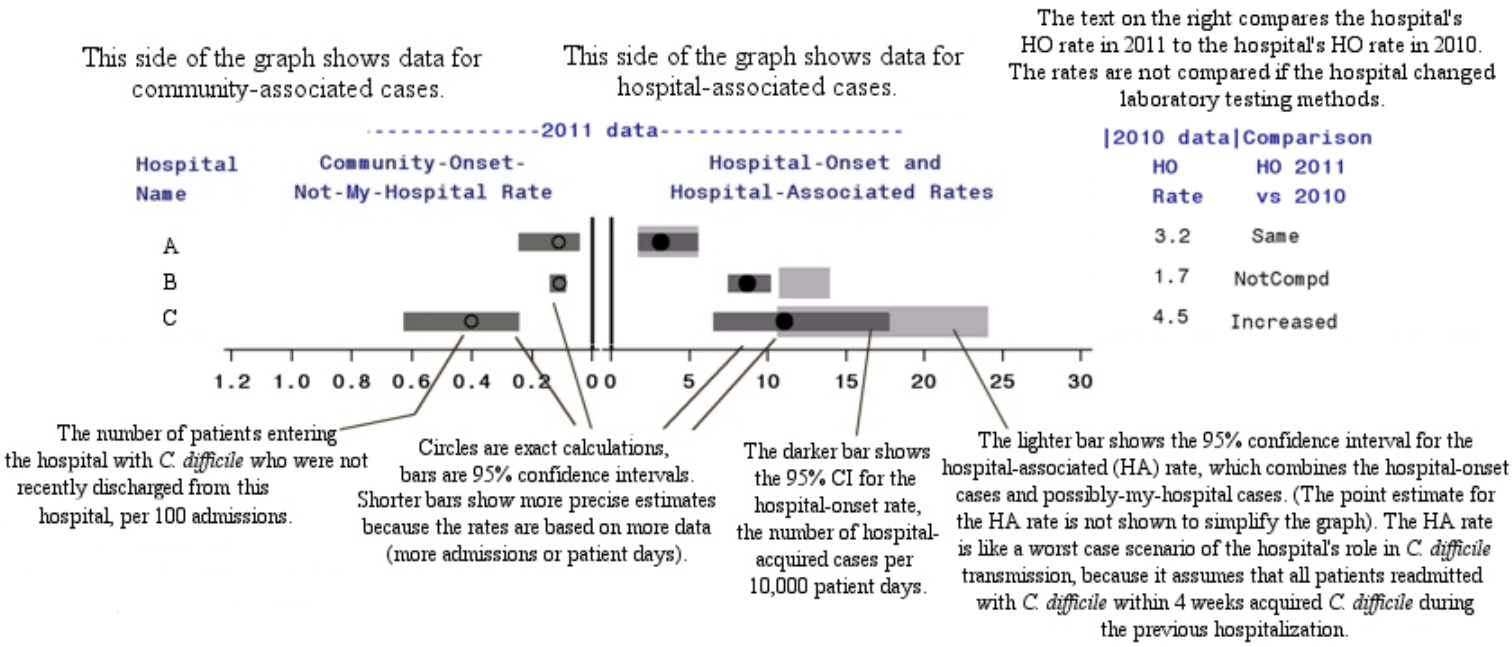
- Hospital E - The data are not shown because the hospital performed fewer than 20 procedures, and therefore the rates are not stable enough to be reported.

- Hospital F had an adjusted infection rate that is statistically lower than the state average, because the blue bar is entirely to the left (representing lower rates) of the dotted line

Similar risk adjustment techniques were used to compare NYS average infection rates to national infection rates. In this case, NYS data was stratified into risk groups identical to those published in national reports. Within each risk group, the observed number of infections in NYS was compared to the expected number based on the national rates. The observed and expected numbers of infections were added across all the risk groups, and then the total number of observed infections was divided by the total number of expected infections to give an overall SIR.

The *C. difficile* table shows data for 2011, and also a comparison of the 2011 HO rate to the 2010 HO rate. An example of how to read the table is described below (Figure 31).

Figure 31. How to Read *C. difficile* tables



There is an association between the prevalence of community-associated cases and the incidence of hospital-associated cases. Hospital rates cannot be compared because the rates in a hospital depend on the type of patients in the hospital and the hospitals' testing methods. Each hospital will use these rates to monitor *C. difficile* over time.

- Hospital A has a low CO-NMH rate and a low HO rate. No patients were admitted to the hospital with *C. difficile* within 4 weeks of the last hospitalization at hospital A; therefore, the HO rate is equal to the HA rate. There was no change in the HO rate between 2010 and 2011 at this hospital.

- Hospital B has a higher HA rate than HO rate, because many patients were admitted to the hospital with *C. difficile* within 4 weeks of the last hospitalization to this specific hospital (CO-PMH). The HO rate in 2011 was higher than the HO rate in 2010, but this increase may be due to a switch to more sensitive laboratory testing methods.

- Hospital C has the highest HO rate, but it also has the highest CO-NMH rate. Hospital C's rates may appear high if they use a more sensitive test or test more frequently, or if they serve a high risk population such as elderly from nursing homes. The HO rate in 2011 was more than double the rate in 2010. This hospital will investigate reasons for this increase.

Comparison of NYS and CMS HAI Reporting

In addition to the indicators required by NYS law, hospitals are encouraged by the Centers for Medicaid and Medicare Services (CMS) to report HAI data. The CMS Hospital Inpatient Quality Reporting Program (HIQRS) currently offers financial incentives to hospitals that report HAI data and publishes the nationwide data on the Hospital Compare Website (http://www.hospitalcompare.hhs.gov). Currently, the website compares hospital-specific CLABSI rates to the National 2006-8 benchmark. In the future, additional indicators such as catheter-associated urinary tract infections (CAUTIs) will be added.

The HAI rates reported by NYS and CMS may differ. The following table (Table 24) summarizes the reasons for these differences. The NYS data will also be available electronically on the NYS METRIX website (http://www.health.ny.gov/metrix).

Table 24. Comparison of New York State and Hospital Compare data

	NYSDOH HAI Report	**CMS Hospital Compare**
Question answered	How did each hospital perform in 2011 compared to the NYS 2011 average?	How did each hospital perform in the most recent time period compared to the National 2006-8 average?
Surveillance system	NHSN	NHSN
Time period	Calendar year	Rolling year (updated quarterly)
Hospital	Reported by unique NHSN number	Reported by unique CMS number (may contain more than one NHSN number)
Intensive care units (ICUs)	8 types of ICUs (Cardiothoracic, coronary, medical, medical-surgical, surgical, neurosurgical , pediatric, neonatal)	The 8 ICUs tracked by NYS plus other adult and pediatric ICUs (e.g. burn, trauma)
Indicators	Raw rates, risk-adjusted rates, and Standardized Infection Ratios	Standardized Infection Ratios
CLABSI Exclusions	Untreated events with single-pathogen contaminated specimens are excluded from hospital comparisons but not statewide averages.	None
Data validation	Yes	Beginning 2012

Appendix 4: List of Hospitals by County

This table lists the hospitals individually identified in this report. Additional information on the hospitals can be obtained from the NYSDOH Hospital Profile at http://hospitals.nyhealth.gov/.

County	PFI	CMS	Hospital Name
Albany	0001	330013	Albany Medical
	0004	330003	Albany Memorial
	0005	330057	St Peters Hospital
Allegany	0039	330096	Jones Memorial
Bronx	1178	330009	Bronx-Lebanon
	1165	330127	Jacobi Medical
	1172	330080	Lincoln Medical
	3058	330059	Montefiore-Einstein
	1169	330059	Montefiore-Moses
	1168	330059	Montifiore North
	1186	330385	North Central Bronx
	1176	330399	St Barnabas
	1185	330316	Westchester Square
Broome	0043	330011	Our Lady of Lourdes
	0042 / 0058	330394	U Health Bing/Wilson
Cattaraugus	0066	330103	Olean General
Cayuga	0085	330235	Auburn Memorial
Chautauqua	0098	330229	Brooks Memorial
	0114	330132	TLC Lake Shore
	0103	330239	Womans Christian
Chemung	0116	330090	Arnot Ogden
	0118	330108	St Josephs- Elmira
Chenango	0128	330033	Chenango Memorial
Clinton	0135	330250	Champlain Valley
Columbia	0146	330094	Columbia Memorial
Cortland	0158	330175	Cortland Reg Med
Dutchess	0192	330049	Northern Dutchess
	0180	330067	St Francis- Pough.
	0181	330023	Vassar Brothers
Erie	0280	330111	Bertrand Chaffee
	0207	330005	Buffalo General
	0210	330219	Erie Medical Center
	0267	330102	Kenmore Mercy
	0213	330279	Mercy Buffalo
	3067	330005	Millard Fill. Suburb
	0216	330354	Roswell Park
	0218	330078	Sisters of Charity
	0292	330078	St Joseph Cheektow.
	0208	330005	Woman and Childrens
Franklin	0324	330079	Adirondack Medical
	0325	330084	Alice Hyde
Fulton	0330	330276	Nathan Littauer
Genesee	0339	330073	United Memorial
Jefferson	0379	330263	Carthage Area
	0367	330157	Samaritan- Watertown

County	PFI	CMS	Hospital Name
Kings	1324	330169	Beth Israel- Kings
	1286	330233	Brookdale Hospital
	1288	330056	Brooklyn Hosp. Downtown
	1294	330196	Coney Island
	1309	330397	Interfaith Medical
	1301	330202	Kings County
	1315	330201	Kingsbrook Jewish
	1304	330306	Lutheran Medical
	1305	330194	Maimonides
	1293	330019	NY Community Bklyn
	1306	330236	NY Methodist
	1302	330152	U Hosp Brooklyn LICH
	1320	330350	U Hosp SUNYDownstate
	1692	330396	Woodhull Medical
	1318	330221	Wyckoff Heights
Lewis	0383	330213	Lewis County
Livingston	0393	330238	Noyes Memorial
Madison	0401	330249	Community Memorial
	0397	330115	Oneida Healthcare
Monroe	0409	330164	Highland Hospital
	0461	330037	Lakeside Memorial
	0411	330125	Rochester General
	0413	330285	Strong Memorial
	0471	330226	Unity Hosp Rochester
Montgomery	0484	330047	St Marys Amsterdam
Nassau	0518	330372	Franklin
	0490	330181	Glen Cove Hospital
	0495	330225	Long Beach
	0513	330259	Mercy Medical
	0528	330027	Nassau University
	0541	330106	North Shore
	0552	330331	Plainview Hospital
	0527	330198	South Nassau Comm.
	0563	330182	St Francis- Roslyn
	0551	330332	St Joseph -Bethpage
	0550	330106	Syosset Hospital
	0511	330167	Winthrop University

County	PFI	CMS	Hospital Name
New York	1438	330204	Bellevue Hospital
	1439	330169	Beth Israel- Petrie
	1445	330240	Harlem Hospital
	1447	330270	Hosp for Spec Surg
	1450	330119	Lenox Hill
	1453	330154	Mem. Sloan Kettering
	1454	330199	Metropolitan
	1456	330024	Mount Sinai
	1437	330064	NY Downtown
	3975	330101	NYP- Allen
	1464	330101	NYP- Columbia
	1464	330101	NYP- Morgan Stanley
	1458	330101	NYP- Weill Cornell
	1446	330389	NYU Joint Disease
	1463	330214	NYU Medical Center
	1466	330046	St Lukes- Roosevelt
	1469	330046	St Lukes- St Lukes
Niagara	0581	330005	DeGraff Memorial
	0585	330163	Intercomm. Newfane
	0565	330163	Lockport Memorial
	0583	330188	Mount St. Marys
	0574	330065	Niagara Falls
Oneida	0599	330044	Faxton St. Lukes
	0589	330215	Rome Memorial
	0598	330245	St Elizabeth Medical
Onondaga	0636	330203	Crouse Hospital
	0630	330140	St Josephs- Syracuse
	0628	330241	Upst. Community Gen
	0635	330241	Upst. Univ.Hosp.SUNY
Ontario	0676	330265	Clifton Springs
	0678	330074	FF Thompson
	0671	330058	Geneva General
Orange	0708	330135	Bon Secours
	0699 / 0686	330126	OrangeReg Goshen&Mid
	0704	330205	St Anthony
	0694 / 0698	330264	St LukesNewburgh&Cor
Orleans	0718	330053	Medina Memorial
Oswego	0727	330218	Oswego Hospital
Otsego	0739	330085	AO Fox Memorial
	0746	330136	Mary Imogene Bassett
Putnam	0752	330273	Putnam Hospital
Queens	1626	330128	Elmhurst
	1628	330193	Flushing Hospital
	1638	330353	Forest Hills Hosp
	1629	330014	Jamaica Hospital
	1630	330195	Long Island Jewish
	1639	330024	Mount Sinai Queens
	1637	330055	NY Med Ctr Queens
	1633	330231	Queens Hospital
	1635	330395	St Johns Episcopal

County	PFI	CMS	Hospital Name
Rensselaer	0756	330180	Samaritan- Troy
	0755	330232	Seton Health
Richmond	1738	330028	Richmond Univ
	1740 / 1737	330160	Staten Island U N&S
Rockland	0779	330158	Good Samar. Suffern
	0776	330104	Nyack Hospital
Saratoga	0818	330222	Saratoga Hospital
Schenectady	0829	330153	Ellis Hospital
St.Lawrence	0815	330197	Canton-Potsdam
	0798	330211	Claxton-Hepburn
	0812	330177	EJ Noble Hospital
	0804	330223	Massena Memorial
Steuben	0866	330277	Corning Hospital
	0873	330144	Ira Davenport
	0870	330151	St James Mercy
Suffolk	0885	330141	Brookhaven Memorial
	0891	330088	Eastern Long Island
	0925	330286	Good Samar. W Islip
	0913	330045	Huntington
	0895	330185	JT Mather
	0938	330107	Peconic Bay Medical
	0889	330340	Southampton
	0924	330043	Southside
	0943	330401	St Catherine Siena
	0896	330246	St Charles Hospital
	0245	330393	Stony Brook Univ.Hos
Sullivan	0971	330386	Catskill Regional
Tompkins	0977	330307	Cayuga Medical Cntr
Ulster	0989	330224	Benedictine Hospital
	0990	330004	Kingston Hospital
Warren	1005	330191	Glens Falls
Wayne	1028	330030	Newark Wayne
Westchester	1039	330267	Hudson Valley
	1122	330061	Lawrence
	1061	330086	Mount Vernon
	1117	330162	Northern Westchester
	1129	330261	Phelps Memorial
	1072	330184	Sound Shore Medical
	1097	330208	St Johns Riverside
	1098	330006	St Josephs- Yonkers
	1139	330234	Westchester Medical
	1045	330304	White Plains
Wyoming	1153	330008	Wyoming County Comm.

PFI: New York State Permanent Facility Identification Number

CMS: Centers for Medicaid and Medicare Services Identification Number

References

1. Klevens RM, Edwards JR, Horan TC, Gaynes RP, Pollack DA, Cardo DM. Estimating health care-associated infections and deaths in U.S. hospitals, 2002. *Public Health Reports* 2007; 122:160-166.
2. Scott RD. The direct medical costs of healthcare-associated infections in U.S. hospitals and the benefits of prevention. CDC, Division of Healthcare Quality Promotion, Atlanta GA, March 2009. Report CS200891-A. http://www.cdc.gov/HAI/pdfs/hai/Scott_CostPaper.pdf. (accessed July 30, 2012).
3. CDC, Division of Healthcare Quality Promotion. National and state healthcare-associated infections standardized infection ratio report using data reported to the National Healthcare Safety Network, January-December 2010. http://www.cdc.gov/hai/national-sir-jan-dec-2010/ . (accessed August 7, 2012).
4. Edwards JR, Peterson KD, Mu Y, Banerjee S, Allen-Bridson K, Morrell G, Dudeck MA, Pollack DA, Horan *TC*. National Healthcare Safety Network (NHSN) report: Data summary for 2006 through 2008, issued December 2009. *Am J Infect Control* 2009;37:783-805.
5. Vital Signs: Preventing *Clostridium difficile* infections. *Morbidity and Mortality Weekly Report*. March 2012; volume 61, pages 157-62.
6. New York State Department of Health Cardiac Surgery Reporting System. http://www.health.ny.gov/statistics/diseases/cardiovascular/heart_disease/docs/2007-2009_adult_cardiac_surgery.pdf. (accessed July 18, 2012).
7. New York State Department of Health Statewide Planning and Research Cooperative System. http://www.health.ny.gov/statistics/sparcs/ . (accessed July 18, 2011).
8. Haley VB, Van Antwerpen C, Tserenpuntsag B, Gase K, Hazamy P, Doughty D, Tsivitis M, Stricof RL. Use of administrative data in efficient auditing of hospital-acquired surgical site infections, New York State 2009-2010. *Infect Control and Hosp Epidem* 2012;33:565-71.
9. Hazamy P, Van Antwerpen C, Tserenpuntsag B, Doughty D, Tsivitis M, Gase K, Tucci V, Haley V, Stricof R. Determining accuracy of CLABSI data submission for public reporting of hospital-acquired infections in NYS from 2007-2009. APIC 38th Annual Educational Conference & International Meeting, June 2011. Abstract and Poster Session. (Blue Ribbon Abstract Award Recipient)

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