

2015 National

Ac

Introduction: Welcome to the 2015 National and State HAI Data Report using the new 2015 bas by comparing the number of observed infections to the number of predicted infecti This report is created by CDC staff with the National Healthcare Safety Network (N

This workbook includes national and state-specific SIR data for acute care hospita

Scope of report:

HAI Types
Central line-associated bloodstream infections (CLABSI) by locations
Catheter-associated urinary tract infections (CAUTI) by locations
Ventilator-associated events (VAE) by locations
Infection-related ventilator-associated condition and possible ventilator-associated pneumonia (IVAC-Plus) by locations
Surgical site infections (SSI)- All procedures for adults and pediatrics (using Complex Admission, Readmission (A/R) model)
Hospital-onset methicillin-resistant <i>Staphylococcus aureus</i> (MRSA) bacteremia by facility-wide reporting
Hospital-onset <i>Clostridium difficile</i> (CDI) by facility-wide reporting

*The Surgical Care Improvement Project (SCIP) procedures plus 5 of the most reported pro

and State HAI Data Report

ute Care Hospitals

eline and risk adjustment calculations. Standardized infection ratios (SIRs) are used to describe different HAI ty
ons. This year's report will not compare 2015 SIRs to those from the prior year.
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2015 Annual National and State HAI Data Report

Acute Care Hospitals: Full series of tables for all national and state-specific data

Tables included in this report:

Table 1	Characteristics of NHSN Acute Care Hospitals reporting to NHSN by state 1a. Central line-associated bloodstream infections (CLABSI) 1b. Catheter-associated urinary tract infections (CAUTI) 1c. Ventilator-associated events (VAE), including Infection-related ventilator-associated condition and possible ventilator-associated pneumonia 1d. Surgical site infections (SSI) 1f. Hospital-onset methicillin-resistant Staphylococcus aureus (MRSA) bacteremia 1e. Hospital-onset Clostridium difficile (CDI) 1g. Table 1 Footnotes
Table 2	National standardized infection ratios (SIRs) 2a. CLABSI, CAUTI, VAE, IVAC-Plus, hospital-onset MRSA bacteremia, and hospital-onset CDI from Acute Care Hospitals 2b. Adult SSIs from all NHSN procedure categories from Acute Care Hospitals 2c. Pediatric SSIs from all NHSN procedure categories from Acute Care Hospitals
Table 3	State-specific SIRs for CLABSI from Acute Care Hospitals 3a. All locations combined 3b. Critical care locations only 3c. Ward (non-critical care) locations only 3d. Neonatal critical care locations only
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Table 5	State-specific SIRs for VAE and IVAC Plus from Acute Care Hospitals 5a. VAE, all locations combined 5b. VAE, critical care locations only 5c. VAE, ward (non-critical care) locations only 5d. IVAC Plus, all locations combined 5e. IVAC Plus, critical care locations only

5f. IVAC Plus, ward (non-critical care) locations only

Table 6 State-specific SIRs for **Adult SSI** from Acute Care Hospitals

- 6a. Colon surgery
- 6b. Abdominal hysterectomy surgery
- 6c. Hip arthroplasty
- 6d. Knee arthroplasty
- 6e. Rectal surgery
- 6f. Vaginal hysterectomy
- 6g. Coronary artery bypass graft
- 6h. Other cardiac surgery
- 6i. Peripheral vascular bypass surgery
- 6j. Abdominal aortic aneurysm repair
- 6k. Cesarean section surgery
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- 6m. Laminectomy surgery
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- 6o. Appendix surgery

Table 7 State-specific SIRs for hospital-onset MRSA bacteremia from Acute Care Hospitals

Table 8 State-specific SIRs for hospital-onset CDI from Acute Care Hospitals

Appendix A Factors used in NHSN risk adjustment of the device-associated HAIs (CLABSI, CAUTI, VAE, IVAC-Plus) negative binomial regression models

Appendix B Factors used in NHSN risk adjustment of the MRSA Bacteremia and C.difficile negative binomial regression models from Acute Care Hospitals

Appendix C List of NHSN procedures included in this report with predictive risk factors from the NHSN Complex Admission/Re-admission SSI Logistic Regression Models

Appendix D List of NHSN procedures included in this report with predictive risk factors from the NHSN Complex Admission/Re-admission SSI Logistic Regression Models

Appendix E List of NHSN procedures and corresponding SCIP procedures included in this report with factors used in the NHSN risk adjustment of the device-associated HAIs

Additional Resources

- [SIR Guide](#)
- [Technical Appendix](#)
- [HAI Progress Report Home Page](#)

monia (IVAC-Plus)

Models from Acute Care Hospitals

Hospitals

: Regression, Adults ≥ 18 years of age

: Regression, Pediatrics < 18 years of age

: Complex Admission/Readmission Model, Adults ≥ 18 years of age

Table 1a

Table 1. Characteristics of NHSN Acute Care Hospitals reporting to NHSN by State ¹ , 2015:								
1a. Central line-associated bloodstream infections (CLABSI) ²								
State	No. of Acute Care Hospitals in State ³	2015						
		State NHSN Mandate ⁴	Any Validation ⁵	No. of Acute Care Hospitals Reporting ⁶	Locations (n) ²			
					Total	ICU	Wards ²	NICU ⁷
Alaska	16	No	Yes	9	43	10	31	2
Alabama	94	Yes	Yes ^A	76	456	135	305	16
Arkansas	79	Yes		48	269	64	196	9
Arizona	64	No	No	66	408	91	301	16
California	305	Yes		332	2325	526	1657	142
Colorado	72	Yes	Yes	51	342	70	249	23
Connecticut	27	Yes	No	32	241	48	181	12
D.C.	10	Yes	No	8	105	24	74	7
Delaware	7	Yes	Yes	8	84	15	67	2
Florida	149	No	No	198	1681	424	1200	57
Georgia	97	Yes	No	105	689	177	474	38
Guam	1	No	No	1	1	1		
Hawaii	21	Yes	Yes	16	79	23	54	2
Iowa	122	No	Yes	39	212	50	150	12
Idaho	31	No	No	11	84	16	60	8
Illinois	159	Yes	Yes	132	908	208	655	45
Indiana	112	Yes	Yes	88	520	117	375	28
Kansas	140	No	Yes	51	235	58	168	9
Kentucky	82	M		70	425	123	286	16
Louisiana	89	No	Yes	91	451	114	309	28
Massachusetts	57	Yes	Yes	68	486	118	358	10
Maryland	50	Yes		49	457	83	357	17
Maine	31	Yes	Yes	19	88	20	65	3
Michigan	123	No	Yes	95	637	178	439	20
Minnesota	111	Yes	No	52	278	74	193	11
Missouri	123	No	Yes	74	552	122	407	23
Mississippi	92	Yes		54	322	74	234	14
Montana	50	No	No	13	60	12	43	5
North Carolina	101	Yes	Yes	95	656	166	465	25
North Dakota	27	No	No	7	57	11	40	6
Nebraska	53	No	No	24	129	27	96	6
New Hampshire	24	Yes		13	85	18	64	3
New Jersey	58	Yes	Yes	71	567	136	407	24
New Mexico	32	Yes	Yes	32	139	37	97	5
Nevada	25	Yes	No	24	167	43	116	8
New York	154	Yes		175	1532	356	1122	54
Ohio	133	No	No	136	978	249	700	29
Oklahoma	110	Yes	No	79	330	78	243	9
Oregon	60	Yes	Yes	37	224	50	165	9
Pennsylvania	172	Yes	Yes	163	1337	272	1020	45
Puerto Rico	17	Yes	No	14	87	28	52	7
Rhode Island	9	No	Yes	11	92	16	75	1
South Carolina	66	Yes	Yes	64	429	105	315	9
South Dakota	37	No	Yes	16	82	18	61	3
Tennessee	69	Yes	Yes	107	600	169	406	25
Texas	452	Yes		331	1753	420	1213	120
Utah	34	Yes	Yes	36	137	39	85	13
Virginia	80	Yes	Yes	82	559	136	397	26
Virgin Island		Yes	No	2	15	2	11	2
Vermont	12	Yes	No	7	33	8	24	1
Washington	80	Yes		56	395	73	306	16
Wisconsin	137	No	Yes	73	413	91	303	19
West Virginia	55	Yes	Yes	29	200	50	145	5
Wyoming	24	No	No	10	29	9	20	0
All US	4,334			3550	23463	5582	16836	1045

Table 1b

Table 1. Characteristics of NHSN Acute Care Hospitals reporting to NHSN by State ¹ , 2015:							
1b. Catheter-associated urinary tract infections (CAUTI) ²							
State		2015					
						Total	ICU
		No	Yes				
Alaska	16	No	Yes	10	17	7	10
Alabama	94	Yes	Yes	88	155	67	88
Arkansas	79	Yes	Yes ^A	48	90	42	48
Arizona	64	No	No	66	122	56	66
California	305	No	No	334	628	307	321
Colorado	72	No	No	50	93	46	47
Connecticut	27	Yes	No	32	62	30	32
D.C.	10	No	No	8	16	8	8
Delaware	7	Yes	Yes	8	16	8	8
Florida	149	No	No	198	385	191	194
Georgia	97	Yes	No	108	201	94	107
Guam	1	No	No	1	1	1	0
Hawaii	21	Yes	Yes	16	30	15	15
Iowa	122	No	Yes	40	74	34	40
Idaho	31	No	No	15	25	10	15
Illinois	159	No	No	133	258	127	131
Indiana	112	Yes	Yes	89	157	69	88
Kansas	140	No		52	91	39	52
Kentucky	82	M		70	133	66	67
Louisiana	89	No	Yes	92	158	69	89
Massachusetts	57	Yes	Yes	69	131	63	68
Maryland	50	Yes		49	95	46	49
Maine	31	Yes	Yes	19	32	14	18
Michigan	123	No	Yes	95	184	89	95
Minnesota	111	Yes	No	53	98	45	53
Missouri	123	No	No	78	147	71	76
Mississippi	92	Yes		60	103	45	58

Table 1b

Montana	50	No	No	13	23	10	13
North Carolina	101	Yes	Yes	96	181	85	96
North Dakota	27	No	No	8	14	6	8
Nebraska	53	No	No	25	44	19	25
New Hampshire	24	Yes		13	26	13	13
New Jersey	58	Yes	Yes	71	141	71	70
New Mexico	32	No	No	35	63	29	34
Nevada	25	No	No	24	44	20	24
New York	154	No	No	178	339	164	175
Ohio	133	No	No	138	260	124	136
Oklahoma	110	No	No	87	137	51	86
Oregon	60	Yes	Yes	38	70	33	37
Pennsylvania	172	Yes	Yes	177	327	150	177
Puerto Rico	17	Yes	No	14	27	14	13
Rhode Island	9	No	Yes	11	21	10	11
South Carolina	66	No	No	64	119	56	63
South Dakota	37	No	Yes	21	32	11	21
Tennessee	69	Yes	Yes	108	192	87	105
Texas	452	Yes		360	614	269	345
Utah	34	Yes	Yes	36	64	28	36
Virginia	80	M	Yes	82	160	79	81
Virgin Islands		Yes	No	2	4	2	2
Vermont	12	No	No	6	11	5	6
Washington	80	No	No	57	108	51	57
Wisconsin	137	No	Yes	73	138	65	73
West Virginia	55	Yes	Yes	29	57	29	28
Wyoming	24	No	No	11	19	9	10
All US	4,334			3,658	6,737	3149	3588

Table 1c

1c. Ventilator-associated events (VAE) ⁹								
State		2015						
					Total	ICU		
Alaska	16	No	No	7	8	6	2	
Alabama	94	No	No	32	66	56	10	
Arkansas	79	No	No	17	27	25	2	
Arizona	64	No	No	34	53	43	10	
California	305	No	No	164	331	265	66	
Colorado	72	No	No	29	51	44	7	
Connecticut	27	No	No	14	33	21	12	
D.C.	10	No	No	3	6	6	0	
Delaware	7	No	No	3	9	7	2	
Florida	149	No	No	111	250	215	35	
Georgia	97	No	No	66	125	123	2	
Guam	1	No	No	0	0	0	0	
Hawaii	21	No	No	5	5	5	0	
Iowa	122	No	No	10	11	11	0	
Idaho	31	No	Yes	7	11	9	2	
Illinois	159	No	No	57	108	74	34	
Indiana	112	No	No	63	97	88	9	
Kansas	140	No	No	29	45	37	8	
Kentucky	82	M	No	42	67	64	3	
Louisiana	89	No	No	35	57	44	13	
Massachusetts	57	No	No	22	48	40	8	
Maryland	50	No	No	27	45	38	7	
Maine	31	No	No	10	16	12	4	
Michigan	123	No	No	63	128	115	13	
Minnesota	111	No	No	10	18	12	6	
Missouri	123	No	No	32	66	53	13	
Mississippi	92	No	No	25	41	38	3	

Table 1c

Montana	50	No	No	5	5	5	0
North Carolina	101	No	No	37	67	57	10
North Dakota	27	No	No	2	3	3	0
Nebraska	53	No	No	7	18	11	7
New Hampshire	24	No	No	8	12	8	4
New Jersey	58	No	No	45	110	77	33
New Mexico	32	No	No	17	23	19	4
Nevada	25	No	No	20	41	31	10
New York	154	No	No	120	388	224	164
Ohio	133	No	No	72	208	133	75
Oklahoma	110	No	No	34	51	48	3
Oregon	60	No	No	21	31	28	3
Pennsylvania	172	Yes	Yes	141	349	255	94
Puerto Rico	17	Yes	No	6	21	10	11
Rhode Island	9	No	No	6	6	6	0
South Carolina	66	M	Yes	55	108	94	14
South Dakota	37	No	No	5	9	7	2
Tennessee	69	No	No	54	129	104	25
Texas	452	No	No	142	218	188	30
Utah	34	No	No	8	8	8	0
Virginia	80	No	No	62	131	105	26
Virgin Islands		Yes	No	1	1	1	0
Vermont	12	No	No	0	0	0	0
Washington	80	No	No	28	38	33	5
Wisconsin	137	No	No	50	65	60	5
West Virginia	55	No	No	16	29	28	1
Wyoming	24	No	No	6	6	5	1
All US	4,334			1,885	3,797	2999	798

Table 1. Characteristics of NHSN Acute Care Hospitals reporting to NHSN by State¹, 2015:

1d. Surgical site infections⁸

State		2015			
		Any Validation ⁵		No. of Acute Care Hospitals Reporting colon and hysterectomy surgeries in adults ⁶	No. of Procedures ⁸ colon and hysterectomy surgeries in adults
Alaska	16	No	Yes	7	1,123
Alabama	94	Yes	Yes	71	12,935
Arkansas	79	Yes	Yes	41	6,630
Arizona	64	No	No	58	13,741
California	305	Yes	Yes	316	55,556
Colorado	72	Yes	Yes	48	9,425
Connecticut	27	Yes	No	30	7,428
D.C.	10	No	No	7	1,810
Delaware	7	Yes	Yes	7	2,157
Florida	149	No	No	186	43,686
Georgia	97	Yes	No	94	22,406
Guam	1	No	No	0	0
Hawaii	21	Yes	Yes	14	1,792
Iowa	122	No		36	6,259
Idaho	31	No	No	12	2,083
Illinois	159	No	No	126	22,603
Indiana	112	Yes	Yes	81	12,700
Kansas	140	No	Yes	44	6,094
Kentucky	82	M		63	10,863
Louisiana	89	No	Yes	75	10,552
Massachusetts	57	Yes	Yes	61	12,350
Maryland	50	Yes	Yes	45	10,997
Maine	31	Yes		19	2,305
Michigan	123	No	No	88	21,044
Minnesota	111	Yes	No	50	9,690
Missouri	123	No	Yes	68	14,544
Mississippi	92	Yes	Yes	45	6,830
Montana	50	No	No	12	1,748
North Carolina	101	Yes	Yes	88	20,782
North Dakota	27	No	No	6	1,601
Nebraska	53	No	No	21	3,803
New Hampshire	24	Yes	Yes	13	2,316
New Jersey	58	Yes		70	15,541
New Mexico	32	No	No	28	3,028
Nevada	25	No	No	21	4,403
New York	154	Yes	Yes	165	38,092
Ohio	133	No	No	125	27,704
Oklahoma	110	No	No	65	8,724
Oregon	60	Yes	Yes	34	6,981
Pennsylvania	172	Yes	Yes	153	29,872
Puerto Rico	17	No	No	0	0
Rhode Island	9	No	No	11	2,342
South Carolina	66	Yes	Yes	56	10,780
South Dakota	37	No	Yes	16	2,013
Tennessee	69	Yes	Yes	96	16,852

Texas	452	Yes	Yes	301	50,652
Utah	34	Yes	Yes	32	5,149
Virginia	80	M	Yes	75	16,150
Virgin Islands		No	No	2	126
Vermont	12	Yes	No	7	815
Washington	80	Yes	Yes	52	10,798
Wisconsin	137	No	Yes	67	11,062
West Virginia	55	Yes		27	3,932
Wyoming	24	No	No	11	485
All US	4,334			3,246	623,354

**Table 1. Characteristics of NHSN Acute Care Hospitals reporting to NHSN by State¹, 2015:
1e. Hospital-onset methicillin-resistant *Staphylococcus aureus* bacteremia⁹**

State		2015		
Alaska	16	No	Yes	8
Alabama	94	No	No	89
Arkansas	79	Yes	Yes	48
Arizona	64	No	No	67
California	305	Yes	Yes	339
Colorado	72	Yes	No	51
Connecticut	27	Yes	Yes	32
D.C.	10	Yes	No	8
Delaware	7	Yes	Yes	8
Florida	149	No	No	195
Georgia	97	Yes	No	105
Guam	1	No	No	0
Hawaii	21	Yes		16
Iowa	122	No	Yes	37
Idaho	31	No	No	14
Illinois	159	Yes	Yes	134
Indiana	112	No	No	92
Kansas	140	No	Yes	57
Kentucky	82	M	Yes	69
Louisiana	89	No	No	96
Massachusetts	57	Yes	Yes	69
Maryland	50	Yes	Yes	47
Maine	31	Yes		21
Michigan	123	No	No	98
Minnesota	111	Yes	No	53
Missouri	123	No	No	78
Mississippi	92	Yes	Yes	62
Montana	50	No	No	13
North Carolina	101	Yes	Yes	96
North Dakota	27	No	No	8
Nebraska	53	Yes	Yes	25
New Hampshire	24	No	No	13
New Jersey	58	Yes		71
New Mexico	32	No	Yes	37
Nevada	25	Yes	No	22
New York	154	No	No	182
Ohio	133	No	Yes	136
Oklahoma	110	No	No	91
Oregon	60	Yes	Yes	37
Pennsylvania	172	Yes	Yes	168
Puerto Rico	17	No	No	3
Rhode Island	9	No	No	11

South Carolina	66	Yes	Yes	65
South Dakota	37	No	Yes	23
Tennessee	69	Yes		113
Texas	452	No	No	366
Utah	34	Yes		36
Virginia	80	M	Yes	79
Virgin Islands		Yes	Yes	2
Vermont	12	No	No	6
Washington	80	No	No	56
Wisconsin	137	No	Yes	75
West Virginia	55	Yes	Yes	30
Wyoming	24	No	No	11
All US	4,334			3,668

1f. Hospital-onset *Clostridium difficile*⁹

State	2015			
		Any Validation ⁵		
Alaska	16	No	Yes	8
Alabama	94	No	No	89
Arkansas	79	Yes	Yes	48
Arizona	64	No	No	68
California	305	Yes	Yes	339
Colorado	72	Yes	Yes	51
Connecticut	27	Yes	No	32
D.C	10	No	No	7
Delaware	7	Yes	Yes	8
Florida	149	No	No	195
Georgia	97	Yes	No	105
Guam	1	No	No	0
Hawaii	21	Yes		16
Iowa	122	No	Yes	38
Idaho	31	No	No	14
Illinois	159	Yes		134
Indiana	112	No	No	92
Kansas	140	No	Yes	57
Kentucky	82	M	Yes	69
Louisiana	89	No	No	97
Massachusetts	57	Yes	Yes	70
Maryland	50	Yes	Yes	47
Maine	31	Yes		21
Michigan	123	No	No	98
Minnesota	111	Yes	No	55
Missouri	123	No	No	78
Mississippi	92	Yes	Yes	62
Montana	50	No	No	13
North Carolina	101	Yes	Yes	96
North Dakota	27	No	No	8
Nebraska	53	Yes	Yes	26
New Hampshire	24	No	No	13
New Jersey	58	No	No	71
New Mexico	32	E	Yes	38
Nevada	25	No	No	22
New York	154	Yes	Yes	183
Ohio	133	No	Yes	137
Oklahoma	110	No	No	91
Oregon	60	Yes	Yes	37
Pennsylvania	172	Yes	Yes	168
Puerto Rico	17	No	No	4
Rhode Island	9	No		11
South Carolina	66	Yes	Yes	65

South Dakota	37	No	Yes	23
Tennessee	69	Yes		113
Texas	452	No	No	371
Utah	34	Yes		37
Virginia	80	M	Yes	80
Virgin Islands		Yes	No	2
Vermont	12	No	No	6
Washington	80	Yes	Yes	56
Wisconsin	137	No	Yes	75
West Virginia	55	Yes	Yes	30
Wyoming	24	No	No	11
All US	4,334			3,685

Footnotes for Tables 1a-1f:

1. United States, Washington, D.C., Guam, Puerto Rico and Virgin Islands

2. Data included in this table are from 2015 from acute care facility ICUs (critical care units), NICUs (CLABSI only, see footnote 7), and ward plus (for this report wards also include step-down, mixed acuity and specialty care areas [hematology/oncology, bone marrow transplant]). Long-term acute care facilities and locations, inpatient rehabilitation facilities and locations, dialysis facilities and locations, and long term care facilities (skilled nursing facilities) are not included in Table 1.

3. The total number of acute care hospitals in a state was computed from the American Hospital Association (AHA) annual survey for fiscal year 2015, after excluding rehabilitation hospitals and long-term acute care hospitals (Available at <http://www.ahadataviewer.com/about/hospital-database/>). The AHA is a voluntary survey that hospitals opt to participate. The response rate of the survey is about 75%. Because of this methodology, this count may differ slightly from counts provided by state regulatory authorities. This number also excludes facilities that were not operational in 2015 (0 DAYS OPEN DURING REPORTING PERIOD). So, the total # facilities will be lower than that in 2013 worksheet (shown in the 2014 HAI Progress Report) for which we reported all hospitals regardless of operational status

4. Yes indicates that a legislative or regulatory requirement ("state mandate") for acute care hospitals to report data for the given HAI type to the state health department or hospital association via NHSN was in effect at the beginning of the year. If no state mandate existed at the beginning of each year, but was implemented at some time during the year, the value of this column is "M" for midyear implementation. No indicates that a state mandate did not exist during the years included in this report. On Table 1c, the presence of a state mandate reflects a mandate for colon surgery or abdominal hysterectomy data.

5. Yes indicates that the state health department reported the completion of all of the following validation activities for NHSN data during that year: state health department had access to NHSN data, state health department performed an assessment of missing or implausible values on at least six months of the year's data prior to the freeze date of July 1, 2016 for 2015 data, and state health department contacted identified facilities. Yes^a indicates that the state also conducted an audit of facility medical or laboratory records prior to July 1, 2016 for 2015 data to confirm proper case ascertainment (although intensity of auditing activities varies by state). On Table 1c, validation information applies to either colon surgery or abdominal hysterectomy data. Information on validation efforts was requested from all states, regardless of the presence of a legislative mandate for the particular HAI type. Some states without mandatory reporting of a given HAI to the state health department have performed validation on NHSN data that is voluntarily shared with them by facilities in their jurisdiction.

6. The number of facilities reporting at least one month of "in-plan" data to NHSN may be lower than the number of facilities in the state identified in footnote 3, as some hospitals in a state may not be included in the state mandate (e.g., facilities that do not have units or perform procedures covered by the mandate, or the mandate covers only facilities above a certain bed size).

7. NICU locations included are those classified by NHSN CDC location codes as Level II/III and Level III neonatal critical care areas. A Level II/III neonatal critical care area is defined by NHSN as a combined nursery housing both Level II and III newborns and infants. A Level III neonatal critical care area is defined by NHSN as a hospital NICU organized with personnel and equipment to provide continuous life support and comprehensive care for extremely high-risk newborn infants and those with complex and critical illness.

8. SSIs included are those classified as deep incisional or organ/space infections following inpatient procedures within colon and hysterectomy surgeries, detected during the same admission as the surgical procedure or upon readmission to the same facility.

9. Hospital-onset is defined as event detected on the 4th day (or later) after admission to an inpatient location within the facility.

Central line-associated blood

HAI and Patient Population	No. of Facilities Reporting ¹	No. of Infections (Events)	
		Observed	Predicted
CLABSI, all⁴	3,550	26,029	26,183.537
ICUs⁵	3,148	9,699	9,694.452
Wards⁶	3,466	14,395	14,505.761
NICUs⁷	1,001	1,935	1,983.323
CAUTI, all⁸	3,658	28,712	28,910.634
	3,149	13,898	13,863.380
	3,588	14,814	15,047.260
VAE, all⁸	1,828	21,888	21,896.841
	1,796	21,318	21,330.661
	259	570	566.180
IVAC- plus, all⁸	1,828	8,021	8,024.082
	1,796	7,834	7,838.249
	259	187	185.833
Hospital-onset MRSA bacteremia, facility-wide⁹	3,616	8,887	8,906.430
Hospital-onset <i>C. difficile</i>, facility-wide⁹	3,634	101,505	102,203.940

1. The number of reporting facilities included in the SIR calculation. Due to SIR exclusion criteria, this may be
2. Percent of facilities with at least one predicted infection (event) that had an SIR significantly greater than or
3. Facility-specific percentiles are only calculated if at least 20 facilities had ≥ 1.0 predicted HAI in 2015. If a fa
4. Data from all ICUs, wards (and other non-critical care locations), and NICUs.
5. Data from all ICUs; excludes wards (and other non-critical care locations) and NICUs. For VAE, pediatric IC
6. Data from all wards (for this table wards also include step-down and specialty care areas [including hematc
7. Data from all NICU locations, including Level II/III and Level III nurseries. Both umbilical line and central lin
8. Data from all ICUs and wards (and other non-critical care locations). This excludes NICUs. For VAE, pedie
IVAC-plus includes those events identified as infection-related ventilator-associated condition (IVAC) and p
9. Hospital-onset is defined as event detected on the 4th day (or later) after admission to an inpatient location

NOTE: Risk factors used in the calculation of the number of predicted device-associated infections are listed
Risk factors used in the calculation of the number of predicted MRSA bacteremia and CDI are listed in Apper

Table 2a. National standardized infection ratios (SIRs) and facility-specific stream infections (CLABSIs), catheter-associated urinary tract infections (CAUTIs), ventilator-associated

SIR	95% CI for SIR		Facility-specific SIRs		
	Lower	Upper	No. Facilities with ≥ 1 Predicted Infection (Event)	No. Facilities with SIR Significantly > National SIR	No. Facilities Significantly <
				N	% ²
0.994	0.982	1.006	2,328	264	11%
1.000	0.981	1.021	1,712	156	9%
0.992	0.976	1.009	1,975	200	10%
0.976	0.933	1.020	463	35	3%
0.993	0.982	1.005	2,597	300	12%
1.002	0.986	1.019	1,955	198	10%
0.984	0.969	1.000	2,261	220	10%
1.000	0.986	1.013	1,373	257	19%
0.999	0.986	1.013	1,362	257	19%
1.007	0.927	1.092	112	13	12%
1.000	0.978	1.022	1,065	148	14%
0.999	0.978	1.022	1,055	150	14%
1.006	0.870	1.159	53	5	9%
0.998	0.977	1.019	1,839	144	8%
0.993	0.987	0.999	3,159	427	14%

different from the numbers shown in Table 1. These tables contain data from acute care hospitals; as such, they are less than the nominal value of the national SIR for the given HAI type. This is only calculated if at least 10 facilities within a facility's predicted number of HAIs was <1.0, a facility-specific SIR was neither calculated nor included in the distribution.

Locations are excluded from SIR since pediatric and neonatal locations are excluded from VAE surveillance. Locations (e.g., oncology/oncology, bone marrow transplant). For VAE, pediatric locations are excluded from SIR since pediatric and neonatal-associated bloodstream infections are considered CLABSIs.

Pediatric locations are excluded from SIR since pediatric and neonatal locations are excluded from VAE surveillance. Possible ventilator-associated pneumonia (pVAP). IVAC-plus events are a subset of the total VAE, meaning the IVAC-plus events are within the facility.

See Appendix A.

See Appendix B.

c summary SIRs using HAI data reported to NHSN during 2015 by facility type, HAI, and patient population (VAE), infection-related ventilator-associated complication (IVAC-Plus), hospital-onset methicillin-resistant S. aureus (HOMSA), and hospital-onset methicillin-resistant S. pneumoniae (HOMSP)

Facilities with SIR < National SIR	Percentage of Facilities							
	5%	10%	15%	20%	25%	30%	35%	40%
11%	0.000	0.000	0.282	0.397	0.483	0.559	0.644	0.712
7%	0.000	0.000	0.000	0.281	0.398	0.500	0.584	0.653
8%	0.000	0.000	0.166	0.338	0.444	0.538	0.616	0.689
3%	0.000	0.000	0.000	0.206	0.361	0.489	0.568	0.652
11%	0.000	0.000	0.277	0.396	0.485	0.579	0.661	0.724
7%	0.000	0.000	0.088	0.322	0.423	0.508	0.583	0.687
8%	0.000	0.000	0.207	0.347	0.442	0.530	0.603	0.686
26%	0.000	0.000	0.000	0.000	0.146	0.285	0.411	0.543
26%	0.000	0.000	0.000	0.000	0.137	0.284	0.407	0.541
13%	0.000	0.000	0.000	0.000	0.000	0.000	0.298	0.359
14%	0.000	0.000	0.000	0.000	0.000	0.241	0.390	0.548
14%	0.000	0.000	0.000	0.000	0.000	0.241	0.386	0.548
4%	0.000	0.000	0.000	0.000	0.000	0.000	0.369	0.398
4%	0.000	0.000	0.000	0.345	0.443	0.519	0.608	0.672
15%	0.000	0.327	0.477	0.563	0.636	0.715	0.776	0.830

exclude data from LTACHs, IRFs, and CAHs.
 facilities had ≥ 1.0 predicted HAI in 2015.
 distribution of facility-specific SIRs.

neonatal locations are excluded from VAE surveillance.

IVAC-plus events are included in the total VAE SIR as well.

lation:

illin-resistant *Staphylococcus aureus* (MRSA) bacteremia, and hospital-onset *Clostridium difficile*

Percentile Distribution of Facility-specific SIRs³

Median								
45%	50%	55%	60%	65%	70%	75%	80%	85%
0.787	0.868	0.943	1.022	1.109	1.206	1.323	1.462	1.679
0.728	0.807	0.892	0.970	1.091	1.205	1.359	1.560	1.786
0.769	0.833	0.917	0.994	1.103	1.211	1.361	1.516	1.733
0.743	0.840	0.909	0.995	1.068	1.241	1.446	1.570	1.812
0.797	0.872	0.950	1.016	1.113	1.202	1.325	1.478	1.674
0.760	0.838	0.917	1.000	1.122	1.223	1.373	1.561	1.743
0.760	0.840	0.922	1.004	1.103	1.211	1.345	1.507	1.721
0.667	0.791	0.924	1.080	1.208	1.341	1.515	1.701	1.962
0.658	0.779	0.914	1.068	1.208	1.341	1.512	1.703	1.962
0.450	0.560	0.739	0.867	1.014	1.174	1.495	1.793	2.064
0.668	0.751	0.881	1.005	1.180	1.293	1.451	1.683	1.948
0.668	0.756	0.873	0.991	1.180	1.318	1.462	1.687	1.948
0.507	0.602	1.003	1.236	1.387	1.472	1.475	1.941	2.216
0.747	0.827	0.923	1.005	1.119	1.245	1.364	1.543	1.731
0.880	0.928	0.987	1.046	1.101	1.159	1.228	1.317	1.427

ie (CDI)

90%	95%
1.958	2.440
2.047	2.585
2.032	2.583
2.236	2.542
1.923	2.369
2.022	2.595
1.988	2.595
2.241	2.838
2.288	2.840
2.367	3.456
2.298	2.824
2.302	2.880
2.520	3.471
2.084	2.671
1.571	1.842

Surgical Procedure	No. of Acute Care Hospitals Reporting ²	No. of Procedures
US, all NHSN procedures	3,344	2,441,688
US, SCIP procedures only⁵	3,326	1,552,852
AAA Abdominal aortic aneurysm repair ⁵	271	1,615
AMP Limb amputation	137	6,668
APPY Appendix surgery	381	35,343
AVSD Shunt for dialysis	105	1,926
BILI Bile duct, liver or pancreatic surgery	298	10,293
BRST Breast surgery	214	15,700
CARD Cardiac surgery ⁵	386	40,027
CABG- Coronary artery bypass graft ^{5,6}	756	120,877
CEA Carotid endarterectomy	277	9,898
CHOL Gallbladder surgery	404	63,951
COLO Colon surgery ⁵	3,140	302,736
CRAN Craniotomy	140	23,594
CSEC Cesarean section	408	219,692
FUSN Spinal fusion	527	115,547
FX Open reduction of fracture	386	46,166
GAST Gastric surgery	387	33,250
HER Herniorrhaphy	198	14,359
HPRO Hip arthroplasty ⁵	1,847	306,591
HTP Heart transplant	25	672
HYST Abdominal hysterectomy ⁵	3,029	304,027
KPRO Knee arthroplasty ⁵	1,787	432,116
KTP Kidney transplant	38	3,816
LAM Laminectomy	488	102,259
LTP Liver transplant	24	1,373
NECK Neck surgery	69	1,214
NEPH Kidney surgery	261	9,450
OVRY Ovarian surgery	359	32,813
PACE Pacemaker surgery	317	24,175
PRST Prostate surgery	95	2,696
PVBY Peripheral vascular bypass surgery ⁵	294	8,623
REC Rectal surgery ⁵	319	6,878
RFUSN Refusion of spine	278	4,340
SB Small bowel surgery	378	22,816
SPLE Spleen surgery	249	2,458
THOR Thoracic surgery	310	20,445
THYR Thyroid and/or parathyroid surgery	116	3,929
VHYS Vaginal hysterectomy ⁵	736	29,362
VSHN Ventricular shunt	103	3,042
XLAP Abdominal surgery	383	56,951

1. SSIs included are those classified as deep incisional or organ/space infections following inpatient
2. The number of reporting facilities included in the SIR calculation. Due to SIR exclusion criteria, thi

3. Risk factors used in the calculation of the number of predicted SSIs are listed in Appendix C.
4. Percent of facilities with at least one predicted infection that had an SIR significantly greater than 1.0 is reported in Appendix D.
5. These procedures were presented in previous versions of the HAI Progress Report and follow selected SCIP procedures and the corresponding SCIP procedures are listed in Appendix E.
6. Coronary artery bypass graft includes procedures with either chest only or chest and donor site incisions.
7. Facility-specific percentiles are only calculated if at least 20 facilities had ≥ 1.0 predicted SSI in 2010.

Table 2b. National standardized infection ratios (SIRs) and facility-specific summary

No. of Infections		SIR	95% CI for SIR		No. Hosp with ≥1 Predicted Infection	Facility- No. Hosp Significantly > N
Observed	Predicted³		Lower	Upper		
18,851	18,853.286	1.000	0.986	1.014	2,380	208
14,364	14,363.507	1.000	0.984	1.017	2,319	183
11	11.027	0.998	0.525	1.734	0	.
37	37.215	0.994	0.710	1.356	13	0
131	134.596	0.973	0.817	1.151	33	1
5	5.055	0.989	0.362	2.192	0	.
326	323.362	1.008	0.903	1.122	57	4
144	147.897	0.974	0.824	1.143	46	3
135	135.667	0.995	0.838	1.174	35	1
856	852.864	1.004	0.938	1.073	304	23
8	8.034	0.996	0.462	1.891	0	.
226	226.576	0.997	0.874	1.134	78	2
7,493	7497.084	0.999	0.977	1.022	1,811	147
250	250.670	0.997	0.879	1.127	61	3
323	326.017	0.991	0.887	1.103	104	4
846	841.438	1.005	0.939	1.075	232	19
328	324.371	1.011	0.906	1.125	99	7
224	224.623	0.997	0.873	1.134	70	5
125	122.986	1.016	0.850	1.207	36	4
1,917	1921.469	0.998	0.954	1.043	600	33
6	6.218	0.965	0.391	2.007	0	.
2,005	1999.690	1.003	0.959	1.047	614	29
1,510	1509.661	1.000	0.951	1.052	528	25
23	23.211	0.991	0.643	1.463	8	.
350	349.429	1.002	0.901	1.111	106	5
65	65.673	0.990	0.770	1.253	19	0
29	29.071	0.998	0.681	1.414	6	.
31	31.139	0.996	0.688	1.396	2	.
20	21.039	0.951	0.597	1.442	0	.
43	43.242	0.994	0.729	1.327	2	.
7	7.063	0.991	0.433	1.960	0	.
169	167.406	1.010	0.866	1.171	51	3
120	120.472	0.996	0.829	1.187	30	1
62	62.567	0.991	0.766	1.262	10	1
449	451.216	0.995	0.906	1.090	145	9
14	14.110	0.992	0.565	1.625	0	.
70	70.876	0.988	0.776	1.240	15	2
3	3.027	0.991	0.252	2.697	0	.
148	148.166	0.999	0.847	1.170	20	2
47	47.186	0.996	0.740	1.313	13	0
295	291.869	1.011	0.900	1.131	89	4

procedures that occurred in 2015 with a primary or other than primary skin closure technique, detected during the study period may be different from the numbers shown in Table 1. Refer to the Technical Appendix for information about

or less than the nominal value of the national SIR for the given procedure type. This is only calculated if at least 10 inpatient surgical procedures approximating procedures covered by the Surgical Care Improvement Project

are performed.

15. If a facility's predicted number of SSIs was < 1.0 , a facility-specific SIR was neither calculated nor included.

SIRs using adult surgical site infection (SSI) data¹ reported to NHSN from NHSN Acute Care Hospi

specific SIRs			5%	10%	15%	20%	25%
> National SIR	No. Hosp with SIR	< National SIR					
% ⁴	N						
9%	171	7%	0.000	0.000	0.239	0.382	0.497
8%	135	6%	0.000	0.000	0.211	0.387	0.500
.
0%	0	0%	.	.	.	.	.
3%	0	0%	0.000	0.000	0.000	0.000	0.000
.
7%	1	2%	0.000	0.000	0.000	0.000	0.258
7%	2	4%	0.000	0.000	0.000	0.261	0.338
3%	0	0%	0.000	0.000	0.000	0.000	0.000
8%	6	2%	0.000	0.000	0.000	0.000	0.000
.
3%	0	0%	0.000	0.000	0.000	0.000	0.000
8%	72	4%	0.000	0.000	0.000	0.204	0.389
5%	2	3%	0.000	0.000	0.000	0.000	0.357
4%	0	0%	0.000	0.000	0.000	0.000	0.116
8%	11	5%	0.000	0.000	0.000	0.214	0.366
7%	1	1%	0.000	0.000	0.000	0.000	0.226
7%	1	1%	0.000	0.000	0.000	0.000	0.000
11%	2	6%	0.000	0.000	0.000	0.000	0.000
6%	13	2%	0.000	0.000	0.000	0.000	0.391
.
5%	9	1%	0.000	0.000	0.000	0.000	0.000
5%	7	1%	0.000	0.000	0.000	0.000	0.000
.
5%	3	3%	0.000	0.000	0.000	0.000	0.000
0%	0	0%	.	.	.	.	.
.
.
.
6%	0	0%	0.000	0.000	0.000	0.000	0.000
3%	0	0%	0.000	0.000	0.000	0.000	0.000
10%	0	0%	.	.	.	.	.
6%	1	1%	0.000	0.000	0.000	0.000	0.257
.
13%	0	0%	.	.	.	.	.
.
10%	0	0%	0.000	0.000	0.000	0.000	0.000
0%	0	0%	.	.	.	.	.
4%	0	0%	0.000	0.000	0.000	0.000	0.000

¹g the same admission as the surgical procedure or upon readmission to the same facility.
⁴it exclusion criteria.

at least 10 facilities had ≥ 1.0 predicted SSI in 2015.
Specific NHSN procedures

in the distribution of facility-specific SIRs.

tals during 2015 by surgical procedure.

Percentile Distribution of Facility-specific SIRs⁷									
Median									
30%	35%	40%	45%	50%	55%	60%	65%	70%	75%
0.578	0.659	0.729	0.807	0.878	0.963	1.041	1.133	1.238	1.373
0.585	0.661	0.740	0.816	0.882	0.968	1.059	1.137	1.251	1.389
.
0.515	0.772	0.811	0.849	0.951	1.494	1.604	1.885	1.896	1.932
.
0.607	0.631	0.729	0.766	0.826	0.859	0.994	1.102	1.129	1.382
0.487	0.577	0.662	0.728	0.790	0.937	0.952	1.183	1.477	1.758
0.482	0.598	0.651	0.711	0.796	0.867	0.898	0.945	1.009	1.310
0.373	0.488	0.610	0.691	0.773	0.854	0.976	1.162	1.342	1.465
.
0.501	0.609	0.724	0.819	0.882	0.908	0.959	1.051	1.264	1.299
0.498	0.586	0.672	0.756	0.823	0.927	1.007	1.124	1.257	1.405
0.503	0.537	0.577	0.641	0.685	0.831	0.883	1.053	1.200	1.365
0.386	0.535	0.567	0.648	0.693	0.722	0.859	0.943	1.049	1.296
0.481	0.548	0.630	0.781	0.846	0.921	0.979	1.091	1.261	1.372
0.452	0.669	0.771	0.871	0.971	1.207	1.282	1.341	1.610	1.735
0.000	0.000	0.289	0.523	0.619	0.755	0.864	1.012	1.133	1.476
0.419	0.469	0.513	0.593	0.670	0.690	0.710	0.833	0.997	1.263
0.511	0.595	0.708	0.801	0.881	0.942	1.048	1.166	1.299	1.402
.
0.352	0.501	0.624	0.701	0.777	0.880	0.978	1.168	1.313	1.492
0.385	0.501	0.609	0.687	0.804	0.893	0.969	1.123	1.300	1.437
.
0.260	0.363	0.543	0.657	0.728	0.872	0.938	0.985	1.098	1.185
.
.
.
.
0.000	0.315	0.515	0.628	0.812	0.969	1.148	1.248	1.352	1.683
0.000	0.290	0.463	0.645	0.720	0.829	0.920	1.027	1.178	1.505
.
0.464	0.569	0.688	0.781	0.826	0.885	1.005	1.207	1.383	1.544
.
.
0.000	0.000	0.347	0.785	0.954	1.168	1.315	1.448	1.640	1.767
.
0.372	0.561	0.696	0.760	0.834	0.907	1.010	1.085	1.345	1.375

80%	85%	90%	95%
1.538	1.699	1.929	2.331
1.574	1.729	1.952	2.381
.	.	.	.
.	.	.	.
2.191	2.410	2.623	2.916
.	.	.	.
1.656	1.754	1.872	2.587
1.905	2.257	2.413	2.709
1.467	1.728	2.107	2.784
1.742	1.943	2.349	2.951
.	.	.	.
1.717	1.865	2.536	2.821
1.607	1.831	2.176	2.631
1.447	1.679	1.998	2.388
1.573	1.730	1.895	2.661
1.538	1.696	2.152	3.051
1.912	1.965	2.377	2.915
1.580	1.672	2.427	3.071
1.349	1.470	3.488	4.733
1.604	1.846	2.142	2.781
.	.	.	.
1.733	1.951	2.319	2.656
1.659	1.891	2.276	2.839
.	.	.	.
1.438	1.791	2.304	2.858
.	.	.	.
.	.	.	.
.	.	.	.
.	.	.	.
.	.	.	.
1.831	2.177	2.824	3.713
1.892	2.295	2.448	2.593
.	.	.	.
1.742	1.809	2.133	2.475
.	.	.	.
.	.	.	.
.	.	.	.
1.942	2.287	2.973	3.756
.	.	.	.
1.599	1.714	1.881	2.873

Surgical Procedure	No. of Acute Care Hospitals Reporting²	No. of Procedures
US, all NHSN procedures	1,329	50,997
	967	12,784
	0	.
AMP Limb amputation	0	.
APPY Appendix surgery	337	13,185
AVSD Shunt for dialysis	0	.
BILI Bile duct, liver or pancreatic surgery	47	380
BRST Breast surgery	0	.
	81	6,090
	0	.
CEA Carotid endarterectomy	0	.
CHOL Gallbladder surgery	235	1,351
	754	5,780
CRAN Craniotomy (ALL AGE)	72	1,513
CRAN Craniotomy (AGE >=2)	68	1,187
CRAN Craniotomy (AGE <2)	27	326
CSEC Cesarean section	323	1,706
FUSN Spinal fusion (AGE >=2)	186	4,584
FX Open reduction of fracture	250	2,876
GAST Gastric surgery	0	.
HER Herniorrhaphy	52	712
	152	242
HTP Heart transplant	0	.
	127	151
	122	171
KTP Kidney transplant	15	124
LAM Laminectomy	133	1,401
LTP Liver transplant	9	116
NECK Neck surgery	0	.
NEPH Kidney surgery	0	.
OVRV Ovarian surgery	0	.
PACE Pacemaker surgery	0	.
PRST Prostate surgery	0	.
	0	.
	42	350
RFUSN Refusion of spine	41	136
SB Small bowel surgery	108	1,231
SPLE Spleen surgery	0	.
THOR Thoracic surgery	104	1,272
THYR Thyroid and/or parathyroid surgery	0	.
	0	.
VSHN Ventricular shunt	50	3,876
XLAP Abdominal surgery	163	2,237

1. SSIs included are those classified as deep incisional or organ/space infections following inpatient
2. The number of reporting facilities included in the SIR calculation. Due to SIR exclusion criteria, this statistics are only calculated for surgeries in which at least 5 facilities reported pediatric SSI data in
3. Risk factors used in the calculation of the number of predicted SSIs are listed in Appendix D.
4. Percent of facilities with at least one predicted infection that had an SIR significantly greater than 1.0
5. These procedures were presented in previous versions of the HAI Progress Report and follow selected and the corresponding SCIP procedures are listed in Appendix E.
6. Coronary artery bypass graft includes procedures with either chest only or chest and donor site incisions
7. Facility-specific percentiles are only calculated if at least 20 facilities had ≥ 1.0 predicted SSI in 2010

Table 2c. National standardized infection ratios (SIRs) and facility-specific summary SI

<u>No. of Infections</u>		<u>SIR</u>	<u>95% CI for SIR</u>		<u>No. Hosp with ≥1 Predicted Infection</u>	<u>Facility- No. Hosp Significantly > N</u>
<u>Observed</u>			<u>Lower</u>	<u>Upper</u>		
458	459.318	0.997	0.909	1.092	79	6
187	188.152	0.994	0.859	1.144	47	1
.
42	42.897	0.979	0.715	1.311	6	.
6	6.150	0.976	0.395	2.029	0	.
58	58.084	0.999	0.765	1.282	20	2
.
1	0.995	.	.	.	0	.
122	123.308	0.989	0.825	1.177	24	0
14	14.001	1.000	0.569	1.638	4	.
11	11.000	1.000	0.526	1.738	2	.
3	3.000	1.000	0.254	2.721	0	.
5	4.974	1.005	0.368	2.228	0	.
47	47.265	0.994	0.739	1.311	11	1
9	8.808	1.022	0.498	1.875	0	.
.
1	0.987	.	.	.	0	.
1	0.988	.	.	.	0	.
.
3	2.904	1.033	0.263	2.812	0	.
2	1.869	1.070	0.179	3.536	0	.
1	1.000	.	.	.	0	.
9	8.993	1.001	0.488	1.836	0	.
8	8.000	1.000	0.464	1.899	2	.
.
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.
1	1.000	.	.	.	0	.
2	2.000	1.000	0.168	3.304	0	.
10	11.001	0.909	0.462	1.620	1	.
.
2	2.003	0.998	0.167	3.299	0	.
.
.
90	88.134	1.021	0.826	1.249	27	2
10	9.957	1.004	0.510	1.790	1	.

t procedures in pediatric patients less than 18 years that occurred in 2015 with a primary or other than primary diagnosis may be different from the numbers shown in Table 1. Refer to the Technical Appendix for information about procedures in 2015.

or less than the nominal value of the national SIR for the given procedure type. This is only calculated if at least one inpatient surgical procedure approximating procedures covered by the Surgical Care Improvement Project

procedures.

15. If a facility's predicted number of SSIs was < 1.0 , a facility-specific SIR was neither calculated nor included.

ry skin closure technique, detected during the same admission as the surgical procedure or upon readmission. SIRS and accompanying
at exclusion criteria. SIRS and accompanying

at least 10 facilities had ≥ 1.0 predicted SSI in 2015.
Specific NHSN procedures

ed in the distribution of facility-specific SIRS.

pitals during 2015 by surgical procedure.

	Median									
	30%	35%	40%	45%	50%	55%	60%	65%	70%	75%
	0.494	0.546	0.648	0.724	0.829	0.851	0.964	1.047	1.074	1.334
	0.545	0.571	0.648	0.729	0.811	0.829	0.936	0.956	1.029	1.121

	0.414	0.572	0.630	0.691	0.774	0.853	0.917	0.980	1.396	2.041

	0.000	0.000	0.000	0.394	0.609	0.816	0.829	0.835	0.932	1.021

	0.727	0.764	0.790	0.816	0.862	0.999	1.087	1.167	1.321	1.674

ation to the same facility.

80%	85%	90%	95%
1.461	1.783	1.945	2.493
1.221	1.502	1.964	2.366
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2.359	2.677	3.223	3.556
.	.	.	.
.	.	.	.
1.121	1.345	1.375	1.803
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1.731	1.738	2.468	3.116
.	.	.	.

Table 3. State-specific standardized infection ratios (SIRs) and facility-specific SIR summary measures, NHSN Acute Care Hospitals reporting during 2015

3a. Central line-associated bloodstream infections (CLABSI), all locations¹

State	State NHSN Mandate ²	Any Validation ³	No. of Acute Care Hospitals Reporting ⁴	No. of Infections		95% CI for SIR			Facility-specific SIRs			Facility-specific SIRs at Key Percentiles ⁵						
				Observed	Predicted	SIR	Lower	Upper	No. of hosp with at least 1 predicted CLABSI	% of hosp with SIR sig higher than national SIR ⁵	% of hosp with SIR sig lower than national SIR ⁵	10%	25%	Median (50%)	75%	90%		
Alaska	No	Yes	9	36	33.006	1.091	0.775	1.494	.	.	.	.	.	.	.	.	.	.
Alabama	Yes		76	694	493.136	1.407	1.305	1.515	36	0%	28%	0.497	0.680	1.278	1.910	2.391	.	.
Arkansas	Yes		48	319	291.403	1.095	0.979	1.22	25	16%	12%	0.293	0.817	1.184	1.466	1.682	.	.
Arizona	No	No	66	439	517.079	0.849	0.772	0.931	44	7%	16%	0.000	0.404	0.664	1.084	1.508	.	.
California	Yes		332	2,651	2,731.414	0.971	0.934	1.008	264	13%	14%	0.100	0.524	0.934	1.353	2.189	.	.
Colorado	Yes	Yes	51	282	312.953	0.901	0.8	1.011	30	10%	17%	0.000	0.271	0.792	1.038	1.819	.	.
Connecticut	Yes	No	32	295	255.259	1.156	1.029	1.293	22	14%	0%	0.266	0.486	0.816	1.259	1.377	.	.
D.C.	Yes	No	8	205	176.372	1.162	1.011	1.33	.	.	.	.	.	.	.	.	.	.
Delaware	Yes	Yes	8	95	90.611	1.048	0.853	1.276	.	.	.	.	.	.	.	.	.	.
Florida	No	No	198	2,202	2,009.921	1.096	1.051	1.142	174	17%	13%	0.329	0.532	0.927	1.565	2.266	.	.
Georgia	Yes	No	105	963	821.595	1.172	1.1	1.248	65	18%	11%	0.196	0.551	0.980	1.518	1.879	.	.
Guam	No	No	1	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
Hawaii	Yes	Yes	16	32	98.821	0.324	0.225	0.452	13	8%	38%	.	.	.	.	.	.	.
Iowa	No	Yes	39	190	204.174	0.931	0.805	1.07	21	5%	10%	0.336	0.481	0.739	0.884	1.369	.	.
Idaho	No	No	11	47	73.265	0.642	0.477	0.846	.	.	.	.	.	.	.	.	.	.
Illinois	Yes	Yes	132	786	961.935	0.817	0.761	0.876	102	5%	16%	0.000	0.306	0.722	1.137	1.463	.	.
Indiana	Yes	Yes	88	613	548.776	1.117	1.031	1.208	56	13%	7%	0.128	0.452	0.957	1.400	2.118	.	.
Kansas	No	Yes	51	171	213.114	0.802	0.689	0.93	20	0%	20%	0.000	0.189	0.502	0.861	1.282	.	.
Kentucky	M		70	425	397.917	1.068	0.97	1.173	39	18%	13%	0.000	0.535	0.830	1.480	2.466	.	.
Louisiana	No	Yes	91	611	426.103	1.434	1.324	1.551	44	32%	0%	0.369	0.775	1.325	1.840	2.646	.	.
Massachusetts	Yes	Yes	68	412	546.854	0.753	0.683	0.829	50	0%	14%	0.000	0.368	0.686	0.960	1.556	.	.
Maryland	Yes		49	527	470.174	1.121	1.028	1.22	42	19%	10%	0.046	0.475	1.026	1.679	2.419	.	.
Maine	Yes	Yes	19	56	69.621	0.804	0.613	1.037	.	.	.	.	.	.	.	.	.	.
Michigan	No	Yes	95	716	759.937	0.942	0.875	1.013	56	11%	18%	0.189	0.436	0.823	1.236	1.664	.	.
Minnesota	Yes	No	52	263	339.141	0.775	0.686	0.874	21	5%	19%	0.000	0.188	0.698	0.910	1.143	.	.
Missouri	No	Yes	74	693	651.795	1.063	0.986	1.145	48	17%	8%	0.000	0.357	0.892	1.370	1.985	.	.
Mississippi	Yes		54	289	260.755	1.108	0.986	1.242	27	19%	11%	0.000	0.321	1.107	1.597	2.742	.	.
Montana	No	No	13	40	43.062	0.929	0.673	1.252	9	.	.	.	.	.	.	.	.	.
North Carolina	Yes	Yes	95	808	759.978	1.063	0.992	1.138	59	12%	3%	0.000	0.549	0.891	1.172	1.781	.	.
North Dakota	No	No	7	52	65.754	0.791	0.597	1.029	.	.	.	.	.	.	.	.	.	.
Nebraska	No	No	24	189	163.477	1.156	1.000	1.33	17	12%	0%	.	.	.	.	.	.	.
New Hampshire	No		13	74	70.876	1.044	0.826	1.303	.	.	.	.	.	.	.	.	.	.
New Jersey	Yes	Yes	71	709	629.754	1.126	1.045	1.211	64	14%	9%	0.344	0.611	0.967	1.616	1.971	.	.
New Mexico	Yes	Yes	32	118	117.869	1.001	0.832	1.194	13	0%	0%	.	.	.	.	.	.	.
Nevada	Yes	No	24	268	282.119	0.95	0.841	1.069	18	17%	22%	.	.	.	.	.	.	.
New York	Yes		175	1,905	1,776.458	1.072	1.025	1.121	135	15%	7%	0.274	0.714	1.075	1.603	2.252	.	.
Ohio	No	No	136	1,005	1,139.406	0.882	0.829	0.938	92	3%	16%	0.000	0.322	0.647	0.994	1.336	.	.
Oklahoma	Yes	No	79	374	395.770	0.945	0.853	1.045	32	13%	9%	0.000	0.225	0.654	1.339	1.631	.	.
Oregon	Yes	Yes	37	187	234.957	0.796	0.688	0.916	24	0%	13%	0.000	0.321	0.645	1.020	1.407	.	.
Pennsylvania	Yes	Yes	163	1,298	1,376.130	0.943	0.893	0.996	111	4%	8%	0.333	0.498	0.749	1.125	1.507	.	.
Puerto Rico	Yes	No	14	63	62.617	1.006	0.78	1.279	12	8%	0%	.	.	.	.	.	.	.
Rhode Island	No	Yes	11	82	76.490	1.072	0.858	1.324	.	.	.	.	.	.	.	.	.	.
South Carolina	Yes	Yes	64	463	419.352	1.104	1.007	1.208	33	9%	3%	0.075	0.754	0.980	1.342	1.801	.	.
South Dakota	No	Yes	16	42	64.518	0.651	0.475	0.872	.	.	.	.	.	.	.	.	.	.
Tennessee	Yes	Yes	107	674	746.467	0.903	0.837	0.973	57	12%	21%	0.000	0.300	0.794	1.193	1.824	.	.
Texas	Yes		331	2,107	2,171.730	0.97	0.929	1.012	203	13%	7%	0.041	0.504	0.879	1.210	1.912	.	.
Utah	Yes	Yes	36	109	133.158	0.819	0.675	0.984	14	14%	21%	.	.	.	.	.	.	.
Virginia	Yes	Yes	82	544	591.122	0.92	0.845	1.000	53	11%	17%	0.000	0.332	0.637	1.395	1.960	.	.
Virgin Island	Yes	No	2	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
Vermont	Yes	No	7	32	28.361	1.128	0.785	1.574	.	.	.	.	.	.	.	.	.	.
Washington	Yes		56	417	482.262	0.865	0.785	0.951	45	4%	4%	0.145	0.489	0.753	1.016	1.360	.	.
Wisconsin	No	Yes	73	292	379.392	0.77	0.685	0.862	43	0%	7%	0.000	0.414	0.704	1.101	1.346	.	.
West Virginia	Yes	Yes	29	148	198.838	0.744	0.631	0.872	20	5%	15%	0.000	0.000	0.502	1.090	1.466	.	.
Wyoming	No	No	10	10	14.988	0.667	0.339	1.189	.	.	.	.	.	.	.	.	.	.
All US			3,550	26,029	26,183.537	0.994	0.982	1.006	2,328	11%	11%	0.000	0.483	0.868	1.323	1.958		

-
1. Data from all ICUs, wards (and other non-critical care locations), and NICUs. CLABSIs identified as Mucosal Barrier Injury (MBI) are excluded from the SIRs. These tables contain data from acute care hospitals; as such, they exclude data from LTACHs, IRFs, and CAHs.
 2. Yes indicates the presence of a state mandate to report CLABSI data from any location to NHSN at the beginning of 2015. M indicates midyear implementation of a mandate.
No indicates that a state mandate did not exist during 2015.
 3. Yes indicates that the state health department reported the completion of all of the following validation activities: state health department had access to 2015 NHSN data, state health department performed an assessment of missing or implausible values on at least six months of 2015 NHSN data prior to July 1, 2016, and state health department contacted identified facilities.
Yes^a indicates that the state also conducted an audit of facility medical or laboratory records prior to July 1, 2016 to confirm proper case ascertainment (although intensity of auditing activities varies by state). Information on validation efforts was requested from all states, regardless of the presence of a legislative mandate for the particular HAI type. Some states without mandatory reporting of a given HAI to the state health department have performed validation on NHSN data that is voluntarily shared with them by facilities in their jurisdiction.
 4. The number of reporting facilities included in the SIR calculation. SIRs and accompanying statistics are only calculated for states in which at least 5 facilities reported CLABSI data in 2015.
 5. Percent of facilities with at least one predicted CLABSI that had an SIR significantly greater or less than the nominal value of the 2015 national overall CLABSI SIR of 0.996. This is only calculated if at least 10 facilities had ≥ 1.0 predicted CLABSI in 2015.
 6. Facility-specific key percentiles were only calculated if at least 20 facilities had ≥ 1.0 predicted CLABSI in 2015. If a facility's predicted number of CLABSI was < 1.0 , a facility-specific SIR was neither calculated nor included in the distribution of facility-specific SIRs.

Table 3. State-specific standardized infection ratios (SIRs) and facility-specific SIR summary measures, NHSN Acute Care Hospitals reporting during 2015

3b. Central line-associated bloodstream infections (CLABSI), critical care locations¹

State	No. of Acute Care Hospitals Reporting ³	No. of Infections		95% CI for SIR			Facility-specific SIRs			Facility-specific SIRs at Key Percentiles ⁵					
		Observed	Predicted	SIR	Lower	Upper	% of hosp with SIR sig higher than national SIR ⁴	% of hosp with SIR sig lower than national SIR ⁴	10%	25%	75%	90%			
Alaska	No	7	10	8.606	1.162	0.590	2.071	.	.	.	.	.	.	.
Alabama	Yes	67	245	188.389	1.300	1.145	1.471	29	34%	0%	0.000	0.546	1.101	1.829	2.422
Arkansas	Yes	41	134	101.062	1.326	1.115	1.565	21	19%	10%	0.000	0.473	1.065	1.809	2.310
Arizona	No	56	155	187.369	0.827	0.705	0.965	36	3%	8%	0.000	0.000	0.540	1.252	1.604
California	Yes	309	1000	977.469	1.023	0.961	1.088	205	7%	6%	0.000	0.433	0.895	1.468	2.088
Colorado	Yes	46	96	107.795	0.891	0.725	1.083	26	4%	12%	0.000	0.000	0.510	1.091	1.838
Connecticut	Yes	30	93	88.161	1.055	0.856	1.286	19	21%	5%	.	.	.	.	.
D.C.	Yes	8	73	64.395	1.134	0.895	1.417	.	.	.	.	.	.	.	.
Delaware	Yes	8	25	31.847	0.785	0.519	1.142	.	.	.	.	.	.	.	.
Florida	No	192	795	781.813	1.017	0.948	1.089	137	11%	12%	0.000	0.351	0.741	1.548	2.146
Georgia	Yes	94	395	329.938	1.197	1.083	1.320	50	18%	10%	0.000	0.473	0.842	1.532	1.860
Guam	No	1	.	.	.	.	.	.	.	.	.	.	.	.	.
Hawaii	Yes	15	13	35.331	0.368	0.205	0.613	.	.	.	.	.	.	.	.
Iowa	No	34	72	62.094	1.160	0.914	1.452	11	18%	9%	.	.	.	.	.
Idaho	No	10	16	25.043	0.639	0.378	1.015	.	.	.	.	.	.	.	.
Illinois	Yes	126	308	338.197	0.911	0.813	1.017	69	7%	9%	0.000	0.389	0.681	1.201	1.868
Indiana	Yes	69	247	215.145	1.148	1.011	1.298	40	10%	5%	0.000	0.381	0.818	1.522	2.035
Kansas	No	39	64	75.054	0.853	0.662	1.082	13	0%	0%	.	.	.	.	.
Kentucky	M	66	217	176.611	1.229	1.073	1.401	29	7%	17%	0.103	0.493	0.887	1.707	1.933
Louisiana	No	69	267	167.724	1.592	1.409	1.792	31	26%	3%	0.029	0.699	1.352	2.119	3.169
Massachusetts	Yes	63	158	213.610	0.740	0.631	0.862	23	0%	9%	0.075	0.294	0.540	0.929	0.993
Maryland	Yes	46	172	156.462	1.099	0.944	1.273	29	10%	7%	0.000	0.452	0.733	1.210	1.763
Maine	Yes	14	18	22.806	0.789	0.482	1.223	.	.	.	.	.	.	.	.
Michigan	No	89	327	333.016	0.982	0.880	1.093	51	10%	10%	0.000	0.294	0.847	1.274	1.857
Minnesota	Yes	45	100	117.264	0.853	0.697	1.033	16	6%	6%	.	.	.	.	.
Missouri	No	71	237	229.868	1.031	0.906	1.169	35	11%	9%	0.000	0.373	0.800	1.572	2.020
Mississippi	Yes	45	120	90.689	1.323	1.102	1.577	19	16%	5%	.	.	.	.	.
Montana	No	10	13	13.314	0.976	0.543	1.628	.	.	.	.	.	.	.	.
North Carolina	Yes	85	292	282.915	1.032	0.919	1.156	39	8%	3%	0.000	0.360	0.870	1.478	2.227
North Dakota	No	6	19	24.825	0.765	0.474	1.173	.	.	.	.	.	.	.	.
Nebraska	No	20	61	46.359	1.316	1.015	1.679	11	18%	9%	.	.	.	.	.
New Hampshire	Yes	13	21	24.373	0.862	0.548	1.295	.	.	.	.	.	.	.	.
New Jersey	Yes	71	255	241.547	1.056	0.932	1.191	54	9%	4%	0.000	0.401	0.880	1.373	2.385
New Mexico	Yes	29	59	48.768	1.210	0.929	1.550	.	.	.	.	.	.	.	.
Nevada	Yes	20	109	121.422	0.898	0.741	1.079	16	13%	6%	.	.	.	.	.
New York	Yes	164	581	587.104	0.990	0.912	1.073	99	11%	4%	0.000	0.517	0.898	1.348	2.187
Ohio	No	125	359	447.298	0.803	0.723	0.889	74	1%	11%	0.000	0.181	0.640	0.993	1.519
Oklahoma	Yes	51	150	144.525	1.038	0.881	1.214	20	15%	0%	0.000	0.450	0.668	1.688	1.974
Oregon	Yes	33	48	77.515	0.619	0.462	0.814	14	0%	0%	.	.	.	.	.
Pennsylvania	Yes	149	536	522.429	1.026	0.942	1.116	81	7%	5%	0.000	0.499	0.786	1.264	1.778
Puerto Rico	Yes	14	13	20.584	0.632	0.351	1.053	.	.	.	.	.	.	.	.
Rhode Island	No	10	33	25.090	1.315	0.920	1.826	.	.	.	.	.	.	.	.
South Carolina	Yes	56	160	141.624	1.130	0.965	1.315	22	9%	9%	0.000	0.533	0.913	1.287	1.897
South Dakota	No	11	10	15.293	0.654	0.332	1.166	.	.	.	.	.	.	.	.
Tennessee	Yes	87	263	278.388	0.945	0.836	1.064	40	13%	13%	0.000	0.422	0.728	1.462	1.999
Texas	Yes	266	801	847.081	0.946	0.882	1.013	156	5%	3%	0.000	0.414	0.808	1.183	1.754

Utah	Yes	28	46	59.086	0.779	0.577	1.029	11	0%	18%	.	.	.	.	.
Virginia	Yes	79	210	208.502	1.007	0.878	1.151	33	12%	9%	0.000	0.485	0.680	1.397	2.050
Virgin Islands	Yes	2	.	.	.	.	.	.	.	.	.	.	.	.	.
Vermont	Yes	6	7	7.883	0.888	0.388	1.757	.	.	.	.	.	.	.	.
Washington	Yes	50	127	153.449	0.828	0.693	0.981	35	6%	0%	0.000	0.348	0.733	1.256	1.826
Wisconsin	No	65	98	142.804	0.686	0.560	0.833	29	0%	3%	0.000	0.287	0.650	0.979	1.584
West Virginia	Yes	29	64	79.638	0.804	0.624	1.020	13	0%	8%	.	.	.	.	.
Wyoming	No	9	2	4.531	0.441	0.074	1.458	.	.	.	.	.	.	.	.
All US		3,148	9,699	9,694.452	1.000	0.981	1.021	1,712	9%	7%	0.000	0.398	0.807	1.359	2.047

1. Data from all ICUs; excludes wards (and other non-critical care locations), NICUs. CLABSIs identified as Mucosal Barrier Injury (MBI) are excluded from the SIRs. These tables contain data from acute care hospitals; as such, they exclude data from LTACHs, IRFs, and CAHs.
2. Yes indicates the presence of a state mandate to report CLABSI data from critical care units to NHSN at the beginning of 2015. M indicates midyear implementation of a mandate. No indicates that a state mandate did not exist during 2015. Note that almost all acute care hospitals are required to report CLABSI data from ICUs to NHSN for participation in the Centers for Medicare and Medicaid Services' Hospital Inpatient Quality Reporting Program.
3. The number of reporting facilities included in the SIR calculation. SIRs and accompanying statistics are only calculated for states in which at least 5 facilities reported CLABSI data from at least one critical care location in 2015.
4. Percent of facilities with at least one predicted ICU CLABSI that had an SIR significantly greater or less than the nominal value of the 2015 national ICU CLABSI SIR of 1.014. This is only calculated if at least 10 facilities had at least one predicted ICU CLABSI in 2015.
5. Facility-specific key percentiles were only calculated if at least 20 facilities had ≥ 1.0 predicted ICU CLABSI in 2015. If a facility's predicted number of ICU CLABSI was < 1.0 , a facility-specific SIR was neither calculated nor included in the distribution of facility-specific SIRs.

**Table 3. State-specific standardized infection ratios (SIRs) and facility-specific SIR summary measures,
NHSN Acute Care Hospitals reporting during 2015
3c. Central line-associated bloodstream infections (CLABSI), ward (non-critical care) locations¹**

State		No. of Infections			95% CI for SIR			Facility-specific SIRs				10%	25%	75%	90%
		Observed	Predicted	SIR	Lower	Upper									
Alaska	No	9	22	20.453	1.076	0.691	1.602	.	.	.	.	.	.	.	.
Alabama	No	69	348	249.176	1.397	1.256	1.549	31	29%	0%	0.606	0.751	1.129	1.974	2.823
Arkansas	Yes	47	163	158.094	1.031	0.882	1.199	22	14%	14%	0.204	0.757	0.931	1.416	2.454
Arizona	No	65	247	297.030	0.832	0.733	0.94	40	8%	10%	0.000	0.390	0.710	1.117	1.894
California	Yes	329	1,460	1,542.246	0.947	0.899	0.996	230	12%	9%	0.000	0.424	0.818	1.440	2.271
Colorado	No	46	147	182.097	0.807	0.684	0.946	25	8%	16%	0.000	0.174	0.477	0.995	1.847
Connecticut	Yes	32	186	150.848	1.233	1.065	1.42	21	24%	5%	0.026	0.442	0.867	1.323	1.987
D.C.	Yes	8	125	92.321	1.354	1.132	1.608	.	.	.	.	.	.	.	.
Delaware	Yes	8	66	52.210	1.264	0.986	1.598	.	.	.	.	.	.	.	.
Florida	No	193	1,290	1,112.878	1.159	1.097	1.224	157	17%	6%	0.151	0.574	0.994	1.502	2.254
Georgia	Yes	103	470	405.219	1.16	1.059	1.268	60	12%	7%	0.000	0.525	1.003	1.459	2.521
Guam	No	0	.	.	.	.	.	.	.	.	.	.	.	.	.
Hawaii	Yes	15	18	50.920	0.353	0.216	0.548	.	.	.	.	.	.	.	.
Iowa	No	39	108	123.023	0.878	0.724	1.056	19	0%	0%	.	.	.	.	.
Idaho	No	11	24	41.913	0.573	0.375	0.839	.	.	.	.	.	.	.	.
Illinois	No	128	408	545.274	0.748	0.678	0.824	87	1%	13%	0.000	0.219	0.696	1.064	1.725
Indiana	No	85	308	300.408	1.025	0.915	1.145	42	5%	7%	0.177	0.422	0.813	1.116	1.602
Kansas	No	50	97	126.383	0.768	0.626	0.932	16	0%	25%	.	.	.	.	.
Kentucky	M	67	195	201.798	0.966	0.838	1.109	31	10%	6%	0.000	0.305	0.715	1.115	1.761
Louisiana	No	88	285	219.351	1.299	1.155	1.457	33	12%	0%	0.000	0.625	0.969	1.582	1.876
Massachusetts	No	68	217	309.632	0.701	0.612	0.799	38	3%	16%	0.000	0.345	0.486	0.854	0.987
Maryland	Yes	49	332	283.450	1.171	1.05	1.302	38	16%	8%	0.000	0.449	0.960	1.643	2.543
Maine	No	18	33	42.686	0.773	0.541	1.073	.	.	.	.	.	.	.	.
Michigan	No	95	340	364.483	0.933	0.838	1.036	53	11%	8%	0.000	0.383	0.867	1.437	1.941
Minnesota	Yes	51	154	209.931	0.734	0.624	0.857	19	0%	11%	.	.	.	.	.
Missouri	No	73	425	365.629	1.162	1.056	1.277	41	22%	5%	0.006	0.462	0.797	1.717	2.028
Mississippi	Yes	51	141	145.942	0.966	0.816	1.136	19	11%	11%	.	.	.	.	.
Montana	No	13	27	27.021	0.999	0.672	1.434	.	.	.	.	.	.	.	.
North Carolina	Yes	94	456	405.769	1.124	1.024	1.231	47	9%	4%	0.000	0.564	0.932	1.449	1.747
North Dakota	No	7	24	33.360	0.719	0.472	1.054	.	.	.	.	.	.	.	.
Nebraska	No	23	119	111.375	1.068	0.889	1.274	16	6%	0%	.	.	.	.	.
New Hampshire	No	13	44	43.505	1.011	0.744	1.345	.	.	.	.	.	.	.	.
New Jersey	No	70	418	347.525	1.203	1.092	1.322	60	17%	5%	0.365	0.603	0.957	1.539	2.755
New Mexico	Yes	31	51	61.285	0.832	0.626	1.085	.	.	.	.	.	.	.	.
Nevada	Yes	24	141	132.060	1.068	0.902	1.255	17	18%	12%	.	.	.	.	.
New York	Yes	172	1,230	1,069.485	1.15	1.087	1.216	119	22%	7%	0.000	0.586	1.115	1.622	2.823
Ohio	No	133	583	616.332	0.946	0.871	1.025	78	4%	6%	0.000	0.283	0.761	0.975	1.289
Oklahoma	No	78	201	217.544	0.924	0.803	1.059	25	8%	4%	0.000	0.376	0.796	1.181	1.768
Oregon	Yes	36	126	147.279	0.856	0.716	1.015	19	0%	11%	.	.	.	.	.
Pennsylvania	Yes	163	670	781.978	0.857	0.794	0.924	101	3%	9%	0.000	0.406	0.797	1.211	1.639
Puerto Rico	Yes	14	48	39.690	1.209	0.902	1.59	.	.	.	.	.	.	.	.
Rhode Island	No	11	46	45.862	1.003	0.743	1.326	.	.	.	.	.	.	.	.
South Carolina	Yes	64	267	246.857	1.082	0.958	1.217	28	7%	0%	0.000	0.611	1.010	1.208	1.744
South Dakota	No	16	28	42.973	0.652	0.441	0.929	5	.	.	.	.	.	.	.
Tennessee	Yes	105	354	405.769	0.872	0.785	0.967	49	4%	14%	0.000	0.034	0.752	1.244	1.722
Texas	No	313	1,049	1,096.793	0.956	0.9	1.016	159	8%	3%	0.000	0.502	0.814	1.370	1.954
Utah	Yes	36	48	52.629	0.912	0.68	1.199	8	.	.	.	.	.	.	.
Virginia	M	81	300	338.194	0.887	0.791	0.992	47	13%	15%	0.000	0.299	0.806	1.361	2.140
Virgin Islands	Yes	2	.	.	.	.	.	0	.	.	.	.	.	.	.

Vermont	No	6	21	18.708	1.123	0.713	1.687	1	.	.	.	.	.	.	.
Washington	Yes	55	270	300.001	0.9	0.797	1.012	39	5%	5%	0.287	0.520	0.800	1.077	1.383
Wisconsin	No	72	177	210.248	0.842	0.725	0.973	34	3%	3%	0.000	0.000	0.669	0.934	1.360
West Virginia	Yes	28	78	108.585	0.718	0.572	0.892	16	0%	25%	.	.	.	.	.
Wyoming	No	9	8	10.457	0.765	0.355	1.453	2	.	.	.	.	.	.	.
All US		3,466	14,395	14,505.761	0.992	0.976	1.009	1,975	10%	8%	0.000	0.444	0.833	1.361	2.032

1. Data from all wards (for this table wards also include step-down, mixed acuity and specialty care areas [including hematology/oncology, bone marrow transplant]). CLABSIs identified as Mucosal Barrier Injury (MBI) are excluded from the SIRs. These tables contain data from acute care hospitals; as such, they exclude data from LTACHs, IRFs, and CAHs
2. Yes indicates the presence of a state mandate to report CLABSI data from ward locations to NHSN at the beginning of 2015. M indicates midyear implementation of a mandate. No indicates that a state mandate did not exist during 2015.
3. The number of reporting facilities included in the SIR calculation. SIRs and accompanying statistics are only calculated for states in which at least 5 facilities reported CLABSI data from at least one ward in 2015.
4. Percent of facilities with at least one predicted ward CLABSI that had an SIR significantly greater or less than the nominal value of the 2015 national ward CLABSI SIR of 0.987. This is only calculated if at least 10 facilities had at least one predicted ward CLABSI in 2015.
5. Facility-specific key percentiles were only calculated if at least 20 facilities had ≥ 1.0 predicted ward CLABSI in 2015. If a facility's predicted number of ward CLABSI was < 1.0 , a facility-specific SIR was neither calculated nor included in the distribution of facility-specific SIRs.

**Table 3. State-specific standardized infection ratios (SIRs) and facility-specific SIR summary measures,
NHSN Acute Care Hospitals reporting during 2015
3d. Central line-associated bloodstream infections (CLABSI), neonatal critical care locations¹**

State		No. of Infections	95% CI for SIR			Facility-specific SIRs									
			Observed	Predicted	SIR	Lower	Upper	10%	25%	75%	90%				
Alaska	No	2	.	.	.	2.445	.	.	.	.	.	.	.	.
Alabama	Yes	14	101	55.570	1.818	1.488	2.199	10	30%	0%	.	.	.	.	.
Arkansas	Yes	10	22	32.247	0.682	0.438	1.016	4	.	.	.	.	.	.	.
Arizona	No	16	37	32.680	1.132	0.809	1.544	8	.	.	.	.	.	.	.
California	Yes	140	191	211.700	0.902	0.781	1.037	52	2%	4%	0.000	0.000	0.507	1.052	1.787
Colorado	Yes	22	39	23.062	1.691	1.219	2.289	8	.	.	.	.	.	.	.
Connecticut	Yes	11	16	16.250	0.985	0.583	1.565	2	.	.	.	.	.	.	.
D.C.	Yes	7	7	19.656	0.356	0.156	0.704	4	.	.	.	.	.	.	.
Delaware	Yes	2	.	.	.	.	.	.	.	.	.	.	.	.	.
Florida	No	55	117	115.229	1.015	0.844	1.212	22	9%	5%	0.000	0.420	0.847	1.188	1.711
Georgia	Yes	36	98	86.439	1.134	0.925	1.376	20	10%	5%	0.000	0.523	0.878	1.844	2.354
Guam	No	0	.	.	.	.	.	.	.	.	.	.	.	.	.
Hawaii	Yes	2	.	.	.	.	.	.	.	.	.	.	.	.	.
Iowa	No	10	10	19.056	0.525	0.267	0.935	3	.	.	.	.	.	.	.
Idaho	No	9	7	6.310	1.109	0.485	2.194	3	.	.	.	.	.	.	.
Illinois	Yes	44	70	78.464	0.892	0.701	1.120	20	0%	5%	0.000	0.383	0.995	1.523	1.853
Indiana	Yes	25	58	33.223	1.746	1.338	2.241	9	.	.	.	.	.	.	.
Kansas	No	10	10	11.677	0.856	0.435	1.526	4	.	.	.	.	.	.	.
Kentucky	M	15	13	19.508	0.666	0.371	1.111	4	.	.	.	.	.	.	.
Louisiana	No	30	59	39.028	1.512	1.161	1.936	9	.	.	.	.	.	.	.
Massachusetts	Yes	10	37	23.612	1.567	1.120	2.137	8	.	.	.	.	.	.	.
Maryland	Yes	17	23	30.262	0.760	0.493	1.122	7	.	.	.	.	.	.	.
Maine	Yes	3	.	.	.	.	.	.	.	.	.	.	.	.	.
Michigan	No	20	49	62.438	0.785	0.587	1.029	14	7%	29%	.	.	.	.	.
Minnesota	Yes	11	9	11.946	0.753	0.367	1.383	3	.	.	.	.	.	.	.
Missouri	No	22	31	56.297	0.551	0.381	0.772	9	.	.	.	.	.	.	.
Mississippi	Yes	14	28	24.125	1.161	0.786	1.655	3	.	.	.	.	.	.	.
Montana	No	5	0	2.727	0.000	0.000	1.099	0	.	.	.	.	.	.	.
North Carolina	Yes	25	60	71.293	0.842	0.648	1.076	12	0%	8%	.	.	.	.	.
North Dakota	No	6	9	7.568	1.189	0.580	2.182	2	.	.	.	.	.	.	.
Nebraska	No	5	9	5.743	1.567	0.764	2.876	3	.	.	.	.	.	.	.
New Hampshire	Yes	3	.	.	.	.	.	.	.	.	.	.	.	.	.
New Jersey	Yes	24	36	40.682	0.885	0.629	1.212	12	8%	8%	.	.	.	.	.
New Mexico	Yes	6	8	7.817	1.023	0.475	1.943	3	.	.	.	.	.	.	.
Nevada	Yes	8	18	28.637	0.629	0.384	0.974	8	.	.	.	.	.	.	.
New York	Yes	54	94	119.869	0.784	0.637	0.955	33	6%	6%	0.198	0.346	0.660	0.997	1.803
Ohio	No	20	63	75.776	0.831	0.644	1.057	16	13%	6%	.	.	.	.	.
Oklahoma	Yes	11	23	33.701	0.682	0.443	1.008	6	.	.	.	.	.	.	.
Oregon	Yes	9	13	10.162	1.279	0.712	2.133	3	.	.	.	.	.	.	.
Pennsylvania	Yes	43	92	71.723	1.283	1.040	1.566	20	10%	.	0.659	0.836	1.337	1.584	2.496
Puerto Rico	Yes	7	2	2.344	0.853	0.143	2.819	0	.	.	.	.	.	.	.
Rhode Island	No	1	.	.	.	.	.	.	.	.	.	.	.	.	.
South Carolina	Yes	9	36	30.872	1.166	0.829	1.597	6	.	.	.	.	.	.	.
South Dakota	No	3	.	.	.	.	.	.	.	.	.	.	.	.	.
Tennessee	Yes	25	57	62.310	0.915	0.699	1.177	12	0%	0%	.	.	.	.	.
Texas	Yes	119	257	227.856	1.128	0.996	1.272	52	13%	2%	0.000	0.462	0.773	1.565	2.396
Utah	Yes	13	15	21.443	0.700	0.406	1.128	4	.	.	.	.	.	.	.
Virginia	M	26	34	44.425	0.765	0.539	1.057	11	0%	0%	.	.	.	.	.
Virgin Islands	Yes	2	.	.	.	.	.	.	.	.	.	.	.	.	.
Vermont	Yes	1	.	.	.	.	.	.	.	.	.	.	.	.	.
Washington	Yes	16	20	28.812	0.694	0.436	1.053	9	.	.	.	.	.	.	.
Wisconsin	No	19	17	26.340	0.645	0.389	1.012	10	0%	10%	.	.	.	.	.
West Virginia	Yes	6	6	10.615	0.565	0.229	1.176	3	.	.	.	.	.	.	.

Wyoming	No	0													
All US		1,023	1,935	1,983.323	0.976	0.933	1.020	463	3%	3%	0.000	0.361	0.840	1.446	2.236

1. Data from all NICUs including Level II/III and Level III nurseries. Both umbilical line and central line-associated bloodstream infections are considered CLABSIs. CLABSIs identified as Mucosal Barrier Injury (MBI) are excluded from the SIRs. These tables contain data from acute care hospitals; as such, they exclude data from LTACHs, IRFs, and CAHs.
2. Yes indicates the presence of a state mandate to report CLABSI data from NICUs to NHSN at the beginning of 2015. M indicates midyear implementation of a mandate. No indicates that a state mandate did not exist during 2015. Note that almost all acute care hospitals are required to report CLABSI data from NICUs to NHSN for participation in the Centers for Medicare and Medicaid Services' Hospital Inpatient Quality Reporting Program.
3. The number of reporting facilities included in the SIR calculation. SIRs and accompanying statistics are only calculated for states in which at least 5 facilities reported CLABSI data from at least one NICU in 2015.
4. Percent of facilities with at least one predicted NICU CLABSI that had an SIR significantly greater or less than the nominal value of the 2015 national NICU CLABSI SIR of 0.976. This is only calculated if at least 10 facilities had at least one predicted NICU CLABSI in 2015.
5. Facility-specific key percentiles were only calculated if at least 20 facilities had ≥ 1.0 predicted NICU CLABSI in 2015. If a facility's predicted number of NICU CLABSI was < 1.0 , a facility-specific SIR was neither calculated nor included in the distribution of facility-specific SIRs.

Table 4. State-specific standardized infection ratios (SIRs) and facility-specific SIR summary measures, NHSN Acute Care Hospitals reporting during 2015
4a. Catheter-associated urinary tract infections (CAUTI), all locations¹

State	No. of Infections			95% CI for SIR			Facility-specific SIRs				No. of hosp with at least 1 predicted CAUTI					
	Observed	Predicted	SIR	Lower	Upper	10%	25%	75%	90%							
Alaska	No	Yes	10	43	28.561	1.506	1.103	2.009	5							
Alabama	Yes	Yes	88	526	603.260	0.872	0.800	0.949	46	9%	13%	0.000	0.497	0.712	1.254	2.090
Arkansas	Yes		48	369	327.710	1.126	1.015	1.245	28	14%	14%	0.223	0.460	0.865	1.350	1.756
Arizona	No	No	66	438	491.530	0.891	0.811	0.978	47	9%	13%	0.255	0.421	0.855	1.149	1.530
California	No	No	334	3,331	2,975.140	1.120	1.082	1.158	282	17%	10%	0.000	0.493	0.961	1.504	2.240
Colorado	No	No	50	346	380.410	0.910	0.817	1.290	33	15%	12%	0.300	0.481	0.930	1.545	1.848
Connecticut	Yes	No	32	288	287.330	1.002	0.891	1.123	27	11%	0%	0.392	0.737	0.908	1.166	1.964
D.C.	No	No	8	145	124.620	1.164	0.985	1.365	8							
Delaware	Yes	Yes	8	74	71.620	1.033	0.817	1.290	8							
Florida	No	No	198	1,990	2,228.710	0.893	0.854	0.933	179	7%	20%	0.122	0.386	0.860	1.152	1.645
Georgia	Yes	No	108	1,051	922.160	1.140	1.072	1.210	75	13%	4%	0.243	0.704	0.936	1.424	1.954
Guam	No	No	1						1							
Hawaii	Yes	Yes	16	72	82.270	0.875	0.690	1.096	13	23%	23%					
Iowa	No	Yes	40	220	209.990	1.048	0.916	1.193	25	16%	4%	0.000	0.334	0.614	1.069	1.639
Idaho	No	No	15	87	98.250	0.885	0.714	1.087	9							
Illinois	No	No	133	911	1,024.570	0.889	0.833	0.948	110	7%	14%	0.000	0.236	0.706	1.122	1.879
Indiana	Yes	Yes	89	520	538.840	0.965	0.885	1.051	54	7%	6%	0.308	0.566	0.933	1.240	1.677
Kansas	No		52	217	226.250	0.959	0.838	1.093	25	0%	8%	0.000	0.307	0.755	1.175	1.322
Kentucky	M		70	438	495.160	0.885	0.805	0.970	52	8%	19%	0.000	0.152	0.817	1.517	1.864
Louisiana	No	Yes	92	589	586.810	1.004	0.925	1.087	51	18%	12%	0.257	0.547	0.885	1.692	2.382
Massachusetts	Yes	Yes	69	716	663.550	1.079	1.002	1.160	58	17%	12%	0.128	0.513	0.949	1.557	2.170
Maryland	Yes		49	513	511.020	1.004	0.920	1.094	44	14%	16%	0.091	0.528	0.862	1.411	2.013
Maine	Yes	Yes	19	78	74.080	1.053	0.838	1.307	11	0%	0%					
Michigan	No	Yes	95	937	932.130	1.005	0.942	1.071	66	14%	8%	0.243	0.549	0.893	1.155	1.526
Minnesota	Yes	No	53	347	331.190	1.048	0.942	1.161	28	14%	7%	0.391	0.721	1.113	1.632	2.023
Missouri	No	No	78	627	661.290	0.948	0.876	1.025	56	5%	5%	0.299	0.614	0.931	1.238	2.074
Mississippi	Yes		60	301	336.330	0.895	0.798	1.000	34	9%	12%	0.000	0.123	0.668	1.160	1.686
Montana	No	No	13	57	47.060	1.211	0.926	1.558	9							
North Carolina	Yes	Yes	96	830	858.580	0.967	0.903	1.034	74	8%	7%	0.000	0.555	0.855	1.207	1.791
North Dakota	No	No	8	62	67.700	0.916	0.708	1.166	6							
Nebraska	No	No	25	135	140.410	0.961	0.809	1.134	17	12%	12%					
New Hampshire	No		13	77	96.350	0.799	0.635	0.993	13	0%	8%					
New Jersey	Yes	Yes	71	845	751.130	1.125	1.051	1.203	71	13%	11%	0.234	0.489	1.050	1.325	1.726
New Mexico	No	No	35	155	144.670	1.071	0.912	1.250	15	13%	7%					
Nevada	No	No	24	218	289.210	0.754	0.659	0.859	17	6%	29%					
New York	No	No	178	2,360	2,041.250	1.156	1.110	1.203	149	21%	6%	0.434	0.778	1.087	1.718	2.305
Ohio	No	No	138	1,122	1,358.990	0.826	0.778	0.875	103	6%	22%	0.000	0.334	0.639	1.051	1.406
Oklahoma	No	No	87	378	392.960	0.962	0.869	1.063	37	16%	5%	0.000	0.385	0.775	1.385	2.035
Oregon	Yes	Yes	38	255	270.030	0.944	0.834	1.066	27	7%	11%	0.094	0.455	0.948	1.141	1.829
Pennsylvania	Yes	Yes	177	1,566	1,490.990	1.050	0.999	1.103	124	13%	6%	0.081	0.449	0.934	1.368	1.953
Puerto Rico	Yes	No	14	69	111.030	0.621	0.487	0.782	14	0%	29%					
Rhode Island	No	Yes	11	115	85.030	1.353	1.122	1.617	10	10%	0%					
South Carolina	No	No	64	501	423.280	1.184	1.083	1.291	41	24%	10%	0.017	0.613	1.161	1.606	2.131
South Dakota	No	Yes	21	79	63.530	1.243	0.991	1.541	7							
Tennessee	Yes	Yes	108	742	805.000	0.922	0.857	0.990	67	9%	15%	0.000	0.269	0.642	1.048	1.655
Texas	Yes		360	2,051	2,262.510	0.907	0.868	0.946	218	8%	11%	0.000	0.416	0.770	1.187	1.728
Utah	Yes	Yes	36	200	145.370	1.376	1.195	1.577	18	6%	0%					

Virginia	M	Yes	82	644	668.130	0.964	0.892	1.041	61	10%	15%	0.155	0.476	0.709	1.153	1.652
Virgin Islands	Yes	No	2	.	.	.	.	.	2	.	.	.	.	.	.	.
Vermont	No	No	6	42	40.840	1.028	0.751	1.377	4	.	.	.	.	.	.	.
Washington	No	No	57	468	473.380	0.989	0.902	1.081	44	9%	5%	0.328	0.521	0.809	1.314	1.533
Wisconsin	No	Yes	73	364	378.970	0.960	0.866	1.063	48	6%	2%	0.140	0.495	0.815	1.232	1.777
West Virginia	Yes	Yes	29	172	260.560	0.660	0.567	0.765	23	0%	22%	0.000	0.349	0.592	0.800	1.062
Wyoming	No	No	11	14	24.630	0.568	0.324	0.931	3	.	.	.	.	.	.	.
All US			3,658	28,712	28,910.634	0.993	0.982	1.005	2,597	12%	11%	0.000	0.485	0.872	1.325	1.923

1. Data from all ICUs and wards (and other non-critical care locations). This excludes NICUs. These tables contain data from acute care hospitals; as such, they exclude data from LTACHs, IRFs, and CAHs.
2. Yes indicates the presence of a state mandate to report CAUTI data from any location to NHSN at the beginning of 2015. M indicates midyear implementation of a mandate. No indicates that a state mandate did not exist during 2015.
3. Yes indicates that the state health department reported the completion of all of the following validation activities: state health department had access to 2015 NHSN data, state health department performed an assessment of missing or implausible values on at least six months of 2015 NHSN data prior to July 1, 2016, and state health department contacted identified facilities.

varies by state). Information on validation efforts was requested from all states, regardless of the presence of a legislative mandate for the particular HAI type. Some states without mandatory reporting of a given HAI to the state health department have performed validation on NHSN data that is voluntarily shared with them by facilities in their jurisdiction.

4. The number of reporting facilities included in the SIR calculation. SIRs and accompanying statistics are only calculated for states in which at least 5 facilities reported CAUTI data in 2015.
5. Percent of facilities with at least one predicted CAUTI that had an SIR significantly greater or less than the nominal value of the 2015 national overall CAUTI SIR of 0.976. This is only calculated if at least 10 facilities had at least one predicted CAUTI in 2015.
6. Facility-specific key percentiles were only calculated if at least 20 facilities had ≥ 1.0 predicted CAUTI in 2015. If a facility's predicted number of CAUTI was < 1.0 , a facility-specific SIR was neither calculated nor included in the distribution of facility-specific SIRs.

Table 4. State-specific standardized infection ratios (SIRs) and facility-specific SIR summary measures, NHSN Acute Care Hospitals reporting during 2015

4b. Catheter-associated urinary tract infections (CAUTI), critical care locations¹

State		No. of Infections			95% CI for SIR		Facility-specific SIRs								
		Observed	Predicted	SIR	Lower	Upper	10%	25%	75%	90%					
Alaska	No	7	12	8.750	1.371	0.743	2.331	1	.	.	.	.	.	.
Alabama	Yes	67	271	353.090	0.768	0.680	0.863	37	5%	16%	0.000	0.346	0.671	1.348	1.822
Arkansas	Yes	42	186	143.620	1.295	1.119	1.492	22	23%	14%	0.000	0.089	1.088	1.587	2.077
Arizona	No	56	223	235.220	0.948	0.830	1.079	37	8%	5%	0.000	0.408	0.839	1.157	1.621
California	No	307	1494	1287.530	1.160	1.103	1.220	220	13%	4%	0.000	0.495	0.962	1.530	2.352
Colorado	No	46	153	170.510	0.897	0.763	1.048	27	16%	15%	0.185	0.381	0.602	1.417	2.787
Connecticut	Yes	30	136	137.430	0.990	0.833	1.167	22	5%	5%	0.000	0.302	0.833	1.220	1.505
D.C.	No	8	80	74.860	1.069	0.853	1.323	8	.	.	.	.	.	.	.
Delaware	Yes	8	34	36.540	0.930	0.655	1.285	5	.	.	.	.	.	.	.
Florida	No	191	1013	1100.430	0.921	0.865	0.979	153	9%	14%	0.000	0.278	0.786	1.317	1.816
Georgia	Yes	94	550	474.640	1.159	1.065	1.259	56	16%	2%	0.191	0.528	0.965	1.420	1.887
Guam	No	1	.	.	.	.	.	1	.	.	.	.	.	.	.
Hawaii	Yes	15	28	38.000	0.737	0.499	1.051	9	.	.	.	.	.	.	.
Iowa	No	34	89	86.850	1.025	0.828	1.255	15	7%	0%	.	.	.	.	.
Idaho	No	10	40	35.390	1.130	0.818	1.524	7	.	.	.	.	.	.	.
Illinois	No	127	438	463.020	0.946	0.860	1.038	84	7%	5%	0.000	0.304	0.793	1.245	1.886
Indiana	Yes	69	307	277.500	1.106	0.988	1.235	45	13%	0%	0.000	0.426	0.761	1.301	2.573
Kansas	No	39	100	113.900	0.878	0.718	1.063	14	0%	0%	.	.	.	.	.
Kentucky	M	66	248	257.290	0.964	0.849	1.090	36	14%	6%	0.000	0.403	0.765	1.267	1.916
Louisiana	No	69	291	278.690	1.044	0.929	1.169	35	23%	9%	0.000	0.335	0.800	1.504	2.971
Massachusetts	Yes	63	379	319.200	1.187	1.072	1.312	38	18%	8%	0.000	0.339	0.929	1.816	2.394
Maryland	Yes	46	246	245.440	1.002	0.883	1.134	33	6%	12%	0.000	0.558	0.897	1.530	1.896
Maine	Yes	14	38	32.380	1.174	0.842	1.594	4	.	.	.	.	.	.	.
Michigan	No	89	541	521.450	1.037	0.953	1.128	56	11%	7%	0.263	0.645	0.835	1.602	1.914
Minnesota	Yes	45	163	164.430	0.991	0.848	1.153	18	6%	11%	.	.	.	.	.
Missouri	No	71	309	321.080	0.962	0.859	1.074	42	7%	2%	0.320	0.544	0.771	1.045	1.675
Mississippi	Yes	45	126	157.750	0.799	0.668	0.948	25	8%	8%	0.000	0.051	0.588	0.897	1.579
Montana	No	10	18	16.890	1.066	0.652	1.652	5	.	.	.	.	.	.	.
North Carolina	Yes	85	415	440.540	0.942	0.885	1.036	46	4%	2%	0.000	0.595	0.865	1.141	1.650
North Dakota	No	6	25	30.710	0.814	0.538	1.184	6	.	.	.	.	.	.	.
Nebraska	No	19	63	53.030	1.188	0.921	1.510	11	18%	0%	.	.	.	.	.
New Hampshire	Yes	13	32	35.990	0.889	0.619	1.240	9	.	.	.	.	.	.	.
New Jersey	Yes	71	415	348.960	1.189	1.079	1.308	62	10%	6%	0.000	0.373	0.801	1.477	1.986
New Mexico	No	29	79	70.210	1.125	0.897	1.395	9	.	.	.	.	.	.	.
Nevada	No	20	110	154.600	0.712	0.588	0.854	16	6%	19%	.	.	.	.	.
New York	No	164	910	894.620	1.017	0.953	1.085	119	12%	6%	0.000	0.566	0.968	1.561	2.172
Ohio	No	124	579	675.530	0.857	0.789	0.929	84	2%	17%	0.000	0.292	0.696	1.163	1.622
Oklahoma	No	51	186	182.040	1.022	0.883	1.177	25	16%	8%	0.000	0.057	0.875	1.603	2.028
Oregon	Yes	33	116	106.330	1.091	0.906	1.304	18	11%	17%	.	.	.	.	.
Pennsylvania	Yes	150	733	731.910	1.001	0.931	1.076	93	10%	5%	0.000	0.355	0.883	1.299	1.873
Puerto Rico	Yes	14	27	42.160	0.640	0.431	0.919	11	0%	0%	.	.	.	.	.
Rhode Island	No	10	40	38.860	1.029	0.745	1.388	6	.	.	.	.	.	.	.
South Carolina	No	56	243	207.110	1.173	1.033	1.328	27	19%	0%	0.000	0.485	1.119	1.654	2.341
South Dakota	No	11	22	19.390	1.135	0.729	1.690	3	.	.	.	.	.	.	.
Tennessee	Yes	87	427	406.830	1.050	0.954	1.153	47	11%	6%	0.000	0.000	0.694	1.039	1.974
Texas	Yes	269	1070	1156.090	0.926	0.871	0.982	168	11%	8%	0.000	0.426	0.800	1.200	1.981
Utah	Yes	28	93	81.190	1.146	0.930	1.397	12	8%	0%	.	.	.	.	.

Virginia	M	79	321	306.940	1.046	0.936	1.165	40	5%	0%	0.000	0.382	0.776	1.136	1.156
Virgin Islands	Yes	2	.	.	.	.	.	.	.	.	.	.	.	.	.
Vermont	No	5	13	15.530	0.837	0.465	1.395	2	.	.	.	.	.	.	.
Washington	No	51	192	198.830	0.966	0.836	1.110	38	8%	5%	0.000	0.453	0.811	1.360	1.989
Wisconsin	No	65	170	171.540	0.991	0.850	1.149	29	7%	0%	0.000	0.481	0.729	0.978	2.368
West Virginia	Yes	29	94	132.620	0.709	0.576	0.863	17	6%	12%	.	.	.	.	.
Wyoming	No	9	2	6.480	0.309	0.052	1.021	2	.	.	.	.	.	.	.
All US		3,149	13,898	13,863.375	1.002	0.986	1.019	1,955	10%	7%	0.000	0.423	0.837	1.373	2.595

1. Data from all ICUs; excludes wards (and other non-critical care locations) and NICUs. These tables contain data from acute care hospitals; as such, they exclude data from LTACHs, IRFs, and CAHs.
2. Yes indicates the presence of a state mandate to report CAUTI data from critical care units to NHCN at the beginning of 2015. M indicates midyear implementation of a mandate. No indicates that a state mandate did not exist during 2015. Note that almost all acute care hospitals are required to report CAUTI data from ICUs to NHCN for participation in the Centers for Medicare and Medicaid Services' Hospital Inpatient Quality Reporting Program.
3. The number of reporting facilities included in the SIR calculation. SIRs and accompanying statistics are only calculated for states in which at least 5 facilities reported CAUTI data from at least one critical care location in 2015.
4. Percent of facilities with at least one predicted ICU CAUTI that had an SIR significantly greater or less than the nominal value of the 2015 national ICU CAUTI SIR of 0.988. This is only calculated if at least 10 facilities had at least one predicted ICU CAUTI in 2015.
5. Facility-specific key percentiles were only calculated if at least 20 facilities had ≥ 1.0 predicted ICU CAUTI in 2015. If a facility's predicted number of ICU CAUTI was < 1.0 , a facility-specific SIR was neither calculated nor included in the distribution of facility-specific SIRs.

Vermont	No	6	29	25.310	1.146	0.782	1.624	3	.	.	.	.	.	.	.
Washington	No	57	276	274.560	1.005	0.892	1.129	41	7%	5%	0.000	0.397	0.969	1.369	1.721
Wisconsin	No	73	194	207.430	0.935	0.810	1.074	39	5%	3%	0.000	0.253	0.757	1.263	1.659
West Virginia	Yes	28	78	127.940	0.610	0.485	0.757	20	0%	15%	0.000	0.000	0.541	0.798	1.276
Wyoming	No	10	12	18.160	0.661	0.358	1.124	2	.	.	.	.	.	.	.
All US		3,588	14,814	15,047.259	0.984	0.969	1.000	2,261	10%	8%	0.000	0.442	0.839	1.345	1.988

1. Data from all wards (for this table wards also include stepdown, mixed acuity and specialty care areas [including hematology/oncology, bone marrow transplant]). This excludes NICU. These tables contain data from acute care hospitals; as such, they exclude data from LTACHs, IRFs, and CAHs.
2. Yes indicates the presence of a state mandate to report CAUTI data from ward locations to NHSN at the beginning of 2015. M indicates midyear implementation of a mandate. No indicates that a state mandate did not exist during 2015.
3. The number of reporting facilities included in the SIR calculation. SIRs and accompanying statistics are only calculated for states in which at least 5 facilities reported CAUTI data from at least one ward in 2015.
4. Percent of facilities with at least one predicted ward CAUTI that had an SIR significantly greater or less than the nominal value of the 2015 national ward CAUTI SIR of 0.964. This is only calculated if at least 10 facilities had at least one predicted ward CAUTI in 2015.
5. Facility-specific key percentiles were only calculated if at least 20 facilities had ≥ 1.0 predicted ward CAUTI in 2015. If a facility's predicted number of ward CAUTI was < 1.0 , a facility-specific SIR was neither calculated nor included in the distribution of facility-specific SIRs.

**Table 5. State-specific standardized infection ratios (SIRs) and facility-specific SIR summary measures,
NHSN Acute Care Hospitals reporting during 2015
5a. Ventilator-associated events (VAE), all locations¹**

State			No. of Events	95% CI for SIR			Facility-specific SIRs				10%	25%	75%	90%		
				Observed	Predicted	SIR	Lower	Upper	No. of hosp with at least 1 predicted VAE	10%					25%	75%	90%
Alaska	No	No	7	50	39.289	1.273	0.955	1.664	4	.	.	.	.	.
Alabama	No	No	31	412	323.146	1.275	1.156	1.403	19	26%	16%	.	.	.		
Arkansas	No	No	16	46	124.620	0.369	0.273	0.488	11	9%	64%	.	.	.		
Arizona	No	No	32	494	349.843	1.412	1.292	1.541	18	44%	33%	.	.	.		
California	No	No	160	1370	1780.857	0.769	0.729	0.811	140	15%	36%	0.000	0.029	0.565	1.451	2.075
Colorado	No	No	29	376	270.799	1.388	1.253	1.534	17	35%	24%	.	.	.	.	.
Connecticut	No	No	13	261	153.582	1.699	1.502	1.915	11	27%	9%	.	.	.	.	.
D.C.	No	No	3	.	.	.	.	.	.	.	.	.	.	.	.	.
Delaware	No	No	3	.	.	.	.	.	.	.	.	.	.	.	.	.
Florida	No	No	110	1555	1553.783	1.001	0.952	1.051	96	20%	31%	0.000	0.000	0.909	1.405	2.288
Georgia	No	No	65	975	924.519	1.055	0.990	1.122	54	22%	19%	0.125	0.421	1.005	1.618	2.898
Guam	No	No	0	.	.	.	.	.	.	.	.	.	.	.	.	.
Hawaii	No	No	5	6	25.941	0.231	0.094	0.481	5	.	.	.	.	.	.	.
Iowa	No	No	10	83	33.067	2.510	2.012	3.096	6	.	.	.	.	.	.	.
Idaho	No	Yes	7	57	49.622	1.149	0.878	1.478	6	.	.	.	.	.	.	.
Illinois	No	No	53	420	440.592	0.953	0.865	1.048	42	7%	14%	0.000	0.439	0.927	1.509	1.886
Indiana	No	No	62	757	728.704	1.039	0.967	1.115	43	14%	33%	0.000	0.076	0.709	1.693	2.472
Kansas	No	No	28	224	157.929	1.418	1.242	1.614	14	21%	21%	.	.	.	.	.
Kentucky	M	No	41	292	224.326	1.302	1.159	1.458	22	23%	23%	0.000	0.431	0.789	1.981	2.446
Louisiana	No	No	31	123	170.144	0.723	0.603	0.859	17	0%	24%	.	.	.	.	.
Massachusetts	No	No	20	580	399.884	1.450	1.336	1.572	15	20%	7%	.	.	.	.	.
Maryland	No	No	27	262	285.661	0.917	0.811	1.033	25	16%	36%	0.000	0.000	0.739	1.293	2.134
Maine	No	No	10	50	40.443	1.236	0.927	1.617	7	.	.	.	.	.	.	.
Michigan	No	No	63	1167	967.161	1.207	1.139	1.277	44	32%	20%	0.199	0.658	1.229	1.749	2.160
Minnesota	No	No	10	175	124.054	1.411	1.213	1.632	6	.	.	.	.	.	.	.
Missouri	No	No	31	300	274.729	1.092	0.974	1.221	22	23%	23%	0.000	0.246	0.559	1.594	2.483
Mississippi	No	No	25	65	115.474	0.563	0.438	0.713	16	0%	19%	.	.	.	.	.
Montana	No	No	5	52	31.774	1.637	1.235	2.129	4	.	.	.	.	.	.	.
North Carolina	No	No	37	565	389.601	1.450	1.334	1.574	24	25%	13%	0.000	0.000	1.103	1.601	2.312
North Dakota	No	No	2	.	.	.	.	.	.	.	.	.	.	.	.	.
Nebraska	No	No	7	203	104.810	1.937	1.684	2.217	5	.	.	.	.	.	.	.
New Hampshire	No	No	8	22	28.419	0.774	0.497	1.153	6	.	.	.	.	.	.	.
New Jersey	No	No	45	625	762.568	0.820	0.757	0.886	45	13%	24%	0.000	0.213	0.760	1.562	1.775
New Mexico	No	No	17	235	122.427	1.920	1.686	2.177	8	.	.	.	.	.	.	.
Nevada	No	No	19	313	423.378	0.739	0.661	0.825	15	13%	67%	.	.	.	.	.
New York	No	No	118	1335	1966.705	0.679	0.643	0.716	103	10%	35%	0.000	0.087	0.617	1.095	1.522
Ohio	No	No	68	1292	1013.434	1.275	1.207	1.346	57	26%	19%	0.000	0.514	1.228	1.856	2.495
Oklahoma	No	No	33	287	379.385	0.756	0.673	0.848	21	0%	24%	0.000	0.000	0.601	0.935	1.293
Oregon	No	No	21	146	142.814	1.022	0.866	1.199	15	20%	20%	.	.	.	.	.
Pennsylvania	Yes	Yes	140	2136	2278.279	0.938	0.898	0.978	108	19%	21%	0.000	0.183	0.757	1.314	1.953
Puerto Rico	No	No	6	19	48.452	0.392	0.243	0.601	6	.	.	.	.	.	.	.
Rhode Island	No	No	6	39	32.172	1.212	0.874	1.641	6	.	.	.	.	.	.	.
South Carolina	M	Yes	53	864	705.338	1.225	1.145	1.309	36	31%	14%	0.000	0.368	1.137	1.913	2.349
South Dakota	No	No	5	31	18.430	1.682	1.163	2.358	1	.	.	.	.	.	.	.
Tennessee	No	No	51	677	631.350	1.072	0.994	1.155	32	25%	19%	0.000	0.233	1.062	1.712	2.402
Texas	No	No	127	1128	1547.056	0.729	0.687	0.773	98	8%	32%	0.000	0.154	0.535	1.098	1.647
Utah	No	No	8	30	20.402	1.470	1.010	2.073	4	.	.	.	.	.	.	.

Virginia	No	No	62	760	773.847	0.982	0.914	1.054	47	15%	28%	0.000	0.000	0.791	1.427	1.920
Virgin Islands	Yes	No	1	.	.	.	.	.	.	.	.	.	.	.	.	.
Vermont	No	No	0	.	.	.	.	.	.	.	.	.	.	.	.	.
Washington	No	No	27	174	194.233	0.896	0.770	1.037	22	18%	41%	0.000	0.000	0.147	1.336	3.331
Wisconsin	No	No	49	464	287.590	1.613	1.472	1.765	31	35%	6%	0.000	0.651	1.639	2.154	3.235
West Virginia	No	No	15	163	229.126	0.711	0.608	0.827	9	.	.	.	.	.	.	.
Wyoming	No	No	6	4	6.404	0.625	0.198	1.507	1	.	.	.	.	.	.	.
All US			1,828	21,888	21896.841	1.000	0.986	1.013	1,373	19%	26%	0.000	0.146	0.791	1.515	2.241

1. Data from all ICUs and wards (and other non-critical care locations). This excludes NICUs. Pediatric locations (ICUs or wards) are excluded, since pediatric and neonatal locations are excluded from VAE surveillance.

These tables contain data from acute care hospitals; as such, they exclude data from LTACHs, IRFs, and CAHs.

2. Yes indicates the presence of a state mandate to report VAE data from any location to NHSN at the beginning of 2015. M indicates midyear implementation of a mandate.

No indicates that a state mandate did not exist during 2015.

3. Yes indicates that the state health department reported the completion of all of the following validation activities: state health department had access to 2015 NHSN data, state health department performed an assessment of missing or implausible values on at least six months of 2015 NHSN data prior to July 1, 2016, and state health department contacted identified facilities.

varies by state). Information on validation efforts was requested from all states, regardless of the presence of a legislative mandate for the particular HAI type. Some states without mandatory reporting of a given HAI to the state health department have performed validation on NHSN data that is voluntarily shared with them by facilities in their jurisdiction.

4. The number of reporting facilities included in the SIR calculation. SIRs and accompanying statistics are only calculated for states in which at least 5 facilities reported VAE data in 2015.

5. Percent of facilities with at least one predicted VAE that had an SIR significantly greater or less than the nominal value of the 2015 national overall VAE SIR of 1.000. This is only calculated if at least 10 facilities had at least one predicted VAE in 2015.

6. Facility-specific key percentiles were only calculated if at least 20 facilities had ≥ 1.0 predicted VAE in 2015. If a facility's predicted number of VAE was < 1.0 , a facility-specific SIR was neither calculated nor included in the distribution of facility-specific SIRs.

Vermont	No	0	.	.	.	.	.	.	.	.	.	.	.	.	.
Washington	No	26	174	193.383	0.900	0.773	1.041	22	18%	41%	0.000	0.000	0.148	1.336	3.331
Wisconsin	No	48	459	284.476	1.613	1.471	1.766	31	35%	6%	0.000	0.651	1.554	2.154	3.235
West Virginia	No	15	163	228.950	0.712	0.609	0.828	9	.	.	.	.	.	.	.
Wyoming	No	5	4	6.346	0.630	0.200	1.520	1	.	.	.	.	.	.	.
All US		1,796	21,318	21330.661	0.999	0.986	1.013	1,362	19%	26%	0.000	0.137	0.779	1.512	2.288

1. Data from all ICUs; excludes wards (and other non-critical care locations) and NICUs. Pediatric location (ICUs) are excluded from SIR since pediatric and neonatal locations are excluded from VAE surveillance. These tables contain data from acute care hospitals; as such, they exclude data from LTACHs, IRFs, and CAHs.
2. Yes indicates the presence of a state mandate to report VAE data from critical care units to NHSN at the beginning of 2015. M indicates midyear implementation of a mandate. No indicates that a state mandate did not exist during 2015.
3. The number of reporting facilities included in the SIR calculation. SIRs and accompanying statistics are only calculated for states in which at least 5 facilities reported VAE data from at least one critical care location in 2015.
4. Percent of facilities with at least one predicted ICU VAE that had an SIR significantly greater or less than the nominal value of the 2015 national ICU VAE SIR of 0.999. This is only calculated if at least 10 facilities had at least one predicted ICU VAE in 2015.
5. Facility-specific key percentiles were only calculated if at least 20 facilities had ≥ 1.0 predicted ICU VAE in 2015. If a facility's predicted number of ICU VAE was < 1.0 , a facility-specific SIR was neither calculated nor included in the distribution of facility-specific SIRs.

Virginia	No	10	30	18.236	1.645	1.130	2.319	3	.	.	.	.	.	.	.
Virgin Islands	Yes	0	.	.	.	.	.	.	.	.	.	.	.	.	.
Vermont	No	0	.	.	.	.	.	.	.	.	.	.	.	.	.
Washington	No	4	.	.	.	.	.	.	.	.	.	.	.	.	.
Wisconsin	No	4	.	.	.	.	.	.	.	.	.	.	.	.	.
West Virginia	No	1	.	.	.	.	.	.	.	.	.	.	.	.	.
Wyoming	No	1	.	.	.	.	.	.	.	.	.	.	.	.	.
All US		259	570	566.180	1.007	0.927	1.092	112	12%	13%	0.000	0.000	0.560	1.495	2.367

1. Data from all wards (for this table wards also include stepdown, mixed acuity and specialty care areas [including hematology/oncology, bone marrow transplant]). This excludes NICU. Pediatric location (wards) are excluded from SIR since pediatric and neonatal locations are excluded from VAE surveillance. These tables contain data from acute care hospitals; as such, they exclude data from LTACHs, IRFs, and CAHs.
2. Yes indicates the presence of a state mandate to report VAE data from ward locations to NHSN at the beginning of 2015. M indicates midyear implementation of a mandate. No indicates that a state mandate did not exist during 2015.
3. The number of reporting facilities included in the SIR calculation. SIRs and accompanying statistics are only calculated for states in which at least 5 facilities reported VAE data from at least one ward in 2015.
4. Percent of facilities with at least one predicted ward VAE that had an SIR significantly greater or less than the nominal value of the 2015 national ward VAE SIR of 1.007. This is only calculated if at least 10 facilities had at least one predicted ward VAE in 2015.
5. Facility-specific key percentiles were only calculated if at least 20 facilities had ≥ 1.0 predicted ward VAE in 2015. If a facility's predicted number of ward VAE was < 1.0 , a facility-specific SIR was neither calculated nor included in the distribution of facility-specific SIRs.

Washington	No	No	27	50	69.244	0.722	0.542	0.944	17	18%	6%	.	.	.	.	.
Wisconsin	No	No	49	178	102.357	1.739	1.497	2.009	21	24%	5%	0.000	0.701	1.448	2.026	3.016
West Virginia	No	No	15	57	84.768	0.672	0.514	0.865	7	.	.	.	.	.	.	.
Wyoming	No	No	6	0	2.110	0.000	.	1.420	1	.	.	.	.	.	.	.
All US			1,828	8,021	8,024.082	1.000	0.978	1.022	1,065	14%	14%	0.000	0.000	0.751	1.451	2.298

1. Data from all ICUs and wards (and other non-critical care locations). This excludes NICUs. Pediatric location (ICUs and wards) are excluded from SIR since pediatric and neonatal locations are excluded from VAE surveillance.

These tables contain data from acute care hospitals; as such, they exclude data from LTACHs, IRFs, and CAHs.

2. Yes indicates the presence of a state mandate to report IVAC Plus data from any location to NHSN at the beginning of 2015. M indicates midyear implementation of a mandate.

No indicates that a state mandate did not exist during 2015.

3. Yes indicates that the state health department reported the completion of all of the following validation activities: state health department had access to 2015 NHSN data, state health department performed an assessment of missing or implausible values on at least six months of 2015 NHSN data prior to July 1, 2016, and state health department contacted identified facilities.

varies by state). Information on validation efforts was requested from all states, regardless of the presence of a legislative mandate for the particular HAI type. Some states without mandatory reporting of a given HAI to the state health department have performed validation on NHSN data that is voluntarily shared with them by facilities in their jurisdiction.

4. The number of reporting facilities included in the SIR calculation.

SIRs and accompanying statistics are only calculated for states in which at least 5 facilities reported IVAC Plus data in 2015. IVAC-plus events are a subset of the total VAE, meaning the IVAC-plus events are included in the total VAE SIR as well.

5. Percent of facilities with at least one predicted IVAC Plus that had an SIR significantly greater or less than the nominal value of the 2015 national overall IVAC Plus SIR of 1.000. This is only calculated if at least 10 facilities had at least one predicted IVAC Plus in 2015.

6. Facility-specific key percentiles were only calculated if at least 20 facilities had ≥ 1.0 predicted IVAC Plus in 2015. If a facility's predicted number of IVAC Plus was < 1.0 , a facility-specific SIR was neither calculated nor included in the distribution of facility-specific SIRs.

**Table 5. State-specific standardized infection ratios (SIRs) and facility-specific SIR summary measures,
NHSN Acute Care Hospitals reporting during 2015**

5e. Infection-related ventilator-associated condition and possible ventilator-associated pneumonia (IVAC-Plus), critical care locations¹

State		No. of Events	95% CI for SIR			Facility-specific SIRs				10%	25%	75%	90%		
			Observed	Predicted	SIR	Lower	Upper								
Alaska	No	5	13	8.958	1.451	0.807	2.419	2	.	.	.	.	.
Alabama	No	31	119	114.990	1.035	0.861	1.234	16	31%	6%	.	.	.		
Arkansas	No	16	15	43.769	0.343	0.199	0.553	9	.	.	.	.	.
Arizona	No	29	192	127.584	1.505	1.303	1.729	15	27%	7%	.	.	.		
California	No	156	553	628.602	0.880	0.809	0.955	116	16%	19%	0.000	0.000	0.511	1.458	2.586
Colorado	No	29	140	95.682	1.463	1.235	1.721	16	19%	13%	.	.	.	.	.
Connecticut	No	13	97	53.728	1.805	1.472	2.193	10	30%	0%	.	.	.	.	.
D.C.	No	3	.	.	.	.	.	.	.	.	.	.	.	.	.
Delaware	No	3	.	.	.	.	.	.	.	.	.	.	.	.	.
Florida	No	110	537	570.261	0.942	0.865	1.024	79	10%	16%	0.000	0.000	0.626	1.395	1.972
Georgia	No	65	349	340.788	1.024	0.921	1.136	42	12%	2%	0.000	0.666	0.845	1.759	2.298
Guam	No	0	.	.	.	.	.	.	.	.	.	.	.	.	.
Hawaii	No	5	2	8.682	0.230	0.039	0.761	3	.	.	.	.	.	.	.
Iowa	No	10	25	10.742	2.327	1.539	3.385	3	.	.	.	.	.	.	.
Idaho	No	7	21	17.024	1.234	0.784	1.853	4	.	.	.	.	.	.	.
Illinois	No	53	154	153.953	1.000	0.851	1.168	29	10%	3%	0.000	0.510	0.944	1.288	2.242
Indiana	No	58	267	264.310	1.010	0.894	1.137	36	17%	14%	0.000	0.000	0.594	1.235	2.558
Kansas	No	27	79	59.304	1.332	1.062	1.651	8	.	.	.	.	.	.	.
Kentucky	No	41	130	80.584	1.613	1.353	1.909	18	28%	11%	.	.	.	.	.
Louisiana	No	29	54	59.833	0.903	0.685	1.169	12	0%	8%	.	.	.	.	.
Massachusetts	No	20	221	145.597	1.518	1.327	1.728	9	.	.	.	.	.	.	.
Maryland	No	26	91	102.189	0.891	0.721	1.088	21	10%	10%	0.000	0.000	0.794	1.101	2.663
Maine	No	7	16	14.073	1.137	0.673	1.807	2	.	.	.	.	.	.	.
Michigan	No	62	463	349.353	1.325	1.209	1.450	39	23%	15%	0.000	0.509	1.190	1.779	2.675
Minnesota	No	7	61	41.716	1.462	1.128	1.866	4	.	.	.	.	.	.	.
Missouri	No	31	86	99.889	0.861	0.693	1.058	17	12%	18%	.	.	.	.	.
Mississippi	No	24	22	39.069	0.563	0.362	0.839	11	0%	0%	.	.	.	.	.
Montana	No	5	19	10.137	1.874	1.162	2.873	3	.	.	.	.	.	.	.
North Carolina	No	37	181	137.397	1.317	1.136	1.520	13	31%	8%	.	.	.	.	.
North Dakota	No	2	.	.	.	.	.	.	.	.	.	.	.	.	.
Nebraska	No	7	74	35.952	2.058	1.628	2.569	3	.	.	.	.	.	.	.
New Hampshire	No	8	8	9.040	0.885	0.411	1.681	2	.	.	.	.	.	.	.
New Jersey	No	45	180	263.523	0.683	0.589	0.788	40	13%	20%	0.000	0.000	0.691	1.372	1.906
New Mexico	No	17	74	45.484	1.627	1.287	2.031	4	.	.	.	.	.	.	.
Nevada	No	19	134	147.132	0.911	0.766	1.075	15	20%	33%	.	.	.	.	.
New York	No	117	377	664.541	0.567	0.512	0.627	78	4%	29%	0.000	0.000	0.441	0.944	1.370
Ohio	No	67	493	357.131	1.380	1.263	1.506	49	18%	2%	0.000	0.348	0.867	1.883	2.973
Oklahoma	No	33	116	137.158	0.846	0.702	1.011	13	0%	8%	.	.	.	.	.
Oregon	No	21	55	49.978	1.100	0.837	1.422	11	9%	9%	.	.	.	.	.
Pennsylvania	Yes	139	751	829.222	0.906	0.843	0.972	82	10%	12%	0.000	0.190	0.806	1.407	1.830
Puerto Rico	No	6	8	16.159	0.495	0.230	0.940	6	.	.	.	.	.	.	.
Rhode Island	No	6	10	10.571	0.946	0.480	1.686	4	.	.	.	.	.	.	.
South Carolina	Yes	53	347	260.822	1.330	1.196	1.476	26	31%	0%	0.000	0.562	1.253	1.499	2.373
South Dakota	No	5	14	6.405	2.186	1.244	3.580	1	.	.	.	.	.	.	.
Tennessee	No	51	208	231.125	0.900	0.784	1.029	23	4%	17%	0.000	0.090	0.812	1.345	1.930
Texas	No	126	470	578.114	0.813	0.742	0.889	72	13%	25%	0.000	0.201	0.702	1.206	2.111
Utah	No	8	13	7.471	1.740	0.968	2.901	2	.	.	.	.	.	.	.

Virginia	No	62	233	281.986	0.826	0.725	0.938	33	12%	21%	0.000	0.000	0.605	1.333	1.737
Virgin Islands	Yes	1	.	.	.	.	.	.	.	.	.	.	.	.	.
Vermont	No	0	.	.	.	.	.	.	.	.	.	.	.	.	.
Washington	No	26	50	68.998	0.725	0.544	0.948	17	18%	6%	.	.	.	.	.
Wisconsin	No	48	175	101.224	1.729	1.487	2.000	21	24%	5%	0.000	0.701	1.277	2.083	3.016
West Virginia	No	15	57	84.705	0.673	0.514	0.866	7	.	.	.	.	.	.	.
Wyoming	No	5	0	2.077	0.000	.	1.442	1	.	.	.	.	.	.	.
All US		1,796	7,834	7,838.249	0.999	0.978	1.022	1,055	14%	14%	0.000	0.000	0.756	1.462	2.302

1. Data from all ICUs; excludes wards (and other non-critical care locations) and NICUs. Pediatric location (ICUs) are excluded from SIR since pediatric and neonatal locations are excluded from VAE surveillance. These tables contain data from acute care hospitals; as such, they exclude data from LTACHs, IRFs, and CAHs.
2. Yes indicates the presence of a state mandate to report IVAC Plus data from critical care units to NHSN at the beginning of 2015. M indicates midyear implementation of a mandate. No indicates that a state mandate did not exist during 2015. Note that almost all acute care hospitals are required to report IVAC Plus data from ICUs to NHSN for participation in the Centers for Medicare and Medicaid Services' Hospital Inpatient Quality Reporting Program.
3. The number of reporting facilities included in the SIR calculation. SIRs and accompanying statistics are only calculated for states in which at least 5 facilities reported IVAC Plus data from at least one critical care location in 2015. IVAC-plus events are a subset of the total VAE, meaning the IVAC-plus events are included in the VAE SIR as well.
4. Percent of facilities with at least one predicted ICU IVAC Plus that had an SIR significantly greater or less than the nominal value of the 2015 national ICU IVAC Plus SIR of 0.999. This is only calculated if at least 10 facilities had at least one predicted ICU IVAC Plus in 2015.
5. Facility-specific key percentiles were only calculated if at least 20 facilities had ≥ 1.0 predicted ICU IVAC Plus in 2015. If a facility's predicted number of ICU IVAC Plus was < 1.0 , a facility-specific SIR was neither calculated nor included in the distribution of facility-specific SIRs.

Virginia	No	10	8	4.885	1.638	0.761	3.110	2	.	.	.	.	.	.	.
Virgin Islands	Yes	0	.	.	.	.	.	.	.	.	.	.	.	.	.
Vermont	No	0	.	.	.	.	.	.	.	.	.	.	.	.	.
Washington	No	4	.	.	.	.	.	.	.	.	.	.	.	.	.
Wisconsin	No	4	.	.	.	.	.	.	.	.	.	.	.	.	.
West Virginia	No	1	.	.	.	.	.	.	.	.	.	.	.	.	.
Wyoming	No	1	.	.	.	.	.	.	.	.	.	.	.	.	.
All US		259	187	185.833	1.006	0.870	1.159	53	9%	4%	0.000	0.000	0.602	1.475	2.520

1. Data from all wards (for this table wards also include stepdown, mixed acuity and specialty care areas [including hematology/oncology, bone marrow transplant]). This excludes NICU. Pediatric location (wards) are excluded from SIR since pediatric and neonatal locations are excluded from VAE surveillance. These tables contain data from acute care hospitals; as such, they exclude data from LTACHs, IRFs, and CAHs.
2. Yes indicates the presence of a state mandate to report IVAC Plus data from ward locations to NHSN at the beginning of 2015. M indicates midyear implementation of a mandate. No indicates that a state mandate did not exist during 2015.
3. The number of reporting facilities included in the SIR calculation. SIRs and accompanying statistics are only calculated for states in which at least 5 facilities reported IVAC Plus data from at least one ward in 2015. IVAC-plus events are a subset of the total VAE, meaning the IVAC-plus events are included in the VAE SIR as well.
4. Percent of facilities with at least one predicted ward IVAC Plus that had an SIR significantly greater or less than the nominal value of the 2015 national ward IVAC Plus SIR of 1.006. This is only calculated if at least 10 facilities had at least one predicted ward IVAC Plus in 2015.
5. Facility-specific key percentiles were only calculated if at least 20 facilities had ≥ 1.0 predicted ward IVAC Plus in 2015. If a facility's predicted number of ward IVAC Plus was < 1.0 , a facility-specific SIR was neither calculated nor included in the distribution of facility-specific SIRs.

**Table 6. State-specific standardized infection ratios (SIRs) and facility-specific SIR summary measures,
NHSN Acute Care Hospitals reporting during 2015
6a. Surgical site infections (SSI) following colon surgery¹ in adults, ≥ 18years**

State	No. of Acute Care Hospitals Reporting ¹		No. of Procedures		No. of Infections		95% CI for SIR			Facility-specific SIRs							
					Observed	Predicted	SIR	Lower	Upper	No. of hosp with at least 1 predicted SSI							
											10%	25%	75%	90%			
Alaska	No	Yes	7	619	19	15,641	1.215	0.753	1.862	5							
Alabama	Yes	Yes	68	5,857	125	145,415	0.860	0.719	1.021	30	10%	7%	0.000	0.156	0.713	1.215	2.209
Arkansas	Yes	Yes	39	2,965	67	67,114	0.998	0.780	1.260	19	5%	0%					
Arizona	No	No	58	6,421	199	148,921	1.336	1.160	1.532	34	18%	0%	0.483	0.760	1.193	1.722	2.789
California	Yes	Yes	304	27,573	719	673,590	1.067	0.992	1.148	179	10%	5%	0.000	0.336	0.811	1.482	2.383
Colorado	Yes	Yes	47	4,777	127	107,750	1.179	0.987	1.398	30	20%	7%	0.000	0.203	0.693	1.889	2.493
Connecticut	Yes	No	30	3,693	92	88,381	1.041	0.844	1.271	22	9%	0%	0.256	0.516	0.777	1.375	1.941
D.C.	No	No	7	1,030	20	35,074	0.570	0.358	0.865	5							
Delaware	Yes	Yes	7	1,156	44	30,918	1.423	1.047	1.893	7							
Florida	No	No	183	22,460	513	515,307	0.996	0.912	1.085	136	10%	1%	0.000	0.405	0.812	1.574	2.290
Georgia	Yes	No	92	9,689	306	244,413	1.252	1.117	1.398	52	17%	4%	0.000	0.578	1.162	1.838	2.625
Guam	No	No	0														
Hawaii	Yes	Yes	13	1,014	18	24,364	0.739	0.452	1.145	8							
Iowa	No	No	36	3,040	82	69,426	1.181	0.945	1.458	19	16%	0%					
Idaho	No	No	12	1,289	34	29,479	1.153	0.812	1.593	8							
Illinois	No	No	125	11,087	254	283,514	0.896	0.791	1.011	76	5%	7%	0.000	0.252	0.876	1.387	2.075
Indiana	Yes	Yes	78	6,581	161	162,626	0.990	0.846	1.152	42	12%	0%	0.000	0.379	0.839	1.449	2.073
Kansas	No	Yes	39	2,762	81	65,903	1.229	0.982	1.520	14	7%	0%					
Kentucky	M		63	4,975	113	118,241	0.956	0.791	1.145	30	7%	3%	0.000	0.324	0.788	1.288	1.866
Louisiana	No	Yes	70	4,862	117	117,737	0.994	0.826	1.187	30	3%	0%	0.000	0.338	0.765	1.315	2.082
Massachusetts	Yes	Yes	60	6,604	153	164,750	0.929	0.790	1.085	38	3%	3%	0.000	0.000	0.856	1.338	1.826
Maryland	Yes	Yes	45	5,329	143	145,371	0.984	0.832	1.155	34	6%	3%	0.000	0.000	0.746	1.185	1.634
Maine	Yes		19	1,465	43	32,286	1.332	0.976	1.777	9							
Michigan	No	No	88	10,598	261	263,905	0.989	0.874	1.115	53	8%	4%	0.127	0.561	0.918	1.380	1.907
Minnesota	Yes	No	49	5,309	140	138,324	1.012	0.855	1.191	23	9%	0%	0.364	0.603	0.981	1.884	2.371
Missouri	No	No	65	7,371	161	174,693	0.922	0.787	1.072	37	5%	11%	0.000	0.346	0.928	1.330	1.781
Mississippi	Yes	Yes	44	2,995	69	67,570	1.021	0.801	1.285	22	14%	5%	0.000	0.000	0.318	1.340	1.789
Montana	No	No	12	928	11	19,492	0.564	0.297	0.981	7							
North Carolina	Yes	Yes	85	9,990	209	254,032	0.823	0.717	0.940	50	6%	12%	0.000	0.310	0.720	1.183	1.666
North Dakota	No	No	6	817	22	18,978	1.159	0.745	1.726	6							
Nebraska	No	No	21	1,770	42	43,932	0.956	0.698	1.280	13	0%	0%					
New Hampshire	Yes	Yes	13	1,270	21	31,512	0.666	0.424	1.001	12	0%	8%					
New Jersey	Yes		70	8,004	149	197,556	0.754	0.640	0.883	49	2%	10%	0.000	0.376	0.616	1.192	1.819
New Mexico	No	No	27	1,226	38	28,769	1.321	0.948	1.794	9							
Nevada	No	No	21	2,482	76	54,257	1.401	1.111	1.744	14	14%	0%					
New York	Yes	Yes	162	17,866	589	481,778	1.223	1.127	1.324	109	10%	1%	0.000	0.736	0.969	1.721	2.348
Ohio	No	No	124	13,937	330	369,012	0.894	0.802	0.995	84	5%	4%	0.000	0.000	0.641	1.165	2.014
Oklahoma	No	No	58	4,077	88	97,612	0.902	0.727	1.105	22	5%	5%	0.000	0.365	0.779	1.394	1.639
Oregon	Yes	Yes	34	3,752	54	92,159	0.586	0.445	0.759	21	0%	14%	0.000	0.095	0.565	0.863	1.240
Pennsylvania	Yes	Yes	152	15,289	365	401,782	0.908	0.819	1.005	93	6%	6%	0.000	0.385	0.793	1.211	2.118
Puerto Rico	No	No	0														
Rhode Island	No	No	11	1,032	27	23,448	1.152	0.774	1.652	7							
South Carolina	Yes	Yes	55	4,855	114	114,837	0.993	0.823	1.188	25	8%	0%	0.000	0.000	0.667	1.322	2.163
South Dakota	No	Yes	14	918	32	19,597	1.633	1.136	2.278	3							
Tennessee	Yes	Yes	89	7,602	166	197,814	0.839	0.719	0.974	46	4%	2%	0.000	0.321	0.739	1.210	1.948
Texas	Yes	Yes	273	22,252	534	554,849	0.962	0.883	1.047	144	5%	5%	0.000	0.343	0.787	1.373	1.927
Utah	Yes	Yes	31	2,044	50	48,521	1.030	0.773	1.348	9							
Virginia	M	Yes	74	7,389	203	183,237	1.108	0.963	1.268	39	10%	0%	0.000	0.515	0.775	1.408	2.335
Virgin Islands	No	No	2	58													
Vermont	No	No	6	450	21	10,377	2.024	1.286	3.041	2							
Washington	Yes	Yes	49	5,420	109	134,186	0.812	0.670	0.976	34	3%	15%	0.000	0.436	0.802	1.257	1.862
Wisconsin	No	Yes	66	5,501	109	131,001	0.832	0.686	1.000	34	0%	0%	0.000	0.398	0.853	1.154	1.768
West Virginia	Yes		27	1,995	67	50,597	1.324	1.034	1.671	15	27%	0%					
Wyoming	No	No	10	291	4	5,778	0.692	0.220	1.670	2							

All US	3,140	302,736	7,493	7,497.084	0.999	0.977	1.022	1,811	8%	4%	0.000	0.389	0.823	1.405	2.176
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- Note that almost all acute care hospitals are required to report SSIs following inpatient colon procedures in adults 18 years and older to NHSN for participation in the Centers for Medicare and Medicaid Services' (CMS) Hospital Inpatient Quality Reporting Program. SSIs included in this table are those classified as deep incisional or organ/space infections following NHSN-defined inpatient colon procedures that occurred in 2015 with a primary or other than primary skin closure technique, detected during the same admission as the surgical procedure or upon readmission to the same facility. The colon surgery SSI data published in this report use different risk adjustment methodology and a different subset of data than that which are used for public reporting by CMS.
- Yes indicates the presence of a state mandate to report SSIs following colon surgery to NHSN at the beginning of 2015. M indicates midyear implementation of a mandate. No indicates that a state mandate did not exist during 2015.
- Yes indicates that the state health department reported the completion of all of the following validation activities: state health department had access to 2015 NHSN data, state health department performed an assessment of missing or implausible values on at least six months of 2015 NHSN data prior to July 1, 2016, and state health department contacted identified facilities.

varies by state). Information on validation efforts was requested from all states, regardless of the presence of a legislative mandate for the particular HAI type. Some states without mandatory reporting of a given HAI to the state health department have performed validation on NHSN data that is voluntarily shared with them by facilities in their jurisdiction.
- The number of reporting facilities included in the SIR calculation. Due to SIR exclusion criteria, this may be different from the numbers shown in Table 1. Refer to the Technical Appendix for information about exclusion criteria. SIRs and accompanying statistics are only calculated for states in which at least 5 facilities reported SSI data following colon surgery in 2015.
- Percent of facilities with at least one predicted colon surgery SSI that had an SIR significantly greater or less than the nominal value of the 2015 national colon surgery SIR of 0.999. This is only calculated if at least 10 facilities had at least one predicted colon surgery SSI in 2015.
- Facility-specific key percentiles were only calculated if at least 20 facilities had ≥ 1.0 predicted colon surgery SSI in 2015. If a facility's predicted number of colon surgery SSI was < 1.0 , a facility-specific SIR was neither calculated nor included in the distribution of facility-specific SIRs.

Table 6. State-specific standardized infection ratios (SIRs) and facility-specific SIR summary measures, NHSN Acute Care Hospitals reporting during 2015

6b. Surgical site infections (SSI) following abdominal hysterectomy surgery¹ in adults, ≥ 18years

State	No. of Acute Care Hospitals Reporting ¹		No. of Procedures		No. of infections		95% CI for SIR			Facility-specific SIRs							
					Observed	Predicted	SIR	Lower	Upper	10%	25%	75%	90%				
Alaska	No	Yes	7	459	0	2.985	0.000	.	1.004	1	.	.	.	.	.
Alabama	Yes	Yes	59	6784	45	42.686	1.054	0.778	1.398	12	0%	0%	.	.	.		
Arkansas	Yes	Yes	37	3498	15	21.262	0.705	0.410	1.138	6	.	.	.	.	.
Arizona	No	No	53	6742	40	39.410	1.015	0.735	1.369	16	0%	0%	.	.	.		
California	Yes	Yes	298	26361	184	174.361	1.055	0.911	1.216	63	6%	0%	0.000	0.000	0.861	1.529	2.645
Colorado	Yes	Yes	47	4449	29	29.035	0.999	0.682	1.416	11	9%	0%	.	.	.	.	.
Connecticut	Yes	No	29	3587	29	25.327	1.145	0.781	1.623	5	.	.	.	.	.	.	.
D.C.	No	No	7	732	7	6.610	1.059	0.463	2.095	2	.	.	.	.	.	.	.
Delaware	Yes	Yes	7	962	13	6.670	1.949	1.084	3.249	2	.	.	.	.	.	.	.
Florida	No	No	174	19976	118	125.956	0.937	0.779	1.118	46	11%	2%	0.000	0.000	0.741	1.308	3.250
Georgia	Yes	No	89	12378	87	78.862	1.103	0.889	1.354	26	8%	0%	0.000	0.481	1.113	1.887	2.362
Guam	No	No	0	.	.	.	.	.	.	.	.	.	.	.	.	.	.
Hawaii	Yes	Yes	12	742	4	4.871	0.821	0.261	1.981	3	.	.	.	.	.	.	.
Iowa	No	Yes	34	3057	15	18.266	0.821	0.477	1.324	4	.	.	.	.	.	.	.
Idaho	No	No	12	737	1	4.557	0.219	0.011	1.082	1	.	.	.	.	.	.	.
Illinois	No	No	123	10956	65	77.950	0.834	0.649	1.056	26	0%	0%	0.000	0.000	0.730	1.333	1.930
Indiana	Yes	Yes	78	5755	39	38.453	1.014	0.731	1.373	8	.	.	.	.	.	.	.
Kansas	No	Yes	38	3186	19	19.541	0.972	0.603	1.490	5	.	.	.	.	.	.	.
Kentucky	M	.	56	5476	28	37.326	0.750	0.508	1.070	9	.	.	.	.	.	.	.
Louisiana	No	Yes	70	5461	37	34.310	1.078	0.770	1.471	10	0%	0%	.	.	.	.	.
Massachusetts	Yes	Yes	52	4886	33	33.287	0.991	0.694	1.376	9	.	.	.	.	.	.	.
Maryland	Yes	Yes	42	5386	38	38.419	0.989	0.710	1.344	10	0%	0%	.	.	.	.	.
Maine	Yes	.	17	759	7	4.512	1.551	0.678	3.069	1	.	.	.	.	.	.	.
Michigan	No	No	83	9925	72	70.622	1.020	0.804	1.276	25	8%	4%	0.000	0.000	0.682	1.901	2.662
Minnesota	Yes	No	50	4162	29	27.539	1.053	0.719	1.493	9	.	.	.	.	.	.	.
Missouri	No	Yes	63	6883	26	45.445	0.572	0.382	0.826	12	0%	8%	.	.	.	.	.
Mississippi	No	Yes	44	3658	35	21.542	1.625	1.149	2.235	6	.	.	.	.	.	.	.
Montana	No	No	11	798	8	4.573	1.749	0.813	3.322	2	.	.	.	.	.	.	.
North Carolina	Yes	Yes	84	10307	68	70.962	0.958	0.750	1.207	18	0%	6%	.	.	.	.	.
North Dakota	No	No	6	755	4	4.019	0.995	0.316	2.401	1	.	.	.	.	.	.	.
Nebraska	No	No	20	1950	26	12.808	2.030	1.354	2.932	4	.	.	.	.	.	.	.
New Hampshire	Yes	Yes	13	957	3	5.994	0.501	0.127	1.362	1	.	.	.	.	.	.	.
New Jersey	Yes	.	64	7199	50	49.694	1.006	0.755	1.316	17	0%	0%	.	.	.	.	.
New Mexico	No	No	25	1747	12	10.520	1.141	0.618	1.939	3	.	.	.	.	.	.	.
Nevada	No	No	20	1803	14	11.157	1.255	0.714	2.055	4	.	.	.	.	.	.	.
New York	Yes	Yes	154	18949	147	129.365	1.136	0.963	1.332	48	4%	0%	0.000	0.365	0.857	1.620	2.321
Ohio	No	No	119	13061	97	89.861	1.079	0.880	1.311	26	4%	0%	0.000	0.600	1.289	1.770	2.232
Oklahoma	No	No	62	4357	15	26.787	0.560	0.325	0.903	6	.	.	.	.	.	.	.
Oregon	Yes	Yes	33	3076	13	20.023	0.649	0.361	1.082	6	.	.	.	.	.	.	.
Pennsylvania	Yes	Yes	137	13747	85	94.986	0.895	0.719	1.101	26	0%	0%	0.000	0.000	0.677	1.083	1.913
Puerto Rico	No	No	0	.	.	.	.	.	.	.	.	.	.	.	.	.	.
Rhode Island	No	No	11	1271	7	7.656	0.914	0.400	1.809	1	.	.	.	.	.	.	.
South Carolina	Yes	Yes	52	5710	27	36.421	0.741	0.499	1.064	11	0%	0%	.	.	.	.	.
South Dakota	No	Yes	16	1047	8	6.193	1.292	0.600	2.453	2	.	.	.	.	.	.	.
Tennessee	Yes	Yes	82	8935	64	55.222	1.159	0.900	1.470	13	8%	0%	.	.	.	.	.
Texas	Yes	Yes	278	27401	156	181.604	0.859	0.732	1.002	57	4%	4%	0.000	0.000	0.682	1.202	1.955
Utah	Yes	Yes	29	2921	20	17.109	1.169	0.734	1.773	6	.	.	.	.	.	.	.
Virginia	M	Yes	68	8541	88	54.621	1.611	1.300	1.975	14	7%	0%	.	.	.	.	.
Virgin Islands	No	No	2	67	.	.	.	.	.	.	.	.	.	.	.	.	.
Vermont	Yes	No	7	351	2	2.248	0.890	0.149	2.940	1	.	.	.	.	.	.	.
Washington	Yes	Yes	51	5032	24	31.084	0.772	0.506	1.131	7	.	.	.	.	.	.	.
Wisconsin	No	Yes	67	5065	34	31.746	1.071	0.754	1.480	8	.	.	.	.	.	.	.
West Virginia	Yes	.	27	1839	17	13.749	1.236	0.744	1.939	4	.	.	.	.	.	.	.
Wyoming	No	No	10	184	0	1.012	0.000	.	2.959	0	.	.	.	.	.	.	.
All US			3,029	304,027	2,005	1,999.690	1.003	0.959	1.047	614	5%	1%	0.000	0.000	0.777	1.492	2.319

1. Note that almost all acute care hospitals are required to report SSIs following inpatient abdominal hysterectomy procedures in adults 18 years and older to NHSN for participation in the Centers for Medicare and Medicaid Services' (CMS) Hospital Inpatient Quality Reporting Program.

SSIs included are those classified as deep incisional or organ/space infections following NHSN-defined inpatient abdominal hysterectomy procedures that occurred in 2015 with a primary or other than primary skin closure technique, detected during the same admission as the surgical procedure or upon readmission to the same facility. The abdominal hysterectomy SSI data published in this report use different risk adjustment methodology and a different subset of data than that which are used for public reporting by CMS.

2. Yes indicates the presence of a state mandate to report SSIs following abdominal hysterectomy surgery to NHSN at the beginning of 2015. M indicates midyear implementation of a mandate. No indicates that a state mandate did not exist during 2015.

3. Yes indicates that the state health department reported the completion of all of the following validation activities: state health department had access to 2015 NHSN data, state health department performed an assessment of missing or implausible values on at least six months of 2015 NHSN data prior to July 1, 2016, and state health department contacted identified facilities.

varies by state). Information on validation efforts was requested from all states, regardless of the presence of a legislative mandate for the particular HAI type. Some states without mandatory reporting of a given HAI to the state health department have performed validation on NHSN data that is voluntarily shared with them by facilities in their jurisdiction.

4. The number of reporting facilities included in the SIR calculation. Due to SIR exclusion criteria, this may be different from the numbers shown in Table 1. Refer to the Technical Appendix for information about exclusion criteria. SIRs and accompanying statistics are only calculated for states in which at least 5 facilities reported SSI data following abdominal hysterectomy surgery in 2015.

5. Percent of facilities with at least one predicted abdominal hysterectomy SSI that had an SIR significantly greater or less than the nominal value of the 2015 national abdominal hysterectomy SIR of 1.003. This is only calculated if at least 10 facilities had at least one predicted abdominal hysterectomy SSI in 2015.

6. Facility-specific key percentiles were only calculated if at least 20 facilities had ≥ 1.0 predicted abdominal hysterectomy SSI in 2015. If a facility's predicted number of abdominal hysterectomy SSI was < 1.0 , a facility-specific SIR was neither calculated nor included in the distribution of facility-specific SIRs.

Vermont	Yes	7	891	1	5.359	0.187	0.009	0.920	2	.	.	.	.	.	.
Washington	Yes	48	12743	55	64.089	0.858	0.653	1.109	23	0%	0%	0.000	0.369	0.821	1.340	1.544
Wisconsin	No	48	7985	43	46.774	0.919	0.674	1.227	18	6%	0%	.	.	.	.	.
West Virginia	No	8	1374	13	11.371	1.143	0.636	1.906	4	.	.	.	.	.	.	.
Wyoming	No	2	95	.	.	.	.	.	.	.	.	.	.	.	.	.
All US		1,847	306,591	1,917	1,921.469	0.998	0.954	1.043	600	6%	2%	0.000	0.391	0.881	1.402	2.142

- SSIs included are those classified as deep incisional or organ/space infections following NHSN-defined inpatient hip arthroplasty procedures that occurred in 2015 with a primary or other than primary skin closure technique, detected during the same admission as the surgical procedure or upon readmission to the same facility.
- Yes indicates the presence of a state mandate to report SSIs following hip arthroplasty surgery to NHSN at the beginning of 2015. M indicates midyear implementation of a mandate. No indicates that a state mandate did not exist during 2015.
- The number of reporting facilities included in the SIR calculation. Refer to the Technical Appendix for information about exclusion criteria. SIRs and accompanying statistics are only calculated for states in which at least 5 facilities reported SSI data following hip arthroplasty in 2015.
- Percent of facilities with at least one predicted hip arthroplasty SSI that had an SIR significantly greater or less than the nominal value of the 2015 national hip arthroplasty SIR of 0.998. This is only calculated if at least 10 facilities had at least one predicted hip arthroplasty SSI in 2015.
- Facility-specific key percentiles were only calculated if at least 20 facilities had ≥ 1.0 predicted hip arthroplasty SSI in 2015. If a facility's predicted number of hip arthroplasty SSI was < 1.0 , a facility-specific SIR was neither calculated nor included in the distribution of facility-specific SIRs.

Vermont	Yes	7	1121	4	3.721	1.075	0.342	2.593	2	.	.	.	.	.	.	.
Washington	Yes	45	16054	56	50.349	1.112	0.848	1.434	21	5%	0%	0.000	0.324	0.840	1.527	1.986
Wisconsin	No	49	11507	35	37.230	0.940	0.665	1.293	13	8%	0%	.	.	.	.	.
West Virginia	No	9	1929	8	7.610	1.051	0.488	1.996	4	.	.	.	.	.	.	.
Wyoming	No	2	107	.	.	.	.	.	.	.	.	.	.	.	.	.
All US		1,787	432,116	1,510	1,509.661	1.000	0.951	1.052	528	5%	1%	0.000	0.000	0.804	1.437	2.276

1. SSIs included are those classified as deep incisional or organ/space infections following NHSN-defined inpatient knee arthroplasty procedures that occurred in 2015 with a primary or other than primary skin closure technique, detected during the same admission as the surgical procedure or upon readmission to the same facility.
2. Yes indicates the presence of a state mandate to report SSIs following knee arthroplasty surgery to NHSN at the beginning of 2015. M indicates midyear implementation of a mandate. No indicates that a state mandate did not exist during 2015.
3. The number of reporting facilities included in the SIR calculation. Refer to the Technical Appendix for information about exclusion criteria. SIRs and accompanying statistics are only calculated for states in which at least 5 facilities reported SSI data following knee arthroplasty in 2015.
4. Percent of facilities with at least one predicted knee arthroplasty SSI that had an SIR significantly greater or less than the nominal value of the 2015 national knee arthroplasty SIR of 1.000. This is only calculated if at least 10 facilities had at least one predicted knee arthroplasty SSI in 2015.
5. Facility-specific key percentiles were only calculated if at least 20 facilities had ≥ 1.0 predicted knee arthroplasty SSI in 2015. If a facility's predicted number of knee arthroplasty SSI was < 1.0 , a facility-specific SIR was neither calculated nor included in the distribution of facility-specific SIRs.

Table 6. State-specific standardi

NHSN

6e. Surgical site inf

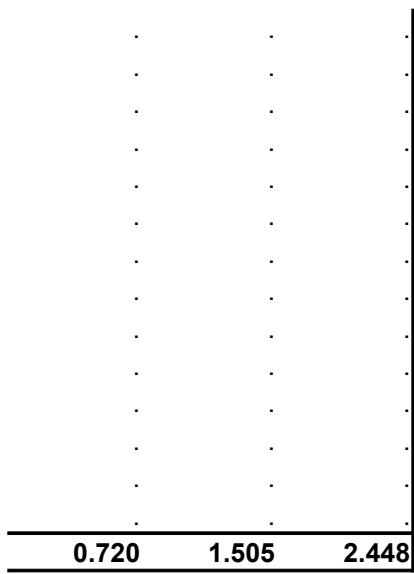
State		No. of		No. of Infections	
		Procedures		Observed	Predicted
Alaska	No	0	.	.	.
Alabama	No	0	.	.	.
Arkansas	No	0	.	.	.
Arizona	No	3	125	.	.
California	Yes	255	4842	86	79.940
Colorado	No	2	28	.	.
Connecticut	No	0	.	.	.
D.C.	No	0	.	.	.
Delaware	No	0	.	.	.
Florida	No	4	27	.	.
Georgia	No	1	87	.	.
Guam	No	0	.	.	.
Hawaii	No	0	.	.	.
Iowa	No	0	.	.	.
Idaho	No	0	.	.	.
Illinois	No	1	18	.	.
Indiana	No	1	65	.	.
Kansas	No	0	.	.	.
Kentucky	No	0	.	.	.
Louisiana	No	3	148	.	.
Massachusetts	No	1	11	.	.
Maryland	No	0	.	.	.
Maine	No	1	110	.	.
Michigan	No	2	76	.	.
Minnesota	No	1	58	.	.
Missouri	No	1	1	.	.
Mississippi	No	0	.	.	.
Montana	No	1	7	.	.
North Carolina	No	0	.	.	.
North Dakota	No	0	.	.	.
Nebraska	No	0	.	.	.
New Hampshire	No	1	26	.	.
New Jersey	No	0	.	.	.
New Mexico	No	0	.	.	.
Nevada	No	3	35	.	.
New York	No	0	.	.	.
Ohio	No	5	117	2	2.362
Oklahoma	No	0	.	.	.
Oregon	No	1	56	.	.
Pennsylvania	Yes	21	646	16	14.699

Puerto Rico	No	0	.	.	.
Rhode Island	No	0	.	.	.
South Carolina	No	0	.	.	.
South Dakota	No	0	.	.	.
Tennessee	No	1	173	.	.
Texas	No	2	9	.	.
Utah	No	0	.	.	.
Virginia	No	0	.	.	.
Virgin Islands	No	0	.	.	.
Vermont	No	0	.	.	.
Washington	No	3	155	.	.
Wisconsin	No	2	36	.	.
West Virginia	No	3	22	.	.
Wyoming	No	0	.	.	.
All US		319	6,878	120	120.472

1. SSIs included are those classified as deep incisional or organ/space infections following NHSN-detected during the same admission as the surgical procedure or upon readmission to the same facility.
2. Yes indicates the presence of a state mandate to report SSIs following rectal surgery to NIDIR. No indicates that a state mandate did not exist during 2015.
3. The number of reporting facilities included in the SIR calculation. Refer to the Technical Appendix for details. Statistics are only calculated for states in which at least 5 facilities reported SSI data following rectal surgery.
4. Percent of facilities with at least one predicted rectal surgery SSI that had an SIR significantly greater than 1.0. At least 10 facilities had at least one predicted rectal surgery SSI in 2015.
5. Facility-specific key percentiles were only calculated if at least 20 facilities had ≥ 1.0 predicted rectal surgery SSI. If a facility's SIR was neither calculated nor included in the distribution of facility-specific SIRs.

**Standardized infection ratios (SIRs) and facility-specific SIR summary measures,
 | Acute Care Hospitals reporting during 2015
 | Infections (SSI) following rectal surgery¹ in adults, ≥ 18years**

95% CI for SIR			Facility-specific SIRs			10%	25%
SIR	Lower	Upper					
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1.076	0.866	1.322	17	6%	0%	.	.
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0.847	0.142	2.798	1
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.	.	.	0
1.089	0.644	1.730	4



sure technique,

Table 6. State-specific standardi

NHSN

6f. Surgical site infecti

State		No. of Procedures	No. of Infections	
			Observed	Predicted
Alaska	No	0	.	.
Alabama	No	1	204	.
Arkansas	No	1	36	.
Arizona	No	1	28	.
California	Yes	271	10041	46 48.432
Colorado	No	19	839	7 4.461
Connecticut	No	0	.	.
D.C.	No	0	.	.
Delaware	No	1	3	.
Florida	No	7	203	0 0.857
Georgia	No	3	103	.
Guam	No	0	.	.
Hawaii	No	0	.	.
Iowa	No	2	13	.
Idaho	No	1	62	.
Illinois	No	5	128	0 0.575
Indiana	No	2	279	.
Kansas	No	1	37	.
Kentucky	No	1	68	.
Louisiana	No	7	76	0 0.515
Massachusetts	Yes	50	1558	10 9.122
Maryland	No	4	211	.
Maine	No	1	30	.
Michigan	No	8	332	5 1.888
Minnesota	No	5	466	4 3.363
Missouri	No	1	2	.
Mississippi	No	7	404	1 1.769
Montana	No	2	51	.
North Carolina	No	1	70	.
North Dakota	No	0	.	.
Nebraska	No	0	.	.
New Hampshire	No	2	66	.
New Jersey	No	1	37	.
New Mexico	No	2	140	.
Nevada	No	0	.	.
New York	No	3	57	.
Ohio	No	9	697	6 3.684
Oklahoma	No	2	15	.
Oregon	No	2	138	.
Pennsylvania	Yes	21	1171	3 7.269

Puerto Rico	No	0	.	.	.
Rhode Island	No	0	.	.	.
South Carolina	No	9	254	2	1.619
South Dakota	No	1	3	.	.
Tennessee	No	4	229	.	.
Texas	Yes	243	9800	43	46.957
Utah	No	0	.	.	.
Virginia	No	2	19	.	.
Virgin Islands	No	0	.	.	.
Vermont	No	0	.	.	.
Washington	No	21	1022	3	4.379
Wisconsin	No	8	348	4	2.159
West Virginia	No	4	122	.	.
Wyoming	No	0	.	.	.
All US		736	29,362	148	148.166

1. SSIs included are those classified as deep incisional or organ/space infections following NHSN-detected during the same admission as the surgical procedure or upon readmission to the same facility.
2. Yes indicates the presence of a state mandate to report SSIs following vaginal hysterectomy surgery. No indicates that a state mandate did not exist during 2015.
3. The number of reporting facilities included in the SIR calculation. Refer to the Technical Appendix for details. Statistics are only calculated for states in which at least 5 facilities reported SSI data following vaginal hysterectomy.
4. Percent of facilities with at least one predicted vaginal hysterectomy SSI that had an SIR significantly greater than 1.0. At least 10 facilities had at least one predicted vaginal hysterectomy SSI in 2015.
5. Facility-specific key percentiles were only calculated if at least 20 facilities had ≥ 1.0 predicted vaginal hysterectomy SSI. If SIR was neither calculated nor included in the distribution of facility-specific SIRs.

zed infection ratios (SIRs) and facility-specific SIR summary measures,
 | Acute Care Hospitals reporting during 2015
 ons (SSI) following vaginal hysterectomy¹ in adults, ≥ 18years

95% CI for SIR			Facility-specific SIRs		10%	25%
SIR	Lower	Upper				
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.
.
0.950	0.703	1.256	1	.	.	.
1.569	0.686	3.104	1	.	.	.
.
.
.	.	.	0	.	.	.
.
.
.
.	.	.	0	.	.	.
1.096	0.557	1.954	1	.	.	.
.
2.648	0.970	5.869	0	.	.	.
1.189	0.378	2.869	1	.	.	.
.
0.565	0.028	2.787	1	.	.	.
.
.
.
.
.
.
1.629	0.660	3.388	2	.	.	.
.
0.413	0.105	1.123	2	.	.	.

.
1.235	0.207	4.080	1	.	.	.	.
.
0.916	0.671	1.222	7	.	.	.	.
.
.
0.685	0.174	1.865	0	.	.	.	.
1.852	0.589	4.468	1	.	.	.	.
.
.
0.999	0.847	1.170	20	10%	0%	0.000	0.000

defined inpatient vaginal hysterectomy procedures that occurred in 2015 with a primary or other than primary site of procedure.

per 1000 vaginal hysterectomy procedures reported to NHSN at the beginning of 2015. M indicates midyear implementation of a mandate.

for information about exclusion criteria. SIRs and accompanying 95% confidence intervals for vaginal hysterectomy in 2015.

is significantly greater or less than the nominal value of the 2015 national vaginal hysterectomy SIR of 0.999. This is on

national hysterectomy SSI in 2015. If a facility's predicted number of vaginal hysterectomy SSI was <1.0, a facility-

Table 6. State-specific standardi

NHSI

6g. Surgical site infection:

State		No. of Procedures	No. of Infections		
			Observed	Predicted	
Alaska	No	1	168	.	.
Alabama	No	4	541	.	.
Arkansas	No	8	1021	10	6.378
Arizona	No	8	804	11	4.543
California	Yes	127	15072	93	96.503
Colorado	Yes	15	1797	12	11.510
Connecticut	No	0	.	.	.
D.C.	No	1	117	.	.
Delaware	No	1	423	.	.
Florida	No	11	2129	9	13.170
Georgia	No	9	2507	7	17.023
Guam	No	0	.	.	.
Hawaii	No	1	270	.	.
Iowa	No	1	132	.	.
Idaho	No	1	176	.	.
Illinois	Yes	62	7333	53	54.324
Indiana	No	10	1636	13	13.716
Kansas	No	4	577	.	.
Kentucky	No	1	379	.	.
Louisiana	No	8	1177	5	9.839
Massachusetts	Yes	14	3845	30	28.725
Maryland	Yes	10	2812	12	18.642
Maine	No	1	600	.	.
Michigan	No	9	1320	9	9.848
Minnesota	No	3	781	.	.
Missouri	No	28	4699	27	35.593
Mississippi	No	8	1209	14	8.124
Montana	No	4	460	.	.
North Carolina	No	4	774	.	.
North Dakota	No	0	.	.	.
Nebraska	No	2	497	.	.
New Hampshire	Yes	4	952	.	.
New Jersey	Yes	18	4833	52	31.135
New Mexico	No	0	.	.	.
Nevada	Yes	12	1829	10	10.560
New York	Yes	38	10514	125	86.380
Ohio	No	14	1450	11	10.373
Oklahoma	No	8	659	3	4.452
Oregon	Yes	15	2416	5	14.890
Pennsylvania	Yes	62	9488	72	67.160

Puerto Rico	No	0	.	.	.
Rhode Island	No	0	.	.	.
South Carolina	Yes	17	3760	28	27.371
South Dakota	No	0	.	.	.
Tennessee	Yes	24	6828	40	51.068
Texas	Yes	138	16079	109	103.523
Utah	No	0	.	.	.
Virginia	No	9	2199	20	19.367
Virgin Islands	No	0	.	.	.
Vermont	No	1	286	.	.
Washington	Yes	17	3451	12	23.483
Wisconsin	No	21	2487	14	15.977
West Virginia	No	2	390	.	.
Wyoming	No	0	.	.	.
All US		756	120,877	856	852.864

1. SSIs included are those classified as deep incisional or organ/space infections following NHSN-detected during the same admission as the surgical procedure or upon readmission to the same facility.
2. Yes indicates the presence of a state mandate to report SSIs following coronary artery bypass graft surgery. No indicates that a state mandate did not exist during 2015.
3. The number of reporting facilities included in the SIR calculation. Refer to the Technical Appendix for details. Statistics are only calculated for states in which at least 5 facilities reported SSI data following coronary artery bypass graft surgery.
4. Percent of facilities with at least one predicted coronary artery bypass graft SSI that had an SIR significantly greater than 1.0. At least 10 facilities had at least one predicted coronary artery bypass graft SSI in 2015.
5. Facility-specific key percentiles were only calculated if at least 20 facilities had ≥ 1.0 predicted coronary artery bypass graft SIR. Facility-specific key percentiles were neither calculated nor included in the distribution of facility-specific SIRs.

ized infection ratios (SIRs) and facility-specific SIR summary measures,
 V Acute Care Hospitals reporting during 2015
 s (SSI) following coronary artery bypass graft¹ in adults, ≥ 18years

95% CI for SIR			Facility-specific SIRs			10%	25%
SIR	Lower	Upper					
.
.
1.568	0.796	2.795	2	.	.	.	.
2.422	1.273	4.209	0	.	.	.	.
0.964	0.782	1.175	31	6%	3%	0.000	0.000
1.043	0.565	1.772	5	.	.	.	.
.
.
0.683	0.333	1.254	5	.	.	.	.
0.411	0.180	0.813	9	.	.	.	.
.
.
0.976	0.738	1.266	16	6%	0%	.	.
0.948	0.527	1.580	4	.	.	.	.
.
0.508	0.186	1.126	3	.	.	.	.
1.044	0.718	1.472	10	20%	10%	.	.
0.644	0.349	1.094	7	.	.	.	.
.
0.914	0.446	1.677	5	.	.	.	.
.
0.759	0.510	1.088	12	0%	0%	.	.
1.723	0.981	2.823	3	.	.	.	.
.
.
.
.
1.670	1.260	2.173	14	21%	0%	.	.
.
0.947	0.481	1.688	4	.	.	.	.
1.447	1.210	1.718	31	23%	3%	0.000	0.398
1.060	0.558	1.843	4	.	.	.	.
0.674	0.171	1.834	2	.	.	.	.
0.336	0.123	0.744	6	.	.	.	.
1.072	0.845	1.342	25	0%	0%	0.000	0.453

.
1.023	0.693	1.459	11	9%	0%	.	.	.
0.783	0.567	1.056	20	5%	5%	0.000	0.000	.
1.053	0.869	1.265	30	3%	0%	0.184	0.530	.
1.033	0.649	1.567	6	.	.	.	.	.
0.511	0.277	0.869	10	0%	0%	.	.	.
0.876	0.499	1.435	4	.	.	.	.	.
.
1.004	0.938	1.073	304	8%	2%	0.000	0.000	

defined inpatient coronary artery bypass graft procedures that occurred in 2015 with a primary or other than prior facility.

Heart surgery to NHSN at the beginning of 2015. M indicates midyear implementation of a mandate.

For information about exclusion criteria, SIRs and accompanying coronary artery bypass graft in 2015.

Significantly greater or less than the nominal value of the 2015 national coronary artery bypass graft SIR of 1.00

coronary artery bypass graft SSI in 2015. If a facility's predicted number of coronary artery bypass graft SSI was <

	75%	90%
.	.	.
.	.	.
.	.	.
0.778	1.429	1.979
.	.	.
.	.	.
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.	.	.
.	.	.
0.992	2.168	2.735
.	.	.
.	.	.
.	.	.
0.851	1.629	2.557

.	.	.
.	.	.
.	.	.
0.444	1.413	2.134
0.980	2.135	2.548
.	.	.
.	.	.
.	.	.
.	.	.
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.	.	.
.	.	.
.	.	.
0.773	1.465	2.349

nary skin closure technique,

4. This is only calculated if

1.0, a facility-specific

Table 6. State-specific standardi

NHSI

6h. Surgical site infect

State		No. of Procedures	No. of Infections		
			Observed	Predicted	
Alaska	No	1	118	.	.
Alabama	No	0	.	.	.
Arkansas	No	0	.	.	.
Arizona	No	4	227	.	.
California	Yes	164	13164	57	42.937
Colorado	No	3	225	.	.
Connecticut	No	0	.	.	.
D.C.	No	0	.	.	.
Delaware	No	0	.	.	.
Florida	No	7	600	2	1.531
Georgia	No	1	148	.	.
Guam	No	0	.	.	.
Hawaii	No	0	.	.	.
Iowa	No	0	.	.	.
Idaho	No	1	102	.	.
Illinois	No	6	197	0	0.778
Indiana	No	2	533	.	.
Kansas	No	2	126	.	.
Kentucky	No	1	271	.	.
Louisiana	No	4	466	.	.
Massachusetts	No	1	59	.	.
Maryland	No	1	198	.	.
Maine	No	1	398	.	.
Michigan	No	4	479	.	.
Minnesota	No	3	1824	.	.
Missouri	No	3	330	.	.
Mississippi	No	3	218	.	.
Montana	No	3	386	.	.
North Carolina	No	1	91	.	.
North Dakota	No	0	.	.	.
Nebraska	No	2	280	.	.
New Hampshire	No	1	27	.	.
New Jersey	No	3	653	.	.
New Mexico	No	0	.	.	.
Nevada	No	0	.	.	.
New York	No	6	1755	6	6.941
Ohio	No	8	545	0	2.052
Oklahoma	No	4	207	.	.
Oregon	No	5	871	2	2.632
Pennsylvania	Yes	70	8123	27	28.381

Puerto Rico	No	0	.	.	.
Rhode Island	No	0	.	.	.
South Carolina	No	1	104	.	.
South Dakota	No	0	.	.	.
Tennessee	No	8	1505	4	5.514
Texas	Yes	23	827	1	2.275
Utah	No	0	.	.	.
Virginia	No	1	220	.	.
Virgin Islands	No	0	.	.	.
Vermont	No	0	.	.	.
Washington	Yes	20	2849	6	9.331
Wisconsin	No	16	1658	5	4.413
West Virginia	No	2	243	.	.
Wyoming	No	0	.	.	.
All US		386	40,027	135	135.667

1. SSIs included are those classified as deep incisional or organ/space infections following NHSN-detected during the same admission as the surgical procedure or upon readmission to the same facility.
2. Yes indicates the presence of a state mandate to report SSIs following other cardiac surgery surgery. No indicates that a state mandate did not exist during 2015.
3. The number of reporting facilities included in the SIR calculation. Refer to the Technical Appendix statistics are only calculated for states in which at least 5 facilities reported SSI data following other cardiac surgery.
4. Percent of facilities with at least one predicted other cardiac surgery SSI that had an SIR significant at least 10 facilities had at least one predicted other cardiac surgery SSI in 2015.
5. Facility-specific key percentiles were only calculated if at least 20 facilities had ≥ 1.0 predicted other cardiac surgery SSI. If the SIR was neither calculated nor included in the distribution of facility-specific SIRs.

Standardized infection ratios (SIRs) and facility-specific SIR summary measures,
 All Acute Care Hospitals reporting during 2015
 Surgical Site Infections (SSI) following other cardiac surgery¹ in adults, ≥ 18years

SIR	95% CI for SIR		Facility-specific SIRs			10%	25%
	Lower	Upper					
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1.328	1.015	1.708	11	9%	0%	.	.
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1.306	0.219	4.315	0
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0.864	0.350	1.798	2
0.000	.	1.460	0
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0.760	0.127	2.510	0
0.951	0.640	1.365	8

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0.725	0.230	1.750	2
0.440	0.022	2.168	0
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0.643	0.261	1.337	3
1.133	0.415	2.511	1
.
.
0.995	0.838	1.174	35	3%	0%	0.000	0.000

defined inpatient other cardiac surgery procedures that occurred in 2015 with a primary or other than primary specialty. M indicates midyear implementation of a mandate.

for information about exclusion criteria. SIRs and accompanying

for cardiac surgery in 2015.

is only greater or less than the nominal value of the 2015 national other cardiac surgery SIR of 0.995. This is only

for cardiac surgery SSI in 2015. If a facility's predicted number of other cardiac surgery SSI was <1.0, a facility's

Table 6. State-specific standardi

NHSN

6i. Surgical site infections (SSI)

State		No. of Procedures	No. of Infections		
			Observed	Predicted	
Alaska	No	0	.	.	
Alabama	No	0	.	.	
Arkansas	No	0	.	.	
Arizona	No	0	.	.	
California	No	48	899	16	17.748
Colorado	No	0	.	.	
Connecticut	No	0	.	.	
D.C.	No	0	.	.	
Delaware	No	0	.	.	
Florida	No	3	186	.	.
Georgia	No	1	65	.	.
Guam	No	0	.	.	.
Hawaii	No	0	.	.	.
Iowa	No	1	2	.	.
Idaho	No	1	15	.	.
Illinois	No	3	87	.	.
Indiana	No	0	.	.	.
Kansas	No	0	.	.	.
Kentucky	No	0	.	.	.
Louisiana	No	3	182	.	.
Massachusetts	No	2	52	.	.
Maryland	No	1	14	.	.
Maine	No	1	107	.	.
Michigan	No	4	218	.	.
Minnesota	No	3	128	.	.
Missouri	No	3	140	.	.
Mississippi	No	2	75	.	.
Montana	No	1	17	.	.
North Carolina	No	1	59	.	.
North Dakota	No	0	.	.	.
Nebraska	No	0	.	.	.
New Hampshire	No	2	32	.	.
New Jersey	No	0	.	.	.
New Mexico	No	0	.	.	.
Nevada	No	1	20	.	.
New York	No	3	136	.	.
Ohio	No	7	304	7	6.515
Oklahoma	No	2	47	.	.
Oregon	No	4	316	.	.
Pennsylvania	Yes	20	760	17	16.616

Puerto Rico	No	0	.	.	.
Rhode Island	No	0	.	.	.
South Carolina	No	2	30	.	.
South Dakota	No	0	.	.	.
Tennessee	No	1	8	.	.
Texas	Yes	159	4423	71	80.024
Utah	No	0	.	.	.
Virginia	No	0	.	.	.
Virgin Islands	No	0	.	.	.
Vermont	No	0	.	.	.
Washington	No	7	197	6	3.952
Wisconsin	No	6	77	0	1.377
West Virginia	No	2	27	.	.
Wyoming	No	0	.	.	.
All US		294	8,623	169	167.406

1. SSIs included are those classified as deep incisional or organ/space infections following NHSN-detected during the same admission as the surgical procedure or upon readmission to the same facility.
2. Yes indicates the presence of a state mandate to report SSIs following peripheral vascular bypass surgery. No indicates that a state mandate did not exist during 2015.
3. The number of reporting facilities included in the SIR calculation. Refer to the Technical Appendix for details. Statistics are only calculated for states in which at least 5 facilities reported SSI data following peripheral vascular bypass surgery.
4. Percent of facilities with at least one predicted peripheral vascular bypass surgery SSI that had an SIR of at least 1.0. At least 10 facilities had at least one predicted peripheral vascular bypass surgery SSI in 2015.
5. Facility-specific key percentiles were only calculated if at least 20 facilities had ≥ 1.0 predicted peripheral vascular bypass surgery SIR. If not, the SIR was neither calculated nor included in the distribution of facility-specific SIRs.

zed infection ratios (SIRs) and facility-specific SIR summary measures,
 | Acute Care Hospitals reporting during 2015
 3l) following peripheral vascular bypass surgery¹ in adults, ≥ 18years

95% CI for SIR			Facility-specific SIRs			
SIR	Lower	Upper			10%	25%
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0.901	0.534	1.433	4	.	.	.
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1.074	0.470	2.125	3	.	.	.
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1.023	0.616	1.605	8	.	.	.
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0.887	0.698	1.113	20	5%	0%	0.000	0.000	.
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1.518	0.615	3.158	1
0.000	.	2.176	0
.
.
1.010	0.866	1.171	51	6%	0%	0.000	0.000	.

defined inpatient peripheral vascular bypass surgery procedures that occurred in 2015 with a primary or other facility.

surgery surgery to NHSN at the beginning of 2015. M indicates midyear implementation of a mandate.

for information about exclusion criteria. SIRs and accompanying peripheral vascular bypass surgery in 2015.

SIR significantly greater or less than the nominal value of the 2015 national peripheral vascular bypass surge

peripheral vascular bypass surgery SSI in 2015. If a facility's predicted number of peripheral vascular bypass surge

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0.862	1.273	2.146
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.	.	.
0.812	1.683	2.824

than primary skin closure technique,

ary SIR of 1.010. This is only calculated if

gery SSI was <1.0, a facility-specific

Table 6. State-specific standardi

NHSI

6j. Surgical site infections (S

State		No. of		No. of Infections	
		Procedures		Observed	Predicted
Alaska	No	0	.	.	.
Alabama	No	0	.	.	.
Arkansas	No	0	.	.	.
Arizona	No	0	.	.	.
California	Yes	121	686	5	4.684
Colorado	No	0	.	.	.
Connecticut	No	0	.	.	.
D.C.	No	0	.	.	.
Delaware	No	0	.	.	.
Florida	No	1	3	.	.
Georgia	No	1	7	.	.
Guam	No	0	.	.	.
Hawaii	No	0	.	.	.
Iowa	No	0	.	.	.
Idaho	No	0	.	.	.
Illinois	No	1	1	.	.
Indiana	No	0	.	.	.
Kansas	No	0	.	.	.
Kentucky	No	0	.	.	.
Louisiana	No	2	18	.	.
Massachusetts	No	1	13	.	.
Maryland	No	0	.	.	.
Maine	No	1	33	.	.
Michigan	No	1	12	.	.
Minnesota	No	1	14	.	.
Missouri	No	1	10	.	.
Mississippi	No	2	9	.	.
Montana	No	1	3	.	.
North Carolina	No	0	.	.	.
North Dakota	No	0	.	.	.
Nebraska	No	0	.	.	.
New Hampshire	No	1	4	.	.
New Jersey	No	0	.	.	.
New Mexico	No	0	.	.	.
Nevada	No	0	.	.	.
New York	No	2	24	.	.
Ohio	No	6	13	1	0.089
Oklahoma	No	0	.	.	.
Oregon	No	0	.	.	.
Pennsylvania	Yes	15	108	0	0.737

Puerto Rico	No	0	.	.	.
Rhode Island	No	0	.	.	.
South Carolina	No	0	.	.	.
South Dakota	No	0	.	.	.
Tennessee	No	0	.	.	.
Texas	Yes	105	621	2	4.240
Utah	No	0	.	.	.
Virginia	No	0	.	.	.
Virgin Islands	No	0	.	.	.
Vermont	No	0	.	.	.
Washington	No	3	14	.	.
Wisconsin	No	4	20	.	.
West Virginia	No	1	2	.	.
Wyoming	No	0	.	.	.
All US		271	1,615	11.000	11.027

1. SSIs included are those classified as deep incisional or organ/space infections following NHSN-de detected during the same admission as the surgical procedure or upon readmission to the same fa
2. Yes indicates the presence of a state mandate to report SSIs following abdominal aortic aneurysm repair. No indicates that a state mandate did not exist during 2015.
3. The number of reporting facilities included in the SIR calculation. Refer to the Technical Appendix statistics are only calculated for states in which at least 5 facilities reported SSI data following abdominal aortic aneurysm repair.
4. Percent of facilities with at least one predicted abdominal aortic aneurysm repair SSI that had an at least 10 facilities had at least one predicted abdominal aortic aneurysm repair SSI in 2015.
5. Facility-specific key percentiles were only calculated if at least 20 facilities had ≥ 1.0 predicted abdominal aortic aneurysm repair SSI. SIR was neither calculated nor included in the distribution of facility-specific SIRs.

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0.472	0.079	1.558	0	.	.
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0.998	0.525	1.734	0	.	.

defined inpatient abdominal aortic aneurysm repair procedures that occurred in 2015 with a primary or other than repair surgery to NHSN at the beginning of 2015. M indicates midyear implementation of a mandate.

for information about exclusion criteria. SIRs and accompanying abdominal aortic aneurysm repair in 2015.

SIR significantly greater or less than the nominal value of the 2015 national abdominal aortic aneurysm repair abdominal aortic aneurysm repair SSI in 2015. If a facility's predicted number of abdominal aortic aneurysm repair

Table 6. State-specific standardi

NHSI

6k. Surgical site infectio

State		No. of Procedures		No. of Infections	
		Observed	Predicted		
Alaska	No	2	796	.	.
Alabama	No	2	990	.	.
Arkansas	No	2	615	.	.
Arizona	No	2	286	.	.
California	Yes	237	141,667	168	191.863
Colorado	No	4	811	.	.
Connecticut	No	0	.	.	.
D.C.	No	0	.	.	.
Delaware	No	0	.	.	.
Florida	No	3	2,413	.	.
Georgia	No	2	2,040	.	.
Guam	No	0	.	.	.
Hawaii	No	1	98	.	.
Iowa	No	1	4	.	.
Idaho	No	2	242	.	.
Illinois	No	3	994	.	.
Indiana	No	3	1,784	.	.
Kansas	No	1	178	.	.
Kentucky	No	1	271	.	.
Louisiana	No	5	1,036	4	1.295
Massachusetts	No	1	619	.	.
Maryland	No	3	1,623	.	.
Maine	No	1	896	.	.
Michigan	No	7	2,222	3	2.945
Minnesota	No	4	1,041	.	.
Missouri	No	5	4,507	3	6.850
Mississippi	Yes	3	870	.	.
Montana	No	4	996	.	.
North Carolina	No	2	1,725	.	.
North Dakota	No	0	.	.	.
Nebraska	No	1	1,180	.	.
New Hampshire	No	4	723	.	.
New Jersey	No	4	1,355	.	.
New Mexico	No	0	.	.	.
Nevada	No	4	3,938	.	.
New York	No	4	650	.	.
Ohio	No	13	7,409	19	14.682
Oklahoma	No	5	758	0	0.801
Oregon	No	0	.	.	.
Pennsylvania	Yes	17	9,890	17	24.610

Puerto Rico	No	0	.	.	.
Rhode Island	No	1	2,684	.	.
South Carolina	No	4	852	.	.
South Dakota	No	0	.	.	.
Tennessee	No	4	3,649	.	.
Texas	No	20	7,042	26	14.190
Utah	No	0	.	.	.
Virginia	No	2	656	.	.
Virgin Islands	No	0	.	.	.
Vermont	No	0	.	.	.
Washington	No	9	3,942	1	3.939
Wisconsin	No	13	5,547	7	8.730
West Virginia	No	2	693	.	.
Wyoming	No	0	.	.	.
All US		408	219,692	323	326.017

1. SSIs included are those classified as deep incisional or organ/space infections following NHSN-detected during the same admission as the surgical procedure or upon readmission to the same facility.
2. Yes indicates the presence of a state mandate to report SSIs following cesarean section surgery; No indicates that a state mandate did not exist during 2015.
3. The number of reporting facilities included in the SIR calculation. Refer to the Technical Appendix for more details. Statistics are only calculated for states in which at least 5 facilities reported SSI data following cesarean section surgery.
4. Percent of facilities with at least one predicted cesarean section surgery SSI that had an SIR signal. At least 10 facilities had at least one predicted cesarean section surgery SSI in 2015.
5. Facility-specific key percentiles were only calculated if at least 20 facilities had ≥ 1.0 predicted cesarean section surgery SSI. If not, SIR was neither calculated nor included in the distribution of facility-specific SIRs.

ized infection ratios (SIRs) and facility-specific SIR summary measures,
 Acute Care Hospitals reporting during 2015
 ns (SSI) following cesarean section surgery¹ in adults, ≥ 18years

SIR	95% CI for SIR		Facility-specific SIRs			10%	25%
	Lower	Upper					
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0.876	0.751	1.016	64	3%	0%	0.000	0.000
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3.089	0.981	7.450	0
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1.019	0.259	2.772	1
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0.438	0.111	1.192	2
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.
.
1.294	0.802	1.983	4
.	.	.	0
.
0.691	0.416	1.084	4

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1.832	1.222	2.646	6
.
.
.
0.254	0.013	1.252	2
0.802	0.351	1.586	4
.
.
0.991	0.887	1.103	104	4%	0%	0.000	0.116

defined inpatient cesarean section surgery procedures that occurred in 2015 with a primary or other than primary facility.
 surgery to NHSN at the beginning of 2015. M indicates midyear implementation of a mandate.

for information about exclusion criteria. SIRs and accompanying
 cesarean section surgery in 2015.
 significantly greater or less than the nominal value of the 2015 national cesarean section surgery SIR of 0.991. T
 cesarean section surgery SSI in 2015. If a facility's predicted number of cesarean section surgery SSI was <1.0,

Table 6. State-specific standard

NHSI

6I. Surgical site infect

No. of Infections

State		No. of Procedures		No. of Infections	
		Observed	Predicted	Observed	Predicted
Alaska	No	0	.	.	.
Alabama	No	2	613	.	.
Arkansas	No	2	71	.	.
Arizona	No	6	1675	10	17.688
California	Yes	220	37281	232	269.595
Colorado	No	20	5034	38	34.577
Connecticut	No	2	215	.	.
D.C.	No	0	.	.	.
Delaware	No	1	1842	.	.
Florida	No	10	2508	18	17.670
Georgia	No	10	3852	32	28.951
Guam	No	0	.	.	.
Hawaii	No	1	3	.	.
Iowa	No	2	290	.	.
Idaho	No	1	569	.	.
Illinois	No	7	1887	9	13.133
Indiana	No	6	2596	16	11.481
Kansas	No	3	416	.	.
Kentucky	No	1	1	.	.
Louisiana	No	4	1045	.	.
Massachusetts	No	3	356	.	.
Maryland	No	7	1860	10	13.542
Maine	No	2	997	.	.
Michigan	No	6	2361	10	12.664
Minnesota	No	7	1510	20	20.263
Missouri	No	7	1736	3	11.071
Mississippi	No	12	2245	7	16.079
Montana	No	4	939	.	.
North Carolina	No	2	1005	.	.
North Dakota	No	0	.	.	.
Nebraska	No	0	.	.	.
New Hampshire	No	4	474	.	.
New Jersey	No	5	961	9	6.148
New Mexico	No	0	.	.	.
Nevada	No	14	4428	18	26.301
New York	No	17	3441	19	25.892
Ohio	No	11	3316	42	20.009
Oklahoma	No	3	675	.	.
Oregon	No	9	2631	18	19.640
Pennsylvania	Yes	31	8530	102	70.525

Puerto Rico	No	0	.	.	.
Rhode Island	No	0	.	.	.
South Carolina	No	4	822	.	.
South Dakota	No	0	.	.	.
Tennessee	No	6	3456	31	33.995
Texas	Yes	40	5790	41	39.583
Utah	No	1	4	.	.
Virginia	No	2	1268	.	.
Virgin Islands	No	0	.	.	.
Vermont	No	1	394	.	.
Washington	No	15	4160	30	21.262
Wisconsin	No	15	2288	17	14.196
West Virginia	No	1	2	.	.
Wyoming	No	0	.	.	.
All US		527	115,547	846	841.438

1. SSIs included are those classified as deep incisional or organ/space infections following NHSN-detected during the same admission as the surgical procedure or upon readmission to the same facility.
2. Yes indicates the presence of a state mandate to report SSIs following fusion surgery surgery to NHSN. No indicates that a state mandate did not exist during 2015.
3. The number of reporting facilities included in the SIR calculation. Refer to the Technical Appendix for details. Statistics are only calculated for states in which at least 5 facilities reported SSI data following spine surgery.
4. Percent of facilities with at least one predicted fusion surgery SSI that had an SIR significantly greater than 1.0. At least 10 facilities had at least one predicted fusion surgery SSI in 2015.
5. Facility-specific key percentiles were only calculated if at least 20 facilities had ≥ 1.0 predicted fusion surgery SIR. Facilities with a predicted fusion surgery SIR was neither calculated nor included in the distribution of facility-specific SIRs.

ized infection ratios (SIRs) and facility-specific SIR summary measures,
 N Acute Care Hospitals reporting during 2015

ions (SSI) following spinal fusion surgery¹ in adults, ≥ 18years

95% CI for SIR			Facility-specific SIRs			10%	25%
SIR	Lower	Upper					
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.
0.565	0.287	1.008	3
0.861	0.755	0.977	80	8%	6%	0.000	0.107
1.099	0.789	1.493	11	0%	0%	.	.
.
.
.
1.019	0.623	1.579	6
1.105	0.769	1.542	9	.	.	.	.
.
.
.
0.685	0.334	1.258	3	.	.	.	.
1.394	0.825	2.215	5	.	.	.	.
.
.
.
0.738	0.375	1.316	4	.	.	.	.
.
0.790	0.401	1.408	5	.	.	.	.
0.987	0.620	1.497	3	.	.	.	.
0.271	0.069	0.738	2	.	.	.	.
0.435	0.190	0.861	5	.	.	.	.
.
.
.
.
1.464	0.714	2.686	2	.	.	.	.
.
0.684	0.418	1.061	10	0%	10%	.	.
0.734	0.455	1.125	10	0%	0%	.	.
2.099	1.532	2.811	5
.
0.916	0.560	1.420	5
1.446	1.185	1.748	15	13%	0%	.	.

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.
0.912	0.631	1.279	5
1.036	0.753	1.392	12	17%	0%	.	.
.
.
.
1.411	0.969	1.989	7
1.198	0.721	1.878	4
.
.
1.005	0.939	1.075	232	8%	5%	0.000	0.366

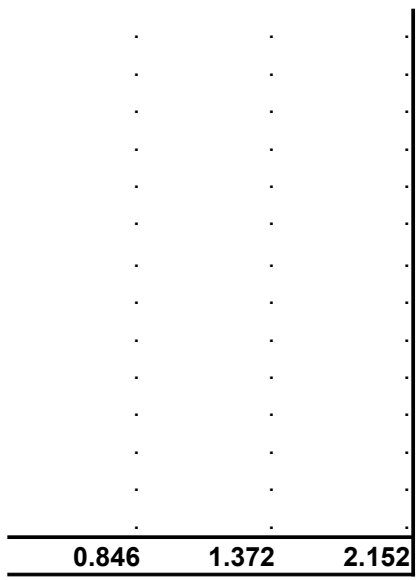
defined inpatient fusion surgery procedures that occurred in 2015 with a primary or other than primary skin closure at the facility.

IHSN at the beginning of 2015. M indicates midyear implementation of a mandate.

for information about exclusion criteria. SIRs and accompanying rates for inpatient fusion surgery in 2015.

greater than or less than the nominal value of the 2015 national fusion surgery SIR of 1.005. This is only calculated if

there was at least one inpatient fusion surgery SSI in 2015. If a facility's predicted number of fusion surgery SSI was <1.0, a facility-specific



ure technique,

Table 6. State-specific standard:

NHSN

6m. Surgical site infect

No. of Infections

State		No. of Procedures		No. of Infections	
		Observed	Predicted	Observed	Predicted
Alaska	No	2	438	.	.
Alabama	No	2	240	.	.
Arkansas	No	0	.	.	.
Arizona	No	5	1443	0	5.436
California	Yes	229	38602	121	125.501
Colorado	No	11	1827	3	5.238
Connecticut	No	2	247	.	.
D.C.	No	0	.	.	.
Delaware	No	0	.	.	.
Florida	No	5	972	5	3.275
Georgia	No	8	2783	7	11.089
Guam	No	0	.	.	.
Hawaii	No	0	.	.	.
Iowa	No	0	.	.	.
Idaho	No	1	440	.	.
Illinois	No	3	1214	.	.
Indiana	No	6	2264	4	7.700
Kansas	No	3	419	.	.
Kentucky	No	0	.	.	.
Louisiana	No	3	501	.	.
Massachusetts	No	2	191	.	.
Maryland	No	6	1014	2	3.517
Maine	No	2	1047	.	.
Michigan	No	6	1906	4	6.363
Minnesota	No	5	2235	10	8.475
Missouri	No	3	366	.	.
Mississippi	No	12	1710	7	6.612
Montana	No	3	931	.	.
North Carolina	No	2	876	.	.
North Dakota	No	0	.	.	.
Nebraska	No	0	.	.	.
New Hampshire	No	4	605	.	.
New Jersey	No	6	788	7	2.342
New Mexico	No	0	.	.	.
Nevada	Yes	17	3991	15	13.208
New York	No	16	3834	16	13.069
Ohio	No	9	3296	13	12.387
Oklahoma	No	0	.	.	.
Oregon	Yes	22	8386	28	28.041
Pennsylvania	Yes	30	7739	29	29.432

Puerto Rico	No	0	.	.	.
Rhode Island	No	0	.	.	.
South Carolina	No	2	514	.	.
South Dakota	No	0	.	.	.
Tennessee	No	4	1202	.	.
Texas	Yes	30	3935	12	13.612
Utah	No	0	.	.	.
Virginia	No	2	1523	.	.
Virgin Islands	No	0	.	.	.
Vermont	No	0	.	.	.
Washington	No	11	3178	12	9.671
Wisconsin	No	13	1601	1	5.302
West Virginia	No	1	1	.	.
Wyoming	No	0	.	.	.
All US		488	102,259	350	349.429

1. SSIs included are those classified as deep incisional or organ/space infections following NHSN-detected during the same admission as the surgical procedure or upon readmission to the same facility.
2. Yes indicates the presence of a state mandate to report SSIs following laminectomy surgery surgery. No indicates that a state mandate did not exist during 2015.
3. The number of reporting facilities included in the SIR calculation. Refer to the Technical Appendix for details. Statistics are only calculated for states in which at least 5 facilities reported SSI data following laminectomy surgery.
4. Percent of facilities with at least one predicted laminectomy surgery SSI that had an SIR significant at the 5% level. At least 10 facilities had at least one predicted laminectomy surgery SSI in 2015.
5. Facility-specific key percentiles were only calculated if at least 20 facilities had ≥ 1.0 predicted laminectomy surgery SIR. If a facility's SIR was neither calculated nor included in the distribution of facility-specific SIRs.

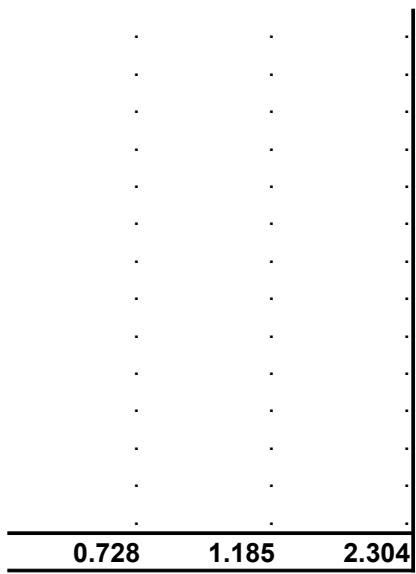
Standardized infection ratios (SIRs) and facility-specific SIR summary measures,
 for Acute Care Hospitals reporting during 2015
 for Surgical Site Infections (SSI) following laminectomy surgery¹ in adults, ≥ 18 years

SIR	95% CI for SIR		Facility-specific SIRs			10%	25%
	Lower	Upper					
.
.
0.000	.	0.551	2	.	.	.	.
0.964	0.803	1.148	32	13%	3%	0.000	0.000
0.573	0.146	1.559	2	.	.	.	.
.
.
1.526	0.559	3.384	2	.	.	.	.
0.631	0.276	1.249	4	.	.	.	.
.
.
.
0.519	0.165	1.253	5	.	.	.	.
.
.
0.569	0.095	1.879	1	.	.	.	.
.
0.629	0.200	1.516	2	.	.	.	.
1.180	0.599	2.103	2	.	.	.	.
.
1.059	0.463	2.094	1	.	.	.	.
.
.
.
2.989	1.307	5.913	0	.	.	.	.
.
1.136	0.660	1.831	5	.	.	.	.
1.224	0.725	1.946	4	.	.	.	.
1.049	0.584	1.750	3	.	.	.	.
.
0.999	0.677	1.424	10	10%	0%	.	.
0.985	0.672	1.397	11	0%	0%	.	.

.
.
.
.
0.882	0.478	1.499	5	.	.	.	.
.
.
.
1.241	0.672	2.110	3	.	.	.	.
0.189	0.009	0.930	1	.	.	.	.
.
.
1.002	0.901	1.111	106	5%	3%	0.000	0.000

defined inpatient laminectomy surgery procedures that occurred in 2015 with a primary or other than primary site of surgery. M indicates midyear implementation of a mandate.

for information about exclusion criteria. SIRs and accompanying predicted number of laminectomy surgery in 2015. This is only if a facility's predicted number of laminectomy surgery SSI was <1.0, a facility-



kin closure technique,

y calculated if

specific

Table 6. State-specific standard:

NHSN

6n. Surgical site infections (

State		No. of Procedures	No. of Infections	
			Observed	Predicted
Alaska	No	0	.	.
Alabama	No	1	329	.
Arkansas	No	0	.	.
Arizona	No	3	65	.
California	Yes	310	45052	211 221.897
Colorado	No	2	213	.
Connecticut	No	0	.	.
D.C.	No	0	.	.
Delaware	No	0	.	.
Florida	No	2	101	.
Georgia	No	1	5	.
Guam	No	0	.	.
Hawaii	No	0	.	.
Iowa	No	1	20	.
Idaho	No	0	.	.
Illinois	No	2	112	.
Indiana	No	1	1	.
Kansas	No	1	20	.
Kentucky	No	0	.	.
Louisiana	No	3	341	.
Massachusetts	No	1	94	.
Maryland	No	0	.	.
Maine	No	0	.	.
Michigan	No	3	255	.
Minnesota	No	1	676	.
Missouri	No	0	.	.
Mississippi	No	0	.	.
Montana	No	1	107	.
North Carolina	No	0	.	.
North Dakota	No	0	.	.
Nebraska	No	0	.	.
New Hampshire	No	1	122	.
New Jersey	No	0	.	.
New Mexico	No	1	17	.
Nevada	No	0	.	.
New York	No	1	1	.
Ohio	No	4	855	.
Oklahoma	No	0	.	.
Oregon	No	0	.	.
Pennsylvania	Yes	22	6878	54 43.069

Puerto Rico	No	0	.	.	.
Rhode Island	No	0	.	.	.
South Carolina	No	2	32	.	.
South Dakota	No	0	.	.	.
Tennessee	No	0	.	.	.
Texas	No	9	191	1	0.729
Utah	No	0	.	.	.
Virginia	No	0	.	.	.
Virgin Islands	No	0	.	.	.
Vermont	No	0	.	.	.
Washington	No	4	928	.	.
Wisconsin	No	3	181	.	.
West Virginia	No	3	355	.	.
Wyoming	No	0	.	.	.
All US		383	56,951	295	291.869

1. SSIs included are those classified as deep incisional or organ/space infections following NHSN-detected during the same admission as the surgical procedure or upon readmission to the same facility.
2. Yes indicates the presence of a state mandate to report SSIs following exploratory laparotomy surgery. No indicates that a state mandate did not exist during 2015.
3. The number of reporting facilities included in the SIR calculation. Refer to the Technical Appendix for details. Statistics are only calculated for states in which at least 5 facilities reported SSI data following exploratory laparotomy surgery.
4. Percent of facilities with at least one predicted exploratory laparotomy surgery SSI that had an SIR of at least 1.0. At least 10 facilities had at least one predicted exploratory laparotomy surgery SSI in 2015.
5. Facility-specific key percentiles were only calculated if at least 20 facilities had ≥ 1.0 predicted exploratory laparotomy surgery SSI. If SIR was neither calculated nor included in the distribution of facility-specific SIRs.

Table 6. State-specific standardi

NHSN

6o. Surgical site infe

State		No. of Procedures		No. of Infections	
				Observed	Predicted
Alaska	No	0	.	.	.
Alabama	No	0	.	.	.
Arkansas	No	0	.	.	.
Arizona	No	0	.	.	.
California	Yes	301	29172	103	108.000
Colorado	No	3	294	.	.
Connecticut	No	0	.	.	.
D.C.	No	0	.	.	.
Delaware	No	0	.	.	.
Florida	No	2	123	.	.
Georgia	No	0	.	.	.
Guam	No	0	.	.	.
Hawaii	No	0	.	.	.
Iowa	No	0	.	.	.
Idaho	No	0	.	.	.
Illinois	No	3	108	.	.
Indiana	No	0	.	.	.
Kansas	No	1	68	.	.
Kentucky	No	0	.	.	.
Louisiana	No	3	162	.	.
Massachusetts	No	1	144	.	.
Maryland	No	0	.	.	.
Maine	No	0	.	.	.
Michigan	No	4	381	.	.
Minnesota	No	1	124	.	.
Missouri	No	0	.	.	.
Mississippi	No	0	.	.	.
Montana	No	2	169	.	.
North Carolina	No	1	20	.	.
North Dakota	No	0	.	.	.
Nebraska	No	1	16	.	.
New Hampshire	No	3	211	.	.
New Jersey	No	0	.	.	.
New Mexico	No	1	43	.	.
Nevada	No	2	187	.	.
New York	No	3	79	.	.
Ohio	No	4	588	.	.
Oklahoma	No	0	.	.	.
Oregon	No	0	.	.	.
Pennsylvania	Yes	23	2155	12	10.205

Puerto Rico	No	0	.	.	.
Rhode Island	No	0	.	.	.
South Carolina	No	2	50	.	.
South Dakota	No	0	.	.	.
Tennessee	No	1	53	.	.
Texas	No	7	162	0	0.428
Utah	No	0	.	.	.
Virginia	No	0	.	.	.
Virgin Islands	No	0	.	.	.
Vermont	No	0	.	.	.
Washington	No	6	803	3	2.991
Wisconsin	No	3	96	.	.
West Virginia	No	3	135	.	.
Wyoming	No	0	.	.	.
All US		381	35,343	131	134.596

1. SSIs included are those classified as deep incisional or organ/space infections following NHSN-detected during the same admission as the surgical procedure or upon readmission to the same facility.
2. Yes indicates the presence of a state mandate to report SSIs following appendix surgery surgery to the SIR calculation. No indicates that a state mandate did not exist during 2015.
3. The number of reporting facilities included in the SIR calculation. Refer to the Technical Appendix for details. Statistics are only calculated for states in which at least 5 facilities reported SSI data following appendix surgery.
4. Percent of facilities with at least one predicted appendix surgery SSI that had an SIR significantly greater than 1.0. At least 10 facilities had at least one predicted appendix surgery SSI in 2015.
5. Facility-specific key percentiles were only calculated if at least 20 facilities had ≥ 1.0 predicted appendix surgery SSI. If a facility's SIR was neither calculated nor included in the distribution of facility-specific SIRs.

Standardized infection ratios (SIRs) and facility-specific SIR summary measures,
 ↓ Acute Care Hospitals reporting during 2015
 Infections (SSI) following appendix surgery¹ in adults, ≥ 18years

95% CI for SIR			Facility-specific SIRs			10%	25%
SIR	Lower	Upper					
0.954	0.782	1.152	26	4%	0%	0.000	0.000
1.176	0.637	1.999	2				

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.	.	.	0
.
.
1.003	0.255	2.730	1
.
.
0.973	0.817	1.151	33	3%	0%	0.000	0.000

defined inpatient appendix surgery procedures that occurred in 2015 with a primary or other than primary skin condition at the facility.
 of NHSN at the beginning of 2015. M indicates midyear implementation of a mandate.

for information about exclusion criteria. SIRs and accompanying appendix surgery in 2015.
 greater or less than the nominal value of the 2015 national appendix surgery SIR of 0.973. This is only calculated for facilities with at least one appendix surgery SSI in 2015. If a facility's predicted number of appendix surgery SSI was <1.0, a facility-specific

**Table 7. State-specific standardized infection ratios (SIRs) and facility-specific SIR summary measures,
NHSN Acute Care Hospitals reporting during 2015
Hospital-onset methicillin-resistant *Staphylococcus aureus* (MRSA) bacteremia, facility-wide¹**

State			No. of Events		95% CI for SIR			Facility-specific SIRs								
	Observed	Predicted	SIR	Lower	Upper	No. of hosp with at least 1 predicted HO MRSA bacteremia	10%	25%	75%	90%						
Alaska	No	Yes	8	10	11.443	0.874	0.444	1.558	2							
Alabama	No	No	86	232	187.419	1.238	1.086	1.405	34	12%	3%	0.152	0.578	1.167	1.581	2.330
Arkansas	Yes	Yes	48	94	83.626	1.124	0.913	1.369	19	5%	5%					
Arizona	No	No	67	169	163.855	1.031	0.884	1.196	33	9%	3%	0.374	0.607	0.948	1.250	1.857
California	Yes	Yes	335	759	774.327	0.980	0.912	1.052	203	6%	2%	0.000	0.459	0.794	1.435	1.992
Colorado	Yes	No	50	54	91.578	0.590	0.447	0.764	25	0%	8%	0.000	0.318	0.606	0.893	1.011
Connecticut	Yes	Yes	32	96	95.764	1.002	0.816	1.219	22	14%	0%	0.000	0.000	0.815	1.240	2.288
D.C.	Yes	No	8	51	54.617	0.934	0.703	1.218	8							
Delaware	Yes	Yes	8	36	28.373	1.269	0.902	1.738	6							
Florida	No	No	194	838	672.090	1.247	1.165	1.333	144	12%	2%	0.297	0.606	1.117	1.747	2.476
Georgia	Yes	No	105	333	263.052	1.266	1.135	1.408	50	18%	0%	0.461	0.665	1.130	1.558	2.631
Guam	No	No	0													
Hawaii	Yes		16	20	34.292	0.583	0.366	0.885	10	0%	0%					
Iowa	No	Yes	37	44	78.190	0.563	0.414	0.749	16	0%	13%					
Idaho	No	No	14	10	20.989	0.476	0.242	0.849	6							
Illinois	Yes	Yes	133	260	318.856	0.815	0.721	0.919	81	5%	5%	0.000	0.000	0.711	1.091	1.652
Indiana	No	No	90	153	168.615	0.907	0.772	1.060	39	10%	5%	0.000	0.402	0.709	1.432	1.673
Kansas	No	Yes	57	62	65.855	0.941	0.728	1.199	13	8%	0%					
Kentucky	M	Yes	69	213	157.341	1.354	1.181	1.545	31	16%	10%	0.015	0.576	1.228	1.799	2.940
Louisiana	No	No	92	218	159.645	1.366	1.193	1.556	34	18%	0%	0.000	0.685	1.084	1.999	2.642
Massachusetts	Yes	Yes	69	168	206.633	0.813	0.697	0.943	40	3%	0%	0.000	0.382	0.675	0.815	1.529
Maryland	Yes	Yes	47	213	172.541	1.234	1.077	1.409	34	9%	6%	0.045	0.648	1.112	1.828	2.151
Maine	Yes		21	14	31.302	0.447	0.255	0.733	6							
Michigan	No	Yes	98	339	315.762	1.074	0.964	1.193	56	11%	2%	0.000	0.535	0.784	1.317	1.906
Minnesota	Yes	No	53	57	117.270	0.486	0.372	0.625	20	0%	15%	0.000	0.000	0.387	0.565	0.771
Missouri	No	No	77	180	201.518	0.893	0.770	1.031	37	5%	0%	0.000	0.457	0.871	1.317	1.830
Mississippi	Yes	Yes	61	108	99.430	1.086	0.895	1.306	22	14%	0%	0.000	0.185	0.631	1.442	1.608
Montana	No	No	13	10	16.233	0.616	0.313	1.098	5							
North Carolina	Yes	Yes	95	311	316.554	0.982	0.878	1.096	46	7%	2%	0.000	0.405	0.844	1.135	1.766
North Dakota	No	No	8	13	22.250	0.584	0.325	0.974	6							
Nebraska	Yes	Yes	24	44	45.707	0.963	0.708	1.281	11	0%	9%					
New Hampshire	No	No	13	19	24.360	0.780	0.484	1.195	9							
New Jersey	Yes		71	301	268.762	1.120	0.999	1.252	62	10%	3%	0.000	0.614	0.894	1.367	1.741
New Mexico	No	Yes	36	20	35.110	0.570	0.358	0.864	8							
Nevada	Yes	No	22	63	73.866	0.853	0.661	1.084	15	7%	7%					
New York	No	No	180	785	740.509	1.060	0.988	1.136	122	11%	6%	0.000	0.518	0.988	1.393	1.987
Ohio	No	Yes	135	370	380.750	0.972	0.876	1.075	72	8%	7%	0.152	0.480	0.816	1.211	1.988
Oklahoma	No	No	85	146	113.627	1.285	1.089	1.506	17	29%	0%					
Oregon	Yes	Yes	37	48	81.050	0.592	0.442	0.779	18	0%	11%					
Pennsylvania	Yes	Yes	167	395	437.178	0.904	0.818	0.996	94	4%	3%	0.000	0.000	0.714	1.229	1.843
Puerto Rico	No	No	3													
Rhode Island	No	No	11	18	30.797	0.584	0.357	0.906	6							
South Carolina	Yes	Yes	64	184	151.185	1.217	1.050	1.403	24	8%	0%	0.167	0.489	0.981	1.613	2.173
South Dakota	No	Yes	22	9	24.432	0.368	0.180	0.676	3							
Tennessee	Yes	Yes	110	320	258.120	1.240	1.109	1.381	44	16%	0%	0.156	0.640	0.956	1.702	2.613
Texas	No	No	354	635	697.190	0.911	0.842	0.984	149	5%	7%	0.000	0.443	0.784	1.352	1.942
Utah	Yes		36	32	47.405	0.675	0.470	0.942	8							

Virgin Islands	Yes	Yes	2	.	.	.	.	.	.	.	.	.	.	.	.
Virginia	Yes	Yes	78	178	212.759	0.837	0.720	0.967	40	0%	0%	0.000	0.452	0.757	1.124	1.252
Vermont	No	No	6	13	11.589	1.122	0.624	1.870	2	.	.	.	.	.	.	.
Washington	No	No	55	90	139.020	0.647	0.524	0.792	33	0%	3%	0.000	0.063	0.525	0.959	1.597
Wisconsin	No	Yes	75	58	113.778	0.510	0.391	0.654	31	0%	13%	0.000	0.000	0.276	0.747	1.009
West Virginia	Yes	Yes	29	84	73.717	1.139	0.915	1.404	17	18%	0%	.	.	.	.	.
Wyoming	No	No	10	1	4.015	0.249	0.012	1.228	2	.	.	.	.	.	.	.
All US			3,616	8,887	8,906.430	0.998	0.977	1.019	1,839	8%	4%	0.000	0.443	0.827	1.364	2.084

1. Note that almost all acute care hospitals are required to report facility-wide MRSA bacteremia data to NHSN for participation in the Centers for Medicare and Medicaid Services' (CMS) Hospital Inpatient Quality Reporting Program.

Hospital-onset is defined as event detected on the 4th day (or later) after admission to an inpatient location within the facility.

2. Yes indicates the presence of a state mandate to report facility-wide MRSA bacteremia data to NHSN at the beginning of 2015. M indicates midyear implementation of a mandate.

No indicates that a state mandate did not exist during 2015.

3. Yes indicates that the state health department reported the completion of all of the following validation activities: state health department had access to 2015 NHSN data, state health department performed an assessment of missing or implausible values on at least six months of 2015 NHSN data prior to July 1, 2016, and state health department contacted identified facilities.

varies by state). Information on validation efforts was requested from all states, regardless of the presence of a legislative mandate for the particular HAI type. Some states without mandatory reporting of a given HAI to the state health department have performed validation on NHSN data that is voluntarily shared with them by facilities in their jurisdiction.

4. The number of reporting facilities included in the SIR calculation. Due to SIR exclusion criteria, this may be different from the numbers shown in Table 1. Refer to the Technical Appendix for information about exclusion criteria.

SIRs and accompanying statistics are only calculated for states in which at least 5 facilities reported MRSA bacteremia data in 2015.

5. Percent of facilities with at least one predicted hospital-onset MRSA bacteremia that had an SIR significantly greater or less than the nominal value of the 2015 national hospital-onset MRSA bacteremia SIR of 0.998.

This is only calculated if at least 10 facilities had at least one predicted hospital-onset MRSA bacteremia in 2015.

6. Facility-specific key percentiles were only calculated if at least 20 facilities had ≥ 1.0 predicted hospital-onset MRSA bacteremia in 2015. If a facility's predicted number of hospital-onset MRSA bacteremia was < 1.0 , a facility-specific SIR was neither calculated nor included in the distribution of facility-specific SIRs.

**Table 8. State-specific standardized infection ratios (SIRs) and facility-specific SIR summary measures,
NHSN Acute Care Hospitals reporting during 2015
Hospital-onset *Clostridium difficile* (CDI), facility-wide¹**

State			No. of Events		95% CI for SIR			Facility-specific SIRs								
	Observed	Predicted	SIR	Lower	Upper	No. of hosp with at least 1 predicted HO CDI	10%	25%	75%	90%						
Alaska	No	Yes	8	97	110.118	0.881	0.718	1.070	7	.	.	.	.	.	.
Alabama	No	No	88	1,276	1,914.740	0.666	0.631	0.704	70	1%	27%	0.000	0.307	0.574	0.847	1.048
Arkansas	Yes	Yes	48	641	898.628	0.713	0.660	0.770	43	2%	30%	0.000	0.299	0.589	0.854	1.199
Arizona	No	No	68	2,130	2,164.374	0.984	0.943	1.027	58	17%	17%	0.489	0.747	1.021	1.355	1.880
California	Yes	Yes	336	10,978	9,456.847	1.161	1.139	1.183	309	28%	11%	0.508	0.834	1.125	1.480	1.837
Colorado	Yes	Yes	49	1,315	1,196.468	1.099	1.041	1.160	45	22%	7%	0.299	0.737	1.101	1.392	1.705
Connecticut	Yes	No	32	1,315	1,108.695	1.186	1.123	1.252	30	30%	7%	0.575	0.972	1.148	1.415	1.643
D.C	No	No	7	409	387.757	1.055	0.956	1.161	7	.	.	.	.	.	.	.
Delaware	Yes	Yes	8	402	355.176	1.132	1.025	1.247	8	.	.	.	.	.	.	.
Florida	No	No	194	7,753	8,245.790	0.940	0.919	0.961	188	12%	17%	0.560	0.723	0.945	1.205	1.534
Georgia	Yes	No	104	2,771	2,862.003	0.968	0.933	1.005	90	4%	11%	0.240	0.525	0.857	1.043	1.269
Guam	No	No	0	.	.	.	.	.	.	.	.	.	.	.	.	.
Hawaii	Yes		15	259	343.750	0.753	0.666	0.850	14	0%	36%	.	.	.	.	.
Iowa	No	Yes	37	820	955.106	0.859	0.801	0.919	35	0%	9%	0.452	0.626	0.828	1.036	1.379
Idaho	No	No	14	240	281.640	0.852	0.749	0.965	10	0%	30%	.	.	.	.	.
Illinois	Yes		133	4,322	4,298.310	1.006	0.976	1.036	125	12%	11%	0.493	0.755	0.986	1.234	1.549
Indiana	No	No	90	2,230	2,210.444	1.009	0.968	1.051	79	9%	15%	0.000	0.499	0.944	1.228	1.500
Kansas	No	Yes	57	734	814.356	0.901	0.838	0.968	38	5%	18%	0.279	0.545	0.790	1.216	1.712
Kentucky	M	Yes	69	1,800	1,707.631	1.054	1.006	1.104	66	12%	11%	0.000	0.561	0.914	1.228	1.627
Louisiana	No	No	94	1,230	1,377.983	0.893	0.844	0.944	67	13%	16%	0.000	0.440	0.735	1.172	1.621
Massachusetts	Yes	Yes	70	2,788	2,619.077	1.064	1.026	1.105	65	15%	8%	0.602	0.855	1.081	1.260	1.571
Maryland	Yes	Yes	47	2,354	2,092.844	1.125	1.080	1.171	46	33%	11%	0.545	0.825	1.147	1.415	2.030
Maine	Yes		21	228	329.955	0.691	0.606	0.785	19	0%	21%	.	.	.	.	.
Michigan	No	Yes	97	3,296	3,600.781	0.915	0.885	0.947	87	5%	16%	0.219	0.712	0.926	1.135	1.400
Minnesota	Yes	No	55	1,350	1,435.945	0.940	0.891	0.991	50	6%	12%	0.000	0.552	0.819	1.107	1.561
Missouri	No	No	77	2,131	2,181.165	0.977	0.936	1.019	71	11%	16%	0.393	0.588	0.839	1.159	1.346
Mississippi	Yes	Yes	60	744	1,079.973	0.689	0.641	0.740	48	2%	35%	0.000	0.296	0.557	0.802	1.083
Montana	No	No	13	201	220.424	0.912	0.792	1.045	10	0%	10%	.	.	.	.	.
North Carolina	Yes	Yes	96	3,101	3,379.709	0.918	0.886	0.950	89	8%	20%	0.000	0.553	0.804	1.089	1.329
North Dakota	No	No	8	255	238.168	1.071	0.945	1.208	6	.	.	.	.	.	.	.
Nebraska	Yes	Yes	25	393	469.559	0.837	0.757	0.923	22	14%	23%	0.062	0.452	0.689	1.118	1.483
New Hampshire	No	No	13	316	295.314	1.070	0.957	1.193	13	15%	0%	.	.	.	.	.
New Jersey	No	No	71	2,981	2,825.646	1.055	1.018	1.093	71	17%	9%	0.662	0.806	1.021	1.175	1.535
New Mexico	Yes	Yes	36	657	494.226	1.329	1.231	1.434	27	19%	7%	0.000	0.572	1.143	1.597	2.136
Nevada	No	No	22	1,083	967.008	1.120	1.055	1.188	20	30%	5%	0.543	0.951	1.141	1.395	1.845
New York	Yes	Yes	182	7,814	7,817.457	1.000	0.978	1.022	170	16%	19%	0.480	0.752	0.952	1.272	1.485
Ohio	No	Yes	136	4,282	4,552.140	0.941	0.913	0.969	126	6%	16%	0.346	0.710	0.960	1.194	1.369
Oklahoma	No	No	86	1,177	1,168.531	1.007	0.951	1.066	56	13%	5%	0.000	0.318	0.899	1.239	2.029
Oregon	Yes	Yes	37	880	874.845	1.006	0.941	1.074	34	15%	18%	0.390	0.613	0.855	1.236	2.170
Pennsylvania	Yes	Yes	166	4,938	4,788.371	1.031	1.003	1.060	150	16%	13%	0.486	0.731	0.951	1.270	1.521
Puerto Rico	No	No	3	.	.	.	.	.	.	.	.	.	.	.	.	.
Rhode Island	No		11	468	394.961	1.185	1.081	1.296	11	36%	9%	.	.	.	.	.
South Carolina	Yes	Yes	64	1,591	1,677.364	0.949	0.903	0.996	57	11%	12%	0.219	0.529	0.845	1.194	1.791
South Dakota	No	Yes	22	282	302.574	0.932	0.828	1.046	10	10%	30%	.	.	.	.	.
Tennessee	Yes	Yes	112	2,471	2,563.035	0.964	0.927	1.003	90	10%	12%	0.354	0.626	0.931	1.186	1.564
Texas	No	No	359	7,297	7,867.587	0.927	0.906	0.949	259	11%	19%	0.270	0.553	0.884	1.202	1.544
Utah	Yes		37	526	498.882	1.054	0.967	1.147	25	12%	4%	0.451	0.694	1.048	1.405	1.631
Virginia	M	Yes	79	2,556	2,422.306	1.055	1.015	1.097	75	13%	13%	0.305	0.577	0.857	1.188	1.439
Virgin Islands	Yes	No	2	.	.	.	.	.	.	.	.	.	.	.	.	.
Vermont	No	No	6	132	116.717	1.131	0.950	1.337	6	.	.	.	.	.	.	.

Washington	Yes	Yes	56	1,912	1,705.235	1.121	1.072	1.172	50	28%	8%	0.519	0.821	1.059	1.405	1.632
Wisconsin	No	Yes	75	1,646	1,597.170	1.031	0.982	1.081	67	10%	13%	0.387	0.565	0.891	1.220	1.445
West Virginia	Yes	Yes	29	808	748.318	1.080	1.007	1.156	28	21%	18%	0.599	0.743	0.965	1.323	2.655
Wyoming	No	No	10	65	57.332	1.134	0.882	1.436	7	.	.	.	.	.	.	.
All US			3,634	101,505	102,203.940	0.993	0.987	0.999	3,159	14%	15%	0.327	0.636	0.928	1.228	1.571

- Note that almost all acute care hospitals are required to report facility-wide CDI data to NHSN for participation in the Centers for Medicare and Medicaid Services' (CMS) Hospital Inpatient Quality Reporting Program. Hospital-onset is defined as event detected on the 4th day (or later) after admission to an inpatient location within the facility.
- Yes indicates the presence of a state mandate to report facility-wide CDI data to NHSN at the beginning of 2015. M indicates midyear implementation of a mandate. No indicates that a state mandate did not exist during 2015.
- Yes indicates that the state health department reported the completion of all of the following validation activities: state health department had access to 2015 NHSN data, state health department performed an assessment of missing or implausible values on at least six months of 2015 NHSN data prior to July 1, 2016, and state health department contacted identified facilities. YesA indicates that the state also conducted an audit of facility medical or laboratory records prior to July 1, 2016 to confirm proper case ascertainment (although intensity of auditing activities varies by state). Information on validation efforts was requested from all states, regardless of the presence of a legislative mandate for the particular HAI type. Some states without mandatory reporting of a given HAI to the state health department have performed validation on NHSN data that is voluntarily shared with them by facilities in their jurisdiction.
- The number of reporting facilities included in the SIR calculation. Due to SIR exclusion criteria, this may be different from the numbers shown in Table 1. Refer to the Technical Appendix for information about exclusion criteria. SIRs and accompanying statistics are only calculated for states in which at least 5 facilities reported CDI data in 2015.
- Percent of facilities with at least one predicted hospital-onset CDI that had an SIR significantly greater or less than the nominal value of the 2015 national hospital-onset CDI SIR of 0.993. This is only calculated if at least 10 facilities had at least one predicted hospital-onset CDI in 2015.
- Facility-specific key percentiles were only calculated if at least 20 facilities had ≥ 1.0 predicted hospital-onset CDI in 2015. If a facility's predicted number of hospital-onset CDI was < 1.0 , a facility-specific SIR was neither calculated nor included in the distribution of facility-specific SIRs.

**Appendix A. Factors used in NHSN risk adjustment of the device-associated HAIs
Negative Binomial Regression Models¹ in Acute Care Hospitals**

HAI Type	Validated Parameters for Risk Model
CLABSI (non-NICU)	Intercept Medical School Affiliation* Location Type Facility Type* Facility Bed size*
CLABSI (NICU)	Intercept Birthweight
CAUTI	Intercept Medical School Affiliation* Location Facility Type* Facility Bed size*
VAE	Intercept Medical School Affiliation* School Type* Location Type Facility Type* Facility Bed size* Medical
IVAC-Plus	Intercept Medical School Affiliation* Location Type Facility Bed size*

1. SIR Guide: <https://www.cdc.gov/nhsn/pdfs/ps-analysis-resources/nhsn-sir-guide.pdf>

* Facility bed size, facility type and medical school affiliation are taken from the Annual Hospital Survey.

Appendix B. Factors used in NHSN risk adjustment of the MRSA Bacteremia and *C. difficile* Negative Binomial Regression Models¹ in Acute Care Hospitals

HAI Type	Validated Parameters for Risk Model
MRSA bacteremia	Intercept Inpatient CO admission prevalence rate* Average length of stay** Medical school affiliation [‡] Facility type, number of ICU beds [‡] , Outpatient CO prevalence rate ED/24-hour observation unit
<i>C. difficile</i>	Intercept Inpatient CO admission prevalence rate* CDI test type ⁺ Medical school affiliation [‡] Number of ICU beds [‡] Facility type size [‡] Bed from an ED or 24-hour observation unit Reporting

1. MRSA bacteremia and CDI risk adjustment methodology in the SIR Guide: <https://www.cdc.gov/nhsr>

* Inpatient community-onset prevalence is calculated as the # of inpatient community-onset MRSA blood culture admissions x 100.

** Average length of stay is taken from the Annual Hospital Survey. It is calculated as: total # of annual patient admissions x 100 / total # of inpatient days.

‡ Medical school affiliation, number of ICU beds, and facility bed size are taken from the Annual Hospital Survey.

+ CDI test type is reported on the FacWideIN MDRO denominator form on the 3rd month of each quarter.

[/pdfs/ps-analysis-resources/nhsn-sir-guide.pdf](#)

events, divided by total

patient days / total # of annual admissions.

Survey.

**Appendix C. List of NHSN procedures included in this report
Admission/Re-admission SSI Logistic Regression Model¹, A**

NHSN Procedure Code	NHSN Procedure
AAA	Abdominal aortic aneurysm
AMP	Limb amputation
APPY	Appendectomy
AVSD	Arteriovenous shunt for dialysis
BILI	Bile duct, liver or pancreatic surgery
BRST	Breast surgery
CABG	Coronary artery bypass graft
CARD	Cardiac surgery
CEA	Carotid endarterectomy
CHOL	Cholecystectomy
COLO	Colon surgery
CRAN	Craniotomy
CSEC	Cesarean delivery
FUSN	Spinal fusion
FX	Open reduction of long bone fracture
GAST	Gastric surgery
HER	Herniorrhaphy
HPRO	Hip arthroplasty
HTP	Heart transplant
HYST	Abdominal hysterectomy
KPRO	Knee arthroplasty
KTP	Kidney transplant
LTP	Liver transplant
NECK	Neck surgery
NEPH	Kidney surgery
OVRV	Ovarian surgery
PACE	Pacemaker surgery
PRST	Prostate surgery
PVBY	Peripheral vascular bypass surgery
REC	Rectal surgery
RFUSN	Refusion of spine

SB	Small-bowel surgery
SPLE	Spleen surgery
THOR	Thoracic surgery
THYR	Thyroid and/or parathyroid surgery
VHYS	Vaginal hysterectomy
VSHN	Ventricular shunt
XLAP	Exploratory Laparotomy

1. SSI risk adjustment methodology: SIR Guide: [https://www.c](https://www.cdc.gov/nhsn/pdfs/sirguide)

* These risk factors originate from the Annual Facility Survey.

‡ None of the variables investigated were statistically significantl

As a result, the overall incidence will be used in the SIR calcu

Exclusion Criteria: SIR Guide: [https://www.cdc.gov/nhsn/pdfs](https://www.cdc.gov/nhsn/pdfs/sirguide)

**rt with predictive risk factors from the NHSN Complex
Adults ≥ 18 years of age**

Validated Parameters for Risk Model
<i>Intercept-only model[†]</i>
anesthesia, wound class, hospital bed size*, age
gender, wound class, hospital bed size*, procedure duration
gender, emergency, trauma, hospital bed size*, scope, age, procedure duration
ASA score, closure, age, procedure duration, BMI
emergency, medical school affiliation*, age, procedure duration, BMI
gender, diabetes, ASA score, trauma, wound class, medical school affiliation*, hospital bed size*, age, procedure duration, BMI, age-gender interaction
wound class
gender, diabetes, ASA score, wound class, hospital bed size*, age, procedure duration, age-gender interaction
gender, diabetes, trauma, anesthesia, ASA score, wound class, hospital bed size*, scope, closure, age, procedure duration, BMI
diabetes, trauma, ASA score, age, procedure duration, wound class
emergency, ASA score, wound class, medical school affiliation*, hospital bed size*, age, procedure duration, duration of labor
gender, diabetes, trauma, ASA score, medical school affiliation*, hospital bed size*, procedure duration, BMI, spinal level, approach
gender, diabetes, ASA score, wound class, closure, age, procedure duration, BMI
wound class, scope, age, procedure duration, BMI
gender, ASA score, wound class, medical school affiliation*, hospital bed size*, scope, age, procedure duration, BMI
diabetes, trauma, anesthesia, ASA score, wound class, medical school affiliation*, hospital bed size*, age, procedure duration, BMI, procedure type
closure
diabetes, ASA score, hospital bed size*, scope, age, procedure duration, BMI
gender, trauma, anesthesia, ASA score, wound class, medical school affiliation*, hospital bed size*, age, procedure duration, BMI, procedure type
procedure duration, diabetes, ASA score, hospital bed size*, BMI
age
procedure duration
wound class
age
BMI, diabetes, procedure duration, number of beds
ASA score, procedure duration, number of beds, oncology
age, procedure duration, number of beds

gender, age, procedure duration, oncology
ASA score
procedure duration, medical school affiliation*
medical school affiliation*
age
ASA score, closure, diabetes, procedure duration, emergency, gender, scope, wound class, trauma

[dc.gov/nhsn/pdfs/ps-analysis-resources/nhsn-sir-guide.pdf](https://www.dhs.gov/nhsn/pdfs/ps-analysis-resources/nhsn-sir-guide.pdf)

ly associated with SSI risk in these procedure categories.
 lation (i.e., intercept-only model).

[s/ps-analysis-resources/nhsn-sir-guide.pdf](https://www.dhs.gov/nhsn/pdfs/ps-analysis-resources/nhsn-sir-guide.pdf)

**Appendix D. List of NHSN procedures included in this re
Complex Admission/Re-admission SSI Logistic Regressi**

NHSN Procedure Code	NHSN Procedure
AAA	Abdominal aortic aneurysm
AMP	Limb amputation
APPY	Appendectomy
AVSD	Arteriovenous shunt for dialysis
BILI	Bile duct, liver or pancreatic surgery
BRST	Breast surgery
CARD	Cardiac surgery
CABG	Coronary artery bypass graft
CEA	Carotid endarterectomy
CHOL [†]	Cholecystectomy
COLO	Colon surgery
CRAN, age ≥ 2	Craniotomy
CRAN, age < 2 [†]	
CSEC	Cesarean delivery
FUSN, age ≥ 2	Spinal fusion
FUSN, age < 2	
FX	Open reduction of long bone fracture
GAST	Gastric surgery
HER [†]	Herniorrhaphy
HPRO [†]	Hip arthroplasty
HTP	Heart transplant
HYST [†]	Abdominal hysterectomy
KPRO [†]	Knee arthroplasty
KTP [†]	Kidney transplant
LAM [†]	Laminectomy
LTP [‡]	Liver transplant
NECK	Neck surgery
NEPH	Kidney surgery
OVRY	Ovarian surgery
PACE	Pacemaker surgery
PRST	Prostate surgery
PVBY	Peripheral vascular bypass surgery
REC [†]	Rectal surgery
RFUSN [†]	Refusion of spine
SB	Small-bowel surgery
SPLE	Spleen surgery
THOR	Thoracic surgery
THYR	Thyroid and/or parathyroid surgery
VHYS	Vaginal hysterectomy
VSHN	Ventricular shunt
XLAP	Exploratory Laparotomy

* These risk factors originate from the Annual Facility Survey

^ Sufficient national data were not available for analysis. As a

As a result, the overall incidence will be used in the SIR cal

Appendix E. List of NHSN procedures and corresponding SCIP procedures included in this report with factors used in the NHSN risk adjustment of the Complex Admission/Readmission Model¹ for adults

SCIP Procedure	NHSN Procedure	Validated Parameters for Risk Model
Vascular	Abdominal aortic aneurysm repair	
	Peripheral vascular bypass surgery	BMI, diabetes, procedure duration, number of beds
Coronary artery bypass graft	Coronary artery bypass graft with both chest and donor site incisions	emergency, medical school affiliation*, age, procedure duration, BMI
	Coronary artery bypass graft with chest incision only	
Other cardiac	Cardiac surgery	gender, diabetes, ASA score, trauma, wound class, medical school affiliation*, hospital bed size*, age, procedure duration, BMI, age-gender interaction
Colon surgery	Colon surgery	gender, diabetes, trauma, anesthesia, ASA score, wound class, hospital bed size*, scope, closure, age, procedure duration, BMI
	Rectal surgery	ASA score, procedure duration, number of beds, oncology
Hip arthroplasty	Hip arthroplasty	diabetes, trauma, anesthesia, ASA score, wound class, medical school affiliation*, hospital bed size*, age, procedure duration, BMI, procedure type
Abdominal hysterectomy	Abdominal hysterectomy	diabetes, ASA score, hospital bed size*, scope, age, procedure duration, BMI
Knee arthroplasty	Knee arthroplasty	gender, trauma, anesthesia, ASA score, wound class, medical school affiliation*, hospital bed size*, age, procedure duration, BMI, procedure type
Vaginal hysterectomy	Vaginal hysterectomy	medical school affiliation*

* These risk factors originate from the Annual Facility Survey.

As a result, the overall incidence will be used in the SIR calculation (i.e., intercept-only model).

Additional Resources

SIR Guide: <https://www.cdc.gov/nhsn/pdfs/ps-analysis-resources/nhsn-sir-guide.pdf>

Technical Appendix (2015 Report): <http://www.cdc.gov/hai/progress-report/index.html>

Explains the methodology used to produce the HAI Report.

HAI Progress Report Home Page: <http://www.cdc.gov/hai/progress-report/index.html>

The complete HAI Report, including the Executive Summary and previous reports, can be found at the above

website.