2017 Nationa

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Introduction: Welcome to the 2017 National and State HAI Progress Report using the 2015 base
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 hospital

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
Surgical site infections (SSI)- All procedures for adults and pediatrics (using Complex Admission Readmission (A/R) model)
Hospital-onset methicillin-resistant *Staphylococcus aureus* (MRSA) bacteremia by facility-wide reporting
Hospital-onset *Clostridioides difficile* (CDI) by facility-wide reporting

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

l and State HAI Progress Report

ute Care Hospitals

eline and risk adjustment calculations. Standardized infection ratios (SIRs) are used to describe different HAI typ
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HSN).

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ACH	
National	State
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Characteristics of Acute Care Hospi

Table 1. Characteristics of acute care hos
Characteristics
Number of facilities reporting to NHSN[1]
Total Number of hospital admissions
Median number of beds
Mean number of beds
Median number of ICU beds
Mean number of ICU beds
Mean number of full time epidemiologists

Table 1a. Number of reporting facil
Type of hospital
Children's hospitals
General hospitals
Military hospitals
Oncology hospitals
Orthopedic hospitals
Psychiatric hospitals
Surgical hospitals
Veteran Administration hospitals
Women's hospitals
Women and Child hospitals

Table 1b. Median and Mean Numb
Type of hospital
Children's hospitals
General hospitals
Military hospitals
Oncology hospitals
Orthopeadic hospitals
Psychiatric hospitals
Surgical hospitals
Veteran Administration hospitals
Women and Child hospitals

Table 2. Total No. (%) of facilities affiliated
Medical School Affiliation
Total number of reporting facilities
Yes

No

Table 2a. Total No. (%) of facilities affiliated
Type of medical school affiliation
Graduate Medical School
Major Teaching School
Undergraduate Medical School

tals Reporting to National Healthcare Safety Network (NHSN),

spitals reporting to NHSN, 2017
2017 Statistics
3,999
38,323,298
133
186.49
12
27.23
1.19

ities by type, NHSN 2017
No. (%)
100(2.50)
3458 (86.47)
47 (1.18)
17 (0.43)
30 (0.75)
105 (2.63)
125 (3.13)
88 (2.20)
13 (0.33)
14 (0.35)

ber of beds by type of hospital, NHSN 2017	
Median No. of beds	Mean No. of beds
150	181.13
145	198.83
47	75.36
74	153.41
30	44.43
74	103.19
22	37.24
96	138.5
196	200.43

with medical school, NHSN 2017
3,998
2001(50.05)

1997 (49.95)

with medical by type, NHSN 2017
No. (%)
681 (34.03)
933 (46.63)
387 (19.34)

2017

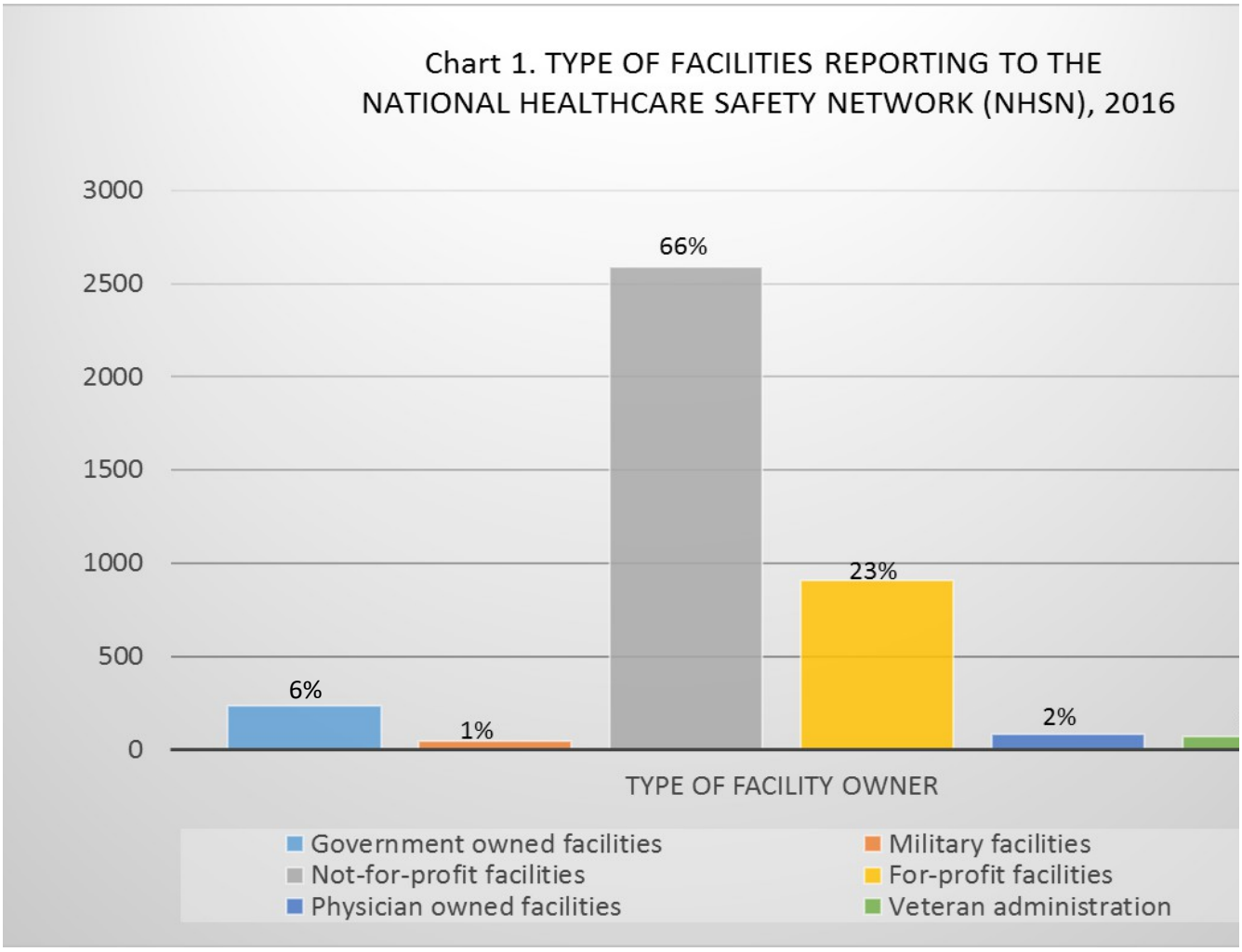
Chart 1. TYPE OF FACILITIES REPORTING TO THE NATIONAL HEALTHCARE SAFETY NETWORK (NHSN), 2016
3000
2500
2000
1500
1000
500
0
66%
23%
6%
1%
2%
TYPE OF FACILITY OWNER
Government owned facilities
Military facilities
Not-for-profit facilities
For-profit facilities
Physician owned facilities
Veteran administration


2%

2017 Annual National and State HAI Progress Report
Acute Care Hospitals: Full series of tables for all national and state-specific data

Tables included in this report:

Additional Resources

SIR Guide
Technical Appendix
HAI Progress Report Home Page

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pitals

: Regression, Adults ≥ 18 years of age

: Regression, Pediatrics < 18 years of age

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

Table 1. Characteristics of NHSN Acute Care Hospitals reporting to NHSN by State[1], 2017:
1a. Central line-associated bloodstream infections (CLABSI)[2]

	2017						
State	State NHSN Mandate[3]	Any Validation[4]	No. of Acute Care Hospitals Reporting[5]	Total	ICU	Wards[2]	NICU[6]
Alaska	No	No	9	47	10	35	2
Alabama	Yes	Yes[a]	81	484	136	332	16
Arkansas			50	282	62	211	9
Arizona	No	No	66	410	89	304	17
California	Yes	Yes	334	2369	524	1712	133
Colorado	Yes	No	52	335	69	245	21
Connecticut	Yes	No	31	252	45	195	12
D.C.	Yes	No	8	99	22	70	7
Delaware			8	91	14	75	2
Florida	No		207	1742	426	1252	64
Georgia	Yes		105	753	176	537	40
Guam	No	No	2	5	2	2	1
Hawaii	Yes	Yes	17	89	24	63	2
Iowa	No	Yes	39	228	49	166	13
Idaho	No	No	13	91	18	63	10
Illinois	Yes	Yes	134	946	204	699	43
Indiana	Yes	No	87	547	117	400	30
Kansas	No	Yes	51	232	55	168	9
Kentucky	Yes	Yes	70	435	119	301	15
Louisiana	No		90	471	112	329	30
Massachusetts	Yes	Yes	68	524	120	392	12
Maryland	Yes	Yes	49	445	78	350	17
Maine	Yes	Yes	17	86	21	62	3
Michigan	No	No	97	628	175	433	20
Minnesota	Yes	Yes	53	302	70	221	11
Missouri			75	598	126	448	24
Mississippi	Yes	Yes	53	344	71	259	14
Montana	No	No	13	64	12	47	5
North Carolina	Yes		98	659	167	468	24
North Dakota	No	No	8	72	13	52	7
Nebraska		Yes	27	148	32	109	7
New Hampshire	Yes	Yes	13	82	16	63	3
New Jersey	Yes	Yes	71	604	139	441	24
New Mexico	Yes	No	31	146	33	108	5
Nevada	Yes	Yes	25	182	44	130	8
New York			173	1553	345	1153	55
Ohio	No	Yes	140	1001	250	722	29
Oklahoma			77	334	79	246	9
Oregon	Yes	Yes	36	239	48	181	10
Pennsylvania	Yes	Yes	166	1322	278	997	47
Puerto Rico			12	82	24	53	5
Rhode Island		No	11	95	16	78	1
South Carolina	Yes	Yes	59	427	103	315	9
South Dakota	No	Yes	16	103	21	78	4
Tennessee	Yes	Yes	104	655	163	466	26
Texas	No	No	335	1818	433	1258	127
Utah	Yes	No	33	136	40	83	13
Virginia	Yes	Yes	83	588	140	422	26
Virgin Islands	No	Yes	2	11	2	7	2
Vermont	Yes	No	6	31	6	24	1
Washington	Yes	Yes	58	394	73	306	15
Wisconsin	No	Yes	72	435	95	322	18
West Virginia	Yes	Yes	29	216	52	159	5
Wyoming	No	No	12	33	10	23	.
All US			**3,576**	**24,265**	**5,568**	**17,635**	**1,062**

Table 1. Characteristics of NHSN Acute Care Hospitals reporting to NHSN by State[1], 2017:
1b. Catheter-associated urinary tract infections (CAUTI)[2]

State	2017					
				Locations (n)[2]		
				Total	ICU	
Alaska	No	No	10	48	10	38
Alabama	Yes		90	485	136	349
Arkansas			50	285	62	223
Arizona	No	No	68	408	89	319
California	No	No	337	2292	526	1766
Colorado	No	No	54	338	69	269
Connecticut	Yes	No	31	242	45	197
D.C.	Yes	No	8	94	22	72
Delaware			8	89	14	75
Florida	No	Yes	206	1722	421	1301
Georgia	Yes		108	729	175	554
Guam	No	No	2	4	2	2
Hawaii	Yes	Yes	17	91	24	67
Iowa	No	Yes	41	223	49	174
Idaho	No	No	16	86	18	68
Illinois	Yes	No	135	938	204	734
Indiana	Yes	No	87	534	117	417
Kansas	No	Yes	54	235	55	180
Kentucky	Yes	Yes	71	426	119	307
Louisiana	No		96	463	113	350
Massachusetts	Yes	Yes	69	518	120	398
Maryland	No	Yes	49	431	78	353
Maine	No	Yes	17	88	21	67
Michigan	No	No	99	628	175	453
Minnesota	Yes	Yes	53	294	70	224
Missouri			76	587	126	461
Mississippi	Yes	Yes	58	347	72	275

Montana	No	No	14	65	12	53
North Carolina	Yes	Yes	98	655	167	488
North Dakota	No	No	9	66	12	54
Nebraska		Yes	27	144	31	113
New Hampshire	Yes	Yes	13	85	16	69
New Jersey	Yes	Yes	71	598	138	460
New Mexico	No		30	143	32	111
Nevada	No	No	25	180	44	136
New York			174	1540	346	1194
Ohio	No	Yes	141	1004	249	755
Oklahoma			83	346	80	266
Oregon	No	Yes	36	240	48	192
Pennsylvania	Yes	No	180	1373	279	1094
Puerto Rico			13	81	26	55
Rhode Island	No	No	11	93	16	77
South Carolina	No	No	60	425	104	321
South Dakota	No	Yes	20	108	23	85
Tennessee	Yes	Yes	105	661	163	498
Texas	No	No	359	1792	432	1360
Utah	Yes	Yes	33	126	40	86
Virginia	Yes	Yes	83	592	140	452
Virgin Islands	No	Yes	2	12	2	10
Vermont	No	No	6	34	6	28
Washington	No	No	60	384	72	312
Wisconsin	No	Yes	73	433	95	338
West Virginia	Yes	Yes	29	218	52	166
Wyoming	No	No	14	40	10	30
All US			**3,679**	**24,063**	**5,567**	**18,496**

1c. Ventilator-associated events (VAE)

State	2017					
				Total	ICU	
Alaska	No	No	8	9	6	3
Alabama	No	No	47	99	83	16
Arkansas			20	30	29	1
Arizona	No	No	33	50	43	7
California	No	No	182	377	300	77
Colorado	No	No	38	66	56	10
Connecticut	No	No	13	31	21	10
D.C.	No	No	3	6	6	0
Delaware			3	9	6	3
Florida	No	Yes	120	258	227	31
Georgia	No	No	73	152	134	18
Guam	No	No	1	1	1	0
Hawaii	No	No	7	14	11	3
Iowa	No	No	14	18	17	1
Idaho	No	No	7	10	10	0
Illinois	No	No	68	133	93	40
Indiana	No	No	72	116	98	18
Kansas	No	No	34	47	40	7
Kentucky	No	No	44	80	77	3
Louisiana	No	No	41	76	56	20
Massachusetts	No	No	22	37	31	6
Maryland	No	No	25	47	35	12
Maine	No	No	15	22	18	4
Michigan	No	No	81	160	145	15
Minnesota	No	No	11	16	10	6
Missouri			43	90	81	9
Mississippi	No	No	26	38	35	3

Montana	No	No	4	4	4	0
North Carolina	No	No	43	80	67	13
North Dakota	No	No	2	3	3	0
Nebraska	No	No	14	27	21	6
New Hampshire	No	No	11	12	11	1
New Jersey	No	No	50	115	85	30
New Mexico	No	No	20	23	19	4
Nevada	No	No	22	72	38	34
New York			134	430	254	176
Ohio	No	No	89	239	149	90
Oklahoma			31	44	41	3
Oregon	No	No	26	34	31	3
Pennsylvania	Yes	Yes	145	360	265	95
Puerto Rico			9	28	14	14
Rhode Island	No	No	9	18	14	4
South Carolina	Yes	No	53	110	95	15
South Dakota	No	No	6	17	13	4
Tennessee	No	No	54	149	99	50
Texas	No	No	151	258	222	36
Utah	No	No	8	8	8	0
Virginia	No	No	66	140	112	28
Virgin Islands	No	Yes	1	1	1	0
Vermont	No	No	0	0	0	0
Washington	No	No	29	40	34	6
Wisconsin	No	Yes	57	81	73	8
West Virginia	No	No	18	34	25	9
Wyoming	No	No	8	10	6	4
All US			**2,111**	**4,329**	**3,373**	**956**

Table 1. Characteristics of NHSN Acute Care Hospitals reporting to NHSN by State[1], 2017: 1d. Surgical site infections[7]

State	2017			
		Any Validation[4]	No. of Acute Care Hospitals Reporting colon and hysterectomy surgeries in adults[5]	No. of Procedures[7] colon and abdominal hysterectomy surgeries in adults
Alaska	No	No	7	1155
Alabama	Yes	Yes	71	13141
Arkansas			43	6694
Arizona	No	No	57	13457
California	Yes	Yes	321	51618
Colorado	Yes	No	48	11089
Connecticut	Yes		29	7361
D.C.	Yes	No	8	1827
Delaware			7	1772
Florida	No	Yes	191	45527
Georgia	Yes	Yes	90	22763
Guam	No	No	1	8
Hawaii	Yes	Yes	14	1750
Iowa	No	No	36	6468
Idaho	No		13	2345
Illinois	Yes	No	129	22820
Indiana	Yes		80	13717
Kansas	No	Yes	43	6032
Kentucky	Yes	No	64	11195
Louisiana	No	Yes	75	10417
Massachusetts	Yes	Yes	60	12082
Maryland	Yes	Yes	45	10990
Maine	No		17	2462
Michigan	No	Yes	91	20948
Minnesota	Yes	Yes	50	9749
Missouri			70	13769
Mississippi	Yes	Yes	43	6651
Montana	No		12	1649
North Carolina	Yes	Yes	90	21307
North Dakota	No	No	7	1453
Nebraska		Yes	22	3972
New Hampshire	Yes	Yes	13	2433
New Jersey	Yes	Yes	70	15176
New Mexico	No	No	25	3100
Nevada	No	No	20	4343
New York			164	36191
Ohio	No	Yes	126	26610
Oklahoma			62	8620
Oregon	Yes	Yes	33	6685
Pennsylvania	Yes	No	154	27472
Puerto Rico			3	145
Rhode Island	No	No	11	2357
South Carolina	Yes	Yes	55	10582
South Dakota	No	Yes	16	2076
Tennessee	Yes	Yes	90	17562
Texas	No	No	294	53904

Utah	Yes	No	33	5362
Virginia	Yes	Yes	75	16536
Virgin Islands	Yes	Yes	2	100
Vermont	Yes	Yes	6	888
Washington	Yes	Yes	52	11795
Wisconsin	No	Yes	68	10933
West Virginia	Yes	Yes	27	3573
Wyoming	No	No	12	623
All US			**3,245**	**623,254**

Table 1. Characteristics of NHSN Acute Care Hospitals reporting to NHSN by State[1], 2017:

1e. Hospital-onset methicillin-resistant *Staphylococcus aureus* bacteremia[8]

	2017		
State			
Alaska	No	No	8
Alabama	No	No	91
Arkansas			49
Arizona	No	No	69
California	Yes	Yes	340
Colorado	No	No	56
Connecticut	Yes	No	31
D.C.	Yes	No	8
Delaware			8
Florida	No		204
Georgia	Yes	Yes	107
Guam	No	No	1
Hawaii	Yes	Yes	17
Iowa	No	Yes	37
Idaho	No	No	15
Illinois	Yes	No	136
Indiana	No	No	91
Kansas	No	Yes	57
Kentucky	Yes	Yes	70
Louisiana	No	Yes	97
Massachusetts	Yes	Yes	69
Maryland	Yes	Yes	48
Maine	Yes		17
Michigan	No	Yes	101
Minnesota	Yes	Yes	53
Missouri			76
Mississippi	Yes	Yes	61
Montana	No	No	14
North Carolina	Yes		100
North Dakota	No	No	10
Nebraska		Yes	27
New Hampshire	No	No	13
New Jersey	Yes	No	71
New Mexico	No		33
Nevada	Yes	No	24
New York			181
Ohio	No	Yes	142
Oklahoma			88
Oregon	Yes	Yes	35
Pennsylvania	Yes	Yes	172
Puerto Rico			2
Rhode Island	No	No	11
South Carolina	Yes	Yes	62
South Dakota	No	Yes	22
Tennessee	Yes	Yes	110
Texas	No	No	374

Utah	Yes	No	34
Virginia	Yes	Yes	80
Virgin Islands	Yes	No	2
Vermont	No	Yes	6
Washington	No	No	57
Wisconsin	No	Yes	73
West Virginia	Yes	No	30
Wyoming	No	No	13
All US			**3,703**

1f. Hospital-onset *Clostridioides difficile*[8]

State	2017		
		Any Validation[4]	
Alaska	No	No	8
Alabama	No	No	91
Arkansas			49
Arizona	No	No	69
California	Yes	Yes	340
Colorado	Yes	No	57
Connecticut	Yes	No	31
D.C	Yes	No	8
Delaware			8
Florida	No		204
Georgia	Yes	Yes	107
Guam	No	No	1
Hawaii	Yes	Yes	17
Iowa	No	Yes	39
Idaho	No		15
Illinois	Yes		136
Indiana	No		91
Kansas	No	Yes	57
Kentucky	Yes	Yes	70
Louisiana	No		98
Massachusetts	Yes		69
Maryland	Yes	No	48
Maine	Yes	Yes	17
Michigan	No	Yes	101
Minnesota	Yes	Yes	54
Missouri			76
Mississippi	Yes	Yes	61
Montana	No		14
North Carolina	Yes		100
North Dakota	No	No	10
Nebraska		Yes	28
New Hampshire	No	No	13
New Jersey	No	No	71
New Mexico	No		33
Nevada	No	No	25
New York			182
Ohio	No	Yes	143
Oklahoma			88
Oregon	Yes	Yes	35
Pennsylvania	Yes	Yes	174
Puerto Rico			5
Rhode Island	No	No	11
South Carolina	Yes	Yes	62

South Dakota	No	Yes	22
Tennessee	Yes	Yes	110
Texas	No	No	377
Utah	Yes	Yes	35
Virginia	Yes	Yes	80
Virgin Islands	Yes	No	2
Vermont	Yes	Yes	6
Washington	Yes	Yes	57
Wisconsin	No	Yes	73
West Virginia	Yes	No	30
Wyoming	No	No	13
All US			**3,721**

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 2017 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. 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, a blank field indicates data not available. On Table 1c, the presence of a state mandate reflects a mandate for colon surgery or abdominal hysterectomy data.

4. 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 2, 2018 for 2017 data, 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 2, 2018 for 2017 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.

5. 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 procedure covered by the mandate, or the mandate covers only facilities above a certain bed size).

6. 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.

7. SSIs included are those classified as deep incisional or organ/space infections following inpatient procedures within colon and abdominal hysterectomy surgeries, detected during the same admission as the surgical procedure or upon readmission to the same facility. This is the crude number of procedures with no considerations to the universal exclusion criteria.

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

HAI and Patient Population	No. of Acute Care Hospitals Reporting[1]	Total Patient Days
CLABSI, all[4]	3,576	129,464,581
ICUs[5]	3,139	18,939,890
Wards[6]	3,536	104,320,315
NICUs[7]	1,010	6,204,376
CAUTI, all[8]	3,679	127,685,751
	3,139	18,960,290
	3,647	108,725,461
VAE, all[8]	2,046	13,842,962
	2,007	10,899,260
	333	2,943,702

1. The number of reporting facilities included in the SIR calculation. Due to SIR exclusion criteria, this may be differ
2. Percent of facilities with at least one predicted infection (event) that had an SIR significantly greater than or less
3. Facility-specific percentiles are only calculated if at least 20 facilities had ≥1.0 predicted HAI in 2017. If a facility's
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 locatior
6. Data from all wards (for this table wards also include step-down and specialty care areas [including hematology/
7. Data from all NICU locations, including Level II/III and Level III nurseries. Both umbilical line and central line-ass
8. Data from all ICUs and wards (and other non-critical care locations). This excludes NICUs. For VAE, pediatric lo
   IVAC-plus includes those events identified as infection-related ventilator-associated condition (IVAC) and possib

NOTE: Risk factors used in the calculation of the number of predicted device-associated infections are listed in App

Table 2a. Na
Central line-

Total Device Days	No. of Infections (Events)			95% CI for SIR		No. Facil
	Observed	Predicted	SIR	Lower	Upper	Predicted Ir
26,343,985	21,173	25,996.180	0.814	0.804	0.825	
8,911,820	8,210	9,478.490	0.866	0.848	0.885	
16,044,986	11,486	14,582.050	0.788	0.773	0.802	
1,387,179	1,477	1,935.640	0.763	0.725	0.803	
25,848,098	24,865	28,241.960	0.880	0.870	0.891	
10,282,929	11,524	13,559.110	0.850	0.834	0.866	
15,565,169	13,341	14,682.840	0.909	0.893	0.924	
3,782,451	24,491	25,730.522	0.952	0.940	0.964	
3,581,043	23,832	24,964.115	0.955	0.943	0.967	
201,408	659	766.407	0.860	0.796	0.927	

ent from the numbers shown in Table 1. These tables contain data from acute care hospitals; as su
than the nominal value of the national SIR for the given HAI type. This is only calculated if at least 1
s predicted number of HAIs was <1.0, a facility-specific SIR was neither calculated nor included in th

ns are excluded from SIR since pediatric and neonatal locations are excluded from VAE surveillance
oncology, bone marrow transplant]). For VAE, pediatric locations are excluded from SIR since pedia
ociated bloodstream infections are considered CLABSIs.
ocations are excluded from SIR since pediatric and neonatal locations are excluded from VAE surveil
le ventilator-associated pneumonia (pVAP). IVAC-plus events are a subset of the total VAE, meanin

pendix A.

tional standardized infection ratios (SIRs) and facility-specific summary SIRs using HAI data repo
associated bloodstream infections (CLABSIs), catheter-associated urinary tract infections (CAUTI

lities with ≥1 nfection (Event)	Facility-specific SIRs: No. Facilities with SIR Significantly > National SIR		No. Facilities with SIR Significantly < National SIR		5%	10%
	N	%[2]	N			
2,337	203	9%	222	10%	0.000	0.000
1,683	109	6%	99	6%	0.000	0.000
1,981	158	8%	110	6%	0.000	0.000
460	30	7%	14	3%	0.000	0.000
2,589	278	11%	262	10%	0.000	0.000
1,926	169	9%	111	6%	0.000	0.000
2,226	188	8%	167	8%	0.000	0.000
1541	312	20%	375	24%	0.000	0.000
1522	306	20%	371	24%	0.000	0.000
161	18	11%	23	14%	0.000	0.000

ch, they exclude data from LTACHs, IRFs, and CAHs.
0 facilities had ≥ 1.0 predicted HAI in 2017.
e distribution of facility-specific SIRs.

.
atric and neonatal locations are excluded from VAE surveillance.

llance. Total VAE includes IVAC-plus events.
g the IVAC-plus events are included in the total VAE SIR as well.

ɔrted to NHSN during 2017 by facility type, HAI, and patient population:
ls) and ventilator-associated events (VAE)

Percentile Distribution of Facility-specific SIRs[3]									
							Median		
15%	20%	25%	30%	35%	40%	45%	50%	55%	60%
0.172	0.278	0.353	0.436	0.510	0.570	0.632	0.700	0.767	0.832
0.000	0.127	0.289	0.380	0.482	0.572	0.641	0.715	0.792	0.874
0.000	0.192	0.322	0.383	0.454	0.522	0.588	0.654	0.733	0.806
0.000	0.000	0.214	0.302	0.418	0.483	0.576	0.636	0.699	0.782
0.205	0.322	0.412	0.497	0.576	0.647	0.712	0.780	0.843	0.929
0.000	0.273	0.381	0.460	0.538	0.601	0.675	0.754	0.821	0.891
0.104	0.277	0.388	0.483	0.560	0.624	0.698	0.777	0.853	0.939
0.000	0.000	0.156	0.271	0.383	0.517	0.636	0.761	0.872	0.989
0.000	0.000	0.156	0.268	0.387	0.517	0.645	0.762	0.877	0.990
0.000	0.000	0.000	0.000	0.000	0.183	0.414	0.475	0.568	0.708

65%	70%	75%	80%	85%	90%	95%
0.906	0.997	1.103	1.235	1.395	1.640	1.985
0.955	1.048	1.186	1.339	1.502	1.741	2.142
0.877	0.969	1.079	1.229	1.433	1.672	2.133
0.842	0.938	1.048	1.173	1.389	1.691	1.988
1.010	1.121	1.242	1.378	1.529	1.776	2.157
0.968	1.087	1.206	1.372	1.565	1.826	2.225
1.038	1.163	1.285	1.419	1.583	1.841	2.308
1.119	1.310	1.463	1.660	1.890	2.219	2.686
1.151	1.321	1.463	1.671	1.886	2.213	2.709
0.932	1.077	1.248	1.445	1.754	2.102	2.775

HAI and Patient Population	Reporting	
	No. of Acute Care Hospitals Reporting[1]	Total Admissions[2]
Laboratory-identified MRSA bacteremia, facility-wide	3,662	36,507,675
Laboratory-identified *C. difficile,* facility-wide	3,669	33,208,794

1. The number of reporting facilities included in the SIR calculation. Due to SIR exclusion criteria, this ma
2. Total inpatient admissions reported from all inpatient locations, excluding counts from CMS-certified re
3. Total patient days reported from all inpatient units, excluding counts from CMS-certified rehabilitation a
4. Community-onset events are defined as those that were identified in an inpatient location on the first, s
5. Hospital-onset events are defined as those that were identified in an inpatient location on the 4th day (
6. Calculated from a negative binomial regression model. Risk factors used in the calculation of the numl
7. Percent of facilities with at least one predicted event that had an SIR significantly greater than or less t
8. Percentile distribution of facility-specific SIRs. This is only calculated if at least 20 facilities had ≥1.0 pr

Table 2b. National standardized infection ratios (SIR
Laboratory-identified methicillin-resistant *Staphylococcu*

Hospitals		Standardized Infection Ratio Data			
					95% CI
Total Patient Days[3]	Inpatient Community-onset events[4]	Hospital-onset events[5]	Predicted Hospital-onset events[6]	SIR	Lower
156,084,260	22,902	8,102	9,398.025	0.862	0.843
143,310,842	109,193	81,942	101,871.014	0.804	0.799

ay be different from the numbers shown in Table 1.
ehabilitation and psychiatric locations. Admissions for *C.difficile* further excludes counts from NICUs and w
and psychiatric locations. Patient days for *C.difficile* further excludes counts from NICUs and well-baby uni
second, or third day of a patient's admission to the facility. For *C.difficile*, this excluded events in which the
(or later) after admission to the facility.
ber of predicted events are listed in Appendix B.
than the nominal value of the national SIR for the given HAI type. This is only calculated if at least 10 facil
edicted HAI in 2017. If a facility's predicted number of events was <1.0, a facility-specific SIR was neither

Rs) and facility-specific SIR distributions using HAI data reported to NHSN during 2017:
***us aureus* (MRSA) bacteremia and *Clostridioides difficile* (*C.difficile*) in Acute Care Hospitals**

for SIR	Facility SIRs Compared to National SIR					
	No. Facilities with ≥1 Predicted Event	No. Facilities with SIR Significantly > National SIR		No. Facilities with SIR Significantly < National SIR		5%
Upper		N	%[7]	N		
0.881	1,881	122	6%	57	3%	0.000
0.810	3,231	417	13%	481	15%	0.000

ell-baby units.
its.
patient was recently discharged from the reporting facility in the previous 4 weeks.

ities had ≥ 1.0 predicted HAI in 2017.
calculated nor included in the distribution of facility-specific SIRs.

Percentile Distribution of Facility-spe

10%	15%	20%	25%	30%	35%	40%	45%	50%	55%
0.000	0.000	0.274	0.380	0.469	0.543	0.608	0.683	0.751	0.835
0.220	0.338	0.424	0.491	0.551	0.604	0.649	0.695	0.739	0.791

ecific SIRs[8]

60%	65%	70%	75%	80%	85%	90%	95%
0.894	0.975	1.054	1.172	1.354	1.543	1.793	2.249
0.839	0.894	0.946	1.015	1.097	1.190	1.331	1.570

Surgical Procedure	No. of Acute Care Hospitals Reporting [2]	No. of Procedures
US, all NHSN procedures	3,359	2,763,061
US, SCIP procedures only[5]	3,337	1,752,562
AAA Abdominal aortic aneurysm repair[5]	231	1,421
AMP Limb amputation	162	9,019
APPY Appendix surgery	415	37,313
AVSD Shunt for dialysis	105	1,710
BILI Bile duct, liver or pancreatic surgery	313	11,293
BRST Breast surgery	248	17,407
CARD Cardiac surgery[5]	401	42,232
CABG- Coronary artery bypass graft[5,6]	757	125,505
CEA Carotid endarterectomy	278	9,396
CHOL Gallbladder surgery	434	64,048
COLO Colon surgery[5]	3,158	319,867
CRAN Craniotomy	181	33,809
CSEC Cesarean section	479	246,949
FUSN Spinal fusion	626	157,585
FX Open reduction of fracture	431	52,492
GAST Gastric surgery	406	34,170
HER Herniorrhaphy	227	18,186
HPRO Hip arthroplasty[5]	2,141	382,960
HTP Heart transplant	30	786
HYST Abdominal hysterectomy[5]	2,970	294,982
KPRO Knee arthroplasty[5]	2,081	541,978
KTP Kidney transplant	55	4,430
LAM Laminectomy	583	116,346
LTP Liver transplant	30	1,704
NECK Neck surgery	83	1,612
NEPH Kidney surgery	278	10,447
OVRY Ovarian surgery	382	28,868
PACE Pacemaker surgery	323	23,243
PRST Prostate surgery	113	4,109
PVBY Peripheral vascular bypass surgery[5]	310	8,872
REC Rectal surgery[5]	331	7,362
SB Small bowel surgery	414	33,465
SPLE Spleen surgery	251	2,563
THOR Thoracic surgery	326	21,762
THYR Thyroid and/or parathyroid surgery	125	4,223
VHYS Vaginal hysterectomy[5]	722	27,383
VSHN Ventricular shunt	122	5,268
XLAP Abdominal surgery	412	58,296

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
5. These procedures were presented in previous versions of the HAI Progress Report and follow sel
   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 in
7. Facility-specific percentiles are only calculated if at least 20 facilities had ≥ 1.0 predicted SSI in 20

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

No. of Infections			95% CI for SIR			Facility-
Observed	Predicted[3]	SIR	Lower	Upper	No. Hosp with ≥1 Predicted Infection	No. Hosp Significantly > N
20,152	21,418.710	0.941	0.928	0.954	2444	202
14,741	15,912.287	0.926	0.912	0.941	2377	184
7	9.702	0.721	0.316	1.427	0	.
68	48.635	1.398	1.094	1.762	21	1
157	145.533	1.079	0.920	1.258	31	0
4	4.488	0.891	0.283	2.150	0	.
362	331.227	1.093	0.985	1.210	61	7
167	170.722	0.978	0.838	1.135	56	4
124	166.119	0.746	0.623	0.887	52	0
828	932.310	0.888	0.829	0.950	326	25
20	8.103	2.468	1.550	3.744	0	.
228	239.761	0.951	0.833	1.081	83	2
7,353	8,114.944	0.906	0.886	0.927	1811	129
399	364.720	1.094	0.991	1.205	85	5
460	409.217	1.124	1.025	1.230	123	9
1,202	1,168.719	1.028	0.972	1.088	309	20
423	376.901	1.122	1.019	1.233	112	7
167	234.875	0.711	0.609	0.825	76	1
144	152.768	0.943	0.798	1.106	42	2
2,394	2,401.710	0.997	0.957	1.037	748	49
6	9.405	0.638	0.259	1.327	1	.
1,733	1,947.358	0.890	0.849	0.933	599	31
1,921	1,889.249	1.017	0.972	1.063	638	34
33	27.214	1.213	0.849	1.683	12	0
349	414.454	0.842	0.757	0.934	140	4
64	81.930	0.781	0.607	0.991	21	2
47	42.101	1.116	0.830	1.472	9	.
33	34.425	0.959	0.671	1.331	3	.
27	18.859	1.432	0.963	2.054	0	.
51	40.880	1.248	0.939	1.627	4	.
20	10.765	1.858	1.167	2.818	1	.
181	178.714	1.013	0.873	1.169	58	4
73	129.116	0.565	0.446	0.707	33	1
511	676.060	0.756	0.692	0.824	179	7
12	14.864	0.807	0.437	1.372	0	.
65	78.861	0.824	0.641	1.044	15	2
3	3.253	0.922	0.235	2.510	0	.
127	143.065	0.888	0.743	1.053	20	0
63	74.056	0.851	0.659	1.081	20	1
326	323.625	1.007	0.902	1.121	98	7

procedures that occurred in 2017 with a primary or other than primary skin closure technique, detected durir
s may be different from the numbers shown in Table 1. Refer to the Technical Appendix for information abou

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

cisions.
)17. If a facility's predicted number of SSIs was < 1.0, a facility-specific SIR was neither calculated nor includ

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

specific SIRs with SIR > National SIR	No. Hosp with SIR Significantly < National SIR		5%	10%	15%	20%	25%
%[4]	N						
8%	186	8%	0.000	0.000	0.180	0.342	0.432
8%	157	7%	0.000	0.000	0.162	0.336	0.424
.	.	.	.	.	.	.	.
5%	1	5%	0.000	0.000	0.000	0.000	0.000
0%	0	0%	0.000	0.000	0.000	0.000	0.000
.	.	.	.	.	.	.	.
11%	3	5%	0.000	0.000	0.000	0.000	0.334
7%	0	0%	0.000	0.000	0.000	0.000	0.150
0%	0	0%	0.000	0.000	0.000	0.000	0.000
8%	3	1%	0.000	0.000	0.000	0.000	0.000
.	.	.	.	.	.	.	.
2%	1	1%	0.000	0.000	0.000	0.000	0.000
7%	65	4%	0.000	0.000	0.000	0.182	0.346
6%	3	4%	0.000	0.000	0.273	0.467	0.607
7%	8	7%	0.000	0.000	0.000	0.000	0.000
6%	9	3%	0.000	0.000	0.000	0.208	0.370
6%	4	4%	0.000	0.000	0.000	0.000	0.434
1%	1	1%	0.000	0.000	0.000	0.000	0.000
5%	2	5%	0.000	0.000	0.000	0.000	0.000
7%	10	1%	0.000	0.000	0.000	0.000	0.287
.	.	.	.	.	.	.	.
5%	8	1%	0.000	0.000	0.000	0.000	0.000
5%	12	2%	0.000	0.000	0.000	0.000	0.000
0%	0	0%					
3%	4	3%	0.000	0.000	0.000	0.000	0.000
10%	0	0%	0.000	0.208	0.229	0.334	0.368
.	.	.	.	.	.	.	.
.	.	.	.	.	.	.	.
.	.	.	.	.	.	.	.
.	.	.	.	.	.	.	.
.	.	.	.	.	.	.	.
7%	1	2%	0.000	0.000	0.000	0.000	0.000
3%	0	0%	0.000	0.000	0.000	0.000	0.000
4%	5	3%	0.000	0.000	0.000	0.000	0.000
.	.	.	.	.	.	.	.
13%	0	0%					
.	.	.	.	.	.	.	.
0%	0	0%	0.000	0.000	0.000	0.000	0.189
5%	0	0%	0.000	0.000	0.000	0.160	0.445
7%	0	0%	0.000	0.000	0.000	0.000	0.000

ıg the same admission as the surgical procedure or upon readmission to the same facility.
ıt exclusion criteria.

ast 10 facilities had ≥ 1.0 predicted SSI in 2017.
ect (SCIP). Specific NHSN procedures

ed in the distribution of facility-specific SIRs.

tals during 2017 by surgical procedure.

Percentile Distribution of Facility-specific SIRs[7]									
				Median					
30%	35%	40%	45%	50%	55%	60%	65%	70%	75%
0.521	0.599	0.670	0.747	0.827	0.898	0.961	1.043	1.166	1.289
0.508	0.587	0.662	0.748	0.826	0.898	0.968	1.042	1.154	1.289
.	.	.	.	.	.	.	.	.	.
0.000	0.415	0.490	0.525	0.605	0.715	0.719	0.970	1.069	1.820
0.576	0.626	0.682	0.691	0.810	0.816	0.817	0.911	0.929	0.980
.	.	.	.	.	.	.	.	.	.
0.432	0.474	0.690	0.862	1.134	1.236	1.431	1.460	1.550	1.729
0.404	0.465	0.574	0.611	0.700	0.805	0.854	0.889	1.162	1.356
0.000	0.000	0.249	0.494	0.735	0.768	0.850	0.945	1.056	1.244
0.000	0.350	0.508	0.601	0.680	0.754	0.861	0.950	1.085	1.299
.	.	.	.	.	.	.	.	.	.
0.386	0.547	0.614	0.674	0.785	0.857	0.964	1.035	1.233	1.512
0.436	0.519	0.618	0.701	0.772	0.851	0.939	1.036	1.164	1.304
0.697	0.821	0.861	0.883	0.987	1.072	1.100	1.300	1.395	1.508
0.342	0.465	0.544	0.700	0.837	1.082	1.160	1.268	1.521	1.678
0.444	0.526	0.629	0.684	0.774	0.857	1.046	1.233	1.389	1.520
0.684	0.731	0.825	0.877	0.901	0.975	1.165	1.327	1.444	1.638
0.000	0.000	0.296	0.470	0.607	0.664	0.719	0.742	0.919	1.055
0.000	0.116	0.380	0.479	0.658	0.721	0.871	0.959	1.284	1.418
0.437	0.553	0.641	0.720	0.799	0.874	0.948	1.097	1.283	1.463
.	.	.	.	.	.	.	.	.	.
0.391	0.483	0.563	0.659	0.714	0.797	0.877	0.959	1.116	1.293
0.371	0.506	0.615	0.758	0.833	0.933	1.002	1.192	1.436	1.586
0.000	0.000	0.000	0.307	0.491	0.594	0.682	0.876	0.954	1.197
0.616	0.637	0.638	0.647	0.729	0.826	0.843	0.867	0.888	1.066
.	.	.	.	.	.	.	.	.	.
.	.	.	.	.	.	.	.	.	.
.	.	.	.	.	.	.	.	.	.
.	.	.	.	.	.	.	.	.	.
.	.	.	.	.	.	.	.	.	.
0.000	0.000	0.536	0.607	0.678	0.744	0.824	0.904	1.018	1.369
0.000	0.000	0.311	0.438	0.479	0.495	0.556	0.610	0.745	0.879
0.318	0.434	0.536	0.574	0.663	0.755	0.843	0.960	1.055	1.143
.	.	.	.	.	.	.	.	.	.
.	.	.	.	.	.	.	.	.	.
0.380	0.462	0.567	0.597	0.641	0.691	0.751	0.827	0.861	0.896
0.602	0.671	0.744	0.794	0.830	0.866	0.917	0.992	1.080	1.159
0.358	0.487	0.593	0.711	0.802	0.898	0.979	1.057	1.265	1.422

80%	85%	90%	95%
1.428	1.585	1.817	2.175
1.436	1.605	1.835	2.193
.	.	.	.
1.823	2.027	2.237	3.458
1.303	1.679	2.544	2.729
.	.	.	.
1.896	2.122	2.244	3.157
1.588	1.810	2.064	3.156
1.395	1.466	1.560	2.413
1.502	1.734	2.117	2.769
.	.	.	.
1.696	1.854	2.008	2.766
1.465	1.643	1.841	2.331
1.664	1.912	2.341	2.439
1.846	1.956	2.524	3.326
1.689	1.850	2.192	2.745
1.923	2.288	2.470	3.009
1.275	1.349	1.729	1.999
1.467	1.672	2.495	2.893
1.658	1.904	2.260	2.765
.	.	.	.
1.507	1.703	1.957	2.552
1.752	1.980	2.365	2.860
1.478	1.670	2.017	2.370
1.084	1.194	1.729	1.760
.	.	.	.
.	.	.	.
.	.	.	.
.	.	.	.
.	.	.	.
1.667	2.158	2.291	3.046
0.914	1.287	1.338	1.772
1.339	1.486	1.570	1.829
.	.	.	.
.	.	.	.
0.956	1.360	1.916	2.186
1.343	1.556	1.931	2.435
1.604	1.843	2.041	2.613

Surgical Procedure	No. of Acute Care Hospitals Reporting[2]	No. of Procedures
US, all NHSN procedures	1,283	56,447
	860	13,721
	0	0
	0	0
AMP Limb amputation	0	0
APPY Appendix surgery	356	12,747
AVSD Shunt for dialysis	0	0
BILI Bile duct, liver or pancreatic surgery	47	349
BRST Breast surgery	0	0
	85	6,794
	0	0
CEA Carotid endarterectomy	0	0
CHOL Gallbladder surgery	203	1,125
COLO Colon surgery[5]	692	6,146
CRAN Craniotomy (**ALL AGE**)	79	2,476
CRAN Craniotomy (**AGE >=2**)	77	1,886
CRAN Craniotomy (**AGE <2**)	36	590
CSEC Cesarean section	345	1,515
FUSN Spinal fusion (**AGE >=2**)	231	5,550
FX Open reduction of fracture	244	3,324
GAST Gastric surgery	0	0
HER Herniorrhaphy	53	941
	137	248
HTP Heart transplant	0	0
	87	107
	104	140
KTP Kidney transplant	14	132
LAM Laminectomy	163	2,188
LTP Liver transplant	10	125
NECK Neck surgery	0	0
NEPH Kidney surgery	0	0
OVRY Ovarian surgery	0	0
PACE Pacemaker surgery	0	0
PRST Prostate surgery	0	0
	0	0
	40	286
RFUSN Refusion of spine	0	0
SB Small bowel surgery	117	1,430
SPLE Spleen surgery	0	0
THOR Thoracic surgery	101	1,280
THYR Thyroid and/or parathyroid surgery	0	0
	0	0
VSHN Ventricular shunt	68	4,461
XLAP Abdominal surgery	175	2,607

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
   statistics are only calculated for surgeries in which at least 5 facilities reported pediatric SSI data i
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
5. These procedures were presented in previous versions of the HAI Progress Report and follow sel
   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 in
7. Facility-specific percentiles are only calculated if at least 20 facilities had ≥ 1.0 predicted SSI in 20

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

No. of Infections			95% CI for SIR			Facility-
Observed		SIR	Lower	Upper	No. Hosp with ≥1 Predicted Infection	No. Hosp Significantly > N
473	547.641	0.864	0.788	0.944	91	4
176	210.409	0.836	0.720	0.967	52	2
.	.	.	.	.	.	.
.	.	.	.	.	.	.
.	.	.	.	.	.	.
42	43.404	0.968	0.706	1.296	10	1
.	.	.	.	.	.	.
1	5.891	0.170	0.008	0.837	0	.
.	.	.	.	.	.	.
61	64.510	0.946	0.730	1.206	22	4
.	.	.	.	.	.	.
.	.	.	.	.	.	.
0	0.828				0	.
112	140.482	0.797	0.660	0.956	31	0
27	29.023	0.930	0.626	1.335	12	0
19	23.593	0.805	0.499	1.234	8	.
8	5.430	1.473	0.684	2.798	0	.
9	4.389	2.051	1.000	3.763	0	.
45	58.556	0.768	0.567	1.019	15	0
13	11.551	1.125	0.626	1.876	1	.
.	.	.	.	.	.	.
0	1.305	0.000		2.295	0	.
2	1.012	1.976	0.331	6.528	0	.
.	.	.	.	.	.	.
0	2.058	0.000		1.456	0	.
0	1.530	0.000		1.958	0	.
3	1.064	2.818	0.717	7.670	0	.
8	14.046	0.570	0.265	1.082	2	.
10	8.621	1.160	0.589	2.068	4	.
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1	0.817				0	.
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9	14.285	0.630	0.307	1.156	2	.
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2	1.566	1.278	0.214	4.221	0	.
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89	101.498	0.877	0.708	1.074	28	0
12	12.182	0.985	0.534	1.675	1	.
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t procedures in pediatric patients less than 18 years that occurred in 2017 with a primary or other than prima
s may be different from the numbers shown in Table 1. Refer to the Technical Appendix for information abou
n 2017.

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

cisions.
)17. If a facility's predicted number of SSIs was < 1.0, a facility-specific SIR was neither calculated nor includ

Rs using pediatric surgical site infection (SSI) data[1] reported to NHSN from NHSN Acute Care Hos

specific SIRs with SIR > National SIR	No. Hosp with SIR Significantly < National SIR N		5%	10%	15%	20%	25%
4%	4	4%	0.000	0.000	0.000	0.263	0.321
4%	1	2%	0.000	0.000	0.000	0.000	0.000
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10%	0	0%	.	.	.	.	.
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18%	2	9%	0.000	0.000	0.000	0.000	0.000
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.	.	.	.	.	.	.	.
0%	0	0%	0.000	0.000	0.000	0.000	0.321
0%	1	8%	.	.	.	.	.
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0%	0	0%	0.000	0.000	0.000	0.227	0.305
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ry skin closure technique, detected during the same admission as the surgical procedure or upon readmis
ut exclusion criteria. SIRs and accompanying

ast 10 facilities had ≥ 1.0 predicted SSI in 2017.
ect (SCIP). Specific NHSN procedures

ed in the distribution of facility-specific SIRs.

spitals during 2017 by surgical procedure.

				Median					
30%	35%	40%	45%	50%	55%	60%	65%	70%	75%
0.388	0.509	0.553	0.603	0.709	0.794	0.856	0.885	0.961	1.138
0.174	0.367	0.387	0.445	0.532	0.660	0.723	0.765	0.790	0.899
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0.000	0.000	0.000	0.415	0.530	0.555	0.795	0.927	0.944	1.029
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0.456	0.475	0.579	0.602	0.790	0.857	0.872	0.939	1.012	1.148
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0.329	0.425	0.622	0.647	0.767	0.868	0.906	1.022	1.100	1.180
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ssion to the same facility.

80%	85%	90%	95%
1.221	1.594	1.806	2.545
1.156	1.673	1.806	2.545
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2.038	2.866	2.885	3.365
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1.151	1.470	1.660	2.545
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1.326	1.377	1.608	1.651
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Table 3. State-specific standardized infection ratios (SIRs) and facility-specific SIR summary measures, NHSN Acute Care Hospitals reporting during 2017

3a. Central line-associated bloodstream infections (CLABSI), all locations[1]

				No. of Infections			95% CI for SIR		Facility-specific SIRs			Facility-specific SIRs at Key Percentiles[6]				
State	State NHSN Mandate[2]	Any Validation[3]	No. of Acute Care Hospitals Reporting[4]	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	No	9	28	30.840	0.908	0.615	1.295	6	.	.	.	.	.	.	.
Alabama	Yes		81	426	485.390	0.878	0.797	0.964	36	8%	6%	0.000	0.434	0.772	1.336	1.496
Arkansas			50	280	271.640	1.031	0.915	1.157	25	16%	8%	0.104	0.604	0.858	1.550	2.185
Arizona	No	No	66	361	520.970	0.693	0.624	0.767	43	12%	14%	0.000	0.285	0.491	0.895	1.447
California	Yes	Yes	334	2,293	2,694.160	0.851	0.817	0.887	271	8%	9%	0.000	0.417	0.751	1.168	1.694
Colorado	Yes	No	52	202	328.330	0.615	0.535	0.705	30	7%	17%	0.175	0.254	0.618	0.916	1.485
Connecticut	Yes	No	31	216	241.660	0.894	0.780	1.019	22	5%	0%	0.423	0.502	0.659	1.028	1.483
D.C.	Yes	No	8	146	170.020	0.859	0.728	1.007	8	.	.	.	.	.	.	.
Delaware			8	100	91.930	1.088	0.890	1.317	8	.	.	.	.	.	.	.
Florida	No		207	1,633	2,008.470	0.813	0.774	0.853	177	10%	12%	0.185	0.443	0.659	1.229	1.774
Georgia	Yes		105	802	827.110	0.970	0.904	1.039	62	15%	8%	0.240	0.475	0.858	1.150	1.485
Guam	No	No	2	.	.	.	.	.	.	.	.	.	.	.	.	.
Hawaii	Yes	Yes	17	46	126.930	0.362	0.268	0.479	14	7%	43%	.	.	.	.	.
Iowa	No	Yes	39	139	209.400	0.664	0.560	0.781	20	0%	5%	0.000	0.284	0.421	0.715	0.886
Idaho	No	No	13	27	67.660	0.399	0.268	0.573	9	.	.	.	.	.	.	.
Illinois	Yes	Yes	134	611	958.220	0.638	0.589	0.690	99	3%	11%	0.000	0.184	0.514	0.888	1.391
Indiana	Yes	No	87	487	529.100	0.920	0.841	1.005	59	7%	3%	0.000	0.506	0.743	1.247	1.833
Kansas	No	Yes	51	164	207.780	0.789	0.675	0.917	21	10%	10%	0.000	0.035	0.409	0.830	1.306
Kentucky	Yes	Yes	70	291	409.960	0.710	0.632	0.795	39	3%	10%	0.000	0.321	0.712	0.956	1.177
Louisiana	No		90	376	439.620	0.855	0.772	0.945	44	14%	16%	0.047	0.395	0.779	1.314	1.836
Massachusetts	Yes	Yes	68	440	586.940	0.750	0.682	0.822	48	2%	10%	0.000	0.289	0.619	0.940	1.162
Maryland	Yes	Yes	49	413	459.090	0.900	0.816	0.990	43	19%	7%	0.214	0.473	0.737	1.451	2.426
Maine	Yes	Yes	17	57	67.830	0.840	0.642	1.081	9	.	.	.	.	.	.	.
Michigan	No	No	97	522	704.450	0.741	0.679	0.807	60	5%	7%	0.000	0.312	0.691	1.018	1.325
Minnesota	Yes	Yes	53	313	363.370	0.861	0.770	0.961	23	4%	13%	0.000	0.219	0.497	0.849	1.268
Missouri			75	577	664.670	0.868	0.799	0.941	47	6%	11%	0.166	0.307	0.777	1.196	1.556
Mississippi	Yes	Yes	53	214	245.160	0.873	0.762	0.996	25	12%	4%	0.270	0.421	0.805	1.140	1.861
Montana	No	No	13	16	36.190	0.442	0.262	0.703	9	.	.	.	.	.	.	.
North Carolina	Yes		98	740	757.450	0.977	0.908	1.049	60	10%	5%	0.000	0.262	0.687	1.024	1.836
North Dakota	No	No	8	52	64.160	0.811	0.612	1.055	7	.	.	.	.	.	.	.
Nebraska	Yes	Yes	27	128	159.360	0.803	0.673	0.952	18	0%	0%	.	.	.	.	.
New Hampshire	Yes	Yes	13	46	64.450	0.714	0.529	0.944	11	0%	0%	.	.	.	.	.
New Jersey	Yes	Yes	71	447	625.800	0.714	0.650	0.783	61	10%	20%	0.000	0.388	0.592	1.007	1.626
New Mexico	Yes	No	31	77	105.050	0.733	0.582	0.911	13	0%	0%	.	.	.	.	.
Nevada	Yes	Yes	25	295	297.180	0.993	0.884	1.111	20	25%	10%	0.000	0.571	0.806	1.287	1.667
New York			173	1,548	1,719.810	0.900	0.856	0.946	133	15%	6%	0.246	0.538	0.775	1.220	1.877
Ohio	No	Yes	140	861	1,159.460	0.743	0.694	0.793	95	3%	14%	0.000	0.294	0.550	0.930	1.338
Oklahoma			77	318	387.730	0.820	0.734	0.914	31	6%	13%	0.000	0.374	0.792	1.243	1.484
Oregon	Yes	Yes	36	163	226.840	0.719	0.614	0.835	23	4%	9%	0.000	0.000	0.403	0.622	1.023
Pennsylvania	Yes	Yes	166	1,040	1,318.720	0.789	0.742	0.838	110	5%	12%	0.000	0.346	0.674	0.995	1.346
Puerto Rico			12	87	67.480	1.289	1.039	1.583	10	30%	0%					
Rhode Island		No	11	83	77.810	1.067	0.855	1.316	9	.	.	.	.	.	.	.
South Carolina	Yes	Yes	59	332	393.380	0.844	0.757	0.938	31	13%	0%	0.000	0.501	0.717	1.159	1.532
South Dakota	No	Yes	16	44	65.070	0.676	0.497	0.900	4	.	.	.	.	.	.	.
Tennessee	Yes	Yes	104	547	761.970	0.718	0.660	0.780	62	5%	3%	0.000	0.395	0.682	1.074	1.696
Texas	No	No	335	1,831	2,100.930	0.872	0.832	0.912	202	13%	7%	0.000	0.359	0.799	1.249	1.803
Utah	Yes	No	33	82	139.360	0.588	0.471	0.727	14	7%	0%	.	.	.	.	.
Virginia	Yes	Yes	83	430	586.640	0.733	0.666	0.805	53	8%	13%	0.000	0.182	0.556	0.895	1.396
Virgin Islands	No	Yes	2	.	.	.	.	.	.	.	.	.	.	.	.	.
Vermont	Yes	No	6	26	26.100	0.996	0.665	1.439	2	.	.	.	.	.	.	.
Washington	Yes	Yes	58	321	523.290	0.613	0.549	0.683	46	2%	13%	0.000	0.268	0.530	0.787	1.051
Wisconsin	No	Yes	72	328	396.860	0.826	0.741	0.920	43	5%	0%	0.000	0.471	0.895	1.170	1.588
West Virginia	Yes	Yes	29	148	209.370	0.707	0.600	0.828	19	11%	21%	.	.	.	.	.
Wyoming	No	No	12	9	10.810	0.832	0.406	1.527	2	.	.	.	.	.	.	.
All US			**3,576**	**21,173**	**25,996.180**	**0.814**	**0.804**	**0.825**	**2,337**	**9%**	**10%**	**0.000**	**0.353**	**0.700**	**1.103**	**1.640**

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 2017. M indicates midyear implementation of a mandate.
   No indicates that a state mandate did not exist during 2017. A blank field indicates data not available.
3. Yes indicates that the state health department reported the completion of all of the following validation activities: state health department had access to 2017 NHSN data, state health department performed an assessment of missing or implausible values on at least six months of 2017 NHSN data prior to July 2, 2018, 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 2, 2018 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 2017.
5. Percent of facilities with at least one predicted CLABSI that had an SIR significantly greater or less than the nominal value of the 2017 national overall CLABSI SIR of 0.814. This is only calculated if at least 10 facilities had ≥ 1.0 predicted CLABSI in 2017.
6. Facility-specific key percentiles were only calculated if at least 20 facilities had ≥1.0 predicted CLABSI in 2017. 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 2017

3b. Central line-associated bloodstream infections (CLABSI), critical care locations[1]

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	6	7.601	0.789	0.320	1.642	2	.	.	.	.	.	.	.
Alabama	Yes	70	158	187.202	0.844	0.720	0.984	29	10%	10%	0.000	0.324	0.744	1.284	2.152
Arkansas		43	124	96.953	1.279	1.068	1.520	19	21%	0%	.	.	.	.	.
Arizona	No	54	130	190.967	0.681	0.571	0.806	35	0%	0%	0.000	0.269	0.552	0.922	1.144
California	Yes	313	877	945.344	0.928	0.868	0.991	193	7%	3%	0.000	0.286	0.721	1.259	1.808
Colorado	Yes	45	76	105.479	0.721	0.572	0.897	25	8%	12%	0.000	0.286	0.527	0.873	2.249
Connecticut	Yes	27	72	84.797	0.849	0.669	1.063	17	6%	12%	.	.	.	.	.
D.C.	Yes	8	61	56.423	1.081	0.834	1.379	8	.	.	.	.	.	.	.
Delaware		8	32	31.721	1.009	0.702	1.407	6	.	.	.	.	.	.	.
Florida	No	198	640	761.923	0.840	0.777	0.907	138	9%	8%	0.000	0.286	0.674	1.327	1.935
Georgia	Yes	92	334	320.350	1.043	0.935	1.159	50	6%	8%	0.000	0.289	0.792	1.258	1.741
Guam	No	2	.	.	.	.	.	.	.	.	.	.	.	.	.
Hawaii	Yes	15	9	37.684	0.239	0.116	0.438	9	.	.	.	.	.	.	.
Iowa	No	35	42	64.834	0.648	0.473	0.867	10	0%	0%					
Idaho	No	11	10	25.247	0.396	0.201	0.706	7	.	.	.	.	.	.	.
Illinois	Yes	127	241	336.941	0.715	0.629	0.810	68	1%	6%	0.000	0.178	0.647	1.017	1.461
Indiana	Yes	72	189	201.800	0.937	0.810	1.077	39	8%	8%	0.000	0.419	0.847	1.355	1.787
Kansas	No	37	67	73.819	0.908	0.709	1.145	11	9%	0%	.	.	.	.	.
Kentucky	Yes	64	149	178.417	0.835	0.709	0.978	29	3%	7%	0.000	0.174	0.710	1.138	1.632
Louisiana	No	69	156	160.281	0.973	0.829	1.135	31	10%	3%	0.018	0.494	0.940	1.601	2.001
Massachusetts	Yes	64	165	209.547	0.787	0.674	0.915	25	4%	8%	0.000	0.494	0.844	1.043	1.451
Maryland	Yes	44	132	150.351	0.878	0.737	1.038	29	7%	0%	0.000	0.072	0.576	1.038	1.272
Maine	Yes	14	26	21.683	1.199	0.800	1.732	4	.	.	.	.	.	.	.
Michigan	No	89	228	310.642	0.734	0.643	0.834	52	4%	8%	0.000	0.163	0.716	1.015	1.397
Minnesota	Yes	41	120	120.594	0.995	0.829	1.186	16	13%	19%	.	.	.	.	.
Missouri		72	198	224.874	0.880	0.764	1.010	36	0%	6%	0.000	0.558	0.862	1.154	1.590
Mississippi	Yes	43	90	84.637	1.063	0.860	1.301	16	13%	6%	.	.	.	.	.
Montana	No	10	5	11.723	0.426	0.156	0.945	5	.	.	.	.	.	.	.
North Carolina	Yes	86	310	288.553	1.074	0.960	1.199	35	11%	9%	0.000	0.289	0.744	1.399	1.764
North Dakota	No	6	22	21.126	1.041	0.669	1.551	6	.	.	.	.	.	.	.
Nebraska	Yes	20	43	50.202	0.857	0.628	1.143	12	8%	0%	.	.	.	.	.
New Hampshire	Yes	13	16	21.806	0.734	0.434	1.166	6	.	.	.	.	.	.	.
New Jersey	No	71	149	222.419	0.670	0.569	0.784	53	6%	6%	0.000	0.000	0.567	0.903	1.550
New Mexico	Yes	26	40	42.143	0.949	0.687	1.280	10	20%	0%	.	.	.	.	.
Nevada	Yes	21	121	121.491	0.996	0.830	1.186	17	12%	6%	.	.	.	.	.
New York		160	479	565.095	0.848	0.774	0.926	95	5%	5%	0.000	0.369	0.683	1.190	1.628
Ohio	No	126	358	458.925	0.780	0.702	0.864	74	5%	11%	0.000	0.037	0.446	0.934	1.421
Oklahoma		51	131	146.228	0.896	0.752	1.059	20	15%	20%	0.000	0.364	0.827	1.538	2.033
Oregon	Yes	33	60	70.873	0.847	0.652	1.082	16	6%	0%	.	.	.	.	.
Pennsylvania	Yes	149	424	498.525	0.851	0.772	0.934	81	4%	6%	0.000	0.000	0.697	1.078	1.578
Puerto Rico		10	27	19.030	1.419	0.954	2.036	5	.	.	.	.	.	.	.
Rhode Island	No	10	22	25.861	0.851	0.547	1.267	5	.	.	.	.	.	.	.
South Carolina	Yes	54	124	136.173	0.911	0.761	1.082	19	11%	0%	.	.	.	.	.
South Dakota	No	11	6	13.789	0.435	0.176	0.905	3	.	.	.	.	.	.	.
Tennessee	Yes	88	241	276.900	0.870	0.766	0.986	42	5%	5%	0.033	0.411	0.771	1.009	1.601
Texas	No	265	769	833.082	0.923	0.860	0.990	152	9%	3%	0.000	0.358	0.804	1.337	2.012

Utah	Yes	27	31	59.806	0.518	0.358	0.727	11	9%	18%	.	.	.	.	.
Virginia	Yes	78	179	201.520	0.888	0.765	1.026	37	5%	8%	0.000	0.040	0.792	1.291	1.503
Virgin Islands	No	2	.	.	.	.	.	.	.	.	.	.	.	.	.
Vermont	Yes	4	.	.	.	.	.	.	.	.	.	.	.	.	.
Washington	Yes	49	126	164.453	0.766	0.641	0.909	33	3%	6%	0.000	0.000	0.576	1.010	1.502
Wisconsin	No	66	121	145.216	0.833	0.694	0.992	26	4%	4%	0.000	0.311	0.694	1.009	1.676
West Virginia	Yes	29	60	81.095	0.740	0.570	0.946	13	0%	8%	.	.	.	.	.
Wyoming	No	10	1	2.990	0.334	0.017	1.649	2	.	.	.	.	.	.	.
All US		**3,139**	**8,210**	**9,478.490**	**0.866**	**0.848**	**0.885**	**1,683**	**6%**	**6%**	**0.000**	**0.289**	**0.715**	**1.186**	**1.741**

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 2017. M indicates midyear implementation of a mandate. No indicates that a state mandate did not exist during 2017. A blank field indicates data not available. 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 2017.
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 2017 national ICU CLABSI SIR of 0.866 This is only calculated if at least 10 facilities had at least one predicted ICU CLABSI in 2017.
5. Facility-specific key percentiles were only calculated if at least 20 facilities had ≥1.0 predicted ICU CLABSI in 2017. 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 2017

3c. Central line-associated bloodstream infections (CLABSI), ward (non-critical care) locations[1]

			No. of Infections			95% CI for SIR		Facility-specific SIRs							
State			Observed	Predicted	SIR	Lower	Upper				10%	25%		75%	90%
Alaska	No	9	19	19.520	0.973	0.603	1.492	5	.	.	.	.	.	.	.
Alabama	No	79	219	254.050	0.862	0.753	0.982	31	10%	3%	0.261	0.560	0.859	1.133	1.634
Arkansas		49	132	144.400	0.914	0.768	1.080	21	14%	10%	0.000	0.094	0.859	1.596	2.253
Arizona	No	66	205	298.450	0.687	0.598	0.786	36	8%	11%	0.000	0.295	0.391	0.859	1.443
California	Yes	334	1,266	1,551.910	0.816	0.772	0.862	227	9%	4%	0.000	0.340	0.687	1.155	1.632
Colorado	Yes	51	121	200.340	0.604	0.503	0.719	27	4%	15%	0.000	0.317	0.599	1.001	1.618
Connecticut	Yes	31	137	143.950	0.952	0.802	1.121	21	0%	0%	0.351	0.603	0.870	1.169	1.537
D.C.	Yes	8	77	94.130	0.818	0.650	1.017	7	.	.	.	.	.	.	.
Delaware		8	54	52.450	1.030	0.781	1.333	6	.	.	.	.	.	.	.
Florida	No	202	906	1,112.930	0.814	0.762	0.868	156	8%	3%	0.000	0.374	0.709	1.122	1.805
Georgia	Yes	104	414	426.310	0.971	0.881	1.068	59	14%	3%	0.000	0.408	0.776	1.332	1.762
Guam	No	1	.	.	.	.	.	.	.	.	.	.	.	.	.
Hawaii	Yes	17	32	76.820	0.417	0.290	0.581	11	9%	18%	.	.	.	.	.
Iowa	No	39	88	124.570	0.706	0.570	0.866	18	0%	0%	.	.	.	.	.
Idaho	No	13	15	35.910	0.418	0.243	0.674	9	.	.	.	.	.	.	.
Illinois	Yes	133	329	545.260	0.603	0.541	0.671	80	3%	8%	0.000	0.111	0.482	0.911	1.102
Indiana	No	85	264	296.130	0.891	0.789	1.004	46	4%	2%	0.000	0.384	0.661	1.079	1.909
Kansas	No	51	91	121.390	0.750	0.607	0.916	16	0%	13%	.	.	.	.	.
Kentucky	Yes	69	127	208.490	0.609	0.510	0.722	32	3%	13%	0.000	0.000	0.471	0.904	1.101
Louisiana	No	90	170	231.580	0.734	0.630	0.851	37	8%	11%	0.000	0.025	0.431	1.122	1.619
Massachusetts	No	68	255	355.740	0.717	0.633	0.809	36	0%	8%	0.000	0.111	0.592	0.844	1.009
Maryland	Yes	49	258	273.480	0.943	0.833	1.064	41	20%	5%	0.000	0.305	0.847	1.366	2.911
Maine	Yes	16	29	43.560	0.666	0.454	0.944	8	.	.	.	.	.	.	.
Michigan	No	97	250	337.190	0.741	0.654	0.838	53	4%	4%	0.000	0.407	0.685	1.120	1.564
Minnesota	Yes	52	185	225.780	0.819	0.708	0.944	19	16%	5%	.	.	.	.	.
Missouri		74	342	390.660	0.875	0.786	0.972	40	10%	8%	0.000	0.383	0.686	0.984	1.490
Mississippi	Yes	53	97	141.320	0.686	0.560	0.834	21	0%	5%	0.000	0.331	0.637	0.870	1.223
Montana	No	13	9	21.560	0.417	0.204	0.766	6	.	.	.	.	.	.	.
North Carolina	Yes	98	373	403.600	0.924	0.834	1.022	49	12%	4%	0.000	0.296	0.627	1.240	1.685
North Dakota	No	8	27	36.360	0.743	0.499	1.065	7	.	.	.	.	.	.	.
Nebraska	Yes	26	81	104.010	0.779	0.623	0.963	16	0%	0%	.	.	.	.	.
New Hampshire	No	13	27	39.280	0.687	0.462	0.986	9	.	.	.	.	.	.	.
New Jersey	Yes	70	280	364.280	0.769	0.682	0.863	61	11%	8%	0.000	0.242	0.620	1.049	2.084
New Mexico	Yes	31	31	54.730	0.566	0.392	0.794	9	.	.	.	.	.	.	.
Nevada	Yes	25	161	147.460	1.092	0.933	1.271	19	21%	5%	.	.	.	.	.
New York		172	973	1,035.930	0.939	0.882	1.000	120	18%	5%	0.000	0.431	0.838	1.411	1.893
Ohio	No	138	460	622.760	0.739	0.673	0.809	83	4%	6%	0.000	0.252	0.562	1.012	1.434
Oklahoma		76	163	210.440	0.775	0.662	0.901	22	9%	9%	0.000	0.305	0.494	0.836	1.447
Oregon	Yes	36	99	144.590	0.685	0.559	0.830	20	5%	10%	0.000	0.000	0.360	0.545	0.994
Pennsylvania	Yes	166	525	747.420	0.702	0.644	0.764	95	3%	5%	0.000	0.233	0.614	0.873	1.292
Puerto Rico		12	57	47.430	1.202	0.919	1.546	8	.	.	.	.	.	.	.
Rhode Island	No	11	54	46.980	1.149	0.872	1.488	6	.	.	.	.	.	.	.
South Carolina	Yes	59	174	224.530	0.775	0.666	0.897	25	4%	0%	0.000	0.374	0.753	1.019	1.366
South Dakota	No	16	36	44.590	0.807	0.574	1.106	3	.	.	.	.	.	.	.
Tennessee	Yes	103	265	430.260	0.616	0.545	0.694	49	4%	6%	0.000	0.259	0.551	0.946	1.640
Texas	No	322	887	1,049.620	0.845	0.791	0.902	156	11%	4%	0.000	0.355	0.777	1.246	1.845
Utah	Yes	33	34	57.270	0.594	0.418	0.820	8	.	.	.	.	.	.	.
Virginia	Yes	82	224	338.660	0.661	0.579	0.752	47	4%	4%	0.000	0.000	0.400	0.828	1.255
Virgin Islands	No	2	.	.	.	.	.	.	.	.	.	.	.	.	.

Vermont	Yes	6	16	17.200	0.930	0.551	1.478	2	.	.	.	.	.	.	.
Washington	Yes	58	175	331.680	0.528	0.454	0.610	42	0%	12%	0.000	0.283	0.453	0.719	1.367
Wisconsin	No	72	184	227.010	0.811	0.700	0.934	37	3%	0%	0.000	0.470	0.673	1.082	1.560
West Virginia	Yes	28	75	118.320	0.634	0.502	0.790	16	6%	19%	.	.	.	.	.
Wyoming	No	12	8	7.820	1.023	0.475	1.942	2	.	.	.	.	.	.	.
All US		**3,536**	**11,486**	**14,582.050**	**0.788**	**0.773**	**0.802**	**1,980**	**8%**	**6%**	**0.000**	**0.322**	**0.654**	**1.079**	**1.672**

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 2017. M indicates midyear implementation of a mandate. No indicates that a state mandate did not exist during 2017. A blank field indicates data not available.
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 2017.
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 2017 national ward CLABSI SIR of 0.788. This is only calculated if at least 10 facilities had at least one predicted ward CLABSI in 2017.
5. Facility-specific key percentiles were only calculated if at least 20 facilities had ≥1.0 predicted ward CLABSI in 2017. 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 2017

3d. Central line-associated bloodstream infections (CLABSI), neonatal critical care locations[1]

State			No. of Infections			95% CI for SIR		Facility-specific SIRs							
			Observed	Predicted	SIR	Lower	Upper				10%	25%		75%	90%
Alaska	No	2	.	.	.	.	.	.	.	.	.	.	.	.	.
Alabama	Yes	15	49	44.136	1.088	0.811	1.430	9	.	.	.	.	.	.	.
Arkansas		9	24	30.281	0.793	0.520	1.161	5	.	.	.	.	.	.	.
Arizona	No	17	26	31.550	0.824	0.550	1.190	8	.	.	.	.	.	.	.
California	No	126	150	196.908	0.757	0.642	0.886	51	4%	0%	0.000	0.000	0.540	0.978	1.356
Colorado	Yes	20	5	22.515	0.222	0.081	0.492	6	.	.	.	.	.	.	.
Connecticut	Yes	11	7	12.919	0.542	0.237	1.072	2	.	.	.	.	.	.	.
D.C.	Yes	7	8	19.461	0.411	0.191	0.781	4	.	.	.	.	.	.	.
Delaware		2	.	.	.	.	.	.	.	.	.	.	.	.	.
Florida	No	61	87	133.623	0.651	0.525	0.799	28	4%	7%	0.000	0.000	0.511	0.911	1.627
Georgia	Yes	36	54	80.448	0.659	0.498	0.855	21	0%	5%	0.000	0.319	0.667	0.940	1.415
Guam	No	1	.	.	.	.	.	.	.	.	.	.	.	.	.
Hawaii	Yes	2	.	.	.	.	.	.	.	.	.	.	.	.	.
Iowa	No	10	9	19.995	0.450	0.220	0.826	3	.	.	.	.	.	.	.
Idaho	No	10	2	6.502	0.308	0.052	1.016	2	.	.	.	.	.	.	.
Illinois	Yes	41	41	76.022	0.539	0.392	0.725	20	0%	5%	0.000	0.000	0.445	0.784	1.340
Indiana	Yes	25	34	31.166	1.059	0.741	1.470	7	.	.	.	.	.	.	.
Kansas	No	9	6	12.567	0.477	0.194	0.993	5	.	.	.	.	.	.	.
Kentucky	Yes	15	15	23.049	0.651	0.378	1.049	4	.	.	.	.	.	.	.
Louisiana	No	29	50	47.753	1.047	0.785	1.369	11	27%	9%	.	.	.	.	.
Massachusetts	Yes	11	20	21.657	0.923	0.580	1.401	8	.	.	.	.	.	.	.
Maryland	Yes	17	23	35.260	0.624	0.401	0.929	8	.	.	.	.	.	.	.
Maine	Yes	3	.	.	.	.	.	.	.	.	.	.	.	.	.
Michigan	No	20	44	56.619	0.777	0.572	1.034	12	8%	17%	.	.	.	.	.
Minnesota	Yes	11	8	16.993	0.471	0.219	0.894	4	.	.	.	.	.	.	.
Missouri		22	37	49.138	0.753	0.538	1.027	9	.	.	.	.	.	.	.
Mississippi	Yes	14	27	19.207	1.406	0.945	2.017	3	.	.	.	.	.	.	.
Montana	No	5	2	2.902	0.689	0.116	2.277	1	.	.	.	.	.	.	.
North Carolina	Yes	24	57	65.294	0.858	0.654	1.106	11	18%	0%	.	.	.	.	.
North Dakota	No	7	3	6.671	0.450	0.114	1.224	2	.	.	.	.	.	.	.
Nebraska	Yes	6	4	5.149	0.777	0.247	1.874	2	.	.	.	.	.	.	.
New Hampshire	Yes	3	.	.	.	.	.	.	.	.	.	.	.	.	.
New Jersey	Yes	24	18	39.105	0.435	0.262	0.682	13	0%	0%	.	.	.	.	.
New Mexico	Yes	5	6	8.181	0.733	0.297	1.525	3	.	.	.	.	.	.	.
Nevada	Yes	8	13	28.226	0.461	0.256	0.768	7	.	.	.	.	.	.	.
New York		53	96	118.785	0.808	0.658	0.982	30	7%	0%	0.000	0.291	0.692	0.972	1.242
Ohio	No	20	43	77.773	0.553	0.405	0.738	15	0%	0%	.	.	.	.	.
Oklahoma		9	24	31.062	0.773	0.507	1.132	6	.	.	.	.	.	.	.
Oregon	Yes	9	4	11.371	0.352	0.112	0.849	3	.	.	.	.	.	.	.
Pennsylvania	Yes	44	91	72.774	1.237	1.000	1.513	19	26%	0%	.	.	.	.	.
Puerto Rico		5	3	1.018	2.948	0.750	8.022	0	.	.	.	.	.	.	.
Rhode Island	No	1	.	.	.	.	.	.	.	.	.	.	.	.	.
South Carolina	Yes	9	34	32.678	1.040	0.732	1.437	7	.	.	.	.	.	.	.
South Dakota	No	3	.	.	.	.	.	.	.	.	.	.	.	.	.
Tennessee	Yes	25	41	54.810	0.748	0.544	1.005	12	8%	8%	.	.	.	.	.
Texas	No	124	175	218.225	0.797	0.685	0.923	52	6%	4%	0.000	0.000	0.583	1.018	1.445
Utah	Yes	13	17	22.281	0.763	0.459	1.197	5	.	.	.	.	.	.	.
Virginia	Yes	26	27	46.458	0.581	0.391	0.834	10	0%	10%	.	.	.	.	.
Virgin Islands	No	2	.	.	.	.	.	.	.	.	.	.	.	.	.
Vermont	Yes	1	.	.	.	.	.	.	.	.	.	.	.	.	.
Washington	Yes	15	20	27.151	0.737	0.463	1.117	6	.	.	.	.	.	.	.
Wisconsin	No	18	23	24.634	0.893	0.574	1.330	11	0%	0%	.	.	.	.	.
West Virginia	Yes	5	13	9.958	1.306	0.726	2.176	3	.	.	.	.	.	.	.

Wyoming	No	0	.	.	.	.	.	.	.	.	.	.	.	.	.
All US		**1,010**	**1,477**	**1,935.640**	**0.763**	**0.725**	**0.803**	**460**	**7%**	**3%**	**0.000**	**0.214**	**0.636**	**1.048**	**1.691**

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 2017. M indicates midyear implementation of a mandate. No indicates that a state mandate did not exist during 2017. A blank field indicates data not available. 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 2017.
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 2017 national NICU CLABSI SIR of 0.763. This is only calculated if at least 10 facilities had at least one predicted NICU CLABSI in 2017.
5. Facility-specific key percentiles were only calculated if at least 20 facilities had ≥1.0 predicted NICU CLABSI in 2017. 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 2017

4a. Catheter-associated urinary tract infections (CAUTI), all locations[1]

State				No. of Infections			95% CI for SIR		Facility-specific SIRs							
				Observed	Predicted	SIR	Lower	Upper	No. of hosp with at least 1 predicted CAUTI			10%	25%		75%	90%
Alaska	No	No	10	42	27.320	1.537	1.122	2.059	5	.	.	.	.	.	.	.
Alabama	Yes		90	483	599.520	0.806	0.736	0.880	45	2%	4%	0.000	0.459	0.725	1.011	1.254
Arkansas			50	352	301.170	1.169	1.051	1.296	30	20%	0%	0.269	0.493	0.639	1.322	1.838
Arizona	No	No	68	324	527.070	0.615	0.550	0.684	48	0%	21%	0.000	0.245	0.593	0.828	0.998
California	No	No	337	2,902	2,811.960	1.032	0.995	1.070	289	17%	10%	0.000	0.441	0.849	1.407	1.971
Colorado	No	No	54	316	382.180	0.827	0.739	0.922	33	12%	9%	0.451	0.599	0.994	1.491	1.824
Connecticut	Yes	No	31	305	272.250	1.120	1.000	1.251	23	13%	0%	0.501	0.689	1.002	1.399	1.699
D.C.	Yes	No	8	112	138.800	0.807	0.668	0.967	8	.	.	.	.	.	.	.
Delaware			8	76	69.350	1.096	0.870	1.364	8	.	.	.	.	.	.	.
Florida	No	Yes	206	1,639	2,228.970	0.735	0.700	0.772	182	4%	14%	0.000	0.384	0.685	0.950	1.421
Georgia	Yes		108	856	889.930	0.962	0.899	1.028	73	14%	7%	0.000	0.344	0.802	1.230	1.659
Guam	No	No	2	.	.	.	.	.	.	.	.	.	.	.	.	.
Hawaii	Yes	Yes	17	98	96.910	1.011	0.825	1.227	13	23%	8%	.	.	.	.	.
Iowa	No	Yes	41	161	221.710	0.726	0.620	0.845	26	12%	12%	0.000	0.080	0.696	1.135	1.395
Idaho	No	No	16	88	88.550	0.994	0.802	1.218	10	20%	10%	.	.	.	.	.
Illinois	Yes	No	135	745	975.520	0.764	0.710	0.820	110	8%	13%	0.000	0.328	0.661	1.075	1.738
Indiana	Yes	No	87	475	560.670	0.847	0.774	0.926	58	7%	5%	0.223	0.490	0.794	1.139	1.500
Kansas	No	Yes	54	187	217.540	0.860	0.743	0.990	26	0%	0%	0.000	0.608	0.840	1.321	1.630
Kentucky	Yes	Yes	71	376	489.830	0.768	0.693	0.848	47	13%	13%	0.000	0.253	0.513	0.977	1.547
Louisiana	No		96	480	568.470	0.844	0.771	0.922	53	15%	8%	0.000	0.302	0.740	1.359	2.422
Massachusetts	Yes	Yes	69	686	637.080	1.077	0.998	1.160	57	18%	7%	0.000	0.546	1.082	1.528	1.986
Maryland	No	Yes	49	417	465.450	0.896	0.813	0.985	43	12%	12%	0.032	0.435	0.975	1.415	1.531
Maine	No	Yes	17	83	69.530	1.194	0.957	1.472	10	10%	0%	.	.	.	.	.
Michigan	No	No	99	688	900.560	0.764	0.708	0.823	67	7%	13%	0.110	0.406	0.667	0.955	1.435
Minnesota	Yes	Yes	53	295	357.840	0.824	0.734	0.923	30	7%	10%	0.000	0.521	0.726	1.194	1.576
Missouri			76	648	711.610	0.911	0.842	0.983	56	5%	4%	0.000	0.532	0.869	1.231	1.557
Mississippi	Yes	Yes	58	225	336.090	0.669	0.586	0.761	31	3%	19%	0.000	0.114	0.552	0.803	1.440
Montana	No	No	14	40	44.040	0.908	0.658	1.225	9	.	.	.	.	.	.	.
North Carolina	Yes	Yes	98	805	900.500	0.894	0.834	0.957	74	11%	9%	0.000	0.408	0.858	1.300	1.731
North Dakota	No	No	9	64	67.330	0.951	0.738	1.206	7	.	.	.	.	.	.	.
Nebraska	Yes	Yes	27	120	137.640	0.872	0.726	1.039	18	11%	0%	.	.	.	.	.
New Hampshire	Yes	Yes	13	89	90.220	0.987	0.797	1.208	13	8%	23%	.	.	.	.	.
New Jersey	Yes	Yes	71	592	676.820	0.875	0.806	0.947	68	9%	13%	0.248	0.403	0.707	1.125	1.478
New Mexico	No		30	135	139.030	0.971	0.817	1.146	15	7%	7%	.	.	.	.	.
Nevada	No	No	25	235	313.100	0.751	0.659	0.851	21	5%	19%	0.000	0.232	0.532	0.977	1.443
New York			174	1,883	1,842.470	1.022	0.977	1.069	145	18%	9%	0.323	0.540	0.951	1.416	1.843
Ohio	No	Yes	141	1,059	1,391.080	0.761	0.716	0.808	103	4%	17%	0.000	0.275	0.612	0.954	1.416
Oklahoma			83	300	397.020	0.756	0.674	0.845	38	3%	13%	0.000	0.074	0.499	0.843	1.320
Oregon	No	Yes	36	267	261.540	1.021	0.904	1.149	28	14%	0%	0.000	0.624	0.890	1.332	1.712
Pennsylvania	Yes	No	180	1,245	1,459.870	0.853	0.806	0.901	122	5%	7%	0.000	0.334	0.724	1.031	1.429
Puerto Rico			13	88	115.440	0.762	0.615	0.935	11	18%	27%	.	.	.	.	.
Rhode Island	No	No	11	104	77.850	1.336	1.097	1.612	8	.	.	.	.	.	.	.
South Carolina	No	No	60	382	437.170	0.874	0.789	0.965	40	10%	10%	0.153	0.566	0.785	1.327	1.807
South Dakota	No	Yes	20	66	66.920	0.986	0.769	1.247	5	.	.	.	.	.	.	.
Tennessee	Yes	Yes	105	603	776.110	0.777	0.717	0.841	69	6%	19%	0.000	0.186	0.765	1.172	1.597
Texas	No	No	359	1,844	2,108.100	0.875	0.835	0.915	211	11%	10%	0.000	0.354	0.812	1.252	1.812
Utah	Yes	Yes	33	129	133.560	0.966	0.810	1.144	17	6%	6%	.	.	.	.	.

Virginia	Yes	Yes	83	656	639.520	1.026	0.949	1.107	62	18%	6%	0.000	0.375	0.921	1.507	1.803
Virgin Islands	No	Yes	2	.	.	.	.	.	.	.	.	.	.	.	.	.
Vermont	No	No	6	46	39.360	1.169	0.866	1.545	4	.	.	.	.	.	.	.
Washington	No	No	60	506	507.420	0.997	0.913	1.087	45	16%	9%	0.294	0.611	0.795	1.429	1.708
Wisconsin	No	Yes	73	362	375.060	0.965	0.870	1.069	47	15%	0%	0.349	0.588	0.862	1.302	1.930
West Virginia	Yes	Yes	29	155	274.920	0.564	0.480	0.658	21	5%	24%	0.000	0.000	0.318	0.648	0.955
Wyoming	No	No	14	14	17.090	0.819	0.466	1.342	3	.	.	.	.	.	.	.
All US			**3,679**	**24,865**	**28,241.960**	**0.880**	**0.870**	**0.891**	**2,589**	**11%**	**10%**	**0.000**	**0.412**	**0.780**	**1.242**	**1.776**

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 2017. M indicates midyear implementation of a mandate.
   No indicates that a state mandate did not exist during 2017. A blank field indicates data not available.
3. Yes indicates that the state health department reported the completion of all of the following validation activities: state health department had access to 2017 NHSN data, state health department performed an assessment of missing or implausible values on at least six months of 2017 NHSN data prior to July 2, 2018, 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 2, 2018 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 CAUTI data in 2017.
5. Percent of facilities with at least one predicted CAUTI that had an SIR significantly greater or less than the nominal value of the 2017 national overall CAUTI SIR of 0.880. This is only calculated if at least 10 facilities had at least one predicted CAUTI in 2017.
6. Facility-specific key percentiles were only calculated if at least 20 facilities had ≥1.0 predicted CAUTI in 2017. 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 2017

4b. Catheter-associated urinary tract infections (CAUTI), critical care locations[1]

State			No. of Infections			95% CI for SIR		Facility-specific SIRs							
			Observed	Predicted	SIR	Lower	Upper				10%	25%		75%	90%
Alaska	No	7	9	8.930	1.008	0.491	1.849	2	.	.	.	.	.	.	.
Alabama	Yes	70	217	349.180	0.621	0.543	0.708	34	0%	12%	0.000	0.422	0.666	0.853	1.145
Arkansas		43	154	135.400	1.137	0.968	1.328	23	13%	0%	0.082	0.461	0.760	1.059	1.413
Arizona	No	54	160	256.140	0.625	0.533	0.727	40	0%	13%	0.000	0.323	0.633	0.920	1.403
California	No	314	1369	1219.530	1.123	1.064	1.183	221	18%	4%	0.000	0.424	0.943	1.682	2.456
Colorado	No	45	134	177.470	0.755	0.635	0.891	27	11%	4%	0.147	0.403	0.791	1.212	2.127
Connecticut	Yes	27	153	135.420	1.130	0.961	1.320	22	9%	0%	0.040	0.532	0.957	1.495	1.659
D.C.	Yes	8	57	83.700	0.681	0.521	0.876	8	.	.	.	.	.	.	.
Delaware		8	35	34.350	1.019	0.721	1.401	6	.	.	.	.	.	.	.
Florida	No	197	788	1099.500	0.717	0.668	0.768	150	5%	9%	0.000	0.252	0.629	0.907	1.442
Georgia	Yes	91	419	452.480	0.926	0.840	1.018	54	11%	4%	0.000	0.336	0.675	1.170	1.856
Guam	No	2	.	.	.	.	.	.	.	.	.	.	.	.	.
Hawaii	Yes	15	39	39.880	0.978	0.705	1.324	9	.	.	.	.	.	.	.
Iowa	No	35	61	92.430	0.660	0.509	0.842	12	8%	0%	.	.	.	.	.
Idaho	No	11	37	36.700	1.008	0.720	1.375	7	.	.	.	.	.	.	.
Illinois	Yes	127	320	445.150	0.719	0.643	0.801	81	5%	9%	0.000	0.287	0.631	1.064	1.712
Indiana	Yes	72	221	269.890	0.819	0.716	0.932	45	7%	2%	0.000	0.365	0.715	1.360	1.932
Kansas	No	37	80	110.400	0.725	0.578	0.897	13	0%	0%	.	.	.	.	.
Kentucky	Yes	64	196	255.790	0.766	0.664	0.879	36	11%	8%	0.000	0.221	0.593	0.892	1.476
Louisiana	No	69	220	268.220	0.820	0.717	0.934	38	8%	5%	0.000	0.256	0.692	1.064	1.482
Massachusetts	Yes	64	305	308.280	0.989	0.883	1.105	35	9%	3%	0.000	0.321	0.736	1.308	1.916
Maryland	No	44	180	217.450	0.828	0.713	0.956	31	13%	6%	0.000	0.301	0.712	1.380	1.924
Maine	No	14	42	30.390	1.382	1.009	1.851	5	.	.	.	.	.	.	.
Michigan	No	89	382	506.500	0.754	0.681	0.833	56	7%	7%	0.267	0.511	0.689	1.070	1.637
Minnesota	Yes	41	133	169.410	0.785	0.660	0.927	16	19%	6%	.	.	.	.	.
Missouri		72	280	329.330	0.850	0.755	0.954	41	2%	2%	0.020	0.561	0.929	1.223	1.695
Mississippi	Yes	43	99	151.400	0.654	0.534	0.793	21	5%	10%	0.000	0.394	0.574	0.983	1.710
Montana	No	10	14	16.190	0.865	0.492	1.416	5	.	.	.	.	.	.	.
North Carolina	Yes	86	383	455.570	0.841	0.760	0.928	42	10%	10%	0.000	0.288	0.744	1.228	1.594
North Dakota	No	6	23	30.030	0.766	0.497	1.131	6	.	.	.	.	.	.	.
Nebraska	Yes	19	53	54.750	0.968	0.732	1.256	11	9%	0%	.	.	.	.	.
New Hampshire	Yes	13	48	34.460	1.393	1.039	1.832	6	.	.	.	.	.	.	.
New Jersey	Yes	70	261	309.360	0.844	0.746	0.951	58	7%	5%	0.000	0.308	0.586	1.098	1.588
New Mexico	No	26	64	65.770	0.973	0.756	1.235	10	0%	0%	.	.	.	.	.
Nevada	No	21	106	163.950	0.647	0.532	0.779	17	6%	6%	.	.	.	.	.
New York		161	764	826.770	0.924	0.860	0.991	114	12%	10%	0.065	0.502	0.862	1.408	1.916
Ohio	No	126	534	692.130	0.772	0.708	0.839	85	4%	6%	0.000	0.000	0.603	0.982	1.346
Oklahoma		51	138	193.050	0.715	0.603	0.842	21	0%	5%	0.000	0.281	0.600	0.965	1.492
Oregon	No	33	108	101.880	1.060	0.874	1.275	18	6%	0%	.	.	.	.	.
Pennsylvania	Yes	150	599	708.050	0.846	0.780	0.916	94	3%	1%	0.000	0.399	0.755	1.047	1.454
Puerto Rico		11	37	38.890	0.951	0.680	1.298	8	.	.	.	.	.	.	.
Rhode Island	No	10	47	37.440	1.255	0.933	1.655	5	.	.	.	.	.	.	.
South Carolina	No	54	194	215.840	0.899	0.779	1.032	26	8%	8%	0.000	0.567	0.813	1.299	1.594
South Dakota	No	11	32	19.810	1.615	1.124	2.253	3	.	.	.	.	.	.	.
Tennessee	Yes	88	275	383.830	0.716	0.635	0.805	47	6%	11%	0.000	0.192	0.670	0.983	1.374
Texas	No	265	894	1114.730	0.802	0.751	0.856	170	8%	6%	0.000	0.390	0.746	1.240	1.789
Utah	Yes	27	79	77.050	1.025	0.817	1.271	12	8%	0%	.	.	.	.	.

Virginia	Yes	78	284	289.600	0.981	0.872	1.100	44	11%	2%	0.000	0.379	0.913	1.373	1.721
Virgin Islands	No	2	.	.	.	.	.	.	.	.	.	.	.	.	.
Vermont	No	4	.	.	.	.	.	.	.	.	.	.	.	.	.
Washington	No	49	230	211.520	1.087	0.954	1.235	37	11%	3%	0.000	0.498	0.898	1.325	1.979
Wisconsin	No	66	169	175.940	0.961	0.824	1.114	34	12%	3%	0.000	0.409	0.879	1.100	2.835
West Virginia	Yes	29	75	135.200	0.555	0.439	0.691	16	6%	19%	.	.	.	.	.
Wyoming	No	10	4	5.230	0.765	0.243	1.844	2	.	.	.	.	.	.	.
All US		**3,139**	**11,524**	**13,559.110**	**0.850**	**0.834**	**0.866**	**1,926**	**9%**	**6%**	**0.000**	**0.381**	**0.754**	**1.206**	**1.826**

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 NHSN at the beginning of 2017. M indicates midyear implementation of a mandate.
   No indicates that a state mandate did not exist during 2017. A blank field indicates data not available. Note that almost all acute care hospitals are required to report CAUTI 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 CAUTI data from at least one critical care location in 2017.
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 2017 national ICU CAUTI SIR of 0.850. This is only calculated if at least 10 facilities had at least one predicted ICU CAUTI in 2017.
5. Facility-specific key percentiles were only calculated if at least 20 facilities had ≥1.0 predicted ICU CAUTI in 2017. 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.

Table 4. State-specific standardized infection ratios (SIRs) and facility-specific SIR summary measures, NHSN Acute Care Hospitals reporting during 2017

4c. Catheter-associated urinary tract infections (CAUTI), ward (non-critical care) locations[1]

State			No. of Infections		95% CI for SIR			Facility-specific SIRs							
			Observed	Predicted	SIR	Lower	Upper				10%	25%		75%	90%
Alaska	No	10	33	18.390	1.795	1.256	2.491	5	.	.	.	.	.	.	.
Alabama	Yes	90	266	250.340	1.063	0.941	1.196	35	6%	3%	0.000	0.613	1.057	1.399	1.753
Arkansas		50	198	165.770	1.194	1.037	1.370	25	24%	0%	0.170	0.496	0.720	1.601	1.738
Arizona	No	68	164	270.930	0.605	0.518	0.703	44	2%	11%	0.000	0.000	0.421	0.810	1.171
California	No	333	1,533	1,592.430	0.963	0.915	1.012	256	10%	7%	0.000	0.444	0.766	1.236	1.789
Colorado	No	54	182	204.720	0.889	0.767	1.025	29	7%	14%	0.251	0.567	1.052	1.534	2.314
Connecticut	Yes	31	152	136.830	1.111	0.945	1.298	21	5%	0%	0.029	0.457	1.085	1.413	1.929
D.C.	Yes	8	55	55.100	0.998	0.759	1.290	7	.	.	.	.	.	.	.
Delaware		8	41	35.000	1.172	0.852	1.574	7	.	.	.	.	.	.	.
Florida	No	202	851	1,129.480	0.753	0.704	0.805	163	6%	10%	0.000	0.354	0.714	1.040	1.631
Georgia	Yes	108	437	437.450	0.999	0.909	1.096	60	10%	7%	0.000	0.450	0.901	1.357	1.941
Guam	No	1	.	.	.	.	.	.	.	.	.	.	.	.	.
Hawaii	Yes	17	59	57.040	1.034	0.795	1.325	10	10%	0%	.	.	.	.	.
Iowa	No	41	100	129.280	0.774	0.633	0.937	23	4%	9%	0.000	0.000	0.583	1.272	1.573
Idaho	No	16	51	51.850	0.984	0.740	1.283	9	.	.	.	.	.	.	.
Illinois	Yes	134	425	530.370	0.801	0.728	0.880	90	6%	8%	0.000	0.308	0.659	1.188	1.841
Indiana	No	86	254	290.780	0.874	0.771	0.986	50	2%	4%	0.000	0.495	0.771	1.050	1.453
Kansas	No	54	107	107.140	0.999	0.823	1.202	21	5%	0%	0.000	0.495	0.806	1.271	1.486
Kentucky	Yes	70	180	234.040	0.769	0.663	0.888	39	13%	13%	0.000	0.201	0.422	1.095	2.131
Louisiana	No	96	260	300.250	0.866	0.765	0.976	42	12%	7%	0.000	0.394	0.757	1.482	2.050
Massachusetts	No	69	381	328.800	1.159	1.047	1.280	45	13%	9%	0.000	0.547	1.027	1.709	2.246
Maryland	No	49	237	248.010	0.956	0.840	1.083	40	8%	8%	0.000	0.499	0.923	1.425	1.846
Maine	No	16	41	39.140	1.047	0.762	1.407	10	10%	0%	.	.	.	.	.
Michigan	No	99	306	394.060	0.777	0.693	0.867	58	5%	14%	0.000	0.221	0.549	0.982	1.324
Minnesota	Yes	53	162	188.430	0.860	0.735	1.000	25	16%	8%	0.000	0.278	0.559	1.207	1.871
Missouri		74	368	382.280	0.963	0.868	1.065	48	6%	6%	0.000	0.281	0.872	1.285	1.642
Mississippi	Yes	58	126	184.700	0.682	0.571	0.809	26	0%	12%	0.000	0.086	0.500	0.871	1.425
Montana	No	14	26	27.850	0.934	0.623	1.348	8	.	.	.	.	.	.	.
North Carolina	Yes	98	422	444.930	0.948	0.861	1.042	62	10%	6%	0.000	0.378	0.863	1.338	1.925
North Dakota	No	9	41	37.300	1.099	0.799	1.477	7	.	.	.	.	.	.	.
Nebraska	Yes	27	67	82.880	0.808	0.631	1.020	15	7%	7%	.	.	.	.	.
New Hampshire	No	13	41	55.760	0.735	0.535	0.988	13	0%	8%	.	.	.	.	.
New Jersey	Yes	70	331	367.460	0.901	0.808	1.002	62	6%	5%	0.149	0.355	0.753	1.115	1.458
New Mexico	No	30	71	73.260	0.969	0.763	1.215	11	9%	9%	.	.	.	.	.
Nevada	No	25	129	149.160	0.865	0.725	1.024	19	11%	11%	.	.	.	.	.
New York		173	1,119	1,015.700	1.102	1.039	1.168	132	17%	9%	0.267	0.555	0.978	1.527	2.061
Ohio	No	140	525	698.950	0.751	0.689	0.818	89	3%	11%	0.000	0.305	0.632	1.035	1.562
Oklahoma		82	162	203.970	0.794	0.679	0.924	28	4%	11%	0.000	0.259	0.718	1.195	1.590
Oregon	No	36	159	159.660	0.996	0.850	1.160	24	8%	0%	0.000	0.668	0.987	1.363	1.738
Pennsylvania	Yes	180	646	751.820	0.859	0.795	0.927	110	5%	6%	0.000	0.368	0.715	1.117	1.426
Puerto Rico		13	51	76.550	0.666	0.501	0.869	11	0%	27%	.	.	.	.	.
Rhode Island	No	11	57	40.410	1.411	1.078	1.814	6	.	.	.	.	.	.	.
South Carolina	No	60	188	221.330	0.849	0.734	0.978	33	3%	6%	0.000	0.365	0.632	1.101	1.698
South Dakota	No	20	34	47.110	0.722	0.508	0.997	3	.	.	.	.	.	.	.
Tennessee	Yes	104	328	392.280	0.836	0.749	0.930	56	7%	11%	0.000	0.105	0.657	1.150	1.832
Texas	No	349	950	993.370	0.956	0.897	1.019	174	9%	5%	0.000	0.360	0.765	1.313	1.955
Utah	Yes	33	50	56.520	0.885	0.664	1.157	12	8%	8%	.	.	.	.	.
Virginia	Yes	82	372	349.930	1.063	0.959	1.175	55	16%	4%	0.000	0.438	1.142	1.564	2.189
Virgin Islands	No	2	.	.	.	.	.	.	.	.	.	.	.	.	.

Vermont	No	6	32	23.750	1.348	0.938	1.880	3	.	.	.	.	.	.	.
Washington	No	60	276	295.890	0.933	0.828	1.048	42	10%	7%	0.030	0.512	0.687	1.440	1.783
Wisconsin	No	73	193	199.110	0.969	0.840	1.114	39	10%	0%	0.000	0.496	0.842	1.297	2.197
West Virginia	Yes	28	80	139.730	0.573	0.457	0.709	20	0%	25%	0.000	0.000	0.371	0.431	0.969
Wyoming	No	14	10	11.860	0.843	0.428	1.503	2	.	.	.	.	.	.	.
All US		**3,647**	**13,341**	**14,682.840**	**0.909**	**0.893**	**0.924**	**2,224**	**8%**	**8%**	**0.000**	**0.388**	**0.777**	**1.285**	**1.841**

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 2017. M indicates midyear implementation of a mandate. No indicates that a state mandate did not exist during 2017. A blank field indicates data not available.
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 2017.
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 2017 national ward CAUTI SIR of 0.909. This is only calculated if at least 10 facilities had at least one predicted ward CAUTI in 2017.
5. Facility-specific key percentiles were only calculated if at least 20 facilities had ≥1.0 predicted ward CAUTI in 2017. 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 2017

5a. Ventilator-associated events (VAE), all locations[1]

				No. of Events			95% CI for SIR			Facility-specific SIRs							
State				Observed	Predicted	SIR	Lower	Upper	No. of hosp with at least 1 predicted VAE			10%	25%		75%	90%
Alaska	No	No	7	45	32.483	1.385	1.023	1.837	3	.	.	.	.	.	.	.
Alabama	No	No	45	378	474.099	0.797	0.720	0.881	29	17%	24%	0.000	0.000	0.747	1.099	2.014
Arkansas			20	214	168.074	1.273	1.111	1.453	13	31%	23%	.	.	.	.	.
Arizona	No	No	30	446	361.523	1.234	1.123	1.352	19	42%	21%	.	.	.	.	.
California	No	No	175	1,845	2,216.299	0.832	0.795	0.871	155	17%	26%	0.000	0.000	0.561	1.239	2.183
Colorado	No	No	38	435	374.701	1.161	1.056	1.274	25	24%	28%	0.112	0.229	1.331	1.660	2.502
Connecticut	No	No	13	288	228.320	1.261	1.122	1.414	13	31%	23%	.	.	.	.	.
D.C.	No	No	3	.	.	.	.	.	.	.	.	.	.	.	.	.
Delaware			3	.	.	.	.	.	.	.	.	.	.	.	.	.
Florida	No	Yes	119	1,653	1,964.294	0.842	0.802	0.883	104	26%	38%	0.000	0.034	0.687	1.502	2.399
Georgia	No	No	70	1,005	1,128.406	0.891	0.837	0.947	51	25%	22%	0.000	0.290	0.810	1.596	1.873
Guam	No	No	1	.	.	.	.	.	.	.	.	.	.	.	.	.
Hawaii	No	No	7	13	82.430	0.158	0.088	0.263	7	.	.	.	.	.	.	.
Iowa	No	No	14	142	100.969	1.406	1.189	1.653	10	30%	10%	.	.	.	.	.
Idaho	No	No	7	51	53.017	0.962	0.724	1.255	6	.	.	.	.	.	.	.
Illinois	No	No	66	536	548.629	0.977	0.897	1.062	52	13%	19%	0.000	0.000	0.728	1.422	2.280
Indiana	No	No	69	847	798.284	1.061	0.991	1.134	52	12%	21%	0.131	0.330	0.720	1.307	1.913
Kansas	No	No	32	197	177.931	1.107	0.960	1.270	18	22%	33%	.	.	.	.	.
Kentucky	No	No	44	417	409.253	1.019	0.925	1.120	24	21%	21%	0.000	0.171	0.848	1.493	2.085
Louisiana	No	No	35	296	316.110	0.936	0.834	1.048	23	17%	39%	0.000	0.000	0.335	1.569	1.876
Massachusetts	No	No	21	274	211.583	1.295	1.148	1.455	17	18%	6%	.	.	.	.	.
Maryland	No	No	25	255	313.707	0.813	0.718	0.917	23	22%	26%	0.000	0.188	0.771	1.308	2.514
Maine	No	No	15	166	85.726	1.936	1.658	2.248	9	.	.	.	.	.	.	.
Michigan	No	No	79	1,463	1,259.663	1.161	1.103	1.222	56	30%	16%	0.309	0.661	1.064	1.792	2.450
Minnesota	No	No	10	159	161.158	0.987	0.842	1.149	6	.	.	.	.	.	.	.
Missouri			42	786	694.940	1.131	1.054	1.212	29	34%	17%	0.000	0.636	1.295	1.848	2.336
Mississippi	No	No	26	44	124.960	0.352	0.259	0.468	17	0%	29%	.	.	.	.	.
Montana	No	No	4	.	.	.	.	.	.	.	.	.	.	.	.	.
North Carolina	No	No	42	788	573.029	1.375	1.282	1.474	30	33%	13%	0.000	0.589	1.375	1.953	3.309
North Dakota	No	No	2	.	.	.	.	.	.	.	.	.	.	.	.	.
Nebraska	No	No	14	230	143.782	1.600	1.403	1.817	10	30%	20%	.	.	.	.	.
New Hampshire	No	No	11	30	45.735	0.656	0.451	0.925	11	9%	27%	.	.	.	.	.
New Jersey	No	No	50	723	778.515	0.929	0.863	0.998	48	25%	21%	0.000	0.242	0.660	1.626	2.293
New Mexico	No	No	18	105	66.925	1.569	1.290	1.891	9	.	.	.	.	.	.	.
Nevada	No	No	22	396	564.410	0.702	0.635	0.773	19	16%	53%	.	.	.	.	.
New York			132	1,668	2,389.493	0.698	0.665	0.732	117	13%	36%	0.000	0.000	0.505	0.929	1.607
Ohio	No	No	85	1,325	1,154.379	1.148	1.087	1.211	68	35%	22%	0.000	0.401	1.095	1.985	2.739
Oklahoma			31	161	237.372	0.678	0.579	0.789	18	6%	22%	.	.	.	.	.
Oregon	No	No	26	134	160.785	0.833	0.701	0.984	19	11%	11%	.	.	.	.	.
Pennsylvania	Yes	Yes	142	2,115	2,268.925	0.932	0.893	0.973	107	20%	21%	0.000	0.193	0.791	1.372	2.228
Puerto Rico			9	51	65.347	0.780	0.587	1.018	8	.	.	.	.	.	.	.
Rhode Island	No	No	9	104	105.860	0.982	0.807	1.185	8	.	.	.	.	.	.	.
South Carolina	Yes	No	52	792	715.250	1.107	1.032	1.186	35	17%	14%	0.000	0.427	1.083	1.732	2.618
South Dakota	No	No	6	18	28.655	0.628	0.384	0.974	2	.	.	.	.	.	.	.
Tennessee	No	No	52	737	725.715	1.016	0.944	1.091	34	24%	18%	0.000	0.250	0.828	1.409	2.059
Texas	No	No	139	1,236	1,656.936	0.746	0.705	0.788	105	12%	30%	0.000	0.128	0.475	1.119	1.782
Utah	No	No	8	10	13.254	0.754	0.383	1.345	4	.	.	.	.	.	.	.

Virginia	No	No	66	962	799.253	1.204	1.129	1.282	46	28%	13%	0.000	0.338	1.007	1.725	2.488
Virgin Islands	No	Yes	1	.	.	.	.	.	.	.	.	.	.	.	.	.
Vermont	No	No	0	.	.	.	.	.	.	.	.	.	.	.	.	.
Washington	No	No	28	160	222.455	0.719	0.614	0.837	23	9%	35%	0.000	0.000	0.251	1.071	1.704
Wisconsin	No	Yes	57	508	370.611	1.371	1.255	1.494	35	26%	9%	0.116	0.546	1.110	1.623	2.550
West Virginia	No	No	18	31	128.017	0.242	0.167	0.340	10	0%	30%	.	.	.	.	.
Wyoming	No	No	6	2	5.566	0.359	0.060	1.187	1	.	.	.	.	.	.	.
All US			**2,046**	**24,491**	**25,730.522**	**0.952**	**0.940**	**0.964**	**1541**	**20%**	**24%**	**0.000**	**0.156**	**0.761**	**1.463**	**2.219**

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 2017. M indicates midyear implementation of a mandate. No indicates that a state mandate did not exist during 2017. A blank field indicates data not available.
3. Yes indicates that the state health department reported the completion of all of the following validation activities: state health department had access to 2017 NHSN data, state health department performed an assessment of missing or implausible values on at least six months of 2017 NHSN data prior to July 2, 2018, 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 2, 2018 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 VAE data in 2017.
5. Percent of facilities with at least one predicted VAE that had an SIR significantly greater or less than the nominal value of the 2017 national overall VAE SIR of 0.952. This is only calculated if at least 10 facilities had at least one predicted VAE in 2017.
6. Facility-specific key percentiles were only calculated if at least 20 facilities had ≥1.0 predicted VAE in 2017. 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.

Table 5. State-specific standardized infection ratios (SIRs) and facility-specific SIR summary measures, NHSN Acute Care Hospitals reporting during 2017

5b. Ventilator-associated events (VAE), critical care locations[1]

			No. of Events			95% CI for SIR		Facility-specific SIRs							
State			Observed	Predicted	SIR	Lower	Upper				10%	25%		75%	90%
Alaska	No	5	7	18.452	0.379	0.166	0.750	2	.	.	.	.	.	.	.
Alabama	No	45	378	473.087	0.799	0.721	0.883	29	14%	24%	0.000	0.000	0.747	1.099	2.014
Arkansas		20	212	167.481	1.266	1.104	1.445	13	31%	31%	.	.	.	.	.
Arizona	No	27	446	361.223	1.235	1.124	1.353	19	37%	21%	.	.	.	.	.
California	No	174	1,822	2,149.803	0.848	0.809	0.887	155	17%	26%	0.000	0.000	0.607	1.264	2.183
Colorado	No	38	425	366.072	1.161	1.054	1.275	25	24%	28%	0.112	0.229	1.331	1.659	2.502
Connecticut	No	13	288	227.771	1.264	1.125	1.417	13	31%	23%	.	.	.	.	.
D.C.	No	3	.	.	.	.	.	.	.	.	.	.	.	.	.
Delaware		3	.	.	.	.	.	.	.	.	.	.	.	.	.
Florida	No	119	1,641	1,920.712	0.854	0.814	0.896	104	26%	38%	0.000	0.025	0.687	1.502	2.260
Georgia	No	69	996	1,120.842	0.889	0.835	0.945	51	25%	24%	0.000	0.290	0.810	1.596	1.873
Guam	No	1	.	.	.	.	.	.	.	.	.	.	.	.	.
Hawaii	No	7	11	76.962	0.143	0.075	0.248	7	.	.	.	.	.	.	.
Iowa	No	14	142	100.969	1.406	1.189	1.653	10	30%	10%	.	.	.	.	.
Idaho	No	7	51	53.017	0.962	0.724	1.255	6	.	.	.	.	.	.	.
Illinois	No	66	523	534.742	0.978	0.897	1.065	52	13%	19%	0.000	0.000	0.753	1.497	2.280
Indiana	No	66	822	782.102	1.051	0.981	1.125	50	12%	22%	0.130	0.327	0.782	1.316	1.969
Kansas	No	31	197	177.507	1.110	0.963	1.273	18	22%	33%	.	.	.	.	.
Kentucky	No	43	416	409.014	1.017	0.923	1.118	24	21%	21%	0.000	0.171	0.848	1.493	2.085
Louisiana	No	34	265	293.700	0.902	0.798	1.016	22	18%	41%	0.000	0.000	0.339	1.609	1.876
Massachusetts	No	21	274	210.312	1.303	1.155	1.464	17	18%	6%	.	.	.	.	.
Maryland	No	24	248	301.114	0.824	0.726	0.931	22	23%	27%	0.000	0.188	0.843	1.389	2.766
Maine	No	13	165	83.762	1.970	1.686	2.288	8	.	.	.	.	.	.	.
Michigan	No	77	1,414	1,233.349	1.146	1.088	1.207	55	27%	16%	0.309	0.655	1.061	1.749	2.353
Minnesota	No	6	133	138.963	0.957	0.804	1.131	4	.	.	.	.	.	.	.
Missouri		42	773	685.423	1.128	1.050	1.209	29	34%	17%	0.000	0.636	1.296	1.848	2.336
Mississippi	No	25	44	122.193	0.360	0.265	0.479	16	0%	31%	.	.	.	.	.
Montana	No	4	.	.	.	.	.	.	.	.	.	.	.	.	.
North Carolina	No	41	738	547.835	1.347	1.253	1.447	30	33%	13%	0.000	0.589	1.375	1.953	3.309
North Dakota	No	2	.	.	.	.	.	.	.	.	.	.	.	.	.
Nebraska	No	12	211	129.092	1.634	1.425	1.867	9	.	.	.	.	.	.	.
New Hampshire	No	11	30	45.591	0.658	0.452	0.928	11	9%	27%	.	.	.	.	.
New Jersey	No	50	699	744.096	0.939	0.872	1.011	48	27%	21%	0.000	0.242	0.670	1.738	2.293
New Mexico	No	18	105	66.925	1.569	1.290	1.891	9	.	.	.	.	.	.	.
Nevada	No	21	388	533.466	0.727	0.658	0.802	18	17%	44%	.	.	.	.	.
New York		131	1,578	2,232.500	0.707	0.673	0.742	116	11%	34%	0.000	0.000	0.466	0.960	1.527
Ohio	No	83	1,282	1,116.169	1.149	1.087	1.213	68	35%	22%	0.000	0.412	1.171	2.044	2.739
Oklahoma		31	161	237.372	0.678	0.579	0.789	18	6%	22%	.	.	.	.	.
Oregon	No	25	134	153.087	0.875	0.736	1.033	18	11%	17%	.	.	.	.	.
Pennsylvania	Yes	139	2,063	2,210.733	0.933	0.894	0.974	106	20%	22%	0.000	0.206	0.775	1.347	2.228
Puerto Rico		9	50	60.438	0.827	0.621	1.082	8	.	.	.	.	.	.	.
Rhode Island	No	9	99	101.900	0.972	0.794	1.178	8	.	.	.	.	.	.	.
South Carolina	Yes	52	789	710.016	1.111	1.036	1.191	34	18%	15%	0.000	0.427	1.089	1.521	2.618
South Dakota	No	6	16	27.522	0.581	0.344	0.924	2	.	.	.	.	.	.	.
Tennessee	No	52	720	706.594	1.019	0.947	1.095	34	24%	18%	0.000	0.250	0.852	1.392	2.120
Texas	No	135	1,199	1,624.986	0.738	0.697	0.781	102	13%	31%	0.000	0.115	0.463	1.057	1.767
Utah	No	8	10	13.254	0.754	0.383	1.345	4	.	.	.	.	.	.	.
Virginia	No	66	939	775.844	1.210	1.135	1.290	46	28%	11%	0.000	0.344	0.961	1.725	2.488
Virgin Islands	No	1	.	.	.	.	.	.	.	.	.	.	.	.	.

Vermont	No	0	.	.	.	.	.	.	.	.	.	.	.	.	.
Washington	No	27	160	221.828	0.721	0.616	0.840	23	9%	35%	0.000	0.000	0.251	1.180	1.704
Wisconsin	No	57	500	352.662	1.418	1.298	1.546	35	26%	9%	0.116	0.546	1.110	1.676	2.550
West Virginia	No	18	31	128.015	0.242	0.167	0.340	10	0%	30%	.	.	.	.	.
Wyoming	No	6	2	5.566	0.359	0.060	1.187	1	.	.	.	.	.	.	.
All US		**2007**	**23,832**	**24,964.115**	**0.955**	**0.943**	**0.967**	**1,522**	**20%**	**24%**	**0.000**	**0.156**	**0.762**	**1.463**	**2.213**

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 2017. M indicates midyear implementation of a mandate. No indicates that a state mandate did not exist during 2017.
   A blank field indicates data not available.
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 2017.
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 2017 national ICU VAE SIR of 0.955. This is only calculated
   if at least 10 facilities had at least one predicted ICU VAE in 2017.
5. Facility-specific key percentiles were only calculated if at least 20 facilities had ≥1.0 predicted ICU VAE in 2017. 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.

Table 5. State-specific standardized infection ratios (SIRs) and facility-specific SIR summary measures, NHSN Acute Care Hospitals reporting during 2017

5c. Ventilator-associated events (VAE), ward (non-critical care) locations[1]

State			No. of Events			95% CI for SIR		Facility-specific SIRs							
			Observed	Predicted	SIR	Lower	Upper				10%	25%		75%	90%
Alaska	No	2	.	.	.	.	.	.	.	.	.	.	.	.	.
Alabama	No	2	.	.	.	.	.	.	.	.	.	.	.	.	.
Arkansas		1	.	.	.	.	.	.	.	.	.	.	.	.	.
Arizona	No	4	.	.	.	.	.	.	.	.	.	.	.	.	.
California	No	37	23	66.496	0.346	0.225	0.511	18	6%	17%	.	.	.	.	.
Colorado	No	5	10	8.630	1.159	0.589	2.066	3	.	.	.	.	.	.	.
Connecticut	No	2	.	.	.	.	.	.	.	.	.	.	.	.	.
D.C.	No	0	.	.	.	.	.	.	.	.	.	.	.	.	.
Delaware		1	.	.	.	.	.	.	.	.	.	.	.	.	.
Florida	No	16	12	43.583	0.275	0.149	0.468	9	.	.	.	.	.	.	.
Georgia	No	6	9	7.564	1.190	0.580	2.184	2	.	.	.	.	.	.	.
Guam	No	0	.	.	.	.	.	.	.	.	.	.	.	.	.
Hawaii	No	2	.	.	.	.	.	.	.	.	.	.	.	.	.
Iowa	No	0	.	.	.	.	.	.	.	.	.	.	.	.	.
Idaho	No	0	.	.	.	.	.	.	.	.	.	.	.	.	.
Illinois	No	11	13	13.887	0.936	0.521	1.561	5	.	.	.	.	.	.	.
Indiana	No	7	25	16.181	1.545	1.022	2.247	5	.	.	.	.	.	.	.
Kansas	No	3	.	.	.	.	.	.	.	.	.	.	.	.	.
Kentucky	No	2	.	.	.	.	.	.	.	.	.	.	.	.	.
Louisiana	No	4	.	.	.	.	.	.	.	.	.	.	.	.	.
Massachusetts	No	1	.	.	.	.	.	.	.	.	.	.	.	.	.
Maryland	No	7	7	12.592	0.556	0.243	1.100	4	.	.	.	.	.	.	.
Maine	No	4	.	.	.	.	.	.	.	.	.	.	.	.	.
Michigan	No	4	.	.	.	.	.	.	.	.	.	.	.	.	.
Minnesota	No	5	26	22.194	1.171	0.782	1.692	2	.	.	.	.	.	.	.
Missouri		5	13	9.517	1.366	0.760	2.277	4	.	.	.	.	.	.	.
Mississippi	No	2	.	.	.	.	.	.	.	.	.	.	.	.	.
Montana	No	0	.	.	.	.	.	.	.	.	.	.	.	.	.
North Carolina	No	5	50	25.194	1.985	1.489	2.595	4	.	.	.	.	.	.	.
North Dakota	No	0	.	.	.	.	.	.	.	.	.	.	.	.	.
Nebraska	No	4	.	.	.	.	.	.	.	.	.	.	.	.	.
New Hampshire	No	1	.	.	.	.	.	.	.	.	.	.	.	.	.
New Jersey	No	14	24	34.419	0.697	0.457	1.022	8	.	.	.	.	.	.	.
New Mexico	No	0	.	.	.	.	.	.	.	.	.	.	.	.	.
Nevada	No	9	8	30.944	0.259	0.120	0.491	6	.	.	.	.	.	.	.
New York		48	90	156.993	0.573	0.464	0.701	28	14%	25%	0.000	0.000	0.242	0.938	2.458
Ohio	No	21	43	38.210	1.125	0.825	1.502	8	.	.	.	.	.	.	.
Oklahoma		0	.	.	.	.	.	.	.	.	.	.	.	.	.
Oregon	No	3	.	.	.	.	.	.	.	.	.	.	.	.	.
Pennsylvania	Yes	34	52	58.191	0.894	0.674	1.163	13	15%	15%	.	.	.	.	.
Puerto Rico		5	1	4.909	0.204	0.010	1.005	3	.	.	.	.	.	.	.
Rhode Island	No	1	.	.	.	.	.	.	.	.	.	.	.	.	.
South Carolina	No	9	3	5.234	0.573	0.146	1.560	2	.	.	.	.	.	.	.
South Dakota	No	1	.	.	.	.	.	.	.	.	.	.	.	.	.
Tennessee	No	8	17	19.121	0.889	0.535	1.395	7	.	.	.	.	.	.	.
Texas	No	17	37	31.950	1.158	0.827	1.579	6	.	.	.	.	.	.	.
Utah	No	0	.	.	.	.	.	.	.	.	.	.	.	.	.

Virginia	No	10	23	23.409	0.983	0.638	1.451	5	.	.	.	.	.	.	.
Virgin Islands	No	0	.	.	.	.	.	.	.	.	.	.	.	.	.
Vermont	No	0	.	.	.	.	.	.	.	.	.	.	.	.	.
Washington	No	4	.	.	.	.	.	.	.	.	.	.	.	.	.
Wisconsin	No	5	8	17.949	0.446	0.207	0.846	2	.	.	.	.	.	.	.
West Virginia	No	1	.	.	.	.	.	.	.	.	.	.	.	.	.
Wyoming	No	0	.	.	.	.	.	.	.	.	.	.	.	.	.
All US		**333**	**659**	**766.407**	**0.860**	**0.796**	**0.927**	**161**	**11%**	**14%**	**0.000**	**0.000**	**0.475**	**1.248**	**2.102**

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 2017. M indicates midyear implementation of a mandate. No indicates that a state mandate did not exist during 2017. A blank field indicates data not available.
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 2017.
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 2017 national ward VAE SIR of 0.860. This is only calculated if at least 10 facilities had at least one predicted ward VAE in 2017.
5. Facility-specific key percentiles were only calculated if at least 20 facilities had ≥1.0 predicted ward VAE in 2017. 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.

Table 6. State-specific standardized infection ratios (SIRs) and facility-specific SIR summary measures, NHSN Acute Care Hospitals reporting during 2017

6a. Surgical site infections (SSI) following colon surgery[1] in adults, ≥ 18years

State			No. of Acute Care Hospitals Reporting[4]	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	No	7	573	16	14.032	1.140	0.675	1.812	5	.	.	.	.	.	.	.
Alabama	Yes	Yes	68	6,050	116	144.337	0.804	0.667	0.960	29	3%	7%	0.000	0.236	0.540	1.278	1.611
Arkansas			41	3,197	88	69.067	1.274	1.028	1.562	20	5%	0%	0.392	0.729	1.001	1.427	2.045
Arizona	No	No	57	6,341	156	151.604	1.029	0.877	1.200	34	6%	0%	0.000	0.519	0.819	1.542	1.992
California	Yes	Yes	317	28,347	686	702.977	0.976	0.905	1.051	189	8%	2%	0.000	0.292	0.829	1.381	2.009
Colorado	Yes	No	47	5,331	135	130.554	1.034	0.870	1.220	32	13%	0%	0.277	0.549	0.961	1.339	2.309
Connecticut	Yes		28	3,780	75	100.090	0.749	0.594	0.934	21	0%	5%	0.000	0.260	0.458	0.920	1.066
D.C.	Yes	No	8	1,096	28	36.334	0.771	0.522	1.099	5	.	.	.	.	.	.	.
Delaware			7	1,136	19	31.832	0.597	0.370	0.915	5	.	.	.	.	.	.	.
Florida	No	Yes	191	25,154	496	588.720	0.843	0.771	0.919	142	6%	6%	0.000	0.320	0.684	1.197	1.756
Georgia	Yes	Yes	89	10,336	203	265.741	0.764	0.664	0.875	52	4%	6%	0.307	0.488	0.741	1.065	1.686
Guam	No	No	0	.	.	.	.	.	.	.	.	.	.	.	.	.	.
Hawaii	Yes	Yes	13	1,109	24	27.374	0.877	0.575	1.285	8	.	.	.	.	.	.	.
Iowa	No	No	36	2,951	64	71.815	0.891	0.692	1.131	21	5%	0%	0.000	0.000	0.518	1.411	1.658
Idaho	No		13	1,341	25	33.001	0.758	0.501	1.102	9	.	.	.	.	.	.	.
Illinois	Yes	No	128	11,724	268	311.034	0.862	0.763	0.970	75	8%	5%	0.000	0.263	0.723	1.288	1.819
Indiana	Yes	Yes	79	7,047	142	173.448	0.819	0.692	0.962	42	0%	5%	0.000	0.399	0.705	1.366	1.793
Kansas	No	Yes	40	2,999	66	75.418	0.875	0.682	1.106	14	7%	0%	.	.	.	.	.
Kentucky	Yes	No	62	5,525	143	136.870	1.045	0.884	1.227	31	13%	10%	0.000	0.420	1.034	1.772	2.561
Louisiana	No	Yes	70	5,054	117	124.289	0.941	0.782	1.124	35	9%	0%	0.000	0.000	0.706	1.415	1.943
Massachusetts	Yes	Yes	60	7,282	161	180.674	0.891	0.761	1.037	38	8%	3%	0.000	0.370	0.852	1.237	1.799
Maryland	Yes	Yes	45	5,788	132	165.158	0.799	0.671	0.945	34	6%	3%	0.000	0.299	0.726	1.227	1.604
Maine	No	Yes	17	1,470	39	34.096	1.144	0.825	1.548	8	.	.	.	.	.	.	.
Michigan	No	Yes	91	10,988	305	280.968	1.086	0.969	1.213	54	15%	4%	0.182	0.438	0.922	1.545	2.115
Minnesota	Yes	Yes	50	5,646	150	157.761	0.951	0.808	1.112	22	9%	5%	0.315	0.725	0.947	1.235	1.395
Missouri			69	7,347	159	183.930	0.864	0.738	1.007	36	3%	3%	0.000	0.438	0.859	1.143	1.540
Mississippi	Yes	Yes	41	3,439	90	79.090	1.138	0.920	1.392	19	16%	0%	.	.	.	.	.
Montana	No		11	861	19	19.238	0.988	0.612	1.514	6	.	.	.	.	.	.	.
North Carolina	Yes	Yes	87	10,881	237	284.890	0.832	0.731	0.943	51	6%	8%	0.000	0.000	0.649	1.138	1.887
North Dakota	No	No	7	917	35	19.916	1.757	1.243	2.417	6	.	.	.	.	.	.	.
Nebraska	Yes	Yes	21	1,902	55	48.180	1.142	0.868	1.475	11	9%	0%	.	.	.	.	.
New Hampshire	Yes	Yes	13	1,309	38	33.891	1.121	0.805	1.523	9	.	.	.	.	.	.	.
New Jersey	Yes	Yes	70	8,119	124	202.841	0.611	0.511	0.726	49	2%	6%	0.000	0.000	0.509	0.851	1.593
New Mexico	No	No	25	1,272	40	31.389	1.274	0.923	1.718	11	18%	0%	.	.	.	.	.
Nevada	No	No	20	2,461	65	52.923	1.228	0.956	1.555	15	20%	0%	.	.	.	.	.
New York			163	18,892	509	523.211	0.973	0.891	1.060	101	9%	5%	0.000	0.478	0.885	1.498	1.984
Ohio	No	Yes	125	14,317	304	397.477	0.765	0.682	0.855	76	4%	5%	0.000	0.289	0.621	1.019	1.555
Oklahoma			56	4,235	101	104.303	0.968	0.793	1.172	21	10%	0%	0.000	0.421	0.827	1.237	1.813
Oregon	Yes	Yes	33	3,817	78	98.066	0.795	0.633	0.987	22	5%	0%	0.000	0.000	0.752	1.126	1.507
Pennsylvania	Yes	No	150	15,898	343	420.718	0.815	0.732	0.905	88	3%	3%	0.000	0.402	0.676	1.080	1.465
Puerto Rico			3	.	.	.	.	.	.	.	.	.	.	.	.	.	.
Rhode Island	No	No	11	1,126	40	24.928	1.605	1.162	2.164	6	.	.	.	.	.	.	.
South Carolina	Yes	Yes	53	4,785	112	111.335	1.006	0.832	1.206	24	8%	4%	0.000	0.187	1.031	1.397	1.616
South Dakota	No	Yes	13	992	33	21.805	1.513	1.059	2.101	4	.	.	.	.	.	.	.
Tennessee	Yes	Yes	86	8,218	177	216.531	0.817	0.703	0.945	44	7%	7%	0.000	0.306	0.806	1.276	1.652
Texas	No	No	268	24,061	531	616.297	0.862	0.791	0.937	146	8%	3%	0.000	0.371	0.708	1.330	1.772
Utah	Yes	No	31	2,277	70	55.034	1.272	0.999	1.597	9	.	.	.	.	.	.	.
Virginia	Yes	Yes	73	7,894	192	197.878	0.970	0.840	1.115	42	10%	0%	0.000	0.336	0.885	1.171	1.636
Virgin Islands	Yes	Yes	2	.	.	.	.	.	.	.	.	.	.	.	.	.	.
Vermont	No	Yes	6	475	15	11.916	1.259	0.731	2.030	2	.	.	.	.	.	.	.
Washington	Yes	Yes	51	6,070	133	153.871	0.864	0.727	1.021	36	3%	3%	0.000	0.392	0.744	1.115	1.485
Wisconsin	No	Yes	68	5,764	124	142.270	0.872	0.728	1.036	36	6%	6%	0.000	0.066	0.670	1.446	1.875
West Virginia	Yes	Yes	27	1,950	70	49.334	1.419	1.114	1.782	14	21%	0%	.	.	.	.	.
Wyoming	No	No	11	268	2	5.338	0.375	0.063	1.238	2	.	.	.	.	.	.	.

All US		**3,158**	**319,867**	**7,353**	**8,114.944**	**0.906**	**0.886**	**0.927**	**1,811**	**7%**	**4%**	**0.000**	**0.346**	**0.772**	**1.304**	**1.841**

1. 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 2017 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.
2. Yes indicates the presence of a state mandate to report SSIs following colon surgery to NHSN at the beginning of 2017. M indicates midyear implementation of a mandate. No indicates that a state mandate did not exist during 2017. A blank field indicates data not available.
3. Yes indicates that the state health department reported the completion of all of the following validation activities: state health department had access to 2017 NHSN data, state health department performed an assessment of missing or implausible values on at least six months of 2017 NHSN data prior to July 2, 2018, 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 2, 2018 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. 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 2017.
5. 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 2017 national colon surgery SIR of 0.906. This is only calculated if at least 10 facilities had at least one predicted colon surgery SSI in 2017.
6. Facility-specific key percentiles were only calculated if at least 20 facilities had ≥1.0 predicted colon surgery SSI in 2017. 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 2017

6b. Surgical site infections (SSI) following abdominal hysterectomy surgery[1] in adults, ≥ 18years

					No. of Infections			95% CI for SIR		Facility-specific SIRs							
State			No. of Acute Care Hospitals Reporting[4]	No. of Procedures	Observed	Predicted	SIR	Lower	Upper				10%	25%		75%	90%
Alaska	No	No	7	564	4	3.324	1.203	0.382	2.902	1	.	.	.	.	.	.	.
Alabama	Yes	Yes	56	6,951	33	41.917	0.787	0.551	1.093	12	8%	8%	.	.	.	.	.
Arkansas			39	3,434	15	20.414	0.735	0.427	1.185	8	.	.	.	.	.	.	.
Arizona	No	No	52	6,945	36	39.300	0.916	0.651	1.254	13	0%	0%	.	.	.	.	.
California	Yes	Yes	296	22,436	136	155.389	0.875	0.737	1.032	55	4%	0%	0.000	0.000	0.701	1.516	1.853
Colorado	Yes	No	47	5,669	28	33.595	0.833	0.565	1.188	13	15%	0%	.	.	.	.	.
Connecticut	Yes		28	3,465	15	23.629	0.635	0.369	1.024	6	.	.	.	.	.	.	.
D.C.	Yes	No	8	690	5	6.355	0.787	0.288	1.744	3	.	.	.	.	.	.	.
Delaware			7	601	7	4.324	1.619	0.708	3.202	1	.	.	.	.	.	.	.
Florida	No	Yes	175	19,825	109	122.617	0.889	0.733	1.068	40	3%	0%	0.000	0.495	0.816	1.242	1.626
Georgia	Yes	Yes	85	12,180	65	78.867	0.824	0.641	1.044	24	4%	0%	0.000	0.330	0.676	1.030	1.655
Guam	No	No	1	.	.	.	.	.	.	.	.	.	.	.	.	.	.
Hawaii	Yes	Yes	12	615	2	4.040	0.495	0.083	1.636	1	.	.	.	.	.	.	.
Iowa	No	No	34	3,412	29	20.411	1.421	0.970	2.014	4	.	.	.	.	.	.	.
Idaho	No		13	985	5	6.097	0.820	0.300	1.818	2	.	.	.	.	.	.	.
Illinois	Yes	No	121	10,744	51	80.340	0.635	0.478	0.828	26	8%	4%	0.000	0.000	0.292	0.751	2.192
Indiana	Yes		73	6,469	46	42.668	1.078	0.799	1.426	10	10%	0%	.	.	.	.	.
Kansas	No	Yes	37	2,953	13	18.234	0.713	0.397	1.189	4	.	.	.	.	.	.	.
Kentucky	Yes	No	56	5,533	42	37.075	1.133	0.827	1.517	11	9%	0%	.	.	.	.	.
Louisiana	No	Yes	67	5,241	31	32.477	0.955	0.660	1.338	10	0%	0%	.	.	.	.	.
Massachusetts	Yes	Yes	51	4,636	40	34.005	1.176	0.852	1.586	7	.	.	.	.	.	.	.
Maryland	Yes	Yes	41	5,036	39	36.056	1.082	0.780	1.464	10	20%	0%	.	.	.	.	.
Maine	No		15	958	5	6.338	0.789	0.289	1.749	1	.	.	.	.	.	.	.
Michigan	No	Yes	87	9,684	56	70.509	0.794	0.606	1.024	27	4%	0%	0.000	0.434	0.895	1.301	2.306
Minnesota	Yes	Yes	48	3,965	36	25.919	1.389	0.988	1.902	9	.	.	.	.	.	.	.
Missouri			61	6,259	29	42.687	0.679	0.464	0.963	12	0%	17%	.	.	.	.	.
Mississippi	Yes	Yes	42	3,141	26	18.480	1.407	0.939	2.032	5	.	.	.	.	.	.	.
Montana	No		11	771	4	4.229	0.946	0.301	2.281	1	.	.	.	.	.	.	.
North Carolina	Yes	Yes	86	10,215	39	69.291	0.563	0.406	0.762	19	0%	5%	.	.	.	.	.
North Dakota	No	No	7	529	5	2.850	1.754	0.643	3.888	0	.	.	.	.	.	.	.
Nebraska	Yes	Yes	22	2,001	13	11.141	1.167	0.649	1.945	4	.	.	.	.	.	.	.
New Hampshire	Yes	Yes	13	1,089	6	7.018	0.855	0.346	1.778	1	.	.	.	.	.	.	.
New Jersey	Yes	Yes	61	6,872	29	47.834	0.606	0.414	0.859	16	0%	0%	.	.	.	.	.
New Mexico	No	No	23	1,702	14	10.892	1.285	0.732	2.105	3	.	.	.	.	.	.	.
Nevada	No	No	18	1,827	12	11.160	1.075	0.583	1.828	4	.	.	.	.	.	.	.
New York			149	16,701	122	118.884	1.026	0.856	1.221	41	7%	0%	0.000	0.472	0.907	1.592	2.050
Ohio	No	Yes	120	11,896	70	85.826	0.816	0.641	1.024	26	0%	4%	0.000	0.187	0.866	1.731	1.945
Oklahoma			58	4,261	25	27.391	0.913	0.604	1.327	8	.	.	.	.	.	.	.
Oregon	Yes	Yes	33	2,778	21	18.074	1.162	0.738	1.746	8	.	.	.	.	.	.	.
Pennsylvania	Yes	No	136	11,225	77	81.415	0.946	0.752	1.176	21	10%	0%	0.226	0.673	0.931	1.270	1.642
Puerto Rico			1	.	.	.	.	.	.	.	.	.	.	.	.	.	.
Rhode Island	No	No	10	1,206	12	7.539	1.592	0.862	2.706	1	.	.	.	.	.	.	.
South Carolina	Yes	Yes	50	5,697	31	35.602	0.871	0.602	1.221	12	0%	0%	.	.	.	.	.
South Dakota	No	Yes	16	1,062	7	6.510	1.075	0.470	2.127	2	.	.	.	.	.	.	.
Tennessee	Yes	Yes	78	9,131	60	55.519	1.081	0.832	1.382	16	6%	0%	.	.	.	.	.
Texas	No	No	267	29,134	151	190.946	0.791	0.672	0.925	57	5%	4%	0.000	0.000	0.558	1.108	1.922
Utah	Yes	No	30	3,014	13	16.570	0.785	0.436	1.308	5	.	.	.	.	.	.	.
Virginia	Yes	Yes	64	8,417	44	51.252	0.858	0.631	1.142	14	7%	0%	.	.	.	.	.
Virgin Islands	Yes	Yes	2	.	.	.	.	.	.	.	.	.	.	.	.	.	.
Vermont	Yes	Yes	6	398	4	2.899	1.380	0.438	3.329	1	.	.	.	.	.	.	.
Washington	Yes	Yes	49	5,568	23	35.352	0.651	0.422	0.961	11	9%	0%	.	.	.	.	.
Wisconsin	No	Yes	65	4,995	37	30.097	1.229	0.878	1.677	9	.	.	.	.	.	.	.
West Virginia	Yes	Yes	24	1,564	11	11.058	0.995	0.523	1.729	4	.	.	.	.	.	.	.
Wyoming	No	No	12	343	-	1.799	0.000		1.665	0	.	.	.	.	.	.	.
All US			**2,970**	**294,982**	**1,733**	**1,947.358**	**0.890**	**0.849**	**0.933**	**599**	**5%**	**1%**	**0.000**	**0.000**	**0.714**	**1.293**	**1.957**

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 2017 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 2017. M indicates midyear implementation of a mandate. No indicates that a state mandate did not exist during 2017. A blank field indicates data not available.
3. Yes indicates that the state health department reported the completion of all of the following validation activities: state health department had access to 2017 NHSN data, state health department performed an assessment of missing or implausible values on at least six months of 2017 NHSN data prior to July 2, 2018, 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 2, 2018 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. 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 2017.
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 2017 national abdominal hysterectomy SIR of 0.890. This is only calculated if at least 10 facilities had at least one predicted abdominal hysterectomy SSI in 2017.
6. Facility-specific key percentiles were only calculated if at least 20 facilities had ≥1.0 predicted abdominal hysterectomy SSI in 2017. 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.

Table 6. State-specific standardized infection ratios (SIRs) and facility-specific SIR summary measures, NHSN Acute Care Hospitals reporting during 2017

6c. Surgical site infections (SSI) following hip arthroplasty[1] in adults, ≥ 18years

State		No. of Acute Care Hospitals Reporting[3]	No. of Procedures	No. of Infections		95% CI for SIR			Facility-specific SIRs							
				Observed	Predicted	SIR	Lower	Upper				10%	25%		75%	90%
Alaska	No	3	.	.	.	.	.	.	.	.	.	.	.	.	.	.
Alabama	No	16	2,297	15	16.325	0.919	0.534	1.481	7	.	.	.	.	.	.	.
Arkansas		16	2,246	9	13.329	0.675	0.329	1.239	7	.	.	.	.	.	.	.
Arizona	No	40	7,299	71	50.828	1.397	1.099	1.752	16	13%	0%	.	.	.	.	.
California	Yes	303	47,274	263	273.881	0.960	0.849	1.082	91	8%	1%	0.000	0.000	0.624	1.243	2.491
Colorado	Yes	50	11,050	61	57.980	1.052	0.812	1.342	20	0%	0%	0.303	0.609	0.846	1.600	2.013
Connecticut	No	14	3,355	35	22.597	1.549	1.096	2.130	6	.	.	.	.	.	.	.
D.C.	No	4	.	.	.	.	.	.	.	.	.	.	.	.	.	.
Delaware		3	.	.	.	.	.	.	.	.	.	.	.	.	.	.
Florida	No	60	13,198	83	84.381	0.984	0.788	1.213	27	15%	4%	0.000	0.271	0.846	1.830	2.790
Georgia	No	62	10,008	64	68.212	0.938	0.729	1.190	27	7%	4%	0.000	0.160	0.784	1.512	2.281
Guam	No	1	.	.	.	.	.	.	.	.	.	.	.	.	.	.
Hawaii	No	3	.	.	.	.	.	.	.	.	.	.	.	.	.	.
Iowa	No	15	2,368	14	13.409	1.044	0.594	1.710	3	.	.	.	.	.	.	.
Idaho	No	5	1,273	11	6.985	1.575	0.828	2.737	2	.	.	.	.	.	.	.
Illinois	No	48	8,550	52	51.663	1.007	0.759	1.310	19	5%	0%	.	.	.	.	.
Indiana	No	51	7,978	49	48.812	1.004	0.751	1.316	15	0%	0%	.	.	.	.	.
Kansas	No	33	4,475	14	28.334	0.494	0.281	0.809	9	.	.	.	.	.	.	.
Kentucky	No	18	2,070	14	14.956	0.936	0.533	1.533	3	.	.	.	.	.	.	.
Louisiana	No	33	3,196	24	24.742	0.970	0.636	1.421	7	.	.	.	.	.	.	.
Massachusetts	Yes	56	15,246	81	91.688	0.883	0.706	1.092	21	5%	5%	0.226	0.595	0.952	1.416	1.635
Maryland	Yes	45	9,398	46	60.662	0.758	0.562	1.003	21	0%	5%	0.000	0.000	0.620	1.451	1.555
Maine	No	11	2,129	14	10.904	1.284	0.731	2.103	4	.	.	.	.	.	.	.
Michigan	No	61	13,627	104	96.257	1.080	0.887	1.304	30	10%	3%	0.308	0.532	0.825	1.695	2.351
Minnesota	No	23	5,612	50	39.392	1.269	0.952	1.660	8	.	.	.	.	.	.	.
Missouri		58	11,275	66	77.031	0.857	0.668	1.083	20	5%	10%	0.000	0.000	0.894	1.530	2.203
Mississippi	No	22	3,333	30	25.619	1.171	0.805	1.651	6	.	.	.	.	.	.	.
Montana	No	6	1,507	9	7.388	1.218	0.594	2.235	3	.	.	.	.	.	.	.
North Carolina	No	29	7,206	66	43.611	1.513	1.180	1.913	12	17%	0%	.	.	.	.	.
North Dakota	No	1	.	.	.	.	.	.	.	.	.	.	.	.	.	.
Nebraska	No	2	.	.	.	.	.	.	.	.	.	.	.	.	.	.
New Hampshire	No	6	1,369	7	7.366	0.950	0.416	1.880	1	.	.	.	.	.	.	.
New Jersey	No	30	5,659	23	33.404	0.689	0.447	1.017	10	0%	0%	.	.	.	.	.
New Mexico	No	8	654	6	3.370	1.781	0.722	3.704	1	.	.	.	.	.	.	.
Nevada	Yes	19	4,055	26	24.372	1.067	0.712	1.541	9	.	.	.	.	.	.	.
New York		157	34,542	205	209.998	0.976	0.849	1.117	60	2%	3%	0.000	0.466	0.854	1.412	1.835
Ohio	No	43	8,678	47	56.509	0.832	0.618	1.097	18	6%	0%	.	.	.	.	.
Oklahoma		30	3,551	32	25.565	1.252	0.871	1.746	8	.	.	.	.	.	.	.
Oregon	Yes	32	7,918	51	43.930	1.161	0.873	1.514	15	20%	0%	.	.	.	.	.
Pennsylvania	Yes	152	28,963	163	179.372	0.909	0.777	1.057	59	0%	0%	0.000	0.000	0.803	1.311	2.010
Puerto Rico		1	.	.	.	.	.	.	.	.	.	.	.	.	.	.
Rhode Island	No	7	1,318	4	8.225	0.486	0.155	1.173	2	.	.	.	.	.	.	.
South Carolina	Yes	53	8,534	56	53.614	1.045	0.797	1.346	18	6%	0%	.	.	.	.	.
South Dakota	No	7	673	2	4.260	0.470	0.079	1.551	1	.	.	.	.	.	.	.
Tennessee	No	57	11,663	101	81.112	1.245	1.019	1.507	25	8%	0%	0.000	0.792	1.130	1.843	2.864
Texas	No	291	32,433	225	227.417	0.989	0.866	1.125	65	8%	0%	0.000	0.000	0.730	1.140	2.180
Utah	No	0	.	.	.	.	.	.	.	.	.	.	.	.	.	.
Virginia	No	21	6,361	45	40.742	1.105	0.815	1.465	12	8%	0%	.	.	.	.	.
Virgin Islands	Yes	0	.	.	.	.	.	.	.	.	.	.	.	.	.	.

Vermont	Yes	6	1,007	8	6.081	1.316	0.611	2.498	2	.	.	.	.	.	.	.
Washington	No	49	13,638	60	66.726	0.899	0.692	1.150	27	4%	0%	0.000	0.000	0.686	1.328	2.349
Wisconsin	No	62	10,811	61	63.808	0.956	0.738	1.220	20	5%	0%	0.000	0.380	0.810	1.082	1.856
West Virginia	No	11	1,275	7	10.280	0.681	0.298	1.347	3	.	.	.	.	.	.	.
Wyoming	No	7	269	0	1.576	0.000		1.900	0	.	.	.	.	.	.	.
All US		**2,141**	**382,960**	**2,394**	**2,401.710**	**0.997**	**0.957**	**1.037**	**748**	**7%**	**1%**	**0.000**	**0.287**	**0.799**	**1.463**	**2.260**

1. SSIs included are those classified as deep incisional or organ/space infections following NHSN-defined inpatient hip arthroplasty procedures that occurred in 2017 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 hip arthroplasty surgery to NHSN at the beginning of 2017. M indicates midyear implementation of a mandate. No indicates that a state mandate did not exist during 2017. A blank field indicates data not available.
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 hip arthroplasty in 2017.
4. 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 2017 national hip arthroplasty SIR of 0.997. This is only calculated if at least 10 facilities had at least one predicted hip arthroplasty SSI in 2017.
5. Facility-specific key percentiles were only calculated if at least 20 facilities had ≥1.0 predicted hip arthroplasty SSI in 2017. 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.

Table 6. State-specific standardized infection ratios (SIRs) and facility-specific SIR summary measures, NHSN Acute Care Hospitals reporting during 2017

6d. Surgical site infections (SSI) following knee arthroplasty[1] in adults, ≥ 18years

				No. of Infections			95% CI for SIR		Facility-specific SIRs							
State			No. of Procedures	Observed	Predicted	SIR	Lower	Upper				10%	25%		75%	90%
Alaska	No	3	.	.	.	.	.	.	.	.	.	.	.	.	.	.
Alabama	No	17	3,947	24	16.495	1.455	0.954	2.132	4	.	.	.	.	.	.	.
Arkansas		16	3,595	14	11.968	1.170	0.666	1.916	6	.	.	.	.	.	.	.
Arizona	No	40	9,562	42	37.078	1.133	0.827	1.517	15	0%	0%	.	.	.	.	.
California	Yes	287	61,530	210	218.284	0.962	0.838	1.099	72	4%	1%	0.000	0.000	0.800	1.440	2.042
Colorado	Yes	51	17,292	66	54.558	1.210	0.943	1.529	18	11%	0%	.	.	.	.	.
Connecticut	No	14	4,391	32	16.925	1.891	1.315	2.637	7	.	.	.	.	.	.	.
D.C.	No	4	.	.	.	.	.	.	.	.	.	.	.	.	.	.
Delaware		2	.	.	.	.	.	.	.	.	.	.	.	.	.	.
Florida	No	60	17,216	68	62.798	1.083	0.847	1.364	27	7%	0%	0.000	0.000	0.933	1.884	2.774
Georgia	No	57	12,373	65	46.820	1.388	1.080	1.758	18	6%	6%	.	.	.	.	.
Guam	No	1	.	.	.	.	.	.	.	.	.	.	.	.	.	.
Hawaii	No	3	.	.	.	.	.	.	.	.	.	.	.	.	.	.
Iowa	No	14	3,439	9	9.213	0.977	0.476	1.793	3	.	.	.	.	.	.	.
Idaho	No	5	2,024	9	7.179	1.254	0.611	2.301	2	.	.	.	.	.	.	.
Illinois	Yes	117	30,794	97	112.197	0.865	0.705	1.050	46	0%	2%	0.000	0.000	0.641	1.151	1.684
Indiana	No	51	13,413	36	43.538	0.827	0.588	1.132	13	0%	0%	.	.	.	.	.
Kansas	No	31	6,552	20	21.603	0.926	0.581	1.404	9	.	.	.	.	.	.	.
Kentucky	No	18	4,478	15	16.761	0.895	0.520	1.443	4	.	.	.	.	.	.	.
Louisiana	No	32	5,149	21	21.158	0.993	0.631	1.491	6	.	.	.	.	.	.	.
Massachusetts	Yes	56	18,754	75	65.371	1.147	0.909	1.430	21	10%	5%	0.433	0.549	1.259	1.869	2.260
Maryland	Yes	45	13,986	36	52.404	0.687	0.488	0.941	16	0%	19%	.	.	.	.	.
Maine	No	12	2,697	12	7.517	1.596	0.865	2.714	3	.	.	.	.	.	.	.
Michigan	No	62	20,485	90	71.459	1.259	1.019	1.541	28	4%	0%	0.000	0.596	1.207	1.856	2.258
Minnesota	No	25	7,144	42	27.143	1.547	1.130	2.072	7	.	.	.	.	.	.	.
Missouri		40	10,930	30	39.380	0.762	0.523	1.074	11	9%	18%	.	.	.	.	.
Mississippi	No	22	4,937	21	19.174	1.095	0.696	1.646	5	.	.	.	.	.	.	.
Montana	No	6	1,934	6	5.202	1.153	0.468	2.399	3	.	.	.	.	.	.	.
North Carolina	No	28	10,885	51	39.035	1.307	0.983	1.704	11	9%	0%	.	.	.	.	.
North Dakota	No	1	.	.	.	.	.	.	.	.	.	.	.	.	.	.
Nebraska	No	3	.	.	.	.	.	.	.	.	.	.	.	.	.	.
New Hampshire	Yes	13	3,475	15	12.609	1.190	0.691	1.918	3	.	.	.	.	.	.	.
New Jersey	Yes	68	17,918	62	61.393	1.010	0.781	1.286	22	9%	0%	0.000	0.000	0.903	1.382	2.157
New Mexico	No	8	1,197	0	3.252	0.000		0.921	1	.	.	.	.	.	.	.
Nevada	Yes	19	4,788	22	18.160	1.211	0.779	1.804	7	.	.	.	.	.	.	.
New York		35	15,905	41	55.792	0.735	0.534	0.987	15	0%	0%	.	.	.	.	.
Ohio	No	44	13,422	43	44.214	0.973	0.713	1.298	15	13%	0%	.	.	.	.	.
Oklahoma		31	5,961	34	21.577	1.576	1.109	2.177	8	.	.	.	.	.	.	.
Oregon	Yes	32	9,982	43	30.820	1.395	1.022	1.862	9	.	.	.	.	.	.	.
Pennsylvania	Yes	153	44,622	120	145.637	0.824	0.686	0.982	52	2%	0%	0.000	0.000	0.753	1.129	1.729
Puerto Rico		1	.	.	.	.	.	.	.	.	.	.	.	.	.	.
Rhode Island	No	7	1,431	4	5.728	0.698	0.222	1.684	2	.	.	.	.	.	.	.
South Carolina	Yes	54	12,984	42	42.736	0.983	0.717	1.316	17	6%	0%	.	.	.	.	.
South Dakota	No	7	936	5	2.108	2.372	0.869	5.257	0	.	.	.	.	.	.	.
Tennessee	No	47	16,956	56	63.004	0.889	0.678	1.146	20	0%	0%	0.000	0.000	0.649	1.539	2.172
Texas	No	285	55,811	173	199.083	0.869	0.747	1.006	51	4%	6%	0.000	0.000	0.475	1.109	1.969
Utah	No	0	.	.	.	.	.	.	.	.	.	.	.	.	.	.
Virginia	No	19	7,965	33	28.717	1.149	0.804	1.595	12	0%	0%	.	.	.	.	.
Virgin Islands	Yes	0	.	.	.	.	.	.	.	.	.	.	.	.	.	.

Vermont	Yes	6	1,152	6	3.802	1.578	0.640	3.282	2	.	.	.	.	.	.	.
Washington	No	50	16,258	41	47.795	0.858	0.624	1.153	18	6%	0%	.	.	.	.	.
Wisconsin	No	62	15,895	38	50.270	0.756	0.543	1.027	18	0%	0%	.	.	.	.	.
West Virginia	No	10	2,045	22	7.629	2.884	1.853	4.294	4	.	.	.	.	.	.	.
Wyoming	No	7	409	0	1.246	0.000		2.404	0	.	.	.	.	.	.	.
All US		**2,081**	**541,978**	**1,921**	**1,889.249**	**1.017**	**0.972**	**1.063**	**638**	**5%**	**2%**	**0.000**	**0.000**	**0.833**	**1.586**	**2.365**

1. SSIs included are those classified as deep incisional or organ/space infections following NHSN-defined inpatient knee arthroplasty procedures that occurred in 2017 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 2017. M indicates midyear implementation of a mandate. No indicates that a state mandate did not exist during 2017. A blank field indicates data not available.
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 2017.
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 2017 national knee arthroplasty SIR of 1.017. This is only calculated if at least 10 facilities had at least one predicted knee arthroplasty SSI in 2017.
5. Facility-specific key percentiles were only calculated if at least 20 facilities had ≥1.0 predicted knee arthroplasty SSI in 2017. 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 Procedures	No. of Infections Observed	No. of Infections Predicted
Alaska	No	0	.	.	.
Alabama	No	0	.	.	.
Arkansas		1	.	.	.
Arizona	No	2	.	.	.
California	Yes	255	5,055	45	83.921
Colorado	No	2	.	.	.
Connecticut	No	0	.	.	.
D.C.	No	0	.	.	.
Delaware		0	.	.	.
Florida	No	5	95	1	2.388
Georgia	No	1	.	.	.
Guam	No	0	.	.	.
Hawaii	No	0	.	.	.
Iowa	No	0	.	.	.
Idaho	No	0	.	.	.
Illinois	No	3	.	.	.
Indiana	No	1	.	.	.
Kansas	No	0	.	.	.
Kentucky	No	0	.	.	.
Louisiana	No	2	.	.	.
Massachusetts	No	1	.	.	.
Maryland	No	0	.	.	.
Maine	No	1	.	.	.
Michigan	No	2	.	.	.
Minnesota	No	1	.	.	.
Missouri		1	.	.	.
Mississippi	No	0	.	.	.
Montana	No	2	.	.	.
North Carolina	No	0	.	.	.
North Dakota	No	0	.	.	.
Nebraska	No	1	.	.	.
New Hampshire	No	1	.	.	.
New Jersey	No	2	.	.	.
New Mexico	No	0	.	.	.
Nevada	No	3	.	.	.
New York		0	.	.	.
Ohio	No	4	.	.	.
Oklahoma		0	.	.	.
Oregon	No	1	.	.	.
Pennsylvania	Yes	25	747	10	14.099

Puerto Rico		0	.	.	.
Rhode Island	No	0	.	.	.
South Carolina	No	0	.	.	.
South Dakota	No	1	.	.	.
Tennessee	No	1	.	.	.
Texas	No	0	.	.	.
Utah	No	0	.	.	.
Virginia	No	0	.	.	.
Virgin Islands	Yes	0	.	.	.
Vermont	No	0	.	.	.
Washington	No	6	191	1	2.927
Wisconsin	No	4	.	.	.
West Virginia	No	2	.	.	.
Wyoming	No	0	.	.	.
All US		**331**	**7,362**	**73**	**129.116**

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 rectal surgery to NHSN at
   No indicates that a state mandate did not exist during 2017. A blank field indicates data not availab
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 recta
4. Percent of facilities with at least one predicted rectal surgery SSI that had an SIR significantly grea
   at least 10 facilities had at least one predicted rectal surgery SSI in 2017.
5. Facility-specific key percentiles were only calculated if at least 20 facilities had ≥1.0 predicted recta
   SIR was neither calculated nor included in the distribution of facility-specific SIRs.

zed infection ratios (SIRs) and facility-specific SIR summary measures,
l Acute Care Hospitals reporting during 2017
fections (SSI) following rectal surgery[1] in adults, ≥ 18years

	95% CI for SIR		Facility-specific SIRs				
SIR	**Lower**	**Upper**				**10%**	**25%**
.	.	.	.	.	.	.	.
.	.	.	.	.	.	.	.
.	.	.	.	.	.	.	.
.	.	.	.	.	.	.	.
0.536	0.396	0.711	19	5%	0%	.	.
.	.	.	.	.	.	.	.
.	.	.	.	.	.	.	.
.	.	.	.	.	.	.	.
.	.	.	.	.	.	.	.
0.419	0.021	2.065	1	.	.	.	.
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0.709	0.360	1.264	5	.	.	.	.

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0.342	0.017	1.685	1	.	.	.	.
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.	.	.	.	.	.	.	.
0.565	**0.446**	**0.707**	**33**	**3%**	**0%**	**0.000**	**0.000**

fined inpatient rectal surgery procedures that occurred in 2017 with a primary or other than primary skin clos
acility.
the beginning of 2017. M indicates midyear implementation of a mandate.
ole.
for information about exclusion criteria. SIRs and accompanying
al surgery in 2017.
ıter or less than the nominal value of the 2017 national rectal surgery SIR of 0.565. This is only calculated if

al surgery SSI in 2017. If a facility's predicted number of rectal surgery SSI was <1.0, a facility-specific

75%	90%
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0.479	**0.879**	**1.338**

sure technique,

Table 6. State-specific standardi
NHSN

6f. Surgical site infecti

				No. of Infections	
State			**No. of Procedures**	**Observed**	**Predicted**
Alaska	No	0	.	.	.
Alabama	No	1	.	.	.
Arkansas		2	.	.	.
Arizona	No	2	.	.	.
California	Yes	265	8,670	46	42.869
Colorado	No	18	787	2	4.127
Connecticut	No	0	.	.	.
D.C.	No	0	.	.	.
Delaware		2	.	.	.
Florida	No	9	278	1	1.603
Georgia	No	2	.	.	.
Guam	No	0	.	.	.
Hawaii	No	0	.	.	.
Iowa	No	3	.	.	.
Idaho	No	0	.	.	.
Illinois	Yes	5	214	2	1.110
Indiana	No	2	.	.	.
Kansas	No	0	.	.	.
Kentucky	No	1	.	.	.
Louisiana	No	7	128	2	0.753
Massachusetts	Yes	50	1,246	9	7.382
Maryland	No	3	.	.	.
Maine	No	1	.	.	.
Michigan	No	5	182	1	1.233
Minnesota	No	4	.	.	.
Missouri		3	.	.	.
Mississippi	No	6	588	2	2.483
Montana	No	2	.	.	.
North Carolina	No	1	.	.	.
North Dakota	No	0	.	.	.
Nebraska	No	2	.	.	.
New Hampshire	No	2	.	.	.
New Jersey	No	3	.	.	.
New Mexico	No	3	.	.	.
Nevada	No	0	.	.	.
New York		4	.	.	.
Ohio	No	10	646	2	3.459
Oklahoma		4	.	.	.
Oregon	No	2	.	.	.
Pennsylvania	Yes	25	963	7	6.330

Puerto Rico		0	.	.	.
Rhode Island	No	0	.	.	.
South Carolina	No	2	.	.	.
South Dakota	No	2	.	.	.
Tennessee	No	4	.	.	.
Texas	No	235	9,559	31	48.143
Utah	No	0	.	.	.
Virginia	No	0	.	.	.
Virgin Islands	Yes	0	.	.	.
Vermont	No	0	.	.	.
Washington	No	19	882	4	4.220
Wisconsin	No	8	370	0	2.478
West Virginia	No	2	.	.	.
Wyoming	No	1	.	.	.
All US		**722**	**27,383**	**127**	**143.065**

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 vaginal hysterectomy surge No indicates that a state mandate did not exist during 2017. A blank field indicates data not availab
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 vagi
4. Percent of facilities with at least one predicted vaginal hysterectomy SSI that had an SIR significar at least 10 facilities had at least one predicted vaginal hysterectomy SSI in 2017.
5. Facility-specific key percentiles were only calculated if at least 20 facilities had ≥1.0 predicted vagi SIR was neither calculated nor included in the distribution of facility-specific SIRs.

zed infection ratios (SIRs) and facility-specific SIR summary measures,
l Acute Care Hospitals reporting during 2017

ons (SSI) following vaginal hysterectomy[1] in adults, ≥ 18years

95% CI for SIR			Facility-specific SIRs				
SIR	Lower	Upper				10%	25%
.	.	.	.	.	.	.	.
.	.	.	.	.	.	.	.
.	.	.	.	.	.	.	.
.	.	.	.	.	.	.	.
1.073	0.795	1.419	2	.	.	.	.
0.485	0.081	1.601	0	.	.	.	.
.	.	.	.	.	.	.	.
.	.	.	.	.	.	.	.
.	.	.	.	.	.	.	.
0.624	0.031	3.077	0	.	.	.	.
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1.801	0.302	5.951	0	.	.	.	.
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			0	.	.	.	.
1.219	0.595	2.237	1	.	.	.	.
.	.	.	.	.	.	.	.
.	.	.	.	.	.	.	.
0.811	0.041	4.001	0	.	.	.	.
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0.806	0.135	2.661	1	.	.	.	.
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0.578	0.097	1.910	2	.	.	.	.
.	.	.	.	.	.	.	.
.	.	.	.	.	.	.	.
1.106	0.484	2.187	2	.	.	.	.

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0.644	0.445	0.903	7	.	.	.	.
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.	.	.	.	.	.	.	.
.	.	.	.	.	.	.	.
0.948	0.301	2.286	1	.	.	.	.
0.000		1.209	0	.	.	.	.
.	.	.	.	.	.	.	.
.	.	.	.	.	.	.	.
0.888	**0.743**	**1.053**	**20**	**.**	**.**	**0.000**	**0.189**

fined inpatient vaginal hysterectomy procedures that occurred in 2017 with a primary or other than primary s
acility.
ery to NHSN at the beginning of 2017. M indicates midyear implementation of a mandate.
ble.
for information about exclusion criteria. SIRs and accompanying
nal hysterectomy in 2017.
ntly greater or less than the nominal value of the 2017 national vaginal hysterectomy SIR of 0.888. This is on

nal hysterectomy SSI in 2017. If a facility's predicted number of vaginal hysterectomy SSI was <1.0, a facility·

75%	90%
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0.641	**0.896**	**1.916**

skin closure technique,

ly calculated if

-specific

Table 6. State-specific standardi
NHSI

6g. Surgical site infection

State			No. of Procedures	No. of Infections Observed	No. of Infections Predicted
Alaska	No	1	.	.	.
Alabama	No	6	816	7	5.076
Arkansas		8	1,448	11	10.083
Arizona	No	7	858	6	4.693
California	Yes	125	15,593	88	108.139
Colorado	Yes	15	1,794	8	11.457
Connecticut	No	0	.	.	.
D.C.	No	1	.	.	.
Delaware		1	.	.	.
Florida	No	11	2,368	14	17.200
Georgia	No	11	2,717	19	20.557
Guam	No	0	.	.	.
Hawaii	No	1	.	.	.
Iowa	No	2	.	.	.
Idaho	No	1	.	.	.
Illinois	Yes	63	7,146	31	55.885
Indiana	No	13	1,849	14	14.421
Kansas	No	5	567	0	3.738
Kentucky	No	2	.	.	.
Louisiana	No	11	1,378	12	10.829
Massachusetts	Yes	13	4,058	33	32.984
Maryland	Yes	10	2,829	20	20.326
Maine	No	1	.	.	.
Michigan	No	8	1,268	11	9.477
Minnesota	No	3	.	.	.
Missouri		28	4,672	26	37.308
Mississippi	No	11	1,489	8	10.913
Montana	No	2	.	.	.
North Carolina	No	5	1,106	5	9.990
North Dakota	No	0	.	.	.
Nebraska	No	2	.	.	.
New Hampshire	Yes	4	.	.	.
New Jersey	Yes	18	4,939	47	34.791
New Mexico	No	0	.	.	.
Nevada	Yes	12	1,809	8	11.977
New York		36	10,761	113	93.757
Ohio	No	18	2,214	10	15.541
Oklahoma		6	648	0	5.524
Oregon	Yes	11	2,395	6	15.590
Pennsylvania	Yes	61	9,174	64	68.985

Puerto Rico		0	.	.	.
Rhode Island	No	1	.	.	.
South Carolina	Yes	17	3,554	36	26.152
South Dakota	No	1	.	.	.
Tennessee	Yes	23	6,799	53	51.229
Texas	No	135	16,369	98	111.471
Utah	No	0	.	.	.
Virginia	No	9	1,933	16	16.244
Virgin Islands	Yes	0	.	.	.
Vermont	No	1	.	.	.
Washington	No	17	3,602	13	25.899
Wisconsin	No	18	2,794	13	19.880
West Virginia	No	2	.	.	.
Wyoming	No	0	.	.	.
All US		**757**	**125,505**	**828**	**932.310**

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 coronary artery bypass gra
   No indicates that a state mandate did not exist during 2017. A blank field indicates data not availab
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 coro
4. Percent of facilities with at least one predicted coronary artery bypass graft SSI that had an SIR sig
   at least 10 facilities had at least one predicted coronary artery bypass graft SSI in 2017.
5. Facility-specific key percentiles were only calculated if at least 20 facilities had ≥1.0 predicted coro
   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 2017

s (SSI) following coronary artery bypass graft[1] in adults, ≥ 18years

	95% CI for SIR		Facility-specific SIRs				
SIR	Lower	Upper				10%	25%
.	.	.	.	.	.	.	.
1.379	0.603	2.728	2	.	.	.	.
1.091	0.574	1.896	3	.	.	.	.
1.278	0.518	2.659	1	.	.	.	.
0.814	0.657	0.998	34	9%	3%	0.000	0.000
0.698	0.324	1.326	3	.	.	.	.
.	.	.	.	.	.	.	.
.	.	.	.	.	.	.	.
.	.	.	.	.	.	.	.
0.814	0.463	1.333	6	.	.	.	.
0.924	0.573	1.417	9	.	.	.	.
.	.	.	.	.	.	.	.
.	.	.	.	.	.	.	.
.	.	.	.	.	.	.	.
.	.	.	.	.	.	.	.
0.555	0.384	0.778	17	0%	6%	.	.
0.971	0.553	1.590	6	.	.	.	.
0.000		0.801	2	.	.	.	.
.	.	.	.	.	.	.	.
1.108	0.600	1.884	3	.	.	.	.
1.000	0.700	1.389	9	.	.	.	.
0.984	0.618	1.493	6	.	.	.	.
.	.	.	.	.	.	.	.
1.161	0.610	2.018	4	.	.	.	.
.	.	.	.	.	.	.	.
0.697	0.465	1.007	14	0%	0%	.	.
0.733	0.340	1.392	4	.	.	.	.
.	.	.	.	.	.	.	.
0.501	0.183	1.109	3	.	.	.	.
.	.	.	.	.	.	.	.
.	.	.	.	.	.	.	.
.	.	.	.	.	.	.	.
1.351	1.004	1.781	14	21%	0%	.	.
.	.	.	.	.	.	.	.
0.668	0.310	1.268	6	.	.	.	.
1.205	0.998	1.443	30	17%	0%	0.155	0.660
0.643	0.327	1.147	6	.	.	.	.
0.000		0.542	3	.	.	.	.
0.385	0.156	0.800	7	.	.	.	.
0.928	0.720	1.177	25	4%	0%	0.000	0.285

.	.	.	.	.	.	.	.
.	.	.	.	.	.	.	.
1.377	0.979	1.885	12	17%	0%	.	.
.	.	.	.	.	.	.	.
1.035	0.783	1.343	18	11%	0%	.	.
0.879	0.718	1.067	35	9%	0%	0.000	0.000
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0.985	0.583	1.565	5	.	.	.	.
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0.502	0.279	0.837	10	0%	0%	.	.
0.654	0.364	1.090	8	.	.	.	.
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0.888	**0.829**	**0.950**	**326**	**8%**	**1%**	**0.000**	**0.000**

fined inpatient coronary artery bypass graft procedures that occurred in 2017 with a primary or other than prir
acility.
ft surgery to NHSN at the beginning of 2017. M indicates midyear implementation of a mandate.
ole.
for information about exclusion criteria. SIRs and accompanying
nary artery bypass graft in 2017.
gnificantly greater or less than the nominal value of the 2017 national coronary artery bypass graft SIR of 0.88

nary artery bypass graft SSI in 2017. If a facility’s predicted number of coronary artery bypass graft SSI was <

	75%	90%
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0.772	1.326	1.788
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1.029	1.407	3.153
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0.640	1.152	2.159

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0.688	1.041	2.176
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0.680	**1.299**	**2.117**

nary skin closure technique,

8. 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	No. of Infections Predicted
Alaska	No	1	.	.	.
Alabama	No	0	.	.	.
Arkansas		2	.	.	.
Arizona	N	4	.	.	.
California	Yes	170	13,412	53	52.546
Colorado	No	5	470	3	1.697
Connecticut	No	0	.	.	.
D.C.	No	0	.	.	.
Delaware		0	.	.	.
Florida	No	7	464	2	1.706
Georgia	No	2	.	.	.
Guam	No	0	.	.	.
Hawaii	No	0	.	.	.
Iowa	No	2	.	.	.
Idaho	No	1	.	.	.
Illinois	No	6	179	0	0.696
Indiana	No	2	.	.	.
Kansas	No	4	.	.	.
Kentucky	No	1	.	.	.
Louisiana	No	6	673	0	2.680
Massachusetts	No	2	.	.	.
Maryland	No	1	.	.	.
Maine	No	1	.	.	.
Michigan	No	4	.	.	.
Minnesota	No	3	.	.	.
Missouri		7	534	1	2.055
Mississippi	No	3	.	.	.
Montana	No	2	.	.	.
North Carolina	No	2	.	.	.
North Dakota	No	0	.	.	.
Nebraska	No	2	.	.	.
New Hampshire	No	1	.	.	.
New Jersey	No	3	.	.	.
New Mexico	No	0	.	.	.
Nevada	No	0	.	.	.
New York		5	1,846	2	8.198
Ohio	No	8	527	2	2.175
Oklahoma		4	.	.	.
Oregon	No	5	829	2	2.510
Pennsylvania	Yes	68	7,472	27	29.942

Puerto Rico		0	.	.	.
Rhode Island	No	1	.	.	.
South Carolina	No	1	.	.	.
South Dakota	No	1	.	.	.
Tennessee	No	6	1,214	1	5.604
Texas	No	19	647	0	1.721
Utah	No	0	.	.	.
Virginia	No	3	.	.	.
Virgin Islands	Yes	0	.	.	.
Vermont	No	0	.	.	.
Washington	No	19	2,859	5	10.767
Wisconsin	No	16	1,971	9	8.061
West Virginia	No	1	.	.	.
Wyoming	No	0	.	.	.
All US		**401**	**42,232**	**124**	**166.119**

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 other cardiac surgery to NI No indicates that a state mandate did not exist during 2017. A blank field indicates data not availat
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 othe
4. Percent of facilities with at least one predicted other cardiac surgery SSI that had an SIR significar at least 10 facilities had at least one predicted other cardiac surgery SSI in 2017.
5. Facility-specific key percentiles were only calculated if at least 20 facilities had ≥1.0 predicted othe 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 2017

ions (SSI) following other cardiac surgery[1] in adults, ≥ 18years

	95% CI for SIR		Facility-specific SIRs				
SIR	Lower	Upper				10%	25%
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1.009	0.763	1.309	16	0%	0%	.	.
1.768	0.450	4.811	0	.	.	.	.
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1.173	0.197	3.874	1	.	.	.	.
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0.244	0.041	0.806	3	.	.	.	.
0.920	0.154	3.039	0	.	.	.	.
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0.797	0.134	2.633	1	.	.	.	.
0.902	0.606	1.294	9	.	.	.	.

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0.464	0.170	1.029	4	.	.	.	.
1.117	0.545	2.049	2	.	.	.	.
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.	.	.	.	.	.	.	.
0.746	**0.623**	**0.887**	**52**	**0%**	**0%**	**0.000**	**0.000**

fined inpatient other cardiac surgery procedures that occurred in 2017 with a primary or other than primary sk
cility.
HSN at the beginning of 2017. M indicates midyear implementation of a mandate.
ble.
for information about exclusion criteria. SIRs and accompanying
r cardiac surgery in 2017.
ntly greater or less than the nominal value of the 2017 national other cardiac surgery SIR of 0.746. This is only

r cardiac surgery SSI in 2017. If a facility's predicted number of other cardiac surgery SSI was <1.0, a facility-s

75%	90%
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0.735	**1.244**	**1.560**

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specific

Table 6. State-specific standardi
NHSN

6i. Surgical site infections (SS

State			No. of Procedures	No. of Infections Observed	No. of Infections Predicted
Alaska	No	0	.	.	.
Alabama	No	0	.	.	.
Arkansas		1	.	.	.
Arizona	No	0	.	.	.
California	No	48	748	14	14.917
Colorado	No	2	.	.	.
Connecticut	No	0	.	.	.
D.C.	No	0	.	.	.
Delaware		1	.	.	.
Florida	No	5	202	3	4.163
Georgia	No	2	.	.	.
Guam	No	0	.	.	.
Hawaii	No	0	.	.	.
Iowa	No	0	.	.	.
Idaho	No	0	.	.	.
Illinois	No	4	.	.	.
Indiana	No	0	.	.	.
Kansas	No	0	.	.	.
Kentucky	No	0	.	.	.
Louisiana	No	4	.	.	.
Massachusetts	No	3	.	.	.
Maryland	No	1	.	.	.
Maine	No	1	.	.	.
Michigan	No	4	.	.	.
Minnesota	No	2	.	.	.
Missouri		4	.	.	.
Mississippi	No	1	.	.	.
Montana	No	1	.	.	.
North Carolina	No	2	.	.	.
North Dakota	No	0	.	.	.
Nebraska	No	0	.	.	.
New Hampshire	No	2	.	.	.
New Jersey	No	2	.	.	.
New Mexico	No	0	.	.	.
Nevada	No	1	.	.	.
New York		7	67	2	1.394
Ohio	No	6	300	4	7.179
Oklahoma		1	.	.	.
Oregon	Yes	4	.	.	.
Pennsylvania	Yes	26	840	26	19.524

Puerto Rico		0	.	.	.
Rhode Island	No	0	.	.	.
South Carolina	No	1	.	.	.
South Dakota	No	1	.	.	.
Tennessee	No	0	.	.	.
Texas	No	156	4215	73	78.030
Utah	No	0	.	.	.
Virginia	No	2	.	.	.
Virgin Islands	Yes	0	.	.	.
Vermont	No	0	.	.	.
Washington	No	7	250	7	5.077
Wisconsin	No	7	179	4	3.671
West Virginia	No	1	.	.	.
Wyoming	No	0	.	.	.
All US		**310**	**8872**	**181**	**178.714**

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 peripheral vascular bypass
   No indicates that a state mandate did not exist during 2017. A blank field indicates data not availab
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 perip
4 Percent of facilities with at least one predicted peripheral vascular bypass surgery SSI that had an
   at least 10 facilities had at least one predicted peripheral vascular bypass surgery SSI in 2017.
5. Facility-specific key percentiles were only calculated if at least 20 facilities had ≥1.0 predicted perip
   SIR was neither calculated nor included in the distribution of facility-specific SIRs.

zed infection ratios (SIRs) and facility-specific SIR summary measures,
l Acute Care Hospitals reporting during 2017

SI) following peripheral vascular bypass surgery[1] in adults, ≥ 18years

	95% CI for SIR		Facility-specific SIRs				
SIR	Lower	Upper				10%	25%
.	.	.	.	.	.	.	.
.	.	.	.	.	.	.	.
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0.939	0.534	1.537	4	.	.	.	.
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0.721	0.183	1.961	1	.	.	.	.
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1.435	0.241	4.741	0	.	.	.	.
0.557	0.177	1.344	4	.	.	.	.
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1.332	0.888	1.923	8	.	.	.	.

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0.936	0.739	1.170	23	9%	4%	0.000	0.000
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1.379	0.603	2.727	2	.	.	.	.
1.090	0.346	2.628	1	.	.	.	.
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1.013	**0.873**	**1.169**	**58**	**7%**	**2%**	**0.000**	**0.000**

fined inpatient peripheral vascular bypass surgery procedures that occurred in 2017 with a primary or other t
acility.
surgery to NHSN at the beginning of 2017. M indicates midyear implementation of a mandate.
ble.
for information about exclusion criteria. SIRs and accompanying
pheral vascular bypass surgery in 2017.
SIR significantly greater or less than the nominal value of the 2017 national peripheral vascular bypass surge

pheral vascular bypass surgery SSI in 2017. If a facility's predicted number of peripheral vascular bypass surg

	75%	90%
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0.762	1.702	2.311
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0.678	**1.369**	**2.291**

than primary skin closure technique,

ery SIR of 1.013. This is only calculated if

gery SSI was <1.0, a facility-specific

Table 6. State-specific standardi
NHSN

6j. Surgical site infections (S

State			No. of Procedures	No. of Infections Observed	No. of Infections Predicted
Alaska	No	0	.	.	.
Alabama	No	0	.	.	.
Arkansas		1	.	.	.
Arizona	No	0	.	.	.
California	Yes	102	516	2	3.523
Colorado	No	2	.	.	.
Connecticut	No	0	.	.	.
D.C.	No	0	.	.	.
Delaware		0	.	.	.
Florida	No	3	.	.	.
Georgia	No	1	.	.	.
Guam	No	0	.	.	.
Hawaii	No	0	.	.	.
Iowa	No	0	.	.	.
Idaho	No	0	.	.	.
Illinois	No	3	.	.	.
Indiana	No	0	.	.	.
Kansas	No	0	.	.	.
Kentucky	No	0	.	.	.
Louisiana	No	2	.	.	.
Massachusetts	No	1	.	.	.
Maryland	No	0	.	.	.
Maine	No	1	.	.	.
Michigan	No	1	.	.	.
Minnesota	No	1	.	.	.
Missouri		0	.	.	.
Mississippi	No	0	.	.	.
Montana	No	1	.	.	.
North Carolina	No	1	.	.	.
North Dakota	No	0	.	.	.
Nebraska	No	0	.	.	.
New Hampshire	No	0	.	.	.
New Jersey	No	1	.	.	.
New Mexico	No	0	.	.	.
Nevada	No	0	.	.	.
New York		0	.	.	.
Ohio	No	6	17	0	0.116
Oklahoma		0	.	.	.
Oregon	No	0	.	.	.
Pennsylvania	Yes	13	96	2	0.655

Puerto Rico		0	.	.	.
Rhode Island	No	0	.	.	.
South Carolina	No	0	.	.	.
South Dakota	No	1	.	.	.
Tennessee	No	0	.	.	.
Texas	No	86	575	3	3.926
Utah	No	0	.	.	.
Virginia	No	0	.	.	.
Virgin Islands	Yes	0	.	.	.
Vermont	No	0	.	.	.
Washington	No	1	.	.	.
Wisconsin	No	3	.	.	.
West Virginia	No	0	.	.	.
Wyoming	No	0	.	.	.
All US		**231**	**1,421**	**7**	**9.702**

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
   No indicates that a state mandate did not exist during 2017. A blank field indicates data not availab
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 abdo
4. Percent of facilities with at least one predicted abdominal aortic aneurysm repair SSI that had an S
   at least 10 facilities had at least one predicted abdominal aortic aneurysm repair SSI in 2017.
5. Facility-specific key percentiles were only calculated if at least 20 facilities had ≥1.0 predicted abdo
   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 2017
SSI) following abdominal aortic aneurysm repair[1] in adults, ≥ 18years

	95% CI for SIR		Facility-specific SIRs				
SIR	Lower	Upper				10%	25%
.	.	.	.	.	.	.	.
.	.	.	.	.	.	.	.
.	.	.	.	.	.	.	.
.	.	.	.	.	.	.	.
0.568	0.095	1.876	0	.	.	.	.
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0.764	0.194	2.080	0	.	.	.	.
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0.721	**0.316**	**1.427**	**0**	**.**	**.**	**.**	**.**

fined inpatient abdominal aortic aneurysm repair procedures that occurred in 2017 with a primary or other tha
acility.
repair surgery to NHSN at the beginning of 2017. M indicates midyear implementation of a mandate.
ole.
for information about exclusion criteria. SIRs and accompanying
ominal aortic aneurysm repair in 2017.
SIR significantly greater or less than the nominal value of the 2017 national abdominal aortic aneurysm repair

ominal aortic aneurysm repair SSI in 2017. If a facility's predicted number of abdominal aortic aneurysm repai

	75%	90%
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an primary skin closure technique,

SIR of 0.721. This is only calculated if

r SSI was <1.0, a facility-specific

Table 6. State-specific standardi
NHSN

6k. Surgical site infectio

State			No. of Procedures	No. of Infections Observed	No. of Infections Predicted
Alaska	No	1	.	.	.
Alabama	No	4	.	.	.
Arkansas		2	.	.	.
Arizona	N	2	.	.	.
California	Yes	238	133,360	202	201.037
Colorado	No	12	4,275	9	5.972
Connecticut	No	1	.	.	.
D.C.	No	1	.	.	.
Delaware		0	.	.	.
Florida	No	6	3,262	4	7.016
Georgia	No	4	.	.	.
Guam	No	1	.	.	.
Hawaii	No	1	.	.	.
Iowa	No	2	.	.	.
Idaho	No	1	.	.	.
Illinois	No	4	.	.	.
Indiana	No	9	2,991	9	3.431
Kansas	No	2	.	.	.
Kentucky	No	1	.	.	.
Louisiana	No	6	3,830	4	6.525
Massachusetts	No	1	.	.	.
Maryland	No	2	.	.	.
Maine	No	2	.	.	.
Michigan	No	8	4,748	14	9.905
Minnesota	No	1	.	.	.
Missouri		15	8,473	10	16.573
Mississippi	No	7	2,027	9	4.002
Montana	No	3	.	.	.
North Carolina	No	3	.	.	.
North Dakota	No	0	.	.	.
Nebraska	No	3	.	.	.
New Hampshire	No	2	.	.	.
New Jersey	No	4	.	.	.
New Mexico	No	1	.	.	.
Nevada	No	5	4,543	5	3.346
New York		2	.	.	.
Ohio	No	15	7,209	9	12.769
Oklahoma		4	.	.	.
Oregon	No	0	.	.	.
Pennsylvania	Yes	28	13,039	46	35.198

Puerto Rico		0	.	.	.
Rhode Island	No	1	.	.	.
South Carolina	No	4	.	.	.
South Dakota	No	2	.	.	.
Tennessee	No	5	3,773	6	10.424
Texas	No	33	16,624	35	29.259
Utah	No	0	.	.	.
Virginia	No	4	.	.	.
Virgin Islands	Yes	0	.	.	.
Vermont	No	0	.	.	.
Washington	No	9	4,494	8	5.727
Wisconsin	No	15	6,082	12	8.961
West Virginia	No	2	.	.	.
Wyoming	No	0	.	.	.
All US		**479**	**246,949**	**460**	**409.217**

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 cesarean section surgery No indicates that a state mandate did not exist during 2017. A blank field indicates data not availab
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 cesa
4. Percent of facilities with at least one predicted cesarean section surgery SSI that had an SIR signi at least 10 facilities had at least one predicted cesarean section surgery SSI in 2017.
5. Facility-specific key percentiles were only calculated if at least 20 facilities had ≥1.0 predicted ces 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 2017

ns (SSI) following cesarean section surgery[1] in adults, ≥ 18years

	95% CI for SIR		Facility-specific SIRs				
SIR	Lower	Upper				10%	25%
.	.	.	.	.	.	.	.
.	.	.	.	.	.	.	.
.	.	.	.	.	.	.	.
.	.	.	.	.	.	.	.
1.005	0.873	1.151	64	3%	6%	0.000	0.000
1.507	0.735	2.766	2	.	.	.	.
.	.	.	.	.	.	.	.
.	.	.	.	.	.	.	.
.	.	.	.	.	.	.	.
0.570	0.181	1.375	2	.	.	.	.
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2.623	1.279	4.814	0	.	.	.	.
.	.	.	.	.	.	.	.
.	.	.	.	.	.	.	.
0.613	0.195	1.479	1	.	.	.	.
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.	.	.	.	.	.	.	.
1.413	0.805	2.315	3	.	.	.	.
.	.	.	.	.	.	.	.
0.603	0.306	1.076	5	.	.	.	.
2.249	1.097	4.126	1	.	.	.	.
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1.494	0.547	3.312	1	.	.	.	.
.	.	.	.	.	.	.	.
0.705	0.344	1.294	3	.	.	.	.
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1.307	0.968	1.728	8	.	.	.	.

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0.576	0.233	1.197	2	.	.	.	.
1.196	0.846	1.645	9	.	.	.	.
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1.397	0.649	2.652	2	.	.	.	.
1.339	0.726	2.277	3	.	.	.	.
.	.	.	.	.	.	.	.
.	.	.	.	.	.	.	.
1.124	**1.025**	**1.23**	**123**	**7%**	**7%**	**0.000**	**0.000**

fined inpatient cesarean section surgery procedures that occurred in 2017 with a primary or other than prima
acility.
to NHSN at the beginning of 2017. M indicates midyear implementation of a mandate.
ble.
for information about exclusion criteria. SIRs and accompanying
arean section surgery in 2017.
ificantly greater or less than the nominal value of the 2017 national cesarean section surgery SIR of 1.124. T

arean section surgery SSI in 2017. If a facility's predicted number of cesarean section surgery SSI was <1.0,

	75%	90%
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0.606	1.524	1.918
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0.837	**1.678**	**2.524**

ary skin closure technique,

his is only calculated if

a facility-specific

Table 6. State-specific standard
NHSI

6I. Surgical site infect

State			No. of Procedures	No. of Infections Observed	Predicted
Alaska	No	1	.	.	.
Alabama	No	3	.	.	.
Arkansas		3	.	.	.
Arizona	No	1	.	.	.
California	Yes	220	38,983	243	291.461
Colorado	No	25	72,38	58	51.440
Connecticut	No	6	555	7	4.317
D.C.	No	1	.	.	.
Delaware		1	.	.	.
Florida	No	16	3,890	32	34.100
Georgia	No	14	5,057	52	35.536
Guam	No	1	.	.	.
Hawaii	No	1	.	.	.
Iowa	No	2	.	.	.
Idaho	No	2	.	.	.
Illinois	No	10	2,987	22	24.597
Indiana	No	11	4,795	39	28.117
Kansas	No	4	.	.	.
Kentucky	No	0	.	.	.
Louisiana	No	8	2,115	19	14.215
Massachusetts	No	5	1,070	6	4.263
Maryland	No	8	2,631	18	16.854
Maine	No	1	.	.	.
Michigan	No	10	3,526	13	18.498
Minnesota	No	8	4,822	58	45.497
Missouri		14	3,125	12	22.048
Mississippi	No	10	2,088	16	13.988
Montana	No	3	.	.	.
North Carolina	No	8	4,440	49	41.241
North Dakota	No	0	.	.	.
Nebraska	No	1	.	.	.
New Hampshire	No	4	.	.	.
New Jersey	No	6	1,555	10	11.134
New Mexico	No	0	.	.	.
Nevada	No	14	5,607	42	37.821
New York		20	5,450	41	42.700
Ohio	No	14	3,906	21	21.197
Oklahoma		5	884	8	6.408
Oregon	No	10	3,177	20	23.133
Pennsylvania	Yes	36	11,510	113	95.037

Puerto Rico		0	.	.	.
Rhode Island	No	1	.	.	.
South Carolina	No	6	2,148	16	16.284
South Dakota	No	1	.	.	.
Tennessee	No	10	4,149	50	40.268
Texas	No	62	10,234	78	65.684
Utah	No	1	.	.	.
Virginia	No	5	3,009	23	24.967
Virgin Islands	Yes	0	.	.	.
Vermont	No	1	.	.	.
Washington	No	15	4,443	16	26.148
Wisconsin	No	15	3,277	17	19.567
West Virginia	No	0	.	.	.
Wyoming	No	2	.	.	.
All US		**626**	**157,585**	**1,202**	**1,168.719**

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 fusion surgery to NHSN at No indicates that a state mandate did not exist during 2017. A blank field indicates data not availat
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 spin
4. Percent of facilities with at least one predicted fusion surgery SSI that had an SIR significantly grea at least 10 facilities had at least one predicted fusion surgery SSI in 2017.
5. Facility-specific key percentiles were only calculated if at least 20 facilities had ≥1.0 predicted fusic 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 2017

ions (SSI) following spinal fusion surgery[1] in adults, ≥ 18years

	95% CI for SIR		Facility-specific SIRs				
SIR	Lower	Upper				10%	25%
.	.	.	.	.	.	.	.
.	.	.	.	.	.	.	.
.	.	.	.	.	.	.	.
.	.	.	.	.	.	.	.
0.834	0.734	0.944	85	4%	2%	0.000	0.000
1.128	0.864	1.447	17	18%	6%	.	.
1.622	0.709	3.208	2	.	.	.	.
.	.	.	.	.	.	.	.
.	.	.	.	.	.	.	.
0.938	0.653	1.309	9	.	.	.	.
1.463	1.104	1.904	11	27%	0%	.	.
.	.	.	.	.	.	.	.
.	.	.	.	.	.	.	.
.	.	.	.	.	.	.	.
.	.	.	.	.	.	.	.
0.894	0.575	1.332	5	.	.	.	.
1.387	1.000	1.877	9	.	.	.	.
.	.	.	.	.	.	.	.
.	.	.	.	.	.	.	.
1.337	0.829	2.049	7	.	.	.	.
1.407	0.570	2.927	1	.	.	.	.
1.068	0.653	1.655	6	.	.	.	.
.	.	.	.	.	.	.	.
0.703	0.391	1.172	8	.	.	.	.
1.275	0.977	1.636	7	.	.	.	.
0.544	0.295	0.925	7	.	.	.	.
1.144	0.677	1.818	5	.	.	.	.
.	.	.	.	.	.	.	.
1.188	0.889	1.558	6	.	.	.	.
.	.	.	.	.	.	.	.
.	.	.	.	.	.	.	.
.	.	.	.	.	.	.	.
0.898	0.456	1.601	3	.	.	.	.
.	.	.	.	.	.	.	.
1.110	0.811	1.487	10	10%	10%	.	.
0.960	0.698	1.290	11	9%	18%	.	.
0.991	0.630	1.489	8	.	.	.	.
1.248	0.580	2.371	2	.	.	.	.
0.865	0.543	1.312	5	.	.	.	.
1.189	0.984	1.424	21	5%	0%	0.000	0.375

.	.	.	.	.	.	.	.
.	.	.	.	.	.	.	.
0.983	0.582	1.562	4	.	.	.	.
.	.	.	.	.	.	.	.
1.242	0.931	1.624	7	.	.	.	.
1.188	0.945	1.474	19	5%	0%	.	.
.	.	.	.	.	.	.	.
0.921	0.598	1.360	3	.	.	.	.
.	.	.	.	.	.	.	.
.	.	.	.	.	.	.	.
0.612	0.362	0.973	9	.	.	.	.
0.869	0.523	1.363	5	.	.	.	.
.	.	.	.	.	.	.	.
.	.	.	.	.	.	.	.
1.028	**0.972**	**1.088**	**309**	**6%**	**3%**	**0.000**	**0.370**

fined inpatient fusion surgery procedures that occurred in 2017 with a primary or other than primary skin closu
acility.
the beginning of 2017. M indicates midyear implementation of a mandate.
ole.
for information about exclusion criteria. SIRs and accompanying
al fusion surgery in 2017.
ater or less than the nominal value of the 2017 national fusion surgery SIR of 1.028 This is only calculated if

on surgery SSI in 2017. If a facility's predicted number of fusion surgery SSI was <1.0, a facility-specific

	75%	90%
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0.633	1.090	1.689
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0.900	1.696	2.237

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0.774	**1.520**	**2.192**

ure technique,

Table 6. State-specific standardi
NHSN
6m. Surgical site infect

State			No. of Procedures	No. of Infections Observed	No. of Infections Predicted
Alaska	No	1	.	.	.
Alabama	No	3	.	.	.
Arkansas		2	.	.	.
Arizona	No	1	.	.	.
California	Yes	238	36,452	88	122.626
Colorado	No	16	3,128	15	10.243
Connecticut	No	5	479	3	1.659
D.C.	No	0	.	.	.
Delaware		0	.	.	.
Florida	No	10	2,299	6	8.988
Georgia	No	11	2,762	15	11.159
Guam	No	1	.	.	.
Hawaii	No	0	.	.	.
Iowa	No	2	.	.	.
Idaho	No	2	.	.	.
Illinois	No	5	1,803	5	7.191
Indiana	No	10	2,793	14	10.309
Kansas	No	3	.	.	.
Kentucky	No	0	.	.	.
Louisiana	No	5	1,174	8	4.656
Massachusetts	No	3	.	.	.
Maryland	No	6	1,158	4	3.498
Maine	No	1	.	.	.
Michigan	No	8	2,511	4	8.351
Minnesota	No	7	5,891	22	22.002
Missouri		10	1,512	5	5.671
Mississippi	No	10	1,523	9	6.137
Montana	No	3	.	.	.
North Carolina	No	6	1,562	2	6.294
North Dakota	No	0	.	.	.
Nebraska	No	1	.	.	.
New Hampshire	No	4	.	.	.
New Jersey	No	7	1,854	7	6.431
New Mexico	No	0	.	.	.
Nevada	Yes	17	4,010	7	13.941
New York		19	3,378	13	12.198
Ohio	No	13	3,606	10	12.870
Oklahoma		1	.	.	.
Oregon	Yes	23	6,483	9	22.682
Pennsylvania	Yes	39	8,348	40	31.637

Puerto Rico		0	.	.	.
Rhode Island	No	1	.	.	.
South Carolina	No	4	.	.	.
South Dakota	No	1	.	.	.
Tennessee	No	4	.	.	.
Texas	No	50	6,061	13	21.456
Utah	No	0	.	.	.
Virginia		6	2,666	6	10.382
Virgin Islands	Yes	0	.	.	.
Vermont	No	0	.	.	.
Washington	No	10	2,465	4	7.686
Wisconsin	No	13	2,139	3	6.842
West Virginia	No	0	.	.	.
Wyoming	No	1	.	.	.
All US		**583**	**116,346**	**349**	**414.454**

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 laminectomy surgery to NH No indicates that a state mandate did not exist during 2017. A blank field indicates data not availab
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 lami
4. Percent of facilities with at least one predicted laminectomy surgery SSI that had an SIR significan at least 10 facilities had at least one predicted laminectomy surgery SSI in 2017.
5. Facility-specific key percentiles were only calculated if at least 20 facilities had ≥1.0 predicted lami SIR was neither calculated nor included in the distribution of facility-specific SIRs.

zed infection ratios (SIRs) and facility-specific SIR summary measures,
l Acute Care Hospitals reporting during 2017

ions (SSI) following laminectomy surgery[1] in adults, ≥ 18years

	95% CI for SIR		Facility-specific SIRs				
SIR	Lower	Upper				10%	25%
.	.	.	.	.	.	.	.
.	.	.	.	.	.	.	.
.	.	.	.	.	.	.	.
.	.	.	.	.	.	.	.
0.718	0.579	0.880	39	5%	3%	0.000	0.000
1.464	0.851	2.361	3	.	.	.	.
1.808	0.460	4.921	0	.	.	.	.
.	.	.	.	.	.	.	.
.	.	.	.	.	.	.	.
0.668	0.271	1.388	5	.	.	.	.
1.344	0.781	2.167	5	.	.	.	.
.	.	.	.	.	.	.	.
.	.	.	.	.	.	.	.
.	.	.	.	.	.	.	.
.	.	.	.	.	.	.	.
0.695	0.255	1.541	2	.	.	.	.
1.358	0.773	2.224	5	.	.	.	.
.	.	.	.	.	.	.	.
.	.	.	.	.	.	.	.
1.718	0.798	3.263	2	.	.	.	.
.	.	.	.	.	.	.	.
1.144	0.363	2.759	1	.	.	.	.
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0.479	0.152	1.155	2	.	.	.	.
1.000	0.643	1.489	5	.	.	.	.
0.882	0.323	1.954	3	.	.	.	.
1.467	0.715	2.691	2	.	.	.	.
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0.318	0.053	1.050	1	.	.	.	.
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1.089	0.476	2.153	3	.	.	.	.
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0.502	0.220	0.993	5	.	.	.	.
1.066	0.593	1.777	2	.	.	.	.
0.777	0.395	1.385	5	.	.	.	.
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0.397	0.194	0.728	11	0%	9%	.	.
1.264	0.915	1.705	10	0%	0%	.	.

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0.606	0.337	1.010	8	.	.	.	.
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0.578	0.234	1.202	2	.	.	.	.
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0.520	0.165	1.255	3	.	.	.	.
0.438	0.112	1.193	2	.	.	.	.
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0.842	**0.757**	**0.934**	**140**	**3%**	**3%**	**0.000**	**0.000**

fined inpatient laminectomy surgery procedures that occurred in 2017 with a primary or other than primary sl
acility.
HSN at the beginning of 2017. M indicates midyear implementation of a mandate.
ble.
for information about exclusion criteria. SIRs and accompanying
nectomy surgery in 2017.
tly greater or less than the nominal value of the 2017 national laminectomy surgery SIR of 0.842. This is onl

nectomy surgery SSI in 2017. If a facility's predicted number of laminectomy surgery SSI was <1.0, a facility-

	75%	90%
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0.364	0.991	1.704
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0.491	**1.197**	**2.017**

kin closure technique,

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Table 6. State-specific standardi
NHSN
6o. Surgical site infec

State			No. of Procedures	No. of Infections Observed	No. of Infections Predicted
Alaska	No	0	.	.	.
Alabama	No	0	.	.	.
Arkansas		1	.	.	.
Arizona	No	1	.	.	.
California	Yes	313	49,023	163	173.938
Colorado	No	4	.	.	.
Connecticut	No	0	.	.	.
D.C.	No	0	.	.	.
Delaware		0	.	.	.
Florida	No	6	786	0	3.253
Georgia	No	2	.	.	.
Guam	No	0	.	.	.
Hawaii	No	0	.	.	.
Iowa	No	0	.	.	.
Idaho	No	1	.	.	.
Illinois	Yes	6	576	2	2.345
Indiana	No	1	.	.	.
Kansas	No	0	.	.	.
Kentucky	No	1	.	.	.
Louisiana	No	5	294	2	0.648
Massachusetts	No	1	.	.	.
Maryland	No	1	.	.	.
Maine	No	1	.	.	.
Michigan	No	4	.	.	.
Minnesota	No	1	.	.	.
Missouri		1	.	.	.
Mississippi	No	0	.	.	.
Montana	No	2	.	.	.
North Carolina	No	1	.	.	.
North Dakota	No	0	.	.	.
Nebraska	No	1	.	.	.
New Hampshire	No	2	.	.	.
New Jersey	No	3	.	.	.
New Mexico	No	2	.	.	.
Nevada	No	2	.	.	.
New York		1	.	.	.
Ohio	No	3	.	.	.
Oklahoma		0	.	.	.
Oregon	No	0	.	.	.
Pennsylvania	Yes	36	5,082	34	25.554

Puerto Rico		0	.	.	.
Rhode Island	No	0	.	.	.
South Carolina	No	3	.	.	.
South Dakota	No	2	.	.	.
Tennessee	No	0	.	.	.
Texas	No	8	157	0	0.506
Utah	No	0	.	.	.
Virginia	No	1	.	.	.
Virgin Islands	Yes	0	.	.	.
Vermont	No	0	.	.	.
Washington	No	8	1,301	2	5.207
Wisconsin	No	5	443	1	2.088
West Virginia	No	3	.	.	.
Wyoming	No	1	.	.	.
All US		**434**	**64,048**	**228**	**239.761**

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 gallbladder surgery to NHS
   No indicates that a state mandate did not exist during 2017. A blank field indicates data not availab
3. The number of reporting facilities included in the SIR calculation. Refer to the Technical gallbladde
   statistics are only calculated for states in which at least 5 facilities reported SSI data following gallb
4. Percent of facilities with at least one predicted gallbladder surgery SSI that had an SIR significantly
   at least 10 facilities had at least one predicted gallbladder surgery SSI in 2017.
5. Facility-specific key percentiles were only calculated if at least 20 facilities had ≥1.0 predicted gallb
   SIR was neither calculated nor included in the distribution of facility-specific SIRs.

zed infection ratios (SIRs) and facility-specific SIR summary measures,
N Acute Care Hospitals reporting during 2017
tions (SSI) following Gallbladder surgery[1] in adults, ≥ 18years

	95% CI for SIR		Facility-specific SIRs				
SIR	Lower	Upper				10%	25%
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0.937	0.801	1.090	56	2%	0%	0.000	0.193
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0.853	0.143	2.818	0	.	.	.	.
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1.330	0.936	1.838	11	9%	9%		

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0.384	0.064	1.269	3	.	.	.	.
0.479	0.024	2.362	1	.	.	.	.
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0.951	**0.833**	**1.081**	**83**	**2%**	**1%**	**0.000**	**0.000**

fined inpatient gallbladder surgery procedures that occurred in 2017 with a primary or other than primary skin
acility.
SN at the beginning of 2017. M indicates midyear implementation of a mandate.
ole.
er for information about exclusion criteria. SIRs and accompanying
bladder surgery in 2017.
y greater or less than the nominal value of the 2017 national gallbladder surgery SIR of 0.951. This is only ca

bladder surgery SSI in 2017. If a facility's predicted number of gallbladder surgery SSI was <1.0, a facility-spe

	75%	90%
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0.782	1.477	2.176
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0.785	**1.512**	**2.008**

ı closure technique,

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Table 6. State-specific standardi
NHSN

6n. Surgical site infections (

State			No. of Procedures	No. of Infections Observed	Predicted
Alaska	No	0	.	.	.
Alabama	No	1	.	.	.
Arkansas		1	.	.	.
Arizona	No	3	.	.	.
California	Yes	312	42,733	217	230.421
Colorado	No	5	368	6	2.430
Connecticut	No	0	.	.	.
D.C.	No	0	.	.	.
Delaware		0	.	.	.
Florida	No	6	1,036	6	5.464
Georgia	No	0	.	.	.
Guam	No	1	.	.	.
Hawaii	No	0	.	.	.
Iowa	No	0	.	.	.
Idaho	No	0	.	.	.
Illinois	Yes	4	.	.	.
Indiana	No	1	.	.	.
Kansas	No	0	.	.	.
Kentucky	No	0	.	.	.
Louisiana	No	2	.	.	.
Massachusetts	No	1	.	.	.
Maryland	No	1	.	.	.
Maine	No	0	.	.	.
Michigan	No	2	.	.	.
Minnesota	No	1	.	.	.
Missouri		2	.	.	.
Mississippi	No	0	.	.	.
Montana	No	2	.	.	.
North Carolina	No	1	.	.	.
North Dakota	No	0	.	.	.
Nebraska	No	1	.	.	.
New Hampshire	No	1	.	.	.
New Jersey	No	2	.	.	.
New Mexico	No	1	.	.	.
Nevada	No	0	.	.	.
New York		1	.	.	.
Ohio	No	3	.	.	.
Oklahoma		0	.	.	.
Oregon	No	0	.	.	.
Pennsylvania	Yes	36	7,404	70	50.151

Puerto Rico		0	.	.	.
Rhode Island	No	0	.	.	.
South Carolina	No	1	.	.	.
South Dakota	No	2	.	.	.
Tennessee	No	0	.	.	.
Texas	No	3	.	.	.
Utah	No	0	.	.	.
Virginia	No	1	.	.	.
Virgin Islands	Yes	0	.	.	.
Vermont	No	0	.	.	.
Washington	No	6	1,116	0	4.659
Wisconsin	No	5	728	7	4.461
West Virginia	No	3	.	.	.
Wyoming	No	0	.	.	.
All US		**412**	**58,296**	**326**	**323.625**

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 exploratory laparotomy sur
   No indicates that a state mandate did not exist during 2017. A blank field indicates data not availa
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 expl
4. Percent of facilities with at least one predicted exploratory laparotomy surgery SSI that had an SIR
   at least 10 facilities had at least one predicted exploratory laparotomy surgery SSI in 2017.
5. Facility-specific key percentiles were only calculated if at least 20 facilities had ≥1.0 predicted expl
   SIR was neither calculated nor included in the distribution of facility-specific SIRs.

zed infection ratios (SIRs) and facility-specific SIR summary measures,
l Acute Care Hospitals reporting during 2017
(SSI) following exploratory laparotomy surgery[1] in adults, ≥ 18years

	95% CI for SIR		Facility-specific SIRs				
SIR	**Lower**	**Upper**				**10%**	**25%**
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0.942	0.823	1.074	73	5%	0%	0.000	0.000
2.469	1.001	5.135	1	.	.	.	.
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1.098	0.445	2.284	1	.	.	.	.
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1.569	0.686	3.104	1	.	.	.	.
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1.007	**0.902**	**1.121**	**98**	**7%**		**0.000**	**0.000**

fined inpatient exploratory laparotomy surgery procedures that occurred in 2017 with a primary or other thar
acility.
gery to NHSN at the beginning of 2017. M indicates midyear implementation of a mandate.
ible.
for information about exclusion criteria. SIRs and accompanying
oratory laparotomy surgery in 2017.
significantly greater or less than the nominal value of the 2017 national exploratory laparotomy surgery SIR

oratory laparotomy surgery SSI in 2017. If a facility's predicted number of exploratory laparotomy surgery SS

	75%	90%
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0.778	1.374	1.917
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0.802	**1.422**	**2.041**

ı primary skin closure technique,

of 1.007. This is only calculated if

l 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 2017

Hospital-onset methicillin-resistant *Staphylococcus aureus* (MRSA) bacteremia, facility-wide[1]

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	No	8	15	14.279	1.050	0.610	1.694	4	.	.	.	.	.	.	.	
Alabama	No	No	90	211	201.207	1.049	0.914	1.198	32	13%	0%	0.352	0.732	0.892	1.386	2.305	
Arkansas			48	94	81.178	1.158	0.941	1.411	20	10%	0%	0.454	0.622	0.955	1.696	1.974	
Arizona	No	No	69	129	189.800	0.680	0.570	0.805	36	8%	3%	0.000	0.389	0.560	0.893	1.475	
California	Yes	Yes	339	694	795.063	0.873	0.810	0.940	205	7%	3%	0.000	0.338	0.698	1.153	1.855	
Colorado	No	No	55	68	94.349	0.721	0.564	0.908	23	0%	4%	0.000	0.324	0.518	1.117	1.756	
Connecticut	Yes	No	31	72	92.037	0.782	0.617	0.979	20	0%	5%	0.000	0.000	0.712	1.005	1.215	
D.C.	Yes	No	8	65	56.049	1.160	0.902	1.469	8	.	.	.	.	.	.	.	
Delaware			8	28	34.668	0.808	0.547	1.152	5	.	.	.	.	.	.	.	
Florida	No		204	755	729.945	1.034	0.962	1.110	150	7%	1%	0.000	0.553	0.958	1.363	1.880	
Georgia	Yes	Yes	107	272	284.816	0.955	0.846	1.074	55	9%	4%	0.000	0.579	0.906	1.442	1.880	
Guam	No	No	1	.	.	.	.	.	.	.	.	.	.	.	.	.	
Hawaii	Yes	Yes	17	20	36.105	0.554	0.348	0.840	12	0%	0%	.	.	.	.	.	
Iowa	No	Yes	37	41	79.560	0.515	0.375	0.692	18	0%	11%	.	.	.	.	.	
Idaho	No	No	14	10	24.854	0.402	0.204	0.717	7	.	.	.	.	.	.	.	
Illinois	Yes	Yes	135	186	316.195	0.588	0.508	0.678	81	0%	5%	0.000	0.000	0.458	0.813	1.335	
Indiana	No	No	90	134	190.970	0.702	0.590	0.828	39	3%	3%	0.000	0.282	0.566	0.859	1.328	
Kansas	No	Yes	57	50	64.763	0.772	0.579	1.010	13	15%	0%	.	.	.	.	.	
Kentucky	Yes	Yes	70	187	188.433	0.992	0.858	1.143	33	6%	3%	0.208	0.360	0.892	1.058	1.702	
Louisiana	No	Yes	93	188	168.964	1.113	0.962	1.280	35	11%	0%	0.232	0.791	1.026	1.421	1.912	
Massachusetts	Yes	Yes	69	150	216.474	0.693	0.588	0.811	40	5%	5%	0.000	0.000	0.564	1.001	1.619	
Maryland	Yes	Yes	48	178	183.586	0.970	0.835	1.120	35	6%	0%	0.270	0.428	0.849	1.772	2.195	
Maine	Yes		17	20	30.689	0.652	0.409	0.989	5	.	.	.	.	.	.	.	
Michigan	No	Yes	101	295	320.965	0.919	0.819	1.029	59	8%	2%	0.000	0.487	0.839	1.399	2.061	
Minnesota	Yes	Yes	52	65	119.299	0.545	0.424	0.690	22	0%	5%	0.000	0.000	0.317	0.674	0.943	
Missouri			76	177	228.006	0.776	0.668	0.897	40	5%	5%	0.108	0.422	0.703	1.053	1.729	
Mississippi	Yes	Yes	59	96	112.252	0.855	0.697	1.040	21	5%	5%	0.000	0.353	0.623	1.558	1.723	
Montana	No	No	14	9	15.812	0.569	0.278	1.045	5	.	.	.	.	.	.	.	
North Carolina	Yes		99	279	356.781	0.782	0.694	0.878	49	8%	2%	0.000	0.269	0.658	1.238	1.751	
North Dakota	No	No	9	18	20.277	0.888	0.543	1.376	7	.	.	.	.	.	.	.	
Nebraska	Yes	Yes	26	36	52.009	0.692	0.492	0.948	12	0%	0%	.	.	.	.	.	
New Hampshire	No	No	13	23	28.505	0.807	0.524	1.192	7	.	.	.	.	.	.	.	
New Jersey	Yes	No	71	248	273.042	0.908	0.800	1.027	61	8%	7%	0.000	0.478	0.719	1.102	1.777	
New Mexico	No		29	15	36.019	0.416	0.242	0.671	9	.	.	.	.	.	.	.	
Nevada	Yes	No	24	85	87.773	0.968	0.778	1.191	15	7%	0%	.	.	.	.	.	
New York			180	689	696.308	0.990	0.918	1.066	124	12%	3%	0.000	0.598	0.865	1.415	1.853	
Ohio	No	Yes	141	373	405.223	0.920	0.831	1.018	81	4%	2%	0.000	0.302	0.784	1.095	1.676	
Oklahoma			84	133	125.391	1.061	0.892	1.253	18	17%	0%	.	.	.	.	.	
Oregon	Yes	Yes	35	69	90.061	0.766	0.601	0.964	19	5%	0%	.	.	.	.	.	
Pennsylvania	Yes	Yes	172	358	460.659	0.777	0.700	0.861	93	2%	3%	0.000	0.316	0.708	1.019	1.606	
Puerto Rico			2	.	.	.	.	.	.	.	.	.	.	.	.	.	
Rhode Island	No	No	11	16	29.593	0.541	0.320	0.859	6	.	.	.	.	.	.	.	
South Carolina	Yes	Yes	62	156	170.037	0.917	0.782	1.070	27	11%	0%	0.000	0.439	0.862	1.115	1.468	
South Dakota	No	Yes	21	13	25.161	0.517	0.287	0.861	3	.	.	.	.	.	.	.	
Tennessee	Yes	Yes	109	290	266.257	1.089	0.969	1.220	45	13%	0%	0.161	0.634	0.964	1.542	2.674	
Texas	No	No	363	576	754.129	0.764	0.703	0.828	149	5%	5%	0.000	0.293	0.650	0.989	1.455	
Utah	Yes	No	34	26	49.549	0.525	0.350	0.758	9	.	.	.	.	.	.	.	

Virginia	Yes	Yes	80	212	213.577	0.993	0.866	1.133	42	10%	0%	0.000	0.622	0.972	1.255	1.863
Virgin Islands	Yes	No	2	.	.	.	.	.	.	.	.	.	.	.	.	.
Vermont	No	Yes	6	9	13.278	0.678	0.331	1.244	2	.	.	.	.	.	.	.
Washington	No	No	57	88	158.871	0.554	0.447	0.679	34	0%	6%	0.000	0.234	0.488	0.791	1.064
Wisconsin	No	Yes	73	50	114.719	0.436	0.327	0.570	28	0%	4%	0.000	0.000	0.398	0.664	0.980
West Virginia	Yes	No	30	122	87.722	1.391	1.160	1.655	15	33%	0%	.	.	.	.	.
Wyoming	No	No	12	3	4.332	0.693	0.176	1.885	2	.	.	.	.	.	.	.
All US			**3,662**	**8,102**	**9,398.025**	**0.862**	**0.843**	**0.881**	**1,881**	**6%**	**3%**	**0.000**	**0.380**	**0.751**	**1.172**	**1.793**

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 2017. M indicates midyear implementation of a mandate. No indicates that a state mandate did not exist during 2017. A blank field indicates data not available.
3. Yes indicates that the state health department reported the completion of all of the following validation activities: state health department had access to 2017 NHSN data, state health department performed an assessment of missing or implausible values on at least six months of 2017 NHSN data prior to July 2, 2018, 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 2, 2018 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. 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 2017.
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 2017 national hospital-onset MRSA bacteremia SIR of 0.862. This is only calculated if at least 10 facilities had at least one predicted hospital-onset MRSA bacteremia in 2017.
6. Facility-specific key percentiles were only calculated if at least 20 facilities had ≥1.0 predicted hospital-onset MRSA bacteremia in 2017. 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 2017

Hospital-onset *Clostridioides difficile* (CDI), facility-wide[1]

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	No	8	125	153.807	0.813	0.679	0.965	7	.	.	.	.	.	.	.
Alabama	No	No	90	1,249	1,918.275	0.651	0.616	0.688	72	4%	17%	0.000	0.125	0.521	0.756	1.363
Arkansas			48	734	936.562	0.784	0.729	0.842	40	8%	20%	0.000	0.384	0.628	0.989	1.330
Arizona	No	No	69	1,425	1,943.515	0.733	0.696	0.772	57	9%	25%	0.316	0.473	0.767	0.996	1.267
California	Yes	No	338	7,798	9,153.173	0.852	0.833	0.871	319	15%	9%	0.332	0.592	0.816	1.053	1.361
Colorado	Yes	No	56	1,163	1,246.512	0.933	0.881	0.988	46	11%	13%	0.085	0.512	0.810	1.089	1.502
Connecticut	Yes	No	31	986	1,105.238	0.892	0.838	0.949	30	17%	3%	0.276	0.580	0.808	1.105	1.354
D.C	Yes	No	8	447	452.558	0.988	0.899	1.083	8	.	.	.	.	.	.	.
Delaware			8	282	348.489	0.809	0.719	0.908	8	.	.	.	.	.	.	.
Florida	No		204	5,488	8,114.942	0.676	0.659	0.694	195	6%	26%	0.273	0.456	0.655	0.870	1.087
Georgia		Yes	107	2,191	3,104.516	0.706	0.677	0.736	92	7%	24%	0.021	0.328	0.582	0.886	1.059
Guam	No	No	1	.	.	.	.	.	.	.	.	.	.	.	.	.
Hawaii	Yes	Yes	17	249	358.833	0.694	0.612	0.784	16	13%	19%	0.000	0.462	0.667	0.927	1.528
Iowa	No	Yes	39	828	911.393	0.908	0.848	0.972	37	16%	3%	0.244	0.514	0.821	1.170	1.654
Idaho	No		14	235	311.754	0.754	0.662	0.855	12	8%	17%	0.026	0.279	0.735	0.774	0.889
Illinois	Yes		135	4,168	4,276.321	0.975	0.945	1.005	128	24%	9%	0.382	0.669	0.902	1.177	1.517
Indiana	No		90	1,805	2,229.439	0.810	0.773	0.848	81	12%	11%	0.235	0.568	0.811	1.103	1.402
Kansas	No	Yes	57	652	777.627	0.838	0.776	0.905	39	15%	10%	0.000	0.365	0.701	1.088	1.285
Kentucky	Yes	Yes	70	1,349	1,782.831	0.757	0.717	0.798	66	9%	15%	0.000	0.460	0.741	0.989	1.322
Louisiana	No		93	1,002	1,333.017	0.752	0.706	0.799	69	9%	20%	0.105	0.380	0.645	0.892	1.385
Massachusetts	Yes		69	2,182	2,430.649	0.898	0.861	0.936	66	18%	9%	0.374	0.612	0.798	1.098	1.392
Maryland	Yes	No	48	1,774	1,928.956	0.920	0.878	0.963	47	36%	15%	0.386	0.674	0.894	1.267	1.763
Maine	Yes	Yes	17	231	333.803	0.692	0.607	0.786	17	12%	12%	.	.	.	.	.
Michigan	No	Yes	101	2,795	3,454.724	0.809	0.779	0.839	91	14%	15%	0.026	0.515	0.736	0.937	1.265
Minnesota	Yes	Yes	54	1,342	1,526.599	0.879	0.833	0.927	49	20%	10%	0.000	0.444	0.725	1.183	1.361
Missouri			75	1,735	2,364.601	0.734	0.700	0.769	70	9%	17%	0.231	0.405	0.710	0.878	1.187
Mississippi	Yes	Yes	58	795	1,105.345	0.719	0.671	0.771	49	6%	20%	0.000	0.200	0.503	0.913	1.109
Montana	No		14	159	186.914	0.851	0.726	0.991	11	9%	18%	.	.	.	.	.
North Carolina	Yes		100	2,695	3,497.797	0.770	0.742	0.800	93	11%	20%	0.075	0.423	0.719	0.994	1.278
North Dakota	No	No	9	249	220.055	1.132	0.997	1.279	7	.	.	.	.	.	.	.
Nebraska	Yes	Yes	25	477	593.398	0.804	0.734	0.878	22	5%	5%	0.402	0.520	0.768	0.853	1.260
New Hampshire	No	No	13	309	328.089	0.942	0.841	1.051	13	15%	0%	.	.	.	.	.
New Jersey	No	No	71	2,583	2,925.293	0.883	0.849	0.918	71	28%	14%	0.419	0.645	0.853	1.116	1.379
New Mexico	No		28	430	450.704	0.954	0.867	1.047	24	21%	4%	0.053	0.490	0.718	1.057	1.516
Nevada	No	No	25	884	1,030.526	0.858	0.803	0.916	22	27%	9%	0.562	0.692	0.889	1.079	1.239
New York			181	5,414	7,168.052	0.755	0.735	0.776	173	13%	24%	0.167	0.487	0.737	0.937	1.315
Ohio	No	Yes	142	3,788	4,545.647	0.833	0.807	0.860	131	12%	11%	0.202	0.538	0.728	0.989	1.182
Oklahoma			83	851	1,222.727	0.696	0.650	0.744	53	2%	11%	0.019	0.383	0.607	0.951	1.150
Oregon	Yes	Yes	35	748	906.570	0.825	0.768	0.886	34	18%	9%	0.141	0.509	0.787	1.095	1.532
Pennsylvania	Yes	Yes	174	4,125	5,037.354	0.819	0.794	0.844	154	9%	16%	0.229	0.536	0.785	1.010	1.232
Puerto Rico			4	.	.	.	.	.	.	.	.	.	.	.	.	.
Rhode Island	No	No	11	363	360.259	1.008	0.908	1.115	11	36%	9%	.	.	.	.	.
South Carolina	Yes	Yes	62	1,291	1,593.420	0.810	0.767	0.855	56	11%	11%	0.316	0.480	0.683	0.945	1.479
South Dakota	No	Yes	21	214	298.589	0.717	0.625	0.818	11	0%	18%	.	.	.	.	.
Tennessee	Yes	Yes	109	2,072	2,512.146	0.825	0.790	0.861	94	13%	15%	0.000	0.323	0.652	0.998	1.273
Texas	No	No	363	6,115	8,155.255	0.750	0.731	0.769	265	11%	17%	0.274	0.474	0.690	0.975	1.315
Utah	Yes	Yes	35	577	508.091	1.136	1.046	1.231	29	28%	3%	0.000	0.519	0.976	1.372	1.640
Virginia	Yes	Yes	80	1,783	2,360.118	0.755	0.721	0.791	78	6%	18%	0.122	0.416	0.715	0.892	1.107
Virgin Islands	Yes	No	2	.	.	.	.	.	.	.	.	.	.	.	.	.
Vermont	Yes	Yes	6	95	119.832	0.793	0.645	0.965	6	.	.	.	.	.	.	.

Washington	Yes	Yes	57	1,584	1,680.815	0.942	0.897	0.990	53	25%	11%	0.248	0.537	0.723	1.115	1.567
Wisconsin	No	Yes	73	1,297	1,519.572	0.854	0.808	0.901	68	12%	10%	0.000	0.469	0.747	1.027	1.274
West Virginia	Yes	No	30	722	870.894	0.829	0.770	0.891	27	11%	7%	0.000	0.435	0.688	0.901	1.118
Wyoming	No	No	11	46	69.516	0.662	0.490	0.875	8	.	.	.	.	.	.	.
All US			**3,669**	**81,942**	**101,871.014**	**0.804**	**0.799**	**0.810**	**3,231**	**13%**	**15%**	**0.220**	**0.491**	**0.739**	**1.015**	**1.331**

1. 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.
2. Yes indicates the presence of a state mandate to report facility-wide CDI data to NHSN at the beginning of 2017. M indicates midyear implementation of a mandate. No indicates that a state mandate did not exist during 2017. A blank field indicates data not available.
3. Yes indicates that the state health department reported the completion of all of the following validation activities: state health department had access to 2017 NHSN data, state health department performed an assessment of missing or implausible values on at least six months of 2017 NHSN data prior to July 2, 2018, 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 2, 2018 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. 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 2017.
5. 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 2017 national hospital-onset CDI SIR of 0.804. This is only calculated if at least 10 facilities had at least one predicted hospital-onset CDI in 2017.
6. Facility-specific key percentiles were only calculated if at least 20 facilities had ≥1.0 predicted hospital-onset CDI in 2017. 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.

Table 9. Changes in national standardized infection ratios (SIRs) using HAI data reported from all NHSN Central line-associated bloodstream infections (CLABSIs), catheter-associated urinary tract infections (CAUTIs), ventilator *Clostridioides difficile* infections, and surgical site infections (SSIs) following Surgical Care Ir

	2016 SIR	2017 SIR	Percent Change	Direction of Change, Based on Statistical Significance	p-value
CLABSI, all locations[1]	0.892	0.814	-9%	Decrease	0.0000
CLABSI, ICU[2]	0.931	0.866	-7%	Decrease	0.0000
CLABSI, Ward[3]	0.878	0.788	-10%	Decrease	0.0000
CLABSI, NICU[4]	0.805	0.763	5%	No change	0.1417
CAUTI, all locations[5]	0.930	0.880	-5%	Decrease	0.0000
CAUTI, ICU[2]	0.927	0.850	-8%	Decrease	0.0000
CAUTI, Ward[3]	0.933	0.909	-3%	Decrease	0.0253
	0.979	0.952	-3%	Decrease	0.0019
ICUs[5]	0.982	0.955	-3%	Decrease	0.0021
Wards[6]	0.872	0.860	1%	No change	0.8106
Hospital-onset MRSA bacteremia, facility-wide[6]	0.935	0.862	-8%	Decrease	0.0000
Hospital-onset *C. difficile* infections, facility-wide[6]	0.921	0.804	-13%	Decrease	0.0000
SSI, combined SCIP procedures[7]	0.936	0.926	1%	No change	0.3722
SSI, Hip arthroplasty	0.962	0.997	4%	No change	0.2319
SSI, Knee arthroplasty	1.050	1.017	3%	No change	0.3161
SSI, Coronary artery bypass graft[8]	0.936	0.888	5%	No change	0.2839
SSI, Cardiac surgery	0.779	0.746	4%	No change	0.7386
SSI, Peripheral vascular bypass surgery	0.906	1.013	12%	No change	0.2982
SSI, Abdominal aortic aneurysm repair	0.512	0.721	41%	No change	0.5746
SSI, Colon surgery	0.933	0.906	3%	No change	0.0786
SSI, Rectal surgery	0.480	0.565	18%	No change	0.3333
SSI, Abdominal hysterectomy	0.874	0.890	2%	No change	0.5900
SSI, Vaginal hysterectomy	0.846	0.888	5%	No change	0.7089

*Statistically significant, p < 0.0500

1. Data from all ICUs, wards (and other non-critical care locations), and NICUs in acute care hospitals. This excludes LTAC locations (or facilities)
2. Data from all ICUs in acute care hospitals; excludes wards (and other non-critical care locations), NICUs, LTAC locations (or facilities), and IRF
3. Data from all wards (for this table wards also include step-down, mixed acuity and specialty care areas [including hematology/oncology, bone m
4. Data from all NICU locations, including Level II/III and Level III nurseries. Both umbilical line and central line-associated bloodstream infections
5. Data from all ICUs and wards (and other non-critical care locations). This excludes NICUs, LTAC locations (or facilities) and IRF locations (or f
6. Hospital-onset is defined as event detected on the 4th day (or later) after admission to an inpatient location within the facility.
7. These procedures were presented in previous versions of the HAI Progress Report and follow select inpatient surgical procedures with a primar using NHSN surgical procedure categorizations. Includes SSIs that were classified as deep incisional or organ/space, and were detected upon
8. Coronary artery bypass graft includes procedures with either chest only or chest and donor site incisions.

acute care hospitals reporting during 2017 by HAI and patient population:
-associated events (VAEs), methicillin-resistant *Staphylococcus aureus* (MRSA) bacteremia,
nprovement Project (SCIP) procedures, 2016 compared to 2017

and IRF locations (or facilities).
locations (or facilities).
narrow transplant] in acute care hospitals. This excludes LTAC locations (or facilities) and IRF locations (or facilities).
are considered CLABSIs.
acilities).

y skin closure technique approximating the procedures covered by SCIP,
admission or readmission. Specific NHSN procedures and the corresponding SCIP procedures are listed in Appendix C.

Table 10. Changes in state-specific standardized infection ratios (SIRs) between 2016 and 2017 from NHSN Acute Care Hospitals

10a. Central line-associated bloodstream infections (CLABSI), all locations[1]

	All Acute Care Hospitals Reporting to NHSN				
State[2]	2016 SIR[3]	2017 SIR	Percent Change	Direction of Change, Based on Statistical Significance	p-value
Alaska	0.866	0.908	5%	No change	0.8593
Alabama	1.122	0.878	-22%	Decrease	0.0001
Arkansas	0.996	1.031	4%	No change	0.6824
Arizona	0.764	0.693	9%	No change	0.1744
California	0.945	0.851	-10%	Decrease	0.0003
Colorado	0.720	0.615	15%	No change	0.1001
Connecticut	1.026	0.894	13%	No change	0.1397
D.C.	0.951	0.859	10%	No change	0.3687
Delaware	0.966	1.088	13%	No change	0.4154
Florida	0.906	0.813	-10%	Decrease	0.0014
Georgia	1.143	0.970	-15%	Decrease	0.0005
Guam	.	.		.	.
Hawaii	0.525	0.362	31%	No change	0.0623
Iowa	0.635	0.664	4%	No change	0.7184
Idaho	0.394	0.399	1%	No change	0.9619
Illinois	0.700	0.638	9%	No change	0.0939
Indiana	0.987	0.920	7%	No change	0.2641
Kansas	0.850	0.789	7%	No change	0.4943
Kentucky	0.768	0.710	8%	No change	0.3358
Louisiana	1.126	0.855	-24%	Decrease	0.0001
Massachusetts	0.765	0.750	2%	No change	0.7577
Maryland	1.105	0.900	-19%	Decrease	0.0018
Maine	0.926	0.840	9%	No change	0.5960
Michigan	0.779	0.741	5%	No change	0.4049
Minnesota	0.858	0.861	0%	No change	0.9604
Missouri	0.935	0.868	7%	No change	0.1991
Mississippi	0.925	0.873	6%	No change	0.5422
Montana	0.690	0.442	36%	No change	0.1611
North Carolina	1.036	0.977	6%	No change	0.2497
North Dakota	0.844	0.811	4%	No change	0.8328
Nebraska	0.782	0.803	3%	No change	0.8311
New Hampshire	0.959	0.714	26%	No change	0.1218
New Jersey	0.822	0.714	-13%	Decrease	0.0277
New Mexico	1.054	0.733	-30%	Decrease	0.0119
Nevada	0.935	0.993	6%	No change	0.4814
New York	0.978	0.900	-8%	Decrease	0.0180
Ohio	0.837	0.743	-11%	Decrease	0.0113
Oklahoma	0.816	0.820	1%	No change	0.9445
Oregon	0.684	0.719	5%	No change	0.6595
Pennsylvania	0.946	0.789	-17%	Decrease	0.0000
Puerto Rico	0.892	1.289	45%	Increase	0.0274
Rhode Island	1.026	1.067	4%	No change	0.8073
South Carolina	0.964	0.844	12%	No change	0.0705
South Dakota	0.770	0.676	12%	No change	0.5369
Tennessee	0.780	0.718	8%	No change	0.1648
Texas	0.869	0.872	0%	No change	0.9386
Utah	0.836	0.588	-30%	Decrease	0.0143
Virginia	0.683	0.733	7%	No change	0.3065
Virgin Islands	.	.	.	.	.
Vermont	0.682	0.996	46%	No change	0.2182
Washington	0.709	0.613	14%	No change	0.0625
Wisconsin	0.800	0.826	3%	No change	0.6808
West Virginia	0.863	0.707	18%	No change	0.0766
Wyoming	0.364	0.832	129%	No change	0.1412
All US	**0.892**	**0.814**	**-9%**	**Decrease**	**0.0000**

* Statistically significant, $p < 0.0500$

1. Data from all ICUs, wards (and other non-critical care locations), and NICUs. This excludes LTAC locations (or facilities) and IRF locations (or facilities).
2. States without SIR either in 2016 and/or 2017 and therefore subsequent data not calculated
3. 2016 SIRs were recalculated using an updated dataset and therefore might be slightly different from the data published in the 2016 HAI Progress Report.

Table 10. Changes in state-specific standardized infection ratios (SIRs) between 2016 and 2017 from NHSN Acute Care Hospitals

10b. Catheter-associated urinary tract infections (CAUTI), all locations[1]

	All Acute Care Hospitals Reporting to NHSN				
	2016 SIR	2017 SIR	Percent Change	Direction of Change, Based on Statistical Significance	p-value
Alaska	1.822	1.537	16%	No change	0.4149
Alabama	0.862	0.806	6%	No change	0.2812
Arkansas	1.014	1.169	15%	No change	0.0612
Arizona	0.689	0.615	11%	No change	0.1345
California	1.112	1.032	-7%	Decrease	0.0034
Colorado	0.837	0.827	1%	No change	0.8775
Connecticut	0.951	1.120	18%	No change	0.0537
D.C.	1.092	0.807	-26%	Decrease	0.0163
Delaware	0.923	1.096	19%	No change	0.3044
Florida	0.823	0.735	-11%	Decrease	0.0009
Georgia	1.013	0.962	5%	No change	0.2670
Guam	.	.	.	.	.
Hawaii	0.738	1.011	37%	Increase	0.0497
Iowa	1.002	0.726	-28%	Decrease	0.0019
Idaho	0.562	0.994	77%	Increase	0.0008
Illinois	0.846	0.764	-10%	Decrease	0.0399
Indiana	0.827	0.847	2%	No change	0.7057
Kansas	0.932	0.860	8%	No change	0.4242
Kentucky	0.834	0.768	8%	No change	0.2436
Louisiana	0.864	0.844	2%	No change	0.7110
Massachusetts	0.945	1.077	14%	Increase	0.0189
Maryland	1.055	0.896	-15%	Decrease	0.0121
Maine	1.416	1.194	16%	No change	0.2513
Michigan	0.856	0.764	-11%	Decrease	0.0294
Minnesota	1.084	0.824	-24%	Decrease	0.0005
Missouri	0.922	0.911	1%	No change	0.8227
Mississippi	0.747	0.669	10%	No change	0.2325
Montana	0.907	0.908	0%	No change	0.9955
North Carolina	0.908	0.894	2%	No change	0.7482
North Dakota	1.077	0.951	12%	No change	0.4653
Nebraska	0.866	0.872	1%	No change	0.9609
New Hampshire	1.185	0.987	17%	No change	0.1971
New Jersey	0.871	0.875	0%	No change	0.9336
New Mexico	1.238	0.971	-22%	Decrease	0.0324
Nevada	0.882	0.751	15%	No change	0.0711
New York	1.101	1.022	-7%	Decrease	0.0179
Ohio	0.772	0.761	1%	No change	0.7502
Oklahoma	1.009	0.756	-25%	Decrease	0.0001
Oregon	0.890	1.021	15%	No change	0.1187
Pennsylvania	0.955	0.853	-11%	Decrease	0.0035
Puerto Rico	0.736	0.762	4%	No change	0.8183
Rhode Island	1.150	1.336	16%	No change	0.2982
South Carolina	0.925	0.874	6%	No change	0.4202
South Dakota	1.062	0.986	7%	No change	0.6702
Tennessee	0.894	0.777	-13%	Decrease	0.0115
Texas	0.824	0.875	6%	No change	0.0715
Utah	1.248	0.966	-23%	Decrease	0.0271
Virginia	0.993	1.026	3%	No change	0.5565
Virgin Islands	.	.	.	.	.
Vermont	0.730	1.169	60%	Increase	0.0441
Washington	1.027	0.997	3%	No change	0.6467
Wisconsin	1.032	0.965	6%	No change	0.3615
West Virginia	0.714	0.564	-21%	Decrease	0.0315
Wyoming	0.409	0.819	100%	No change	0.1051
All US	**0.930**	**0.880**	**-5%**	**Decrease**	**0.0000**

*Statistically significant, $p < 0.0500$

1. Data from all ICUs, wards (and other non-critical care locations), and NICUs. This excludes LTAC locations (or facilities) and IRF locations (or facilities).
2. States without SIR either in 2016 and/or 2017 and therefore subsequent data not calculated

Table 10. Changes in state-specific standardized infection ratios (SIRs) between 2016 and 2017 from NHSN Acute Care Hospitals

10c. Ventilator-associated events (VAE), all locations[1]

	All Acute Care Hospitals Reporting to NHSN				
	2016 SIR	2017 SIR	Percent Change	Direction of Change, Based on Statistical Significance	p-value
Alaska	1.281	1.385	8%	No change	0.6942
Alabama	0.926	0.797	-14%	Decrease	0.0354
Arkansas	0.781	1.273	63%	Increase	0.0000
Arizona	1.371	1.234	10%	No change	0.0982
California	0.819	0.832	2%	No change	0.6198
Colorado	1.162	1.161	0%	No change	0.9903
Connecticut	1.549	1.261	-19%	Decrease	0.0091
D.C.	.	.	.		.
Delaware	.	.	.		.
Florida	0.821	0.842	3%	No change	0.4830
Georgia	1.092	0.891	-18%	Decrease	0.0000
Guam	.	.	.		.
Hawaii	0.319	0.158	50%	No change	0.1045
Iowa	1.209	1.406	16%	No change	0.3354
Idaho	1.010	0.962	5%	No change	0.8045
Illinois	1.021	0.977	4%	No change	0.4796
Indiana	1.099	1.061	3%	No change	0.4694
Kansas	1.220	1.107	9%	No change	0.3251
Kentucky	1.369	1.019	-26%	Decrease	0.0000
Louisiana	0.639	0.936	46%	Increase	0.0003
Massachusetts	1.520	1.295	-15%	Decrease	0.0372
Maryland	0.800	0.813	2%	No change	0.8678
Maine	1.930	1.936	0%	No change	0.9732
Michigan	1.174	1.161	1%	No change	0.7746
Minnesota	1.182	0.987	16%	No change	0.0949
Missouri	0.913	1.131	24%	Increase	0.0002
Mississippi	0.708	0.352	-50%	Decrease	0.0001
Montana	.	.	.		.
North Carolina	1.482	1.375	7%	No change	0.1353
North Dakota	.	.	.		.
Nebraska	1.746	1.600	8%	No change	0.3625
New Hampshire	0.696	0.656	6%	No change	0.8279
New Jersey	0.792	0.929	17%	Increase	0.0039
New Mexico	1.690	1.569	7%	No change	0.5562
Nevada	0.539	0.702	30%	Increase	0.0012
New York	0.682	0.698	2%	No change	0.4951
Ohio	1.225	1.148	6%	No change	0.0936
Oklahoma	0.907	0.678	-25%	Decrease	0.0025
Oregon	0.998	0.833	17%	No change	0.1224
Pennsylvania	0.927	0.932	1%	No change	0.8541
Puerto Rico	1.081	0.780	28%	No change	0.0757
Rhode Island	0.802	0.982	22%	No change	0.1906
South Carolina	1.260	1.107	-12%	Decrease	0.0072
South Dakota	1.271	0.628	-51%	Decrease	0.0213
Tennessee	1.084	1.016	6%	No change	0.2166
Texas	0.736	0.746	1%	No change	0.7531
Utah	1.289	0.754	42%	No change	0.1438
Virginia	1.091	1.204	10%	Increase	0.0346
Virgin Islands	.	.	.		.
Vermont	.	.	.		.
Washington	0.809	0.719	11%	No change	0.2821
Wisconsin	1.476	1.371	7%	No change	0.2503
West Virginia	0.515	0.242	-53%	Decrease	0.0002
Wyoming	1.270	0.359	72%	No change	0.0850
All US	**0.979**	**0.952**	**-3%**	**Decrease**	**0.0019**

* Statistically significant, p < 0.0500

1. Data from all ICUs, wards (and other non-critical care locations), and NICUs. This excludes LTAC locations (or facilities) and IRF locations (or facilities).
2. States without SIR either in 2016 and/or 2017 and therefore subsequent data not calculated

Table 10. Changes in state-specific standardized infection ratios (SIRs) between 2016 and 2017 from NHSN Acute Care Hospitals

10d. Surgical site infections (SSI) following colon surgery[1]

	All Acute Care Hospitals Reporting to NHSN				
	2016 SIR	2017 SIR	Percent Change	Direction of Change, Based on Statistical Significance	p-value
Alaska	0.262	1.140	335%	Increase	0.0041
Alabama	0.678	0.804	19%	No change	0.2106
Arkansas	0.901	1.274	41%	Increase	0.0352
Arizona	1.151	1.029	11%	No change	0.3034
California	0.958	0.976	2%	No change	0.7301
Colorado	0.968	1.034	7%	No change	0.6033
Connecticut	1.124	0.749	-33%	Decrease	0.0068
D.C.	0.955	0.771	19%	No change	0.4000
Delaware	1.024	0.597	42%	No change	0.0607
Florida	0.810	0.843	4%	No change	0.5331
Georgia	0.992	0.764	-23%	Decrease	0.0051
Guam	.	.	.		.
Hawaii	0.810	0.877	8%	No change	0.7896
Iowa	0.944	0.891	6%	No change	0.7400
Idaho	0.974	0.758	22%	No change	0.3601
Illinois	0.871	0.862	1%	No change	0.9053
Indiana	0.927	0.819	12%	No change	0.2819
Kansas	1.231	0.875	-29%	Decrease	0.0368
Kentucky	0.985	1.045	6%	No change	0.6325
Louisiana	0.849	0.941	11%	No change	0.4364
Massachusetts	0.843	0.891	6%	No change	0.6264
Maryland	0.987	0.799	19%	No change	0.0752
Maine	1.266	1.144	10%	No change	0.6477
Michigan	0.913	1.086	19%	Increase	0.0396
Minnesota	1.043	0.951	9%	No change	0.4193
Missouri	0.826	0.864	5%	No change	0.6862
Mississippi	0.856	1.138	33%	No change	0.0863
Montana	0.932	0.988	6%	No change	0.8649
North Carolina	0.802	0.832	4%	No change	0.7024
North Dakota	1.726	1.757	2%	No change	0.9394
Nebraska	1.392	1.142	18%	No change	0.2698
New Hampshire	0.973	1.121	15%	No change	0.5587
New Jersey	0.739	0.611	17%	No change	0.1175
New Mexico	1.197	1.274	6%	No change	0.7884
Nevada	1.270	1.228	3%	No change	0.8468
New York	1.088	0.973	11%	No change	0.0647
Ohio	0.807	0.765	5%	No change	0.5009
Oklahoma	1.076	0.968	10%	No change	0.4448
Oregon	0.698	0.795	14%	No change	0.4288
Pennsylvania	0.822	0.815	1%	No change	0.9122
Puerto Rico	.	.	.		.
Rhode Island	1.166	1.605	38%	No change	0.1762
South Carolina	1.030	1.006	2%	No change	0.8571
South Dakota	1.165	1.513	30%	No change	0.3215
Tennessee	0.920	0.817	11%	No change	0.2548
Texas	0.892	0.862	3%	No change	0.5726
Utah	1.193	1.272	7%	No change	0.7138
Virginia	1.136	0.970	15%	No change	0.1144
Virgin Islands	.	.	.		.
Vermont	1.903	1.259	34%	No change	0.2247
Washington	0.879	0.864	2%	No change	0.8884
Wisconsin	0.990	0.872	12%	No change	0.3038
West Virginia	1.188	1.419	19%	No change	0.3051
Wyoming	0.978	0.375	62%	No change	0.2481
All US	**0.933**	**0.906**	**3%**	**No change**	**0.0786**

* Statistically significant, $p < 0.0500$

1. SSIs included are those classified as deep incisional or organ/space infections following NHSN-defined inpatient colon procedures with both primary ar detected during the same admission as the surgical procedure or upon readmission to the same facility.
2. States without SIR either in 2016 and/or 2017 and therefore subsequent data not calculated

ıd other than primary skin closure technique,

Table 10. Changes in state-specific standardized infection ratios (SIRs) between 2016 and 2017 from NHSN Acute Care Hospitals

10e. Surgical site infections (SSI) following abdominal hysterectomy surgery[1]

	All Acute Care Hospitals Reporting to NHSN				
	2016 SIR	2017 SIR	Percent Change[2]	Direction of Change, Based on Statistical Significance	p-value
Alaska	0.000	1.203	.	No change	0.079
Alabama	0.724	0.787	9%	No change	0.739
Arkansas	0.530	0.735	39%	No change	0.418
Arizona	1.119	0.916	18%	No change	0.374
California	0.854	0.875	2%	No change	0.838
Colorado	0.995	0.833	16%	No change	0.492
Connecticut	0.945	0.635	33%	No change	0.225
D.C.	0.000	0.787	.	Increase	0.025
Delaware	1.804	1.619	10%	No change	0.842
Florida	0.913	0.889	3%	No change	0.841
Georgia	0.930	0.824	11%	No change	0.479
Guam	.	.	.		.
Hawaii	0.948	0.495	48%	No change	0.484
Iowa	0.698	1.421	104%	Increase	0.026
Idaho	0.679	0.820	21%	No change	0.792
Illinois	0.726	0.635	13%	No change	0.485
Indiana	0.838	1.078	29%	No change	0.272
Kansas	0.444	0.713	61%	No change	0.282
Kentucky	1.147	1.133	1%	No change	0.955
Louisiana	0.906	0.955	5%	No change	0.841
Massachusetts	1.181	1.176	0%	No change	0.986
Maryland	0.778	1.082	39%	No change	0.180
Maine	0.434	0.789	82%	No change	0.435
Michigan	0.887	0.794	10%	No change	0.552
Minnesota	1.075	1.389	29%	No change	0.302
Missouri	0.891	0.679	24%	No change	0.266
Mississippi	1.501	1.407	6%	No change	0.809
Montana	0.236	0.946	301%	No change	0.218
North Carolina	0.731	0.563	23%	No change	0.225
North Dakota	0.790	1.754	122%	No change	0.291
Nebraska	1.176	1.167	1%	No change	0.987
New Hampshire	0.143	0.855	498%	No change	0.071
New Jersey	0.515	0.606	18%	No change	0.548
New Mexico	0.892	1.285	44%	No change	0.402
Nevada	1.354	1.075	21%	No change	0.558
New York	0.997	1.026	3%	No change	0.820
Ohio	0.885	0.816	8%	No change	0.621
Oklahoma	0.442	0.913	107%	Increase	0.036
Oregon	0.559	1.162	108%	Increase	0.047
Pennsylvania	1.072	0.946	12%	No change	0.412
Puerto Rico	.	.	.		.
Rhode Island	1.607	1.592	1%	No change	0.983
South Carolina	0.950	0.871	8%	No change	0.728
South Dakota	1.734	1.075	38%	No change	0.323
Tennessee	1.066	1.081	1%	No change	0.940
Texas	0.600	0.791	32%	Increase	0.026
Utah	1.419	0.785	45%	No change	0.081
Virginia	1.041	0.858	18%	No change	0.347
Virgin Islands	.	.	.		.
Vermont	2.274	1.380	39%	No change	0.457
Washington	0.630	0.651	3%	No change	0.916
Wisconsin	0.868	1.229	42%	No change	0.166
West Virginia	1.647	0.995	40%	No change	0.168
Wyoming	0.550	0.000	100%	No change	0.502
All US	**0.874**	**0.890**	**2%**	**No change**	**0.590**

* Statistically significant, p < 0.0500

1. SSIs included are those classified as deep incisional or organ/space infections following NHSN-defined inpatient abdominal hysterectomy procedures wi detected during the same admission as the surgical procedure or upon readmission to the same facility.
2. States without SIR either in 2016 and/or 2017 and therefore subsequent data not calculated. For any state with a referent SIR of 0.000, the percent chan

th a primary or other than primary skin closure technique,

ıge was reflected as greater than 100 percent.

Table 10. Changes in state-specific standardized infection ratios (SIRs) between 2016 and 2017 from NHSN Acute Care Hospitals

10f. Hospital-onset methicillin-resistant *Staphylococcus aureus* (MRSA) bacteremia, facility-wide[1]

	All Acute Care Hospitals Reporting to NHSN				
	2016 SIR	2017 SIR	Percent Change	Direction of Change, Based on Statistical Significance	p-value
Alaska	0.916	1.050	15%	No change	0.7301
Alabama	1.231	1.049	15%	No change	0.0894
Arkansas	1.224	1.158	5%	No change	0.7006
Arizona	1.000	0.680	-32%	Decrease	0.0007
California	0.954	0.873	8%	No change	0.0917
Colorado	0.721	0.721	0%	No change	0.9978
Connecticut	1.064	0.782	-27%	Decrease	0.0472
D.C.	1.286	1.160	10%	No change	0.5451
Delaware	0.830	0.808	3%	No change	0.9185
Florida	1.119	1.034	8%	No change	0.1206
Georgia	1.072	0.955	11%	No change	0.1699
Guam	.	.	.	.	.
Hawaii	0.447	0.554	24%	No change	0.5362
Iowa	0.591	0.515	13%	No change	0.5220
Idaho	0.165	0.402	144%	No change	0.1296
Illinois	0.672	0.588	13%	No change	0.1844
Indiana	0.790	0.702	11%	No change	0.3252
Kansas	0.609	0.772	27%	No change	0.2726
Kentucky	1.221	0.992	-19%	Decrease	0.0387
Louisiana	1.362	1.113	-18%	Decrease	0.0407
Massachusetts	0.593	0.693	17%	No change	0.2008
Maryland	1.150	0.970	16%	No change	0.0981
Maine	0.514	0.652	27%	No change	0.4704
Michigan	1.035	0.919	11%	No change	0.1435
Minnesota	0.520	0.545	5%	No change	0.7977
Missouri	0.909	0.776	15%	No change	0.1302
Mississippi	1.149	0.855	-26%	Decrease	0.0309
Montana	0.197	0.569	189%	No change	0.1053
North Carolina	0.938	0.782	-17%	Decrease	0.0273
North Dakota	0.424	0.888	109%	No change	0.0595
Nebraska	0.718	0.692	4%	No change	0.8780
New Hampshire	0.783	0.807	3%	No change	0.9218
New Jersey	1.005	0.908	10%	No change	0.2520
New Mexico	0.776	0.416	-46%	Decrease	0.0476
Nevada	0.839	0.968	15%	No change	0.3843
New York	0.971	0.990	2%	No change	0.7261
Ohio	0.856	0.920	7%	No change	0.3299
Oklahoma	1.137	1.061	7%	No change	0.5674
Oregon	0.639	0.766	20%	No change	0.3162
Pennsylvania	0.811	0.777	4%	No change	0.5705
Puerto Rico	.	.	.	.	.
Rhode Island	0.710	0.541	24%	No change	0.4259
South Carolina	1.014	0.917	10%	No change	0.3695
South Dakota	0.683	0.517	24%	No change	0.4622
Tennessee	1.327	1.089	-18%	Decrease	0.0128
Texas	0.838	0.764	9%	No change	0.1069
Utah	0.679	0.525	23%	No change	0.3265
Virginia	0.850	0.993	17%	No change	0.1273
Virgin Islands	.	.	.	.	.
Vermont	0.750	0.678	10%	No change	0.8325
Washington	0.690	0.554	20%	No change	0.1314
Wisconsin	0.490	0.436	11%	No change	0.5513
West Virginia	1.139	1.391	22%	No change	0.1508
Wyoming	0.907	0.693	24%	No change	0.7440
All US	**0.935**	**0.862**	**-8%**	**Decrease**	**0.0000**

* Statistically significant, $p < 0.0500$

1. Hospital-onset is defined as event detected on the 4th day (or later) after admission to an inpatient location within the facility.
2. States without SIR either in 2016 and/or 2017 and therefore subsequent data not calculated

Table 10. Changes in state-specific standardized infection ratios (SIRs) between 2016 and 2017 from NHSN Acute Care Hospitals

10g. Hospital-onset *Clostridioides difficile* infection (CDI), facility-wide[1]

	All Acute Care Hospitals Reporting to NHSN				
	2016 SIR	2017 SIR	Percent Change	Direction of Change, Based on Statistical Significance	p-value
Alaska	0.921	0.813	12%	No change	0.3233
Alabama	0.623	0.651	4%	No change	0.2694
Arkansas	0.792	0.784	1%	No change	0.8416
Arizona	0.899	0.733	-18%	Decrease	0.0000
California	1.071	0.852	-20%	Decrease	0.0000
Colorado	1.048	0.933	-11%	Decrease	0.0039
Connecticut	1.008	0.892	-12%	Decrease	0.0054
D.C.	1.118	0.988	12%	No change	0.0621
Delaware	1.054	0.809	-23%	Decrease	0.0008
Florida	0.806	0.676	-16%	Decrease	0.0000
Georgia	0.880	0.706	-20%	Decrease	0.0000
Guam	.	.	.	.	.
Hawaii	0.721	0.694	4%	No change	0.6618
Iowa	0.828	0.908	10%	No change	0.0639
Idaho	0.730	0.754	3%	No change	0.7257
Illinois	1.004	0.975	3%	No change	0.1650
Indiana	0.890	0.810	-9%	Decrease	0.0032
Kansas	0.932	0.838	10%	No change	0.0522
Kentucky	0.857	0.757	-12%	Decrease	0.0008
Louisiana	0.903	0.752	-17%	Decrease	0.0000
Massachusetts	0.941	0.898	5%	No change	0.1102
Maryland	1.003	0.920	-8%	Decrease	0.0072
Maine	0.681	0.692	2%	No change	0.8624
Michigan	0.877	0.809	-8%	Decrease	0.0021
Minnesota	0.926	0.879	5%	No change	0.1767
Missouri	0.940	0.734	-22%	Decrease	0.0000
Mississippi	0.720	0.719	0%	No change	0.9856
Montana	0.947	0.851	10%	No change	0.3128
North Carolina	0.891	0.770	-14%	Decrease	0.0000
North Dakota	1.010	1.132	12%	No change	0.2056
Nebraska	0.891	0.804	10%	No change	0.1120
New Hampshire	1.158	0.942	-19%	Decrease	0.0069
New Jersey	0.935	0.883	-6%	Decrease	0.0392
New Mexico	1.068	0.954	11%	No change	0.0823
Nevada	1.082	0.858	-21%	Decrease	0.0000
New York	0.920	0.755	-18%	Decrease	0.0000
Ohio	0.901	0.833	-8%	Decrease	0.0005
Oklahoma	0.891	0.696	-22%	Decrease	0.0000
Oregon	0.941	0.825	-12%	Decrease	0.0082
Pennsylvania	0.929	0.819	-12%	Decrease	0.0000
Puerto Rico	.	.	.	.	.
Rhode Island	1.208	1.008	-17%	Decrease	0.0103
South Carolina	0.800	0.810	1%	No change	0.7411
South Dakota	0.967	0.717	-26%	Decrease	0.0008
Tennessee	0.883	0.825	-7%	Decrease	0.0243
Texas	0.882	0.750	-15%	Decrease	0.0000
Utah	1.079	1.136	5%	No change	0.3835
Virginia	0.951	0.755	-21%	Decrease	0.0000
Virgin Islands	.	.	.	.	.
Vermont	0.987	0.793	20%	No change	0.1133
Washington	1.060	0.942	-11%	Decrease	0.0006
Wisconsin	0.994	0.854	-14%	Decrease	0.0001
West Virginia	0.978	0.829	-15%	Decrease	0.0013
Wyoming	1.134	0.662	-42%	Decrease	0.0037
All US	**0.921**	**0.804**	**-13%**	**Decrease**	**0.0000**

* Statistically significant, p < 0.0500

1. Hospital-onset is defined as event detected on the 4th day (or later) after admission to an inpatient location within the facility.
2. States without SIR either in 2016 and/or 2017 and therefore subsequent data not calculated

Appendix A. Factors used in NHSN risk adjustment of the device-associated HAIs Negative Binomial Regression Models[1] 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* Medical School Type* Location Type Facility 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 Models[1] 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
C. difficile	Intercept Inpatient CO admission prevalence rate* CDI test type+ Medical school affiliation‡ Number of ICU beds‡ Facility type Bed size‡ Reporting from an ED or 24-hour observation unit

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 admissions x 100.

** Average length of stay is taken from the Annual Hospital Survey. It is calculated as: total # of annual pa

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

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

ı/pdfs/ps-analysis-resources/nhsn-sir-guide.pdf
events, divided by total

tient days / total # of annual admissions.
Survey.

Appendix C. List of NHSN procedures included in this repo
Admission/Re-admission SSI Logistic Regression Model[1], 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
LAM	Laminectomy
KTP	Kidney transplant
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

1. SSI risk adjustment methodology: SIR Guide: **https://www.c**

* 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**

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

Validated Parameters for Risk Model
Intercept-only model[‡]
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
diabetes, ASA, hospital bed size*, BMI
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

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

port with predictive risk factors from the NHSN
ion Model[1], Pediatrics < 18 years of age

Validated Parameters for Risk Model
No SIR available^
No SIR available^
Hospital bed size*, procedure duration, wound class
Trauma
procedure duration, age
closure, wound class, age, trauma, procedure duration
BMI, anesthesia
duration of labor
ASA score, BMI
Procedure duration, closure technique
diabetes, wound class
Trauma
Age
Trauma

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a result, no SIRs can be calculated for these procedures.

lculation (i.e., intercept-only model).

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 Model[1] for adults, ≥ 18 years of age

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 (2016 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.