

2021 National

AcI

Introduction: Welcome to the 2021 National and State HAI Progress Report using the 2015 baseline. This report is created by CDC staff with the National Healthcare Safety Network (NHSN).

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

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 <i>Staphylococcus aureus</i> (MRSA) bacteremia by facility-wide reporting
Hospital-onset <i>Clostridioides difficile</i> (CDI) by facility-wide reporting

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

National and State HAI Progress Report

Acute Care Hospitals

baseline and risk adjustment calculations. Standardized infection ratios (SIRs) are used to describe different HAI types (e.g., SSI, CLABSI, CAUTI, and VAP). (IHSN).

ACHs (ACHs).

ACH	
National	State
<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
<input checked="" type="checkbox"/>	
	<input checked="" type="checkbox"/>
<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>

procedures nationally.

pes

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 Numk
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 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

hospitals Reporting to National Healthcare Safety Network (NHSN),

Hospitals reporting to NHSN, 2021	
2021 Statistics	
	3,917
	36,298,845
	131
	188
	14
	30
	0.43

Hospital types by type, NHSN 2021	
No. (%)	
	102 (2.60)
	3,394 (86.65)
	31 (0.79)
	18 (0.46)
	31 (0.79)
	80 (2.04)
	109 (2.78)
	126 (3.22)
	13 (0.33)
	13 (0.33)

Number of beds by type of hospital, NHSN 2021	
Median No. of beds	Mean No. of beds
172	191.65
143.5	199.87
57	85.23
91.5	161.56
30	42.1
79.5	103.78
24	37.6
90	116.09
108	152.69
225	212.31

Hospitals with medical school, NHSN 2021

1,403 (35.82)
2,514 (64.18)

with medical by type, NHSN 2021

No. (%)

581 (23.11)

1,404 (55.85)

529 (21.04)

2021

2021 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:

Table 1	Characteristics of NHSN Acute Care Hospitals reporting to NHSN by state 1a. Central line-associated bloodstream infections (CLABSI) 1b. Catheter-associated urinary tract infections (CAUTI) 1c. Ventilator-associated events (VAE), including Infection-related ventilator-associated condition and possible ventilator-associated pneumonia 1d. Surgical site infections (SSI)-COLO 1d. Surgical site infections (SSI)-HYST 1e. Hospital-onset methicillin-resistant <i>Staphylococcus aureus</i> (MRSA) bacteremia 1f. Hospital-onset <i>Clostridioides difficile</i> (CDI) 1g. Table 1 Footnotes
Table 2	National standardized infection ratios (SIRs) 2a. CLABSI, CAUTI, and VAE from Acute Care Hospitals 2a-i. CLABSI from Acute Care Hospitals by CDC Locations 2a-ii. CAUTI from Acute Care Hospitals by CDC Locations 2a-iii. VAE from Acute Care Hospitals by CDC Locations 2b. Hospital-onset MRSA bacteremia and hospital-onset CDI from Acute Care Hospitals 2c. Adult SSIs from all NHSN procedure categories from Acute Care Hospitals 2d. Pediatric SSIs from all NHSN procedure categories from Acute Care Hospitals
Table 3	State-specific SIRs for CLABSI from Acute Care Hospitals 3a. All locations combined 3b. Critical care locations only 3c. Ward (non-critical care) locations only 3d. Neonatal critical care locations only
Table 4	State-specific SIRs for CAUTI from Acute Care Hospitals 4a. All locations combined 4b. Critical care locations only 4c. Ward (non-critical care) locations only

Table 5	<p>State-specific SIRs for VAE from Acute Care Hospitals</p> <p>5a. VAE, all locations combined</p> <p>5b. VAE, critical care locations only</p> <p>5c. VAE, ward (non-critical care) locations only</p>
Table 6	<p>State-specific SIRs for Adult SSI from Acute Care Hospitals</p> <p>6a. Colon surgery</p> <p>6b. Abdominal hysterectomy surgery</p> <p>6c. Hip arthroplasty</p> <p>6d. Knee arthroplasty</p> <p>6e. Rectal surgery</p> <p>6f. Vaginal hysterectomy</p> <p>6g. Coronary artery bypass graft</p> <p>6h. Other cardiac surgery</p> <p>6i. Peripheral vascular bypass surgery</p> <p>6j. Abdominal aortic aneurysm repair</p> <p>6k. Cesarean section surgery</p> <p>6l. Spinal fusion surgery</p> <p>6m. Laminectomy surgery</p> <p>6n. Gallbladder surgery</p> <p>6o. Open reduction of fracture</p>
Table 7	State-specific SIRs for hospital-onset MRSA bacteremia from Acute Care Hospitals
Table 8	State-specific SIRs for hospital-onset CDI from Acute Care Hospitals
Table 9a	Changes in national SIRs for CLABSI, CAUTI, VAE, SSI, hospital-onset MRSA bacteremia, and hospital-onset CDI between 2020 and 2021
Table 10	<p>Changes in state-specific SIRs between 2020 and 2021 from Acute Care Hospitals</p> <p>10a. CLABSI, all locations combined</p> <p>10b. CAUTI, all locations combined</p> <p>10c. VAE, all locations, combined</p> <p>10d. SSI, colon surgery</p> <p>10e. SSI, abdominal hysterectomy surgery</p> <p>10f. Hospital-onset MRSA bacteremia</p> <p>10g. Hospital-onset CDI</p>

- Appendix A** [Factors used in NHSN risk adjustment of the device-associated HAIs \(CLABSI, CAUTI, VAE, IVAC-Plus\) negative binomial regression mo](#)
- Appendix B** [Factors used in NHSN risk adjustment of the MRSA Bacteremia and C.difficile negative binomial regression models from Acute Care Hos](#)
- Appendix C** [List of NHSN procedures included in this report with predictive risk factors from the NHSN Complex Admission/Re-admission SSI Logistic](#)
- Appendix D** [List of NHSN procedures included in this report with predictive risk factors from the NHSN Complex Admission/Re-admission SSI Logistic](#)
- Appendix E** [List of NHSN procedures and corresponding SCIP procedures included in this report with factors used in the NHSN risk adjustment of the](#)
- Additional Resources** [SIR Guide](#)
[Technical Appendix](#)
[HAI Progress Report Home Page](#)

monia (IVAC-Plus)

21 from Acute Care Hospitals

Models from Acute Care Hospitals. List of CDC locations and their descriptions

Hospitals

Regression, Adults \geq 18 years of age

Regression, Pediatrics < 18 years of age

Complex Admission/Readmission Model, Adults \geq 18 years of age

Table 1. Characteristics of NHSN Acute Care Hospitals reporting to NHSN by State¹, 2021:1a. Central line-associated bloodstream infections (CLABSI)²

State	2021							
				Inpatient Locations				
	State NHSN Mandate ³	Any Validation ⁴	No. of Acute Care Hospitals Reporting ⁵	Total	ICU	Wards ²	NICU ⁶	
Alabama	Yes	Yes	84	626	256	315	55	
Alaska	Yes	No	10	71	28	37	6	
Arizona			72	553	209	274	70	
Arkansas			51	383	154	193	36	
California			339	3,065	1,256	1,327	482	
Colorado	Yes	No	59	498	190	227	81	
Connecticut	Yes	No	29	265	104	115	46	
D.C.	Yes	No	9	87	32	35	20	
Delaware			9	80	36	36	8	
Florida	No	Yes	219	1,883	796	851	236	
Georgia			110	930	374	417	139	
Guam			2	.	.	.	.
Hawaii	No	No	17	131	59	64	8	
Idaho	No	No	16	151	55	63	33	
Illinois	Yes	Yes	136	1,132	478	522	132	
Indiana	Yes	Yes	90	738	287	347	104	
Iowa	No	Yes	40	326	131	155	40	
Kansas			56	394	148	212	34	
Kentucky			71	598	257	281	60	
Louisiana			101	770	279	384	107	
Maine	Yes	No	20	143	55	79	9	
Maryland	Yes	No	49	435	180	195	60	
Massachusetts	Yes	No	66	531	231	260	40	
Michigan	No	Yes	99	778	306	392	80	
Minnesota	No	No	50	357	120	193	44	
Mississippi	Yes	Yes	57	446	175	217	54	
Missouri	Yes	No	79	660	276	307	77	
Montana	No	No	14	114	40	54	20	
Nebraska	No	No	28	196	61	106	29	
Nevada			28	230	81	109	40	
New Hampshire			13	112	52	52	8	
New Jersey	Yes	Yes	72	663	288	288	87	
New Mexico			31	241	106	119	16	
New York			174	1,521	638	679	204	
North Carolina			103	847	344	405	98	
North Dakota	No	No	10	92	28	40	24	
Ohio	No	No	146	1,147	503	571	73	
Oklahoma			81	539	202	309	28	
Oregon	Yes	No	37	315	131	146	38	
Pennsylvania			174	1,374	542	661	171	
Puerto Rico	Yes	No	17	110	43	55	12	
Rhode Island	No	Yes	11	88	40	44	4	
South Carolina	Yes	Yes	64	494	215	247	32	
South Dakota	No	No	20	131	44	75	12	
Tennessee	Yes	Yes	96	784	324	377	83	
Texas			342	2,793	1,018	1,289	486	
Utah	Yes	No	36	310	120	141	49	
Vermont	No	No	7	52	20	28	4	
Virgin Islands			2	.	.	.	.
Virginia	Yes	Yes	83	731	298	327	106	
Washington	Yes	No	58	490	194	232	64	
West Virginia	Yes	No	30	241	109	110	22	
Wisconsin	No	Yes	81	622	248	306	68	
Wyoming			12	92	44	48	.	
All US			3,710	30,389	12,219	14,328	3,842	

Table 1. Characteristics of NHSN Acute Care Hospitals reporting to NHSN by State¹, 2021:
1b. Catheter-associated urinary tract infections (CAUTI)²

State	2021					
				Locations (n) ²		
				Total	ICU	
Alabama	Yes	Yes	88	615	267	348
Alaska	Yes	No	10	66	28	38
Arizona			72	498	211	287
Arkansas			50	354	155	199
California			338	2,585	1,256	1,329
Colorado	M	No	56	414	191	223
Connecticut	Yes	No	29	220	104	116
D.C.	Yes	No	9	65	32	33
Delaware			9	72	36	36
Florida	No	Yes	219	1,651	796	855
Georgia			112	812	376	436
Guam			2	.	.	.
Hawaii	No	No	17	126	59	67
Idaho	No	No	18	126	55	71
Illinois	No	No	136	1,017	487	530
Indiana	Yes	Yes	91	651	292	359
Iowa	No	Yes	41	302	139	163
Kansas			61	382	148	234
Kentucky			71	543	259	284
Louisiana			106	704	286	418
Maine	Yes	No	20	136	56	80
Maryland	Yes	No	49	375	180	195
Massachusetts	Yes	No	67	498	231	267
Michigan	No	Yes	100	703	306	397
Minnesota	No	No	50	315	120	195
Mississippi	Yes	Yes	59	405	176	229
Missouri	Yes	No	78	583	279	304

Table 1b-CAUTI

Montana	No	No	14	94	40	54
Nebraska	No	No	28	166	58	108
Nevada			28	191	82	109
New Hampshire			13	104	52	52
New Jersey	Yes	Yes	72	576	288	288
New Mexico			32	233	107	126
New York			177	1,338	640	698
North Carolina			103	751	345	406
North Dakota	No	No	11	69	28	41
Ohio	No	No	150	1,092	503	589
Oklahoma			84	529	204	325
Oregon	Yes	No	37	278	132	146
Pennsylvania			185	1,252	547	705
Puerto Rico	Yes	No	17	100	45	55
Rhode Island	No	Yes	11	84	40	44
South Carolina	No	No	64	469	216	253
South Dakota	No	No	22	135	48	87
Tennessee	Yes	Yes	95	705	325	380
Texas			357	2,415	1,023	1,392
Utah	Yes	No	38	267	120	147
Vermont			7	48	20	28
Virgin Islands			2	.	.	.
Virginia	Yes	Yes	84	626	298	328
Washington	Yes	No	59	429	193	236
West Virginia	Yes	No	31	225	110	115
Wisconsin	No	Yes	82	564	250	314
Wyoming			13	96	44	52
All US			3,774	27,080	12,297	14,783

Table 1c-VAE

1c. Ventilator-associated events (VAE)

State	2021					
				Total	ICU	
	No	No				
Alabama	No	No	46	108	89	19
Alaska	Yes	No	5	6	4	2
Arizona			27	51	44	7
Arkansas			27	48	43	5
California			184	529	355	174
Colorado	No	No	42	69	56	13
Connecticut	No	No	16	36	25	11
D.C.	No	No	2			
Delaware			4			
Florida	No	Yes	139	341	258	83
Georgia			73	223	164	59
Guam			2			
Hawaii	No	No	6	8	6	2
Idaho	No	No	6	11	11	
Illinois	No	No	52	107	79	28
Indiana	M	No	56	90	69	21
Iowa	No	No	14	20	20	
Kansas			31	44	37	7
Kentucky			41	80	69	11
Louisiana			45	113	73	40
Maine	No	No	15	25	18	7
Maryland	Yes	No	19	39	25	14
Massachusetts	No	No	24	38	30	8
Michigan	No	No	55	118	83	35
Minnesota	No	No	12	32	26	6
Mississippi	No	No	29	58	47	11
Missouri	No	No	41	102	81	21

Table 1c-VAE

Montana	No	No	6	7	6	1
Nebraska	No	No	12	22	18	4
Nevada			18	80	38	42
New Hampshire			10	12	11	1
New Jersey	No	No	52	144	97	47
New Mexico			18	27	19	8
New York			114	424	244	180
North Carolina			42	74	62	12
North Dakota	No	No	3			
Ohio	No	No	83	272	139	133
Oklahoma			35	67	51	16
Oregon	No	No	18	27	21	6
Pennsylvania			138	396	272	124
Puerto Rico	Yes	No	14	45	16	29
Rhode Island	No	No	9	19	16	3
South Carolina	Yes	Yes	54	134	104	30
South Dakota	No	No	7	14	10	4
Tennessee	No	No	50	113	92	21
Texas			151	342	266	76
Utah	No	No	8	14	11	3
Vermont			1			
Virgin Islands			2			
Virginia	No	No	62	142	109	33
Washington	No	No	23	34	25	9
West Virginia	No	No	14	25	19	6
Wisconsin	No	No	31	62	40	22
Wyoming			7	8	7	1
All US			1,995	4,833	3,427	1,406

Table 1. Characteristics of NHSN Acute Care Hospitals reporting to NHSN by State¹, 2021:

1d. Surgical site infections⁷

State	2021		No. of Acute Care Hospitals Reporting colon surgeries in adults ⁵	No. of Procedures ⁷ colon surgeries in adults
	Any Validation ⁴			
Alabama	Yes	Yes	64	6,156
Alaska	Yes	No	7	624
Arizona			57	6,942
Arkansas			36	3,194
California			302	29,555
Colorado	Yes	No	51	5,564
Connecticut	Yes	No	25	3,675
D.C.	Yes	No	7	1,073
Delaware			7	1,020
Florida	No	Yes	195	25,981
Georgia			86	10,699
Guam			1	.
Hawaii	No	No	12	1,001
Idaho	No	No	16	1,444
Illinois	No	Yes	117	11,773
Indiana	Yes	Yes	81	7,202
Iowa	No	No	35	2,870
Kansas			38	3,242
Kentucky			63	5,395
Louisiana			72	5,138
Maine	Yes	No	19	1,646
Maryland	Yes	No	43	5,627
Massachusetts	Yes	No	55	7,491
Michigan	No	Yes	87	10,391
Minnesota	No	No	47	5,770
Mississippi	Yes	Yes	42	3,335
Missouri	Yes	No	66	7,761
Montana	No	No	11	1,033
Nebraska	No	No	22	2,144
Nevada			21	2,770
New Hampshire			13	1,280
New Jersey	Yes	Yes	70	8,405
New Mexico			26	1,681
New York			154	18,600
North Carolina			87	11,464
North Dakota	No	No	7	1,033
Ohio	No	No	127	14,925
Oklahoma			50	4,307
Oregon	Yes	No	33	4,181
Pennsylvania			138	15,632
Puerto Rico	No	No	2	.
Rhode Island	No	Yes	10	988
South Carolina	Yes	Yes	55	5,472
South Dakota	No	No	14	1,095
Tennessee	Yes	Yes	81	8,380
Texas			262	26,711

Utah	Yes	No	35	2,264
Vermont			6	552
Virgin Islands			1	.
Virginia	Yes	Yes	73	8,049
Washington	Yes	No	47	6,457
West Virginia	Yes	No	23	2,040
Wisconsin	No	Yes	69	6,213
Wyoming			10	265
All US			3,078	330,575

State	2021		No. of Acute Care Hospitals Reporting hysterectomy surgeries in adults ⁵	No. of Procedures ⁷ abdominal hysterectomy surgeries in adults
Alabama	Yes	Yes	49	7,447
Alaska	Yes	No	7	565
Arizona			48	7,005
Arkansas			37	3,533
California			274	23,169
Colorado	Yes	No	48	8,293
Connecticut	Yes	No	25	3,226
D.C.	Yes	No	6	902
Delaware			7	1,239
Florida	No	Yes	172	28,562
Georgia			83	14,950
Guam			1	.
Hawaii	No	No	10	614
Idaho	No	No	13	2,515
Illinois	No	No	109	13,823
Indiana	Yes	Yes	74	9,540
Iowa	No	No	32	3,838
Kansas			36	3,995
Kentucky			54	6,090
Louisiana			67	7,107
Maine	No	No	16	1,342
Maryland	Yes	No	39	5,317
Massachusetts	Yes	No	47	5,020
Michigan	No	Yes	81	11,111
Minnesota	No	No	45	6,236
Mississippi	Yes	Yes	38	5,386
Missouri	Yes	No	62	8,483
Montana	No	No	10	1,489
Nebraska	No	No	22	2,407
Nevada			18	2,829
New Hampshire			13	1,210
New Jersey	Yes	Yes	60	7,489
New Mexico			24	1,761
New York			145	16,821
North Carolina			82	12,163
North Dakota	No	No	7	606
Ohio	No	No	119	14,205
Oklahoma			52	6,566
Oregon	Yes	No	32	5,046
Pennsylvania			127	15,052
Puerto Rico	No	No	4	.

Rhode Island	No	Yes	10	1,293
South Carolina	Yes	Yes	47	6,976
South Dakota	No	No	15	1,599
Tennessee	Yes	Yes	70	10,942
Texas			253	42,502
Utah	Yes	No	35	3,691
Vermont			6	501
Virgin Islands			1	.
Virginia	Yes	Yes	60	10,232
Washington	Yes	No	49	7,824
West Virginia	Yes	No	21	3,047
Wisconsin	No	Yes	65	7,529
Wyoming			10	332
All US			2,837	373,602

**Table 1. Characteristics of NHSN Acute Care Hospitals reporting to NHSN by State¹, 2021:
1e. Hospital-onset methicillin-resistant *Staphylococcus aureus* bacteremia⁸**

State	2021		
Alabama	No	No	88
Alaska	Yes	No	8
Arizona			69
Arkansas			50
California			337
Colorado	M	No	56
Connecticut	Yes	No	30
D.C.	Yes	No	8
Delaware			8
Florida	No	Yes	215
Georgia			110
Guam			2
Hawaii	No	No	17
Idaho	No	No	17
Illinois	Yes	Yes	133
Indiana	M	Yes	93
Iowa	No	Yes	39
Kansas			62
Kentucky			68
Louisiana			102
Maine	Yes	No	19
Maryland	Yes	No	49
Massachusetts	Yes	No	67
Michigan	No	Yes	99
Minnesota	No	No	51
Mississippi	Yes	Yes	62
Missouri	No	No	75
Montana	No	No	13
Nebraska	No	No	28
Nevada			27
New Hampshire			13
New Jersey	Yes	Yes	71
New Mexico			33
New York			173
North Carolina			101
North Dakota	No	No	10
Ohio	No	No	147
Oklahoma			86
Oregon	Yes	No	35
Pennsylvania			179
Puerto Rico	Yes	No	4
Rhode Island	No	Yes	10
South Carolina	Yes	Yes	62
South Dakota	No	No	21
Tennessee	Yes	Yes	103
Texas			360
Utah	Yes	No	38

Vermont			6
Virgin Islands			1
Virginia	Yes	Yes	79
Washington	Yes	Yes	56
West Virginia	Yes	No	28
Wisconsin	No	Yes	80
Wyoming			11
All US			3,709

1f. Hospital-onset *Clostridioides difficile*⁸

State	2021		
	Any Validation ⁴		
Alabama	No	No	88
Alaska	Yes	No	8
Arizona			69
Arkansas			50
California			332
Colorado	M	No	57
Connecticut	Yes	No	30
D.C	Yes	No	8
Delaware			8
Florida	No	Yes	216
Georgia			110
Guam			2
Hawaii	No	No	17
Idaho	No	No	17
Illinois	Yes	Yes	133
Indiana	Yes	Yes	93
Iowa	No	Yes	40
Kansas			62
Kentucky			68
Louisiana			103
Maine	Yes	No	19
Maryland	Yes	No	49
Massachusetts	Yes	No	67
Michigan	No	Yes	99
Minnesota	No	No	51
Mississippi	Yes	Yes	62
Missouri	No	No	75
Montana	No	No	13
Nebraska	No	No	28
Nevada			28
New Hampshire			13
New Jersey	Yes	Yes	71
New Mexico			33
New York			174
North Carolina			101
North Dakota	No	No	10
Ohio	No	No	148
Oklahoma			86
Oregon	Yes	No	35
Pennsylvania			178
Puerto Rico	Yes	No	6
Rhode Island	No	Yes	10
South Carolina	Yes	Yes	62
South Dakota	No	No	21
Tennessee	Yes	Yes	103
Texas			361
Utah	Yes	No	39
Vermont			6
Virgin Islands			1
Virginia	Yes	Yes	81

Washington	Yes	Yes	56
West Virginia	Yes	No	28
Wisconsin	No	Yes	80
Wyoming			11
All US			3,716

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 2021 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.

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 June 1, 2022 for 2021 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 June 1, 2022 for 2021 data 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.

5. The number of facilities reporting at least one month of "in-plan" data to NHSN

6. NICU locations included are those classified by NHSN CDC location codes as Level II/III, Level III, and Level IV 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. NICU Level IV is defined as critical care area for the care of newborns and infants with serious illness requiring Level IV care; area is supervised by a neonatologist. NICU Level IV has Level III capabilities plus others detailed in the location chapter of the NHSN manual. [Location Chapter: NHSN Manual](#)

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, all⁴	3,710	144,883,260
ICUs⁵	3,109	21,613,530
Wards⁶	3,683	116,980,337
NICUs⁷	1,007	6,289,393
CAUTI, all⁸	3,774	143,155,316
	3,117	21,629,971
	3,759	121,525,345
VAE, all⁸	1,911	15,142,948
	1,848	11,404,929
	499	3,738,019

1. The number of reporting facilities included in the SIR calculation. Due to SIR exclusion criteria, this may be different from the total number of facilities.
2. Percent of facilities with at least one predicted infection (event) that had an SIR significantly greater than or less than the expected SIR.
3. Facility-specific percentiles are only calculated if at least 20 facilities had ≥ 1.0 predicted HAI in 2021. If a facility had fewer than 20 facilities, the percentile is based on the national distribution.
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 locations are included.
6. Data from all wards (for this table wards also include step-down and specialty care areas [including hematology/oncology]).
7. Data from all NICU locations, including Level II/III, Level III, and Level IV nurseries. Both umbilical line and central line events are included.
8. Data from all ICUs and wards (and other non-critical care locations). This excludes NICUs. For VAE, pediatric locations are included. IVAC-plus includes those events identified as infection-related ventilator-associated condition (IVAC) and possible

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

Total Device Days	No. of Infections (Events)		SIR	95% CI for SIR	
	Observed	Predicted		Lower	Upper
29,128,185	27,021	29,335.399	0.921	0.910	0.932
10,751,699	14,003	11,580.130	1.209	1.189	1.229
17,036,877	11,863	15,887.850	0.747	0.733	0.760
1,339,609	1,155	1,867.410	0.619	0.584	0.655
27,018,974	24,710	31,077.110	0.795	0.785	0.805
11,416,888	12,208	15,306.710	0.798	0.784	0.812
15,602,086	12,502	15,770.460	0.793	0.779	0.807
5,065,345	50,050	34,261.474	1.461	1.448	1.474
4,688,767	47,254	32,440.442	1.457	1.444	1.470
376,578	2,796	1,821.031	1.535	1.479	1.593

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

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

Locations are excluded from SIR since pediatric and neonatal locations are excluded from ventilator-associated pneumonia (vAP). IVAC-plus events are a subset of the total VAP events.

Appendix A.

Table 2a. National standardized infection ratios (SIRs) and facility-specific summary SIRs using HAI Central line-associated bloodstream infections (CLABSIs), catheter-associated urinary tract infectio

No. Facilities with ≥ 1 Predicted Infection (Event)	Facility-specific SIRs		No. Facilities with SIR		5%
	No. Facilities with SIR	No. Facilities with SIR	No. Facilities with SIR		
	Significantly > National SIR	Significantly < National SIR	Significantly < National SIR		
	N	% ²	N		
2,535	353	14%	280	11%	0.000
1,997	244	12%	217	11%	0.000
2,100	166	8%	107	5%	0.000
421	16	4%	11	3%	0.000
2,698	321	12%	271	10%	0.000
2,132	242	11%	187	9%	0.000
2,317	160	7%	131	6%	0.000
1,605	554	35%	517	32%	0.000
1,568	539	34%	507	32%	0.000
270	66	24%	73	27%	0.000

tals; as such, they exclude data from LTACHs, IRFs, and CAHs.
 if at least 10 facilities had ≥ 1.0 predicted HAI in 2021.
 luded in the distribution of facility-specific SIRs.

urveillance.

since pediatric and neonatal locations are excluded from VAE surveillance.

/AE surveillance. Total VAE includes IVAC-plus events.

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

**data reported to NHSN during 2021 by facility type, HAI, and patient population:
ns (CAUTIs) and ventilator-associated events (VAE)**

Percentile Distribution of Facility-speci									
Median									
10%	15%	20%	25%	30%	35%	40%	45%	50%	55%
0.155	0.317	0.421	0.502	0.575	0.653	0.731	0.807	0.881	0.953
0.000	0.330	0.457	0.572	0.675	0.774	0.874	0.954	1.079	1.202
0.000	0.000	0.197	0.287	0.369	0.435	0.508	0.564	0.620	0.686
0.000	0.000	0.000	0.000	0.099	0.256	0.343	0.419	0.531	0.583
0.075	0.256	0.346	0.427	0.495	0.545	0.612	0.676	0.744	0.811
0.000	0.000	0.247	0.339	0.422	0.495	0.581	0.659	0.749	0.857
0.000	0.130	0.255	0.346	0.429	0.498	0.556	0.616	0.676	0.740
0.000	0.000	0.000	0.261	0.500	0.741	1.020	1.260	1.520	1.767
0.000	0.000	0.000	0.263	0.499	0.733	1.020	1.262	1.507	1.745
0.000	0.000	0.000	0.124	0.336	0.503	0.733	1.051	1.183	1.514

fic SIRs³

60%	65%	70%	75%	80%	85%	90%	95%
1.041	1.160	1.275	1.410	1.598	1.824	2.137	2.746
1.344	1.481	1.655	1.846	2.108	2.441	2.928	3.721
0.762	0.850	0.935	1.046	1.206	1.398	1.676	2.176
0.638	0.707	0.753	0.847	0.948	1.062	1.297	1.538
0.876	0.951	1.062	1.184	1.326	1.540	1.815	2.231
0.945	1.064	1.196	1.319	1.503	1.741	2.090	2.822
0.817	0.890	0.981	1.077	1.218	1.417	1.697	2.086
1.939	2.135	2.381	2.657	2.959	3.322	3.822	4.646
1.934	2.162	2.412	2.634	2.923	3.319	3.822	4.646
1.667	1.869	2.096	2.468	3.000	3.597	4.372	6.037

HAI and Patient Population	No. of Acute Care Hospitals Reporting by CDC Locations ¹
Adolescent Behavioral Health Ward	4
Adult Mixed Acuity Unit	459
Adult Step Down Unit	1,166
Antenatal Care Ward	88
Behavioral Health/Psych Ward	193
Burn Critical Care	64
Burn Ward	27
Chronic Behavioral Health/Psych Unit	2
Chronic Care Unit	18
Dialysis Specialty Care Area	7
Ear, Nose, Throat Ward	3
Gastrointestinal Ward	16
Genitourinary Ward	21
Gerontology Ward	32
Gynecology Ward	91
Inpatient Hospice	17
Jail Unit	31
Labor and Delivery Ward	277
Labor, Delivery, Recovery, Postpartum Suite	364
Medical Cardiac Critical Care	284
Medical Critical Care	857
Medical Ward	1,592
Medical-Surgical Critical Care	2,291
Medical-Surgical Ward	2,644
Mixed Age Mixed Acuity Unit	145
Neonatal Critical Care (Level II/III)	567
Neonatal Critical Care (Level III)	410
Neonatal Critical Care (Level IV)	58
Neurologic Critical Care	102
Neurology Ward	181
Neurosurgical Critical Care	193
Neurosurgical Ward	108
Oncology General Hematology-Oncology Ward	404
Oncology Hematopoietic Stem Cell Transplant Ward	96
Oncology Leukemia Ward	5
Oncology Leukemia/Lymphoma Ward	19
Oncology Lymphoma Ward	3
Oncology Medical Critical Care	6
Oncology Medical-Surgical Critical Care	17
Oncology Mixed Acuity Unit (all ages)	6
Oncology Pediatric Critical Care	3
Oncology Pediatric General Hematology/Oncology Ward	104
Oncology Pediatric Hematopoietic Stem Cell Transplant Ward	20

Oncology Solid Tumor Ward	14
Oncology Step Down Unit	12
Oncology Surgical Critical Care	4
Orthopedic Trauma Ward	41
Orthopedic Ward	558
Pediatric Behavioral Health Ward	5
Pediatric Burn Critical Care	5
Pediatric Burn Ward	1
Pediatric Medical Critical Care	32
Pediatric Medical Ward	135
Pediatric Medical-Surgical Critical Care	284
Pediatric Medical-Surgical Ward	432
Pediatric Mixed Acuity Unit	49
Pediatric Neurology Ward	5
Pediatric Neurosurgical Critical Care	1
Pediatric Neurosurgical Ward	3
Pediatric Orthopedic Ward	8
Pediatric Rehabilitation Ward (within Hospital)	11
Pediatric Solid Organ Transplant Specialty Care Area	4
Pediatric Step Down Unit	39
Pediatric Surgical Cardiothoracic Critical Care	61
Pediatric Surgical Critical Care	4
Pediatric Surgical Ward	29
Pediatric Trauma Critical Care	2
Plastic Surgery Ward	1
Postpartum Ward	506
Prenatal Critical Care	8
Pulmonary Ward	193
Rehabilitation Ward (within Hospital)	39
Respiratory Critical Care	104
Solid Organ Transplant Specialty Care Area	46
Special Care Nursery (Level II)	138
Stroke (Acute) Ward	36
Surgical Cardiothoracic Critical Care	410
Surgical Critical Care	365
Surgical Ward	1,136
Telemetry Ward	868
Trauma Critical Care	129
Vascular Surgery Ward	30
Ventilator Dependent Unit	2
Well Newborn-- Nursery (Level I)	51

1. The number of reporting facilities included in the SIR calculation. Due to SIR exclusion criteria, this may be Total number of facilities reporting the locations will be higher than the number of facilities in table 2a because
2. Percent of Locations with at least one predicted infection (event) that had an SIR significantly greater than
3. Location-specific percentiles are only calculated if at least 20 locations had ≥ 1.0 predicted HAI in 2021. If a

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

Table 2a. National standardized infection ratios (SIRs) and facility-specific summary SIRs using HAI data re Central line-associated bloodstream infections (CLABSIs)

Number of CDC Locations	Total Patient Days	Total Device Days	No. of Infections (Events)		SIR	95% CI
			Observed	Predicted		Lower
.
762	3,394,749	635,078	697	463.544	1.504	1.395
1,944	11,280,465	1,919,017	1,501	1,778.920	0.844	0.802
91	163,316	6,532	4	5.345	0.748	0.238
248	474,199	9,857	5	7.287	0.686	0.251
64	191,836	86,547	139	289.802	0.480	0.405
31	119,823	23,765	27	19.006	1.421	0.955
.
20	72,426	10,959	11	7.352	1.496	0.787
7	45,148	14,015	16	15.412	1.038	0.615
.
19	162,546	30,454	26	24.754	1.050	0.701
22	138,126	28,126	15	22.333	0.672	0.390
35	285,089	24,849	18	19.722	0.913	0.558
94	260,515	33,683	24	26.594	0.902	0.592
17	46,674	12,797	4	10.296	0.389	0.123
36	106,316	18,454	22	13.605	1.617	1.039
282	268,979	6,096	1	4.678	0.214	0.011
374	409,250	5,883	2	4.187	0.478	0.080
303	1,067,579	538,533	714	581.770	1.227	1.140
1,075	3,744,608	1,889,245	3,213	1,972.967	1.629	1.573
3,517	23,990,614	2,970,346	2,024	2,660.727	0.761	0.728
2,672	9,494,099	4,640,332	6,144	4,424.174	1.389	1.354
5,450	34,253,854	3,929,211	2,286	3,310.534	0.691	0.663
170	576,355	99,152	83	69.966	1.186	0.951
588	2,288,051	392,729	325	545.487	0.596	0.534
421	3,088,596	687,585	614	967.881	0.634	0.586
71	912,746	259,295	216	354.032	0.610	0.533
108	409,734	158,320	179	171.856	1.042	0.897
199	1,525,734	154,974	99	146.339	0.677	0.553
215	962,313	342,004	390	374.986	1.040	0.941
124	942,894	100,335	55	94.121	0.584	0.445
510	3,402,154	1,374,690	1,043	1,543.230	0.676	0.636
117	663,876	544,706	654	850.669	0.769	0.712
9	63,542	50,465	43	54.880	0.784	0.574
26	162,626	119,375	135	131.980	1.023	0.861
.
6	21,652	15,908	21	17.214	1.220	0.775
17	39,115	24,916	29	24.680	1.175	0.802
10	52,233	24,711	18	15.626	1.152	0.704
.
112	581,171	398,184	307	502.637	0.611	0.545
21	76,714	61,251	85	106.227	0.800	0.643

35	296,554	111,381	53	125.206	0.423	0.320
22	110,424	56,585	35	53.182	0.658	0.466
.
46	386,719	40,114	29	32.298	0.898	0.613
625	3,548,992	344,006	117	258.350	0.453	0.376
5	3,149	65	0	0.069	.	.
5	5,854	2,691	3	3.457	0.868	0.221
.
32	64,113	19,059	28	28.135	0.995	0.674
195	878,377	123,303	93	130.703	0.712	0.578
298	1,007,705	413,911	434	624.040	0.695	0.632
557	2,070,720	316,142	224	319.466	0.701	0.614
52	146,435	27,870	17	23.960	0.710	0.427
5	13,733	1,053	1	1.177	0.850	0.043
.
.
8	16,207	1,681	1	1.633	0.612	0.031
11	41,908	4,462	5	4.879	1.025	0.375
.	.	.	.	11.679	.	.
47	171,032	37,104	40	39.375	1.016	0.736
63	319,172	229,243	264	359.020	0.735	0.651
.	.	.	.	3.592	.	.
35	218,475	38,158	21	41.780	0.503	0.319
.
.
537	927,166	15,616	4	11.870	0.337	0.107
8	7,189	391	0	0.441	.	.
322	1,162,058	162,953	125	124.981	1.000	0.836
60	251,663	31,334	21	25.685	0.818	0.520
147	262,544	137,791	307	143.930	2.133	1.904
57	404,568	146,851	120	173.513	0.692	0.576
144	173,874	12,093	10	10.836	0.923	0.469
38	213,082	21,682	19	16.638	1.142	0.708
445	1,703,126	1,131,645	887	1,226.981	0.723	0.676
419	1,625,077	831,792	941	906.515	1.038	0.973
1,578	10,805,615	1,507,224	872	1,360.752	0.641	0.599
1,471	11,205,128	1,342,507	801	1,143.669	0.700	0.653
144	664,196	278,023	302	416.837	0.725	0.646
35	259,186	52,067	22	41.515	0.530	0.341
.
51	24,898	699	0	0.532	.	.

are different from the numbers shown in Table 1. These tables contain data from acute care hospitals; as such, they are not necessarily representative of all hospitals. If a location reports more than 1 locdcd or less than the nominal value of the national SIR for the given HAI type. This is only calculated if at least 10 locations reported the same HAI type. If a location's predicted number of HAIs was <1.0, a location-specific SIR was neither calculated nor included in the data. For more information, see the methodology section in Appendix A.

reported to NHSN during 2021 by facility type, HAI, and patient population:

<u>CI for SIR</u> Upper	<u>Location-specific SIRs</u>			
	No. CDC Locations with ≥ 1 Predicted Infection (Event)	No. Locations with SIR Significantly > National SIR		No. Locations Significantly
		N		N
.
1.618	158	23	15%	2
0.887	678	36	5%	8
1.805	0	.	.	.
1.521	0	.	.	.
0.565	62	0	0%	10
2.038	4	.	.	.
.
2.600	2	.	.	.
1.650	5	.	.	.
.
1.517	13	2	15%	0
1.083	10	0	0%	0
1.415	4	.	.	.
1.322	10	1	10%	0
0.937	2	.	.	.
2.408	2	.	.	.
1.054	0	.	.	.
1.578	0	.	.	.
1.320	207	26	13%	1
1.686	634	149	24%	5
0.794	944	22	2%	0
1.424	1505	273	18%	25
0.719	1034	17	2%	9
1.463	19	2	11%	0
0.663	144	2	1%	12
0.686	240	5	2%	18
0.696	60	1	2%	8
1.203	71	7	10%	1
0.820	44	1	2%	0
1.147	153	10	7%	0
0.755	34	1	3%	0
0.718	426	5	1%	18
0.829	112	5	4%	8
1.046	9	.	.	.
1.207	23	3	13%	0
.
1.833	4	.	.	.
1.666	8	.	.	.
1.785	7	.	.	.
.
0.682	101	2	2%	17
0.984	20	0	0%	2

0.549	31	0	0%	3
0.905	18	0	0%	0
.
1.273	13	0	0%	0
0.541	52	0	0%	0
.	0	.	.	.
2.362	1	.	.	.
.
1.419	11	1	9%	0
0.868	43	1	2%	0
0.763	148	2	1%	8
0.798	104	1	1%	0
1.113	5	.	.	.
4.192	0	.	.	.
.
.
3.020	0	.	.	.
2.272	0	.	.	.
.
1.370	16	0	0%	0
0.828	61	1	2%	2
.
0.755	17	0	0%	0
.
.
0.813	1	.	.	.
.	0	.	.	.
1.187	39	2	5%	0
1.228	6	.	.	.
2.382	49	18	37%	0
0.824	53	1	2%	2
1.645	0	.	.	.
1.750	2	.	.	.
0.772	365	12	3%	19
1.106	320	31	10%	5
0.684	511	7	1%	3
0.750	395	9	2%	2
0.810	131	5	4%	8
0.789	21	0	0%	0
.
.	0	.	.	.

Exclude data from LTACHs, IRFs, and CAHs.

Locations had ≥ 1.0 predicted HAI in 2021.
 Distribution of location-specific SIRs.

ons with SIR < National SIR	10%	25%	Median 50%	75%	90%
.
1%	0.000	0.362	0.875	1.852	3.873
1%	0.000	0.000	0.578	1.124	2.267
.
16%	0.000	0.168	0.471	0.780	1.146
.
.
.
.
0%	.	.	.	.	.
0%	.	.	.	.	.
0%	.	.	.	.	.
.
.
.
0%	0.000	0.336	0.973	1.681	2.872
1%	0.000	0.658	1.328	2.199	3.254
0%	0.000	0.000	0.575	0.986	1.783
2%	0.000	0.522	1.081	1.998	3.102
1%	0.000	0.000	0.519	0.938	1.714
0%	.	.	.	.	.
8%	0.000	0.000	0.465	0.843	1.305
8%	0.000	0.000	0.515	0.930	1.404
13%	0.000	0.228	0.501	0.797	1.115
1%	0.000	0.000	0.650	1.467	2.230
0%	0.000	0.000	0.481	0.918	1.330
0%	0.000	0.362	0.894	1.515	2.253
0%	0.000	0.000	0.615	1.043	1.606
4%	0.000	0.194	0.574	0.974	1.443
7%	0.174	0.409	0.655	1.064	1.447
.
0%	0.131	0.484	0.867	1.250	1.518
.
.
.
.
17%	0.000	0.211	0.520	0.949	1.427
10%	0.010	0.480	0.671	1.103	1.689

10%	0.000	0.000	0.320	0.533	1.097
0%	.	.	.	.	.
.
0%	.	.	.	.	.
0%	0.000	0.000	0.000	0.737	0.959
.
.
0%	.	.	.	.	.
0%	0.000	0.000	0.530	1.116	1.725
5%	0.000	0.271	0.618	1.023	1.465
0%	0.000	0.000	0.674	1.130	1.768
.
.
.
.
.
0%	.	.	.	.	.
3%	0.202	0.416	0.669	1.029	1.414
.
0%	.	.	.	.	.
.
.
0%	0.000	0.000	0.583	1.145	1.786
.
0%	0.000	0.767	2.000	3.319	4.208
4%	0.000	0.192	0.567	0.830	1.442
.
.
5%	0.000	0.000	0.536	1.048	1.668
2%	0.000	0.332	0.767	1.378	2.464
1%	0.000	0.000	0.508	0.922	1.663
1%	0.000	0.000	0.527	0.999	1.846
6%	0.000	0.139	0.496	0.997	1.735
0%	0.000	0.000	0.545	0.745	0.975
.
.

HAI and Patient Population	No. of Acute Care Hospitals Reporting by CDC Location ¹
Adolescent Behavioral Health Ward	4
Adult Mixed Acuity Unit	461
Adult Step Down Unit	1,166
Antenatal Care Ward	101
Behavioral Health/Psych Ward	218
Burn Critical Care	64
Burn Ward	28
Chronic Behavioral Health/Psych Unit	7
Chronic Care Unit	20
Chronic Rehabilitation Unit	1
Dialysis Specialty Care Area	8
Ear, Nose, Throat Ward	3
Gastrointestinal Ward	16
Genitourinary Ward	22
Gerontology Ward	33
Gynecology Ward	117
Inpatient Hospice	16
Jail Unit	31
Labor and Delivery Ward	478
Labor, Delivery, Recovery, Postpartum Suite	636
Medical Cardiac Critical Care	284
Medical Critical Care	860
Medical Ward	1,610
Medical-Surgical Critical Care	2,296
Medical-Surgical Ward	2,678
Mixed Age Mixed Acuity Unit	152
Neurologic Critical Care	102
Neurology Ward	180
Neurosurgical Critical Care	194
Neurosurgical Ward	108
Oncology General Hematology-Oncology Ward	405
Oncology Hematopoietic Stem Cell Transplant Ward	94
Oncology Leukemia Ward	5
Oncology Leukemia/Lymphoma Ward	19
Oncology Lymphoma Ward	3
Oncology Medical Critical Care	6
Oncology Medical-Surgical Critical Care	17
Oncology Mixed Acuity Unit (all ages)	6
Oncology Pediatric Critical Care	3
Oncology Pediatric General Hematology/Oncology Ward	95
Oncology Pediatric Hematopoietic Stem Cell Transplant W	14
Oncology Solid Tumor Ward	14
Oncology Step Down Unit	12

Oncology Surgical Critical Care	4
Orthopedic Trauma Ward	41
Orthopedic Ward	566
Pediatric Behavioral Health Ward	2
Pediatric Burn Critical Care	5
Pediatric Burn Ward	1
Pediatric Medical Critical Care	32
Pediatric Medical Ward	135
Pediatric Medical-Surgical Critical Care	285
Pediatric Medical-Surgical Ward	445
Pediatric Mixed Acuity Unit	50
Pediatric Neurology Ward	4
Pediatric Neurosurgical Critical Care	1
Pediatric Neurosurgical Ward	3
Pediatric Orthopedic Ward	10
Pediatric Rehabilitation Ward (within Hospital)	9
Pediatric Solid Organ Transplant Specialty Care Area	4
Pediatric Step Down Unit	38
Pediatric Surgical Cardiothoracic Critical Care	60
Pediatric Surgical Critical Care	4
Pediatric Surgical Ward	28
Pediatric Trauma Critical Care	2
Plastic Surgery Ward	1
Postpartum Ward	711
Prenatal Critical Care	9
Pulmonary Ward	193
Rehabilitation Ward (within Hospital)	41
Respiratory Critical Care	104
Solid Organ Transplant Specialty Care Area	46
Special Care Nursery (Level II)	8
Stroke (Acute) Ward	36
Surgical Cardiothoracic Critical Care	410
Surgical Critical Care	366
Surgical Ward	1,155
Telemetry Ward	866
Trauma Critical Care	129
Vascular Surgery Ward	30
Ventilator Dependent Unit	2
Well Newborn-- Nursery (Level I)	34

1. The number of reporting facilities included in the SIR calculation. Due to SIR exclusion criteria, Total number of facilities reporting the locations will be higher than the number of facilities in table
2. Percent of Locations with at least one predicted infection (event) that had an SIR significantly greater than 1.0
3. Location-specific percentiles are only calculated if at least 20 locations had ≥ 1.0 predicted HAI i

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

Table 2a. National standardized infection ratios (SIRs) and facility-specific summary SIRs using HAI data re Catheter-associated urinary tract infections (CAUTIs)

Number of CDC Locations	Total Patient Days	Total Device Days	No. of Infections (Events)		SIR	95% CI
			Observed	Predicted		Lower
.
762	3,403,689	609,775	632	628.437	1.006	0.930
1,943	11,290,384	1,935,991	1,891	2,413.353	0.784	0.749
107	267,831	20,300	5	2.326	2.150	0.788
270	525,474	12,727	14	30.594	0.458	0.260
64	192,314	80,065	169	265.866	0.636	0.545
32	120,373	23,304	23	32.144	0.716	0.465
15	57,008	2,180	1	2.529	0.395	0.020
22	83,862	17,301	14	26.329	0.532	0.303
.
8	53,630	5,387	4	6.245	0.641	0.204
.
19	162,546	21,058	23	24.079	0.955	0.620
23	139,305	30,244	25	33.195	0.753	0.498
36	289,117	28,272	28	34.844	0.804	0.545
120	402,672	57,917	25	6.290	3.975	2.629
16	45,705	19,560	1	36.527	0.027	0.001
36	105,758	10,434	13	11.576	1.123	0.625
495	1,031,246	194,521	17	20.507	0.829	0.499
662	1,690,099	217,242	18	20.789	0.866	0.529
303	1,067,534	506,795	551	746.232	0.738	0.679
1,078	3,752,796	2,099,297	2,401	2,424.139	0.990	0.951
3,544	24,118,141	2,644,558	2,324	2,852.240	0.815	0.782
2,678	9,522,603	5,387,477	5,484	5,397.906	1.016	0.989
5,503	34,597,048	4,387,850	3,048	3,901.554	0.781	0.754
176	601,555	107,568	107	101.968	1.049	0.864
108	409,794	187,409	274	624.255	0.439	0.389
198	1,520,884	180,688	278	351.581	0.791	0.702
216	959,619	440,882	772	1,495.485	0.516	0.481
124	944,033	118,149	183	225.884	0.810	0.699
511	3,401,191	404,351	437	613.711	0.712	0.648
115	633,165	50,947	68	81.885	0.830	0.650
9	63,542	6,729	3	6.445	0.465	0.118
26	159,734	12,442	20	13.378	1.495	0.939
.
6	21,629	15,389	8	16.060	0.498	0.231
17	38,944	21,719	19	20.971	0.906	0.562
10	51,156	10,491	9	7.320	1.229	0.600
.
102	428,843	8,762	15	15.707	0.955	0.555
14	46,949	831	0	1.539	0.000	.
35	296,554	49,989	47	52.072	0.903	0.671
22	110,424	17,234	14	17.057	0.821	0.467

.
46	387,302	45,083	49	39.654	1.236	0.924
637	3,594,494	504,677	333	390.276	0.853	0.765
.
5	6,604	1,528	2	1.835	1.090	0.183
.
32	63,687	6,664	9	11.246	0.800	0.390
191	683,758	19,579	17	13.815	1.231	0.741
299	998,984	151,520	227	256.426	0.885	0.776
562	1,840,387	56,355	48	43.329	1.108	0.826
54	113,749	5,479	8	6.222	1.286	0.597
.
.
10	20,672	2,952	1	1.727	0.579	0.029
9	27,924	1,254	2	0.966	.	.
.
44	125,209	3,130	4	4.033	0.992	0.315
62	311,259	42,638	42	43.672	0.962	0.702
.
34	206,243	13,856	13	11.930	1.090	0.606
.
.
785	3,337,783	356,943	31	37.245	0.832	0.576
9	12,923	1,995	1	2.554	0.392	0.020
326	1,164,529	132,758	146	175.165	0.834	0.706
63	259,688	72,653	97	213.316	0.455	0.371
148	262,271	142,177	188	165.681	1.135	0.981
57	403,555	76,658	68	101.580	0.669	0.524
9	2,080	454	0	0.519	.	.
39	214,762	26,547	49	49.818	0.984	0.736
445	1,703,178	1,004,839	650	1,227.118	0.530	0.490
419	1,618,111	945,493	906	1,615.664	0.561	0.525
1,601	10,893,334	1,672,268	1215	1655.857	0.734	0.693
1,470	11,194,050	1,357,858	1,092	1,404.233	0.778	0.733
144	663,721	372,469	488	982.024	0.497	0.454
35	259,214	33,326	35	36.957	0.947	0.67
.
34	24,714	361	0	0.198	.	.

this may be different from the numbers shown in Table 1. These tables contain data from acute care hospitals; as s
2a because the same facilities may be reporting more than 1 locdcd
reater than or less than the nominal value of the national SIR for the given HAI type. This is only calculated if at lea
in 2021. If a location's predicted number of HAIs was <1.0, a location-specific SIR was neither calculated nor includ

s are listed in Appendix A.

Reported to NHSN during 2021 by facility type, HAI, and patient population:

CI for SIR Upper	No. CDC Locations with ≥ 1 Predicted Infection (Event)	Location-specific SIRs		No. Locations with SIR Significantly < National SIR N	No. Locations with SIR Significantly > National SIR N
		No. Locations with SIR Significantly > National SIR N	%		
.
1.086	227	17	7%	0	0%
0.819	1,004	33	3%	5	1%
4.764	0	.	.	.	.
0.750	2	.	.	.	.
0.737	62	1	2%	3	5%
1.057	12	0	0%	1	8%
1.950	0	.	.	.	.
0.871	8	.	.	.	.
.
1.545	3	.	.	.	.
.
1.411	12	1	8%	0	0%
1.095	12	0	0%	0	0%
1.146	15	1	7%	0	0%
5.781	0	.	.	.	.
0.135	13	0	0%	3	23%
1.872	0	.	.	.	.
1.300	0	.	.	.	.
1.342	0	.	.	.	.
0.802	246	8	3%	7	3%
1.031	697	90	13%	20	3%
0.848	1109	33	3%	0	0%
1.043	1691	189	11%	30	2%
0.809	1360	36	3%	2	0%
1.263	31	2	6%	0	0%
0.493	104	3	3%	27	26%
0.888	142	3	2%	2	1%
0.554	206	3	1%	48	23%
0.934	95	3	3%	1	1%
0.781	270	9	3%	0	0%
1.046	31	0	0%	0	0%
1.267	2	.	.	.	.
2.268	6	.	.	.	.
.
0.946	4	.	.	.	.
1.389	7	.	.	.	.
2.256	4	.	.	.	.
.
1.540	0	.	.	.	.
1.946	0	.	.	.	.
1.190	23	2	9%	0	0%
1.344	7	.	.	.	.

1.620	17	1	6%	0	0%
0.949	127	6	5%	0	0%
3.601	1	.	.	.	.
1.469	2	.	.	.	.
1.930	1	.	.	.	.
1.006	88	2	2%	0	0%
1.456	1	.	.	.	.
2.441	1	.	.	.	.
.
2.856	0	.	.	.	.
.	0	.	.	.	.
2.392	0	.	.	.	.
1.288	15	0	0%	0	0%
.
1.817	3	.	.	.	.
.
1.167	0	.	.	.	.
1.931	1	.	.	.	.
0.977	60	2	3%	0	0%
0.552	36	1	3%	7	19%
1.306	61	6	10%	0	0%
0.843	43	1	2%	0	0%
.	0	.	.	.	.
1.290	19	1	5%	0	0%
0.572	378	5	1%	21	6%
0.598	369	5	1%	34	9%
0.776	699	13	2%	1	0%
0.825	567	15	3%	0	0%
0.543	140	5	4%	33	24%
1.303	16	0	0%	0	0%
.
.	0	.	.	.	.

such, they exclude data from LTACHs, IRFs, and CAHs.

At least 10 locations had ≥ 1.0 predicted HAI in 2021.
 led in the distribution of location-specific SIRs.

	Median			
10%	25%	50%	75%	90%
.
.
0.000	0.000	0.770	1.403	2.312
0.000	0.000	0.645	1.143	1.854
.
.
0.000	0.222	0.606	0.912	1.505
.
.
.
.
.
.
.
.
.
.
.
0.000	0.000	0.615	1.140	1.587
0.000	0.272	0.740	1.423	2.338
0.000	0.000	0.673	1.248	1.934
0.000	0.320	0.809	1.463	2.359
0.000	0.000	0.652	1.057	1.852
0.000	0.000	0.767	1.168	1.847
0.000	0.000	0.352	0.533	0.907
0.000	0.229	0.675	1.159	1.630
0.000	0.202	0.436	0.754	1.128
0.000	0.000	0.667	1.282	1.860
0.000	0.000	0.561	0.936	1.732
0.000	0.000	0.682	0.944	1.801
.
.
.
.
.
.
.
.
.
0.000	0.000	0.581	1.502	2.259
.

.
.
0.000	0.000	0.784	1.374	2.246
.
.
.
.
0.000	0.281	0.736	1.364	1.961
.
.
.
.
.
.
.
.
.
.
.
.
0.000	0.000	0.677	1.024	2.360
0.000	0.158	0.374	0.670	0.884
0.000	0.468	0.821	1.663	2.218
0.000	0.000	0.537	0.895	1.693
.
.
0.000	0.000	0.430	0.795	1.220
0.000	0.188	0.464	0.832	1.209
0.000	0.000	0.612	1.002	1.658
0.000	0.000	0.590	1.013	1.927
0.000	0.166	0.370	0.681	1.102
.
.
.

HAI and Patient Population	No. of Acute Care Hospitals
Adult Mixed Acuity Unit	136
Adult Step Down Unit	239
Antenatal Care Ward	3
Burn Critical Care	37
Burn Ward	5
Ear, Nose, Throat Ward	1
Gastrointestinal Ward	1
Gynecology Ward	1
Jail Unit	2
Labor and Delivery Ward	4
Labor, Delivery, Recovery, Postpartum Suite	5
Medical Cardiac Critical Care	167
Medical Critical Care	454
Medical Ward	62
Medical-Surgical Critical Care	1,443
Medical-Surgical Ward	95
Neurologic Critical Care	59
Neurology Ward	4
Neurosurgical Critical Care	116
Neurosurgical Ward	2
Oncology General Hematology-Oncology Ward	8
Oncology Hematopoietic Stem Cell Transplant Ward	4
Oncology Medical Critical Care	5
Oncology Medical-Surgical Critical Care	7
Oncology Surgical Critical Care	2
Orthopedic Ward	7
Postpartum Ward	3
Pulmonary Ward	30
Respiratory Critical Care	56
Solid Organ Transplant Specialty Care Area	5
Stroke (Acute) Ward	4
Surgical Cardiothoracic Critical Care	253
Surgical Critical Care	193
Surgical Ward	27
Telemetry Ward	49
Trauma Critical Care	83

1. The number of reporting facilities included in the SIR calculation. Due to SIR exclusion criteria Total number of facilities reporting the locations will be higher than the number of facilities in table
2. Percent of Locations with at least one predicted infection (event) that had an SIR significantly
3. Location-specific percentiles are only calculated if at least 20 locations had ≥ 1.0 predicted H₁

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

Table 2a. National standardized infection ratios (SIRs) and facility-specific summary SIRs using Ventilator-associated events (VAE)

Number of CDC Locations	Total Patient Days	Total Device Days	No. of Infections (Events)	
			Observed	Predicted
173	521,571	107,681	1,317	943.767
318	1,343,973	158,438	1,010	612.126
.
37	98,219	24,943	266	190.868
5	13,177	1,769	16	4.591
.
.
.
.
5	4,069	27	0	0.057
174	582,415	200,654	1,828	1,647.638
561	1,946,945	907,298	10,242	7,086.704
102	553,075	28,867	116	71.605
1,667	5,666,777	2,367,955	23,596	13,710.532
135	538,613	27,722	95	59.438
61	226,670	87,780	842	764.410
.
127	512,727	182,256	1,495	1,606.055
.
10	39,386	855	1	2.286
.
5	18,195	8,283	7	29.464
7	14,031	4,798	74	14.854
.
7	30,104	1,261	4	3.091
.
33	148,563	18,627	129	54.408
81	158,223	78,197	1,027	352.622
6	12,644	3,430	13	10.111
.
268	983,362	338,854	2,701	2,378.678
216	795,407	314,328	3,348	2,635.424
33	126,791	7,884	33	17.990
63	300,922	15,335	43	29.195
92	395,292	171,056	1,828	2,015.506

Therefore, this may be different from the numbers shown in Table 1. These tables contain data from acute care hospitals (Table 2a) because the same facilities may be reporting more than 1 location. The SIR is calculated as the ratio of the observed number of HAIs to the predicted number of HAIs. If the SIR is greater than or less than the nominal value of the national SIR for the given HAI type. This is only calculated for HAIs in 2021. If a location's predicted number of HAIs was <1.0, a location-specific SIR was neither calculated nor reported.

Locations are listed in Appendix A.

HAI data reported to NHSN during 2021 by facility type, HAI, and patient population:

SIR	95% CI for SIR		No. CDC Locations with ≥ 1 Predicted Infection (Event)	Location-specific SIRs	
	Lower	Upper		No. Locations with SIR Significantly > National SIR N	
1.395	1.322	1.472	164	26	16%
1.650	1.551	1.754	274	26	9%
.
1.394	1.234	1.569	37	5	14%
3.485	2.063	5.539	.	.	.
.
.
.
.
1.109	1.059	1.161	173	18	10%
1.445	1.417	1.473	553	147	27%
1.620	1.345	1.936	68	2	3%
1.721	1.699	1.743	1632	443	27%
1.598	1.300	1.945	100	3	3%
1.102	1.029	1.178	61	7	11%
.
0.931	0.885	0.979	127	13	10%
.
0.437	0.022	2.158	8	.	.
.
0.238	0.104	0.470	.	.	.
4.982	3.940	6.219	.	.	.
.
1.294	0.411	3.122	.	.	.
.
2.371	1.988	2.808	31	6	19%
2.912	2.738	3.095	72	29	40%
1.286	0.715	2.143	.	.	.
.
1.136	1.093	1.179	268	32	12%
1.270	1.228	1.314	213	26	12%
1.834	1.284	2.546	30	1	3%
1.473	1.079	1.966	52	1	2%
0.907	0.866	0.949	92	9	10%

hospitals; as such, they exclude data from LTACHs, IRFs, and CAHs.

culated if at least 10 locations had ≥ 1.0 predicted HAI in 2021.
ated nor included in the distribution of location-specific SIRs.

No. Locations with SIR Significantly < National SIR		10%	25%	Median 50%	75%	90%
N						
33	20%	0.000	0.304	1.514	2.519	3.233
32	12%	0.000	0.000	0.796	2.271	5.132
.
7	19%	0.105	0.495	1.319	2.193	3.405
.
.
.
.
.
53	31%	0.000	0.339	0.972	1.639	2.355
149	27%	0.000	0.341	1.506	2.415	3.290
4	6%	0.000	0.000	0.608	1.719	2.441
413	25%	0.000	0.205	1.482	2.809	4.012
4	4%	0.000	0.000	0.000	1.367	5.091
24	39%	0.000	0.421	0.879	1.521	2.537
.
53	42%	0.000	0.221	0.760	1.562	2.373
.
.
.
.
.
.
.
5	16%	0.000	0.258	1.506	5.823	12.307
5	7%	0.000	1.117	3.198	4.850	6.067
.
.
88	33%	0.000	0.371	1.038	1.820	2.935
57	27%	0.000	0.586	1.250	1.811	2.557
2	7%	0.000	0.000	0.000	0.000	6.109
.	0%	0.000	0.000	0.000	0.489	6.608
52	57%	0.000	0.299	0.817	1.429	2.050

HAI and Patient Population	Reporting	
	No. of Acute Care Hospitals Reporting ¹	Total Admissions ²
Laboratory-identified MRSA bacteremia, facility-wide	3,681	35,326,962
Laboratory-identified <i>C. difficile</i> , facility-wide	3,680	32,123,376

1. The number of reporting facilities included in the SIR calculation. Due to SIR exclusion criteria, this may be less than the total number of facilities.
2. Total inpatient admissions reported from all inpatient locations, excluding counts from CMS-certified rehabilitation centers.
3. Total patient days reported from all inpatient units, excluding counts from CMS-certified rehabilitation centers.
4. Community-onset events are defined as those that were identified in an inpatient location on the first, second, or third day of hospitalization.
5. Hospital-onset events are defined as those that were identified in an inpatient location on the 4th day (or later) of hospitalization.
6. Calculated from a negative binomial regression model. Risk factors used in the calculation of the number of events include patient age, gender, race, ethnicity, insurance status, and facility type.
7. Percent of facilities with at least one predicted event that had an SIR significantly greater than or less than the expected SIR.
8. Percentile distribution of facility-specific SIRs. This is only calculated if at least 20 facilities had ≥ 1.0 predicted events.

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

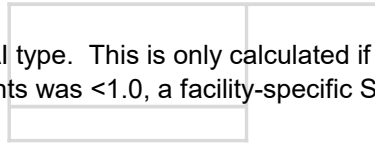
Hospitals		Standardized Infection Ratio Data			
Total Patient Days³	Inpatient Community-onset events⁴	Hospital-onset events⁵	Predicted Hospital-onset events⁶	SIR	95% CI Lower
165,896,703	15,765	11,605	10,850.791	1.070	1.050
153,453,225	56,027	44,948	89,798.105	0.501	0.496

may be different from the numbers shown in Table 1.

rehabilitation and psychiatric locations. Admissions for *C.difficile* further excludes counts from NICUs and well-baby units and psychiatric locations. Patient days for *C.difficile* further excludes counts from NICUs and well-baby units on the second, or third day of a patient's admission to the facility. For *C.difficile*, this excluded events in which the infection occurred (or later) after admission to the facility.

Number of predicted events are listed in Appendix B.

greater than the nominal value of the national SIR for the given HAI type. This is only calculated if at least 10 facilities reported predicted HAI in 2021. If a facility's predicted number of events was <1.0, a facility-specific SIR was neither calculated nor reported.



SIRs) and facility-specific SIR distributions using HAI data reported to NHSN during 2021:
***Staphylococcus aureus* (MRSA) bacteremia and *Clostridioides difficile* (*C.difficile*) in Acute Care Hospitals**

Upper for SIR	Facility SIRs Compared to National SIR						5%
	No. Facilities with ≥1 Predicted Event	No. Facilities with SIR Significantly > National SIR		No. Facilities with SIR Significantly < National SIR			
		N	% ⁷	N	%		
1.089	1,979	158	8%	112	6%	0.000	
0.505	3,179	414	13%	544	17%	0.000	

ell-baby units.

ts.

patient was recently discharged from the reporting facility in the previous 4 weeks.

ities had ≥ 1.0 predicted HAI in 2021.

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	0.356	0.435	0.542	0.630	0.701	0.777	0.864	0.950	1.042
0.000	0.100	0.171	0.220	0.260	0.297	0.339	0.376	0.419	0.469

Specific SIRs⁸

60%	65%	70%	75%	80%	85%	90%	95%
1.133	1.254	1.369	1.520	1.708	1.884	2.209	2.736
0.514	0.561	0.616	0.678	0.757	0.845	0.998	1.194

Surgical Procedure	No. of Acute Care Hospitals Reporting ²	No. of Procedures
US, all NHSN procedures	3,288	2,759,027
US, SCIP procedures only⁵	3,261	1,518,713
AAA Abdominal aortic aneurysm repair ⁵	165	640
AMP Limb amputation	229	15,599
APPY Appendix surgery	487	39,999
AVSD Shunt for dialysis	126	1,634
BILI Bile duct, liver or pancreatic surgery	368	14,453
BRST Breast surgery	328	23,756
CABG- Coronary artery bypass graft ^{5,6}	680	113,074
CARD Cardiac surgery ⁵	392	42,699
CEA Carotid endarterectomy	217	6,551
CHOL Gallbladder surgery	502	70,000
COLO Colon surgery ⁵	3,069	318,896
CRAN Craniotomy	234	45,217
CSEC Cesarean section	615	312,678
FUSN Spinal fusion	891	221,664
FX Open reduction of fracture	496	66,720
GAST Gastric surgery	453	35,851
HER Herniorrhaphy	312	21,230
HPRO Hip arthroplasty ⁵	2,127	338,952
HTP Heart transplant	30	944
HYST Abdominal hysterectomy ⁵	2,800	268,359
KPRO Knee arthroplasty ⁵	2,054	409,730
KTP Kidney transplant	49	6,053
LAM Laminectomy	673	130,112
LTP Liver transplant	30	2,405
NECK Neck surgery	103	3,470
NEPH Kidney surgery	311	11,563
OVRY Ovarian surgery	425	21,375
PACE Pacemaker surgery	333	21,270
PRST Prostate surgery	140	5,366
PVBY Peripheral vascular bypass surgery ⁵	247	9,447
REC Rectal surgery ⁵	397	10,336
SB Small bowel surgery	494	45,645
SPLE Spleen surgery	271	3,098
THOR Thoracic surgery	377	34,390
THYR Thyroid and/or parathyroid surgery	151	4,650
VHYS Vaginal hysterectomy ⁵	524	6,580
VSHN Ventricular shunt	155	4,792
XLAP Abdominal surgery	489	69,829

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

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

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

No. of Infections		SIR	95% CI for SIR		No. Hosp with ≥1 Predicted Infection	Facility- No. Hosp Significantly > N
Observed	Predicted³		Lower	Upper		
21,186	23,355.962	0.907	0.895	0.919	2,399	213
13,975	15,840.406	0.882	0.868	0.897	2,328	171
2	4.352	0.460	0.077	1.518	0	.
160	67.766	2.361	2.016	2.749	23	1
112	160.546	0.698	0.577	0.836	35	.
7	4.248	1.648	0.721	3.259	0	.
366	424.161	0.863	0.778	0.955	79	7
220	271.406	0.811	0.709	0.923	73	5
749	917.375	0.816	0.760	0.877	316	20
145	181.397	0.799	0.677	0.938	60	5
8	5.480	1.460	0.678	2.772	0	.
301	290.764	1.035	0.923	1.157	100	4
7,094	8,531.864	0.831	0.812	0.851	1,785	113
578	500.755	1.154	1.063	1.251	112	8
658	614.800	1.070	0.991	1.154	184	15
1,889	1,763.799	1.071	1.024	1.120	433	36
450	516.202	0.872	0.794	0.955	139	4
202	273.738	0.738	0.641	0.845	90	4
153	177.975	0.860	0.731	1.004	48	.
2,204	2,340.717	0.942	0.903	0.981	776	41
13	11.502	1.130	0.629	1.884	3	.
1,871	1,883.860	0.993	0.949	1.039	560	33
1,605	1,559.146	1.029	0.980	1.081	516	26
58	37.279	1.556	1.192	1.997	18	.
373	493.146	0.756	0.682	0.836	159	3
60	118.136	0.508	0.391	0.649	26	1
85	81.538	1.042	0.838	1.283	16	3
45	38.158	1.179	0.871	1.564	3	.
13	16.060	0.809	0.450	1.349	0	.
39	37.608	1.037	0.748	1.403	2	.
33	13.952	2.365	1.655	3.283	0	.
205	193.776	1.058	0.920	1.210	70	3
66	189.877	0.348	0.271	0.439	47	2
765	933.389	0.820	0.763	0.879	243	20
17	19.218	0.885	0.533	1.388	0	.
113	144.652	0.781	0.647	0.936	39	1
2	3.720	0.538	0.090	1.776	0	.
34	38.042	0.894	0.629	1.235	0	.
70	71.281	0.982	0.771	1.233	23	.
421	424.278	0.992	0.901	1.091	126	7

procedures that occurred in 2021 with a primary or other than primary skin closure technique, detected during the study period may be different from the numbers shown in Table 1. Refer to the Technical Appendix for information about

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

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

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

specific SIRs								
with SIR		No. Hosp with SIR						
> National SIR	Significantly < National SIR	5%	10%	15%	20%	25%		
%⁴	N							
9%	180	8%	0.000	0.000	0.179	0.336	0.432	
7%	130	6%	0.000	0.000	0.179	0.325	0.425	
.
4%	5	22%	0.000	0.000	0.000	0.529	0.787	
.	.	.	0.000	0.000	0.000	0.000	0.000	
.
9%	3	4%	0.000	0.000	0.000	0.315	0.393	
7%	3	4%	0.000	0.000	0.000	0.000	0.000	
6%	5	2%	0.000	0.000	0.000	0.000	0.000	
8%	.	.	0.000	0.000	0.000	0.000	0.000	
.
4%	1	1%	0.000	0.000	0.000	0.000	0.000	
6%	61	3%	0.000	0.000	0.000	0.206	0.340	
7%	8	7%	0.000	0.000	0.235	0.371	0.486	
8%	10	5%	0.000	0.000	0.000	0.000	0.250	
8%	29	7%	0.000	0.000	0.000	0.153	0.405	
3%	2	1%	0.000	0.000	0.000	0.308	0.398	
4%	1	1%	0.000	0.000	0.000	0.000	0.000	
.	1	2%	0.000	0.000	0.000	0.000	0.000	
5%	14	2%	0.000	0.000	0.000	0.000	0.000	
.
6%	12	2%	0.000	0.000	0.000	0.000	0.310	
5%	3	1%	0.000	0.000	0.000	0.000	0.000	
.	1	6%	.	.	.	.	.	.
2%	1	1%	0.000	0.000	0.000	0.000	0.000	
4%	1	4%	0.000	0.000	0.000	0.000	0.000	
19%	2	0.13	.	.	.	.	.	.
.
.
.
4%	3	4%	0.000	0.000	0.000	0.000	0.000	
4%	.	.	0.000	0.000	0.000	0.000	0.000	
8%	11	5%	0.000	0.000	0.000	0.000	0.178	
.
3%	.	.	0.000	0.000	0.000	0.000	0.000	
.
.
.	.	.	0.000	0.000	0.000	0.000	0.000	
6%	4	3%	0.000	0.000	0.000	0.000	0.000	

g the same admission as the surgical procedure or upon readmission to the same facility.
t exclusion criteria.

at least 10 facilities had ≥ 1.0 predicted SSI in 2021.
Specific NHSN procedures

and in the distribution of facility-specific SIRs.

tals during 2021 by surgical procedure.

Percentile Distribution of Facility-specific SIRs⁷									
Median									
30%	35%	40%	45%	50%	55%	60%	65%	70%	75%
0.528	0.592	0.662	0.735	0.809	0.874	0.953	1.037	1.132	1.235
0.510	0.583	0.644	0.716	0.787	0.857	0.935	1.017	1.119	1.229
.
0.980	1.082	1.196	1.771	2.032	2.222	2.309	2.350	2.737	3.223
0.000	0.000	0.000	0.000	0.000	0.416	0.579	0.767	0.822	0.861
.
0.447	0.561	0.690	0.745	0.793	0.857	0.920	0.960	1.047	1.220
0.000	0.000	0.259	0.434	0.583	0.710	0.802	0.951	1.024	1.115
0.197	0.347	0.450	0.572	0.633	0.734	0.801	0.879	1.019	1.185
0.000	0.000	0.408	0.676	0.808	0.848	0.930	1.005	1.242	1.460
.
0.000	0.341	0.508	0.585	0.655	0.741	0.888	0.976	1.334	1.684
0.419	0.493	0.574	0.646	0.712	0.781	0.850	0.947	1.044	1.186
0.648	0.697	0.777	0.858	0.969	1.085	1.252	1.311	1.373	1.445
0.423	0.519	0.613	0.682	0.773	0.898	0.989	1.237	1.376	1.647
0.506	0.594	0.704	0.763	0.888	0.986	1.098	1.234	1.343	1.471
0.445	0.569	0.641	0.769	0.878	0.936	1.015	1.121	1.214	1.348
0.000	0.000	0.000	0.248	0.458	0.558	0.849	0.978	1.041	1.282
0.000	0.000	0.242	0.325	0.467	0.511	0.527	0.708	0.906	0.947
0.337	0.482	0.586	0.687	0.789	0.879	0.954	1.040	1.178	1.382
.
0.441	0.516	0.634	0.721	0.814	0.883	0.969	1.129	1.301	1.536
0.421	0.560	0.676	0.770	0.845	0.922	0.988	1.189	1.352	1.523
.
0.000	0.233	0.387	0.534	0.620	0.719	0.772	0.845	0.921	1.026
0.000	0.000	0.184	0.346	0.443	0.537	0.565	0.640	0.661	0.714
.
.
.
.
0.323	0.418	0.576	0.734	0.845	0.956	1.161	1.380	1.780	1.923
0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.203	0.367
0.319	0.411	0.508	0.598	0.658	0.761	0.849	0.990	1.133	1.373
.
0.000	0.316	0.429	0.561	0.671	0.778	0.795	0.915	0.955	0.974
.
.
0.000	0.570	0.577	0.598	0.679	0.691	0.848	0.923	1.038	1.163
0.263	0.440	0.566	0.660	0.773	0.850	0.870	0.992	1.246	1.375

80%	85%	90%	95%
1.357	1.560	1.783	2.254
1.372	1.571	1.794	2.226
.	.	.	.
3.383	3.426	3.708	3.726
1.107	1.549	1.739	1.989
.	.	.	.
1.390	1.647	2.366	3.778
1.395	1.742	2.045	2.859
1.433	1.695	1.879	2.772
1.624	1.896	2.338	3.539
.	.	.	.
1.868	2.049	2.221	2.886
1.330	1.508	1.783	2.237
1.556	1.761	2.083	2.866
1.843	2.072	2.465	3.704
1.590	1.874	2.282	3.038
1.527	1.686	1.888	2.171
1.524	1.785	1.949	2.343
1.120	1.193	1.305	1.474
1.558	1.740	1.975	2.672
.	.	.	.
1.718	1.933	2.323	2.869
1.696	1.861	2.173	2.772
.	.	.	.
1.186	1.562	1.828	2.229
0.832	0.889	0.930	1.065
.	.	.	.
.	.	.	.
.	.	.	.
.	.	.	.
1.991	2.059	2.755	2.876
0.548	0.714	0.853	1.010
1.559	1.727	2.065	2.615
.	.	.	.
1.015	1.488	1.699	1.859
.	.	.	.
.	.	.	.
1.364	1.643	1.916	2.022
1.778	2.062	2.389	2.903

Surgical Procedure	No. of Acute Care Hospitals Reporting ²	No. of Procedures
US, all NHSN procedures	1,205	61,104
	729	15,742
	0	.
AMP Limb amputation	0	.
APPY Appendix surgery	355	12,299
AVSD Shunt for dialysis	0	.
BILI Bile duct, liver or pancreatic surgery	57	306
BRST Breast surgery	0	.
	0	.
	87	8,150
CEA Carotid endarterectomy	0	.
CHOL Gallbladder surgery	190	1,419
COLO Colon surgery ⁵	620	6,831
CRAN Craniotomy (ALL AGE)	98	3,648
CSEC Cesarean section	397	1,425
FUSN Spinal fusion (AGE >=2)	282	7,994
FX Open reduction of fracture	245	3,887
GAST Gastric surgery	0	.
HER Herniorrhaphy	64	1,286
	127	226
HTP Heart transplant	0	.
	51	56
	55	88
KTP Kidney transplant	18	169
LAM Laminectomy	160	2,137
LTP Liver transplant	13	148
NECK Neck surgery	0	.
NEPH Kidney surgery	0	.
OVRY Ovarian surgery	0	.
PACE Pacemaker surgery	0	.
PRST Prostate surgery	0	.
	0	.
	56	391
SB Small bowel surgery	115	1,830
SPLE Spleen surgery	0	.
THOR Thoracic surgery	116	1,432
THYR Thyroid and/or parathyroid surgery	0	.
	0	.
VSHN Ventricular shunt	74	4,720
XLAP Abdominal surgery	178	2,662

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

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

<u>No. of Infections</u>		<u>SIR</u>	<u>95% CI for SIR</u>		<u>No. Hosp with ≥1 Predicted Infection</u>	<u>Facility- No. Hosp Significantly > N</u>
<u>Observed</u>			<u>Lower</u>	<u>Upper</u>		
540	631.800	0.855	0.785	0.929	118	9
187	257.728	0.726	0.627	0.835	67	4
.
21	49.589	0.423	0.269	0.636	10	0
6	7.102	0.845	0.342	1.757	0	.
.
57	85.992	0.663	0.507	0.853	30	0
0	0.993	.	.	.	0	.
127	167.641	0.758	0.634	0.898	42	3
44	34.762	1.266	0.931	1.684	13	2
6	3.437	1.746	0.708	3.631	0	.
109	89.530	1.217	1.004	1.463	27	2
12	12.912	0.929	0.504	1.580	1	.
.
1	1.800	0.555	0.028	2.739	0	.
3	0.927	.	.	.	0	.
.
0	1.075	0.000	.	2.786	0	.
0	0.959	.	.	.	0	.
0	1.369	0.000	.	2.188	0	.
17	13.677	1.243	0.748	1.950	0	.
8	10.212	0.783	0.364	1.488	4	.
.
.
.
.
.
0	1.134	0.000	.	2.642	0	.
14	22.427	0.624	0.355	1.023	5	.
.
5	3.397	1.472	0.539	3.262	0	.
.
.
98	108.954	0.899	0.734	1.091	39	2
12	13.911	0.863	0.467	1.467	2	.

t procedures in pediatric patients less than 18 years that occurred in 2021 with a primary or other than primary may be different from the numbers shown in Table 1. Refer to the Technical Appendix for information about n 2021.

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

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

IRs using pediatric surgical site infection (SSI) data¹ reported to NHSN from NHSN Acute Care Hos

specific SIRs								
> National SIR	No. Hosp with SIR	Significantly < National SIR	N	5%	10%	15%	20%	25%
8%	3	3%		0.000	0.000	0.000	0.446	0.548
6%	1	1%		0.000	0.000	0.000	0.000	0.000
.
.
0%	0	0%		.	.	.	.	.
.
.
.
0%	0	0%		0.000	0.000	0.000	0.000	0.000
.
.
7%	0	0%		0.000	0.000	0.000	0.000	0.000
15%	0	0%		.	.	.	.	.
.
7%	1	4%		0.000	0.000	0.000	0.000	0.344
.
.
.
.
.
.
.
.
.
.
.
.
.
.
.
.
5%	0	0%		0.000	0.000	0.000	0.000	0.303
.

by skin closure technique, detected during the same admission as the surgical procedure or upon readmission. SIRs and accompanying

at least 10 facilities had ≥ 1.0 predicted SSI in 2021.
Specific NHSN procedures

and in the distribution of facility-specific SIRs.

pitals during 2021 by surgical procedure.

	30%	35%	40%	45%	Median 50%	55%	60%	65%	70%	75%
	0.602	0.643	0.711	0.798	0.906	0.924	0.953	1.028	1.136	1.273
	0.000	0.353	0.410	0.463	0.601	0.684	0.790	0.891	0.949	1.028

	0.000	0.000	0.128	0.308	0.521	0.695	0.705	0.814	0.858	0.912

	0.000	0.000	0.000	0.609	0.667	0.741	0.886	0.949	1.044	1.351

	0.684	0.920	0.953	0.988	1.084	1.192	1.265	1.389	1.482	1.735

	0.345	0.418	0.628	0.655	0.757	0.956	1.018	1.150	1.221	1.561

sion to the same facility.

80%	85%	90%	95%
1.420	1.595	1.955	2.633
1.213	1.371	1.482	2.067
.	.	.	.
.	.	.	.
.	.	.	.
.	.	.	.
.	.	.	.
0.999	1.155	1.666	2.166
.	.	.	.
1.420	1.497	1.725	2.432
.	.	.	.
1.740	1.840	1.941	2.976
.	.	.	.
.	.	.	.
.	.	.	.
.	.	.	.
.	.	.	.
.	.	.	.
.	.	.	.
.	.	.	.
.	.	.	.
.	.	.	.
.	.	.	.
.	.	.	.
.	.	.	.
.	.	.	.
.	.	.	.
.	.	.	.
1.638	1.907	2.131	2.432
.	.	.	.

Table 3. State-specific standardized infection ratios (SIRs) and facility-specific SIR summary measures, NHSN Acute Care Hospitals reporting during 2021

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

State	State NHSN Mandate ²	Any Validation ³	No. of Acute Care Hospitals Reporting ⁴	No. of Infections		95% CI for SIR			Facility-specific SIRs			Facility-specific SIRs at Key Percentiles ⁵				
				Observed	Predicted	SIR	Lower	Upper	No. of hosp with at least 1 predicted CLABSI	% of hosp with SIR sig higher than national SIR ⁶	% of hosp with SIR sig lower than national SIR ⁶	10%	25%	Median (50%)	75%	90%
Alabama	Yes	Yes	84	558	535.115	1.043	0.959	1.132	43	23%	5%	0.204	0.480	1.036	1.642	2.036
Alaska	Yes	No	10	38	43.930	0.865	0.621	1.175	5	.	.	.	.	.	.	.
Arizona			72	651	656.757	0.991	0.917	1.070	50	16%	12%	0.081	0.526	0.923	1.312	1.961
Arkansas			51	347	303.232	1.144	1.029	1.270	27	30%	4%	0.268	0.697	1.223	1.890	2.563
California			339	2,647	2,908.948	0.910	0.876	0.945	285	40%	34%	0.149	0.469	0.903	1.444	2.149
Colorado	Yes	No	59	340	410.700	0.828	0.743	0.919	39	13%	13%	0.000	0.402	0.732	1.174	1.853
Connecticut	Yes	No	29	253	286.274	0.884	0.780	0.998	23	9%	9%	0.115	0.517	0.823	1.300	1.469
D.C.	Yes	No	9	140	173.305	0.808	0.682	0.950	8	.	.	.	.	.	.	.
Delaware			9	73	110.510	0.661	0.522	0.826	8	.	.	.	.	.	.	.
Florida	No	Yes	219	1,883	2,142.875	0.879	0.840	0.919	187	16%	13%	0.141	0.458	0.844	1.306	1.982
Georgia			110	971	981.961	0.989	0.928	1.053	76	25%	5%	0.480	0.656	0.954	1.661	2.302
Guam			2	.	.	.	.	.	.	.	.	.	.	.	.	.
Hawaii	No	No	17	63	109.891	0.573	0.444	0.729	13	0%	23%	.	.	.	.	.
Idaho	No	No	16	78	91.090	0.856	0.681	1.063	12	8%	0%	.	.	.	.	.
Illinois	Yes	Yes	136	852	1,094.791	0.778	0.727	0.832	100	10%	9%	0.000	0.440	0.799	1.158	2.037
Indiana	Yes	Yes	90	522	657.112	0.794	0.728	0.865	63	8%	13%	0.148	0.390	0.771	1.221	1.812
Iowa	No	Yes	40	236	231.971	1.017	0.894	1.154	24	17%	4%	0.369	0.786	1.263	1.543	2.184
Kansas			56	179	217.811	0.822	0.708	0.949	25	8%	4%	0.000	0.077	0.726	1.015	1.383
Kentucky			71	502	485.676	1.034	0.946	1.127	44	23%	11%	0.000	0.578	1.017	1.603	2.400
Louisiana			101	565	457.667	1.235	1.136	1.340	50	26%	2%	0.345	0.694	1.022	1.673	2.399
Maine	Yes	No	20	70	89.880	0.779	0.612	0.978	10	10%	0%	.	.	.	.	.
Maryland	Yes	No	49	505	493.887	1.023	0.936	1.115	43	19%	7%	0.065	0.528	0.890	1.379	2.326
Massachusetts	Yes	No	66	494	670.340	0.737	0.674	0.804	52	6%	8%	0.000	0.469	0.745	1.037	1.469
Michigan	No	Yes	99	757	760.473	0.995	0.926	1.068	64	20%	8%	0.269	0.691	1.062	1.509	1.942
Minnesota	No	No	50	365	422.574	0.864	0.779	0.956	24	13%	7%	0.101	0.482	0.800	1.183	1.622
Mississippi	Yes	Yes	57	337	281.979	1.195	1.073	1.328	30	40%	3%	0.000	0.471	1.200	2.104	2.517
Missouri	Yes	No	79	694	758.771	0.915	0.848	0.985	53	15%	9%	0.268	0.572	0.962	1.364	2.069
Montana	No	No	14	34	40.382	0.842	0.592	1.163	9	.	.	.	.	.	.	.
Nebraska	No	No	28	146	174.374	0.837	0.710	0.982	20	20%	5%	0.000	0.000	0.712	0.967	2.340
Nevada			28	297	312.190	0.951	0.848	1.064	20	20%	10%	0.000	0.489	0.811	1.226	1.499
New Hampshire			13	51	79.460	0.642	0.483	0.837	10	0%	0%	.	.	.	.	.
New Jersey	Yes	Yes	72	551	635.675	0.867	0.797	0.941	69	14%	12%	0.269	0.548	0.792	1.286	2.306
New Mexico			31	163	129.837	1.255	1.073	1.460	14	29%	7%	.	.	.	.	.
New York			174	1,786	1,834.338	0.974	0.929	1.020	141	14%	9%	0.000	0.441	0.982	1.399	1.932
North Carolina			103	998	963.463	1.036	0.973	1.102	71	18%	6%	0.000	0.490	0.947	1.647	2.094
North Dakota	No	No	10	41	71.804	0.571	0.415	0.767	7	.	.	.	.	.	.	.
Ohio	No	No	146	1,212	1,349.221	0.898	0.849	0.950	99	14%	12%	0.000	0.485	0.853	1.302	1.935
Oklahoma			81	534	414.917	1.287	1.181	1.400	38	39%	5%	0.318	0.629	1.178	2.502	3.279
Oregon	Yes	No	37	152	258.146	0.589	0.501	0.688	23	4%	7%	0.000	0.364	0.502	0.860	1.291
Pennsylvania			174	1,322	1,420.661	0.931	0.881	0.982	113	16%	3%	0.249	0.578	0.925	1.454	2.086
Puerto Rico	Yes	No	17	62	66.949	0.926	0.716	1.179	11	0%	18%	.	.	.	.	.
Rhode Island	No	Yes	11	57	83.087	0.686	0.524	0.882	11	0%	9%	.	.	.	.	.
South Carolina	Yes	Yes	64	397	434.690	0.913	0.827	1.007	39	10%	8%	0.326	0.654	1.002	1.514	1.844
South Dakota	No	No	20	78	68.741	1.135	0.903	1.409	5	.	.	.	.	.	.	.
Tennessee	Yes	Yes	96	643	782.949	0.821	0.760	0.887	59	17%	8%	0.000	0.385	0.816	1.309	2.054
Texas			342	2,584	2,702.414	0.956	0.920	0.994	224	21%	9%	0.239	0.532	0.893	1.508	2.276
Utah	Yes	No	36	163	183.186	0.890	0.761	1.035	18	0%	0%	.	.	.	.	.
Vermont	No	No	7	27	34.088	0.792	0.533	1.136	3	.	.	.	.	.	.	.
Virgin Islands			2	.	.	.	.	.	.	.	.	.	.	.	.	.
Virginia	Yes	Yes	83	511	639.436	0.799	0.732	0.871	55	13%	5%	0.000	0.334	0.593	1.244	1.902
Washington	Yes	No	58	427	567.277	0.753	0.684	0.827	45	4%	16%	0.221	0.344	0.662	0.959	1.300
West Virginia	Yes	No	30	254	211.674	1.200	1.059	1.355	20	35%	5%	0.252	0.607	1.167	1.781	2.969
Wisconsin	No	Yes	81	380	475.226	0.800	0.722	0.883	49	4%	4%	0.000	0.433	0.803	1.217	1.580
Wyoming			12	20	17.671	1.132	0.711	1.717	2	.	.	.	.	.	.	.
All US			3,710	27,021	29,335.399	0.921	0.910	0.932	2,535	14%	11%	0.155	0.502	0.881	1.410	2.137

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 2021. M indicates midyear implementation of a mandate. No indicates that a state mandate did not exist during 2021. 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 2021 NHSN data, state health department performed an assessment of missing or implausible values on at least six months of 2021 NHSN data prior to June 1, 2022, and state health department contacted identified facilities. YesA indicates that the state also conducted an audit of facility medical or laboratory records prior to June 1, 2022 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 2021.
5. Percent of facilities with at least one predicted CLABSI that had an SIR significantly greater or less than the nominal value of the 2021 national overall CLABSI SIR of 0.921. This is only calculated if at least 10 facilities had ≥ 1.0 predicted CLABSI in 2021.
6. Facility-specific key percentiles were only calculated if at least 20 facilities had ≥ 1.0 predicted CLABSI in 2021. 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 2021

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

State	No. of Acute Care Hospitals Reporting ³	No. of Infections		95% CI for SIR			Facility-specific SIRs			Facility-specific SIRs at Key Percentiles ⁵					
		Observed	Predicted	SIR	Lower	Upper	% of hosp with SIR sig higher than national SIR ⁴	% of hosp with SIR sig lower than national SIR ⁴		10%	25%	75%	90%		
Alabama	Yes	67	344	242.837	1.417	1.273	1.572	34	15%	12%	0.165	0.500	1.268	2.069	2.733
Alaska	Yes	7	15	14.818	1.012	0.588	1.632	4	.	.	.	.	.	.	.
Arizona		53	396	286.244	1.383	1.252	1.525	44	18%	14%	0.280	0.716	1.261	1.859	3.094
Arkansas		40	188	127.759	1.472	1.272	1.693	22	36%	9%	0.393	0.918	1.505	2.813	3.777
California		316	1,457	1,169.915	1.245	1.183	1.311	224	13%	12%	0.171	0.555	1.158	1.889	2.809
Colorado	M	48	170	154.079	1.103	0.947	1.279	32	9%	3%	0.072	0.617	0.947	1.487	2.805
Connecticut	Yes	26	113	104.261	1.084	0.897	1.298	22	9%	5%	0.000	0.618	0.923	1.761	2.062
D.C.	Yes	8	66	62.272	1.060	0.826	1.340	7	.	.	.	.	.	.	.
Delaware		9	26	33.102	0.785	0.524	1.134	7	.	.	.	.	.	.	.
Florida	No	202	934	871.028	1.072	1.005	1.143	150	8%	17%	0.000	0.417	0.980	1.607	2.323
Georgia		95	582	445.937	1.305	1.202	1.414	66	24%	11%	0.475	0.634	1.292	2.265	3.523
Guam		2	.	.	.	.	.	.	.	.	.	.	.	.	.
Hawaii	No	15	27	37.097	0.728	0.489	1.044	10	0%	0%	.	.	.	.	.
Idaho	No	14	49	36.813	1.331	0.996	1.745	11	18%	9%	.	.	.	.	.
Illinois	Yes	123	441	406.272	1.085	0.988	1.190	81	9%	10%	0.000	0.467	1.071	1.760	2.630
Indiana	Yes	75	259	275.516	0.940	0.831	1.060	53	9%	23%	0.171	0.429	0.914	1.692	3.024
Iowa	No	36	126	79.243	1.590	1.330	1.887	14	29%	0%	.	.	.	.	.
Kansas		38	92	81.924	1.123	0.910	1.371	14	7%	7%	.	.	.	.	.
Kentucky		65	295	214.024	1.378	1.228	1.543	33	15%	12%	0.052	0.564	1.287	2.306	2.994
Louisiana		71	286	184.174	1.553	1.381	1.741	39	13%	5%	0.000	0.765	1.305	2.127	2.916
Maine	Yes	14	27	29.464	0.916	0.616	1.315	5	.	.	.	.	.	.	.
Maryland	Yes	45	245	176.835	1.385	1.220	1.567	37	22%	8%	0.000	0.680	1.160	2.493	3.749
Massachusetts	Yes	58	241	253.376	0.951	0.837	1.077	33	0%	3%	0.000	0.509	0.824	1.399	1.781
Michigan	No	77	410	323.339	1.268	1.150	1.395	53	9%	11%	0.206	0.781	1.280	1.632	2.741
Minnesota	No	30	164	147.185	1.114	0.953	1.295	16	6%	19%	.	.	.	.	.
Mississippi	Yes	45	178	115.654	1.539	1.325	1.778	22	23%	9%	0.375	1.029	1.886	2.927	4.152
Missouri	Yes	71	326	273.576	1.192	1.067	1.326	45	13%	9%	0.322	0.738	1.143	1.893	2.716
Montana	No	10	20	15.632	1.279	0.803	1.941	5	.	.	.	.	.	.	.
Nebraska	No	16	33	50.495	0.654	0.457	0.907	10	0%	10%	.	.	.	.	.
Nevada		21	148	138.503	1.069	0.907	1.252	16	0%	13%	.	.	.	.	.
New Hampshire		13	22	28.121	0.782	0.503	1.165	6	.	.	.	.	.	.	.
New Jersey	Yes	72	238	233.603	1.019	0.895	1.155	57	7%	16%	0.000	0.305	0.785	1.444	2.475
New Mexico		27	109	61.761	1.765	1.456	2.120	13	31%	0%	.	.	.	.	.
New York		161	755	666.631	1.133	1.054	1.216	113	10%	12%	0.055	0.500	0.941	1.783	2.613
North Carolina		87	504	354.992	1.420	1.300	1.548	48	19%	4%	0.453	0.859	1.450	2.148	3.410
North Dakota	No	7	19	22.979	0.827	0.513	1.267	6	.	.	.	.	.	.	.
Ohio	No	127	606	533.212	1.137	1.049	1.230	82	7%	11%	0.000	0.468	0.981	1.520	2.731
Oklahoma		52	326	177.881	1.833	1.642	2.040	27	30%	4%	0.640	0.825	1.338	2.978	3.604
Oregon	Yes	33	72	85.886	0.838	0.661	1.050	16	13%	13%	.	.	.	.	.
Pennsylvania		141	670	554.800	1.208	1.119	1.302	89	10%	8%	0.415	0.606	1.120	1.926	2.929
Puerto Rico	Yes	13	27	21.353	1.265	0.850	1.814	7	.	.	.	.	.	.	.
Rhode Island	No	10	28	32.891	0.851	0.577	1.214	5	.	.	.	.	.	.	.
South Carolina	Yes	54	219	175.124	1.251	1.093	1.425	29	14%	14%	0.312	0.723	1.126	1.848	2.447
South Dakota	No	12	45	15.746	2.858	2.110	3.790	3	.	.	.	.	.	.	.
Tennessee	Yes	82	343	306.147	1.120	1.006	1.244	51	12%	16%	0.000	0.405	1.217	2.131	3.281
Texas		257	1,429	1,155.270	1.237	1.174	1.302	190	13%	12%	0.000	0.498	0.994	1.841	2.551

Utah	Yes	30	78	82.408	0.947	0.753	1.175	14	0%	0%
Vermont		5	5	8.411	0.59	0.22	1.32	1
Virgin Islands		2
Virginia	Yes	76	281	241.304	1.165	1.034	1.307	40	15%	15%	0.000	0.439	0.987	1.793	2.774	
Washington	Yes	49	215	196.084	1.096	0.957	1.251	38	5%	8%	0.000	0.495	0.751	1.532	2.411	
West Virginia	Yes	28	159	100.178	1.587	1.354	1.849	16	44%	13%	.	.	.	.	.
Wisconsin	No	63	181	164.786	1.098	0.947	1.267	35	6%	9%	0.000	0.434	0.905	1.419	2.150	
Wyoming		11	7	7.016	0.998	0.436	1.974	2	.	.	.	.	.	.	.
All US		3,109	14,003	11,580.132	1.209	1.189	1.229	1,997	12%	11%	0.000	0.572	1.079	1.846	2.928	

1. Data from all ICUs; excludes 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 critical care units to NHSN at the beginning of 2021. M indicates midyear implementation of a mandate. No indicates that a state mandate did not exist during 2021. 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 2021.
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 2021 national ICU CLABSI SIR of 1.209. This is only calculated if at least 10 facilities had at least one predicted ICU CLABSI in 2021.
5. Facility-specific key percentiles were only calculated if at least 20 facilities had ≥ 1.0 predicted ICU CLABSI in 2021. 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.

Virginia	Yes	83	222	359.737	0.617	0.540	0.702	46	4%	9%	0.000	0.231	0.455	0.795	1.405
Washington	Yes	58	186	346.111	0.537	0.464	0.619	41	2%	17%	0.000	0.200	0.419	0.706	0.926
West Virginia	Yes	29	92	104.011	0.885	0.717	1.080	17	18%	6%	.	.	.	.	.
Wisconsin	No	81	179	288.592	0.620	0.534	0.716	40	0%	5%	0.000	0.000	0.501	0.826	1.311
Wyoming	No	12	13	10.656	1.220	0.679	2.034	2	.	.	.	.	.	.	.
All US		3,683	11,863	15,887.854	0.747	0.733	0.760	2,100	8%	5%	0.000	0.287	0.620	1.046	1.676

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 2021. M indicates midyear implementation of a mandate. No indicates that a state mandate did not exist during 2021. 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 2021.
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 2021 national ward CLABSI SIR of 0.747. This is only calculated if at least 10 facilities had at least one predicted ward CLABSI in 2021.
5. Facility-specific key percentiles were only calculated if at least 20 facilities had ≥ 1.0 predicted ward CLABSI in 2021. 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 2021

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

State		No. of Infections	95% CI for SIR				Facility-specific SIRs				10%	25%	75%	90%	
			Observed	Predicted	SIR	Lower	Upper								
Alabama	Yes	14	28	52.251	0.536	0.363	0.764	9	.	.	.	.	.	.
Alaska	Yes	2	.	.	.	.	.	.	.	.	.	.	.	.
Arizona		19	21	31.736	0.662	0.421	0.994	8	.	.	.	.	.	.
Arkansas		9	23	27.560	0.835	0.542	1.232	5	.	.	.	.	.	.
California		127	101	175.942	0.574	0.470	0.695	42	2%	0%	0.000	0.000	0.338	0.699	0.949
Colorado	M	21	16	21.958	0.729	0.431	1.158	6	.	.	.	.	.	.	.
Connecticut	Yes	13	4	12.755	0.314	0.100	0.756	2	.	.	.	.	.	.	.
D.C.	Yes	5	4	16.726	0.239	0.076	0.577	4	.	.	.	.	.	.	.
Delaware		2	.	.	.	.	.	.	.	.	.	.	.	.	.
Florida	No	62	47	137.749	0.341	0.254	0.450	26	0%	12%	0.000	0.109	0.368	0.690	0.866
Georgia		35	42	76.473	0.549	0.401	0.735	18	6%	0%	.	.	.	.	.
Guam		0	.	.	.	.	.	.	.	.	.	.	.	.	.
Hawaii	No	2	.	.	.	.	.	.	.	.	.	.	.	.	.
Idaho	No	10	3	6.364	0.471	0.120	1.283	2	.	.	.	.	.	.	.
Illinois	Yes	34	41	63.924	0.641	0.466	0.862	19	5%	0%	.	.	.	.	.
Indiana	Yes	28	26	30.277	0.859	0.573	1.240	6	.	.	.	.	.	.	.
Iowa	No	11	7	20.354	0.344	0.150	0.680	3	.	.	.	.	.	.	.
Kansas		10	1	11.936	0.084	0.004	0.413	4	.	.	.	.	.	.	.
Kentucky		16	14	25.238	0.555	0.316	0.909	4	.	.	.	.	.	.	.
Louisiana		28	40	51.406	0.778	0.563	1.049	9	.	.	.	.	.	.	.
Maine	Yes	3	.	.	.	.	.	.	.	.	.	.	.	.	.
Maryland	Yes	15	20	25.697	0.778	0.489	1.181	7	.	.	.	.	.	.	.
Massachusetts	Yes	10	19	21.948	0.866	0.537	1.327	8	.	.	.	.	.	.	.
Michigan	No	20	47	59.234	0.793	0.590	1.046	14	7%	0%	.	.	.	.	.
Minnesota	No	11	18	19.258	0.935	0.571	1.449	3	.	.	.	.	.	.	.
Mississippi	Yes	15	20	24.627	0.812	0.510	1.232	3	.	.	.	.	.	.	.
Missouri	Yes	21	19	53.505	0.355	0.220	0.544	10	0%	20%	.	.	.	.	.
Montana	No	5	1	2.250	0.444	0.022	2.192	0	.	.	.	.	.	.	.
Nebraska	No	8	20	10.855	1.842	1.157	2.795	4	.	.	.	.	.	.	.
Nevada		10	13	28.251	0.460	0.256	0.767	8	.	.	.	.	.	.	.
New Hampshire		2	.	.	.	.	.	.	.	.	.	.	.	.	.
New Jersey	Yes	23	16	29.353	0.545	0.323	0.866	10	0%	0%	.	.	.	.	.
New Mexico		4	.	.	.	.	.	.	.	.	.	.	.	.	.
New York		52	64	111.874	0.572	0.444	0.726	28	0%	4%	0.000	0.000	0.537	0.903	1.020
North Carolina		25	43	62.743	0.685	0.502	0.915	11	9%	9%	.	.	.	.	.
North Dakota	No	6	3	5.560	0.540	0.137	1.468	2	.	.	.	.	.	.	.
Ohio	No	19	42	77.154	0.544	0.397	0.729	14	0%	0%	.	.	.	.	.
Oklahoma		7	17	28.606	0.594	0.358	0.932	6	.	.	.	.	.	.	.
Oregon	Yes	10	2	9.956	0.201	0.034	0.664	3	.	.	.	.	.	.	.
Pennsylvania		45	66	61.208	1.078	0.841	1.363	14	14%	0%	.	.	.	.	.
Puerto Rico	Yes	4	.	.	.	.	.	.	.	.	.	.	.	.	.
Rhode Island	No	1	.	.	.	.	.	.	.	.	.	.	.	.	.
South Carolina	Yes	8	13	25.313	0.514	0.286	0.856	6	.	.	.	.	.	.	.
South Dakota	No	3	.	.	.	.	.	.	.	.	.	.	.	.	.
Tennessee	Yes	22	40	61.575	0.650	0.470	0.876	11	9%	0%	.	.	.	.	.
Texas		129	149	223.623	0.666	0.566	0.780	44	2%	2%	0.000	0.393	0.585	0.864	1.077
Utah	Yes	13	18	18.514	0.972	0.594	1.507	5	.	.	.	.	.	.	.
Vermont		1	.	.	.	.	.	.	.	.	.	.	.	.	.
Virgin Islands		1	.	.	.	.	.	.	.	.	.	.	.	.	.
Virginia	Yes	27	8	38.391	0.208	0.097	0.396	12	0%	0%	.	.	.	.	.
Washington	Yes	16	26	25.084	1.037	0.692	1.497	5	.	.	.	.	.	.	.
West Virginia	Yes	6	3	7.485	0.401	0.102	1.091	3	.	.	.	.	.	.	.
Wisconsin	No	17	20	21.844	0.916	0.575	1.389	7	.	.	.	.	.	.	.
Wyoming		0	.	.	.	.	.	.	.	.	.	.	.	.	.
All US		1,007	1,155	1,867.410	0.619	0.584	0.655	421	4%	3%	0.000	0.000	0.531	0.847	1.297

1. Data from all NICUs including Level II/III, Level III, and Level IV 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 2021. M indicates midyear implementation of a mandate. No indicates that a state mandate did not exist during 2021. 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 parts of the Centers for Medicare and Medicaid Services (CMS) Hospital-Acquired Conditions Reduction Program (HACRP) and the Hospital Value-Based Purchasing (VBP) 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 2021.
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 2021 national NICU CLABSI SIR of 0.619. This is only calculated if at least 10 facilities had at least one predicted NICU CLABSI in 2021.
5. Facility-specific key percentiles were only calculated if at least 20 facilities had ≥ 1.0 predicted NICU CLABSI in 2021. 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 2021
4a. Catheter-associated urinary tract infections (CAUTI), all locations¹

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%						
Alabama	Yes	Yes	88	614	725.756	0.846	0.781	0.915	50	14%	12%	0.000	0.410	0.748	1.219	1.733
Alaska	Yes	No	10	45	38.270	1.176	0.868	1.559	6	.	.	.	.	.	.	.
Arizona			72	456	737.512	0.618	0.563	0.677	50	6%	16%	0.113	0.358	0.534	1.026	1.452
Arkansas			50	264	380.233	0.694	0.614	0.782	29	3%	14%	0.304	0.450	0.664	0.825	1.646
California			338	2,643	2,988.498	0.884	0.851	0.919	295	15%	9%	0.218	0.476	0.817	1.270	1.753
Colorado	Yes	No	56	299	435.701	0.686	0.612	0.767	38	11%	18%	0.246	0.330	0.816	1.232	2.059
Connecticut	Yes	No	29	169	290.067	0.583	0.500	0.676	23	0%	17%	0.000	0.104	0.579	0.671	1.060
D.C.	Yes	No	9	74	135.161	0.547	0.433	0.683	8	.	.	.	.	.	.	.
Delaware			9	66	82.182	0.803	0.626	1.015	8	.	.	.	.	.	.	.
Florida	No	Yes	219	1,457	2,153.582	0.677	0.642	0.712	190	7%	15%	0.000	0.358	0.600	0.931	1.552
Georgia			112	843	1,063.681	0.793	0.740	0.847	77	14%	9%	0.207	0.439	0.751	1.177	1.953
Guam			2	.	.	.	.	.	.	.	.	.	.	.	.	.
Hawaii	No	No	17	94	99.938	0.941	0.764	1.146	13	15%	8%	.	.	.	.	.
Idaho	No	No	18	85	107.143	0.793	0.638	0.976	13	23%	15%	.	.	.	.	.
Illinois	No	No	136	805	1,102.326	0.730	0.681	0.782	105	8%	10%	0.000	0.320	0.645	1.070	1.507
Indiana	Yes	Yes	91	507	685.015	0.740	0.678	0.807	63	14%	16%	0.135	0.326	0.718	1.278	1.967
Iowa	No	Yes	41	223	269.889	0.826	0.723	0.940	28	11%	7%	0.000	0.401	0.778	0.979	1.363
Kansas			61	183	214.125	0.855	0.737	0.985	26	15%	4%	0.000	0.103	0.787	1.244	2.356
Kentucky			71	454	591.762	0.767	0.699	0.840	52	13%	10%	0.000	0.292	0.736	1.119	1.756
Louisiana			106	311	529.719	0.587	0.525	0.655	56	4%	5%	0.000	0.313	0.498	0.828	1.121
Maine	Yes	No	20	107	88.817	1.205	0.992	1.450	12	25%	0%	.	.	.	.	.
Maryland	Yes	No	49	465	505.318	0.920	0.839	1.007	44	14%	7%	0.279	0.406	0.856	1.217	1.636
Massachusetts	Yes	No	67	615	662.648	0.928	0.857	1.004	53	17%	6%	0.383	0.683	0.995	1.751	2.127
Michigan	No	Yes	100	632	902.082	0.701	0.648	0.757	71	8%	13%	0.000	0.286	0.558	0.876	1.538
Minnesota	No	No	50	379	422.746	0.897	0.810	0.990	28	14%	0%	0.000	0.633	0.908	1.326	1.643
Mississippi	Yes	Yes	59	277	371.258	0.746	0.662	0.838	36	3%	11%	0.000	0.395	0.715	0.978	1.277
Missouri	Yes	No	78	550	732.839	0.751	0.690	0.815	60	13%	10%	0.000	0.514	0.700	1.289	1.739
Montana	No	No	14	47	75.396	0.623	0.463	0.822	9	.	.	.	.	.	.	.
Nebraska	No	No	28	132	145.947	0.904	0.760	1.069	18	6%	6%	.	.	.	.	.
Nevada			28	209	323.920	0.645	0.562	0.737	21	10%	19%	0.126	0.501	0.656	0.965	2.169
New Hampshire			13	100	101.150	0.989	0.809	1.197	13	23%	0%	.	.	.	.	.
New Jersey	Yes	Yes	72	535	666.192	0.803	0.737	0.873	70	10%	11%	0.173	0.427	0.729	1.231	1.912
New Mexico			32	229	183.209	1.250	1.096	1.420	17	35%	6%	.	.	.	.	.
New York			177	1,682	2,013.274	0.835	0.796	0.876	151	16%	14%	0.179	0.448	0.766	1.251	1.783
North Carolina			103	902	1,008.625	0.894	0.837	0.954	81	12%	5%	0.236	0.503	0.874	1.624	2.036
North Dakota	No	No	11	36	72.266	0.498	0.354	0.682	7	.	.	.	.	.	.	.
Ohio	No	No	150	1,130	1,444.568	0.782	0.738	0.829	107	9%	9%	0.000	0.499	0.758	1.199	1.912
Oklahoma			84	337	438.305	0.769	0.690	0.854	44	9%	7%	0.000	0.338	0.661	0.985	1.374
Oregon	Yes	No	37	314	270.865	1.159	1.036	1.293	25	24%	8%	0.188	0.526	0.850	1.466	2.552
Pennsylvania			185	1,429	1,603.276	0.891	0.846	0.938	121	12%	2%	0.269	0.574	0.821	1.239	1.819
Puerto Rico	Yes	No	17	55	130.996	0.420	0.319	0.542	13	0%	38%	.	.	.	.	.
Rhode Island	No	Yes	11	87	96.570	0.901	0.726	1.106	10	0%	0%	.	.	.	.	.
South Carolina	No	No	64	465	487.646	0.954	0.870	1.043	47	21%	2%	0.000	0.499	0.809	1.486	2.060
South Dakota	No	No	22	70	79.895	0.876	0.688	1.100	7	.	.	.	.	.	.	.
Tennessee	Yes	Yes	95	618	815.146	0.758	0.700	0.820	72	10%	6%	0.000	0.256	0.557	0.874	1.411
Texas			357	1,882	2,614.098	0.720	0.688	0.753	225	9%	14%	0.162	0.382	0.686	1.000	1.518
Utah	Yes	No	38	141	162.730	0.866	0.732	1.019	20	5%	0%	0.000	0.304	0.689	1.212	1.587

Vermont			7	71	39.530	1.796	1.413	2.252	5							
Virgin Islands			2	.	.	.	.	.	.	.	.	.	.	.	.	.
Virginia	Yes	Yes	84	470	663.389	0.708	0.647	0.775	61	8%	10%	0.000	0.208	0.523	0.901	1.243
Washington	Yes	No	59	548	548.814	0.999	0.917	1.085	43	26%	7%	0.356	0.608	1.009	1.474	2.124
West Virginia	Yes	No	31	191	289.772	0.659	0.571	0.758	23	9%	9%	0.000	0.223	0.601	0.855	1.228
Wisconsin	No	Yes	82	377	448.740	0.840	0.759	0.928	50	14%	6%	0.000	0.500	0.810	1.465	2.120
Wyoming			13	18	28.368	0.635	0.388	0.983	2							
All US			3,774	24,710	31,077.142	0.795	0.785	0.805	2,698	12%	10%	0.075	0.427	0.744	1.184	1.815

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 2021. M indicates midyear implementation of a mandate. No indicates that a state mandate did not exist during 2021. 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 2021 NHSN data, state health department performed an assessment of missing or implausible values on at least six months of 2021 NHSN data prior to June 1, 2022, and state health department contacted identified facilities. YesA indicates that the state also conducted an audit of facility medical or laboratory records prior to June 1, 2022 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 2021.
5. Percent of facilities with at least one predicted CAUTI that had an SIR significantly greater or less than the nominal value of the 2021 national overall CAUTI SIR of 0.795. This is only calculated if at least 10 facilities had at least one predicted CAUTI in 2021.
6. Facility-specific key percentiles were only calculated if at least 20 facilities had ≥ 1.0 predicted CAUTI in 2021. 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 2021

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

State		No. of Infections	95% CI for SIR			Facility-specific SIRs									
			Observed	Predicted	SIR	Lower	Upper	10%	25%	75%	90%				
Alabama	Yes	67	365	423.046	0.863	0.778	0.955	41	17%	15%	0.000	0.295	0.821	1.448	2.271
Alaska		7	19	16.896	1.125	0.697	1.724	4	.	.	.	.	.	.	.
Arizona		54	247	390.437	0.633	0.557	0.715	46	9%	9%	0.000	0.379	0.670	1.230	1.743
Arkansas	Yes	40	150	196.798	0.762	0.647	0.892	27	11%	7%	0.083	0.420	0.662	1.098	1.650
California		316	1395	1,407.349	0.991	0.940	1.044	232	15%	6%	0.023	0.521	0.920	1.521	2.161
Colorado	M	49	143	219.938	0.650	0.550	0.764	31	13%	16%	0.000	0.195	0.443	1.235	2.277
Connecticut	Yes	26	62	142.137	0.436	0.337	0.555	21	0%	14%	0.000	0.000	0.416	0.892	1.194
D.C.	Yes	8	27	75.946	0.356	0.239	0.510	8	.	.	.	.	.	.	.
Delaware		9	21	36.198	0.580	0.369	0.872	7	.	.	.	.	.	.	.
Florida	No	202	697	1,119.426	0.623	0.578	0.670	158	6%	12%	0.000	0.179	0.569	0.901	1.372
Georgia		95	417	586.616	0.711	0.645	0.782	67	13%	10%	0.000	0.323	0.608	1.280	2.068
Guam		2	.	.	.	.	.	.	.	.	.	.	.	.	.
Hawaii	No	15	42	43.783	0.959	0.700	1.284	10	10%	0%	.	.	.	.	.
Idaho	No	14	48	50.826	0.944	0.704	1.242	10	20%	10%	.	.	.	.	.
Illinois	No	124	367	507.343	0.723	0.652	0.800	86	7%	7%	0.000	0.164	0.574	1.323	1.976
Indiana	Yes	75	248	334.891	0.741	0.653	0.837	55	9%	15%	0.000	0.203	0.632	1.365	2.157
Iowa	No	36	109	111.670	0.976	0.805	1.173	20	10%	5%	0.000	0.607	0.886	1.589	2.860
Kansas		38	82	110.410	0.743	0.594	0.917	16	6%	6%	.	.	.	.	.
Kentucky		65	288	308.453	0.934	0.830	1.046	37	30%	5%	0.209	0.529	1.227	2.187	3.091
Louisiana		73	167	260.878	0.640	0.548	0.743	42	5%	7%	0.000	0.327	0.613	0.966	1.261
Maine	Yes	14	45	35.680	1.261	0.931	1.673	5	.	.	.	.	.	.	.
Maryland	Yes	45	253	231.193	1.094	0.966	1.236	38	24%	3%	0.000	0.089	0.796	1.452	2.727
Massachusetts	Yes	58	274	329.028	0.833	0.738	0.936	41	10%	5%	0.338	0.564	0.976	1.727	2.584
Michigan	No	77	308	461.962	0.667	0.595	0.744	54	9%	15%	0.000	0.319	0.615	1.134	1.800
Minnesota	No	30	171	190.785	0.896	0.769	1.038	17	18%	6%	.	.	.	.	.
Mississippi	Yes	45	132	180.136	0.733	0.616	0.866	25	16%	12%	0.000	0.343	0.914	1.329	2.183
Missouri	Yes	71	258	353.933	0.729	0.644	0.822	51	12%	14%	0.000	0.247	0.782	1.424	2.483
Montana	No	10	11	28.920	0.380	0.200	0.661	8	.	.	.	.	.	.	.
Nebraska	No	16	58	54.330	1.068	0.818	1.370	9	.	.	.	.	.	.	.
Nevada		21	113	174.821	0.646	0.535	0.774	16	6%	19%	.	.	.	.	.
New Hampshire		13	43	43.283	0.993	0.728	1.326	9	.	.	.	.	.	.	.
New Jersey	Yes	72	212	295.455	0.718	0.626	0.819	59	5%	7%	0.000	0.219	0.618	1.182	2.070
New Mexico		27	149	88.266	1.688	1.433	1.976	13	38%	0%	.	.	.	.	.
New York		161	680	926.326	0.734	0.680	0.791	121	7%	12%	0.000	0.258	0.606	1.189	1.795
North Carolina		87	425	504.074	0.843	0.766	0.926	58	10%	5%	0.181	0.468	0.871	1.557	2.379
North Dakota	No	7	19	30.286	0.627	0.389	0.962	6	.	.	.	.	.	.	.
Ohio	No	127	544	704.695	0.772	0.709	0.839	87	8%	8%	0.000	0.316	0.811	1.228	1.672
Oklahoma		52	156	213.753	0.730	0.622	0.851	31	10%	13%	0.000	0.114	0.755	1.258	2.200
Oregon	Yes	33	138	114.072	1.210	1.020	1.425	19	37%	5%	.	.	.	.	.
Pennsylvania		142	715	790.859	0.904	0.840	0.972	102	18%	7%	0.338	0.602	0.955	1.392	2.296
Puerto Rico	Yes	14	16	36.569	0.438	0.259	0.695	10	0%	0%	.	.	.	.	.
Rhode Island	No	10	50	46.344	1.079	0.809	1.411	5	.	.	.	.	.	.	.
South Carolina	No	54	239	242.261	0.987	0.867	1.118	34	15%	0%	0.000	0.000	0.812	1.500	3.765

South Dakota	No	12	33	27.987	1.179	0.825	1.637	3	.	.	.	.	.	.	.
Tennessee	Yes	82	317	420.353	0.754	0.674	0.841	49	10%	12%	0.000	0.354	0.605	1.088	1.876
Texas		258	1059	1,408.348	0.752	0.708	0.798	191	9%	9%	0.000	0.292	0.618	1.103	1.663
Utah	Yes	30	79	102.959	0.767	0.612	0.951	13	8%	0%	.	.	.	.	.
Vermont		5	27	15.834	1.705	1.147	2.447	2	.	.	.	.	.	.	.
Virgin Islands		2	.	.	.	.	.	.	.	.	.	.	.	.	.
Virginia	Yes	76	213	314.103	0.678	0.592	0.774	44	0%	14%	0.000	0.178	0.487	0.944	1.433
Washington	Yes	49	252	237.392	1.062	0.936	1.199	39	26%	5%	0.147	0.618	1.165	1.640	3.219
West Virginia	Yes	28	96	148.222	0.648	0.528	0.787	18	6%	6%	.	.	.	.	.
Wisconsin	No	63	212	201.446	1.052	0.918	1.201	35	17%	3%	0.157	0.559	1.057	1.470	2.685
Wyoming		11	10	7.101	1.408	0.715	2.510	2	.	.	.	.	.	.	.
All US		3,117	12,208	15,306.685	0.798	0.784	0.812	2,132	11%	9%	0.000	0.339	0.749	1.319	2.090

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 2021. M indicates midyear implementation of a mandate. No indicates that a state mandate did not exist during 2021. 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 2021.
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 2021 national ICU CAUTI SIR of 0.798. This is only calculated if at least 10 facilities had at least one predicted ICU CAUTI in 2021.
5. Facility-specific key percentiles were only calculated if at least 20 facilities had ≥ 1.0 predicted ICU CAUTI in 2021. 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.

Virginia	Yes	84	257	349.286	0.736	0.650	0.830	50	4%	6%	0.000	0.249	0.535	0.913	1.256
Washington	Yes	59	296	311.422	0.950	0.847	1.063	43	12%	0%	0.234	0.495	0.879	1.161	2.123
West Virginia	Yes	30	95	141.550	0.671	0.546	0.817	20	5%	15%	0.000	0.098	0.541	1.099	1.365
Wisconsin	No	82	165	247.294	0.667	0.571	0.775	40	3%	3%	0.000	0.350	0.582	0.943	1.458
Wyoming		13	8	21.267	0.376	0.175	0.714	2	.	.	.	.	.	.	.
All US		3,759	12,502	15,770.458	0.793	0.779	0.907	2,317	7%	6%	0.000	0.346	0.676	1.077	1.697

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 2021. M indicates midyear implementation of a mandate. No indicates that a state mandate did not exist during 2021. 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 2021.
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 2021 national ward CAUTI SIR of 0.793. This is only calculated if at least 10 facilities had at least one predicted ward CAUTI in 2021.
5. Facility-specific key percentiles were only calculated if at least 20 facilities had ≥ 1.0 predicted ward CAUTI in 2021. 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 2021
5a. Ventilator-associated events (VAE), all locations¹**

State			No. of Events		95% CI for SIR			Facility-specific SIRs								
	Observed	Predicted	SIR	Lower	Upper	No. of hosp with at least 1 predicted VAE	10%	25%	75%	90%						
Alabama			43	588	581.018	1.012	0.933	1.096	36	17%	44%	0.000	0.000	0.220	1.676	2.532
Alaska	No	No	5	98	36.078	2.716	2.217	3.296	3	.	.	.	.	.	.	.
Arizona	Yes	No	25	473	523.912	0.903	0.824	0.987	20	20%	45%	0.000	0.000	0.514	2.070	2.889
Arkansas			25	624	303.586	2.055	1.899	2.222	19	32%	21%	.	.	.	.	.
California			176	4,254	3,249.963	1.309	1.270	1.349	162	22%	47%	0.000	0.000	0.819	2.043	2.935
Colorado	No	No	41	1,173	634.484	1.849	1.745	1.957	31	61%	29%	0.000	0.341	2.412	3.570	5.366
Connecticut	No	No	15	379	341.591	1.110	1.002	1.226	14	29%	29%	.	.	.	.	.
D.C.	No	No	2	.	.	.	.	.	.	.	.	.	.	.	.	.
Delaware			4	.	.	.	.	.	.	.	.	.	.	.	.	.
Florida	No	Yes	138	5,467	2,856.357	1.914	1.864	1.965	126	48%	27%	0.000	0.624	2.118	3.197	4.021
Georgia			70	2,900	2,013.054	1.441	1.389	1.494	58	53%	26%	0.000	0.716	2.079	3.250	3.886
Guam			2	.	.	.	.	.	.	.	.	.	.	.	.	.
Hawaii	No	No	6	21	33.933	0.619	0.393	0.930	6	.	.	.	.	.	.	.
Idaho	No	No	6	200	82.307	2.430	2.110	2.785	5	.	.	.	.	.	.	.
Illinois	No	No	50	928	635.196	1.461	1.369	1.557	41	22%	34%	0.000	0.000	1.355	2.221	2.568
Indiana	M	No	55	1,157	657.595	1.759	1.660	1.863	48	21%	17%	0.491	0.882	1.455	2.418	3.348
Iowa	No	No	10	125	70.098	1.783	1.491	2.117	8	.	.	.	.	.	.	.
Kansas			30	413	248.900	1.659	1.505	1.825	20	30%	30%	0.000	0.403	1.479	2.911	4.471
Kentucky			41	863	560.483	1.540	1.440	1.645	32	41%	28%	0.000	0.532	2.041	3.250	4.999
Louisiana			38	858	526.137	1.631	1.524	1.743	27	30%	26%	0.000	0.137	0.995	2.087	4.303
Maine	No	No	14	235	170.448	1.379	1.211	1.564	10	50%	30%	.	.	.	.	.
Maryland	Yes	No	19	408	255.729	1.595	1.446	1.756	19	26%	42%	.	.	.	.	.
Massachusetts	No	No	22	282	218.633	1.290	1.146	1.447	18	17%	33%	.	.	.	.	.
Michigan	No	Yes	55	1,930	1,090.498	1.770	1.692	1.850	41	46%	15%	0.575	1.207	1.744	2.823	3.902
Minnesota	No		12	343	361.034	0.950	0.853	1.055	9	.	.	.	.	.	.	.
Mississippi	No	No	27	472	338.411	1.395	1.273	1.525	26	15%	50%	0.000	0.000	0.318	1.628	3.029
Missouri	No	No	38	1,184	911.150	1.299	1.227	1.375	33	36%	33%	0.000	0.386	1.721	2.691	3.805
Montana	No	No	6	102	59.294	1.720	1.410	2.079	4	.	.	.	.	.	.	.
Nebraska	No	No	11	243	126.769	1.917	1.687	2.170	10	30%	30%	.	.	.	.	.
Nevada			18	1,356	730.143	1.857	1.760	1.958	17	47%	24%	.	.	.	.	.
New Hampshire			10	101	79.155	1.276	1.045	1.544	10	30%	50%	.	.	.	.	.
New Jersey	No	No	51	1,189	1,124.654	1.057	0.998	1.119	50	30%	48%	0.000	0.098	0.851	2.306	3.264
New Mexico			17	231	123.273	1.874	1.644	2.128	11	36%	27%	.	.	.	.	.
New York			111	2,925	2,617.190	1.118	1.078	1.159	97	26%	37%	0.000	0.125	1.123	2.029	3.123
North Carolina			42	821	591.616	1.388	1.295	1.485	36	25%	33%	0.000	0.000	1.247	2.680	3.326
North Dakota	No	No	3	.	.	.	.	.	.	.	.	.	.	.	.	.
Ohio	No	No	79	1,568	1,527.098	1.027	0.977	1.079	63	38%	30%	0.000	0.000	1.584	3.205	4.231
Oklahoma			31	592	450.776	1.313	1.211	1.422	25	32%	32%	0.000	0.180	1.856	2.096	3.789
Oregon	No	No	18	232	141.827	1.636	1.435	1.857	13	31%	23%	.	.	.	.	.
Pennsylvania			132	3,962	2,786.530	1.422	1.378	1.467	106	43%	20%	0.482	1.041	1.858	3.015	4.580
Puerto Rico	Yes	No	13	45	67.484	0.667	0.492	0.884	10	10%	40%	.	.	.	.	.
Rhode Island	No	No	9	288	137.960	2.088	1.857	2.339	9	.	.	.	.	.	.	.
South Carolina	Yes	Yes	53	1,771	1,092.704	1.621	1.547	1.698	46	52%	17%	0.000	0.912	1.930	3.622	5.107
South Dakota	No	No	7	74	57.928	1.277	1.010	1.595	4	.	.	.	.	.	.	.
Tennessee	No	No	46	1,074	783.875	1.370	1.290	1.454	34	32%	35%	0.000	0.156	1.237	2.841	3.386
Texas			142	4,984	2,721.001	1.832	1.781	1.883	123	45%	36%	0.000	0.034	1.814	3.069	4.195
Utah	No	No	8	311	136.271	2.282	2.039	2.547	6	.	.	.	.	.	.	.

Vermont			1	.	.	.	.	.	.	.	.	.	.	.	.	.
Virgin Islands			2	.	.	.	.	.	.	.	.	.	.	.	.	.
Virginia	No	No	61	1,592	1,102.447	1.444	1.374	1.516	51	37%	29%	0.000	0.642	1.890	2.690	3.425
Washington	No	No	20	442	269.703	1.639	1.491	1.797	16	31%	19%	.	.	.	.	.
West Virginia	No	No	14	233	246.158	0.947	0.831	1.074	13	46%	23%	.	.	.	.	.
Wisconsin	No	No	30	243	296.384	0.820	0.722	0.928	23	17%	43%	0.000	0.000	0.421	1.983	2.910
Wyoming			7	29	19.850	1.461	0.997	2.071	2			.	.	.	.	.
All US			1,911	50,050	34,261.474	1.461	1.448	1.474	1,605	35%	32%	0.000	0.261	1.520	2.657	3.822

- 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.
- Yes indicates the presence of a state mandate to report VAE data from any location to NHSN at the beginning of 2021. M indicates midyear implementation of a mandate. No indicates that a state mandate did not exist during 2021. A blank field indicates data not available.
- Yes indicates that the state health department reported the completion of all of the following validation activities: state health department had access to 2021 NHSN data, state health department performed an assessment of missing or implausible values on at least six months of 2021 NHSN data prior to June 1, 2022, and state health department contacted identified facilities. YesA indicates that the state also conducted an audit of facility medical or laboratory records prior to June 1, 2022 to confirm proper case ascertainment (although intensity of auditing activities varies by state). Information on validation efforts was requested from all states, regardless of the presence of a legislative mandate for the particular HAI type. Some states without mandatory reporting of a given HAI to the state health department have performed validation on NHSN data that is voluntarily shared with them by facilities in their jurisdiction.
- The number of reporting facilities included in the SIR calculation. SIRs and accompanying statistics are only calculated for states in which at least 5 facilities reported VAE data in 2021.
- Percent of facilities with at least one predicted VAE that had an SIR significantly greater or less than the nominal value of the 2021 national overall VAE SIR of 1.461. This is only calculated if at least 10 facilities had at least one predicted VAE in 2021.
- Facility-specific key percentiles were only calculated if at least 20 facilities had ≥ 1.0 predicted VAE in 2021. 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.

Virginia	No	60	1,556	1,071.534	1.452	1.381	1.526	50	40%	30%	0.000	0.642	1.936	2.657	3.447
Washington	No	19	430	264.582	1.625	1.477	1.784	16	31%	19%	.	.	.	.	.
West Virginia	No	14	232	246.003	0.943	0.827	1.070	13	46%	23%	.	.	.	.	.
Wisconsin	No	30	230	253.800	0.906	0.795	1.029	23	17%	43%	0.000	0.000	0.472	1.983	2.910
Wyoming		7	29	19.850	1.461	0.997	2.071	2			.	.	.	.	.
All US		1,848	47,254	32,440.442	1.457	1.444	1.470	1,568	34%	32%	0.000	0.263	1.507	2.634	3.822

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 2021. M indicates midyear implementation of a mandate. No indicates that a state mandate did not exist during 2021. 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 2021.
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 2021 national ICU VAE SIR of 1.457. This is only calculated if at least 10 facilities had at least one predicted ICU VAE in 2021.
5. Facility-specific key percentiles were only calculated if at least 20 facilities had ≥ 1.0 predicted ICU VAE in 2021. 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.

Vermont		0	.	.	.	.	.	.	.	.	.	.	.	.	.
Virgin Islands		1	.	.	.	.	.	.	.	.	.	.	.	.	.
Virginia	No	15	36	30.913	1.165	0.828	1.595	6	.	.	.	.	.	.	.
Washington	No	5	12	5.122	2.343	1.269	3.983	1	.	.	.	.	.	.	.
West Virginia	No	1	.	.	.	.	.	.	.	.	.	.	.	.	.
Wisconsin	No	3	.	.	.	.	.	.	.	.	.	.	.	.	.
Wyoming		0	.	.	.	.	.	.	.	.	.	.	.	.	.
All US		499	2,796	1,821.031	1.535	1.479	1.593	270	24%	27%	0.000	0.124	1.183	2.468	4.372

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 2021. M indicates midyear implementation of a mandate. No indicates that a state mandate did not exist during 2021. 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 2021.
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 2021 national ward VAE SIR of 1.535. This is only calculated if at least 10 facilities had at least one predicted ward VAE in 2021.
5. Facility-specific key percentiles were only calculated if at least 20 facilities had ≥ 1.0 predicted ward VAE in 2021. 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 2021

6a. Surgical site infections (SSI) following colon surgery¹ 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%			
Alabama	Yes	Yes	64	5,883	86	149.135	0.577	0.464	0.709	29	3%	3%	0.000	0.000	0.364	0.721	1.031
Alaska	Yes	No	7	601	19	16.840	1.128	0.699	1.729	6							
Arizona			57	6,747	129	177.827	0.725	0.608	0.859	34	0%	6%	0.000	0.404	0.669	0.961	1.319
Arkansas			36	3,114	70	74.306	0.942	0.740	1.183	17	12%	0%					
California			302	28,727	670	772.287	0.868	0.804	0.935	189	5%	2%	0.000	0.439	0.795	1.223	1.722
Colorado	Yes	No	51	5,368	127	137.355	0.925	0.774	1.096	31	13%	3%	0.299	0.368	1.137	1.492	2.591
Connecticut	Yes	No	25	3,540	87	97.735	0.890	0.717	1.093	20	5%	0%	0.330	0.355	0.727	1.684	1.861
D.C.	Yes	No	7	1,029	30	36.678	0.818	0.562	1.153	5							
Delaware			7	959	22	25.640	0.858	0.551	1.278	5							
Florida	No	Yes	195	25,055	496	628.880	0.789	0.722	0.860	146	6%	3%	0.000	0.232	0.653	1.108	1.721
Georgia			86	10,276	229	279.211	0.820	0.719	0.932	52	8%	4%	0.000	0.329	0.770	1.019	1.877
Guam			1	0													
Hawaii	No	No	12	966	25	24.360	1.026	0.679	1.493	8							
Idaho	No	No	16	1,439	25	33.448	0.747	0.494	1.087	9							
Illinois	No	Yes	116	11,350	213	310.151	0.687	0.599	0.784	70	4%	6%	0.000	0.000	0.500	0.998	1.506
Indiana	Yes	Yes	81	6,936	145	175.373	0.827	0.700	0.970	39	5%	5%	0.000	0.108	0.783	1.061	1.475
Iowa	No	No	35	2,816	37	72.173	0.513	0.366	0.699	17	0%	12%					
Kansas			38	3,022	63	73.548	0.857	0.664	1.089	15	7%	7%					
Kentucky			63	5,270	124	143.363	0.865	0.722	1.028	29	7%	3%	0.000	0.000	0.670	0.931	1.533
Louisiana			71	4,999	116	129.538	0.895	0.743	1.070	32	9%	6%	0.000	0.000	0.735	1.235	2.196
Maine	Yes	No	18	1,604	36	39.540	0.910	0.647	1.247	8							
Maryland	Yes	No	43	5,418	117	153.949	0.760	0.631	0.907	32	6%	0%	0.000	0.161	0.660	1.178	1.295
Massachusetts	Yes	No	55	7,107	170	197.984	0.859	0.737	0.995	38	0%	0%	0.000	0.444	0.759	1.138	1.518
Michigan	No	Yes	87	10,059	276	266.072	1.037	0.920	1.165	54	20%	2%	0.000	0.300	0.855	1.382	2.515
Minnesota	No	No	47	5,603	115	170.003	0.676	0.561	0.809	21	0%	10%	0.160	0.408	0.699	0.923	1.338
Mississippi	Yes	Yes	41	3,200	93	81.764	1.137	0.923	1.387	17	12%	0%					
Missouri	Yes	No	65	7,567	190	196.540	0.967	0.836	1.112	39	8%	3%	0.000	0.502	0.737	1.330	1.644
Montana	No	No	11	996	19	23.862	0.796	0.494	1.220	6							
Nebraska	No	No	22	2,059	72	55.752	1.291	1.018	1.617	9							
Nevada			21	2,682	75	60.028	1.249	0.990	1.557	15	13%	0%					
New Hampshire			13	1,160	19	30.475	0.623	0.386	0.956	10	0%	0%					
New Jersey	Yes	Yes	70	8,208	143	218.572	0.654	0.553	0.768	49	0%	2%	0.000	0.206	0.609	1.012	1.754
New Mexico			26	1,582	37	41.037	0.902	0.644	1.230	8							
New York			153	17,892	446	521.554	0.855	0.779	0.937	99	5%	5%	0.000	0.406	0.738	1.249	1.848
North Carolina			87	11,108	225	300.624	0.748	0.655	0.851	51	2%	2%	0.000	0.512	0.688	0.944	1.628
North Dakota	No	No	7	1,009	26	23.752	1.095	0.730	1.581	6							
Ohio	No	No	127	14,014	346	400.029	0.865	0.777	0.960	77	10%	3%	0.000	0.418	0.755	1.352	2.077
Oklahoma			49	4,188	108	101.288	1.066	0.879	1.282	19	11%	0%					
Oregon	Yes	No	33	4,040	79	109.162	0.724	0.577	0.897	23	4%	9%	0.000	0.000	0.458	1.107	1.293
Pennsylvania			137	15,150	361	427.439	0.845	0.761	0.935	85	8%	5%	0.000	0.373	0.730	1.330	1.771
Puerto Rico	No	No	2	0													
Rhode Island	No	Yes	10	967	27	24.333	1.110	0.746	1.592	6							
South Carolina	Yes	Yes	55	5,346	101	132.219	0.764	0.625	0.924	26	4%	4%	0.227	0.496	0.746	1.066	1.594
South Dakota	No	No	14	1,060	25	24.906	1.004	0.664	1.460	4							
Tennessee	Yes	Yes	81	8,134	141	219.044	0.644	0.544	0.757	41	2%	10%	0.000	0.000	0.484	0.844	1.394
Texas			261	25,674	608	698.407	0.871	0.803	0.942	149	9%	3%	0.000	0.356	0.745	1.282	1.820
Utah	Yes	No	35	2,196	46	55.228	0.833	0.617	1.101	10	20%	0%					
Vermont			6	533	16	13.995	1.143	0.677	1.817	2							
Virgin Islands			1	0													
Virginia	Yes	Yes	73	7,779	144	203.050	0.709	0.600	0.832	42	0%	5%	0.000	0.340	0.524	1.034	1.263
Washington	Yes	No	47	6,126	123	162.549	0.757	0.632	0.900	34	3%	6%	0.000	0.282	0.715	0.950	1.421
West Virginia	Yes	No	23	1,954	60	51.355	1.168	0.899	1.494	14	7%	0%					
Wisconsin	No	Yes	69	6,035	133	161.909	0.821	0.690	0.970	36	3%	3%	0.000	0.334	0.733	1.127	1.669
Wyoming			10	262	1	5.462	0.183	0.009	0.903	2							
All US			3,069	318,896	7,094	8,531,864	0.831	0.812	0.851	1,785	6%	3%	0.000	0.340	0.712	1.186	1.783

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 2021 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 2021. M indicates midyear implementation of a mandate. No indicates that a state mandate did not exist during 2021. 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 2021 NHSN data, state health department performed an assessment of missing or implausible values on at least six months of 2021 NHSN data prior to June 1, 2022, and state health department contacted identified facilities. YesA indicates that the state also conducted an audit of facility medical or laboratory records prior to June 1, 2022 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 2021.
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 2021 national colon surgery SIR of 0.831. This is only calculated if at least 10 facilities had at least one predicted colon surgery SSI in 2021.
6. Facility-specific key percentiles were only calculated if at least 20 facilities had ≥ 1.0 predicted colon surgery SSI in 2021. 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 2021
6b. Surgical site infections (SSI) following abdominal hysterectomy surgery¹ in adults ≥ 18years

State	No. of Acute Care Hospitals Reporting ^a		No. of Procedures	No. of Infections		95% CI for SIR			Facility-specific SIRs								
				Observed	Predicted	SIR	Lower	Upper	10%	25%	75%	90%					
Alabama	Yes	Yes	48	6,895	50	40.454	1.236	0.927	1.616	14	21%	0%	.	.	.	.	.
Alaska	Yes	No	7	308	3	2.003	1.498	0.381	4.077	0	.	.	.	.	.	.	.
Arizona			47	5,544	44	34.142	1.289	0.948	1.714	10	20%	0%	.	.	.	.	.
Arkansas			35	2,940	16	18.049	0.886	0.525	1.409	5	.	.	.	.	.	.	.
California			272	19,662	117	151.594	0.772	0.641	0.922	50	2%	2%	0.000	0.000	0.604	0.981	1.833
Colorado	Yes	No	48	4,777	40	29.892	1.338	0.969	1.804	8	.	.	.	.	.	.	.
Connecticut	Yes	No	25	2,752	20	20.196	0.990	0.622	1.502	6	.	.	.	.	.	.	.
D.C.	Yes	No	6	853	8	7.121	1.123	0.522	2.133	3	.	.	.	.	.	.	.
Delaware			7	513	0	4.339	0.000	.	0.690	1	.	.	.	.	.	.	.
Florida	No	Yes	170	19,840	122	127.030	0.960	0.801	1.143	44	7%	2%	0.000	0.092	0.866	2.065	2.927
Georgia			83	11,716	109	82.845	1.316	1.086	1.581	24	8%	0%	0.000	0.437	1.050	1.869	2.337
Guam			1	.	.	.	.	.	.	.	.	.	.	.	.	.	.
Hawaii	No	No	10	584	3	4.280	0.701	0.178	1.908	1	.	.	.	.	.	.	.
Idaho	No	No	13	1,074	4	5.856	0.683	0.217	1.648	2	.	.	.	.	.	.	.
Illinois	No	Yes	107	10,409	63	77.268	0.815	0.632	1.036	26	0%	0%	0.000	0.000	0.453	0.845	1.673
Indiana	Yes	Yes	73	7,185	48	46.739	1.027	0.766	1.350	12	8%	8%	.	.	.	.	.
Iowa	No	No	32	2,748	8	15.697	0.510	0.237	0.968	3	.	.	.	.	.	.	.
Kansas			34	2,851	12	19.086	0.629	0.341	1.069	4	.	.	.	.	.	.	.
Kentucky			53	4,564	38	32.539	1.168	0.838	1.586	10	0%	0%	.	.	.	.	.
Louisiana			67	4,512	41	30.269	1.355	0.985	1.820	7	.	.	.	.	.	.	.
Maine	Yes	No	16	707	2	5.332	0.375	0.063	1.239	1	.	.	.	.	.	.	.
Maryland	Yes	No	39	4,560	46	33.635	1.368	1.013	1.808	8	.	.	.	.	.	.	.
Massachusetts	Yes	No	47	3,625	36	30.689	1.173	0.834	1.606	8	.	.	.	.	.	.	.
Michigan	No	Yes	79	7,935	82	61.495	1.333	1.067	1.647	22	5%	0%	0.461	0.728	0.957	1.932	2.666
Minnesota	No	No	45	3,447	36	28.553	1.261	0.896	1.727	11	9%	0%	.	.	.	.	.
Mississippi	Yes	Yes	38	2,997	21	19.025	1.104	0.702	1.659	5	.	.	.	.	.	.	.
Missouri	Yes	No	60	6,257	56	45.605	1.228	0.936	1.583	13	8%	8%	.	.	.	.	.
Montana	No	No	10	864	4	5.231	0.765	0.243	1.845	1	.	.	.	.	.	.	.
Nebraska	No	No	22	1,782	19	12.020	1.581	0.980	2.423	5	.	.	.	.	.	.	.
Nevada			18	1,719	18	10.455	1.722	1.052	2.668	3	.	.	.	.	.	.	.
New Hampshire			13	745	4	5.196	0.770	0.245	1.857	2	.	.	.	.	.	.	.
New Jersey	Yes	Yes	60	6,777	31	51.613	0.601	0.415	0.842	15	0%	13%	.	.	.	.	.
New Mexico			24	1,356	11	9.303	1.182	0.622	2.055	3	.	.	.	.	.	.	.
New York			145	13,804	109	109.408	0.996	0.822	1.197	35	9%	0%	0.000	0.000	0.745	1.689	2.213
North Carolina			82	9,411	68	71.166	0.956	0.748	1.204	16	0%	0%	.	.	.	.	.
North Dakota	No	No	7	280	3	1.855	1.617	0.411	4.402	0	.	.	.	.	.	.	.
Ohio	No	No	119	10,383	74	78.560	0.942	0.745	1.176	20	15%	0%	0.000	0.439	0.830	2.024	2.419
Oklahoma			51	5,462	25	34.684	0.721	0.477	1.048	9	.	.	.	.	.	.	.
Oregon	Yes	No	31	2,550	18	17.555	1.025	0.627	1.589	6	.	.	.	.	.	.	.
Pennsylvania			123	9,416	62	76.363	0.812	0.628	1.034	20	0%	0%	0.000	0.307	0.966	1.414	1.790
Puerto Rico	No	No	4	.	.	.	.	.	.	.	.	.	.	.	.	.	.
Rhode Island	No	Yes	10	975	2	6.161	0.325	0.054	1.072	2	.	.	.	.	.	.	.
South Carolina	Yes	Yes	47	5,464	43	35.915	1.197	0.877	1.598	11	9%	0%	.	.	.	.	.
South Dakota	No	No	15	1,223	5	6.674	0.749	0.274	1.660	2	.	.	.	.	.	.	.
Tennessee	Yes	Yes	67	6,549	39	45.482	0.857	0.618	1.160	13	0%	0%	.	.	.	.	.
Texas			246	27,588	195	184.796	1.055	0.915	1.211	59	3%	3%	0.000	0.000	0.758	1.619	2.259
Utah	Yes	No	35	3,164	10	18.045	0.554	0.281	0.988	5	.	.	.	.	.	.	.
Vermont			6	344	3	2.430	1.234	0.314	3.360	1	.	.	.	.	.	.	.
Virgin Islands			1	.	.	.	.	.	.	.	.	.	.	.	.	.	.
Virginia	Yes	Yes	60	7,747	42	50.464	0.832	0.608	1.114	10	0%	10%	.	.	.	.	.
Washington	Yes	No	46	4,535	25	30.364	0.823	0.545	1.198	11	0%	0%	.	.	.	.	.
West Virginia	Yes	No	21	1,997	8	12.197	0.656	0.305	1.245	3	.	.	.	.	.	.	.
Wisconsin	No	Yes	65	4,584	25	32.053	0.780	0.516	1.134	10	0%	10%	.	.	.	.	.
Wyoming			10	218	2	1.166	1.715	0.288	5.666	0	.	.	.	.	.	.	.
All US			2,800	268,359	1,871	1,883.860	0.993	0.949	1.039	560	6%	2%	0.000	0.310	0.814	1.536	2.323

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 2021 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 2021. M indicates midyear implementation of a mandate. No indicates that a state mandate did not exist during 2021. 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 2021 NHSN data, state health department performed an assessment of missing or implausible values on at least six months of 2021 NHSN data prior to June 1, 2022, and state health department contacted identified facilities.
YesA indicates that the state also conducted an audit of facility medical or laboratory records prior to June 1, 2022 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 2021.
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 2021 national abdominal hysterectomy SIR of 0.993. This is only calculated if at least 10 facilities had at least one predicted abdominal hysterectomy SSI in 2021.
6. Facility-specific key percentiles were only calculated if at least 20 facilities had ≥ 1.0 predicted abdominal hysterectomy SSI in 2021. 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.

Virginia	No	30	6,444	45	44,981	1.000	0.738	1.327	16	6%	6%	.	.	.	.	.
Washington	Yes	34	7,051	31	43,816	0.707	0.489	0.992	15	0%	7%	.	.	.	.	.
West Virginia	No	9	1,097	15	9,620	1.559	0.906	2.514	2	.	.	.	.	.	.	.
Wisconsin	No	60	10,799	36	68,494	0.526	0.374	0.720	24	0%	8%	0.000	0.000	0.411	0.909	1.438
Wyoming		4	.	.	.	.	.	.	.	.	.	.	.	.	.	.
All US		2,127	338,952	2,204	2,340,717	0.942	0.903	0.981	776	5%	2%	0.000	0.000	0.789	1.382	1.975

1. SSIs included are those classified as deep incisional or organ/space infections following NHSN-defined inpatient hip arthroplasty procedures that occurred in 2021 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 2021. M indicates midyear implementation of a mandate. No indicates that a state mandate did not exist during 2021. 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 2021.
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 2021 national hip arthroplasty SIR of 0.942. This is only calculated if at least 10 facilities had at least one predicted hip arthroplasty SSI in 2021.
5. Facility-specific key percentiles were only calculated if at least 20 facilities had ≥ 1.0 predicted hip arthroplasty SSI in 2021. 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.

Virginia	No	29	7,605	31	29,164	1.063	0.735	1.490	11	0%	0%	.	.	.	.	.
Washington	Yes	35	6,420	15	23,531	0.637	0.370	1.028	9	.	.	.	.	.	.	.
West Virginia	No	8	1,488	9	6,320	1.424	0.694	2.613	3	.	.	.	.	.	.	.
Wisconsin	No	60	13,131	34	45,038	0.755	0.531	1.043	19	0%	0%	.	.	.	.	.
Wyoming		4	.	.	.	.	.	.	.	.	.	.	.	.	.	.
All US		2,054	409,730	1,605	1,559,146	1.029	0.98	1.081	516	5%	1%	0.000	0.000	0.845	1.523	2.173

- SSIs included are those classified as deep incisional or organ/space infections following NHSN-defined inpatient knee arthroplasty procedures that occurred in 2021 with a primary or other than primary skin closure technique, detected during the same admission as the surgical procedure or upon readmission to the same facility.
- Yes indicates the presence of a state mandate to report SSIs following knee arthroplasty surgery to NHSN at the beginning of 2021. M indicates midyear implementation of a mandate. No indicates that a state mandate did not exist during 2021. A blank field indicates data not available.
- 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 2021.
- 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 2021 national knee arthroplasty SIR of 1.029. This is only calculated if at least 10 facilities had at least one predicted knee arthroplasty SSI in 2021.
- Facility-specific key percentiles were only calculated if at least 20 facilities had ≥ 1.0 predicted knee arthroplasty SSI in 2021. 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 standard:
NHSN
6e. Surgical site inf**

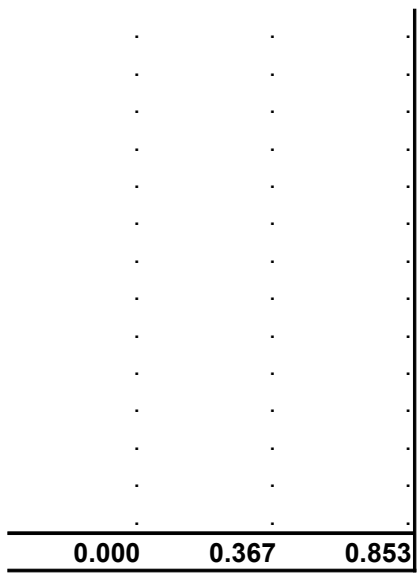
State		No. of Procedures		No. of Infections	
		Observed	Predicted	Observed	Predicted
Alabama	No	1	.	.	.
Alaska	No	0	.	.	.
Arizona		1	.	.	.
Arkansas		2	.	.	.
California		260	6,291	32	111.843
Colorado	No	4	.	.	.
Connecticut	No	0	.	.	.
D.C.	No	0	.	.	.
Delaware		0	.	.	.
Florida	No	8	262	0	5.240
Georgia		0	.	.	.
Guam		0	.	.	.
Hawaii	No	0	.	.	.
Idaho	No	1	.	.	.
Illinois	No	4	.	.	.
Indiana	No	4	.	.	.
Iowa	No	0	.	.	.
Kansas		0	.	.	.
Kentucky		1	.	.	.
Louisiana		5	198	2	3.852
Maine	No	0	.	.	.
Maryland	No	0	.	.	.
Massachusetts	No	2	.	.	.
Michigan	No	1	.	.	.
Minnesota	No	6	146	1	3.548
Mississippi	No	0	.	.	.
Missouri	No	2	.	.	.
Montana	No	2	.	.	.
Nebraska	No	1	.	.	.
Nevada		1	.	.	.
New Hampshire		0	.	.	.
New Jersey	No	0	.	.	.
New Mexico		0	.	.	.
New York		1	.	.	.
North Carolina		1	.	.	.
North Dakota	No	0	.	.	.
Ohio	No	14	223	1	3.466
Oklahoma		1	.	.	.
Oregon	Yes	5	188	0	4.072
Pennsylvania		42	1213	13	24.146

Puerto Rico		0	.	.	.
Rhode Island	No	0	.	.	.
South Carolina	M	3	.	.	.
South Dakota	No	2	.	.	.
Tennessee	No	1	.	.	.
Texas		3	.	.	.
Utah	No	0	.	.	.
Vermont		0	.	.	.
Virgin Islands		0	.	.	.
Virginia	No	8	222	2	3.521
Washington	No	5	201	1	1.633
West Virginia	No	2	.	.	.
Wisconsin	No	3	.	.	.
Wyoming		0	.	.	.
All US		397	10,336	66	189.877

1. SSIs included are those classified as deep incisional or organ/space infections following NHSN-detected during the same admission as the surgical procedure or upon readmission to the same facility.
2. Yes indicates the presence of a state mandate to report SSIs following rectal surgery to NHSN at the time of the procedure. No indicates that a state mandate did not exist during 2021. A blank field indicates data not available.
3. The number of reporting facilities included in the SIR calculation. Refer to the Technical Appendix for more details. Statistics are only calculated for states in which at least 5 facilities reported SSI data following rectal surgery.
4. Percent of facilities with at least one predicted rectal surgery SSI that had an SIR significantly greater than 1.0. At least 10 facilities had at least one predicted rectal surgery SSI in 2021.
5. Facility-specific key percentiles were only calculated if at least 20 facilities had ≥ 1.0 predicted rectal surgery SIR. If the SIR was neither calculated nor included in the distribution of facility-specific SIRs.

zed infection ratios (SIRs) and facility-specific SIR summary measures,
 I Acute Care Hospitals reporting during 2021
 fections (SSI) following rectal surgery¹ in adults, ≥ 18years

95% CI for SIR			Facility-specific SIRs			10%	25%
SIR	Lower	Upper					
.
.
.
0.286	0.199	0.399	27	4%	0%	0.000	0.000
.
.
.
0.000	.	0.572	1	.	.	.	.
.
.
.
.
0.519	0.087	1.715	1	.	.	.	.
.
.
.
0.282	0.014	1.39	1	.	.	.	.
.
.
.
.
.
.
.
0.289	0.014	1.423	1	.	.	.	.
.
0	.	0.736	1	.	.	.	.
0.538	0.299	0.898	9	.	.	.	.



ure technique,

Table 6. State-specific standardi

NHSN

6f. Surgical site infecti

State		No. of Procedures		No. of Infections	
		Observed	Predicted	Observed	Predicted
Alabama	No	1	.	.	.
Alaska	No	0	.	.	.
Arizona		2	.	.	.
Arkansas		3	.	.	.
California		210	2,373	9	13.407
Colorado	No	12	76	0	0.418
Connecticut	No	0	.	.	.
D.C.	No	0	.	.	.
Delaware		0	.	.	.
Florida	No	8	105	1	0.524
Georgia		2	.	.	.
Guam		1	.	.	.
Hawaii	No	0	.	.	.
Idaho	No	1	.	.	.
Illinois	No	4	.	.	.
Indiana	No	12	84	0	0.529
Iowa	No	2	.	.	.
Kansas		2	.	.	.
Kentucky		0	.	.	.
Louisiana		4	.	.	.
Maine	No	0	.	.	.
Maryland	No	3	.	.	.
Massachusetts	Yes	35	360	2	2.299
Michigan	No	2	.	.	.
Minnesota	No	6	34	0	0.236
Mississippi	No	2	.	.	.
Missouri	No	1	.	.	.
Montana	No	2	.	.	.
Nebraska	No	1	.	.	.
Nevada		0	.	.	.
New Hampshire		1	.	.	.
New Jersey	No	1	.	.	.
New Mexico		7	64	0	0.272
New York		4	.	.	.
North Carolina		2	.	.	.
North Dakota	No	0	.	.	.
Ohio	No	16	252	3	1.257
Oklahoma		3	.	.	.
Oregon	No	4	.	.	.
Pennsylvania		30	509	5	3.434

Puerto Rico		0	.	.	.
Rhode Island	No	0	.	.	.
South Carolina	No	2	.	.	.
South Dakota	Yes	1	.	.	.
Tennessee	No	4	.	.	.
Texas		109	1,420	7	7.641
Utah	No	0	.	.	.
Vermont		0	.	.	.
Virgin Islands		0	.	.	.
Virginia	No	8	65	0	0.331
Washington	No	10	164	0	0.865
West Virginia	No	1	.	.	.
Wisconsin	No	5	89	0	0.659
Wyoming		0	.	.	.
All US		524	6,580	34	38.042

1. SSIs included are those classified as deep incisional or organ/space infections following NHSN-detected during the same admission as the surgical procedure or upon readmission to the same facility.
2. Yes indicates the presence of a state mandate to report SSIs following vaginal hysterectomy surge. No indicates that a state mandate did not exist during 2021. A blank field indicates data not available.
3. The number of reporting facilities included in the SIR calculation. Refer to the Technical Appendix for details. Statistics are only calculated for states in which at least 5 facilities reported SSI data following vaginal hysterectomy.
4. Percent of facilities with at least one predicted vaginal hysterectomy SSI that had an SIR significant at the 5% level. At least 10 facilities had at least one predicted vaginal hysterectomy SSI in 2021.
5. Facility-specific key percentiles were only calculated if at least 20 facilities had ≥ 1.0 predicted vaginal hysterectomy SSI. If SIR was neither calculated nor included in the distribution of facility-specific SIRs.

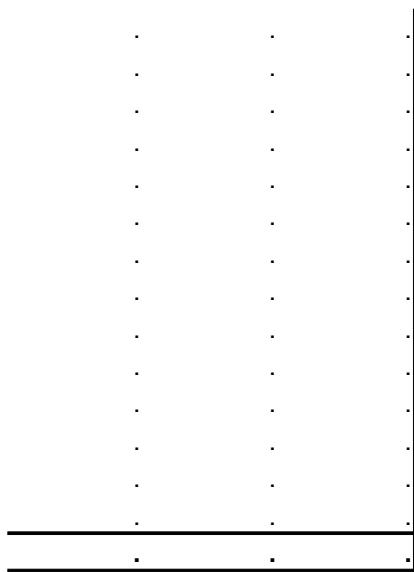
zed infection ratios (SIRs) and facility-specific SIR summary measures,
 ↓ Acute Care Hospitals reporting during 2021
 ons (SSI) following vaginal hysterectomy¹ in adults, ≥ 18years

95% CI for SIR			Facility-specific SIRs	
SIR	Lower	Upper	10%	25%
.
.
.
0.671	0.327	1.232	0	.
.	.	.	0	.
.
.
.	.	.	0	.
.
.
.
.	.	.	0	.
.
.
0.87	0.146	2.874	0	.
.	.	.	0	.
.
.
.
.
.
.
.	.	.	0	.
.
.
2.387	0.607	6.496	0	.
.
.
.
1.456	0.534	3.228	0	.

.
.
.
.
0.916	0.401	1.812	0	.	.
.
.
.	.	.	0	.	.
.	.	.	0	.	.
.	.	.	0	.	.
.	.	.	0	.	.
.
0.894	0.629	1.235	0	.	.

fined inpatient vaginal hysterectomy procedures that occurred in 2021 with a primary or other than primary si
 cility.
 ery to NHSN at the beginning of 2021. M indicates midyear implementation of a mandate.
 ple.
 for information about exclusion criteria. SIRs and accompanying
 nal hysterectomy in 2021.
 itly greater or less than the nominal value of the 2021 national vaginal hysterectomy SIR of 0.894. This is onl

 ral hysterectomy SSI in 2021. If a facility's predicted number of vaginal hysterectomy SSI was <1.0, a facility-



\langle in closure technique,

y calculated if

specific

**Table 6. State-specific standard
NHSI**

6g. Surgical site infection

State		No. of Procedures	No. of Infections		
			Observed	Predicted	
Alabama	No	6	690	9	4.943
Alaska	No	1	.	.	.
Arizona		14	2,109	18	14.397
Arkansas		7	1,076	9	9.014
California		119	14,273	90	111.540
Colorado	No	11	1,074	5	7.128
Connecticut	No	0	.	.	.
D.C.	No	2	.	.	.
Delaware		1	.	.	.
Florida	No	10	2,327	11	17.780
Georgia		11	2,833	16	25.960
Guam		0	.	.	.
Hawaii	No	1	.	.	.
Idaho	No	2	.	.	.
Illinois	Yes	50	6,180	38	51.979
Indiana	No	10	1,675	14	13.862
Iowa	No	2	.	.	.
Kansas		3	.	.	.
Kentucky		3	.	.	.
Louisiana		8	1,428	7	11.396
Maine	No	2	.	.	.
Maryland	No	11	2,494	13	19.238
Massachusetts	Yes	13	3,514	31	30.691
Michigan	No	7	1,172	7	9.833
Minnesota	No	5	1,193	12	10.555
Mississippi	No	13	1,626	6	13.683
Missouri	No	28	4,553	32	38.798
Montana	No	5	629	6	3.888
Nebraska	No	2	.	.	.
Nevada		12	1,356	3	10.018
New Hampshire		4	.	.	.
New Jersey	Yes	18	4,480	30	33.968
New Mexico		1	.	.	.
New York		35	8,975	79	84.053
North Carolina		7	1,909	5	17.062
North Dakota	No	2	.	.	.
Ohio	No	20	2,624	12	21.744
Oklahoma		5	555	0	4.114
Oregon	Yes	11	2,019	13	13.612
Pennsylvania		52	8,330	62	66.972

Puerto Rico		0	.	.	.
Rhode Island	No	1	.	.	.
South Carolina	Yes	17	3,468	26	27.616
South Dakota	No	1	.	.	.
Tennessee	Yes	20	6,095	43	50.869
Texas		88	10,106	53	75.931
Utah	No	1	.	.	.
Vermont		1	.	.	.
Virgin Islands		0	.	.	.
Virginia	No	9	2,063	19	17.387
Washington	No	10	2,147	7	16.145
West Virginia	No	2	.	.	.
Wisconsin	No	15	2,968	31	20.989
Wyoming		1	.	.	.
All US		680	113,074	749	917.375

1. SSIs included are those classified as deep incisional or organ/space infections following NHSN-detected during the same admission as the surgical procedure or upon readmission to the same facility.
2. Yes indicates the presence of a state mandate to report SSIs following coronary artery bypass graft surgery. No indicates that a state mandate did not exist during 2021. A blank field indicates data not available.
3. The number of reporting facilities included in the SIR calculation. Refer to the Technical Appendix for more details. Statistics are only calculated for states in which at least 5 facilities reported SSI data following coronary artery bypass graft surgery.
4. Percent of facilities with at least one predicted coronary artery bypass graft SSI that had an SIR significantly greater than 1.0. At least 10 facilities had at least one predicted coronary artery bypass graft SSI in 2021.
5. Facility-specific key percentiles were only calculated if at least 20 facilities had ≥ 1.0 predicted coronary artery bypass graft SSI. If 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 2021
s (SSI) following coronary artery bypass graft¹ in adults, ≥ 18years

95% CI for SIR			Facility-specific SIRs			10%	25%
SIR	Lower	Upper					
1.821	0.888	3.342	3	.	.	.	.
.
1.250	0.764	1.938	8	.	.	.	.
0.999	0.487	1.832	2	.	.	.	.
0.807	0.653	0.987	31	3%	0%	0.000	0.000
0.701	0.257	1.555	3	.	.	.	.
.
.
0.619	0.325	1.075	5	.	.	.	.
0.616	0.365	0.980	9	.	.	.	.
.
.
0.731	0.525	0.993	16	6%	0%	.	.
1.010	0.575	1.654	5	.	.	.	.
.
.
0.614	0.269	1.215	4	.	.	.	.
.
0.676	0.376	1.127	9	.	.	.	.
1.01	0.698	1.416	9	.	.	.	.
0.712	0.311	1.408	5	.	.	.	.
1.137	0.616	1.933	4	.	.	.	.
0.439	0.178	0.912	4	.	.	.	.
0.825	0.574	1.150	16	0%	0%	.	.
1.543	0.625	3.21	1	.	.	.	.
.
0.299	0.076	0.815	5	.	.	.	.
.
0.883	0.607	1.245	13	0%	0%	.	.
.
0.94	0.749	1.165	27	7%	4%	0.000	0.292
0.293	0.107	0.650	4	.	.	.	.
.
0.552	0.299	0.938	7	.	.	.	.
0.000	.	0.728	2	.	.	.	.
0.955	0.531	1.592	7	.	.	.	.
0.926	0.716	1.179	24	8%	0%	0.000	0.165

.
0.941	0.628	1.360	10	10%	0%	.	.	.
0.845	0.619	1.128	15	20%	7%	.	.	.
0.698	0.528	0.906	26	4%	0%	0.000	0.000	.
.
1.093	0.677	1.675	6	.	.	.	.	.
0.434	0.190	0.858	6	.	.	.	.	.
1.477	1.021	2.071	6	.	.	.	.	.
.
0.816	0.76	0.877	316	6%	2%	0.000	0.000	.

defined inpatient coronary artery bypass graft procedures that occurred in 2021 with a primary or other than primary facility.

of coronary artery bypass graft surgery to NHSN at the beginning of 2021. M indicates midyear implementation of a mandate.

Table.

for information about exclusion criteria. SIRs and accompanying

coronary artery bypass graft in 2021.

significantly greater or less than the nominal value of the 2021 national coronary artery bypass graft SIR of 0.816

coronary artery bypass graft SSI in 2021. If a facility's predicted number of coronary artery bypass graft SSI was <1

	75%	90%
.	.	.
.	.	.
.	.	.
0.576	1.369	1.695
.	.	.
.	.	.
.	.	.
.	.	.
.	.	.
.	.	.
.	.	.
.	.	.
.	.	.
.	.	.
.	.	.
.	.	.
.	.	.
.	.	.
.	.	.
.	.	.
.	.	.
.	.	.
0.636	1.514	1.995
.	.	.
.	.	.
.	.	.
.	.	.
.	.	.
.	.	.
.	.	.
.	.	.
.	.	.
0.812	1.251	1.879

Table 6. State-specific standard

NHSI

6h. Surgical site infect

State		No. of		No. of Infections	
		Procedures		Observed	Predicted
Alabama	No	0	.	.	.
Alaska	No	1	.	.	.
Arizona		7	582	3	2.328
Arkansas		5	583	2	2.574
California		161	13,110	43	53.858
Colorado	No	4	.	.	.
Connecticut	No	0	.	.	.
D.C.	No	1	.	.	.
Delaware		1	.	.	.
Florida	No	5	405	0	1.845
Georgia		4	.	.	.
Guam		0	.	.	.
Hawaii	No	0	.	.	.
Idaho	No	1	.	.	.
Illinois	No	6	421	0	1.972
Indiana	No	3	.	.	.
Iowa	No	2	.	.	.
Kansas		3	.	.	.
Kentucky		4	.	.	.
Louisiana		6	670	1	2.653
Maine	No	1	.	.	.
Maryland	No	1	.	.	.
Massachusetts	No	3	.	.	.
Michigan	No	3	.	.	.
Minnesota	No	5	1,401	9	6.055
Mississippi	No	2	.	.	.
Missouri	No	9	783	3	3.682
Montana	No	4	.	.	.
Nebraska	No	1	.	.	.
Nevada		2	.	.	.
New Hampshire		0	.	.	.
New Jersey	No	5	821	1	3.133
New Mexico		0	.	.	.
New York		7	1,482	4	6.515
North Carolina		1	.	.	.
North Dakota	No	0	.	.	.
Ohio	No	13	1,048	1	4.872
Oklahoma		2	.	.	.
Oregon	No	4	.	.	.
Pennsylvania		61	7,127	37	30.815

Puerto Rico		0	.	.	.
Rhode Island	No	1	.	.	.
South Carolina	No	4	.	.	.
South Dakota	No	1	.	.	.
Tennessee	No	3	.	.	.
Texas		18	1,774	4	6.594
Utah	No	0	.	.	.
Vermont		0	.	.	.
Virgin Islands		0	.	.	.
Virginia	No	7	681	1	2.866
Washington	No	11	1,663	4	6.243
West Virginia	No	1	.	.	.
Wisconsin	No	8	1,291	5	6.147
Wyoming		0	.	.	.
All US		392	42,699	145	181.397

1. SSIs included are those classified as deep incisional or organ/space infections following NHSN-detected during the same admission as the surgical procedure or upon readmission to the same facility.
2. Yes indicates the presence of a state mandate to report SSIs following other cardiac surgery. No indicates that a state mandate did not exist during 2021. A blank field indicates data not available.
3. The number of reporting facilities included in the SIR calculation. Refer to the Technical Appendix for details. Statistics are only calculated for states in which at least 5 facilities reported SSI data following other cardiac surgery.
4. Percent of facilities with at least one predicted other cardiac surgery SSI that had an SIR significant at the 5% level. At least 10 facilities had at least one predicted other cardiac surgery SSI in 2021.
5. Facility-specific key percentiles were only calculated if at least 20 facilities had ≥ 1.0 predicted other cardiac surgery SSI. If the SIR was neither calculated nor included in the distribution of facility-specific SIRs.

ized infection ratios (SIRs) and facility-specific SIR summary measures,
 N Acute Care Hospitals reporting during 2021

itions (SSI) following other cardiac surgery¹ in adults, ≥ 18years

SIR	95% CI for SIR		Facility-specific SIRs			10%	25%
	Lower	Upper					
.
1.289	0.328	3.507	1	.	.	.	.
0.777	0.130	2.567	1	.	.	.	.
0.798	0.585	1.066	16	13%	0%	.	.
.
.
0.000	.	1.624	1	.	.	.	.
.
.
0.000	.	1.519	0	.	.	.	.
.
.
0.377	0.019	1.859	1	.	.	.	.
.
.
1.486	0.725	2.728	2	.	.	.	.
0.815	0.207	2.217	1	.	.	.	.
.
.
0.319	0.016	1.574	2	.	.	.	.
0.614	0.195	1.481	2	.	.	.	.
.
0.205	0.010	1.012	0	.	.	.	.
.
1.201	0.858	1.638	12	17%	0%	.	.

.
.
.
.
0.607	0.193	1.463	2	.	.	.	.	.
.
.
0.349	0.017	1.721	1	.	.	.	.	.
0.641	0.204	1.545	2	.	.	.	.	.
.
0.813	0.298	1.803	3	.	.	.	.	.
.
0.799	0.677	0.938	60	8%	0%	0.000	0.000	

defined inpatient other cardiac surgery procedures that occurred in 2021 with a primary or other than primary skin incision.

-HSN at the beginning of 2021. M indicates midyear implementation of a mandate.

Note.

For information about exclusion criteria, SIRs and accompanying

for cardiac surgery in 2021.

It is either greater or less than the nominal value of the 2021 national other cardiac surgery SIR of 0.799. This is only

for cardiac surgery SSI in 2021. If a facility's predicted number of other cardiac surgery SSI was <1.0, a facility's

Table 6. State-specific standardi

NHSN

6i. Surgical site infections (SSI)

State		No. of Procedures	No. of Infections		
			Observed	Predicted	
Alabama	No	0	.	.	
Alaska	No	0	.	.	
Arizona		0	.	.	
Arkansas		3	.	.	
California		35	577	12	13.123
Colorado	No	3	.	.	
Connecticut	No	0	.	.	
D.C.	No	0	.	.	
Delaware		0	.	.	
Florida	No	6	219	2	4.398
Georgia		1	.	.	
Guam		0	.	.	
Hawaii	No	0	.	.	
Idaho	No	0	.	.	
Illinois	No	3	.	.	
Indiana	No	4	.	.	
Iowa	No	1	.	.	
Kansas		0	.	.	
Kentucky		1	.	.	
Louisiana		4	.	.	
Maine	No	2	.	.	
Maryland	No	1	.	.	
Massachusetts	No	2	.	.	
Michigan	No	3	.	.	
Minnesota	No	4	.	.	
Mississippi	No	1	.	.	
Missouri	No	5	571	13	12.178
Montana	No	1	.	.	
Nebraska	No	0	.	.	
Nevada		1	.	.	
New Hampshire		0	.	.	
New Jersey	No	0	.	.	
New Mexico		0	.	.	
New York		11	480	28	9.984
North Carolina		2	.	.	
North Dakota	No	0	.	.	
Ohio	No	13	424	7	7.705
Oklahoma		0	.	.	
Oregon	No	6	365	8	7.737
Pennsylvania		41	1477	54	33.325

Puerto Rico		0	.	.	.
Rhode Island	No	0	.	.	.
South Carolina	No	2	.	.	.
South Dakota	No	1	.	.	.
Tennessee	No	1	.	.	.
Texas		72	2,620	32	49.240
Utah	No	0	.	.	.
Vermont		0	.	.	.
Virgin Islands		0	.	.	.
Virginia	No	9	403	5	8.353
Washington	No	3	.	.	.
West Virginia	No	1	.	.	.
Wisconsin	No	4	.	.	.
Wyoming		0	.	.	.
All US		247	9,447	205	193.776

1. SSIs included are those classified as deep incisional or organ/space infections following NHSN-detected during the same admission as the surgical procedure or upon readmission to the same facility.
2. Yes indicates the presence of a state mandate to report SSIs following peripheral vascular bypass surgery. No indicates that a state mandate did not exist during 2021. A blank field indicates data not available.
3. The number of reporting facilities included in the SIR calculation. Refer to the Technical Appendix for more details. Statistics are only calculated for states in which at least 5 facilities reported SSI data following peripheral vascular bypass surgery.
4. Percent of facilities with at least one predicted peripheral vascular bypass surgery SSI that had an SIR of 1.0 or greater. At least 10 facilities had at least one predicted peripheral vascular bypass surgery SSI in 2021.
5. Facility-specific key percentiles were only calculated if at least 20 facilities had ≥ 1.0 predicted peripheral vascular bypass surgery SIR. Facility-specific SIR was neither calculated nor included in the distribution of facility-specific SIRs.

zed infection ratios (SIRs) and facility-specific SIR summary measures,
 ↓ Acute Care Hospitals reporting during 2021

3l) following peripheral vascular bypass surgery¹ in adults, ≥ 18years

95% CI for SIR			Facility-specific SIRs		
SIR	Lower	Upper		10%	25%
.
.
.
0.914	0.495	1.555	4	.	.
.
.
0.455	0.076	1.502	1	.	.
.
.
.
.
.
.
.
.
.
.
1.067	0.594	1.780	4	.	.
.
.
.
.
2.805	1.9	3.999	6	.	.
.
0.909	0.397	1.797	2	.	.
.
1.034	0.48	1.964	3	.	.
1.620	1.229	2.098	15	7%	0%

.
.
.
.
0.650	0.452	0.906	17	0%	0%	.	.
.
.
0.599	0.219	1.327	4	.	.	.	.
.
.
.
1.058	0.92	1.21	70	4%	4%	0.000	0.000

defined inpatient peripheral vascular bypass surgery procedures that occurred in 2021 with a primary or other diagnosis at the facility.

peripheral vascular bypass surgery to NHSN at the beginning of 2021. M indicates midyear implementation of a mandate.

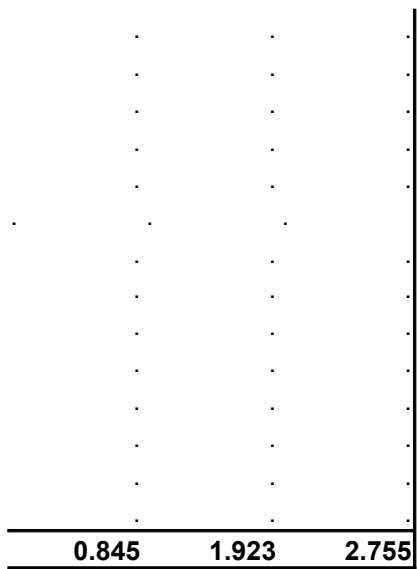
Note:

For information about exclusion criteria, SIRs and accompanying

peripheral vascular bypass surgery in 2021.

SIR significantly greater or less than the nominal value of the 2021 national peripheral vascular bypass surgery

peripheral vascular bypass surgery SSI in 2021. If a facility's predicted number of peripheral vascular bypass surgery



han primary skin closure technique,

ry SIR of 1.058. This is only calculated if

ery SSI was <1.0, a facility-specific

Table 6. State-specific standardi

NHSI

6j. Surgical site infections (S

State		No. of Procedures		No. of Infections	
		Observed	Predicted		
Alabama	No	0	.	.	.
Alaska	No	0	.	.	.
Arizona		0	.	.	.
Arkansas		1	.	.	.
California		76	288	0	1.958
Colorado	No	1	.	.	.
Connecticut	No	0	.	.	.
D.C.	No	0	.	.	.
Delaware		0	.	.	.
Florida	No	2	.	.	.
Georgia		0	.	.	.
Guam		0	.	.	.
Hawaii	No	0	.	.	.
Idaho	No	0	.	.	.
Illinois	No	0	.	.	.
Indiana	No	2	.	.	.
Iowa	No	0	.	.	.
Kansas		0	.	.	.
Kentucky		0	.	.	.
Louisiana		2	.	.	.
Maine	No	0	.	.	.
Maryland	No	0	.	.	.
Massachusetts	No	2	.	.	.
Michigan	No	0	.	.	.
Minnesota	No	2	.	.	.
Mississippi	No	0	.	.	.
Missouri	No	0	.	.	.
Montana	No	1	.	.	.
Nebraska	No	0	.	.	.
Nevada		0	.	.	.
New Hampshire		0	.	.	.
New Jersey	No	0	.	.	.
New Mexico		0	.	.	.
New York		2	.	.	.
North Carolina		1	.	.	.
North Dakota	No	0	.	.	.
Ohio	No	9	23	0	0.156
Oklahoma		0	.	.	.
Oregon	No	1	.	.	.
Pennsylvania		18	73	0	0.496

Puerto Rico		0	.	.	.
Rhode Island	No	0	.	.	.
South Carolina	No	1	.	.	.
South Dakota	No	1	.	.	.
Tennessee	No	0	.	.	.
Texas		37	183	1	1.244
Utah	No	0	.	.	.
Vermont		0	.	.	.
Virgin Islands		0	.	.	.
Virginia	No	3	.	.	.
Washington	No	1	.	.	.
West Virginia	No	0	.	.	.
Wisconsin	No	2	.	.	.
Wyoming		0	.	.	.
All US		165	640	2	4.352

1. SSIs included are those classified as deep incisional or organ/space infections following NHSN-detected during the same admission as the surgical procedure or upon readmission to the same facility.
2. Yes indicates the presence of a state mandate to report SSIs following abdominal aortic aneurysm repair. No indicates that a state mandate did not exist during 2021. A blank field indicates data not available.
3. The number of reporting facilities included in the SIR calculation. Refer to the Technical Appendix for details. Statistics are only calculated for states in which at least 5 facilities reported SSI data following abdominal aortic aneurysm repair.
4. Percent of facilities with at least one predicted abdominal aortic aneurysm repair SSI that had an SIR of at least 1.0. At least 10 facilities had at least one predicted abdominal aortic aneurysm repair SSI in 2021.
5. Facility-specific key percentiles were only calculated if at least 20 facilities had ≥ 1.0 predicted abdominal aortic aneurysm repair SIR. Facility-specific SIR was neither calculated nor included in the distribution of facility-specific SIRs.

.	.	.
.	.	.
.	.	.
.	.	.
.	.	.
.	.	.
.	.	.
.	.	.
.	.	.
.	.	.
.	.	.
.	.	.
.	.	.
.	.	.
.	.	.
.	.	.

n primary skin closure technique,

3IR of 0.460. This is only calculated if

SSI was <1.0, a facility-specific

Table 6. State-specific standardi

NHSI

6k. Surgical site infectio

State		No. of Procedures		No. of Infections	
				Observed	Predicted
Alabama	No	3	.	.	.
Alaska	No	0	.	.	.
Arizona		2	.	.	.
Arkansas		2	.	.	.
California		218	113,546	171	219.060
Colorado	No	19	7,148	25	12.818
Connecticut	No	2	.	.	.
D.C.	No	1	.	.	.
Delaware		2	.	.	.
Florida	No	10	7,880	9	17.038
Georgia		11	6,986	34	13.288
Guam		0	.	.	.
Hawaii	No	1	.	.	.
Idaho	No	4	.	.	.
Illinois	No	20	4,514	10	8.621
Indiana	No	15	4,393	3	7.152
Iowa	No	3	.	.	.
Kansas		2	.	.	.
Kentucky		3	.	.	.
Louisiana		8	3,131	4	5.193
Maine	No	3	.	.	.
Maryland	No	2	.	.	.
Massachusetts	No	3	.	.	.
Michigan	No	8	6,569	12	15.909
Minnesota	No	8	3,374	13	5.638
Mississippi	No	7	1,751	2	2.426
Missouri	No	13	8,224	23	17.250
Montana	No	5	1,035	3	1.644
Nebraska	No	3	.	.	.
Nevada		9	5,995	7	8.643
New Hampshire		1	.	.	.
New Jersey	No	4	.	.	.
New Mexico		7	2,032	10	3.527
New York		8	3,286	6	4.095
North Carolina		6	2,716	6	8.525
North Dakota	No	1	.	.	.
Ohio	No	31	14,633	34	24.226
Oklahoma		10	3,921	5	4.374
Oregon	No	4	.	.	.
Pennsylvania		40	22,607	42	56.382

Puerto Rico		1	.	.	.
Rhode Island	No	2	.	.	.
South Carolina	No	8	4637	17	8.994
South Dakota	No	5	1691	5	2.985
Tennessee	No	7	4,265	13	9.949
Texas		42	29,126	77	62.899
Utah	No	1	.	.	.
Vermont		0	.	.	.
Virgin Islands		0	.	.	.
Virginia	No	10	4064	14	7.529
Washington	No	19	10,162	9	14.446
West Virginia	No	3	.	.	.
Wisconsin	No	18	6,196	16	13.417
Wyoming		0	.	.	.
All US		615	312,678	658	614.800

1. SSIs included are those classified as deep incisional or organ/space infections following NHSN-detected during the same admission as the surgical procedure or upon readmission to the same facility.
2. Yes indicates the presence of a state mandate to report SSIs following cesarean section surgery. No indicates that a state mandate did not exist during 2021. A blank field indicates data not available.
3. The number of reporting facilities included in the SIR calculation. Refer to the Technical Appendix for details. Statistics are only calculated for states in which at least 5 facilities reported SSI data following cesarean section surgery.
4. Percent of facilities with at least one predicted cesarean section surgery SSI that had an SIR significantly greater than 1.0. At least 10 facilities had at least one predicted cesarean section surgery SSI in 2021.
5. Facility-specific key percentiles were only calculated if at least 20 facilities had ≥ 1.0 predicted cesarean section surgery SIRs. If not, SIR was neither calculated nor included in the distribution of facility-specific SIRs.

ized infection ratios (SIRs) and facility-specific SIR summary measures,
 N Acute Care Hospitals reporting during 2021
 ns (SSI) following cesarean section surgery¹ in adults, ≥ 18years

95% CI for SIR			Facility-specific SIRs			10%	25%
SIR	Lower	Upper					
.
.
.
0.781	0.670	0.904	76	4%	4%	0.000	0.000
1.950	1.290	2.837	3	.	.	.	.
.
.
0.528	0.258	0.969	4	.	.	.	.
2.559	1.8	3.535	5	.	.	.	.
.
.
1.16	0.589	2.067	2	.	.	.	.
0.419	0.107	1.142	1	.	.	.	.
.
.
0.770	0.245	1.858	2	.	.	.	.
.
.
0.754	0.409	1.282	4	.	.	.	.
2.306	1.282	3.844	2	.	.	.	.
0.824	0.138	2.723	1	.	.	.	.
1.333	0.866	1.969	5	.	.	.	.
1.825	0.464	4.968	0	.	.	.	.
.
0.81	0.354	1.602	3	.	.	.	.
.
.
2.835	1.44	5.053	1	.	.	.	.
1.465	0.594	3.048	2	.	.	.	.
0.704	0.285	1.464	2	.	.	.	.
.
1.403	0.988	1.939	6	.	.	.	.
1.143	0.419	2.534	2	.	.	.	.
.
0.745	0.544	0.997	14	0%	21%	.	.

.
.
1.89	1.138	2.965	3	.	.	.	.	.
1.675	0.614	3.713	1	.	.	.	.	.
1.307	0.727	2.178	2	.	.	.	.	.
1.224	0.973	1.522	17	6%	12%	.	.	.
.
.
1.86	1.058	3.046	2	.	.	.	.	.
0.623	0.304	1.143	3	.	.	.	.	.
.
1.193	0.706	1.895	3	.	.	.	.	.
.
1.070	0.991	1.154	184	8%	5%	0.000	0.250	

defined inpatient cesarean section surgery procedures that occurred in 2021 with a primary or other than primary facility.

to NHSN at the beginning of 2021. M indicates midyear implementation of a mandate.

le.

for information about exclusion criteria. SIRs and accompanying

cesarean section surgery in 2021.

significantly greater or less than the nominal value of the 2021 national cesarean section surgery SIR of 1.070. TI

cesarean section surgery SSI in 2021. If a facility's predicted number of cesarean section surgery SSI was <1.0, ε

Table 6. State-specific standard

NHSI

6I. Surgical site infect

State		No. of Procedures		No. of Infections	
		Observed	Predicted	Observed	Predicted
Alabama	No	6	2,739	49	15.820
Alaska	No	1	.	.	.
Arizona		5	2,357	22	21.848
Arkansas		8	2,116	14	13.864
California		213	39,917	281	322.842
Colorado	No	29	8,100	51	53.360
Connecticut	No	8	2,382	10	12.218
D.C.	No	2	.	.	.
Delaware		1	.	.	.
Florida	No	18	4,839	25	38.746
Georgia		18	5,869	58	44.689
Guam		1	.	.	.
Hawaii	No	1	.	.	.
Idaho	No	8	1,979	12	10.560
Illinois	No	9	2,026	12	16.408
Indiana	No	20	6,814	35	42.256
Iowa	No	5	1,914	12	18.926
Kansas		4	.	.	.
Kentucky		6	2,640	23	17.477
Louisiana		10	1,974	19	14.489
Maine	No	3	.	.	.
Maryland	No	7	2,734	28	22.491
Massachusetts	No	6	2,158	14	13.171
Michigan	No	11	4,230	33	30.511
Minnesota	No	16	6,435	84	69.632
Mississippi	No	12	2,207	25	18.965
Missouri	No	29	8,250	73	76.855
Montana	No	7	1,704	7	9.866
Nebraska	No	2	.	.	.
Nevada		16	4,422	37	27.597
New Hampshire		2	.	.	.
New Jersey	No	8	1,615	6	12.739
New Mexico		0	.	.	.
New York		111	24,332	237	197.424
North Carolina		14	4,940	58	44.458
North Dakota	No	1	.	.	.
Ohio	No	34	9,096	86	65.980
Oklahoma		7	2,233	18	18.834
Oregon	No	12	2,514	24	22.633
Pennsylvania		56	13,947	121	123.478

Puerto Rico		0	.	.	.
Rhode Island	No	1	.	.	.
South Carolina	No	6	1,713	11	15.155
South Dakota	No	1	.	.	.
Tennessee	No	14	5,984	82	67.606
Texas		82	15,201	107	113.034
Utah	No	4	.	.	.
Vermont		1	.	.	.
Virgin Islands		0	.	.	.
Virginia	No	17	4,480	40	33.099
Washington	No	23	5,577	41	36.597
West Virginia	No	0	.	.	.
Wisconsin	No	14	2,770	20	20.033
Wyoming		1	.	.	.
All US		891	221,664	1,889	1,763.799

1. SSIs included are those classified as deep incisional or organ/space infections following NHSN-detected during the same admission as the surgical procedure or upon readmission to the same facility.
2. Yes indicates the presence of a state mandate to report SSIs following fusion surgery to NHSN at the time of surgery. No indicates that a state mandate did not exist during 2021. A blank field indicates data not available.
3. The number of reporting facilities included in the SIR calculation. Refer to the Technical Appendix for more details. Statistics are only calculated for states in which at least 5 facilities reported SSI data following spine surgery.
4. Percent of facilities with at least one predicted fusion surgery SSI that had an SIR significantly greater than 1.0. At least 10 facilities had at least one predicted fusion surgery SSI in 2021.
5. Facility-specific key percentiles were only calculated if at least 20 facilities had ≥ 1.0 predicted fusion surgery SSI. If a facility's 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 2021

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

95% CI for SIR			Facility-specific SIRs			10%	25%
SIR	Lower	Upper					
3.097	2.317	4.061	4	.	.	.	.
.
1.007	0.647	1.500	3	.	.	.	.
1.010	0.575	1.654	5	.	.	.	.
0.870	0.773	0.977	93	3%	6%	0.000	0.000
0.956	0.719	1.247	15	0%	7%	.	.
0.818	0.416	1.459	5	.	.	.	.
.
.
0.645	0.427	0.938	8	.	.	.	.
1.298	0.995	1.666	11	9%	0%	.	.
.
.
1.136	0.616	1.932	5	.	.	.	.
0.731	0.396	1.243	2	.	.	.	.
0.828	0.586	1.139	11	0%	9%	.	.
0.634	0.344	1.078	2	.	.	.	.
.
1.316	0.854	1.943	2	.	.	.	.
1.311	0.813	2.010	6	.	.	.	.
.
1.245	0.844	1.775	5	.	.	.	.
1.063	0.605	1.741	4	.	.	.	.
1.082	0.757	1.501	7	.	.	.	.
1.206	0.968	1.486	10	20%	10%	.	.
1.318	0.872	1.917	5	.	.	.	.
0.950	0.750	1.187	16	0%	19%	.	.
0.709	0.310	1.403	3	.	.	.	.
.
1.341	0.958	1.829	11	9%	0%	.	.
.
0.471	0.191	0.980	5	.	.	.	.
.
1.200	1.055	1.361	48	8%	6%	0.000	0.570
1.305	1.000	1.675	8	.	.	.	.
.
1.303	1.049	1.602	18	11%	0%	.	.
0.956	0.584	1.481	4	.	.	.	.
1.060	0.695	1.554	7	.	.	.	.
0.980	0.817	1.167	28	4%	14%	0.000	0.361

.
0.726	0.382	1.262	3	.	.	.	.	.
1.213	0.971	1.498	9	.	.	.	.	.
0.947	0.780	1.139	30	10%	10%	0.000	0.000	.
.
1.208	0.875	1.629	8	.	.	.	.	.
1.120	0.815	1.505	13	8%	0%	.	.	.
0.998	0.627	1.515	5	.	.	.	.	.
.
1.071	1.024	1.120	433	8%	7%	0.000	0.405	.

defined inpatient fusion surgery procedures that occurred in 2021 with a primary or other than primary skin closure facility.

the beginning of 2021. M indicates midyear implementation of a mandate.

le.

for information about exclusion criteria. SIRs and accompanying national fusion surgery in 2021.

greater or less than the nominal value of the 2021 national fusion surgery SIR of 1.071. This is only calculated if

inpatient fusion surgery SSI in 2021. If a facility's predicted number of fusion surgery SSI was <1.0, a facility-specific

	75%	90%
.	.	.
.	.	.
.	.	.
0.656	1.145	1.590
.	.	.
.	.	.
.	.	.
.	.	.
.	.	.
.	.	.
.	.	.
.	.	.
.	.	.
.	.	.
.	.	.
.	.	.
.	.	.
.	.	.
.	.	.
.	.	.
.	.	.
1.1745	1.537	2.282
.	.	.
.	.	.
.	.	.
.	.	.
.	.	.
.	.	.
.	.	.
.	.	.
0.701	1.457	2.683

.	.	.
.	.	.
.	.	.
.	.	.
0.722	1.214	2.766
.	.	.
.	.	.
.	.	.
.	.	.
.	.	.
.	.	.
.	.	.
.	.	.
0.888	1.471	2.282

re technique,

Table 6. State-specific standardi

NHSN

6m. Surgical site infect

State		No. of		No. of Infections	
			Procedures	Observed	Predicted
Alabama	No	5	1,348	5	4.689
Alaska	No	1	.	.	.
Arizona		3	.	.	.
Arkansas		4	.	.	.
California		221	32,725	92	117.781
Colorado	No	19	3,691	9	12.981
Connecticut	No	8	1,951	4	6.102
D.C.	No	1	.	.	.
Delaware		0	.	.	.
Florida	No	11	2,796	2	10.788
Georgia		16	3,957	13	16.326
Guam		0	.	.	.
Hawaii	No	0	.	.	.
Idaho	No	2	.	.	.
Illinois	No	6	1,336	6	5.441
Indiana	No	12	2,894	4	11.592
Iowa	No	5	1,752	2	7.636
Kansas		3	.	.	.
Kentucky		2	.	.	.
Louisiana		7	1,060	6	4.469
Maine	No	3	.	.	.
Maryland	No	5	639	3	2.195
Massachusetts	No	5	1,179	2	4.179
Michigan	No	9	2,271	6	8.518
Minnesota	No	13	5,871	21	22.872
Mississippi	No	12	1,534	6	6.665
Missouri	No	17	3,965	6	16.336
Montana	No	6	1,084	2	3.374
Nebraska	No	2	.	.	.
Nevada		17	4,119	9	14.961
New Hampshire		2	.	.	.
New Jersey	No	10	1,216	3	4.786
New Mexico		0	.	.	.
New York		30	6,698	11	24.028
North Carolina		4	.	.	.
North Dakota	No	0	.	.	.
Ohio	No	24	4,757	18	18.700
Oklahoma		1	.	.	.
Oregon	No	21	4,212	22	16.114
Pennsylvania		56	12,301	37	49.333

Puerto Rico		0	.	.	.
Rhode Island	No	1	.	.	.
South Carolina	No	4	.	.	.
South Dakota	No	1	.	.	.
Tennessee	No	7	1,696	9	8.454
Texas		54	6,826	22	25.816
Utah	No	0	.	.	.
Vermont		0	.	.	.
Virgin Islands		0	.	.	.
Virginia	No	18	3,219	13	12.522
Washington	No	13	3,054	8	10.025
West Virginia	No	0	.	.	.
Wisconsin	No	12	2,770	6	10.395
Wyoming		0	.	.	.
All US		673	130,112	373	493.146

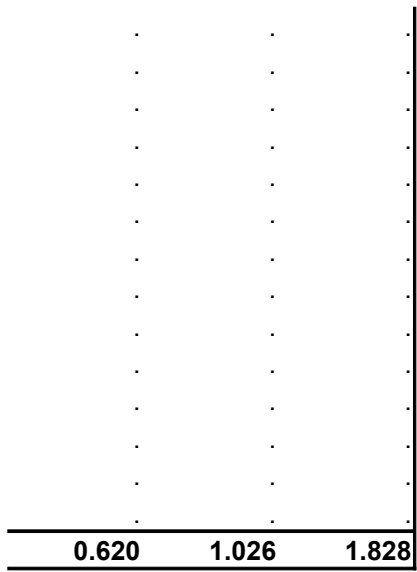
1. SSIs included are those classified as deep incisional or organ/space infections following NHSN-detected during the same admission as the surgical procedure or upon readmission to the same facility.
2. Yes indicates the presence of a state mandate to report SSIs following laminectomy surgery to NHSN. No indicates that a state mandate did not exist during 2021. A blank field indicates data not available.
3. The number of reporting facilities included in the SIR calculation. Refer to the Technical Appendix for details. Statistics are only calculated for states in which at least 5 facilities reported SSI data following laminectomy surgery.
4. Percent of facilities with at least one predicted laminectomy surgery SSI that had an SIR significantly greater than 1.0. At least 10 facilities had at least one predicted laminectomy surgery SSI in 2021.
5. Facility-specific key percentiles were only calculated if at least 20 facilities had ≥ 1.0 predicted laminectomy surgery SIR. If SIR was neither calculated nor included in the distribution of facility-specific SIRs.

Standardized infection ratios (SIRs) and facility-specific SIR summary measures,
 ↓ Acute Care Hospitals reporting during 2021
 Infections (SSI) following laminectomy surgery¹ in adults, ≥ 18years

95% CI for SIR			Facility-specific SIRs			10%	25%
SIR	Lower	Upper					
1.066	0.391	2.364	1	.	.	.	.
.
.
0.781	0.633	0.954	33	3%	0%	0.000	0.000
0.693	0.338	1.272	4	.	.	.	.
0.656	0.208	1.581	3	.	.	.	.
.
.
0.185	0.031	0.613	4	.	.	.	.
0.796	0.443	1.327	6	.	.	.	.
.
.
1.103	0.447	2.294	1	.	.	.	.
0.345	0.110	0.832	5	.	.	.	.
0.262	0.044	0.865	2	.	.	.	.
.
.
1.343	0.544	2.793	2	.	.	.	.
.
1.367	0.348	3.720	0	.	.	.	.
0.479	0.080	1.581	1	.	.	.	.
0.704	0.286	1.465	4	.	.	.	.
0.918	0.584	1.380	4	.	.	.	.
0.900	0.365	1.872	3	.	.	.	.
0.367	0.149	0.764	8	.	.	.	.
0.593	0.099	1.958	1	.	.	.	.
.
0.602	0.293	1.104	6	.	.	.	.
.
0.627	0.159	1.706	1	.	.	.	.
.
0.458	0.241	0.796	9	.	.	.	.
.
.
0.963	0.588	1.492	7	.	.	.	.
.
1.365	0.877	2.033	6	.	.	.	.
0.750	0.536	1.023	17	6%	0%	.	.

.
.
.
.
1.065	0.519	1.954	3	.	.	.	.
0.852	0.548	1.269	7	.	.	.	.
.
.
.
1.038	0.577	1.731	5	.	.	.	.
0.798	0.371	1.515	2	.	.	.	.
.
0.577	0.234	1.201	4	.	.	.	.
.
0.756	0.682	0.836	159	2%	1%	0.000	0.000

fined inpatient laminectomy surgery procedures that occurred in 2021 with a primary or other than primary sk
 facility.
 ISON at the beginning of 2021. M indicates midyear implementation of a mandate.
 ple.
 for information about exclusion criteria. SIRs and accompanying
 nectomy surgery in 2021.
 tly greater or less than the nominal value of the 2021 national laminectomy surgery SIR of 0.756. This is only
 ractomy surgery SSI in 2021. If a facility's predicted number of laminectomy surgery SSI was <1.0, a facility-s



in closure technique,

r calculated if

specific

Table 6. State-specific standardi

NHSN

6o. Surgical site infec

State		No. of Procedures		No. of Infections	
		Observed	Predicted	Observed	Predicted
Alabama	No	1	.	.	.
Alaska	No	0	.	.	.
Arizona		2	.	.	.
Arkansas		2	.	.	.
California		302	48,483	169	192.339
Colorado	No	8	564	2	2.182
Connecticut	No	0	.	.	.
D.C.	No	0	.	.	.
Delaware		1	.	.	.
Florida	No	9	1,144	4	3.740
Georgia		4	.	.	.
Guam		0	.	.	.
Hawaii	No	0	.	.	.
Idaho	No	1	.	.	.
Illinois	No	3	.	.	.
Indiana	No	9	190	2	0.600
Iowa	No	0	.	.	.
Kansas		0	.	.	.
Kentucky		1	.	.	.
Louisiana		7	429	0	1.727
Maine	No	0	.	.	.
Maryland	No	0	.	.	.
Massachusetts	No	2	.	.	.
Michigan	No	3	.	.	.
Minnesota	No	7	479	3	2.246
Mississippi	No	0	.	.	.
Missouri	No	3	.	.	.
Montana	No	2	.	.	.
Nebraska	No	1	.	.	.
Nevada		4	.	.	.
New Hampshire		0	.	.	.
New Jersey	No	1	.	.	.
New Mexico		2	.	.	.
New York		1	.	.	.
North Carolina		1	.	.	.
North Dakota	No	0	.	.	.
Ohio	No	17	1862	11	7.369
Oklahoma		2	.	.	.
Oregon	No	4	.	.	.
Pennsylvania		62	7,226	59	40.172

Puerto Rico		0	.	.	.
Rhode Island	No	0	.	.	.
South Carolina	No	4	.	.	.
South Dakota	No	2	.	.	.
Tennessee	No	0	.	.	.
Texas		13	1933	10	7.699
Utah	No	0	.	.	.
Vermont		0	.	.	.
Virgin Islands		0	.	.	.
Virginia	No	10	1127	13	4.958
Washington	No	5	862	1	3.072
West Virginia	No	2	.	.	.
Wisconsin	No	4	.	.	.
Wyoming		0	.	.	.
All US		502	70,000	301	290.764

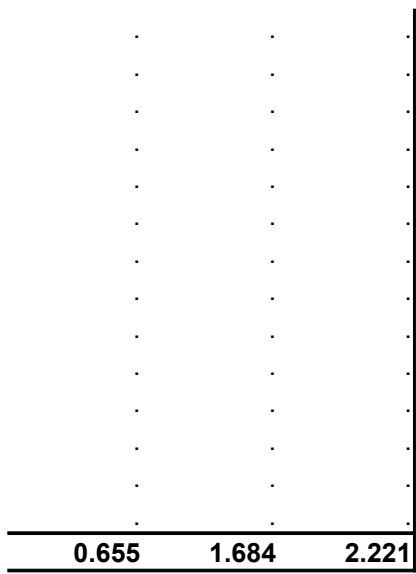
1. SSIs included are those classified as deep incisional or organ/space infections following NHSN-detected during the same admission as the surgical procedure or upon readmission to the same facility.
2. Yes indicates the presence of a state mandate to report SSIs following gallbladder surgery to NHSN. No indicates that a state mandate did not exist during 2021. A blank field indicates data not available.
3. The number of reporting facilities included in the SIR calculation. Refer to the Technical gallbladder statistics are only calculated for states in which at least 5 facilities reported SSI data following gallbladder surgery.
4. Percent of facilities with at least one predicted gallbladder surgery SSI that had an SIR significantly greater than 1.0. At least 10 facilities had at least one predicted gallbladder surgery SSI in 2021.
5. Facility-specific key percentiles were only calculated if at least 20 facilities had ≥ 1.0 predicted gallbladder surgery SIR. Facility-specific SIR was neither calculated nor included in the distribution of facility-specific SIRs.

zed infection ratios (SIRs) and facility-specific SIR summary measures,
 ↓ Acute Care Hospitals reporting during 2021
 tions (SSI) following Gallbladder surgery¹ in adults, ≥ 18years

95% CI for SIR			Facility-specific SIRs			10%	25%
SIR	Lower	Upper					
.
.
.
0.879	0.753	1.019	69	1%	1%	0.000	0.000
0.917	0.154	3.028	1	.	.	.	.
.
.
1.069	0.340	2.580	2	.	.	.	.
.
.
.
.	.	.	0	.	.	.	.
.
0.000	.	1.734	0	.	.	.	.
.
.
1.336	0.34	3.636	1	.	.	.	.
.
.
.
.
.
1.493	0.785	2.594	0	.	.	.	.
.
.
1.469	1.128	1.881	15	7%	0%	.	.

.
.
.
.
1.299	0.660	2.315	3	.	.	.	.
.
.
2.622	1.458	4.371	2	.	.	.	.
0.326	0.016	1.606	1	.	.	.	.
.
.
.
1.035	0.923	1.157	100	4%	1%	0.000	0.000

fined inpatient gallbladder surgery procedures that occurred in 2021 with a primary or other than primary skin
 facility.
 N at the beginning of 2021. M indicates midyear implementation of a mandate.
 le.
 r for information about exclusion criteria. SIRs and accompanying
 ladder surgery in 2021.
 / greater or less than the nominal value of the 2021 national gallbladder surgery SIR of 1.035. This is only calc
 ladder surgery SSI in 2021. If a facility's predicted number of gallbladder surgery SSI was <1.0, a facility-spec



closure technique,

culated if

ific

Table 6. State-specific standard:

NHSN

6n. Surgical site infection

State		No. of Procedures	No. of Infections		
			Observed	Predicted	
Alabama	No	2	.	.	
Alaska	No	0	.	.	
Arizona		3	.	.	
Arkansas		3	.	.	
California		306	43,870	229	261.361
Colorado	No	9	556	6	3.839
Connecticut	No	0	.	.	.
D.C.	No	0	.	.	.
Delaware		1	.	.	.
Florida	No	11	1,982	11	11.965
Georgia		0	.	.	.
Guam		0	.	.	.
Hawaii	No	0	.	.	.
Idaho	No	1	.	.	.
Illinois	No	4	.	.	.
Indiana	No	5	352	8	3.137
Iowa	No	0	.	.	.
Kansas		0	.	.	.
Kentucky		1	.	.	.
Louisiana		6	382	2	1.710
Maine	No	0	.	.	.
Maryland	No	0	.	.	.
Massachusetts	No	2	.	.	.
Michigan	No	1	.	.	.
Minnesota	No	6	990	2	6.445
Mississippi	No	0	.	.	.
Missouri	No	3	.	.	.
Montana	No	2	.	.	.
Nebraska	No	1	.	.	.
Nevada		1	.	.	.
New Hampshire		0	.	.	.
New Jersey	No	0	.	.	.
New Mexico		1	.	.	.
New York		1	.	.	.
North Carolina		1	.	.	.
North Dakota	No	0	.	.	.
Ohio	No	17	2267	23	13.456
Oklahoma		1	.	.	.
Oregon	No	4	.	.	.
Pennsylvania		60	10,052	88	67.407

Puerto Rico		1	.	.	.
Rhode Island	No	0	.	.	.
South Carolina	No	2	.	.	.
South Dakota	No	2	.	.	.
Tennessee	No	0	.	.	.
Texas		9	1150	9	6.296
Utah	No	0	.	.	.
Vermont		0	.	.	.
Virgin Islands		0	.	.	.
Virginia	No	11	1312	10	6.617
Washington	No	5	660	2	3.120
West Virginia	No	2	.	.	.
Wisconsin	No	4	.	.	.
Wyoming		0	.	.	.
All US		489	69,829	421	424.278

1. SSIs included are those classified as deep incisional or organ/space infections following NHSN-detected during the same admission as the surgical procedure or upon readmission to the same facility.
2. Yes indicates the presence of a state mandate to report SSIs following open reduction of fracture surgery. No indicates that a state mandate did not exist during 2021. A blank field indicates data not available.
3. The number of reporting facilities included in the SIR calculation. Refer to the Technical Appendix for details. Statistics are only calculated for states in which at least 5 facilities reported SSI data following open reduction of fracture surgery.
4. Percent of facilities with at least one predicted exploratory laparotomy surgery SSI that had an SIR of at least 1.0. At least 10 facilities had at least one predicted exploratory laparotomy surgery SSI in 2021.
5. Facility-specific key percentiles were only calculated if at least 20 facilities had ≥ 1.0 predicted exploratory laparotomy surgery SSI. If SIR was neither calculated nor included in the distribution of facility-specific SIRs.

zed infection ratios (SIRs) and facility-specific SIR summary measures,
 I Acute Care Hospitals reporting during 2021
 s (SSI) following open reduction of fracture1 in adults, ≥ 18years

SIR	95% CI for SIR		Facility-specific SIRs			10%	25%
	Lower	Upper					
.
.
.
0.876	0.768	0.995	77	6%	4%	0.000	0.000
1.563	0.633	3.250	1	.	.	.	.
.
.
0.919	0.483	1.598	2	.	.	.	.
.
.
2.551	1.185	4.843	1	.	.	.	.
.
.
1.17	0.196	3.865	0	.	.	.	.
.
.
0.31	0.052	1.025	1	.	.	.	.
.
.
.
.
.
1.709	1.11	2.524	5	.	.	.	.
.
.
1.305	1.053	1.601	21	0%	0%	0%	0%

.
.
.
.
1.429	0.697	2.623	2	.	.	.	.	.
.
.
1.511	0.768	2.694	3	.	.	.	.	.
0.641	0.107	2.118	1	.	.	.	.	.
.
.
.
.
0.992	0.901	1.091	126	6%	3%	0.000	0.000	

fined inpatient open reduction of fracture surgery procedures that occurred in 2021 with a primary or other th
 icility.
 surgery to NHSN at the beginning of 2021. M indicates midyear implementation of a mandate.
 ble.
 for information about exclusion criteria. SIRs and accompanying
 1 reduction of fracture surgery in 2021.
 . significantly greater or less than the nominal value of the 2021 national open reduction of fracture surgery SI
 oratory laparotomy surgery SSI in 2021. If a facility's predicted number of open reduction of fracture surgery 5

Table 7. State-specific standardized infection ratios (SIRs) and facility-specific SIR summary measures, NHSN Acute Care Hospitals reporting during 2021

Hospital-onset methicillin-resistant *Staphylococcus aureus* (MRSA) bacteremia, facility-wide¹

State			No. of Events		95% CI for SIR			Facility-specific SIRs								
	Observed	Predicted	SIR	Lower	Upper	No. of hosp with at least 1 predicted HO MRSA bacteremia	10%	25%	75%	90%						
Alabama	No	No	88	337	223.515	1.508	1.353	1.675	37	19%	0%	0.398	0.787	1.156	1.818	2.261
Alaska	Yes	No	8	26	21.197	1.227	0.818	1.772	4	.	.	.	.	.	.	.
Arizona			69	222	235.856	0.941	0.823	1.071	38	8%	5%	0.000	0.582	0.876	1.272	2.214
Arkansas			50	178	113.106	1.574	1.355	1.818	20	15%	0%	0.537	0.739	1.487	1.956	2.804
California			336	895	891.899	1.003	0.939	1.071	208	6%	4%	0.000	0.421	0.825	1.488	2.122
Colorado	Yes	No	56	104	132.419	0.785	0.645	0.948	27	0%	7%	0.000	0.395	0.783	1.080	1.621
Connecticut	Yes	No	29	86	98.238	0.875	0.705	1.076	20	5%	5%	0.000	0.336	0.635	1.086	1.812
D.C.	Yes	No	8	56	58.128	0.963	0.735	1.242	7	.	.	.	.	.	.	.
Delaware			8	37	46.160	0.802	0.573	1.093	8	.	.	.	.	.	.	.
Florida	No	Yes	215	1,031	873.831	1.180	1.109	1.254	162	9%	2%	0.292	0.639	1.092	1.575	2.300
Georgia			109	499	381.030	1.310	1.198	1.428	59	19%	7%	0.362	0.781	1.311	1.750	2.345
Guam			2	.	.	.	.	.	.	.	.	.	.	.	.	.
Hawaii	No	No	17	16	36.381	0.440	0.260	0.699	11	0%	0%	.	.	.	.	.
Idaho	No	No	17	30	29.889	1.004	0.690	1.415	8	.	.	.	.	.	.	.
Illinois	Yes	Yes	132	279	369.528	0.755	0.670	0.848	80	3%	10%	0.000	0.289	0.641	0.997	1.316
Indiana	M	Yes	92	190	212.727	0.893	0.773	1.027	46	7%	7%	0.000	0.413	0.918	1.175	1.722
Iowa	No	Yes	39	82	96.327	0.851	0.681	1.051	15	0%	0%	.	.	.	.	.
Kansas			60	73	77.559	0.941	0.743	1.177	14	0%	0%	.	.	.	.	.
Kentucky			68	294	209.557	1.403	1.249	1.570	34	21%	3%	0.439	0.824	1.261	1.847	3.034
Louisiana			102	332	181.234	1.832	1.643	2.037	37	41%	0%	0.342	0.859	1.794	2.994	3.700
Maine	Yes	No	19	22	39.930	0.551	0.354	0.820	8	.	.	.	.	.	.	.
Maryland	Yes	No	48	193	205.087	0.941	0.815	1.081	35	6%	6%	0.128	0.381	0.673	1.073	1.803
Massachusetts	Yes	No	67	220	259.518	0.848	0.741	0.965	43	2%	7%	0.276	0.534	0.851	1.234	1.997
Michigan	No	Yes	99	413	343.006	1.204	1.092	1.325	57	12%	2%	0.458	0.702	1.165	1.671	2.187
Minnesota	No	No	51	81	133.943	0.605	0.483	0.748	20	0%	25%	0.000	0.281	0.569	0.689	1.338
Mississippi	Yes	Yes	61	180	117.326	1.534	1.322	1.771	20	25%	5%	0.553	1.144	1.637	2.599	3.339
Missouri	No	No	74	267	251.977	1.060	0.938	1.193	43	5%	5%	0.320	0.688	1.042	1.379	1.831
Montana	No	No	13	17	24.939	0.682	0.410	1.069	8	.	.	.	.	.	.	.
Nebraska	No	No	28	51	53.988	0.945	0.711	1.232	13	0%	0%	.	.	.	.	.
Nevada			27	114	105.519	1.080	0.895	1.293	17	6%	6%	.	.	.	.	.
New Hampshire			13	24	34.763	0.690	0.453	1.012	9	.	.	.	.	.	.	.
New Jersey	Yes	Yes	71	288	278.474	1.034	0.920	1.159	61	5%	13%	0.000	0.475	0.965	1.575	2.082
New Mexico			31	53	46.748	1.134	0.858	1.472	8	.	.	.	.	.	.	.
New York			170	718	736.560	0.975	0.905	1.048	125	4%	6%	0.184	0.534	0.870	1.508	1.963
North Carolina			101	471	432.621	1.089	0.994	1.190	60	8%	5%	0.000	0.598	0.935	1.566	2.575
North Dakota	No	No	10	15	26.832	0.559	0.325	0.901	7	.	.	.	.	.	.	.
Ohio	No	No	146	570	464.789	1.226	1.129	1.330	81	12%	7%	0.304	0.711	1.089	1.842	2.431
Oklahoma			85	158	132.952	1.188	1.014	1.385	18	11%	11%	.	.	.	.	.
Oregon	Yes	No	35	82	102.485	0.800	0.640	0.988	21	0%	19%	0.364	0.435	0.963	1.605	2.136
Pennsylvania			178	491	521.942	0.941	0.860	1.027	95	3%	5%	0.253	0.571	0.869	1.258	1.784
Puerto Rico	Yes	No	4	.	.	.	.	.	.	.	.	.	.	.	.	.
Rhode Island	No	Yes	10	28	32.761	0.855	0.579	1.219	6	.	.	.	.	.	.	.
South Carolina	Yes	Yes	62	293	204.483	1.433	1.276	1.604	30	13%	0%	0.700	1.293	1.623	2.087	2.862
South Dakota	No	No	19	29	33.469	0.866	0.591	1.228	3	.	.	.	.	.	.	.
Tennessee	Yes	Yes	98	444	298.904	1.485	1.352	1.629	49	18%	2%	0.461	0.947	1.320	1.759	2.552
Texas			357	965	902.676	1.069	1.003	1.138	162	9%	5%	0.303	0.594	0.988	1.489	2.339
Utah	Yes	No	38	48	60.295	0.796	0.594	1.047	10	0%	10%	.	.	.	.	.
Vermont			6	7	16.081	0.435	0.190	0.861	2	.	.	.	.	.	.	.
Virgin Islands			1	.	.	.	.	.	.	.	.	.	.	.	.	.
Virginia	Yes	Yes	79	230	247.987	0.927	0.813	1.053	42	2%	7%	0.053	0.421	0.780	1.231	1.653

Washington	Yes	Yes	56	129	192.809	0.669	0.561	0.792	35	0%	14%	0.000	0.323	0.608	0.967	1.396
West Virginia	Yes	No	28	147	92.142	1.595	1.353	1.869	17	24%	0%	.	.	.	.	.
Wisconsin	No	Yes	80	79	146.988	0.537	0.428	0.666	33	0%	18%	0.000	0.050	0.566	0.718	1.418
Wyoming			11	2	5.499	0.364	0.061	1.202	2	.	.	.	.	.	.	.
All US			3,681	11,605	10,850.791	1.070	1.050	1.089	1,979	8%	6%	0.000	0.542	0.950	1.520	2.209

- 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.
- Yes indicates the presence of a state mandate to report facility-wide MRSA bacteremia data to NHSN at the beginning of 2021. M indicates midyear implementation of a mandate. No indicates that a state mandate did not exist during 2021. A blank field indicates data not available.
- Yes indicates that the state health department reported the completion of all of the following validation activities: state health department had access to 2021 NHSN data, state health department performed an assessment of missing or implausible values on at least six months of 2021 NHSN data prior to June 1, 2022, and state health department contacted identified facilities. YesA indicates that the state also conducted an audit of facility medical or laboratory records prior to June 1, 2022 to confirm proper case ascertainment (although intensity of auditing activities varies by state). Information on validation efforts was requested from all states, regardless of the presence of a legislative mandate for the particular HAI type. Some states without mandatory reporting of a given HAI to the state health department have performed validation on NHSN data that is voluntarily shared with them by facilities in their jurisdiction.
- The number of reporting facilities included in the SIR calculation. Due to SIR exclusion criteria, this may be different from the numbers shown in Table 1. Refer to the Technical Appendix for information about exclusion criteria. SIRs and accompanying statistics are only calculated for states in which at least 5 facilities reported MRSA bacteremia data in 2021.
- 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 2021 national hospital-onset MRSA bacteremia SIR of 1.070. This is only calculated if at least 10 facilities had at least one predicted hospital-onset MRSA bacteremia in 2021.
- Facility-specific key percentiles were only calculated if at least 20 facilities had ≥ 1.0 predicted hospital-onset MRSA bacteremia in 2021. 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 2021
Hospital-onset *Clostridioides difficile* (CDI), facility-wide¹**

State			No. of Events		95% CI for SIR			Facility-specific SIRs								
	Observed	Predicted	SIR	Lower	Upper	No. of hosp with at least 1 predicted HO CDI	10%	25%	75%	90%						
Alabama	No	No	88	928	1,707.723	0.543	0.509	0.579	70	9%	11%	0.000	0.000	0.415	0.631	1.108
Alaska	Yes	No	8	33	107.172	0.308	0.215	0.427	8	.	.	.	.	.	.	.
Arizona			69	1,051	1,865.294	0.563	0.530	0.598	58	21%	9%	0.131	0.335	0.490	0.745	1.128
Arkansas			50	287	768.264	0.374	0.332	0.419	36	3%	22%	0.000	0.096	0.321	0.607	0.746
California			327	4,358	7,959.041	0.548	0.531	0.564	306	15%	13%	0.062	0.266	0.457	0.737	0.994
Colorado	Yes	No	57	609	1,169.123	0.521	0.481	0.564	50	10%	8%	0.085	0.282	0.479	0.706	1.000
Connecticut	Yes	No	28	530	934.812	0.567	0.520	0.617	28	14%	14%	0.000	0.165	0.440	0.616	0.783
D.C.	Yes	No	8	261	415.348	0.628	0.556	0.708	7	.	.	.	.	.	.	.
Delaware			8	155	290.405	0.534	0.455	0.623	8	.	.	.	.	.	.	.
Florida	No	Yes	216	2,722	7,601.878	0.358	0.345	0.372	205	6%	38%	0.051	0.177	0.296	0.460	0.694
Georgia			109	1,216	2,767.072	0.439	0.415	0.465	95	12%	24%	0.000	0.165	0.326	0.630	1.006
Guam			2	.	.	.	.	.	.	.	.	.	.	.	.	.
Hawaii	No	No	17	166	336.540	0.493	0.422	0.573	16	6%	13%	.	.	.	.	.
Idaho	No	No	17	173	319.733	0.541	0.465	0.626	14	7%	0%	.	.	.	.	.
Illinois	Yes	Yes	132	2,079	3,817.837	0.545	0.522	0.568	122	22%	14%	0.127	0.313	0.539	0.755	1.102
Indiana	Yes	Yes	92	969	1,882.041	0.515	0.483	0.548	83	13%	11%	0.000	0.248	0.475	0.661	1.016
Iowa	No	Yes	40	307	598.226	0.513	0.458	0.573	34	9%	9%	0.032	0.265	0.418	0.810	1.014
Kansas			60	388	650.655	0.596	0.539	0.658	38	21%	8%	0.000	0.169	0.396	0.937	1.385
Kentucky			68	731	1,522.110	0.480	0.446	0.516	63	8%	10%	0.075	0.286	0.476	0.606	0.838
Louisiana			103	537	1,292.484	0.415	0.381	0.452	69	4%	20%	0.000	0.160	0.364	0.593	0.878
Maine	Yes	No	19	192	349.817	0.549	0.475	0.631	17	12%	12%	.	.	.	.	.
Maryland	Yes	No	48	1,099	1,703.991	0.645	0.608	0.684	47	34%	13%	0.173	0.342	0.510	0.813	1.101
Massachusetts	Yes	No	67	1,438	2,172.518	0.662	0.628	0.697	63	29%	8%	0.205	0.388	0.545	0.920	1.278
Michigan	No	Yes	99	1,656	2,844.918	0.582	0.555	0.611	87	20%	5%	0.000	0.285	0.515	0.730	0.919
Minnesota	No	No	51	818	1,443.581	0.567	0.529	0.607	47	9%	4%	0.000	0.305	0.525	0.682	1.105
Mississippi	Yes	Yes	61	392	874.681	0.448	0.405	0.494	46	9%	17%	0.000	0.111	0.324	0.632	0.955
Missouri	No	No	74	1,143	2,059.771	0.555	0.523	0.588	68	16%	12%	0.000	0.254	0.481	0.735	0.975
Montana	No	No	13	91	192.168	0.474	0.383	0.579	11	9%	27%	.	.	.	.	.
Nebraska	No	No	28	242	448.090	0.540	0.475	0.611	22	9%	14%	0.000	0.077	0.367	0.545	0.752
Nevada			28	357	906.938	0.394	0.354	0.436	22	18%	32%	0.088	0.140	0.315	0.634	1.066
New Hampshire			13	226	312.157	0.724	0.634	0.823	13	31%	0%	.	.	.	.	.
New Jersey	Yes	Yes	71	1,325	2,543.663	0.521	0.493	0.550	71	15%	18%	0.081	0.269	0.423	0.618	0.861
New Mexico			31	274	418.202	0.655	0.581	0.736	25	16%	4%	0.000	0.159	0.495	0.721	0.942
New York			171	3,682	6,602.363	0.558	0.540	0.576	163	20%	15%	0.144	0.290	0.488	0.714	1.047
North Carolina			101	1,384	3,207.731	0.431	0.409	0.455	95	7%	26%	0.000	0.171	0.351	0.566	0.941
North Dakota	No	No	10	143	233.715	0.612	0.518	0.719	8	.	.	.	.	.	.	.
Ohio	No	No	146	2,122	3,904.929	0.543	0.521	0.567	130	13%	12%	0.000	0.246	0.421	0.734	0.977
Oklahoma			85	443	1,124.447	0.394	0.359	0.432	57	5%	12%	0.000	0.132	0.398	0.686	0.915
Oregon	Yes	No	35	355	777.083	0.457	0.411	0.506	34	12%	15%	0.118	0.248	0.404	0.651	1.214
Pennsylvania			177	2,265	3,933.000	0.576	0.553	0.600	146	18%	10%	0.000	0.273	0.471	0.752	1.028
Puerto Rico	Yes	No	5	12	109.124	0.110	0.060	0.187	5	.	.	.	.	.	.	.
Rhode Island	No	Yes	10	148	289.901	0.511	0.433	0.598	10	10%	20%	.	.	.	.	.
South Carolina	Yes	Yes	62	537	1,360.117	0.395	0.362	0.429	55	5%	20%	0.000	0.186	0.325	0.600	0.801
South Dakota	No	No	19	124	267.943	0.463	0.387	0.550	13	0%	0%	.	.	.	.	.
Tennessee	Yes	Yes	98	623	1,906.254	0.327	0.302	0.353	84	4%	35%	0.000	0.063	0.271	0.457	0.586
Texas			358	3,127	7,667.784	0.408	0.394	0.422	262	9%	30%	0.000	0.140	0.316	0.568	0.837
Utah	Yes	No	39	299	528.121	0.566	0.505	0.633	29	14%	10%	0.000	0.158	0.385	0.695	1.134
Vermont			6	89	127.796	0.696	0.563	0.853	5	.	.	.	.	.	.	.
Virgin Islands			1	.	.	.	.	.	.	.	.	.	.	.	.	.
Virginia	Yes	Yes	80	691	2,090.717	0.331	0.307	0.356	76	1%	30%	0.000	0.036	0.245	0.433	0.589
Washington	Yes	Yes	56	758	1,407.552	0.539	0.501	0.578	51	12%	12%	0.016	0.267	0.384	0.624	1.030
West Virginia	Yes	No	28	483	659.650	0.732	0.669	0.800	25	24%	4%	0.000	0.246	0.642	0.825	1.249
Wisconsin	No	Yes	80	860	1,231.449	0.698	0.653	0.746	70	21%	6%	0.000	0.316	0.640	1.016	1.247
Wyoming			11	31	60.056	0.516	0.357	0.724	9	.	.	.	.	.	.	.
All US			3,680	44,948	89,798.105	0.501	0.496	0.505	3,179	13%	17%	0.000	0.220	0.419	0.678	0.998

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 2021. M indicates midyear implementation of a mandate. No indicates that a state mandate did not exist during 2021. 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 2021 NHSN data, state health department performed an assessment of missing or implausible values on at least six months of 2021 NHSN data prior to June 1, 2022, and state health department contacted identified facilities. YesA indicates that the state also conducted an audit of facility medical or laboratory records prior to June 1, 2022 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 2021.
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 2021 national hospital-onset CDI SIR of 0.501. This is only calculated if at least 10 facilities had at least one predicted hospital-onset CDI in 2021.
6. Facility-specific key percentiles were only calculated if at least 20 facilities had ≥ 1.0 predicted hospital-onset CDI in 2021. 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 rate
Central line-associated bloodstream infections (CLABSIs), catheter-associated Clostridioides difficile infections, and surgical site infections**

	2020				
	No. of Acute Care Hospitals Reporting	Observed	Predicted	SIR	
CLABSI, all locations¹	3,687	21,399	24,956.730	0.857	3,710
CLABSI, ICU ²	3,126	10,668	9,715.137	1.098	3,109
CLABSI, Ward ³	3,657	9,770	13,068.297	0.718	3,683
CLABSI, NICU ⁴	999	961	1,633.273	0.588	1,007
CAUTI, all locations⁵	3,749	19,738	26,177.031	0.754	3,774
CAUTI, ICU ²	3,137	9,633	13,098.111	0.735	3,117
CAUTI, Ward ³	3,730	10,105	13,078.920	0.773	3,759
ICUs ⁵	1,942	37,205	28,587.678	1.301	1,911
Wards ⁶	1,896	35,569	27,349.904	1.301	1,848
	456	1,636	1,237.774	1.322	499
Hospital-onset MRSA bacteremia, facility-wide⁶	3,658	8,775	9,329	0.941	3,681
Hospital-onset <i>C. difficile</i> infections, facility-wide⁶	3,653	40,562	78,365	0.518	3,680
SSI, combined SCIP procedures⁷	3,249	13,975	15,840.406	0.882	3,261
SSI, Hip arthroplasty	2,119	2,173	2,223.769	0.977	2,127
SSI, Knee arthroplasty	2,059	1,590	1,510.279	1.053	2,054
SSI, Coronary artery bypass graft ⁸	694	585	772.903	0.757	680
SSI, Cardiac surgery	403	131	151.768	0.863	392
SSI, Peripheral vascular bypass surgery	270	181	194.586	0.930	247
SSI, Abdominal aortic aneurysm repair	164	0	4.882	0.000	165
SSI, Colon surgery	3,062	6,094	7,524.642	0.810	3,069

SSI, Rectal surgery	373	48	164.381	0.292	397
SSI, Abdominal hysterectomy	2,845	1,547	1,733.820	0.892	2,800
SSI, Vaginal hysterectomy	535	34	39.981	0.850	524

*Statistically significant, $p < 0.0500$. Statistical significance based on two-tailed p-value < 0.05 , reflected in the relative percent change in magni

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
4. Data from all NICU locations, including Level II/III and Level III nurseries. Both umbilical line and central line-associated bloodstream infection
5. Data from all ICUs and wards (and other non-critical care locations). This excludes NICUs, LTAC locations (or facilities) and IRF locations (o
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 prin using NHSN surgical procedure categorizations. Includes SSIs that were classified as deep incisional or organ/space, and were detected upc
8. Coronary artery bypass graft includes procedures with either chest only or chest and donor site incisions.

tios (SIRs) using HAI data reported from all NHSN acute care hospitals reporting during 2021 by HAI and patient population:
 associated urinary tract infections (CAUTIs), ventilator-associated events (VAEs), methicillin-resistant *Staphylococcus aureus* (MRSA) bacterial site infections (SSIs) following Surgical Care Improvement Project (SCIP) procedures, 2020 compared to 2021

2021					
Observed	Predicted	SIR	Percent Change	Direction of Change, Based on Statistical Significance	p-value
27,021	29,335.399	0.921	7%	Increase	<0.0001
14,003	11,580.130	1.209	10%	Increase	<0.0001
11,863	15,887.850	0.747	4%	Increase	0.0041
1,155	1,867.410	0.619	5%	No change	0.2529
24,710	31,077.110	0.795	5%	Increase	<0.0001
12,208	15,306.710	0.798	9%	Increase	<0.0001
12,502	15,770.460	0.793	3%	No change	0.0544
50,050	34,261.474	1.461	12%	Increase	<0.0001
47,254	32,440.442	1.457	12%	Increase	<0.0001
2,796	1,821.031	1.535	16%	Increase	<0.0001
11,605	10,851	1.07	14%	Increase	<0.0001
44,948	89,798	0.501	3%	Decrease	<0.0001
12,383	14,321.011	0.865	2%	No change	0.1032
2,204	2,340.717	0.942	4%	No change	0.2199
1,605	1,559.146	1.029	2%	No change	0.5257
749	917.375	0.816	8%	No change	0.1695
145	181.397	0.799	7%	No change	0.5241
205	193.776	1.058	14%	No change	0.2073
2	4.352	0.460	>>100%	Inestimable	0.2221
7,094	8,531.864	0.831	3%	No change	0.1318

66	189.877	0.348	19%	No change	0.3600
1,871	1,883.860	0.993	11%	Increase	0.0018
34	38.042	0.894	5%	No change	0.8382

tude.

es) and IRF locations (or facilities).

RF locations (or facilities).

marrow transplant] in acute care hospitals. This excludes LTAC locations (or facilities) and IRF locations (or facilities).

ns are considered CLABSIs.

r facilities).

nary skin closure technique approximating the procedures covered by SCIP,

on admission or readmission. Specific NHSN procedures and the corresponding SCIP procedures are listed in Appendix C.

remia,

Table 10. Changes in state-specific standardized infection ratios (SIRs) between 2020 and 2021 from NHSN Acute Care Hospitals						
10a. Central line-associated bloodstream infections (CLABSI), all locations ¹						
State ²	All Acute Care Hospitals Reporting to NHSN					
	2020 SIR	2021 SIR	Percent Change ³	Direction of Change, Based on Statistical Significance	p-value	
Alabama	0.970	1.043	8%	No change	0.2514	
Alaska	0.710	0.865	22%	No change	0.4464	
Arizona	0.837	0.991	18%	Increase	0.0047	
Arkansas	0.951	1.144	20%	Increase	0.0277	
California	0.859	0.910	6%	Increase	0.0481	
Colorado	0.792	0.828	5%	No change	0.5741	
Connecticut	1.043	0.884	15%	No change	0.0647	
D.C.	0.807	0.808	0%	No change	1.0000	
Delaware	0.795	0.661	17%	No change	0.2614	
Florida	0.848	0.879	4%	No change	0.2970	
Georgia	0.931	0.989	6%	No change	0.2015	
Guam	0.803	0.937	17%	No change	0.8323	
Hawaii	0.445	0.573	29%	No change	0.1926	
Idaho	0.638	0.856	34%	No change	0.1070	
Illinois	0.799	0.778	3%	No change	0.6008	
Indiana	0.711	0.794	12%	No change	0.0922	
Iowa	1.091	1.017	7%	No change	0.4529	
Kansas	0.779	0.822	6%	No change	0.6260	
Kentucky	0.775	1.034	33%	Increase	<0.0001	
Louisiana	1.233	1.235	0%	No change	0.9850	
Maine	0.446	0.779	75%	Increase	0.0065	
Maryland	1.004	1.023	2%	No change	0.7887	
Massachusetts	0.830	0.737	11%	No change	0.0605	
Michigan	0.877	0.995	13%	Increase	0.0228	
Minnesota	0.869	0.864	1%	No change	0.9358	
Mississippi	1.181	1.195	1%	No change	0.8818	
Missouri	0.953	0.915	4%	No change	0.4558	
Montana	0.856	0.842	2%	No change	0.9451	
Nebraska	0.713	0.837	17%	No change	0.1932	
Nevada	0.900	0.951	6%	No change	0.5125	
New Hampshire	0.530	0.642	21%	No change	0.3772	
New Jersey	0.943	0.867	8%	No change	0.2109	
New Mexico	0.954	1.255	32%	Increase	0.0239	
New York	0.794	0.974	23%	Increase	<0.0001	
North Carolina	0.958	1.036	8%	No change	0.1018	
North Dakota	0.874	0.571	35%	Decrease	0.0343	
Ohio	0.857	0.898	5%	No change	0.2764	
Oklahoma	0.905	1.287	42%	Increase	<0.0001	
Oregon	0.673	0.589	12%	No change	0.2521	
Pennsylvania	0.849	0.931	10%	Increase	0.0251	
Puerto Rico	1.347	0.926	31%	Decrease	0.0301	
Rhode Island	0.677	0.686	1%	No change	0.9456	
South Carolina	0.771	0.913	18%	Increase	0.0278	
South Dakota	0.827	1.135	37%	No change	0.0749	
Tennessee	0.704	0.821	17%	Increase	0.0110	
Texas	0.933	0.956	2%	No change	0.3949	
Utah	0.868	0.890	3%	No change	0.8324	
Vermont	0.419	0.792	89%	No change	0.0622	
Virgin Islands	0.785	3.986	408%	No change	0.0993	
Virginia	0.740	0.799	8%	No change	0.2500	
Washington	0.616	0.753	22%	Increase	0.0076	
West Virginia	0.924	1.200	30%	Increase	0.0079	
Wisconsin	0.720	0.800	11%	No change	0.1685	
Wyoming	0.722	1.132	57%	No change	0.2479	
All US	0.857	0.921	7%	Increase	<0.0001	

* Statistically significant, p < 0.0500. Statistical significance based on two-tailed p-value < 0.05, reflected in the relative percent change in magnitude.

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 2020 and/or 2021 and therefore subsequent data not calculated

3. For states with >>>100% value in the percent change field, the p-value cannot be estimated due to sparse data reported within the facility type.

The p-value is indicated as inestimable when the numerator and/or denominator of percent change = 0.

Table 10. Changes in state-specific standardized infection ratios (SIRs) between 2020 and 2021 from NHSN Acute Care Hospitals					
10b. Catheter-associated urinary tract infections (CAUTI), all locations¹					
	All Acute Care Hospitals Reporting to NHSN				
	2020 SIR	2021 SIR	Direction of Change, Based on Statistical Significance		p-value
Alabama	0.749	0.846	13%	Increase	0.0458
Alaska	1.165	1.176	1%	No change	0.9697
Arizona	0.644	0.618	4%	No change	0.5585
Arkansas	0.828	0.694	16%	No change	0.0506
California	0.897	0.884	1%	No change	0.6148
Colorado	0.778	0.686	12%	No change	0.1228
Connecticut	0.599	0.583	3%	No change	0.8067
D.C.	0.450	0.547	22%	No change	0.2911
Delaware	0.632	0.803	27%	No change	0.2241
Florida	0.631	0.677	7%	No change	0.0783
Georgia	0.712	0.793	11%	Increase	0.0389
Guam	0.554	2.085	279%	Increase	0.0313
Hawaii	0.646	0.941	46%	Increase	0.0236
Idaho	0.887	0.793	11%	No change	0.4792
Illinois	0.752	0.730	3%	No change	0.5755
Indiana	0.752	0.740	2%	No change	0.8131
Iowa	0.737	0.826	12%	No change	0.2593
Kansas	0.784	0.855	9%	No change	0.4229
Kentucky	0.745	0.767	3%	No change	0.6765
Louisiana	0.660	0.587	11%	No change	0.1582
Maine	0.951	1.205	27%	No change	0.1269
Maryland	0.889	0.920	3%	No change	0.6312
Massachusetts	0.843	0.928	10%	No change	0.1108
Michigan	0.703	0.701	0%	No change	0.9565
Minnesota	0.831	0.897	8%	No change	0.3282
Mississippi	0.628	0.746	19%	No change	0.0566
Missouri	0.725	0.751	4%	No change	0.5707
Montana	0.678	0.623	8%	No change	0.7045
Nebraska	0.738	0.904	22%	No change	0.1259
Nevada	0.634	0.645	2%	No change	0.8667
New Hampshire	0.559	0.989	77%	Increase	0.0008
New Jersey	0.786	0.803	2%	No change	0.7543
New Mexico	1.037	1.250	21%	No change	0.0651
New York	0.695	0.835	20%	Increase	0.0000
North Carolina	0.780	0.894	15%	Increase	0.0073
North Dakota	0.622	0.498	20%	No change	0.3313
Ohio	0.667	0.782	17%	Increase	0.0007
Oklahoma	0.753	0.769	2%	No change	0.7925
Oregon	0.911	1.159	27%	Increase	0.0075
Pennsylvania	0.798	0.891	12%	Increase	0.0054
Puerto Rico	0.611	0.420	31%	Decrease	0.0485
Rhode Island	0.985	0.901	9%	No change	0.5576
South Carolina	0.876	0.954	9%	No change	0.2247
South Dakota	0.630	0.876	39%	No change	0.0787
Tennessee	0.714	0.758	6%	No change	0.3213
Texas	0.700	0.720	3%	No change	0.4166
Utah	0.891	0.866	3%	No change	0.8231
Vermont	1.555	1.796	15%	No change	0.4290
Virgin Islands	3.344	2.402	28%	No change	0.5578
Virginia	0.785	0.708	10%	No change	0.1198
Washington	0.907	0.999	10%	No change	0.1323
West Virginia	0.665	0.659	1%	No change	0.9338
Wisconsin	0.892	0.840	6%	No change	0.4138
Wyoming	0.545	0.635	17%	No change	0.6853
All US	0.754	0.795	5%	Increase	<0.0001

*Statistically significant, $p < 0.0500$. Statistical significance based on two-tailed p-value < 0.05 , reflected in the relative percent change in magnitude.

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 2020 and/or 2021 and therefore subsequent data not calculated
3. For states with $>>100\%$ value in the percent change field, the p-value cannot be estimated due to sparse data reported within the facility type. The p-value is indicated as inestimable when the numerator and/or denominator of percent change = 0.

Table 10. Changes in state-specific standardized infection ratios (SIRs) between 2020 and 2021 from NHSN Acute Care Hospitals					
10c. Ventilator-associated events (VAE), all locations ¹					
	All Acute Care Hospitals Reporting to NHSN				
	2020 SIR	2021 SIR	Direction of Change, Based on Statistical Significance		p-value
Alabama	0.866	1.012	17%	Increase	0.0115
Alaska	1.536	2.716	77%	Increase	0.0007
Arizona	1.126	0.903	20%	Decrease	0.0009
Arkansas	1.805	2.055	14%	Increase	0.0435
California	1.244	1.309	5%	Increase	0.0235
Colorado	1.738	1.849	6%	No change	0.1591
Connecticut	1.383	1.110	20%	Decrease	0.0041
D.C.	.	.	.	.	.
Delaware	.	.	.	.	.
Florida	1.524	1.914	26%	Increase	<0.0001
Georgia	1.317	1.441	9%	Increase	0.0013
Guam	.	.	.	.	.
Hawaii	0.300	0.619	106%	No change	0.0641
Idaho	2.031	2.430	20%	No change	0.1012
Illinois	1.312	1.461	11%	Increase	0.0219
Indiana	1.617	1.759	9%	No change	0.0541
Iowa	1.659	1.783	7%	No change	0.5742
Kansas	1.703	1.659	3%	No change	0.7161
Kentucky	1.195	1.540	29%	Increase	<0.0001
Louisiana	1.608	1.631	1%	No change	0.7765
Maine	1.639	1.379	16%	No change	0.0712
Maryland	1.415	1.595	13%	No change	0.0901
Massachusetts	1.517	1.290	15%	Decrease	0.0293
Michigan	1.461	1.770	21%	Increase	<0.0001
Minnesota	1.159	0.950	18%	Decrease	0.0299
Mississippi	1.330	1.395	5%	No change	0.4726
Missouri	1.137	1.299	14%	Increase	0.0025
Montana	0.955	1.720	80%	Increase	0.0003
Nebraska	1.898	1.917	1%	No change	0.9056
Nevada	1.782	1.857	4%	No change	0.2970
New Hampshire	1.456	1.276	12%	No change	0.3845
New Jersey	1.065	1.057	1%	No change	0.8720
New Mexico	2.002	1.874	6%	No change	0.5030
New York	0.686	1.118	63%	Increase	<0.0001
North Carolina	1.199	1.388	16%	Increase	0.0058
North Dakota	.	.	.	.	.
Ohio	1.050	1.027	2%	No change	0.5581
Oklahoma	1.258	1.313	4%	No change	0.5116
Oregon	1.077	1.636	52%	Increase	0.0002
Pennsylvania	1.306	1.422	9%	Increase	0.0003
Puerto Rico	0.396	0.667	68%	Increase	0.0394
Rhode Island	1.868	2.088	12%	No change	0.1892
South Carolina	1.327	1.621	22%	Increase	<0.0001
South Dakota	1.095	1.277	17%	No change	0.4069
Tennessee	1.091	1.370	26%	Increase	<0.0001
Texas	1.421	1.832	29%	Increase	<0.0001
Utah	1.933	2.282	18%	No change	0.0660
Vermont	.	.	.	.	.
Virgin Islands	.	.	.	.	.
Virginia	1.545	1.444	7%	No change	0.0633
Washington	1.526	1.639	7%	No change	0.3385
West Virginia	0.436	0.947	117%	Increase	<0.0001
Wisconsin	0.796	0.820	3%	No change	0.7572
Wyoming	1.384	1.461	6%	No change	0.8625
All US	1.301	1.461	12%	Increase	<0.0001

* Statistically significant, p < 0.0500. Statistical significance based on two-tailed p-value < 0.05, reflected in the relative percent change in magnitude.

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 2020 and/or 2021 and therefore subsequent data not calculated
3. For states with >>100% value in the percent change field, the p-value cannot be estimated due to sparse data reported within the facility type. The p-value is indicated as inestimable when the numerator and/or denominator of percent change = 0.

Table 10. Changes in state-specific standardized infection ratios (SIRs) between 2020 and 2021 from NHSN Acute Care Hospitals
10d. Surgical site infections (SSI) following colon surgery¹

	All Acute Care Hospitals Reporting to NHSN				
	2020 SIR	2021 SIR	Direction of Change, Based on Statistical Significance		p-value
Alabama	0.500	0.577	15%	No change	0.3731
Alaska	1.180	1.128	4%	No change	0.8908
Arizona	0.950	0.725	24%	Decrease	0.0224
Arkansas	1.182	0.942	20%	No change	0.1796
California	0.762	0.868	14%	Increase	0.0258
Colorado	0.885	0.925	5%	No change	0.7380
Connecticut	0.904	0.890	2%	No change	0.9229
D. C.	0.619	0.818	32%	No change	0.4095
Delaware	0.885	0.858	3%	No change	0.9198
Florida	0.674	0.789	17%	Increase	0.0201
Georgia	0.885	0.820	7%	No change	0.4065
Guam	.	.	.	.	.
Hawaii	0.766	1.026	34%	No change	0.3484
Idaho	0.884	0.747	15%	No change	0.5449
Illinois	0.733	0.687	6%	No change	0.5167
Indiana	0.741	0.827	12%	No change	0.3743
Iowa	0.809	0.513	37%	Decrease	0.0342
Kansas	0.848	0.857	1%	No change	0.9551
Kentucky	0.868	0.865	0%	No change	0.9740
Louisiana	1.071	0.895	16%	No change	0.1799
Maine	1.257	0.910	28%	No change	0.1475
Maryland	0.955	0.760	20%	No change	0.0856
Massachusetts	0.806	0.859	7%	No change	0.5790
Michigan	1.111	1.037	7%	No change	0.4296
Minnesota	0.711	0.676	5%	No change	0.7115
Mississippi	1.085	1.137	5%	No change	0.7542
Missouri	0.975	0.967	1%	No change	0.9340
Montana	0.642	0.796	24%	No change	0.5485
Nebraska	0.931	1.291	39%	No change	0.0902
Nevada	0.947	1.249	32%	No change	0.1259
New Hampshire	0.679	0.623	8%	No change	0.7873
New Jersey	0.664	0.654	2%	No change	0.9101
New Mexico	0.737	0.902	22%	No change	0.4393
New York	0.772	0.855	11%	No change	0.1725
North Carolina	0.836	0.748	11%	No change	0.2350
North Dakota	0.963	1.095	14%	No change	0.6661
Ohio	0.797	0.865	9%	No change	0.3099
Oklahoma	0.855	1.066	25%	No change	0.1320
Oregon	0.767	0.724	6%	No change	0.7143
Pennsylvania	0.809	0.845	4%	No change	0.5746
Puerto Rico	.	.	.	.	.
Rhode Island	0.796	1.110	39%	No change	0.2866
South Carolina	0.781	0.764	2%	No change	0.8771
South Dakota	1.179	1.004	15%	No change	0.5557
Tennessee	0.639	0.644	1%	No change	0.9546
Texas	0.863	0.871	1%	No change	0.8778
Utah	0.898	0.833	7%	No change	0.7222
Vermont	0.644	1.143	77%	No change	0.1858
Virgin Islands	.	.	.	.	.
Virginia	0.666	0.709	6%	No change	0.6120
Virginia	0.644	0.757	18%	No change	0.2390
Washington	1.124	1.168	4%	No change	0.8378
Wisconsin	0.713	0.821	15%	No change	0.2816
Wyoming	0.340	0.183	46%	No change	0.6666
All US	0.810	0.831	3%	No change	0.1318

* Statistically significant, $p < 0.0500$. Statistical significance based on two-tailed p -value < 0.05 , reflected in the relative percent change in magnitude.

- SSIs included are those classified as deep incisional or organ/space infections following NHSN-defined inpatient colon procedures with both primary or detected during the same admission as the surgical procedure or upon readmission to the same facility.
- States without SIR either in 2020 and/or 2021 and therefore subsequent data not calculated
- For states with $>>100\%$ value in the percent change field, the p -value cannot be estimated due to sparse data reported within the facility type. The p -value is indicated as inestimable when the numerator and/or denominator of percent change = 0.

and other than primary skin closure technique,

Table 10. Changes in state-specific standardized infection ratios (SIRs) between 2020 and 2021 from NHSN Acute Care Hospitals

10e. Surgical site infections (SSI) following abdominal hysterectomy surgery¹

	All Acute Care Hospitals Reporting to NHSN				
	2020 SIR	2021 SIR	Direction of Change, Based on Statistical Significance		p-value
Alabama	0.518	1.236	139%	Increase	0.0006
Alaska	0.435	1.498	244%	No change	0.3098
Arizona	0.855	1.289	51%	No change	0.0823
Arkansas	0.345	0.886	157%	Increase	0.0426
California	0.715	0.772	8%	No change	0.5734
Colorado	1.198	1.338	12%	No change	0.6335
Connecticut	1.278	0.990	23%	No change	0.4182
D. C.	0.719	1.123	56%	No change	0.5380
Delaware	0.228	0.000	100%	No change	0.5029
Florida	0.856	0.960	12%	No change	0.3910
Georgia	1.116	1.316	18%	No change	0.2492
Guam	.	.	.	.	.
Hawaii	1.501	0.701	53%	No change	0.2955
Idaho	1.573	0.683	57%	No change	0.1504
Illinois	0.681	0.815	20%	No change	0.3554
Indiana	0.999	1.027	3%	No change	0.8985
Iowa	0.516	0.510	1%	No change	0.9810
Kansas	0.531	0.629	18%	No change	0.7101
Kentucky	0.576	1.168	103%	Increase	0.0115
Louisiana	1.019	1.355	33%	No change	0.2630
Maine	0.436	0.375	14%	No change	0.8879
Maryland	1.443	1.368	5%	No change	0.8061
Massachusetts	1.427	1.173	18%	No change	0.3986
Michigan	1.238	1.333	8%	No change	0.6496
Minnesota	1.209	1.261	4%	No change	0.8646
Mississippi	1.442	1.104	23%	No change	0.3585
Missouri	0.866	1.228	42%	No change	0.0984
Montana	1.529	0.765	50%	No change	0.2670
Nebraska	1.617	1.581	2%	No change	0.9434
Nevada	1.369	1.722	26%	No change	0.5025
New Hampshire	0.466	0.770	65%	No change	0.5326
New Jersey	0.613	0.601	2%	No change	0.9349
New Mexico	0.558	1.182	112%	No change	0.1644
New York	0.887	0.996	12%	No change	0.4457
North Carolina	0.750	0.956	27%	No change	0.1912
North Dakota	0.000	1.617	>>100%	.	Inestimable
Ohio	0.671	0.942	40%	No change	0.0682
Oklahoma	0.936	0.721	23%	No change	0.3331
Oregon	0.531	1.025	93%	No change	0.1052
Pennsylvania	0.702	0.812	16%	No change	0.4379
Puerto Rico	.	.	.	.	.
Rhode Island	0.563	0.325	42%	No change	0.5584
South Carolina	0.978	1.197	22%	No change	0.3805
South Dakota	0.789	0.749	5%	No change	0.9368
Tennessee	1.009	0.857	15%	No change	0.4634
Texas	0.969	1.055	9%	No change	0.4208
Utah	1.558	0.554	64%	Decrease	0.0032
Vermont	1.271	1.234	3%	No change	0.9726
Virgin Islands	.	.	.	.	.
Virginia	0.967	0.832	14%	No change	0.4772
Virginia	0.519	0.823	59%	No change	0.1576
Washington	0.919	0.656	29%	No change	0.4779
Wisconsin	0.963	0.780	19%	No change	0.4470
Wyoming	1.881	1.715	9%	No change	0.9429
All US	0.892	0.993	11%	Increase	0.0018

* Statistically significant, p < 0.0500. Statistical significance based on two-tailed p-value < 0.05, reflected in the relative percent change in magnitude.

1. SSIs included are those classified as deep incisional or organ/space infections following NHSN-defined inpatient abdominal hysterectomy procedures w detected during the same admission as the surgical procedure or upon readmission to the same facility.
2. States without SIR either in 2020 and/or 2021 and therefore subsequent data not calculated. For any state with a referent SIR of 0.000, the percent char
3. For states with >>100% value in the percent change field, the p-value cannot be estimated due to sparse data reported within the facility type. The p-value is indicated as inestimable when the numerator and/or denominator of percent change = 0.

with a primary or other than primary skin closure technique,

percentage was reflected as greater than 100 percent.

Table 10. Changes in state-specific standardized infection ratios (SIRs) between 2020 and 2021 from NHSN Acute Care Hospitals

10f. Hospital-onset methicillin-resistant *Staphylococcus aureus* (MRSA) bacteremia, facility-wide¹

	All Acute Care Hospitals Reporting to NHSN				
	2020 SIR	2021 SIR	Direction of Change, Based on Statistical Significance		p-value
Alabama	1.269	1.508	19%	Increase	0.0349
Alaska	0.498	1.227	146%	Increase	0.0196
Arizona	0.860	0.941	9%	No change	0.3685
Arkansas	1.239	1.574	27%	Increase	0.0429
California	0.878	1.003	14%	Increase	0.0082
Colorado	0.670	0.785	17%	No change	0.2815
Connecticut	0.853	0.875	3%	No change	0.8739
D.C.	0.941	0.963	2%	No change	0.9158
Delaware	0.612	0.802	31%	No change	0.2939
Florida	1.048	1.180	13%	Increase	0.0119
Georgia	1.159	1.310	13%	No change	0.0696
Guam	.	.	.	.	.
Hawaii	0.243	0.440	81%	No change	0.1699
Idaho	0.404	1.004	149%	Increase	0.0091
Illinois	0.862	0.755	12%	No change	0.1140
Indiana	0.767	0.893	16%	No change	0.1658
Iowa	0.877	0.851	3%	No change	0.8531
Kansas	0.722	0.941	30%	No change	0.1541
Kentucky	1.426	1.403	2%	No change	0.8494
Louisiana	1.612	1.832	14%	No change	0.1434
Maine	0.454	0.551	21%	No change	0.5643
Maryland	0.811	0.941	16%	No change	0.1955
Massachusetts	0.780	0.848	9%	No change	0.4088
Michigan	0.931	1.204	29%	Increase	0.0010
Minnesota	0.463	0.605	31%	No change	0.1212
Mississippi	1.291	1.534	19%	No change	0.1217
Missouri	0.904	1.060	17%	No change	0.0841
Montana	0.633	0.682	8%	No change	0.8529
Nebraska	0.647	0.945	46%	No change	0.0871
Nevada	0.899	1.080	20%	No change	0.1873
New Hampshire	0.664	0.690	4%	No change	0.8970
New Jersey	0.921	1.034	12%	No change	0.2315
New Mexico	0.744	1.134	52%	No change	0.0607
New York	0.821	0.975	19%	Increase	0.0051
North Carolina	0.760	1.089	43%	Increase	<0.0001
North Dakota	0.834	0.559	33%	No change	0.2570
Ohio	1.017	1.226	21%	Increase	0.0041
Oklahoma	0.895	1.188	33%	Increase	0.0195
Oregon	0.591	0.800	35%	No change	0.0863
Pennsylvania	0.885	0.941	6%	No change	0.3608
Puerto Rico	.	.	.	.	.
Rhode Island	0.816	0.855	5%	No change	0.8698
South Carolina	1.137	1.433	26%	Increase	0.0097
South Dakota	0.523	0.866	66%	No change	0.1027
Tennessee	1.238	1.485	20%	Increase	0.0119
Texas	1.045	1.069	2%	No change	0.6352
Utah	0.833	0.796	4%	No change	0.8268
Vermont	0.276	0.435	58%	No change	0.4860
Virgin Islands	.	.	.	.	.
Virginia	0.842	0.927	10%	No change	0.3259
Washington	0.728	0.669	8%	No change	0.4958
West Virginia	1.724	1.595	7%	No change	0.5144
Wisconsin	0.626	0.537	14%	No change	0.3331
Wyoming	1.283	0.364	72%	No change	0.1567
All US	0.941	1.070	14%	Increase	<0.0001

* Statistically significant, p < 0.0500. Statistical significance based on two-tailed p-value < 0.05, reflected in the relative percent change in magnitude.

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 2020 and/or 2021 and therefore subsequent data not calculated
3. For states with >>100% value in the percent change field, the p-value cannot be estimated due to sparse data reported within the facility type. The p-value is indicated as inestimable when the numerator and/or denominator of percent change = 0.

NHSN Acute Care Hospitals					
10g. Hospital-onset <i>Clostridioides difficile</i> infection (CDI), facility-wide ¹					
	All Acute Care Hospitals Reporting to NHSN				
	2020 SIR	2021 SIR	Direction of Change, Based on Statistical Significance		p-value
Alabama	0.483	0.543	12%	Increase	0.0145
Alaska	0.346	0.308	11%	No change	0.6341
Arizona	0.537	0.563	5%	No change	0.2897
Arkansas	0.435	0.374	14%	No change	0.0666
California	0.547	0.548	0%	No change	0.9317
Colorado	0.472	0.521	10%	No change	0.1043
Connecticut	0.520	0.567	9%	No change	0.1977
D.C.	0.551	0.628	14%	No change	0.1603
Delaware	0.490	0.534	9%	No change	0.4723
Florida	0.426	0.358	16%	Decrease	<0.0001
Georgia	0.440	0.439	0%	No change	0.9965
Guam	.	.	.	.	.
Hawaii	0.486	0.493	1%	No change	0.8927
Idaho	0.607	0.541	11%	No change	0.2964
Illinois	0.572	0.545	5%	No change	0.1230
Indiana	0.581	0.515	11%	Decrease	0.0076
Iowa	0.644	0.513	20%	Decrease	0.0034
Kansas	0.622	0.596	4%	No change	0.5575
Kentucky	0.506	0.480	5%	No change	0.3292
Louisiana	0.483	0.415	14%	Decrease	0.0189
Maine	0.629	0.549	13%	No change	0.1799
Maryland	0.590	0.645	9%	No change	0.0518
Massachusetts	0.663	0.662	0%	No change	0.9680
Michigan	0.557	0.582	4%	No change	0.2231
Minnesota	0.574	0.567	1%	No change	0.8115
Mississippi	0.471	0.448	5%	No change	0.4922
Missouri	0.544	0.555	2%	No change	0.6510
Montana	0.375	0.474	26%	No change	0.1626
Nebraska	0.511	0.540	6%	No change	0.5571
Nevada	0.380	0.394	4%	No change	0.6518
New Hampshire	0.824	0.724	12%	No change	0.1630
New Jersey	0.546	0.521	5%	No change	0.2766
New Mexico	0.569	0.655	15%	No change	0.1278
New York	0.547	0.558	2%	No change	0.4724
North Carolina	0.485	0.431	11%	Decrease	0.0020
North Dakota	0.661	0.612	7%	No change	0.5194
Ohio	0.602	0.543	10%	Decrease	0.0010
Oklahoma	0.373	0.394	6%	No change	0.4257
Oregon	0.506	0.457	10%	No change	0.1744
Pennsylvania	0.614	0.576	6%	Decrease	0.0326
Puerto Rico	0.130	0.110	15%	No change	0.6869
Rhode Island	0.712	0.511	28%	Decrease	0.0014
South Carolina	0.494	0.395	20%	Decrease	0.0001
South Dakota	0.421	0.463	10%	No change	0.4785
Tennessee	0.355	0.327	8%	No change	0.1443
Texas	0.419	0.408	3%	No change	0.3121
Utah	0.584	0.566	3%	No change	0.7057
Vermont	0.628	0.696	11%	No change	0.5191
Virgin Islands	.	.	.	.	.
Virginia	0.404	0.331	18%	Decrease	0.0001
Washington	0.534	0.539	1%	No change	0.8869
West Virginia	0.747	0.732	2%	No change	0.7529
Wisconsin	0.638	0.698	9%	No change	0.0724
Wyoming	0.608	0.516	15%	No change	0.5082
All US	0.518	0.501	3%	Decrease	<0.0001

* Statistically significant, p < 0.0500. Statistical significance based on two-tailed p-value < 0.05, reflected in the relative percent change in magnitude.

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 2020 and/or 2021 and therefore subsequent data not calculated
3. For states with >>100% value in the percent change field, the p-value cannot be estimated due to sparse data reported within the facility type. The p-value is indicated as inestimable when the numerator and/or denominator of percent change = 0.

de.

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

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

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.

** CDC Location Code and Location Description described in table below

https://www.cdc.gov/nhsn/pdfs/pscmanual/15locationsdescriptions_current.pdf

CDC Location Code	Location Description
IN:ACUTE:CC:B	Burn Critical Care
IN:ACUTE:CC:T	Trauma Critical Care
IN:ACUTE:CC:C	Medical Cardiac Critical Care
IN:ACUTE:CC:CT	Surgical Cardiothoracic Critical Care
IN:ACUTE:CC:M	Medical Critical Care
IN:ACUTE:CC:MS	Medical-Surgical Critical Care
IN:ACUTE:CC:N	Neurologic Critical Care
IN:ACUTE:CC:NS	Neurosurgical Critical Care
IN:ACUTE:CC:PNATL	Prenatal Critical Care
IN:ACUTE:CC:R	Respiratory Critical Care
IN:ACUTE:CC:S	Surgical Critical Care'
IN:ACUTE:CC:ONC_M	Oncology Medical Critical Care
IN:ACUTE:CC:ONC_S	Oncology Surgical Critical Care
IN:ACUTE:CC:ONC_MS	Oncology Medical-Surgical Critical Care
IN:ACUTE:CC:ONC_PED	Oncology Pediatric Critical Care
IN:ACUTE:CC:B_PED	Pediatric Burn Critical Care
IN:ACUTE:CC:CT_PED	Pediatric Surgical Cardiothoracic Critical Care
IN:ACUTE:CC:M_PED	Pediatric Medical Critical Care
IN:ACUTE:CC:MS_PED	Pediatric Medical-Surgical Critical Care
IN:ACUTE:CC:NS_PED	Pediatric Neurosurgical Critical Care
IN:ACUTE:CC:S_PED	Pediatric Surgical Critical Care
IN:ACUTE:CC:T_PED	Pediatric Trauma Critical Care

IN:ACUTE:WARD:NURS	Well Newborn-- Nursery (Level I)
IN:ACUTE:STEP:NURS	Special Care Nursery (Level II)
IN:ACUTE:SCA:DIAL	Dialysis Specialty Care Area
IN:ACUTE:SCA:SOTP_PED	Pediatric Solid Organ Transplant Specialty Care Area
IN:ACUTE:SCA:SOTP	Solid Organ Transplant Specialty Care Area
IN:ACUTE:MIXED:ALL_ADULT	Adult Mixed Acuity Unit
IN:ACUTE:MIXED:ALL_PEDS	Pediatric Mixed Acuity Unit
IN:ACUTE:MIXED:ALL	Mixed Age Mixed Acuity Unit
IN:ACUTE:MIXED:ONC	Oncology Mixed Acuity Unit (all ages)
IN:ACUTE:STEP	Adult Step Down Unit
IN:ACUTE:STEP:ONC	Oncology Step Down Unit
IN:ACUTE:STEP:PED	Pediatric Step Down Unit
IN:ACUTE:WARD:ANTENAT	Antenatal Care Ward
IN:ACUTE:WARD:BHV	Behavioral Health/Psych Ward
IN:ACUTE:WARD:B	Burn Ward
IN:ACUTE:WARD:ENT	Ear, Nose, Throat Ward
IN:ACUTE:WARD:GI	Gastrointestinal Ward
IN:ACUTE:WARD:GU	Genitourinary Ward
IN:ACUTE:WARD:GNT	Gerontology Ward
IN:ACUTE:WARD:GYN	Gynecology Ward
IN:ACUTE:WARD:JAL	Jail Unit
IN:ACUTE:WARD:LD	Labor and Delivery Ward
IN:ACUTE:WARD:LD_PP	Labor, Delivery, Recovery, Postpartum Suite
IN:ACUTE:WARD:M	Medical Ward
IN:ACUTE:WARD:MS	Medical-Surgical Ward
IN:ACUTE:WARD:N	Neurology Ward
IN:ACUTE:WARD:NS	Neurosurgical Ward
IN:ACUTE:WARD:ONC_LEUK	Oncology Leukemia Ward
IN:ACUTE:WARD:ONC_LYMPH	Oncology Lymphoma Ward
IN:ACUTE:WARD:ONC_LL	Oncology Leukemia/Lymphoma Ward
IN:ACUTE:WARD:ONC_ST	Oncology Solid Tumor Ward
IN:ACUTE:WARD:ONC_HSCT	Oncology Hematopoietic Stem Cell Transplant Ward
IN:ACUTE:WARD:ONC_HONC	Oncology General Hematology-Oncology Ward
IN:ACUTE:WARD:T_ORT	Orthopedic Trauma Ward
IN:ACUTE:WARD:ORT	Orthopedic Ward
IN:ACUTE:WARD:PLS	Plastic Surgery Ward
IN:ACUTE:WARD:PP	Postpartum Ward
IN:ACUTE:WARD:PULM	Pulmonary Ward
IN:ACUTE:WARD:REHAB	Rehabilitation Ward (within Hospital)
IN:ACUTE:WARD:STRK	Stroke (Acute) Ward
IN:ACUTE:WARD:S	Surgical Ward
IN:ACUTE:WARD:TEL	Telemetry Ward
IN:ACUTE:WARD:VS	Vascular Surgery Ward
IN:ACUTE:WARD:BHV_ADOL	Adolescent Behavioral Health Ward
IN:ACUTE:WARD:ONC_HSCT_PED	Oncology Pediatric Hematopoietic Stem Cell Transplant Ward
IN:ACUTE:WARD:ONC_HONC_PED	Oncology Pediatric General Hematology/Oncology Ward
IN:ACUTE:WARD:BHV_PED	Pediatric Behavioral Health Ward
IN:ACUTE:WARD:B_PED	Pediatric Burn Ward
IN:ACUTE:WARD:M_PED	Pediatric Medical Ward
IN:ACUTE:WARD:MS_PED	Pediatric Medical-Surgical Ward
IN:ACUTE:WARD:N_PED	Pediatric Neurology Ward
IN:ACUTE:WARD:NS_PED	Pediatric Neurosurgical Ward
IN:ACUTE:WARD:ORT_PED	Pediatric Orthopedic Ward

IN:ACUTE:WARD:REHAB_PED	Pediatric Rehabilitation Ward
IN:ACUTE:WARD:S_PED	Pediatric Surgical Ward
IN:NONACUTE:LTC:HSP	Inpatient Hospice

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

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

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

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

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

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

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

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

events, divided by total

patient days / total # of annual admissions.

Survey.

**Appendix C. List of NHSN procedures included in this report
Admission/Re-admission SSI Logistic Regression Model¹, 4**

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
OVRV	Ovarian surgery
PACE	Pacemaker surgery
PRST	Prostate surgery
PVBV	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.cdc.gov/nhsn/pdfs/sirguide>

* These risk factors originate from the Annual Facility Survey.

† None of the variables investigated were statistically significant

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

Exclusion Criteria: SIR Guide: <https://www.cdc.gov/nhsn/pdfs/sirguide>

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

Validated Parameters for Risk Model
<i>Intercept-only model[†]</i>
anesthesia, wound class, hospital bed size*, age
gender, wound class, hospital bed size*, procedure duration
gender, emergency, trauma, hospital bed size*, scope, age, procedure duration
ASA score, closure, age, procedure duration, BMI
emergency, medical school affiliation*, age, procedure duration, BMI
gender, diabetes, ASA score, trauma, wound class, medical school affiliation*, hospital bed size*, age, procedure duration, BMI, age-gender interaction
wound class
gender, diabetes, ASA score, wound class, hospital bed size*, age, procedure duration, age-gender interaction
gender, diabetes, trauma, anesthesia, ASA score, wound class, hospital bed size*, scope, closure, age, procedure duration, BMI
diabetes, trauma, ASA score, age, procedure duration, wound class
emergency, ASA score, wound class, medical school affiliation*, hospital bed size*, age, procedure duration, duration of labor
gender, diabetes, trauma, ASA score, medical school affiliation*, hospital bed size*, procedure duration, BMI, spinal level, approach
gender, diabetes, ASA score, wound class, closure, age, procedure duration, BMI
wound class, scope, age, procedure duration, BMI
gender, ASA score, wound class, medical school affiliation*, hospital bed size*, scope, age, procedure duration, BMI
diabetes, trauma, anesthesia, ASA score, wound class, medical school affiliation*, hospital bed size*, age, procedure duration, BMI, procedure type
closure
diabetes, ASA score, hospital bed size*, scope, age, procedure duration, BMI
gender, trauma, anesthesia, ASA score, wound class, medical school affiliation*, hospital bed size*, age, procedure duration, BMI, procedure type
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](https://www.dhs.gov/nhsn/pdfs/ps-analysis-resources/nhsn-sir-guide.pdf)

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

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

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

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

* These risk factors originate from the Annual Facility Survey

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

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

port with predictive risk factors from the NHSN
 ion Model¹, 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

As a result, no SIRs can be calculated for these procedures.
 Calculation (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 Model¹ 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 (2021 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

COVID Papers

<https://www.cdc.gov/library/researchguides/2021novelcoronavirus/databasesjournals.html>

website.