2020 National and State HAI Pro Report

Long-Term Acute Care Hospitals

Introduction: Welcome to the 2020 National and State HAI Progress Report using the 2015 baseline and risk adjustment calculations. Standardiz are used to describe different HAI types by comparing the number of observed infections to the number of predicted infections. The This report is created by CDC staff within the National Healthcare Safety Network (NHSN).

This workbook includes national and state-specific SIR data for long-term acute care hospitals (LTACHs).

Scope of report:

HAI Type	LTACH	
	National	State
Central line-associated bloodstream infections (CLABSI) by locations	þ	þ
Catheter-associated urinary tract infections (CAUTI) by locations	þ	þ
Ventilator-associated events (VAE) by locations	þ	þ
Hospital-onset methicillin-resistant *Staphylococcus aureus* (MRSA) bacteremia by facility-wide reporting	þ	þ
Hospital-onset *Clostridioides difficile* (CDI) by facility-wide reporting	þ	þ

›gress

ɀed infection ratios (SIRs)
2020 SIRs are compared to previous year's SIRs.

2020 Annual National and State HAI Progress Report
Long-term Acute Care Hospitals: Full series of tables for all national and state-specific data

NOTE: Tables contain data from Long-term Acute Care Hospitals (LTACHs); as such, they exclude

are Hospitals (LTACHs):

hospital-onset CDI between 2019 and 2020 from LTACHs

E) negative binomial regression models from LTACHs

regression models from LTACHs

data from Inpatient Rehabilitation Facilities (IRFs), Critical Access Hospitals (CAHs), and Acute Care Hospitals (AC

:Hs).

HAI and Patient Population	Reporting Hospitals			Standardize	
	No. of Long Term Acute Care Hospitals Reporting[1]	Total Patient Days	Total Device Days	Observed Events	Predicted Events
CLABSI, all[4]	406	4,686,741	1,828,129	1,583	2,237.740
ICUs[5]	72	269,032	123,649	208	280.740
Wards[6]	401	4,417,709	1,704,480	1,375	1,957.000
CAUTI, all[7]	407	4,668,375	1,511,468	1,900	2,573.760
	72	267,967	107,960	142	250.080
	402	4,400,408	1,403,508	1,758	2,323.680
VAE, all[7]	191	2,081,057	613,437	569	1,038.075
	42	117,175	61,572	127	156.984
	186	1,963,882	551,865	442	881.091

1. The number of reporting facilities included in the SIR calculation.
2. Percent of facilities with at least one predicted infection (event) that had an SIR significantly greater than or less than the nominal value of the natio
3. Facility-specific percentiles are only calculated if at least 20 facilities had ≥1.0 predicted HAI in 2020. If a facility's predicted number of HAIs was <
4. Data from all ICUs and wards
5. Data from all ICUs; excludes wards. For VAE, pediatric locations are excluded from SIR since pediatric and neonatal locations are excluded from
6. Data from all wards. For VAE, pediatric locations are excluded from SIR since pediatric and neonatal locations are excluded from VAE surveillanc
7. Data from all ICUs and wards. For VAE, pediatric locations are excluded from SIR since pediatric and neonatal locations are excluded from VAE s
   IVAC-plus includes those events identified as infection-related ventilator-associated condition (IVAC) and possible ventilator-associated pneumoni

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

Table 1a. National standardized infection ratios (SIRs) and facility-specific summary SIRs using HAI data reported to NHSN during 2020 by
Central line-associated bloodstream infections (CLABSIs), catheter-associated urinary tract infections (CAUTIs) and ventilato

ed Infection Ratio Data			Facility SIRs Compared to National SIR						
SIR	Lower 95% Confidence Interval	Upper 95% Confidence Interval	No. Facilities with ≥1 Predicted Infection (Event)	No. Facilities with SIR Significantly > National SIR		No. Facilities with SIR Significantly < National SIR		5%	10%
				N	%[2]	N			
0.707	0.673	0.743	381	47	12%	52	14%	0.000	0.000
0.741	0.645	0.847	63	5	8%	7	11%	0.000	0.000
0.703	0.666	0.740	374	43	12%	45	12%	0.000	0.000
0.738	0.706	0.772	385	49	12%	56	14%	0.000	0.000
0.568	0.480	0.667	65	5	7%	2	3%	0.000	0.000
0.757	0.722	0.793	379	45	11%	47	12%	0.000	0.000
0.548	0.504	0.595	140	17	12%	35	25%	0.000	0.000
0.809	0.677	0.959	36	5	14%	6	17%	0.000	0.000
0.502	0.456	0.55	131	17	13%	29	22%	0.000	0.000

onal SIR for the given HAI type. This is only calculated if at least 10 facilities had ≥ 1.0 predicted HAI in 2020.
:1.0, a facility-specific SIR was neither calculated nor included in the distribution of facility-specific SIRs.

VAE surveillance.
e.
urveillance. Total VAE includes IVAC-plus events.
a (pVAP). IVAC-plus events are a subset of the total VAE, meaning the IVAC-plus events are included in the total VAE SIR as well.

facility type, HAI, and patient population:
or-associated events (VAEs)

Percentile Distribution of Facility-specific SIRs[3]

							Median					
15%	**20%**	**25%**	**30%**	**35%**	**40%**	**45%**	**50%**	**55%**	**60%**	**65%**	**70%**	**75%**
0.000	0.000	0.145	0.214	0.267	0.329	0.432	0.512	0.589	0.701	0.780	0.940	1.071
0.000	0.000	0.000	0.188	0.261	0.289	0.334	0.390	0.521	0.643	0.835	1.044	1.187
0.000	0.000	0.136	0.211	0.265	0.319	0.444	0.535	0.595	0.717	0.808	0.942	1.077
0.000	0.178	0.257	0.330	0.389	0.476	0.574	0.646	0.709	0.818	0.911	1.036	1.173
0.000	0.000	0.000	0.000	0.109	0.272	0.306	0.380	0.483	0.644	0.757	0.838	0.940
0.000	0.167	0.254	0.332	0.393	0.478	0.575	0.655	0.718	0.838	0.927	1.055	1.195
0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.113	0.209	0.449	0.609	0.744
0.000	0.000	0.000	0.000	0.000	0.196	0.324	0.464	0.470	0.716	0.892	1.078	1.403
0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.156	0.272	0.428	0.674

80%	85%	90%	95%
1.251	1.583	1.912	2.487
1.377	1.472	2.008	2.405
1.261	1.581	1.876	2.458
1.332	1.513	1.725	2.181
1.024	1.148	1.320	2.350
1.340	1.529	1.777	2.204
0.872	1.231	1.728	2.383
1.613	1.697	2.493	3.535
0.836	1.142	1.431	2.386

HAI and Patient Population	Reporting Hospitals				
		Total Admissions[2]	Total Patient Days[3]	Community-onset events	Observed Hospital-onset Events[4]
MRSA bacteremia, facility-wide[4]	212	81,546	2,692,316	47	329
Hospital-onset *C. difficile,* facility-wide[4]	397	156,907	4,854,207	211	1,888

1. The number of reporting facilities included in the SIR calculation.
2. Total inpatient admissions reported from all inpatient locations.
3. Total patient days reported from all inpatient units.
4. Hospital-onset events are defined as those that were identified in an inpatient location on the 4th day (or later) after admission to the facility.
5. Calculated from a negative binomial regression model. Risk factors used in the calculation of the number of predicted events are listed in Appendix B.
6. Percent of facilities with at least one predicted event that had an SIR significantly greater than or less than the nominal value of the national SIR for the
7. Percentile distribution of facility-specific SIRs. This is only calculated if at least 20 facilities had ≥1.0 predicted HAI in 2020. If a facility's predicted num

Table 1b. National standardized infection ratios (SIRs) and facility-specific summary SIRs using HAI data reported to NHSN duri
hospital-onset methicillin-resistant *Staphylococcus aureus* (MRSA) bacteremia and hospital-onset *C*

Standardized Infection Ratio Data				Facility SIRs Compared to National SIR				
Predicted Hospital-onset Events[5]	SIR	Lower 95% Confidence Interval	Upper 95% Confidence Interval	No. Facilities with ≥1 Predicted Event	No. Facilities with SIR Significantly > National SIR		No. Facilities with SIR Significantly < National SIR	
					N	%[6]	N	
389.941	0.844	0.756	0.939	153	17	11%	3	2%
4,743.475	0.398	0.380	0.416	391	37	9%	45	12%

given HAI type. This is only calculated if at least 10 facilities had ≥ 1.0 predicted HAI in 2020.
ıber of events was <1.0, a facility-specific SIR was neither calculated nor included in the distribution of facility-specific SIRs.

ing 2020 by facility type, HAI, and patient population:
***lostridioides difficile* (CDI)**

Percentile Distribution of Facility-specific SIRs[7]												
									Median			
5%	10%	15%	20%	25%	30%	35%	40%	45%	50%	55%	60%	65%
0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.211	0.395	0.534	0.704	0.844	1.009
0.000	0.000	0.000	0.094	0.125	0.175	0.219	0.258	0.293	0.341	0.381	0.434	0.497

70%	75%	80%	85%	90%	95%
1.164	1.414	1.588	1.914	2.368	2.896
0.558	0.608	0.687	0.738	0.854	1.045

Table 2. State-specific standardized infection rat
NHSN Long-Term Acute Care Ho
Central line-associated bloodstream ir

State	State NHSN Mandate[2]	Any Validation[3]	No. of LTACHs Reporting[4]	No. of Infections			95% CI
				Observed	Predicted	SIR	Lower
Alabama	No	No	8	10	27.720	0.361	0.183
Alaska	Yes	No	1	.	.	.	.
Arizona			6	15	28.779	0.521	0.303
Arkansas			8	20	19.702	1.015	0.637
California	M	Yes	24	264	285.201	0.926	0.819
Colorado	M	No	6	18	28.555	0.630	0.385
Connecticut	Yes	No	2	.	.	.	.
D.C.	Yes	No	2	.	.	.	.
Delaware			1	.	.	.	.
Florida	No	Yes	27	73	186.695	0.391	0.309
Georgia	Yes	No	13	42	75.186	0.559	0.408
Guam			1	.	.	.	.
Hawaii	No	No	1	.	.	.	.
Idaho	No	No	2	.	.	.	.
Illinois	No	No	9	92	90.547	1.016	0.824
Indiana	Yes	No	9	51	58.973	0.865	0.651
Iowa	No	No	2	.	.	.	.
Kansas	No	No	3	.	.	.	.
Kentucky	Yes	No	9	34	35.767	0.951	0.669
Louisiana			29	71	85.882	0.827	0.651
Maine	No	No	1	.	.	.	.
Maryland	No	No	2	.	.	.	.
Massachusetts	Yes	No	11	60	69.463	0.864	0.665
Michigan	No	No	18	59	52.090	1.133	0.870
Minnesota	No	No	2	.	.	.	.
Mississippi	Yes	No	7	23	28.040	0.820	0.533
Missouri	No	No	10	36	40.750	0.883	0.628
Montana	No	No	1	.	.	.	.
Nebraska			4	.	.	.	.
Nevada	Yes	No	8	25	58.453	0.428	0.283
New Hampshire	No	No	1	.	.	.	.
New Jersey	No	No	11	42	58.233	0.721	0.527
New Mexico	No	No	3	.	.	.	.
New York	No	No	1	.	.	.	.
North Carolina			8	30	52.099	0.576	0.396
North Dakota	No	No	2	.	.	.	.
Ohio	No	No	27	50	120.907	0.414	0.310
Oklahoma	No	No	12	22	53.794	0.409	0.263
Oregon	Yes	No	1	.	.	.	.
Pennsylvania	Yes	Yes	17	50	66.691	0.750	0.562
Puerto Rico	No	No	1	.	.	.	.
Rhode Island	No	No	1	.	.	.	.

South Carolina	Yes	Yes	6	44	36.740	1.198	0.881
South Dakota	No	No	1	.	.	.	.
Tennessee	Yes	Yes	9	19	35.976	0.528	0.327
Texas			65	230	390.540	0.589	0.516
Utah			3	.	.	.	.
Vermont	No	No	1	.	.	.	.
Virgin Islands			1	.	.	.	.
Virginia	Yes	No	6	27	32.392	0.834	0.561
Washington	M	No	1	.	.	.	.
West Virginia	Yes	No	5	12	16.836	0.713	0.386
Wisconsin	No	Yes	4	.	.	.	.
Wyoming	No	No	1	.	.	.	.
All US			**406**	**1,583**	**2237.740**	**0.707**	**0.673**

1. Includes data reported from all locations (i.e., adult and pediatric critical care units and wards) within LTACHs.
2. Yes indicates the presence of a state mandate to report CLABSI data from any location to NHSN at the beginnir No indicates that a state mandate did not exist during 2020.
3. Yes indicates that the state health department reported the completion of all of the following validation activities: assessment of missing or implausible values on at least six months of 2020 NHSN data prior to June 1, 2021, a YesA indicates that the state also conducted an audit of facility medical or laboratory records prior to June 1, 20 varies by state). Information on validation efforts was requested from all states, regardless of the presence of a reporting of a given HAI to the state health department have performed validation on NHSN data that is voluntar
4. The number of LTACHs that reported 2020 CLABSI data and are included in the SIR calculation. SIRs and acc from at least one location in 2020.
5. Percent of facilities with ≥1.0 predicted CLABSI that had an SIR significantly greater or less than the nominal va ≥ 1.0 predicted CLABSI in 2020.
6. Facility-specific key percentiles were only calculated if at least 20 facilities had ≥1.0 predicted CLABSI in 2020. nor included in the distribution of facility-specific SIRs.

ios (SIRs) and facility-specific SIR summary measures,
spitals (LTACHs) reporting during 2020
nfections (CLABSIs) in LTACHs, all locations[1]

for SIR		Facility-specific SIRs					Facility-specific SIRs at Key Percen
Upper	No. of facs with at least 1 predicted CLABSI	% of facs with SIR sig higher than national SIR[5]	% of facs with SIR sig lower than national SIR[5]	10%	25%	Median (50%)	75%
0.643	8	.	.	.	.	.	.
.	.	.	.	.	.	.	.
0.840	6	.	.	.	.	.	.
1.540	8	.	.	.	.	.	.
1.042	22	23%	18%	0.217	0.301	0.513	0.933
0.977	5	.	.	.	.	.	.
.	.	.	.	.	.	.	.
.	.	.	.	.	.	.	.
.	.	.	.	.	.	.	.
0.489	26	8%	31%	0.000	0.121	0.267	0.645
0.748	12	0%	25%	.	.	.	.
.	.	.	.	.	.	.	.
.	.	.	.	.	.	.	.
.	.	.	.	.	.	.	.
1.240	9	.	.	.	.	.	.
1.128	9	.	.	.	.	.	.
.	.	.	.	.	.	.	.
.	.	.	.	.	.	.	.
1.313	9	.	.	.	.	.	.
1.037	25	12%	8%	0.000	0.000	0.690	1.468
.	.	.	.	.	.	.	.
.	.	.	.	.	.	.	.
1.104	10	10	10%	.	.	.	.
1.451	16	25%	0%	.	.	.	.
.	.	.	.	.	.	.	.
1.211	7	.	.	.	.	.	.
1.210	10	10	0%	.	.	.	.
.	.	.	.	.	.	.	.
.	.	.	.	.	.	.	.
0.622	8	.	.	.	.	.	.
.	.	.	.	.	.	.	.
0.966	10	20%	20%	.	.	.	.
.	.	.	.	.	.	.	.
.	.	.	.	.	.	.	.
0.812	8	.	.	.	.	.	.
.	.	.	.	.	.	.	.
0.541	26	0%	15%	0.000	0.249	0.320	0.767
0.609	9	.	.	.	.	.	.
.	.	.	.	.	.	.	.
0.980	17	6%	0%	.	.	.	.
.	.	.	.	.	.	.	.
.	.	.	.	.	.	.	.

1.593	6	.	.	.	.	.	.
.	.	.	.	.	.	.	.
0.809	9	.	.	.	.	.	.
0.669	59	7%	17%	0.000	0.052	0.385	1.094
.	.	.	.	.	.	.	.
.	.	.	.	.	.	.	.
.	.	.	.	.	.	.	.
1.196	6	.	.	.	.	.	.
.	.	.	.	.	.	.	.
1.212	5	.	.	.	.	.	.
.	.	.	.	.	.	.	.
.	.	.	.	.	.	.	.
0.743	**381**	**12%**	**14%**	**0.000**	**0.145**	**0.512**	**1.071**

ŋg of 2020. M indicates midyear implementation of a mandate.

: state health department had access to 2020 NHSN data, state health department performed an
nd state health department contacted identified facilities.
21 to confirm proper case ascertainment (although intensity of auditing activities
legislative mandate for the particular HAI type. Some states without mandatory
ily shared with them by facilities in their jurisdiction.
ompanying statistics are only calculated for states in which at least 5 LTACHs reported CLABSI data

lue of the 2020 national LTACH CLABSI SIR of 0.707. This is only calculated if at least 10 facilities had

If a facility's predicted number of CLABSI was <1.0, a facility-specific SIR was neither calculated

tiles[6]
90%
2.172
0.901
2.029
1.120

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.
1.773
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1.912

Table 3. State-specific standardized infection rat
NHSN Long-Term Acute Care Ho
Catheter-associated urinary tract in

State				No. of Infections			95% CI
				Observed	Predicted	SIR	Lower
Alabama	No	No	8	11	38.644	0.285	0.150
Alaska	Yes	No	1	.	.	.	.
Arizona			6	20	31.983	0.625	0.393
Arkansas			8	22	29.611	0.743	0.477
California	No	No	24	206	360.930	0.571	0.497
Colorado	M	No	6	60	53.726	1.117	0.860
Connecticut	Yes	No	3	.	.	.	.
D.C.	Yes	No	2	.	.	.	.
Delaware			1	.	.	.	.
Florida	No	Yes	27	117	224.477	0.521	0.433
Georgia	Yes	No	13	103	81.034	1.271	1.043
Guam			0	.	.	.	.
Hawaii	No	No	0	.	.	.	.
Idaho	No	No	2	.	.	.	.
Illinois	No	No	9	68	99.453	0.684	0.535
Indiana	Yes	No	9	35	54.153	0.646	0.457
Iowa	No	No	2	.	.	.	.
Kansas	No	No	3	.	.	.	.
Kentucky	Yes	No	9	55	40.472	1.359	1.034
Louisiana			29	72	109.658	0.657	0.518
Maine	No	No	0	.	.	.	.
Maryland	No	No	2	.	.	.	.
Massachusetts	Yes	No	11	88	69.973	1.258	1.015
Michigan	No	No	18	89	74.735	1.191	0.962
Minnesota	No	No	2	.	.	.	.
Mississippi	Yes	No	7	31	40.400	0.767	0.531
Missouri	No	No	10	26	46.126	0.564	0.376
Montana	No	No	1	.	.	.	.
Nebraska			4	.	.	.	.
Nevada	No	No	8	43	57.747	0.745	0.546
New Hampshire	No	No	0	.	.	.	.
New Jersey	No	No	11	48	75.438	0.636	0.474
New Mexico	No	No	3	.	.	.	.
New York	No	No	1	.	.	.	.
North Carolina			8	17	55.465	0.306	0.185
North Dakota	No	No	2	.	.	.	.
Ohio	No	No	27	108	120.096	0.899	0.741
Oklahoma	No	No	12	46	67.031	0.686	0.508
Oregon	Yes	No	1	.	.	.	.
Pennsylvania	Yes	Yes	17	63	74.297	0.848	0.657
Puerto Rico	Yes	No	0	.	.	.	.
Rhode Island	No	No	0	.	.	.	.

South Carolina	No	No	6	39	33.248	1.173	0.846
South Dakota	No	No	1	.	.	.	.
Tennessee	Yes	Yes	9	35	49.853	0.702	0.497
Texas			65	222	385.034	0.577	0.504
Utah			3	.	.	.	.
Vermont	No	No	0	.	.	.	.
Virgin Islands			0	.	.	.	.
Virginia	Yes	No	6	32	43.072	0.743	0.517
Washington	No	No	1	.	.	.	.
West Virginia	Yes	No	5	24	25.771	0.931	0.611
Wisconsin	No	Yes	4	.	.	.	.
Wyoming	No	No	0	.	.	.	.
All US			**407**	**1,900**	**2573.760**	**0.738**	**0.706**

1. Includes data reported from all locations (i.e., adult and pediatric critical care units and wards) within LTACHs.
2. Yes indicates the presence of a state mandate to report CAUTI data from any location to NHSN at the beginning No indicates that a state mandate did not exist during 2020.
3. Yes indicates that the state health department reported the completion of all of the following validation activities: assessment of missing or implausible values on at least six months of 2020 NHSN data prior to June 1, 2021, a YesA indicates that the state also conducted an audit of facility medical or laboratory records prior to June 1, 20 varies by state). Information on validation efforts was requested from all states, regardless of the presence of a reporting of a given HAI to the state health department have performed validation on NHSN data that is voluntar
4. The number of LTACHs that reported 2020 CAUTI data and are included in the SIR calculation. SIRs and acco from at least one location in 2020.
5. Percent of facilities with ≥1.0 predicted CAUTI that had an SIR significantly greater or less than the nominal valu ≥ 1.0 predicted CAUTI in 2020.
6. Facility-specific key percentiles were only calculated if at least 20 facilities had ≥1.0 predicted CAUTI in 2020. If nor included in the distribution of facility-specific SIRs.

ios (SIRs) and facility-specific SIR summary measures,
spitals (LTACHs) reporting during 2020
fections (CAUTIs) in LTACHs, all locations[1]

for SIR		Facility-specific SIRs					
Upper	No. of facs with at least 1 predicted CAUTI			10%	25%		75%
0.495	8	.	.	.	.	.	.
.	.	.	.	.	.	.	.
0.949	6	.	.	.	.	.	.
1.106	8	.	.	.	.	.	.
0.653	23	13%	30%	0.120	0.279	0.418	0.888
1.428	6	.	.	.	.	.	.
.	.	.	.	.	.	.	.
.	.	.	.	.	.	.	.
.	.	.	.	.	.	.	.
0.622	27	7%	22%	0.000	0.174	0.370	0.673
1.535	12	33%	8%	.	.	.	.
.	.	.	.	.	.	.	.
.	.	.	.	.	.	.	.
.	.	.	.	.	.	.	.
0.862	9	.	.	.	.	.	.
0.889	9	.	.	.	.	.	.
.	.	.	.	.	.	.	.
.	.	.	.	.	.	.	.
1.756	9	.	.	.	.	.	.
0.822	25	12%	16%	0.000	0.000	0.424	0.822
.	.	.	.	.	.	.	.
.	.	.	.	.	.	.	.
1.542	10	30%	10%	.	.	.	.
1.458	17	24%	0%	.	.	.	.
.	.	.	.	.	.	.	.
1.076	7	.	.	.	.	.	.
0.814	10	0%	20%	.	.	.	.
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.	.	.	.	.	.	.	.
0.994	8	.	.	.	.	.	.
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0.837	10	10%	30%	.	.	.	.
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0.481	8	.	.	.	.	.	.
.	.	.	.	.	.	.	.
1.081	26	8%	0%	0.338	0.552	0.896	1.272
0.907	10	0%	20%	.	.	.	.
.	.	.	.	.	.	.	.
1.078	17	12%	6%	.	.	.	.
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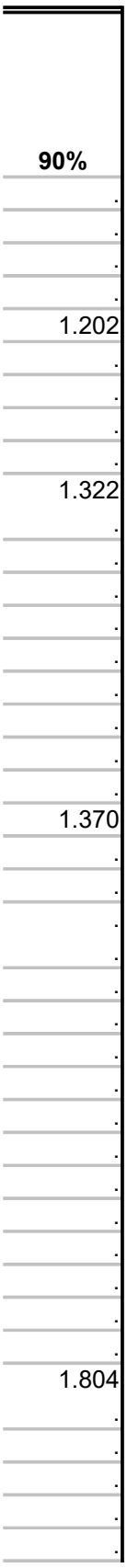
1.587	6	.	.	.	.	.	.
.	.	.	.	.	.	.	.
0.966	9	.	.	.	.	.	.
0.656	58	10%	28%	0.000	0.126	0.390	0.847
.	.	.	.	.	.	.	.
.	.	.	.	.	.	.	.
.	.	.	.	.	.	.	.
1.036	6	.	.	.	.	.	.
.	.	.	.	.	.	.	.
1.365	5	.	.	.	.	.	.
.	.	.	.	.	.	.	.
.	.	.	.	.	.	.	.
0.772	**385**	**12%**	**14%**	**0.000**	**0.257**	**0.646**	**1.173**

g of 2020. M indicates midyear implementation of a mandate.

: state health department had access to 2020 NHSN data, state health department performed an
nd state health department contacted identified facilities.
21 to confirm proper case ascertainment (although intensity of auditing activities
legislative mandate for the particular HAI type. Some states without mandatory
ily shared with them by facilities in their jurisdiction.
mpanying statistics are only calculated for states in which at least 5 LTACHs reported CAUTI data

ıe of the 2020 national LTACH CAUTI SIR of 0.738. This is only calculated if at least 10 facilities had

: a facility's predicted number of CAUTI was <1.0, a facility-specific SIR was neither calculated


90%
1.202
1.322
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1.725

Table 4. State-specific standardize
NHSN Long-Term
Ventilator-ass

State				No. of Events		
				Observed	Predicted	SIR
Alabama	No	No	6	0	12.711	0.000
Alaska	Yes	No	0	.	.	.
Arizona			2	.	.	.
Arkansas			2	.	.	.
California	No	No	19	93	241.938	0.384
Colorado	No	No	3	.	.	.
Connecticut	No	No	0	.	.	.
D.C.	No	No	2	.	.	.
Delaware			0	.	.	.
Florida	No	Yes	12	46	84.099	0.547
Georgia	No	No	7	21	32.837	0.640
Guam			0	.	.	.
Hawaii	No	No	0	.	.	.
Idaho	No	No	0	.	.	.
Illinois	No	No	9	53	84.603	0.626
Indiana	M	No	4	.	.	.
Iowa	No	No	0	.	.	.
Kansas	No	No	0	.	.	.
Kentucky	No	No	5	42	23.358	1.798
Louisiana			5	1	0.746	.
Maine	No	No	0	.	.	.
Maryland	No	No	1	.	.	.
Massachusetts	No	No	7	0	33.273	0.000
Michigan	No	No	5	3	5.583	0.537
Minnesota	No	No	0	.	.	.
Mississippi	No	No	2	.	.	.
Missouri	No	No	7	24	14.715	1.631
Montana	No	No	0	.	.	.
Nebraska			0	.	.	.
Nevada	No	No	3	.	.	.
New Hampshire	No	No	0	.	.	.
New Jersey	No	No	9	12	72.052	0.167
New Mexico	No	No	1	.	.	.
New York	No	No	1	.	.	.
North Carolina			3	.	.	.
North Dakota	No	No	0	.	.	.
Ohio	No	No	5	6	13.334	0.450
Oklahoma	No	No	5	0	1.782	0.000
Oregon	No	No	0	.	.	.
Pennsylvania	Yes	Yes	16	48	74.054	0.648
Puerto Rico	No	No	0	.	.	.
Rhode Island	No	No	0	.	.	.

South Carolina	Yes	Yes	6	44	30.717	1.432
South Dakota	No	No	0	.	.	.
Tennessee	Yes	Yes	8	28	50.457	0.555
Texas			28	40	77.599	0.515
Utah			1	.	.	.
Vermont	No	No	0	.	.	.
Virgin Islands			0	.	.	.
Virginia	No	No	3	.	.	.
Washington	No	No	1	.	.	.
West Virginia	Yes	No	3	.	.	.
Wisconsin	No	Yes	0	.	.	.
Wyoming	No	No	0	.	.	.
All US			**191**	**569**	**1038.075**	**0.548**

1. Includes data reported from all locations (i.e., adult critical care units and wards) within LTACHs.
2. Yes indicates the presence of a state mandate to report VAE data from any location to NHSN at t
   No indicates that a state mandate did not exist during 2020.
3. Yes indicates that the state health department reported the completion of all of the following valid
   assessment of missing or implausible values on at least six months of 2020 NHSN data prior to J
   YesA indicates that the state also conducted an audit of facility medical or laboratory records prio
   varies by state). Information on validation efforts was requested from all states, regardless of the
   reporting of a given HAI to the state health department have performed validation on NHSN data
4. The number of LTACHs that reported 2020 VAE data and are included in the SIR calculation. SI
   from at least one location in 2020.
5. Percent of facilities with ≥1.0 predicted VAE that had an SIR significantly greater or less than the
   ≥ 1.0 predicted VAE in 2020.
6. Facility-specific key percentiles were only calculated if at least 20 facilities had ≥1.0 predicted VA
   nor included in the distribution of facility-specific SIRs.

d infection ratios (SIRs) and facility-specific SIR summary measures,
Acute Care Hospitals (LTACHs) reporting during 2020

sociated events (VAEs) in LTACHs, all locations[1]

95% CI for SIR		Facility-specific SIRs				
Lower	Upper	No. of facs with at least 1 predicted VAE			10%	25%
.	0.236	5	.	.	.	.
.	.	.	.	.	.	.
.	.	.	.	.	.	.
.	.	.	.	.	.	.
0.312	0.469	17	12%	41%	.	.
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0.405	0.723	9	.	.	.	.
0.406	0.961	6	.	.	.	.
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0.474	0.813	9	.	.	.	.
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.	.	.	.	.	.	.
1.313	2.408	5	.	.	.	.
.	.	0	.	.	.	.
.	.	.	.	.	.	.
.	.	.	.	.	.	.
.	0.090	3	.	.	.	.
0.137	1.462	2	.	.	.	.
.	.	.	.	.	.	.
.	.	.	.	.	.	.
1.069	2.390	4	.	.	.	.
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.	.	.	.	.	.	.
.	.	.	.	.	.	.
0.090	0.283	8	.	.	.	.
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.	.	.	.	.	.	.
.	.	.	.	.	.	.
.	.	.	.	.	.	.
0.182	0.936	3	.	.	.	.
.	1.681	0	.	.	.	.
.	.	.	.	.	.	.
0.483	0.852	16	13%	6%	.	.
.	.	.	.	.	.	.
.	.	.	.	.	.	.

1.054	1.906	6	.	.	.	.
.	.	.	.	.	.	.
0.376	0.791	8	.	.	.	.
0.373	0.695	16	6%	13%	.	.
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0.504	**0.595**	**140**	**12%**	**25%**	**0.000**	**0.000**

he beginning of 2020. M indicates midyear implementation of a mandate.

ation activities: state health department had access to 2020 NHSN data, state health department perform
une 1, 2021, and state health department contacted identified facilities.
r to June 1, 2021 to confirm proper case ascertainment (although intensity of auditing activities
presence of a legislative mandate for the particular HAI type. Some states without mandatory
that is voluntarily shared with them by facilities in their jurisdiction.
Rs and accompanying statistics are only calculated for states in which at least 5 LTACHs reported VAE da

nominal value of the 2020 national LTACH VAE SIR of 0.548. This is only calculated if at least 10 facilitie

E in 2020. If a facility's predicted number of VAE was <1.0, a facility-specific SIR was neither calculated

	75%	90%
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0.000	**0.744**	**1.728**

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Table 5. State-specific standardized
NHSN Long-Term A
Hospital-onset methicillin-resis

State				No. of Events		
				Observed	Predicted	SIR
Alabama	No	No	6	21	9.196	2.284
Alaska	Yes	No	0	.	.	.
Arizona			1	.	.	.
Arkansas			2	.	.	.
California	M	Yes	24	70	71.759	0.975
Colorado	No	No	4	.	.	.
Connecticut	No	No	1	.	.	.
D.C.	Yes	No	0	.	.	.
Delaware			1	.	.	.
Florida	No	Yes	12	40	25.280	1.582
Georgia	No	No	8	2	13.055	0.153
Guam			0	.	.	.
Hawaii	No	No	0	.	.	.
Idaho	No	No	1	.	.	.
Illinois	Yes	No	9	25	29.492	0.848
Indiana	M	No	5	3	7.856	0.382
Iowa	No	No	0	.	.	.
Kansas	No	No	0	.	.	.
Kentucky	No	No	5	12	7.922	1.515
Louisiana			4	.	.	.
Maine	No	No	0	.	.	.
Maryland	No	No	1	.	.	.
Massachusetts	Yes	No	10	10	32.592	0.307
Michigan	No	No	6	1	4.857	0.206
Minnesota	No	No	1	.	.	.
Mississippi	No	No	1	.	.	.
Missouri	No	No	7	10	9.190	1.088
Montana	No	No	0	.	.	.
Nebraska			2	.	.	.
Nevada	Yes	No	6	1	8.202	0.122
New Hampshire	No	No	0	.	.	.
New Jersey	No	No	6	13	15.276	0.851
New Mexico	No	No	1	.	.	.
New York	No	No	1	.	.	.
North Carolina			3	.	.	.
North Dakota	No	No	2	.	.	.
Ohio	No	No	6	9	7.549	1.192
Oklahoma	No	No	6	0	2.141	0.000
Oregon	Yes	No	0	.	.	.
Pennsylvania	Yes	Yes	16	16	23.526	0.680
Puerto Rico	Yes	No	0	.	.	.
Rhode Island	No	No	0	.	.	.

South Carolina	Yes	Yes	6	13	9.903	1.313
South Dakota	No	No	0	.	.	.
Tennessee	Yes	Yes	8	29	19.236	1.508
Texas			32	25	43.461	0.575
Utah			1	.	.	.
Vermont	No	No	0	.	.	.
Virgin Islands			0	.	.	.
Virginia	No	No	3	.	.	.
Washington	No	No	1	.	.	.
West Virginia	Yes	No	2	.	.	.
Wisconsin	No	Yes	1	.	.	.
Wyoming	No	No	0	.	.	.
All US			**212**	**329**	**389.941**	**0.844**

1. Includes data reported from all locations (i.e., adult and pediatric critical care units and wards) within
2. Yes indicates the presence of a state mandate to report MRSA bacteremia data from any location to
   No indicates that a state mandate did not exist during 2020.
3. Yes indicates that the state health department reported the completion of all of the following validatio
   assessment of missing or implausible values on at least six months of 2020 NHSN data prior to June
   YesA indicates that the state also conducted an audit of facility medical or laboratory records prior to
   varies by state). Information on validation efforts was requested from all states, regardless of the pre
   reporting of a given HAI to the state health department have performed validation on NHSN data that
4. The number of LTACHs that reported 2020 MRSA bacteremia data and are included in the SIR calcu
   MRSA bacteremia data from at least one location in 2020.
5. Percent of facilities with ≥1.0 predicted MRSA bacteremia that had an SIR significantly greater or less
   ≥ 1.0 predicted MRSA bacteremia in 2020.
6. Facility-specific key percentiles were only calculated if at least 20 facilities had ≥1.0 predicted MRSA
   was neither calculated nor included in the distribution of facility-specific SIRs.

infection ratios (SIRs) and facility-specific SIR summary measures,
cute Care Hospitals (LTACHs) reporting during 2020

stant *Staphylococcus aureus* (MRSA) bacteremia, facility-wide[1]

95% CI for SIR		Facility-specific SIRs				
Lower	Upper	No. of facs with at least 1 predicted MRSA			10%	25%
1.451	3.431	5	.	.	.	.
.	.	.	.	.	.	.
.	.	.	.	.	.	.
.	.	.	.	.	.	.
0.766	1.225	21	14%	5%	0.000	0.042
.	.	.	.	.	.	.
.	.	.	.	.	.	.
.	.	.	.	.	.	.
.	.	.	.	.	.	.
1.146	2.133	10	30%	0%	.	.
0.026	0.506	5	.	.	.	.
.	.	.	.	.	.	.
.	.	.	.	.	.	.
.	.	.	.	.	.	.
0.561	1.233	9	.	.	.	.
0.097	1.039	5	.	.	.	.
.	.	.	.	.	.	.
.	.	.	.	.	.	.
0.821	2.575	4	.	.	.	.
.	.	.	.	.	.	.
.	.	.	.	.	.	.
.	.	.	.	.	.	.
0.156	0.547	8	.	.	.	.
0.010	1.015	2	.	.	.	.
.	.	.	.	.	.	.
.	.	.	.	.	.	.
0.553	1.940	6	.	.	.	.
.	.	.	.	.	.	.
.	.	.	.	.	.	.
0.006	0.601	4	.	.	.	.
.	.	.	.	.	.	.
0.473	1.419	6	.	.	.	.
.	.	.	.	.	.	.
.	.	.	.	.	.	.
.	.	.	.	.	.	.
.	.	.	.	.	.	.
0.581	2.188	3	.	.	.	.
.	1.399	.	.	.	.	.
.	.	.	.	.	.	.
0.403	1.081	11	0%	0%	.	.
.	.	.	.	.	.	.
.	.	.	.	.	.	.

0.730	2.188	6	.	.	.	.
.	.	.	.	.	.	.
1.029	2.137	7	.	.	.	.
0.381	0.837	22	5%	0%	0.000	0.000
.	.	.	.	.	.	.
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.	.	.	.	.	.	.
0.756	**0.939**	**153**	**11%**	**2%**	**0.000**	**0.000**

LTACHs.
NHSN at the beginning of 2020. M indicates midyear implementation of a mandate.

n activities: state health department had access to 2020 NHSN data, state health department performed
1, 2021, and state health department contacted identified facilities.
June 1, 2021 to confirm proper case ascertainment (although intensity of auditing activities
sence of a legislative mandate for the particular HAI type. Some states without mandatory
is voluntarily shared with them by facilities in their jurisdiction.
ılation. SIRs and accompanying statistics are only calculated for states in which at least 5 LTACHs repor

s than the nominal value of the 2020 national LTACH MRSA SIR of 0.844. This is only calculated if at lea

bacteremia in 2020. If a facility's predicted number of MRSA bacteremia was <1.0, a facility-specific SIR

	75%	90%
.	.	.
.	.	.
.	.	.
.	.	.
0.727	1.357	2.135
.	.	.
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0.534	**1.414**	**2.368**

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ast 10 facilities had

Table 6. State-specific standardized infection rat
NHSN Long-Term Acute Care Ho
Hospital-onset *Clostridio*

State				No. of Events			95% CI
				Observed	Predicted	SIR	Lower
Alabama	No	No	8	21	59.462	0.353	0.224
Alaska	Yes	No	1	.	.	.	.
Arizona			6	22	57.109	0.385	0.248
Arkansas			8	21	52.617	0.399	0.254
California	M	Yes	24	264	555.400	0.475	0.421
Colorado	M	No	6	39	85.437	0.456	0.329
Connecticut	Yes	No	3	.	.	.	.
D.C.	Yes	No	2	.	.	.	.
Delaware			1	.	.	.	.
Florida	No	Yes	27	182	414.853	0.439	0.378
Georgia	Yes	No	12	23	147.407	0.156	0.101
Guam			0	.	.	.	.
Hawaii	No	No	0	.	.	.	.
Idaho	No	No	2	.	.	.	.
Illinois	Yes	No	9	49	183.524	0.267	0.200
Indiana	M	No	9	45	90.359	0.498	0.368
Iowa	No	No	2	.	.	.	.
Kansas	No	No	3	.	.	.	.
Kentucky	Yes	No	9	51	84.080	0.607	0.456
Louisiana			28	49	186.352	0.263	0.197
Maine	No	No	0	.	.	.	.
Maryland	No	No	1	.	.	.	.
Massachusetts	Yes	No	12	81	303.318	0.267	0.213
Michigan	No	No	18	61	134.851	0.452	0.349
Minnesota	No	No	2	.	.	.	.
Mississippi	Yes	No	7	13	75.260	0.173	0.096
Missouri	No	No	10	32	93.606	0.342	0.238
Montana	No	No	1	.	.	.	.
Nebraska			4	.	.	.	.
Nevada	No	No	8	32	90.561	0.353	0.246
New Hampshire	No	No	0	.	.	.	.
New Jersey	No	No	11	67	147.695	0.454	0.354
New Mexico	No	No	3	.	.	.	.
New York	No	No	2	.	.	.	.
North Carolina			8	42	91.677	0.458	0.334
North Dakota	No	No	2	.	.	.	.
Ohio	No	No	27	127	248.725	0.511	0.427
Oklahoma	No	No	11	36	91.240	0.395	0.281
Oregon	Yes	No	1	.	.	.	.
Pennsylvania	Yes	Yes	17	70	144.434	0.485	0.381
Puerto Rico	Yes	No	0	.	.	.	.
Rhode Island	No	No	0	.	.	.	.

South Carolina	Yes	Yes	6	30	64.887	0.462	0.318
South Dakota	No	No	1	.	.	.	.
Tennessee	Yes	Yes	8	31	101.757	0.305	0.211
Texas			58	248	561.555	0.442	0.389
Utah			3	.	.	.	.
Vermont	No	No	0	.	.	.	.
Virgin Islands			0	.	.	.	.
Virginia	Yes	No	6	31	66.284	0.468	0.323
Washington	No	No	1	.	.	.	.
West Virginia	Yes	No	5	29	30.135	0.962	0.657
Wisconsin	No	Yes	4	.	.	.	.
Wyoming	No	No	0	.	.	.	.
All US			**397**	**1,888**	**4,743.475**	**0.398**	**0.380**

1. Includes data reported from all locations (i.e., adult and pediatric critical care units and wards) within LTACHs.
2. Yes indicates the presence of a state mandate to report CDI data from any location to NHSN at the beginning of
   No indicates that a state mandate did not exist during 2020.
3. Yes indicates that the state health department reported the completion of all of the following validation activities:
   assessment of missing or implausible values on at least six months of 2020 NHSN data prior to June 1, 2021, a
   YesA indicates that the state also conducted an audit of facility medical or laboratory records prior to June 1, 20
   varies by state). Information on validation efforts was requested from all states, regardless of the presence of a
   reporting of a given HAI to the state health department have performed validation on NHSN data that is voluntar
4. The number of LTACHs that reported 2020 CDI data and are included in the SIR calculation. SIRs and accomp
   from at least one location in 2020.
5. Percent of facilities with ≥1.0 predicted CDI that had an SIR significantly greater or less than the nominal value o
   ≥ 1.0 predicted CDI in 2020.
6. Facility-specific key percentiles were only calculated if at least 20 facilities had ≥1.0 predicted CDI in 2020. If a f
   nor included in the distribution of facility-specific SIRs.

ios (SIRs) and facility-specific SIR summary measures,
spitals (LTACHs) reporting during 2020
***ides difficile* (CDI), facility-wide[1]**

for SIR		Facility-specific SIRs					
Upper	No. of facs with at least 1 predicted CDI			10%	25%		75%
0.531	8	.	.	.	.	.	.
.	.	.	.	.	.	.	.
0.574	5	.	.	.	.	.	.
0.600	8	.	.	.	.	.	.
0.535	23	22%	9%	0.107	0.253	0.435	0.676
0.618	6	.	.	.	.	.	.
.	.	.	.	.	.	.	.
.	.	.	.	.	.	.	.
.	.	.	.	.	.	.	.
0.506	27	15%	11%	0.088	0.182	0.393	0.587
0.230	12	0%	50%	.	.	.	.
.	.	.	.	.	.	.	.
.	.	.	.	.	.	.	.
.	.	.	.	.	.	.	.
0.350	9	.	.	.	.	.	.
0.660	9	.	.	.	.	.	.
.	.	.	.	.	.	.	.
.	.	.	.	.	.	.	.
0.791	9	.	.	.	.	.	.
0.345	27	4%	7%	0.000	0.000	0.124	0.342
.	.	.	.	.	.	.	.
.	.	.	.	.	.	.	.
0.330	12	17%	42%	.	.	.	.
0.577	16	6%	6%	.	.	.	.
.	.	.	.	.	.	.	.
0.288	7	.	.	.	.	.	.
0.477	10	0%	10%	.	.	.	.
.	.	.	.	.	.	.	.
.	.	.	.	.	.	.	.
0.493	8	.	.	.	.	.	.
.	.	.	.	.	.	.	.
0.573	11	0%	0%	.	.	.	.
.	.	.	.	.	.	.	.
.	.	.	.	.	.	.	.
0.613	8	.	.	.	.	.	.
.	.	.	.	.	.	.	.
0.605	26	8%	0%	0.070	0.278	0.412	0.686
0.540	11	9%	18%	.	.	.	.
.	.	.	.	.	.	.	.
0.609	17	6%	0%	.	.	.	.
.	.	.	.	.	.	.	.
.	.	.	.	.	.	.	.

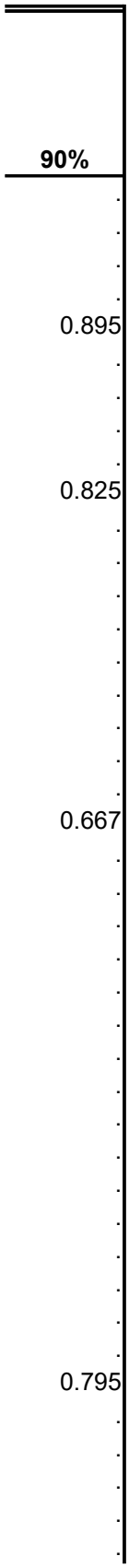
0.652	6	.	.	.	.	.	.
.	.	.	.	.	.	.	.
0.427	8	.	.	.	.	.	.
0.499	58	16%	7%	0.000	0.103	0.297	0.574
.	.	.	.	.	.	.	.
.	.	.	.	.	.	.	.
.	.	.	.	.	.	.	.
0.656	6	.	.	.	.	.	.
.	.	.	.	.	.	.	.
1.364	5	.	.	.	.	.	.
.	.	.	.	.	.	.	.
.	.	.	.	.	.	.	.
0.416	**391**	**9%**	**12%**	**0.000**	**0.125**	**0.341**	**0.608**

f 2020. M indicates midyear implementation of a mandate.

: state health department had access to 2020 NHSN data, state health department performed an
nd state health department contacted identified facilities.
21 to confirm proper case ascertainment (although intensity of auditing activities
legislative mandate for the particular HAI type. Some states without mandatory
ily shared with them by facilities in their jurisdiction.
anying statistics are only calculated for states in which at least 5 LTACHs reported CDI data

of the 2020 national LTACH CDI SIR of 0.398. This is only calculated if at least 10 facilities had

facility's predicted number of CDI was <1.0, a facility-specific SIR was neither calculated


90%
0.895
0.825
0.667
0.795

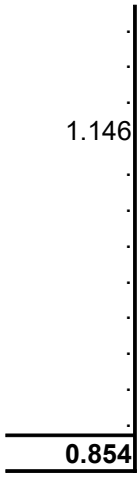

1.146
0.854

Table 7. Changes in national standardized infection ratios (SIRs) using HAI data reported from all NHSN Long-Term
Central line-associated bloodstream infections (CLABSIs), catheter-associated urinary tra
methicillin-resistant Staphylococcus aureus (MRSA) bacteremia and Clostridio

HAI and Patient Population	2019 SIR	2020 SIR	Percent Change	Direction of Change, Based on Statistical Significance	p-value
CLABSI, all locations[1]	0.771	0.707	-8%	Decrease	0.0124
CAUTI, all locations[1]	0.795	0.738	-7%	Decrease	0.0228
VAE, all locations	0.591	0.548	7%	No change	0.1966
Hospital-onset MRSA bacteremia, facility-wide[2]	0.705	0.844	20%	Increase	0.0231
Hospital-onset *C. difficile* infections, facility-wide[2]	0.527	0.398	-24%	Decrease	0.0000

* Statistically significant, p < 0.0500. Statistical significance based on two-tailed p-value < 0.05, reflected in the relative percent change in magnitu
1. Data from all ICUs and wards.
2. Hospital-onset is defined as an event detected on the 4th day (or later) after admission to an inpatient location within the facility.

Acute Care Hospitals (LTACHs) reporting during 2020 by HAI and patient population:
ct infections (CAUTIs), ventilator-associated events (VAEs),
ɔides difficile infections, 2019 compared to 2020

de.

Table 8. Changes in state-specific standardized infection ratios (SIRs) between 2019 and 2020 from NHSN Long-Term Acute Care Hospitals

8a. Central line-associated bloodstream infections (CLABSI), all locations[1]

	All Long-Term Acute Care Hospitals Reporting to NHSN				
State[2]	2019 SIR	2020 SIR	Percent Change[3]	Direction of Change, Based on Statistical Significance	p-value
Alabama	0.667	0.361	46%	No change	0.1147
Alaska	.	.	.	.	.
Arizona	0.438	0.521	19%	No change	0.6683
Arkansas	1.427	1.015	29%	No change	0.2436
California	0.901	0.926	3%	No change	0.7626
Colorado	0.558	0.630	13%	No change	0.7280
Connecticut	.	.	.	.	.
D.C.	.	.	.	.	.
Delaware	.	.	.	.	.
Florida	0.671	0.391	-42%	Decrease	0.0002
Georgia	0.655	0.559	15%	No change	0.4587
Guam	.	.	.	.	.
Hawaii	.	.	.	.	.
Idaho	.	.	.	.	.
Illinois	1.084	1.016	6%	No change	0.6628
Indiana	0.937	0.865	8%	No change	0.6827
Iowa	.	.	.	.	.
Kansas	.	.	.	.	.
Kentucky	1.109	0.951	14%	No change	0.4999
Louisiana	1.026	0.827	19%	No change	0.1664
Maine	.	.	.	.	.
Maryland	.	.	.	.	.
Massachusetts	0.586	0.864	47%	Increase	0.0488
Michigan	0.985	1.133	15%	No change	0.4629
Minnesota	.	.	.	.	.
Mississippi	0.806	0.820	2%	No change	0.9502
Missouri	1.050	0.883	16%	No change	0.4496
Montana	.	.	.	.	.
Nebraska	.	.	.	.	.
Nevada	0.229	0.428	87%	No change	0.0549
New Hampshire	.	.	.	.	.
New Jersey	1.148	0.721	-37%	Decrease	0.0173
New Mexico	.	.	.	.	.
New York	.	.	.	.	.
North Carolina	0.669	0.576	14%	No change	0.5511
North Dakota	.	.	.	.	.
Ohio	0.625	0.414	-34%	Decrease	0.0211
Oklahoma	0.626	0.409	35%	No change	0.1252
Oregon	.	.	.	.	.
Pennsylvania	0.674	0.750	11%	No change	0.6137
Puerto Rico	.	.	.	.	.
Rhode Island	.	.	.	.	.
South Carolina	0.723	1.198	66%	Increase	0.0423
South Dakota	.	.	.	.	.
Tennessee	0.859	0.528	39%	No change	0.0822
Texas	0.699	0.589	16%	No change	0.0521
Utah	.	.	.	.	.
Vermont	.	.	.	.	.
Virgin Islands	.	.	.	.	.
Virginia	0.623	0.834	34%	No change	0.3191
Washington	.	.	.	.	.
West Virginia	.	0.713	.	.	.
Wisconsin	0.633	.	.	.	.
Wyoming	.	.	.	.	.
All US	**0.771**	**0.707**	**-8%**	**Decrease**	**0.0124**

* 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).

2. States without SIR either in 2019 and/or 2020 and therefore subsequent data not calculated.

3.For states with <100% or >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 denominator of percent change (2019 SIR) = 0.

Table 8. Changes in state-specific standardized infection ratios (SIRs) between 2019 and 2020 from NHSN Long-Term Acute Care Hospitals

8b. Catheter-associated urinary tract infections (CAUTI), all locations[1]

	All Long-Term Acute Care Hospitals Reporting to NHSN				
	2019 SIR	2020 SIR		Direction of Change, Based on Statistical Significance	p-value
Alabama	0.689	0.285	-59%	Decrease	0.0148
Alaska	.	.	.	.	.
Arizona	0.808	0.625	23%	No change	0.4060
Arkansas	1.588	0.743	-53%	Decrease	0.0025
California	0.592	0.571	4%	No change	0.7142
Colorado	1.376	1.117	19%	No change	0.2474
Connecticut	.	.	.	.	.
D.C.	.	.	.	.	.
Delaware	.	.	.	.	.
Florida	0.667	0.521	22%	No change	0.0501
Georgia	0.840	1.271	51%	Increase	0.0067
Guam	.	.	.	.	.
Hawaii	.	.	.	.	.
Idaho	.	.	.	.	.
Illinois	0.921	0.684	26%	No change	0.0725
Indiana	0.604	0.646	7%	No change	0.7811
Iowa	.	.	.	.	.
Kansas	.	.	.	.	.
Kentucky	1.001	1.359	36%	No change	0.1245
Louisiana	0.617	0.657	6%	No change	0.7065
Maine	.	.	.	.	.
Maryland	.	.	.	.	.
Massachusetts	0.966	1.258	30%	No change	0.1077
Michigan	1.299	1.191	8%	No change	0.5713
Minnesota	.	.	.	.	.
Mississippi	0.949	0.767	19%	No change	0.3908
Missouri	0.742	0.564	24%	No change	0.3049
Montana	.	.	.	.	.
Nebraska	.	.	.	.	.
Nevada	0.674	0.745	11%	No change	0.6374
New Hampshire	.	.	.	.	.
New Jersey	0.788	0.636	19%	No change	0.3008
New Mexico	.	.	.	.	.
New York	.	.	.	.	.
North Carolina	0.577	0.306	-47%	Decrease	0.0355
North Dakota	.	.	.	.	.
Ohio	0.920	0.899	2%	No change	0.8702
Oklahoma	0.526	0.686	30%	No change	0.2589
Oregon	.	.	.	.	.
Pennsylvania	1.038	0.848	18%	No change	0.2554
Puerto Rico	.	.	.	.	.
Rhode Island	.	.	.	.	.
South Carolina	1.361	1.173	14%	No change	0.5305
South Dakota	.	.	.	.	.
Tennessee	0.681	0.702	3%	No change	0.9021
Texas	0.600	0.577	4%	No change	0.6683
Utah	.	.	.	.	.
Vermont	.	.	.	.	.
Virgin Islands	.	.	.	.	.
Virginia	0.790	0.743	6%	No change	0.8073
Washington	.	.	.	.	.
West Virginia	.	0.931	.	.	.
Wisconsin	1.183	.	.	.	.
Wyoming	.	.	.	.	.
All US	**0.795**	**0.738**	**-7%**	**Decrease**	**0.0228**

* 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 and wards (and other non-critical care locations).

2. States without SIR either in 2019 and/or 2020 and therefore subsequent data not calculated.

3.For states with <100% or >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 denominator of percent change (2019 SIR) = 0.

Table 8. Changes in state-specific standardized infection ratios (SIRs) between 2019 and 2020 from NHSN Long-Term Acute Care Hospitals

8c. Ventilator-associated events (VAE), all locations[1]

	All Long-Term Acute Care Hospitals Reporting to NHSN				
	2019 SIR	2020 SIR		Direction of Change, Based on Statistical Significance	p-value
Alabama	0.000	0.000	0%	.	Inestimable
Alaska	.	.	.	.	.
Arizona	.	.	.	.	.
Arkansas	.	.	.	.	.
California	0.599	0.384	-36%	Decrease	0.0012
Colorado	0.591				
Connecticut	.	.	.	.	.
D.C.	.	.	.	.	.
Delaware	.	.	.	.	.
Florida	0.605	0.547	10%	No change	0.6176
Georgia	0.552	0.640	16%	No change	0.6723
Guam	.	.	.	.	.
Hawaii	.	.	.	.	.
Idaho	.	.	.	.	.
Illinois	0.973	0.626	-36%	Decrease	0.0150
Indiana	0.278				
Iowa	.	.	.	.	.
Kansas	.	.	.	.	.
Kentucky	1.835	1.798	2%	No change	0.9263
Louisiana	1.075				
Maine	.	.	.	.	.
Maryland	.	.	.	.	.
Massachusetts	0.120	0.000	100%	No change	0.0628
Michigan	0.572	0.537	6%	No change	0.9664
Minnesota	.	.	.	.	.
Mississippi	.	.	.	.	.
Missouri	2.370	1.631	31%	No change	0.2218
Montana	.	.	.	.	.
Nebraska	.	.	.	.	.
Nevada	0.148				
New Hampshire	.	.	.	.	.
New Jersey	0.272	0.167	39%	No change	0.2167
New Mexico	.	.	.	.	.
New York	.	.	.	.	.
North Carolina	.	.	.	.	.
North Dakota	.	.	.	.	.
Ohio	0.469	0.450	4%	No change	0.9528
Oklahoma	0.512	0.000	100%	No change	0.4719
Oregon	.	.	.	.	.
Pennsylvania	0.761	0.648	15%	No change	0.4320
Puerto Rico	.	.	.	.	.
Rhode Island	.	.	.	.	.
South Carolina	1.273	1.432	12%	No change	0.6314
South Dakota	.	.	.	.	.
Tennessee	0.454	0.555	22%	No change	0.4894
Texas	0.802	0.515	-36%	Decrease	0.0371
Utah	.	.	.	.	.
Vermont	.	.	.	.	.
Virgin Islands	.	.	.	.	.
Virginia	.	.	.	.	.
Washington	.	.	.	.	.
West Virginia	.	.	.	.	.
Wisconsin	.	.	.	.	.
Wyoming	.	.	.	.	.
All US	**0.591**	**0.548**	**7%**	**No change**	**0.1966**

* 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 and wards (and other non-critical care locations).

2. States without SIR either in 2019 and/or 2020 and therefore subsequent data not calculated.

3.For states with <100% or >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 denominator of percent change (2019 SIR) = 0.

Table 8. Changes in state-specific standardized infection ratios (SIRs) between 2019 and 2020 from NHSN Long-Term Acute Care Hospitals

8d. Hospital-onset methicillin-resistant *Staphylococcus aureus* (MRSA) bacteremia, facility-wide[1]

	All Long-Term Acute Care Hospitals Reporting to NHSN				
	2019 SIR	2020 SIR		Direction of Change, Based on Statistical Significance	p-value
Alabama	1.059	2.284	116%	Increase	0.0421
Alaska	.	.	.	.	.
Arizona	.	.	.	.	.
Arkansas	.	.	.	.	.
California	1.195	0.975	18%	No change	0.2234
Colorado	0.381	.	.	.	.
Connecticut	.	.	.	.	.
D.C.	.	.	.	.	.
Delaware	.	.	.	.	.
Florida	1.557	1.582	2%	No change	0.9428
Georgia	0.220	0.153	30%	No change	0.7230
Guam	.	.	.	.	.
Hawaii	.	.	.	.	.
Idaho	.	.	.	.	.
Illinois	0.498	0.848	70%	No change	0.1270
Indiana	0.956	0.382	60%	No change	0.1662
Iowa	.	.	.	.	.
Kansas	.	.	.	.	.
Kentucky	1.809	1.515	16%	No change	0.6628
Louisiana	0.083	.	.	.	.
Maine	.	.	.	.	.
Maryland	.	.	.	.	.
Massachusetts	0.248	0.307	24%	No change	0.6620
Michigan	0.944	0.206	78%	No change	0.1154
Minnesota	.	.	.	.	.
Mississippi	.	.	.	.	.
Missouri	0.996	1.088	9%	No change	0.8596
Montana	.	.	.	.	.
Nebraska	.	.	.	.	.
Nevada	0.646	0.122	81%	No change	0.1096
New Hampshire	.	.	.	.	.
New Jersey	0.444	0.851	92%	No change	0.1370
New Mexico	.	.	.	.	.
New York	.	.	.	.	.
North Carolina	0.385	.	.	.	.
North Dakota	.	.	.	.	.
Ohio	0.390	1.192	206%	Increase	0.0258
Oklahoma	0.486	0.000	100%	No change	0.4092
Oregon	.	.	.	.	.
Pennsylvania	0.281	0.68	142%	Increase	0.0468
Puerto Rico	.	.	.	.	.
Rhode Island	.	.	.	.	.
South Carolina	0.150	1.313	775%	Increase	0.0085
South Dakota	.	.	.	.	.
Tennessee	0.852	1.508	77%	No change	0.0760
Texas	0.636	0.575	10%	No change	0.7061
Utah	.	.	.	.	.
Vermont	.	.	.	.	.
Virgin Islands	.	.	.	.	.
Virginia	.	.	.	.	.
Washington	.	.	.	.	.
West Virginia	.	.	.	.	.
Wisconsin	.	.	.	.	.
Wyoming	.	.	.	.	.
All US	**0.705**	**0.844**	**20%**	**Increase**	**0.0231**

* Statistically significant, p < 0.0500Statistical 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 2019 and/or 2020 and therefore subsequent data not calculated.

3.For states with <100% or >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 denominator of percent change (2019 SIR) = 0.

Table 8. Changes in state-specific standardized infection ratios (SIRs) between 2019 and 2020 from NHSN Long Term Acute Care Hospitals

8e. Hospital-onset *Clostridioides difficile* infection (CDI), facility-wide[1]

	All Long Term Acute Care Hospitals Reporting to NHSN				
	2019 SIR	2020 SIR		Direction of Change, Based on Statistical Significance	p-value
Alabama	0.359	0.353	2%	No change	0.9618
Alaska	.	.	.	.	.
Arizona	0.638	0.385	40%	No change	0.0664
Arkansas	0.334	0.399	19%	No change	0.5901
California	0.754	0.475	-37%	Decrease	0.0000
Colorado	0.621	0.456	27%	No change	0.1628
Connecticut	.	.	.	.	.
D.C.	.	.	.	.	.
Delaware	.	.	.	.	.
Florida	0.527	0.439	17%	No change	0.0675
Georgia	0.333	0.156	-53%	Decrease	0.0019
Guam	.	.	.	.	.
Hawaii	.	.	.	.	.
Idaho	.	.	.	.	.
Illinois	0.527	0.267	-49%	Decrease	0.0001
Indiana	0.574	0.498	13%	No change	0.4816
Iowa	.	.	.	.	.
Kansas	.	.	.	.	.
Kentucky	0.790	0.607	23%	No change	0.1638
Louisiana	0.392	0.263	-33%	Decrease	0.0296
Maine	.	.	.	.	.
Maryland	.	.	.	.	.
Massachusetts	0.367	0.267	-27%	Decrease	0.0248
Michigan	0.527	0.452	14%	No change	0.3690
Minnesota	.	.	.	.	.
Mississippi	0.418	0.173	-59%	Decrease	0.0068
Missouri	0.498	0.342	31%	No change	0.1096
Montana	.	.	.	.	.
Nebraska	.	.	.	.	.
Nevada	0.270	0.353	31%	No change	0.3369
New Hampshire	.	.	.	.	.
New Jersey	0.570	0.454	20%	No change	0.1665
New Mexico	.	.	.	.	.
New York	.	.	.	.	.
North Carolina	0.517	0.458	11%	No change	0.5657
North Dakota	.	.	.	.	.
Ohio	0.408	0.511	25%	No change	0.0786
Oklahoma	0.349	0.395	13%	No change	0.6206
Oregon	.	.	.	.	.
Pennsylvania	0.559	0.485	13%	No change	0.3773
Puerto Rico	.	.	.	.	.
Rhode Island	.	.	.	.	.
South Carolina	0.282	0.462	64%	No change	0.0963
South Dakota	.	.	.	.	.
Tennessee	0.283	0.305	8%	No change	0.7827
Texas	0.728	0.442	-39%	Decrease	0.0000
Utah	.	.	.	.	.
Vermont	.	.	.	.	.
Virgin Islands	.	.	.	.	.
Virginia	0.654	0.468	28%	No change	0.1568
Washington	.	.	.	.	.
West Virginia	.	0.962	.	.	.
Wisconsin	0.577	.	.	.	.
Wyoming	.	.	.	.	.
All US	**0.527**	**0.398**	**-24%**	**Decrease**	**0.0000**

* 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 2019 and/or 2020 and therefore subsequent data not calculated.
3.For states with <100% or >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 denominator of percent change (2019 SIR) = 0.

Appendix A. Factors used in NHSN risk adjustment of the device-associated HAIs (CLABSI, CAUTI, VAE) negative binomial regression models[1] from Long-Term Acute Care Hospitals

HAI Type	Validated Parameters for Risk Model
CLABSI	Intercept Location Type Facility Bed Size* Average Length of Stay**
CAUTI	Intercept Average Length of Stay** Setting† Location Type
VAE	Intercept Facility bed size* Proportion of admissions on hemodialysis*** Location Type Average Length of Stay**

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

* Facility bed size is taken from the Annual LTACH Survey.

** Average length of stay is taken from the Annual LTACH Survey. It is calculated as: total # of annual patient da

*** Proportion of annual admissions on a ventilator (or hemodialysis) is taken from the Annual LTACH Survey. It is calculated as: number of admissions on a ventilator (or hemodialysis) / total # of annual admissions.

† LTACH Setting (free-standing vs. within a hospital) is taken from the Annual LTACH Survey.

ays / total # of annual admissions.

Appendix B. Factors used in NHSN risk adjustment of the MRSA Bacteremia and *C. difficile* negative binomial regression models[1] from Long-Term Acute Care Hospitals

HAI Type	Validated Parameters for Risk Model
MRSA bacteremia	Intercept, Percent of admissions on ventilator*
C. difficile infections	Intercept, Inpatient CO prevalence rate** Percent of admissions on ventilator* CDI test type^ Percent of single occupancy rooms‡

* Percent of annual admissions on a ventilator is taken from the Annual LTACH Survey. It is calculate
ventilator / total # annual admissions) x 100

** Inpatient community-onset prevalence is calculated as: (# of inpatient community-onset CDI events
The prevalence rate for each quarter is used in the risk adjustment.

^ CDI test type is reported on the FacWideIN MDRO denominator form on the 3rd month of each quart

‡ Percent of beds located in single occupancy rooms is taken from the Annual LTACH Survey. It is ca
rooms / total number of beds x 100.

ed as: (# admissions on a

/ total # admissions) x 100.

ter.
alculated as: # of single occupancy

Additional Resources

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

Technical Appendix (2020 Report): http://www.cdc.gov/hai/progress-report/index.html
Explains the methodology used to produce the HAI Report.

HAI Data Report Home Page: http://www.cdc.gov/hai/progress-report/index.html
The complete HAI Report, including the Executive Summary and previous reports, can be found at the above

website.