2020 Nat
S

Introduction: Welcome to the 2020 National and State HAI Progress Report using the 2015 bas
by comparing the number of observed device days to the number of predicted dev
This report is created by CDC staff with the National Healthcare Safety Network (N

Scope of report:

Device Days Types
Central line days (CLDs) by locations
Urinary catheter days (UCDs) by locations
Ventilator days (VDs) by locations

tional and State HAI Progress Report
tandardized Utilization Ratios

Long Term Acute Care Hospitals

eline and risk adjustment calculations. Standardized utilization ratios (SURs) are used to describe device
ice days.
IHSN).

ACH	
National	State
þ	þ
þ	þ
þ	þ

utilization

Development of the NHSN Standardized Utilization Ratio (SUR): Methodology

Rationale
Traditionally, NHSN has been providing a crude measure of device utilization rate to the healthcare facilities. standardized to compare with a reference baseline population as well as over time. Accordingly, CDC has dev

Development of SUR models
SUR models were developed for the following measures: central line days, urinary catheter days and ventilate inpatient rehabilitation facilities (IRF), long-term acute care hospitals (LTACH) (and NICU for central line days Using the NHSN data (2020) in sync with rebaseline work, CDC has developed multivariable logistic regressio "Extra-binomial Variation in Logistic Linear Models," Applied Statistics, 31, 144–148.). Unit of analysis in all th

STEPS to compute SUR at the location level
1: First, calculate the logit scale value of p_hat, using parameter estimates of corresponding SUR model.
Logit p_hat= intercept + x1 + X2 + X3 + ………
(Risk factors are provided in appendices for individual matrix of measure and healthcare setting)

2: Then, compute the probability of device use
p_hat = [e^logit(p_hat)] / [1+ e^logit(p_hat)]

3: Calculate predicted device days as follows:
Predicted Device Days = p-hat * In-patient days

4: Finally, derive SUR value at the location by dividing number of observed device days with number of predic
SUR = Observed Device Days / Predicted Device Days

Note that SUR will not be calculated if Predicted Device Days is <1 due to minimum precision criteria of 1.0.

STEPS to compute SUR at higher level above location
Do the same computation as in step 1, 2, 3 at location level.
Sum the observed device days and predicted device days up to the level of aggregation desired (e.g., facility-
Then, derive SUR value at the desired aggregate level by dividing number of observed device days with numb

SUR Guide: https://www.cdc.gov/nhsn/pdfs/ps-analysis-resources/nhsn-sur-guide-508.pdf

To monitor the progress of healthcare acquired infections (HAI) prevention efforts, device utilization in any healt
veloped statistical models to make SUR values available for different measures (e.g., central line days, urinary c

or days. They were available for the healthcare setting of acute care hospitals (ACH), critical access hospitals (C
).
on models that correct over dispersion by the Williams' method (Reference: Williams, D. A. (1982),
e SUR models are at the location level.

ted device days;

level).
ber of predicted device days.

hcare setting/location needs to be
catheter days) at various healthcare settings.

CAH),

2020 Annual National and State HAI Progress Report
<u>Long-Term Acute Care Hospitals:</u> **Full series of tables for all national and state data**

ry SURs:

ong-term acute care hospitals (LTACHs)

isn-sur-guide-508.pdf

Device and Patient Population	No. of Facilities	No. of Device days	
	Reporting[1]	Observed	Predicted
Central line days, all[4]	408	1,828,682	2,732,445.4504
ICUs[5]	73	123,649	184,736.8456
Wards[6]	5	553	4,574.6415
Urinary catheter days, all[4]	408	1,511,468	1,882,537.5885
	73	107,960	147,814.6804
Wards[6]	13	1,387	5,092.6062
Ventilator days, all[4]	196	613,437	491,963.6673
	43	61,572	52,612.0116
	4	.	.

1. The number of reporting facilities included in the SUR calculation; SURs are not calculated when there are less
2. Percent of facilities with at least one predicted device day that had an SUR significantly greater than or less than
3. Facility-specific percentiles are only calculated if at least 20 facilities had ≥1.0 predicted number of device days i
4. Data from all ICUs, wards (and other non-critical care locations). Data contained in this table are reported from l
5. Data from all ICUs; excludes wards (and other non-critical care locations), and NICUs. Data contained in this ta
6. Data from all wards (for this table wards also include step-down, mixed acuity, and specialty care areas [includin

Table 1. National standardized utilization ratios (SURs) and

95% CI for SUR			Facility-specific SURs				
SUR	**Lower**	**Upper**	**No. Facilities with ≥1 Predicted Device Days**	**No. Facilities with SUR Significantly > National SUR**		**No. Facilities Significantly SUR**	
				N	**%**	**N**	
0.6692	0.6683	0.6702	408	183	45%	183	
0.6693	0.6656	0.6731	73	44	60%	24	
0.1209	0.1111	0.1313	5	.	.	.	
0.8029	0.8016	0.8042	408	200	49%	171	
0.7304	0.7260	0.7347	73	46	63%	24	
0.2724	0.2583	0.2870	13	0	0%	12	
1.2469	1.2438	1.2500	196	68	35%	112	
1.1703	1.1611	1.1796	43	28	65%	11	
.	.	.	.	.	.	.	

than 5 reporting facilities. This may be different from those reported in the SIR tables due to exclusion a
the nominal value of the national SUR. This is only calculated if at least 10 facilities had ≥ 1.0 predicte
n 2020. If a facility's predicted number of device days was <1.0, a facility-specific SUR was neither calc
ong-term acute care hospitals; as such, data from ACHs, IRFs and CAHs are excluded.
ble are reported from long-term acute care hospitals; as such, data from ACHs, IRFs and CAHs are exc
ig hematology/oncology, bone marrow transplant]). Data contained in this table are reported from long-t

Table 1a. Central line days (CLDs), urinary catheter days (UCDs), and ventilator days (VDs).

										Percenti
with SUR < National		**5%**	**10%**	**15%**	**20%**	**25%**	**30%**	**35%**	**40%**	
%										
	45%	0.3536	0.4219	0.4618	0.5093	0.5468	0.5805	0.6038	0.6256	
	33%	0.3025	0.3349	0.3619	0.4498	0.5209	0.5633	0.6686	0.7464	
	.	.	.	.	.	.	.	.	.	
	42%	0.3467	0.4520	0.5432	0.6053	0.6486	0.6836	0.7235	0.7558	
	33%	0.2759	0.3100	0.4542	0.5247	0.5705	0.6497	0.7693	0.8500	
	92%	.	.	.	.	.	.	.	.	
	57%	0.1868	0.5613	0.6575	0.7205	0.7910	0.8786	0.9705	1.0087	
	26%	0.3710	0.5926	0.6974	0.9528	1.0000	1.0438	1.2513	1.2976	
	.	.	.	.	.	.	.	.	.	

and inclusion criteria. Refer to the technical appendix for details.
ed device days in 2020.
culated nor included in the distribution of facility-specific SURs.

cluded.
erm acute care hospitals.

rm acute care hospitals (LTACHs), by device type and patient population:

Median

45%	50%	55%	60%	65%	70%	75%	80%	85%	90%
0.6494	0.6761	0.6912	0.7149	0.7561	0.7912	0.8341	0.8964	0.9564	1.0553
0.7776	0.8317	0.8652	0.8858	0.8928	0.9609	0.9911	1.0862	1.1241	1.2293
.	.	.	.	.	.	.	.	.	.
0.7886	0.8238	0.8597	0.8952	0.9409	1.0125	1.0421	1.1210	1.1875	1.2761
0.8795	0.9833	1.0478	1.0800	1.1059	1.1676	1.1779	1.2138	1.2931	1.4048
.	.	.	.	.	.	.	.	.	
1.0717	1.1140	1.1742	1.2285	1.3004	1.3716	1.4319	1.4849	1.6271	1.8003
1.3756	1.3907	1.4217	1.4560	1.5417	1.6158	1.7228	1.7934	1.8822	2.0254
.	.	.	.	.	.	.	.	.	.

95%

1.1918
1.2815
.

1.4046
1.5252

.

2.4678
2.1527
.

Table 2. State-specific standardized utilization ratios (SURs) and facility-specific summary SURs

Table 2. C

State	Facilities	No. of Device days			95% CI f
		Observed	Predicted	SUR	Lower
Alabama	8	24,017	37,664.3220	0.6377	0.6296
Alaska	1	.	.	.	.
Arizona	6	22,902	36,258.2861	0.6316	0.6235
Arkansas	8	21,402	37,782.5722	0.5665	0.5589
California	24	169,958	247,906.4962	0.6856	0.6823
Colorado	6	22,298	44,657.0637	0.4993	0.4928
Connecticut	3	.	.	.	.
D.C.	1	.	.	.	.
Delaware	2	.	.	.	.
Florida	27	136,573	223,298.0013	0.6116	0.6084
Georgia	13	55,702	80,817.8021	0.6892	0.6835
Guam	0	.	.	.	.
Hawaii	0	.	.	.	.
Idaho	2	.	.	.	.
Illinois	9	61,067	96,610.9180	0.6321	0.6271
Indiana	9	42,257	59,349.0264	0.7120	0.7053
Iowa	2	.	.	.	.
Kansas	3	.	.	.	.
Kentucky	9	34,523	49,803.0969	0.6932	0.6859
Louisiana	29	102,874	141,753.1514	0.7257	0.7213
Maine	0	.	.	.	.
Maryland	2	.	.	.	.
Massachusetts	12	64,298	129,233.0382	0.4975	0.4937
Michigan	18	48,393	88,017.4193	0.5498	0.5449
Minnesota	2	.	.	.	.
Mississippi	7	23,293	46,390.6328	0.5021	0.4957
Missouri	10	38,075	55,475.3427	0.6863	0.6795
Montana	1	.	.	.	.
Nebraska	4	.	.	.	.
Nevada	8	49,550	53,053.3866	0.9340	0.9258
New Hampshire	0	.	.	.	.
New Jersey	11	45,161	62,371.3743	0.7241	0.7174
New Mexico	3	.	.	.	.
New York	1	.	.	.	.
North Carolina	8	43,602	52,632.3933	0.8284	0.8207
North Dakota	2	.	.	.	.
Ohio	27	98,949	141,879.1894	0.6974	0.6931
Oklahoma	12	54,473	63,382.4833	0.8594	0.8522
Oregon	1	.	.	.	.
Pennsylvania	17	55,178	91,897.0819	0.6004	0.5954
Puerto Rico	0	.	.	.	.
Rhode Island	0	.	.	.	.
South Carolina	6	29,961	43,782.9375	0.6843	0.6766

South Dakota	1	.	.	.	.
Tennessee	9	29,706	61,045.1400	0.4866	0.4811
Texas	65	334,642	442,435.5986	0.7564	0.7538
Utah	3	.	.	.	.
Vermont	0	.	.	.	.
Virgin Islands	0	.	.	.	.
Virginia	6	27,636	36,323.6859	0.7608	0.7519
Washington	1	.	.	.	.
West Virginia	5	18,029	23,930	1	1
Wisconsin	4	.	.	.	.
Wyoming	0	.	.	.	.
All US	**408**	**1,828,682**	**2,732,445.4504**	**0.6692**	**0.6683**

1. The number of reporting facilities included in the SUR calculation; SURs are not calculated when there are le

2. Percent of facilities with at least one predicted device day that had an SUR significantly greater than or less th

3. Facility-specific percentiles are only calculated if at least 20 facilities had ≥1.0 predicted number of device da

4. Data from all ICUs and wards (and other non-critical care locations). Data contained in this table are reported

for SUR Upper	No. Facilities with ≥1 Predicted Device Days	Facility-specific SURs				10%
		No. Facilities with SUR Significantly > National SUR N	%[2]	No. Facilities with SUR Significantly < National SUR N		
0.6458	8	.	.	.	.	.
.	.	.	.	.	.	.
0.6399	6	.	.	.	.	.
0.5741	8	.	.	.	.	.
0.6888	24	13	54%	10	42%	0.4618
0.5059	6	.	.	.	.	.
.	.	.	.	.	.	.
.	.	.	.	.	.	.
.	.	.	.	.	.	.
0.6149	27	7	26%	17	63%	0.4405
0.6950	13	4	31%	5	38%	.
.	.	.	.	.	.	.
.	.	.	.	.	.	.
.	.	.	.	.	.	.
0.6371	9	.	.	.	.	.
0.7188	9	.	.	.	.	.
.	.	.	.	.	.	.
0.7005	9	.	.	.	.	.
0.7302	29	15	52%	11	38%	0.4591
.	.	.	.	.	.	.
0.5014	12	5	42%	7	58%	.
0.5547	18	4	22%	13	72%	.
.	.	.	.	.	.	.
0.5086	7	.	.	.	.	.
0.6932	10	4	40%	6	60%	.
.	.	.	.	.	.	.
.	.	.	.	.	.	.
0.9422	8	.	.	.	.	.
.	.	.	.	.	.	.
0.7308	11	7	64%	4	36%	.
.	.	.	.	.	.	.
0.8362	8	.	.	.	.	.
0.7018	27	14	52%	10	37%	0.5727
0.8667	12	8	67%	3	25%	.
.	.	.	.	.	.	.
0.6055	17	5	29%	10	59%	.
.	.	.	.	.	.	.
.	.	.	.	.	.	.
0.6921	6	.	.	.	.	.

0.4922	9					
0.7589	65	38	58%	20	31%	0.4572
0.7698	6					
1	5					
0.6702	**408**	**183**	**45%**	**183**	**45%**	**0.4219**

ss than 5 reporting facilities. This may be different from those reported in the SIR tables due to exclusion
han the nominal value of the national SUR. This is only calculated if at least 10 facilities had ≥ 1.0 predict
ys in 2020. If a facility's predicted number of device days was <1.0, a facility-specific SUR was neither cal
l from long-term acute care hospitals.

s), by device type and patient population:

	Median		
25%	50%	75%	90%
.	.	.	.
.	.	.	.
.	.	.	.
0.6003	0.6904	0.8362	0.9242
.	.	.	.
.	.	.	.
.	.	.	.
0.5073	0.6020	0.6853	0.7759
.	.	.	.
.	.	.	.
.	.	.	.
.	.	.	.
.	.	.	.
.	.	.	.
.	.	.	.
.	.	.	.
0.5398	0.7614	1.0359	1.2583
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.	.	.	.
.	.	.	.
.	.	.	.
0.6196	0.6950	0.8028	0.9220
.	.	.	.
.	.	.	.
.	.	.	.
.	.	.	.
.	.	.	.

0.6086	0.7534	0.9172	1.1225
0.5468	**0.6761**	**0.8341**	**1.0553**

and inclusion criteria. Refer to the technical appendix for details
ted device days in 2020.
culated nor included in the distribution of facility-specific SURs.

State	No. of Facilities	No. of Device days		SUR	95% CI
		Observed	Predicted		Lower
Alabama	8	26,706	26,155.1350	1.0211	1.0089
Alaska	1	.	.	.	.
Arizona	6	20,830	26,031.2485	0.8002	0.7894
Arkansas	8	22,476	25,360.6456	0.8863	0.8747
California	24	164,254	173,769.9335	0.9452	0.9407
Colorado	6	26,105	29,814.6290	0.8756	0.8650
Connecticut	3	.	.	.	.
D.C.	1	.	.	.	.
Delaware	2	.	.	.	.
Florida	27	112,126	156,651.2866	0.7158	0.7116
Georgia	13	43,765	58,522.3933	0.7478	0.7408
Guam	0	.	.	.	.
Hawaii	0	.	.	.	.
Idaho	2	.	.	.	.
Illinois	9	57,139	67,035.8502	0.8524	0.8454
Indiana	9	33,969	43,431.2700	0.7821	0.7739
Iowa	2	.	.	.	.
Kansas	3	.	.	.	.
Kentucky	9	25,989	33,901.0715	0.7666	0.7573
Louisiana	29	86,637	88,459.9761	0.9794	0.9729
Maine	0	.	.	.	.
Maryland	2	.	.	.	.
Massachusetts	12	36,725	85,734.3905	0.4284	0.4240
Michigan	18	45,900	57,368.8454	0.8001	0.7928
Minnesota	2	.	.	.	.
Mississippi	7	23,270	30,961.8347	0.7516	0.7420
Missouri	10	29,679	39,753.2235	0.7466	0.7381
Montana	1	.	.	.	.
Nebraska	4	.	.	.	.
Nevada	8	35,549	35,535.3282	1.0004	0.9901
New Hampshire	0	.	.	.	.
New Jersey	11	40,784	44,456.0517	0.9174	0.9085
New Mexico	3	.	.	.	.
New York	1	.	.	.	.
North Carolina	8	30,758	36,397.6733	0.8451	0.8357
North Dakota	2	.	.	.	.
Ohio	27	81,784	100,308.1831	0.8153	0.8098
Oklahoma	12	49,511	42,605.3690	1.1621	1.1519
Oregon	1	.	.	.	.
Pennsylvania	17	47,415	64,999.1404	0.7295	0.7229
Puerto Rico	0	.	.	.	.
Rhode Island	0	.	.	.	.
South Carolina	6	17,762	30,735.5222	0.5779	0.5694

South Dakota	1	.	.	.	.
Tennessee	9	28,221	39,274.3027	0.7186	0.7102
Texas	65	256,141	306,067.5543	0.8369	0.8336
Utah	3	.	.	.	.
Vermont	0	.	.	.	.
Virgin Islands	0	.	.	.	.
Virginia	6	21,502	25,621.6724	0.8392	0.8280
Washington	1	.	.	.	.
West Virginia	5	17,790	15,927.9185	1.1169	1.1006
Wisconsin	4	.	.	.	.
Wyoming	0	.	.	.	.
All US	**408**	**1,511,468**	**1,882,537.5885**	**0.8029**	**0.8016**

1. The number of reporting facilities included in the SUR calculation; SURs are not calculated when there are les
2. Percent of facilities with at least one predicted device day that had an SUR significantly greater than or less th
3. Facility-specific percentiles are only calculated if at least 20 facilities had ≥1.0 predicted number of device day
4. Data from all ICUs and wards (and other non-critical care locations). Data contained in this table are reported

for SUR	Facility-specific SURs					
Upper	No. Facilities with ≥1 Predicted Device Days	No. Facilities with SUR Significantly > National SUR		No. Facilities with SUR Significantly < National SUR		10%
		N		N		
1.0334	8	.	.	.	.	.
.	.	.	.	.	.	.
0.8111	6	.	.	.	.	.
0.8979	8	.	.	.	.	.
0.9498	24	18	75%	5	21%	0.5140
0.8862	6	.	.	.	.	.
.	.	.	.	.	.	.
.	.	.	.	.	.	.
.	.	.	.	.	.	.
0.7200	27	6	22%	19	70%	0.5007
0.7548	13	4	31%	6	46%	.
.	.	.	.	.	.	.
.	.	.	.	.	.	.
0.8594	9	.	.	.	.	.
0.7905	9	.	.	.	.	.
.	.	.	.	.	.	.
.	.	.	.	.	.	.
0.7760	9	.	.	.	.	.
0.9859	29	16	55%	9	31%	0.4352
.	.	.	.	.	.	.
0.4327	12	2	17%	10	83%	.
0.8074	18	7	39%	8	44%	.
0.7613	7	.	.	.	.	.
0.7551	10	4	40%	6	60%	.
.	.	.	.	.	.	.
1.0108	8	.	.	.	.	.
0.9263	11	9	82%	1	9%	.
.	.	.	.	.	.	.
0.8545	8	.	.	.	.	.
0.8209	27	13	48%	11	41%	0.5976
1.1723	12	11	92%	1	8%	.
0.7360	17	5	29%	9	53%	.
.	.	.	.	.	.	.
0.5864	6	.	.	.	.	.

0.7270	9					
0.8401	65	40	62%	20	31%	0.6093
0.8505	6					
1.1334	5					
0.8042	**408**	**200**	**49%**	**171**	**42%**	**0.4520**

ss than 5 reporting facilities. This may be different from those reported in the SIR tables due to exclusion a
ıan the nominal value of the national SUR. This is only calculated if at least 10 facilities had ≥ 1.0 predicte
/s in 2020. If a facility's predicted number of device days was <1.0, a facility-specific SUR was neither calcı
 from long-term acute care hospitals.

device type and patient population:

	Median		
25%	**50%**	**75%**	**90%**
.	.	.	.
.	.	.	.
.	.	.	.
.	.	.	.
0.8094	0.9503	1.1584	1.2924
.	.	.	.
.	.	.	.
.	.	.	.
0.5800	0.6912	0.7900	1.0522
.	.	.	.
.	.	.	.
.	.	.	.
.	.	.	.
.	.	.	.
.	.	.	.
0.6388	0.9390	1.3234	1.7259
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0.6811	0.8110	0.9684	1.1704
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0.7358	0.9125	1.0372	1.2134
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.	.	.	.
.	.	.	.
.	.	.	.
.	.	.	.
0.6486	**0.8238**	**1.0421**	**1.2761**

nd inclusion criteria. Refer to the technical appendix for detail
d device days in 2020.
ulated nor included in the distribution of facility-specific SURs.

Table 4. State-specific standardized utilization ratios (SURs) and facility-specific summary $

T:

State	No. of Facilities	No. of Device days		
		Observed	Predicted	SUR
Alabama	6	8,864	10,980.6385	0.8072
Alaska	0	.	.	.
Arizona	2	.	.	.
Arkansas	2	.	.	.
California	19	125,456	88,237.9612	1.4218
Colorado	3	.	.	.
Connecticut	1	.	.	.
D.C.	0	.	.	.
Delaware	2	.	.	.
Florida	12	55,432	36,816.8579	1.5056
Georgia	7	16,946	16,776.1997	1.0101
Guam	0	.	.	.
Hawaii	0	.	.	.
Idaho	0	.	.	.
Illinois	9	51,020	40,315.0080	1.2655
Indiana	4	.	.	.
Iowa	0	.	.	.
Kansas	0	.	.	.
Kentucky	5	13,550	11,942.3350	1.1346
Louisiana	6	2,317	3,330.8642	0.6956
Maine	0	.	.	.
Maryland	2	.	.	.
Massachusetts	8	23,290	21,323.0390	1.0922
Michigan	5	5,113	3,480.6089	1.4690
Minnesota	0	.	.	.
Mississippi	2	.	.	.
Missouri	7	9,695	11,457.3938	0.8462
Montana	0	.	.	.
Nebraska	0	.	.	.
Nevada	3	.	.	.
New Hampshire	0	.	.	.
New Jersey	9	34,578	26,331.1566	1.3132
New Mexico	1	.	.	.
New York	1	.	.	.
North Carolina	3	.	.	.
North Dakota	0	.	.	.
Ohio	5	9,608	7,193.4556	1.3357
Oklahoma	6	2,139	3,015.5443	0.7093
Oregon	0	.	.	.
Pennsylvania	16	40,390	35,146.1641	1.1492
Puerto Rico	0	.	.	.
Rhode Island	0	.	.	.

South Carolina	6	14,199	15,611.3634	0.9095
South Dakota	0	.	.	.
Tennessee	8	27,917	23,836.6736	1.1712
Texas	28	57,433	60,419.3673	0.9506
Utah	1	.	.	.
Vermont	0	.	.	.
Virgin Islands	0	.	.	.
Virginia	3	.	.	.
Washington	1	.	.	.
West Virginia	3	.	.	.
Wisconsin	0	.	.	.
Wyoming	0	.	.	.
All US	**196**	**613,437**	**491,963.6673**	**1.2469**

1. The number of reporting facilities included in the SUR calculation; SURs are not calculated when there ar
2. Percent of facilities with at least one predicted device day that had an SUR significantly greater than or le
3. Facility-specific percentiles are only calculated if at least 20 facilities had ≥1.0 predicted number of device
4. Data from all ICUs and wards (and other non-critical care locations). Data contained in this table are repo

SURs using device days data reported to NHSN during 2020 for long term acute care hospitals (LTAC

able 4. Ventilator days (VDs), all locations[4]

95% CI for SUR		Facility-specific SURs				
Lower	**Upper**	**No. Facilities with ≥1 Predicted Device Days**	**No. Facilities with SUR Significantly > National SUR**		**No. Facilities with SUR Significantly < National SUR**	
			N		**N**	
0.7906	0.8242	6	.	.	.	.
.	.	.	.	.	.	.
.	.	.	.	.	.	.
.	.	.	.	.	.	.
1.4140	1.4297	19	12	63%	5	26%
.	.	.	.	.	.	.
.	.	.	.	.	.	.
.	.	.	.	.	.	.
.	.	.	.	.	.	.
1.4931	1.5181	12	7	58%	4	33%
0.9950	1.0254	7	.	.	.	.
.	.	.	.	.	.	.
.	.	.	.	.	.	.
.	.	.	.	.	.	.
1.2546	1.2765	9	.	.	.	.
.	.	.	.	.	.	.
.	.	.	.	.	.	.
.	.	.	.	.	.	.
.	.	.	.	.	.	.
1.1156	1.1539	5	.	.	.	.
0.6677	0.7244	6	.	.	.	.
.	.	.	.	.	.	.
.	.	.	.	.	.	.
1.0783	1.1063	8	.	.	.	.
1.4292	1.5097	5	.	.	.	.
.	.	.	.	.	.	.
.	.	.	.	.	.	.
0.8295	0.8631	7	.	.	.	.
.	.	.	.	.	.	.
.	.	.	.	.	.	.
.	.	.	.	.	.	.
.	.	.	.	.	.	.
1.2994	1.3271	9	.	.	.	.
.	.	.	.	.	.	.
.	.	.	.	.	.	.
.	.	.	.	.	.	.
1.3091	1.3626	5	.	.	.	.
0.6797	0.7398	6	.	.	.	.
.	.	.	.	.	.	.
1.1380	1.1605	16	6	38%	10	63%
.	.	.	.	.	.	.
.	.	.	.	.	.	.

0.8946	0.9246	6	.	.	.	.
.	.	.	.	.	.	.
1.1575	1.1850	8	.	.	.	.
0.9428	0.9584	28	8	29%	18	64%
.	.	.	.	.	.	.
.	.	.	.	.	.	.
.	.	.	.	.	.	.
.	.	.	.	.	.	.
.	.	.	.	.	.	.
.	.	.	.	.	.	.
.	.	.	.	.	.	.
1.2438	**1.2500**	**196**	**68**	**35%**	**112**	**57%**

re less than 5 reporting facilities. This may be different from those reported in the SIR tables due to exclusio
ss than the nominal value of the national SUR. This is only calculated if at least 10 facilities had ≥ 1.0 pred
e days in 2020. If a facility's predicted number of device days was <1.0, a facility-specific SUR was neither c
orted from long-term acute care hospitals.

CHs), by device type and patient population:

	Median			
10%	25%	50%	75%	90%

| .   .   .   .   . |
| .   .   .   .   . |
| .   .   .   .   . |
| 0.3710   0.7073   1.0873   1.4032   1.8664 |
| .   .   .   .   . |
| .   .   .   .   . |
| .   .   .   .   . |
| .   .   .   .   . |
| .   .   .   .   . |
| 0.5613   0.7910   1.1140   1.4319   1.8003 |

ɔn and inclusion criteria. Refer to the technical appendix for details.
icted device days in 2020.
ɔalculated nor included in the distribution of facility-specific SURs.

Table 5. Changes in national standardized utilization ratios (SURs) using HAI data reported from all NHSN long term acute care hospitals reporting during 2020 by HAI and patient population: Central line days (CLDs), urinary catheter days (UCDs), and ventilator days (VDs), 2020 compared to 2019

	2019 SUR	2020 SUR	Percent Change	Direction of Change, Based on Statistical Significance	p-value
CLDs, all locations[1]	0.7069	0.6692	-5%	Decrease	0.0000
ICU[2]	0.6861	0.6693	-2%	Decrease	0.0000
Ward[3]	.	0.1209	.	.	.
UCDs, all locations[1]	0.7844	0.8029	2%	Increase	0.0000
	0.7010	0.7304	4%	Increase	0.0000
	.	0.2724	.	.	.
VDs, all[1]	1.1621	1.2469	7%	Increase	0.0000
ICUs[2]	0.9887	1.1703	18%	Increase	0.0000
Wards[3]	.	0.0000	.	.	.

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

1. Data from all ICUs, wards (and other non-critical care locations).

2. Data from all ICUs; excludes wards (and other non-critical care locations).

3. Data from all wards (for this table wards also include step-down and specialty care areas [including hematology/oncology, bone marrow transp

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blant].

Table 6. Changes in state-specific standardized infection ratios (SURs) between 2019 and 2020 from NHSN Long Term Acute Care Hospitals

6a. Central line days (CLDs), all locations[1]

State[2]	All Long Term Acute Care Hospitals Reporting to NHSN				
	2019 SUR	2020 SUR	Percent Change[3]	Direction of Change, Based on Statistical Significance	p-value
Alabama	0.7244	0.6377	-12%	Decrease	0.0000
Alaska	.	.	.	.	.
Arizona	0.6701	0.6316	-6%	Decrease	0.0000
Arkansas	0.6498	0.5665	-13%	Decrease	0.0000
California	0.7539	0.6856	-9%	Decrease	0.0000
Colorado	0.6109	0.4993	-18%	Decrease	0.0000
Connecticut	.	.	.	.	.
D.C.	.	.	.	.	.
Delaware	.	.	.	.	.
Florida	0.6109	0.6116	0%	No change	0.7599
Georgia	0.6717	0.6892	3%	Increase	0.0000
Guam	.	.	.	.	.
Hawaii	.	.	.	.	.
Idaho	.	.	.	.	.
Illinois	0.6991	0.6321	-10%	Decrease	0.0000
Indiana	0.6767	0.7120	5%	Increase	0.0000
Iowa	.	.	.	.	.
Kansas	.	.	.	.	.
Kentucky	0.7121	0.6932	-3%	Decrease	0.0003
Louisiana	0.8122	0.7257	-11%	Decrease	0.0000
Maine	.	.	.	.	.
Maryland	.	.	.	.	.
Massachusetts	0.5026	0.4975	1%	No change	0.0601
Michigan	0.5317	0.5498	3%	Increase	0.0000
Minnesota	.	.	.	.	.
Mississippi	0.5949	0.5021	-16%	Decrease	0.0000
Missouri	0.6867	0.6863	0%	No change	0.9477
Montana	.	.	.	.	.
Nebraska	.	.	.	.	.
Nevada	0.9552	0.9340	-2%	Decrease	0.0003
New Hampshire	.	.	.	.	.
New Jersey	0.7161	0.7241	1%	No change	0.0934
New Mexico	.	.	.	.	.
New York	.	.	.	.	.
North Carolina	0.7938	0.8284	4%	Increase	0.0000
North Dakota	.	.	.	.	.
Ohio	0.7663	0.6974	-9%	Decrease	0.0000
Oklahoma	0.8249	0.8594	4%	Increase	0.0000
Oregon	.	.	.	.	.
Pennsylvania	0.5714	0.6004	5%	Increase	0.0000
Puerto Rico	.	.	.	.	.
Rhode Island	.	.	.	.	.
South Carolina	0.7169	0.6843	-5%	Decrease	0.0000
South Dakota	.	.	.	.	.
Tennessee	0.6101	0.4866	-20%	Decrease	0.0000
Texas	0.8304	0.7564	-9%	Decrease	0.0000
Utah	.	.	.	.	.
Vermont	.	.	.	.	.
Virgin Islands	.	.	.	.	.
Virginia	0.7313	0.7608	4%	Increase	0.0000
Washington	.	.	.	.	.
West Virginia	.	.	.	.	.
Wisconsin	0.7716	.	.	.	.
Wyoming	.	.	.	.	.
All US	**0.7069**	**0.6692**	**-5%**	**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. Data from all ICUs, wards (and other non-critical care locations).

2. States without SUR 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 SUR) = 0.

Table 6. Changes in state-specific standardized infection ratios (SURs) between 2019 and 2020 from NHSN Long Term Acute Care Hospitals

6b. Urinary catheter days (UCDs), all locations[1]

	All Long Term Acute Care Hospitals Reporting to NHSN				
	2019 SUR	2020 SUR	Direction of Change, Based on Statistical Significance		p-value
Alabama	1.0653	1.0211	-4%	Decrease	0.0000
Alaska	.	.	.		.
Arizona	0.8313	0.8002	-4%	Decrease	0.0001
Arkansas	0.9462	0.8863	-6%	Decrease	0.0000
California	0.9013	0.9452	5%	Increase	0.0000
Colorado	0.8564	0.8756	2%	Increase	0.0141
Connecticut	.	.	.		.
D.C.	.	.	.		.
Delaware	.	.	.		.
Florida	0.7293	0.7158	-2%	Decrease	0.0000
Georgia	0.7899	0.7478	-5%	Decrease	0.0000
Guam	.	.	.		.
Hawaii	.	.	.		.
Idaho	.	.	.		.
Illinois	0.8465	0.8524	1%	No change	0.2606
Indiana	0.7182	0.7821	9%	Increase	0.0000
Iowa	.	.	.		.
Kansas	.	.	.		.
Kentucky	0.8168	0.7666	-6%	Decrease	0.0000
Louisiana	1.0063	0.9794	-3%	Decrease	0.0000
Maine	.	.	.		.
Maryland	.	.	.		.
Massachusetts	0.3833	0.4284	12%	Increase	0.0000
Michigan	0.6818	0.8001	17%	Increase	0.0000
Minnesota	.	.	.		.
Mississippi	0.7705	0.7516	-2%	Decrease	0.0069
Missouri	0.7294	0.7466	2%	Increase	0.0051
Montana	.	.	.		.
Nebraska	.	.	.		.
Nevada	0.9957	1.0004	0%	No change	0.5245
New Hampshire	.	.	.		.
New Jersey	0.7611	0.9174	21%	Increase	0.0000
New Mexico	.	.	.		.
New York	.	.	.		.
North Carolina	0.8109	0.8451	4%	Increase	0.0000
North Dakota	.	.	.		.
Ohio	0.7955	0.8153	2%	Increase	0.0000
Oklahoma	1.0700	1.1621	9%	Increase	0.0000
Oregon	.	.	.		.
Pennsylvania	0.6770	0.7295	8%	Increase	0.0000
Puerto Rico	.	.	.		.
Rhode Island	.	.	.		.
South Carolina	0.4569	0.5779	26%	Increase	0.0000
South Dakota	.	.	.		.
Tennessee	0.7580	0.7186	-5%	Decrease	0.0000
Texas	0.8794	0.8369	-5%	Decrease	0.0000
Utah	.	.	.		.
Vermont	.	.	.		.
Virgin Islands	.	.	.		.
Virginia	0.7789	0.8392	8%	Increase	0.0000
Washington	.	.	.		.
West Virginia	1.2119	1.1169	-8%	Decrease	0.0000
Wisconsin	0.7158	.	.		.
Wyoming	.	.	.		.
All US	**0.7844**	**0.8029**	**2%**	**Increase**	**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. Data from all ICUs, wards (and other non-critical care locations).

2. States without SUR 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 SUR) = 0.

Table 6. Changes in state-specific standardized infection ratios (SURs) between 2019 and 2020 from NHSN Long Term Acute Care Hospitals

6c. Ventilator days (VDs), all locations[1]

| | All Long Term Acute Care Hospitals Reporting to NHSN | | | |
	2019 SUR	2020 SUR	Direction of Change, Based on Statistical Significance	p-value
Alabama	0.5982	0.8072	35%	Increase	0.0000
Alaska	.	.	.		.
Arizona	.	.	.		.
Arkansas	.	.	.		.
California	1.5400	1.4218	-8%	Decrease	0.0000
Colorado	0.7852	0.6037	-23%	Decrease	0.0000
Connecticut	.	.	.		.
D.C.	.	.	.		.
Delaware	.	.	.		.
Florida	1.5580	1.5056	-3%	Decrease	0.0000
Georgia	0.9206	1.0101	10%	Increase	0.0000
Guam	.	.	.		.
Hawaii	.	.	.		.
Idaho	.	.	.		.
Illinois	1.3659	1.2655	-7%	Decrease	0.0000
Indiana	0.5932	1.0638	79%	Increase	0.0000
Iowa	.	.	.		.
Kansas	.	.	.		.
Kentucky	1.2561	1.1346	-10%	Decrease	0.0000
Louisiana	0.5293	0.6956	31%	Increase	0.0000
Maine	.	.	.		.
Maryland	.	.	.		.
Massachusetts	0.8751	1.0922	25%	Increase	0.0000
Michigan	1.1798	1.4690	25%	Increase	0.0000
Minnesota	.	.	.		.
Mississippi	.	.	.		.
Missouri	0.7695	0.8462	10%	Increase	0.0000
Montana	.	.	.		.
Nebraska	.	.	.		.
Nevada	0.9151	1.2584	38%	Increase	0.0000
New Hampshire	.	.	.		.
New Jersey	1.2226	1.3132	7%	Increase	0.0000
New Mexico	.	.	.		.
New York	.	.	.		.
North Carolina	.	.	.		.
North Dakota	.	.	.		.
Ohio	1.0262	1.3357	30%	Increase	0.0000
Oklahoma	1.0513	0.7093	-33%	Decrease	0.0000
Oregon	.	.	.		.
Pennsylvania	1.0770	1.1492	7%	Increase	0.0000
Puerto Rico	.	.	.		.
Rhode Island	.	.	.		.
South Carolina	0.9086	0.9095	0%	No change	0.9368
South Dakota	.	.	.		.
Tennessee	1.1489	1.1712	2%	Increase	0.0243
Texas	0.8339	0.9506	14%	Increase	0.0000
Utah	.	.	.		.
Vermont	.	.	.		.
Virgin Islands	.	.	.		.
Virginia	.	.	.		.
Washington	.	.	.		.
West Virginia	.	.	.		.
Wisconsin	.	.	.		.
Wyoming	.	.	.		.
All US	**1.1621**	**1.2469**	**7%**	**Increase**	**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. Data from all ICUs, wards (and other non-critical care locations).

2. States without SUR 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 SUR) = 0.

Appendix A. Factors used in NHSN risk adjusted standard utilization ratios (SUR) calculation of the device utilization in Long Term Acute Care Hospitals (LTACHs).

Device Type	Validated Parameters for Risk Model
CLD	Intercept Location type Facility bed size* Facility type* LTACH setting** Proportion of admissions with hemodialysis (in percentile) Length of stay in days (in percentile)

UCD	Intercept
	Location type
	Facility bed size*
	Ventilator days
	HEMO
	                                 LTACH setting**
	                       Proportion of admissions with
	ventilator dependence (in percentile)
	Proportion of admissions with hemodialysis (in percentile)
	Length of stay in days (in percentile)

VD	Intercept Location type proportion of admissions with ventilator dependence (in percentile)

* Facility bed size and facility type are taken from the Annual LTACH Survey.
** LTACH setting categorized as free standing LTACH or LTACH units in Hospitals

Technical Appendix: http://www.cdc.gov/hai/pdfs/progress-report/tech-appendix.pdf
Explains the methodology used to procedure the HAI Progress Report.

HAI Progress Report Home Page: http://www.cdc.gov/hai/progress-report/index.html
The complete HAI Progress Report, including state-specific fact sheets and the Executive Summary, can be found

at the above website.