

Table1: CAUTI Acute Care Hospitals (ACH)

Parameter (Variable Name)	Parameter Level	Description	Parameter Estimate	P-Value
Intercept			-10.2778	<0.001
Location Groups (LOCCDC_grp)	CC GROUP 1	Inpatient locations in any of the following: 1) Burn Critical Care 2) Pediatric Medical Critical Care 3) Pediatric Surgical Critical Care	3.3086	<0.001
	CC GROUP 2	Inpatient locations in any of the following: 1) Pediatric Burn Critical Care 2) Pediatric Medical-Surgical Critical Care 3) Neurosurgical Critical Care 4) ONC Pediatric Critical Care 5) Pediatric Trauma Critical Care	2.9823	<0.001
	CC GROUP 3	Inpatient locations in any of the following: 1) Pediatric Surgical Cardiothoracic Critical Care 2) Neurologic Critical Care 3) Trauma Critical Care	2.8105	<0.001
	CC GROUP 4	Inpatient locations in any of the following: 1) Medical Cardiac Critical Care 2) Medical Critical Care 3) Medical-Surgical Critical Care 4) Onsite Overflow Critical Care 5) Oncology Medical Critical Care 6) Oncology Medical-Surgical Critical Care 7) Oncology Surgical Critical Care 8) Prenatal Critical Care 9) Respiratory Critical Care 10) Surgical Critical Care	2.4744	<0.001
	CC:CT	Inpatient locations in any of the following: 1) Surgical Cardiothoracic Critical Care	2.1594	<0.001
	STEP	Inpatient locations in any of the following: 1) Adult Step-Down Unit 2) Special Care Nursery (Level II) 3) Oncology Step-Down Unit 4) Pediatric Step-Down Unit	2.6617	<0.001
	WARD GROUP 1	Inpatient locations in any of the following: 1) Burn Ward 2) Pediatric Medical Ward 3) Neurology Ward 4) Neurosurgical Ward 5) Onsite Overflow Ward	3.0615	<0.001

		6) Pediatric Oncology General Hematology-Oncology Ward 7) Oncology Hematopoietic Stem Cell Transplant Ward 8) Pediatric Oncology Hematopoietic Stem Cell Transplant Ward 9) Oncology Leukemia Ward 10) Oncology Lymphoma Ward 11) Rehabilitation Ward (within Hospital) 12) Stroke (Acute) Ward 13) Orthopedic Trauma Ward		
	WARD GROUP 2	Inpatient locations in any of the following: 1) Oncology Mixed Acuity Unit (all ages) 2) Dialysis Specialty Care Area 3) Gerontology Ward 4) Jail Unit 5) Oncology General Hematology-Oncology Ward 6) Pulmonary Ward	2.7991	<0.001
	WARD GROUP 3	Inpatient locations in any of the following: 1) Adult Mixed Acuity Unit 2) Medical Ward 3) Oncology Solid Tumor Ward	2.6868	<0.001
	WARD GROUP 4	Inpatient locations in any of the following: 1) Pediatric Mixed Acuity Unit 2) Gastrointestinal Ward 3) Telemetry Ward 4) Vascular Surgery Ward	2.6006	<0.001
	WARD GROUP 5	Inpatient locations in any of the following: 1) Mixed Age Mixed Acuity Unit 2) Solid Organ Transplant Specialty Care Area 3) Pediatric Solid Organ Transplant Specialty Care Area 4) Pediatric Burn Ward 5) Behavioral Health/Psych Ward 6) Adolescent Behavioral Health Ward 7) Pediatric Behavioral Health Ward 8) Ear, Nose, Throat Ward 9) Pediatric Genitourinary Ward 10) Medical-Surgical Ward 11) Pediatric Medical-Surgical Ward 12) Pediatric Neurology Ward 13) Pediatric Neurosurgical Ward 14) Well Newborn-- Nursery (Level I) 15) Orthopedic Ward 16) Pediatric Orthopedic Ward 17) Plastic Surgery Ward 18) Pediatric Rehabilitation Ward (within Hospital)	2.4987	<0.001

		19) Surgical Ward		
	WARD GROUP 6	Inpatient locations in any of the following: 1) Genitourinary Ward 2) Gynecology Ward 3) Pediatric Surgical Ward	2.0046	<0.001
	WARD GROUP 7	Inpatient locations in any of the following: 1) Antenatal Care Ward 2) Labor and Delivery Ward 3) Labor, Delivery, Recovery, Postpartum Suite 4) Postpartum Ward	Ref	Ref
Number of Hospital Beds Groupings (numBeds_grp)	68<=numBeds<177	Number of Beds 68 - <177	0.2577	<0.001
	177<=numBeds<421	Number of Beds 177 - <421	0.3347	<0.001
	numBeds>=421	Number of Beds ≥421	0.4996	<0.001
	1<=numBeds<68	Number of Beds 1-<68	Ref	Ref
Medical Type Groups (medType2_grp)	M	Hospital Medical Affiliation Type in any 1) Major Medical	0.2244	<.0001
	U/N/G	Hospital Medical Affiliation Type in any 1) Undergraduate Teaching 2) Graduate Teaching 3) Non-Teaching	REF	REF
Average Length of Stay in Days (avgLOS_grp)	5.7<=avgLOS<6.6	Average LOS 5.7-<6.6	0.0581	0.012
	avgLOS>=6.6	Average LOS ≥6.6	0.1833	<0.001
	1<=avgLOS<5.7	Average LOS 1-<5.7	REF	.
Proportion of ICU Beds Group (propICU_grp)	propICU>=0.141	Proportion of ICU Beds ≥ 0.141	0.0677	<0.001
	0<=propICU<0.141	Proportion of ICU Beds < 0.141	REF	REF

Table2: CAUTI Critical Access Hospitals (CAH)

Parameter (Variable Name)	Parameter Level	Description	Parameter Estimate	P-Value
Intercept			-9.0295	<.0001
Length of Stay Groupings (los_decilegp)	LOS >=6.5	Average LOS ≥ 6.5	0.7592	<0.001
	1<=LOS<6.5	Average LOS 1 - < 6.5	Ref	Ref
Proportion of ICU Beds Group (propICU_grp)	propICU>=0.16	Proportion of ICU Beds ≥ 0.16	REF	REF
	0<=propICU<0.16	Proportion of ICU Beds < 0.16	0.4189	0.014

Table3: CAUTI Inpatient Rehabilitation Facility (IRF)

Parameter (Variable Name)	Parameter Level	Description	Parameter Estimate	P-Value
Intercept			-7.0380	<0.001
Proportion of admissions with other neurologic conditions group (PropnOthNeuro_grp)	0 <= PropnOthNeuro < 0.150	Proportion of Other Neuro Admissions <0.150	0.3583	<0.001
	0.150 <= PropnOthNeuro	Proportion of Other Neuro Admissions >=0.150	Ref	Ref
Facility Type Groups (facType_grp)	CAH, CHLD, GEN, ORTHO, SURG	Facility Type in Any 1) CAH 2) Children's 3) General 4) Ortho 5) Surgery	0.4051	<0.001
	LTAC, REHAB	Facility Type in Any 1) LTAC 2) REHAB	Ref	Ref
Proportion of admissions with stroke (pStrokeAdm_grp)	0<=pStroke<0.250	Proportion of Stroke admissions <0.250	Ref	Ref
	pStroke>=0.250	Proportion of Stroke admissions >=0.250	0.2143	0.006
Proportion of admissions with non-traumatic spinal cord dysfunction group (PropnNonTraSCDys_grp)	0.064 <= PropnNonTraSCDys	Proportion of non-traumatic spinal cord dysfunction admissions >=0.064	0.3165	<0.001
	0 <= PropnNonTraSCDys < 0.064	Proportion of non-traumatic spinal cord dysfunction admissions <0.064	Ref	Ref
Proportion of admissions with brain dysfunction (PropnBrainDys_grp)	0.123 <= PropnBrainDys	Proportion of brain dysfunction admissions >=0.123	0.2074	0.004
	0 <= PropnBrainDys < 0.123	Proportion of brain dysfunction admissions <0.123	Ref	Ref

Table4: CAUTI Long-Term Acute Care Facility (LTAC)

Parameter (Variable Name)	Parameter Level	Description	Parameter Estimate	P-Value
Intercept			-7.8086	<0.001
Proportion of ICU Beds Group (propICU_grp)	propICU>=0.103	Proportion of ICU Beds $\geq$ 0.103	REF	REF
	0<=propICU<0.103	Proportion of ICU Beds < 0.103	0.3579	0.001
Length of Stay Groupings (AvgLOS_grp)	22.2<=LOS<27.8	Average LOS 22.2 - < 27.8	0.5783	0.006
	LOS >=27.8	Average LOS $\geq$ 27.8	1.1001	<0.001
	1<=LOS<22.2	Average LOS 1 - < 22.2	Ref	Ref

#### 4.1b Implementation Costs and Burden\*

Form Number & Name	No. of Facilities Completing Form	Time for Each Facility to Complete Data Collection (minutes)	Total Cost for Each Facility to Complete Data Collection
57.114 Urinary Tract Infection (UTI)	6000	24	\$1,406
57.116 Denominators for Neonatal Intensive Care Unit (NICU)	1,100	240	\$14,064
57.117 Denominators for Specialty Care Area (SCA)/Oncology (ONC)	500	300	\$17,580
57.118 Denominators for Intensive Care Unit (ICU)/Other locations (not NICU or SCA)	5500	300	\$17,580
		864 minutes	\$50,630

### 5.1.3 Characteristics of Measured Entities\*

#### Reliability Testing:

Any acute care hospital or long-term acute care facility that reported 2023 data to NHSN for CAUTI events and had at least one predicted event, was included in the analysis for the respective facility type. Bed size, medical type, and census region of included facilities are broken down below by facility type. Critical access hospitals were not included in the analysis due to small sample size resulting in no facilities having both a CAUTI and CLABSI SIR for analysis.

	AC H			LTAC			IRF		
Medical Type	Frequency	Percent	Cumulative	Frequency	Percent	Cumulative	Frequency	Percent	Cumulative
Non-Major	1333	53.41	2496	350	99.7	350	346	68.4	506
Major	1163	46.59	1163	1	0.281	351	160	31.6	160
Bed Size Group									
< 319	1809	72.48	1809	350	99.7	350	384	75.89	384
>= 319	687	27.52	2496	1	0.28	351	122	24.11	506
Census Region									
Midwest	534	21.39	534	78	22.2	78	122	24.11	122
Non Mainland	28	1.12	562	0	0	78	1	0.20	123
Northeast	430	17.23	992	40	11.4	118	74	14.62	197
South	984	39.42	1976	180	51.2	298	224	44.27	421
West	520	20.83	2496	53	15.1	351	85	16.80	506

**Validity Testing:**

Any acute care hospital or long-term acute care facility that reported 2023 data to NHSN for both CAUTI and CLABSI events and had at least one predicted event for each, was included in the analysis for the respective facility type. Bed size, medical type, and census region of included facilities are broken down below by facility type. Critical access hospitals were not included in the analysis due to small sample size resulting in no facilities having both a CAUTI and CLABSI SIR for analysis. Inpatient rehabilitation facilities do not report CLABSI events to NHSN and thus do not have SIRs calculated, resulting in exclusion of these facilities from validation analysis.

	ACH			LTAC		
	Frequency	Percent	Cumulative	Frequency	Percent	Cumulative
<b>Medical Type</b>						
(missing)	272	12.04	272	313	100	313
Major	1283	56.77	1555	0	0	313
Non-Major	705	31.19	2260	0	0	313
<b>Bed Size Group</b>						
(missing)	1	0.04	1	4	1.28	4
< 319	1572	69.59	1573	307	98.08	311
>= 319	687	30.41	2260	2	0.64	313
<b>Census Region</b>						
Midwest	478	21.15	478	73	23.32	73
Non-Mainland	23	1.02	501	0	0	73
Northeast	388	17.17	889	37	11.82	110
South	889	39.34	1778	154	49.2	264
West	482	21.33	2260	49	15.65	313



### 5.4.3 Variable Distribution Across Measured Entities\*

The below table shows the CAUTI Events, number of urinary catheter days, and the CAUTI rate (per 10,000 days) as estimated by the risk model for acute care hospitals, stratified by included variables:

Factor	CAUTI Events	Number of Urinary Catheter Days	CAUTI Event Rate (per 10,000 days)
<b>loccdc_grp</b>			
CC GROUP 1	148	76,704	19.295
CC GROUP 2	850	567,032	14.99
CC GROUP 3	683	553,822	12.332
CC GROUP 4	5,530	7,592,517	7.283
IN:ACUTE:CC:CT	571	917,654	6.222
STEP	1,748	1,916,959	9.119
WARD GROUP 1	840	551,945	15.219
WARD GROUP 2	635	555,083	11.44
WARD GROUP 3	3,119	3,395,559	9.186
WARD GROUP 4	1,109	1,390,382	7.976
WARD GROUP 5	4,850	6,669,520	7.272
WARD GROUP 6	56	100,424	5.576
WARD GROUP 7	51	813,765	0.627
<b>numBeds_grp</b>			
1. 1 <= numBeds < 68	495	1,046,739	4.729
2. 68 <= numBeds < 177	2,753	4,370,706	6.299
3. 177 <= numBeds < 421	7,904	10,645,308	7.425
4. 421 <= numBeds	9,038	9,038,613	9.999
<b>medType2_grp</b>			
M	14,310	15,603,718	9.171
N, U, G	5,880	9,497,648	6.191
<b>avgLOS_grp</b>			
1. 1 <= avgLOS < 5.7	12,293	17,039,495	7.214
2. 5.7 <= avgLOS < 6.6	3,915	4,293,513	9.118

3. 6.6 <= avgLOS	3,982	3,768,358	10.567
<b>ICUBedsPropn_grp</b>			
1. 0 <= ICUBedsPropn < 0.141	7,172	10,248,300	6.998
2. 0.141 <= ICUBedsPropn	13,018	14,853,066	8.765

The below table shows the CAUTI Events, number of urinary catheter days, and CAUTI rate (per 10,000 days) as estimated by the risk model for critical access hospitals, stratified by included variables:

Variable	CAUTI events	Urinary catheter days	CAUTI event rate (per 10,000 days)
<b>avgLOS_grp</b>			
1. 1 <= avgLOS < 6.5	201	316,797	6.345
2. avgLOS >= 6.5	85	78,120	10.881
<b>ICUbedPropn_grp</b>			
1. ICUbedPropn < 0.16	232	283,172	8.193
2. ICUbedPropn >= 0.16	54	111,745	4.832

Below shows the CAUTI Events, Number of urinary catheter days, and CAUTI rate (per 10,000 days) as estimated by the risk model for inpatient rehabilitation facilities, stratified by included variables:

Factor	CAUTI Events	Number of Urinary Catheter Days	CAUTI Event Rate (per 10,000 days)
<b>PropnOthNeuro_grp</b>			
1. 0 <= PropnOthNeuro < 0.150	983	460,648	21.340
2. 0.150 <= PropnOthNeuro	274	260,835	10.505
<b>factype_grp</b>			
CAH, CHLD, GEN, ORTHO, SURG	642	259,690	24.722
LTAC, REHAB	615	461,793	13.318
<b>PropnStroke_grp</b>			
1. 0 <= PropnStroke < 0.250	737	519,002	14.200
2. 0.250 <= PropnStroke	520	202,481	25.681
<b>PropnNonTraSCDys_grp</b>			
1. 0 <= PropnNonTraSCDys < 0.064	812	556,354	14.595
2. 0.064 <= PropnNonTraSCDys	445	165,129	26.949
<b>PropnBrainDys_grp</b>			
1. 0 <= PropnBrainDys < 0.123	565	390,079	14.484
2. 0.123 <= PropnBrainDys	692	331,404	20.881

Below shows the CAUTI Events, Number of urinary catheter days, and CAUTI rate (per 10,000 days) as estimated by the risk model for long-term acute care, stratified by included variables:

Factor	CAUTI Events	Number of Urinary Catheter Days	CAUTI Event Rate (per 10,000)
<b>AvgLOS_grp</b>			
1. 1 <= AvgLOS < 22.2	53	103,174	5.137
2. 22.2 <= AvgLOS < 27.8	353	361,463	9.766
3. 27.8 <= AvgLOS	1,284	823,556	15.591
<b>PropnICUBeds_grp</b>			
1. PropnICUBeds < 0.103	1,339	939,273	14.256
2. 0.103 <= PropnICUBeds	351	348,920	10.06

## 6.2.4 [If maintenance review OR Current Status = In Use (6.1.1)] Progress on Improvement\*

**Table. Catheter-Associated Urinary Tract Infection (CAUTI) 2015 Baseline Data 2015-2021, by facility type**

Facility Type	Year	Number of Reporting Facilities <sup>1</sup>	Number of Indwelling Urinary Catheter Days	Number of CAUTI Events	Number of Predicted Infections	SIR <sup>2</sup>	95% CI Lower Bound	95% CI Upper Bound	Number of facilities with ≥ 1 Predicted CAUTI	No. Facilities with SIR Significantly > National SIR n (%) <sup>3</sup>	No. Facilities with SIR Significantly < National SIR n (%) <sup>3</sup>	Percentile Distribution of Facility-specific SIRs <sup>4</sup>				
												10%	25%	Median 50%	75%	90%
ACH	2015	3,614	27,846,847	29,410	29828.19	<b>0.986</b>	0.975	0.997	2621	306 (12%)	289 (11%)	0.078	0.486	0.873	1.321	1.916
	2016	3,616	27,073,525	27,675	29731.01	<b>0.931</b>	0.92	0.942	2616	279 (11%)	312 (12%)	0.000	0.449	0.822	1.254	1.779
	2017	3,659	26,083,641	25,528	28952.45	<b>0.882</b>	0.871	0.893	2606	276 (11%)	255 (10%)	0.000	0.427	0.781	1.239	1.759
	2018	3,657	24,577,046	22,683	27845.2	<b>0.815</b>	0.804	0.825	2562	231 (9%)	236 (9%)	0.000	0.407	0.734	1.111	1.568
	2019	3,680	23,464,925	20,046	26807.79	<b>0.748</b>	0.737	0.758	2536	206 (8%)	189 (7%)	0.000	0.382	0.674	1.037	1.477
	2020	3,747	23,232,465	20,436	26907.41	<b>0.759</b>	0.749	0.770	2595	258 (10%)	212 (8%)	0.000	0.382	0.688	1.052	1.590
	2021	3,780	27,278,214	25,319	31668.06	<b>0.800</b>	0.79	0.809	2721	325 (12%)	272 (10%)	0.084	0.437	0.751	1.188	1.809
CAH	2015	683	284,068	193	204.51	0.944	0.817	1.084	22	1 (5%)	-	0.000	0.000	0.000	0.825	1.609
	2016	798	292,393	224	243.66	0.919	0.805	1.046	34	1 (3%)	2 (6%)	0.000	0.000	0.000	0.615	1.187
	2017	883	313,555	233	320.37	<b>0.727</b>	0.638	0.825	71	-	2 (3%)	0.000	0.000	0.000	0.357	0.754
	2018	909	314,329	251	335.22	<b>0.749</b>	0.66	0.846	80	-	-	0.000	0.000	0.000	0.648	0.953
	2019	913	311,654	182	321.67	<b>0.566</b>	0.488	0.653	68	1 (1%)	-	0.000	0.000	0.000	0.147	0.687
	2020	909	311,057	195	319.59	<b>0.610</b>	0.529	0.700	61	-	-	0.000	0.000	0.000	0.484	0.832
	2021	1,006	393,924	274	381.12	<b>0.719</b>	0.638	0.808	89	-	-	0.000	0.000	0.000	0.625	0.996
LTAC	2015	488	2,342,244	3,804	463.72	0.992	0.961	1.024	466	59 (13%)	79 (17%)	0.000	0.000	0.699	1.389	2.234
	2016	485	2,162,495	3,386	479.32	0.979	0.947	1.013	469	63 (13%)	72 (15%)	0.000	0.000	0.786	1.737	2.529
	2017	469	1,912,773	2,868	472.35	<b>0.943</b>	0.909	0.978	455	69 (15%)	63 (14%)	0.000	0.348	0.906	1.697	2.505
	2018	448	1,690,955	2,360	483.29	<b>0.877</b>	0.842	0.913	430	63 (15%)	56 (13%)	0.000	0.000	0.868	1.735	2.477
	2019	429	1,474,565	1,920	501.67	<b>0.801</b>	0.765	0.837	401	51 (13%)	45 (11%)	0.000	0.000	0.882	1.742	3.018
	2020	407	1,518,585	1,938	570.88	<b>0.748</b>	0.715	0.782	384	48 (13%)	56 (15%)	0.000	0.000	0.691	1.492	2.371
	2021	390	1,473,053	1,891	628.17	<b>0.748</b>	0.715	0.782	381	44 (12%)	55 (14%)	0.000	0.000	0.784	1.677	2.564
IRF	2015	301	316,123	459	3836.17	0.990	0.902	1.084	159	10 (6%)	4 (3%)	0.140	0.416	0.804	1.368	2.073
	2016	319	321,308	542	3457.31	<b>1.131</b>	1.039	1.229	179	12 (7%)	7 (4%)	0.063	0.414	0.832	1.380	2.022
	2017	324	322,184	558	3042.28	<b>1.181</b>	1.086	1.282	174	13 (7%)	5 (3%)	0.000	0.356	0.783	1.387	2.197
	2018	340	327,162	562	2689.93	<b>1.163</b>	1.07	1.262	175	10 (6%)	8 (5%)	0.000	0.356	0.750	1.417	2.135
	2019	353	337,027	579	2397.85	<b>1.154</b>	1.063	1.251	193	14 (7%)	9 (5%)	0.000	0.327	0.700	1.284	2.083
	2020	368	395,912	538	2591.23	0.942	0.865	1.025	223	17 (8%)	1 (0%)	0.000	0.263	0.647	1.178	1.737
	2021	388	439,784	706	2527.54	<b>1.124</b>	1.043	1.209	250	21 (8%)	13 (5%)	0.000	0.233	0.548	1.109	1.721

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1. Number of facilities included in SIR calculation.

2. Bolded SIR value indicates statistical significance at the  $\alpha = 0.05$  level (e.g., the SIR is statistically significantly different than 1.0)

3. Percent of facilities with at least one predicted infection that had an SIR significantly greater than or less than the nominal value of the national SIR for CAUTI by facility type and year. This is only calculated if at least 10 facilities had  $\geq 1.0$  predicted CAUTI for the given year.

4. Facility-specific percentiles are only calculated if at least 20 facilities had  $\geq 1.0$  predicted CAUTI for the given year. If a facility's predicted number of CAUTIs was  $< 1.0$ , a facility-specific SIR was neither calculated nor included in the distribution of facility-specific SIRs.

ACH: Acute Care Hospital; CAH: Critical Access Hospital; LTAC: Long-term Acute Care Hospital; IRF: Inpatient Rehabilitation Facility