

1.14a Numerator Details*

1. Determine the patients' date of birth and sex.
2. Determine the patients who underwent a colon surgery (COLO) or abdominal hysterectomy (HYST).
 - Procedures are defined by ICD-10-PCS procedure codes that comprise the NHSN colon surgery or abdominal hysterectomy category, or the corresponding set of CPT procedure codes used in the American College of Surgeons National Surgical Quality Improvement Program (ACS NSQIP).
3. Determine if the NHSN operative procedure was performed on a patient whose date of admission to the healthcare facility and the date of discharge are different calendar days.
4. Determine if the patient developed a deep incisional primary or organ/space surgical site infection.
 - Deep Incisional SSI

Date of event occurs within 30 days following the NHSN operative procedure (where day 1 = the procedure date) according to the list in Table 2,

AND

involves deep soft tissues of the incision (for example, fascial and muscle layers)

AND

patient has at least **one** of the following:

 - a. purulent drainage from the deep incision
 - b. a deep incision that is deliberately opened or aspirated by a surgeon, physician* or physician designee or spontaneously dehisces,

AND

organism(s) identified from the deep soft tissues of the incision by a culture or non-culture based microbiologic testing method which is performed for purposes of clinical diagnosis or treatment (for example, not Active Surveillance Culture/Testing [ASC/AST]) or culture or nonculture based microbiologic testing method is not performed. A culture- or nonculture-based test from the deep soft tissues of the incision that has a negative finding does not meet this criterion,

AND

patient has at least **one** of the following signs or symptoms: fever (>38°C); localized pain or tenderness.

 - c. an abscess or other evidence of infection involving the deep incision detected on gross anatomical exam, histopathologic exam, or imaging test.
 - Organ/Space SSI

* The term physician for the purpose of application of the NHSN SSI criteria may be interpreted to mean a surgeon, infectious disease physician, emergency physician, other physician on the case, or physician's designee (nurse practitioner or physician's assistant).

Date of event occurs within 30 days following the NHSN operative procedure (where day 1 = the procedure date) according to the list in Table 2,

AND

involves any part of the body deeper than the fascial/muscle layers that is opened or manipulated during the operative procedure,

AND

patient has at least **one** of the following:

- a. purulent drainage from a drain placed into the organ/space (for example, closed suction drainage system, open drain, T-tube drain, CT guided drainage)
- b. organism(s) identified from fluid or tissue in the organ/space by a culture or non-culture based microbiologic testing method which is performed for purposes of clinical diagnosis or treatment (for example, not Active Surveillance Culture/Testing [ASC/AST])
- c. an abscess or other evidence of infection involving the organ/space detected on:
 - gross anatomical exam **or**
 - histopathologic exam **or**
 - imaging test evidence definitive or equivocal for infection,

AND

meets at least **one** criterion for a specific organ/space infection site listed in Table 3. These criteria are found in the Surveillance Definitions for Specific Types of Infections (Chapter 17).

Notes:

- Community-associated organisms (organisms belonging to the following genera: Blastomyces, Histoplasma, Coccidioides, Paracoccidioides, Cryptococcus and Pneumocystis) and/or organisms associated with latent infections (for example, herpes, shingles, syphilis, or tuberculosis) are excluded from meeting SSI criteria.
- When multiple primary incision sites for the same operative procedure become infected, report as a single SSI and assign the deepest level of SSI.

5. Determine the date of surgery.

6. Determine the date of the surgical site infection.

- If the patient has several procedures performed on different dates during the admission, attribute the SSI to the most recently performed procedure.

7. Determine if the surgical site infection occurred within the 30-days following the surgical procedure.

- If SSI criteria is met within the 30-day postoperative period and was detected at a facility other than the facility where the procedure was performed, the SSI should be reported.

8. Determine if the infection was present at time of surgery (PATOS), (i.e., evidence of infection intraoperatively), as PATOS surgical site infections are not included in the calculation of the standardized infection ratio (SIR).

The SSIs that are linked to procedures that are excluded from the denominator are also excluded from the numerator.

- Surgical site infections that are present at the time of surgery (PATOS)
- ASA class VI
- Patients whose admission date and discharge date are the same day.
- Patients <18 years of age
- Patients ≥ 109 years of age
- Adult patients, ≥ 18 years of age, BMI is less than 12 or greater than 60
- Procedures reported in patients with sex reported as Other are excluded from the SSI SIR
- Surgical procedure duration less than 5 minutes or exceeding the IQR5 value

1.15a Denominator Details*

1. Determine patients who underwent a colon (COLO) surgery or abdominal hysterectomy (HYST).
 - Procedures are defined by ICD-10-PCS procedure codes that comprise the NHSN colon surgery or abdominal hysterectomy category, or the corresponding set of CPT procedure codes used in the American College of Surgeons National Surgical Quality Improvement Program (ACS NSQIP).
2. Determine if the patient developed a deep incisional primary, or organ/space surgical site infection within the 30-day postoperative surveillance period.
 - Deep Incisional SSI

Date of event occurs within 30 days following the NHSN operative procedure (where day 1 = the procedure date) according to the list in Table 2

AND

involves deep soft tissues of the incision (for example, fascial and muscle layers)

AND

patient has at least **one** of the following:

 - a. purulent drainage from the deep incision.
 - b. a deep incision that is deliberately opened or aspirated by a surgeon, physician* or physician designee, or spontaneously dehisces

AND

organism(s) identified from the deep soft tissues of the incision by a culture- or non-culture based microbiologic testing method which is performed for purposes of clinical diagnosis or treatment (for example, not Active Surveillance Culture/Testing [ASC/AST]) or culture- or nonculture-based microbiologic testing method is not performed. A culture- or nonculture-based test from the deep soft tissues of the incision that has a negative finding does not meet this criterion

AND

patient has at least **one** of the following signs or symptoms: fever (>38°C); localized pain or tenderness

- c. an abscess or other evidence of infection involving the deep incision detected on gross anatomical exam, histopathologic exam, or imaging test.

* The term physician for the purpose of application of the NHSN SSI criteria may be interpreted to mean a surgeon, infectious disease physician, emergency physician, other physician on the case, or physician's designee (nurse practitioner or physician's assistant).

- Organ/Space SSI

Date of event occurs within 30 days following the NHSN operative procedure (where day 1 = the procedure date) according to the list in Table 2

AND

involves any part of the body deeper than the fascial/muscle layers that is opened or manipulated during the operative procedure

AND

patient has at least **one** of the following:

- a. purulent drainage from a drain placed into the organ/space (for example, closed suction drainage system, open drain, T-tube drain, CT guided drainage)
- b. organism(s) identified from fluid or tissue in the organ/space by a culture- or nonculture-based microbiologic testing method which is performed for purposes of clinical diagnosis or treatment (for example, not Active Surveillance Culture/Testing [ASC/AST])
- c. an abscess or other evidence of infection involving the organ/space detected on:
 - gross anatomical exam **or**
 - histopathologic exam **or**
 - imaging test evidence definitive or equivocal for infection

AND

meets at least **one** criterion for a specific organ/space infection site listed in Table 3. These criteria are found in the Surveillance Definitions for Specific Types of Infections (Chapter 17)

3. Determine the date of surgery.
4. Determine the date of the surgical site infection.
5. Determine the patient's assigned American Society of Anesthesiologists' (ASA) score.
 - Patients with an ASA of 6 are excluded.
6. Determine if the patient has a diagnosis of diabetes that is managed with insulin or a non-insulin anti-diabetic agent.
7. Determine the surgery start time and surgery finish time.
8. Determine if the procedure was assigned as an emergent or urgent surgery.
9. Determine if the patient had general anesthesia.
10. Determine the patient's date of birth, height, weight, and sex.
11. Determine if the NHSN operative procedure was performed on a patient whose date of admission to the healthcare facility and the date of discharge are different calendar days.
12. Determine if any portion of the skin was closed by primary closure or non-primary closure.
13. Determine if a scope was used during the procedure.
14. Determine if a blunt or penetrating injury (i.e., trauma) occurred prior to the start of the procedure.
15. Determine the wound classification for the surgical wound.
16. Determine if the infection was present at time of surgery (PATOS), (i.e., evidence of infection intraoperatively), as PATOS surgical site infections are not included in the calculation of the standardized infection ratio (SIR).

The logistic regression model is the specific type of model used for surgical site infection risk adjustment. At a high level, the model uses a set of fixed parameters (adjustment variables) to predict the log-odds of a surgical site infection following an inpatient procedure. To obtain the total number of predicted SSIs, the following steps are completed in NHSN:

1. Determine the log-odds for each procedure
2. Convert the log-odds into a probability, or risk of infection (p), for each procedure
3. Sum the risk of infections across all procedures in a given timeframe

The sum of the risks from a set of procedures will amount to the total number of predicted infections for that same set of procedures. Each risk factor's contribution to the standardized infection ratio (SIR) varies, as represented by the parameter estimate for each factor. Parameter estimates describe the relationship between the variable and the risk of SSI; positive parameter estimates indicate that the risk of SSI increases with increasing values of the variable. Negative parameter estimates indicate that the risk of SSI decreases with increasing values of the variable.

The general formula for the logistic regression model is

$$\log(\lambda) = \alpha + \beta_1 X_1 + \beta_2 X_2 + \dots + \beta_i X_i, \text{ where:}$$

α = Intercept

β_i = Parameter estimate

X_i = Value of risk factor (categorical variables: 1 if present, 0 if not present)

i = Number of predictors

The probability of SSI is calculated using the logistic regression model above, by utilizing the relationship between the log-odds and the probability (risk). The probability of SSI is calculated for each procedure and then summed across all procedures to give the total number of predicted SSIs for this population.

The number of predicted events calculated under the 2022 baseline for SSI is risk adjusted based on the following variables found to be statistically significant predictors of SSIs per procedure.

Table. Colon Procedures, Complex 30-Day Model

Parameter	Parameter Estimate	Standard Error	P-value
Intercept	-5.5134	0.1039	<.0001
Scope: No	0.6402	0.0271	<.0001
Scope: Yes	REFERENT	-	-
Procedure duration: 67-107 (Min)	0.2344	0.0521	<.0001
Procedure duration: 108-145 (Min)	0.3900	0.0515	<.0001
Procedure duration: 146-232 (Min)	0.5221	0.0490	<.0001
Procedure duration: 233-296 (Min)	0.6950	0.0556	<.0001
Procedure duration: ≥297 (Min)	0.8690	0.0541	<.0001
Procedure duration: ≤66 (Min)	REFERENT	-	-
Trauma: Yes	0.3607	0.0520	<.0001
Trauma: No	REFERENT	-	-
ASA score: 3/4/5	0.3089	0.0281	<.0001
ASA score: 1/2	REFERENT	-	-
Patient's age: 18-39 years	0.5080	0.0532	<.0001
Patient's age: 40-62 years	0.3765	0.0443	<.0001
Patient's age: 63-79 years	0.1970	0.0438	<.0001
Patient's age: 80-109 years	REFERENT	-	-
Surgical wound class: Contaminated/Dirty	0.1707	0.0245	<.0001
Surgical wound class: Clean-Contaminated	REFERENT	-	-
Total number of beds ¹ : ≥319 beds	0.0958	0.0248	0.0001
Total number of beds ¹ : <319 beds	REFERENT	-	-
Emergency: Yes	0.1097	0.0300	0.0003
Emergency: No	REFERENT	-	-
Medical School Affiliation ¹ : Major	0.0723	0.0259	0.0052
Medical School Affiliation ¹ : Graduate/Undergraduate/None	REFERENT	-	-
Sex: Male	0.1212	0.0231	<.0001
Sex: Female	REFERENT	-	-
BMI: ≥40	0.1111	0.0427	0.0093
BMI: <40	REFERENT	-	-
Oncology Hospital ² : Yes	0.3658	0.0831	<.0001
Oncology Hospital ² : No	REFERENT	-	-
Anesthesia: Yes	0.1708	0.0823	0.0380
Anesthesia: No	REFERENT	-	-

Table . Abdominal Hysterectomy Procedures, Complex 30-Day Model

<u>Parameter</u>	<u>Parameter Estimate</u>	<u>Standard Error</u>	<u>P-value</u>
Intercept	-6.4524	0.1514	<.0001
Procedure duration: 80-136 (Min)	0.4701	0.0755	<.0001
Procedure duration: 137-188 (Min)	0.7385	0.0804	<.0001
Procedure duration: ≥189 (Min)	0.9316	0.0794	<.0001
Procedure duration: ≤79 (Min)	REFERENT	-	-
BMI: ≤30	0.2188	0.0476	<.0001
BMI: <30	REFERENT	-	-
Patient's age: 18-47 years	0.6110	0.0569	<.0001
Patient's age: 48-55 years	0.3018	0.0690	<.0001
Patient's age: 56-109 years	REFERENT	-	-
ASA score: 2	0.3276	0.1300	0.0118
ASA score: 3/4/5	0.5465	0.1338	<.0001
ASA score: 1	REFERENT	-	-
Scope: No	0.1667	0.0449	0.0002
Scope: Yes	REFERENT	-	-
Medical School Affiliation ¹ : Major	0.0934	0.0473	0.0483
Medical School Affiliation ¹ : Graduate/Undergraduate/None	REFERENT	-	-
Oncology Hospital ² : Yes	0.5740	0.1552	0.0002
Oncology Hospital ² : No	REFERENT	-	-
Diabetes: Yes	0.1466	0.0634	0.0208
Diabetes: No	REFERENT	-	-

¹ Medical school affiliation is reported on the [Annual Hospital Survey](#).

² Based on NHCN enrollment as HOSP-ONC

4.1b Implementation Costs and Burden*

Per the Paperwork Reduction Act (PRA) of 1995 federal agencies cannot conduct or sponsor the collection of information unless the Office of Management and Budget (OMB) has reviewed and approved the proposed data collection. Federal agencies must submit a set of documents known as an Information Collection Request (ICR), to request OMB approval of an information collections. The ICR documents describe what information is needed, why it is needed, how it will be collected, and how much time, money, and effort it will cost the respondents to collect the information.

Multiple data collection forms are utilized to provide surveillance data on SSIs. Below are the OMB approved estimated total annual burden hours and annual cost for all facilities that complete this data collection.

Form Number & Name	No. of Respondents	Time for each facility to complete data collection (minutes)	Total Respondent Cost
57.120 Surgical Site Infection (SSI)	3,800	14	\$820
57.121 Denominator for Procedure	3,800	14	\$820
		28 minutes	\$1,640

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

Table. COLO ACH 2015 Baseline SIR Data,

Year	Number of Reporting Facilities	Number of Procedures	Number of SSI Events	Number of Predicted Infections	SIR	95% CI Lower Bound	95% CI Upper Bound	Number of facilities with Greater or Equal to 1 Predicted Infections	No. Facilities with SIR Significantly > National SIR		No. Facilities with SIR Significantly < National SIR		p10	p25	p50	p75	p90
2015	3,115	302,784	8,257	8236.117	1.003	0.981	1.024	2010	143	7%	81	4%	0.000	0.379	0.812	1.388	1.932
2016	3,107	318,208	8,225	8696.633	0.946	0.925	0.966	2010	126	6%	79	4%	0.000	0.328	0.790	1.293	1.880
2017	3,145	320,167	8,048	8777.944	0.917	0.897	0.937	2006	120	6%	76	4%	0.000	0.328	0.752	1.269	1.848
2018	3,114	322,702	7,971	8887.205	0.897	0.877	0.917	1990	120	6%	70	4%	0.000	0.315	0.760	1.244	1.746
2019	3,095	329,431	7,973	9099.622	0.876	0.857	0.896	1994	122	6%	87	4%	0.000	0.302	0.723	1.214	1.726
2020	3,054	283,597	6,644	7961.951	0.834	0.815	0.855	1854	100	5%	67	4%	0.000	0.259	0.711	1.139	1.683
2021	3,069	322,075	7,753	9070.996	0.855	0.836	0.874	1978	119	6%	56	3%	0.000	0.301	0.732	1.154	1.687

Table. HYST ACH 2015 Baseline SIR Data,

Year	Number of Reporting Facilities	Number of Procedures	Number of SSI Events	Number of Predicted Infections	SIR	95% CI Lower Bound	95% CI Upper Bound	Number of facilities with Greater or Equal to 1 Predicted Infections	No. Facilities with SIR Significantly > National SIR		No. Facilities with SIR Significantly < National SIR		p10	p25	p50	p75	p90
2015	3,003	303,938	2,511	2508.596	1.001	0.962	1.041	793	40	5%	9	1%	0.000	0.000	0.790	1.549	2.242
2016	2,964	302,573	2,193	2519.489	0.87	0.835	0.907	801	45	6%	12	1%	0.000	0.000	0.710	1.272	1.978
2017	2,955	295,636	2,144	2472.253	0.867	0.831	0.905	770	37	5%	15	2%	0.000	0.000	0.722	1.245	1.952
2018	2,935	294,161	2,237	2472.832	0.905	0.868	0.943	770	38	5%	12	2%	0.000	0.000	0.735	1.292	1.921
2019	2,913	336,231	2,651	2838.031	0.934	0.899	0.97	869	60	7%	15	2%	0.000	0.236	0.738	1.400	2.164
2020	2,842	255,782	1,887	2190.423	0.861	0.823	0.901	679	39	6%	6	1%	0.000	0.000	0.719	1.374	2.023
2021	2,804	270,326	2,321	2339.888	0.992	0.952	1.033	701	45	6%	11	2%	0.000	0.275	0.810	1.575	2.392

5.1.3 Characteristics of Measured Entities*

Reliability Testing:

COLO

A total of 1788 facilities meeting the criteria of having ≥ 1 predicted event (SSI COLO) were included in the analysis. Bed size, medical type, and census region of included facilities are broken down below:

Bedsizes	Frequency	Percent
<319	1144	63.98
≥ 319	644	36.02
Medical Type		
Major Medical	1059	59.23
Non-Major Medical	729	40.77
Census Region		
Midwest	387	21.64
Northeast	309	17.28
South	713	39.88
West	379	21.20

HYST:

A total of 649 facilities meeting the criteria of having ≥ 1 predicted event (SSI HYST) were included in the analysis. Bed size, medical type, and census region of included facilities are broken

Bedsizes	Frequency	Percent
<319	230	35.44
≥ 319	419	64.56
Medical Type		
Major Medical	479	73.81
Non-Major Medical	170	26.19
Census Region		
Midwest	139	21.42
Northeast	103	15.87
South	293	45.15
West	114	17.57

Validity Testing:

Any acute care hospital or critical access hospital that reported 2023 data to NHSN for both COLO and HYST SSIs, and had at least one predicted event for each, was included in the analysis for a total of 607 facilities. Bed size, medical type, and census region of included facilities are broken down below:

Bed size	# Facilities	Percent
<319	188	30.97
>=319	419	69.03
Medical Type		
Major Medical	460	80.84
Non-Major Medical	147	24.22
Census Region		
Midwest	133	21.91
Northeast	101	16.64
South	263	43.33
West	110	18.12

Risk Adjustment:

- Includes only in-plan, inpatient colon and abdominal hysterectomy procedures in adult patients (i.e., ge 18 years of age)
- Includes only Deep Incisional Primary SSIs and Organ/Space SSIs with an event date within 30 days of the procedure
- Includes SSIs regardless of detection method

COLO

Description of entities in the analytic dataset

Total number of Facility beds	Frequency	Percent
<319	2673	80
>=319	668	20
Medical Type		
Major Medical	1327	40
Non-Major Medical	2014	60
Region		
Midwest	834	24.96%
Non-Mainland	4	0.12%
Northeast	510	15.26%
South	1286	38.49%
West	707	21.16%

HYST:

Description of entities in the analytic dataset

Total number of Facility beds	Frequency	Percent
<319	2336	78
>=319	659	22
Medical Type		
Major Medical	1245	42
Non-Major Medical	1747	58
Region		
Midwest	736	24.60%
Non-Mainland	6	0.20%
Northeast	473	15.81%
South	1149	38.40%
West	628	20.99%

5.1.4 Characteristics of Units of the Eligible Population*

Reliability Testing:

In the 1,788 Hospitals meeting threshold there were a total of 306,844 colo procedures, age and sex information is below:

Age Group (years)	Frequency	Percent
18-39	29689	9.68
40-62	114510	37.32
63-79	128296	41.81
80-109	34349	11.19
Sex		
Female	159402	51.95
Male	147442	48.05

In the 649 Hospitals meeting threshold there were a total of 171193 HYST procedures, age and gender information is below:

Age Group (years)	Frequency	Percent
18-47	76270	44.55
48-55	34186	19.97
56-109	60737	35.48
Sex		
Female	171096	99.94
Male	97	0.06

Validity Testing:

The 607 facilities included in the validity analysis performed a total of 160,423 HYST procedures and 165,617 COLO procedures during 2023. Age group at time of procedure and sex of patients undergoing these procedures are below.

COLO:

Age Group (years)	Frequency	Percent
18-39	18,066	10.91
40-62	63,525	38.36
63-79	67,295	40.63
80-109	16,731	10.1
Sex		
Female	87,251	52.68
Male	78,366	47.32

HYST:

Age Group (years)	Frequency	Percent
18-47	70,006	43.64
48-55	32,092	20
56-109	58,325	36.36
Sex		
Female	160,333	99.94
Male	90	0.06

Risk Adjustment:

Characteristics of Units of Eligible Population in analytic dataset: COLO

Age Group (years)	Frequency	Percent
18-39	31626	9.80
40-62	121583	37.67
63-79	133515	41.37
80-109	36010	11.16
Sex		
Female	167139	51.79
Male	155595	48.21

Characteristics of Units of Eligible Population in analytic dataset: HYST

Age Group (years)		
18-47	123562	48.93
48-55	51595	20.43
56-109	77376	30.64
Sex		
Female	252307	99.91
Male	226	0.09

5.4.3 [If risk/case-mix factors are addressed by any method (5.4.1)] Variable Distribution Across Measured Entities*

Table. Descriptive statistics on the population used in the COLO Complex 30-day SSI SIR modeling

	N	Mean	Min.	Q1	Med	Q3	Max
Age at time of procedure	322,734	61.6	18	52	63	73	106
BMI value	322,734	28.4	12	23.6	27.4	32.1	60.0
Procedure duration	322,734	168.7	5	99	146	213	783
Total number of facility beds	322,734	398.0	6	204	335	535	1342

Table. Descriptive statistics on the population used in the HYST Complex 30-day SSI SIR modeling

	N	Mean	Min.	Q1	Med	Q3	Max
Age at time of procedure	252,533	50.5	18	41	48	59	102
BMI value	252,533	31.7	12.0	25.9	30.6	36.4	60.0
Procedure duration	252,533	139.9	5	86	120	172	608
Total number of facility beds	252,533	395.5	6	193	342	537	1342

Table. Descriptive statistics of the risk factors reported by patients considered for modeling of the Complex 30-day SSI SIR

Risk Factors Collected on NHSN Denominator Form Considered for Model	COLO	HYST
Sex		
Female	167,139 (51.8%)	252,307 (99.9%)
Male	155,595 (48.2%)	226 (0.1%)
Surgical Wound Class		
Clean	0 (0.0%)	27,727 (11.0%)
Clean Contaminated	225,192 (69.8%)	220,801 (87.4%)
Contaminated	52,026 (16.1%)	2,519 (1.0%)
Dirty	45,516 (14.1%)	1,486 (0.6%)
Anesthesia		
No	7,568 (2.3%)	6,605 (2.6%)
Yes	315,166 (97.7%)	245,928 (97.4%)
ASA		
1	3,666 (1.1%)	12,424 (4.9%)
2	93,811 (29.1%)	143,560 (56.9%)
3	177,462 (55.0%)	92,438 (36.6%)
4	43,184 (13.4%)	3,954 (1.6%)
5	4,611 (1.4%)	157 (0.1%)
Diabetes		

No	256,926 (79.6%)	219,472 (86.9%)
Yes	65,808 (20.4%)	33,061 (13.1%)
Closure		
Primary closed	16,350 (5.1%)	3,153 (1.3%)
Other	306,384 (94.9%)	249,380 (98.8%)
Emergency		
No	262,779 (81.4%)	247,433 (98.0%)
Yes	59,955 (18.6%)	5,100 (2.0%)
Trauma		
No	312,559 (96.9%)	251,641 (99.7%)
Yes	10,175 (3.2%)	892 (0.4%)
Scope		
No	194,395 (60.2%)	130,822 (51.8%)
Yes	128,339 (39.8%)	121,711 (48.2%)
Facility Types		
Critical Access Hospitals	2,356 (0.7%)	1,705 (0.7%)
Children Hospitals	175 (0.1%)	411 (0.2%)
General Acute Care Hospitals	314,173 (97.4%)	238,033 (94.3%)
Military Hospitals	230 (0.1%)	214 (0.1%)
Oncology Hospitals	3,898 (1.2%)	2,774 (1.1%)
Orthopedic Hospitals	0 (0.0%)	4 (0.0%)
Surgical Hospitals	1,518 (0.5%)	3,052 (1.2%)
Women Hospitals	233 (0.1%)	3,411 (1.4%)
Women/Children Hospitals	151 (0.1%)	2,929 (1.2%)

The descriptive results summarized in the table provide key insights into the patient population and facility characteristics included in the modeling of the Complex 30-day SSI SIR model using the 2022 national aggregate data.

For COLO:

- Age at Procedure:** In the 2022 national aggregate data, the average age at time of the procedure of patients undergoing COLO surgeries is 61.6 years, with a median age of 63. This indicates that the population skews toward older adults, with 50% of patients between the ages of 52 and 73. The age range spans from 18 to 106 years, with notable variability as shown by the 10th and 90th percentiles (40 and 80 years, respectively). This highlights the diverse age distribution of the patient.
- Patient BMI:** The mean BMI of 28.4 suggests that, on average, the population is classified as overweight, with a median BMI of 27.4. The BMI range varies from 12 to nearly 60, indicating the presence of both underweight and obese individuals in the dataset. Most patients fall within a BMI range of 20.5 to 37.5, as indicated by the 10th and 90th percentiles. This distribution emphasizes the need to consider BMI as a factor influencing procedural outcomes.

- **Procedure Duration:** The average duration of the procedure is approximately 169 minutes, with a median of 146 minutes. Procedure times range widely, from as short as 5 minutes to as long as 783 minutes. The interquartile range (99 to 213 minutes) suggests a significant variation in the time required for different cases, which may reflect differences in case complexity or facility efficiency.
- **Total Number of Facility Beds:** The facilities in this dataset vary greatly in size, with an average of 398 beds and a median of 335 beds. The number of beds ranges from very small facilities with 6 beds to large hospitals with over 1,300 beds. The distribution (10th percentile: 113 beds; 90th percentile: 784 beds) indicates that while many facilities are large, a considerable portion operates with fewer resources, potentially affecting procedural throughput and capacity.

For HYST:

- **Age at Procedure:** The average age of patients undergoing the procedure is approximately 50.5 years, with a median age of 48. This indicates a relatively younger patient population compared to previous data, with ages ranging from 18 to 102 years. The 10th percentile at 36 years and the 90th percentile at 70 years further illustrate the diversity in age, suggesting that while most patients are under 60, there are still a significant number of older patients.
- **Patient BMI:** The mean BMI is 31.7, categorizing the average patient as obese, with a median BMI of 30.6. The BMI values range from a low of approximately 12 to a high of 60, indicating a wide variety of body types within this population. The 10th and 90th percentiles (22.5 and 42.6, respectively) show that while many patients are within a higher BMI range, there is also a significant presence of patients with lower BMI values. This underscores the relevance of BMI in evaluating procedural outcomes and potential health risks.
- **Procedure Duration:** The average duration of the procedure is about 139.9 minutes, with a median of 120 minutes. Procedure durations vary widely from as short as 5 minutes to as long as 608 minutes. The interquartile range (from 86 to 172 minutes) indicates variability in the complexity and length of the procedures performed. This information is crucial for understanding potential operational efficiencies and resource allocation in the facilities.
- **Total Number of Facility Beds:** The facilities represented have an average of 395 beds, with a median of 342 beds. This suggests a mix of facility sizes, ranging from small institutions (as low as 6 beds) to large hospitals (up to 1,342 beds). The 10th percentile at 100 beds and the 90th percentile at 799 beds indicate that while many facilities are large, a significant number operate on a smaller scale, which may impact their ability to accommodate patients and resources for procedural care.

Overall, the 2022 data year includes a patient population that is primarily older and overweight, undergoing procedures of varying complexity in facilities ranging from small to very large hospitals. The variability in patient and facility characteristics underscores the importance of adjusting for these factors when interpreting outcomes from the measure.