

**SURGICAL CARE IMPROVEMENT PROJECT NATIONAL HOSPITAL INPATIENT  
QUALITY MEASURES**

<b>Set Measure ID #</b>	<b>Measure Short Name</b>
<b>Infection</b>	
<b>SCIP-Inf-1a</b>	Prophylactic Antibiotic Received Within One Hour Prior to Surgical Incision - Overall Rate
<b>SCIP-Inf-1b<sup>1</sup></b>	Prophylactic Antibiotic Received Within One Hour Prior to Surgical Incision - CABG
<b>SCIP-Inf-1c<sup>1</sup></b>	Prophylactic Antibiotic Received Within One Hour Prior to Surgical Incision - Other Cardiac Surgery
<b>SCIP-Inf-1d<sup>1</sup></b>	Prophylactic Antibiotic Received Within One Hour Prior to Surgical Incision - Hip Arthroplasty
<b>SCIP-Inf-1e<sup>1</sup></b>	Prophylactic Antibiotic Received Within One Hour Prior to Surgical Incision - Knee Arthroplasty
<b>SCIP-Inf-1f<sup>1</sup></b>	Prophylactic Antibiotic Received Within One Hour Prior to Surgical Incision - Colon Surgery
<b>SCIP-Inf-1g<sup>1</sup></b>	Prophylactic Antibiotic Received Within One Hour Prior to Surgical Incision - Hysterectomy
<b>SCIP-Inf-1h<sup>1</sup></b>	Prophylactic Antibiotic Received Within One Hour Prior to Surgical Incision - Vascular Surgery
<b>SCIP-Inf-2a</b>	Prophylactic Antibiotic Selection for Surgical Patients - Overall Rate
<b>SCIP-Inf-2b<sup>1</sup></b>	Prophylactic Antibiotic Selection for Surgical Patients - CABG
<b>SCIP-Inf-2c<sup>1</sup></b>	Prophylactic Antibiotic Selection for Surgical Patients - Other Cardiac Surgery
<b>SCIP-Inf-2d<sup>1</sup></b>	Prophylactic Antibiotic Selection for Surgical Patients - Hip Arthroplasty
<b>SCIP-Inf-2e<sup>1</sup></b>	Prophylactic Antibiotic Selection for Surgical Patients - Knee Arthroplasty
<b>SCIP-Inf-2f<sup>1</sup></b>	Prophylactic Antibiotic Selection for Surgical Patients - Colon Surgery
<b>SCIP-Inf-2g<sup>1</sup></b>	Prophylactic Antibiotic Selection for Surgical Patients - Hysterectomy
<b>SCIP-Inf-2h<sup>1</sup></b>	Prophylactic Antibiotic Selection for Surgical Patients - Vascular Surgery

## SURGICAL CARE IMPROVEMENT PROJECT NATIONAL QUALITY MEASURES

Set Measure ID #	Measure Short Name
<b>SCIP-Inf-3a</b>	Prophylactic Antibiotics Discontinued Within 24 Hours After Surgery End Time - Overall Rate
<b>SCIP-Inf-3b<sup>1</sup></b>	Prophylactic Antibiotics Discontinued Within 48 Hours After Surgery End Time – CABG
<b>SCIP-Inf-3c<sup>1</sup></b>	Prophylactic Antibiotics Discontinued Within 48 Hours After Surgery End Time - Other Cardiac Surgery
<b>SCIP-Inf-3d<sup>1</sup></b>	Prophylactic Antibiotics Discontinued Within 24 Hours After Surgery End Time - Hip Arthroplasty
<b>SCIP-Inf-3e<sup>1</sup></b>	Prophylactic Antibiotics Discontinued Within 24 Hours After Surgery End Time - Knee Arthroplasty
<b>SCIP-Inf-3f<sup>1</sup></b>	Prophylactic Antibiotics Discontinued Within 24 Hours After Surgery End Time - Colon Surgery
<b>SCIP-Inf-3g<sup>1</sup></b>	Prophylactic Antibiotics Discontinued Within 24 Hours After Surgery End Time – Hysterectomy
<b>SCIP-Inf-3h<sup>1</sup></b>	Prophylactic Antibiotics Discontinued Within 24 Hours After Surgery End Time - Vascular Surgery
<b>SCIP-Inf-4</b>	Cardiac Surgery Patients With Controlled 6 A.M. Postoperative Blood Glucose
<b>SCIP-Inf-6</b>	Surgery Patients with Appropriate Hair Removal
<b>SCIP-Inf-7</b>	Colorectal Surgery Patients with Immediate Postoperative Normothermia
<b>Cardiac</b>	
<b>SCIP-Card-2</b>	Surgery Patients on Beta-Blocker Therapy Prior to <b>Arrival</b> Who Received a Beta-Blocker During the Perioperative Period
<b>VTE</b>	
<b>SCIP-VTE-1</b>	Surgery Patients with Recommended Venous Thromboembolism Prophylaxis Ordered
<b>SCIP-VTE-2</b>	Surgery Patients Who Received Appropriate Venous Thromboembolism Prophylaxis Within 24 Hours Prior to Surgery to 24 Hours After Surgery

<sup>1</sup>The Joint Commission ONLY

## SCIP DATA ELEMENT LIST

General Data Element Name	Collected For:
<i>Admission Date</i>	All Records
<i>Birthdate</i>	All Records
<i>Discharge Date</i>	All Records (Used in Algorithm for SCIP-Inf-4)
<i>Discharge Status</i>	All Records
<i>First Name</i> <sup>1</sup>	All Records <sup>1</sup>
<i>Hispanic Ethnicity</i> <sup>1</sup>	All Records <sup>1</sup>
<i>Hospital Patient Identifier</i> <sup>1</sup>	All Records <sup>1</sup>
<i>ICD-9-CM Other Diagnosis Codes</i>	All Records
<i>ICD-9-CM Other Procedure Codes</i>	All Records
<i>ICD-9-CM Other Procedure Dates</i>	All Records
<i>ICD-9-CM Principal Diagnosis Code</i>	All Records
<i>ICD-9-CM Principal Procedure Code</i>	All Records (Used in Algorithm for all SCIP Measures)
<i>ICD-9-CM Principal Procedure Date</i>	All Records
<i>Last Name</i> <sup>1</sup>	All Records <sup>1</sup>
<i>Patient HIC #</i>	All Records Collected by CMS for patients with a standard HIC#
<i>Payment Source</i>	All Records
<i>Physician 1</i> <sup>1</sup>	Optional for All Records <sup>1</sup>
<i>Physician 2</i> <sup>1</sup>	Optional for All Records <sup>1</sup>
<i>Point of Origin for Admission or Visit</i>	All Records
<i>Postal Code</i> <sup>1</sup>	All Records <sup>1</sup>
<i>Race</i> <sup>1</sup>	All Records <sup>1</sup>
<i>Sample</i> <sup>3</sup>	Used in transmission of the Joint Commission's aggregate data file and the Hospital Clinical Data file <sup>3</sup>
<i>Sex</i>	All Records

Algorithm Output Data Element Name	Collected For:
<i>Measure Category Assignment</i> <sup>2,3</sup>	Used in the calculation of the Joint Commission's aggregate data and in the transmission of the Hospital Clinical Data file <sup>2,3</sup>

## SCIP DATA ELEMENT LIST

SCIP Data Element Name	Collected For:
<i>Antibiotic Administration Date</i>	SCIP-Inf-1, SCIP-Inf-2, SCIP-Inf-3
<i>Antibiotic Administration Route</i>	SCIP-Inf-1, SCIP-Inf-2, SCIP-Inf-3
<i>Antibiotic Administration Time</i>	SCIP-Inf-1, SCIP-Inf-2, SCIP-Inf-3
<i>Antibiotic Allergy</i>	SCIP-Inf-2
<i>Antibiotic Name</i>	SCIP-Inf-1, SCIP-Inf-2, SCIP-Inf-3
<i>Antibiotic Received</i>	SCIP-Inf-1, SCIP-Inf-2, SCIP-Inf-3
<i>Beta-Blocker Current Medication</i>	SCIP-Card-2
<i>Beta-Blocker During Pregnancy</i>	SCIP-Card-2
<i>Beta-Blocker Perioperative</i>	SCIP-Card-2
<i>Clinical Trial</i>	SCIP-Inf-1, SCIP-Inf-2, SCIP-Inf-3, SCIP-Inf-4, SCIP-Inf-6, SCIP-Inf-7, SCIP-Card-2, SCIP-VTE-1, SCIP-VTE-2
<i>Date of Infection</i>	SCIP-Inf-3
<i>Glucose POD 1</i>	SCIP-Inf-4
<i>Glucose POD 2</i>	SCIP-Inf-4
<i>Infection Prior to Anesthesia</i>	SCIP-Inf-1, SCIP-Inf-2, SCIP-Inf-3, SCIP-Inf-4, SCIP-Inf-7
<i>Joint Revision</i>	SCIP-Inf-1, SCIP-Inf-2, SCIP-Inf-3
<i>Laparoscopy</i>	SCIP-Inf-1, SCIP-Inf-2, SCIP-Inf-3, SCIP-Inf-4, SCIP-Inf-6, SCIP-Inf-7, SCIP-Card-2, SCIP-VTE-1, SCIP-VTE-2
<i>Neuraxial Anesthesia</i>	SCIP-VTE-1, SCIP-VTE-2
<i>Oral Antibiotics</i>	SCIP-Inf-1, SCIP-Inf-2, SCIP-Inf-3
<i>Other Surgeries</i>	SCIP-Inf-1, SCIP-Inf-3
<i>Perioperative Death</i>	SCIP-Card-2, , SCIP-Inf-2, SCIP-Inf-3, SCIP-Inf-4, SCIP-Inf-7
<i>Postoperative Infections</i>	SCIP-Inf-3
<i>Preadmission Warfarin</i>	SCIP-VTE-1, SCIP-VTE-2
<i>Preoperative Hair Removal</i>	SCIP-Inf-6
<i>Reason for Not Administering a Beta-Blocker- Perioperative</i>	<b>SCIP-Card-2</b>
<i>Reason for Not Administering VTE Prophylaxis</i>	<b>SCIP-VTE-1, SCIP-VTE-2</b>
<i>Surgery End Date</i>	SCIP-Inf-2, SCIP-Inf-3, SCIP-Inf-4, SCIP-VTE-1, SCIP-VTE-2
<i>Surgery End Time</i>	SCIP-Inf-2, SCIP-Inf-3, SCIP-VTE-1, SCIP-VTE-2
<i>Surgery Start Date</i>	SCIP-Inf-1, SCIP-Inf-2, SCIP-Inf-3, SCIP-Inf-4, SCIP-Inf-6, SCIP-Inf-7, SCIP-Card-2, SCIP-VTE-1, SCIP-VTE-2,
<i>Surgical Incision Time</i>	SCIP-Inf-1, SCIP-Inf-2, SCIP-Inf-3, SCIP-VTE-1, SCIP-VTE-2
<i>Temperature Value</i>	SCIP-Inf-7
<i>Vancomycin</i>	SCIP-Inf-2
<i>VTE Prophylaxis</i>	SCIP-VTE-1, SCIP-VTE-2
<i>VTE Timely</i>	SCIP-VTE-2

<sup>1</sup>CMS ONLY

<sup>2</sup>The Joint Commission ONLY

<sup>3</sup>Transmission Data Element

## Surgical Care Improvement Project (SCIP) Initial Patient Population

The SCIP Topic Population (common to all SCIP measures) is defined as patients admitted to the hospital for inpatient acute care with an *ICD-9-CM Principal Procedure Code* for SCIP as defined in Appendix A, Table 5.10, a Patient Age (*Admission Date – Birthdate*)  $\geq$  18 years, and a Length of Stay (*Discharge Date - Admission Date*)  $\leq$  120 days. There are eight distinct strata or sub-populations within the SCIP Topic Population, each identified by a specific group of procedure codes. The patients in each stratum are counted in the Initial Patient Population of multiple measures.

<b>Measures</b>	<b>Initial Patient Population definition</b>
SCIP-INF-1a, 2a, 3a (overall measures)	The count of all patients in strata 1, 2, 3, 4, 5, 6, and 7
SCIP-Inf-1b, 2b, 3b	The count of all patients in stratum 1
SCIP-Inf-1c, 2c, 3c	The count of all patients in stratum 2
SCIP-Inf-1d, 2d, 3d	The count of all patients in stratum 3
SCIP-Inf-1e, 2e, 3e	The count of all patients in stratum 4
SCIP-Inf-1f, 2f, 3f	The count of all patients in stratum 5
SCIP-Inf-1g, 2g, 3g	The count of all patients in stratum 6
SCIP-Inf-1h, 2h, 3h	The count of all patients in stratum 7
SCIP-Inf-4, 6, and 7	The count of all patients in strata 1, 2, 3, 4, 5, 6, 7, and 8
SCIP-CARD-2	The count of all patients in strata 1, 2, 3, 4, 5, 6, 7, and 8
SCIP-VTE-1 and 2	The count of all patients in strata 1, 2, 3, 4, 5, 6, 7, and 8

Patients admitted to the hospital for inpatient acute care are included in one of the SCIP ICD Strata Populations and are eligible to be sampled\* if they have:

1 – CABG stratum – Patients with an *ICD-9-CM Principal Procedure Code* as defined in Appendix A, Table 5.01, a Patient Age (*Admission Date – Birthdate*)  $\geq$  18 years, and a Length of Stay (*Discharge Date - Admission Date*)  $\leq$  120 days.

2 - Other Cardiac Surgery stratum – Patients with an *ICD-9-CM Principal Procedure Code* as defined in Appendix A, Table 5.02, a Patient Age (*Admission Date – Birthdate*)  $\geq$  18 years, and a Length of Stay (*Discharge Date - Admission Date*)  $\leq$  120 days.

3 - Hip Arthroplasty stratum – Patients with an *ICD-9-CM Principal Procedure Code* as defined in Appendix A, Table 5.04, a Patient Age (*Admission Date – Birthdate*)  $\geq$  18 years, and a Length of Stay (*Discharge Date - Admission Date*)  $\leq$  120 days.

4 - Knee Arthroplasty stratum – Patients with an *ICD-9-CM Principal Procedure Code* as defined in Appendix A, Table 5.05, a Patient Age (*Admission Date – Birthdate*)  $\geq$  18 years , and a Length of Stay (*Discharge Date - Admission Date*)  $\leq$  120 days.

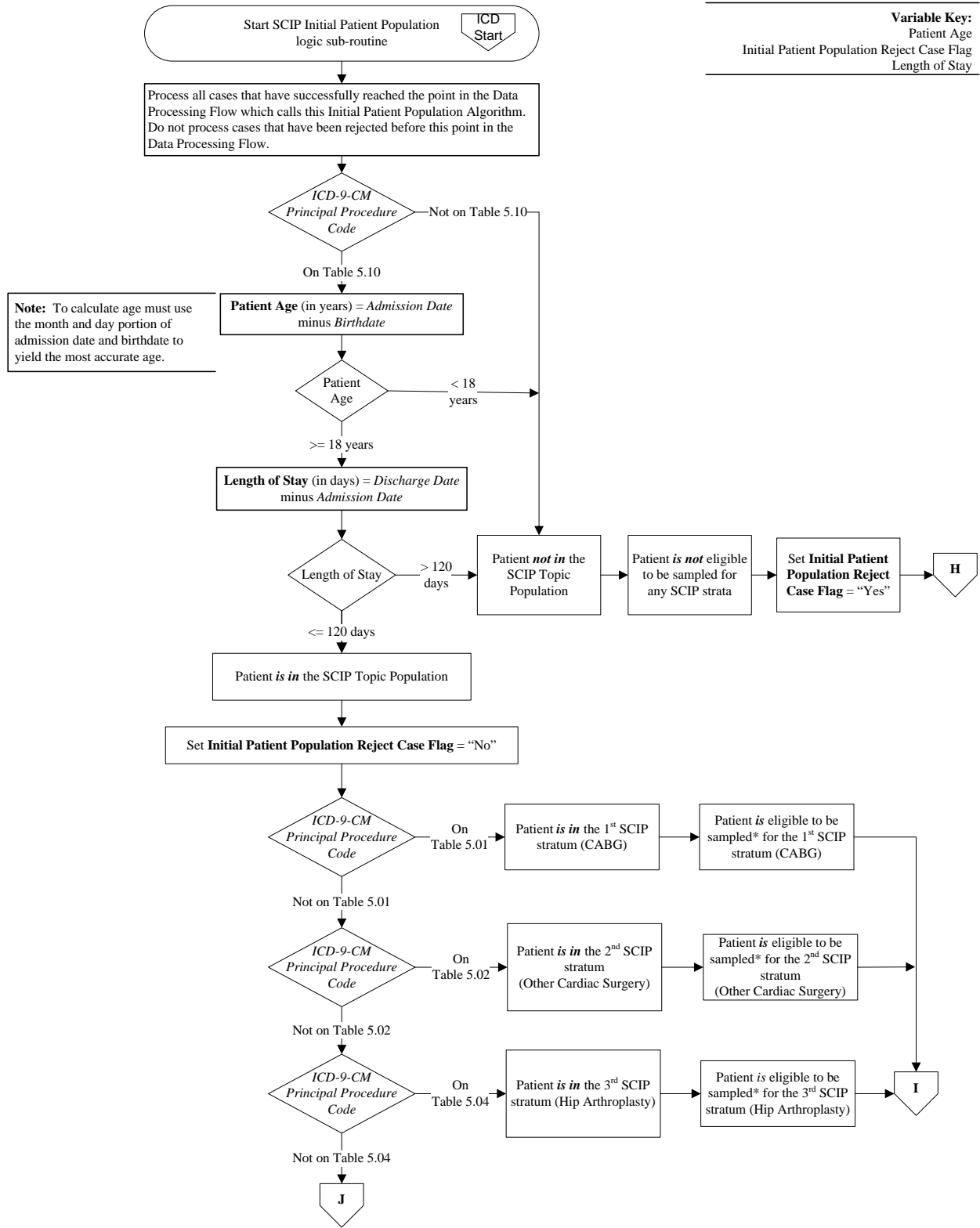
5 - Colon Surgery stratum – Patients with an *ICD-9-CM Principal Procedure Code* as defined in Appendix A, Table 5.03, a Patient Age (*Admission Date – Birthdate*)  $\geq$  18 years, and a Length of Stay (*Discharge Date - Admission Date*)  $\leq$  120 days.

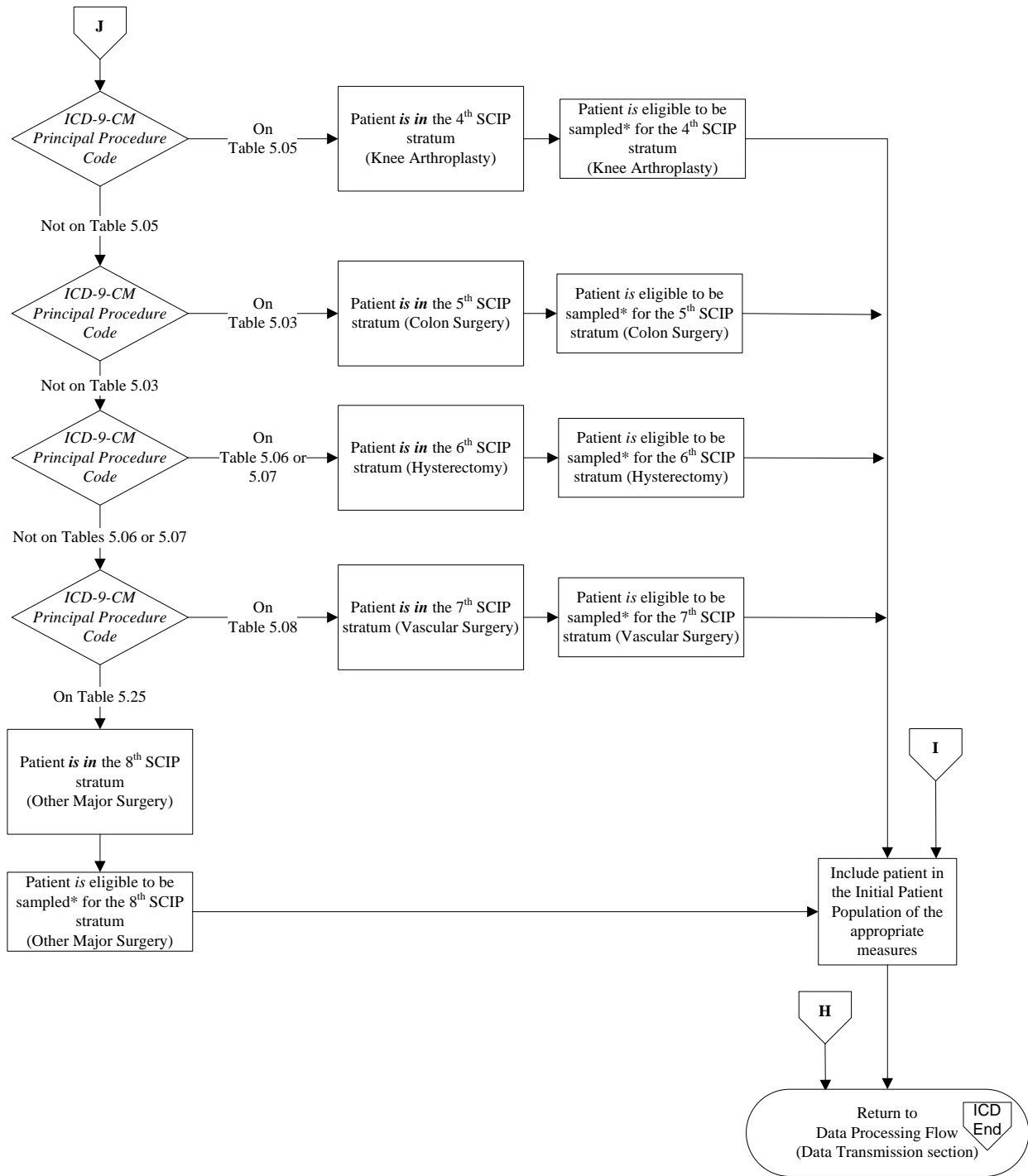
6 - Hysterectomy stratum – Patients with an *ICD-9-CM Principal Procedure Code* as defined in Appendix A, on either Table 5.06 (Abdominal) or Table 5.07 (Vaginal), a Patient Age (*Admission Date – Birthdate*)  $\geq$  18 years, and a Length of Stay (*Discharge Date - Admission Date*)  $\leq$  120 days.

7 - Vascular Surgery stratum – Patients with an *ICD-9-CM Principal Procedure Code* as defined in Appendix A, Table 5.08, a Patient Age (*Admission Date – Birthdate*)  $\geq$  18 years, and a Length of Stay (*Discharge Date - Admission Date*)  $\leq$  120 days.

8 – Other Major Surgery stratum – Patients with an *ICD-9-CM Principal Procedure Code* as defined in Appendix A, Table 5.25 (Other Major Surgery for Sampling), a Patient Age (*Admission Date – Birthdate*)  $\geq$  18 years, and a Length of Stay (*Discharge Date - Admission Date*)  $\leq$  120 days.

## SCIP Initial Patient Population Algorithm





## **SCIP Sample Size Requirements**

Hospitals that choose to sample have the option of sampling quarterly or sampling monthly. A hospital may choose to use a larger sample size than is required. Hospitals whose Initial Patient Population size is less than the minimum number of cases per quarter for a stratum cannot sample that stratum. Hospitals that have five or fewer SCIP discharges for the entire measure set (both Medicare and non-Medicare combined) in a quarter are not required to submit SCIP patient level data to the QIO Clinical Warehouse and Joint Commission’s Data Warehouse.

Regardless of the option used, hospital samples must be monitored to ensure that sampling procedures consistently produce statistically valid and useful data. Because the sample for a measure set will rarely be equal to the effective sample due to exclusions, hospitals selecting sample cases MUST submit AT LEAST the minimum required sample size.

The following sample size tables for each option automatically build in the number of cases needed to obtain the required sample sizes. For information concerning how to perform sampling, refer to the Population and Sampling Specifications section in this manual.

### ***Quarterly Sampling***

For hospitals selecting sample cases for SCIP, a modified sampling procedure is required. Hospitals selecting sample cases for this set must ensure that each individual stratum’s population and effective quarterly sample size meets the following conditions:

- *Select within each of the seven individual measure stratum (e.g., colorectal surgery, hip arthroplasty, etc.) and the 8<sup>th</sup> SCIP stratum (Table 5.25 in Appendix A). The effective quarterly sample size within a stratum is at least 16 cases per quarter.*
- *The required quarterly sample size is at least 10% of the stratum population for the quarter.*

**Quarterly Sample Size  
Based on Initial Patient Population Size for the SCIP Measure Set**

<i>Hospital’s Measure</i>	
Average Quarterly Stratum Initial Patient Population Size “N”	Minimum Required Stratum Sample Size “n”
≥ 471	48
161 - 470	10% of Initial Patient Population size
16 - 160	16
< 16	No sampling; 100% Initial Patient Population required

### Monthly Sampling

For hospitals selecting sample cases for SCIP, a modified sampling procedure is required. Hospitals selecting sample cases for this set must ensure that each individual strata population and effective monthly sample size meets the following conditions:

- *Select within each of the seven individual measure stratum (e.g., colorectal surgery, hip arthroplasty, etc.) and the 8<sup>th</sup> SCIP stratum (Table 5.25 in Appendix A). The effective monthly sample size within a stratum is at least 6 cases per month.*
- *The required monthly sample size is at least 10% of the strata population for the month.*

**Monthly Sample Size**  
**Based on Initial Patient Population Size for the SCIP Measure Set**

<i>Hospital's Measure</i>	
Average Monthly Stratum Initial Patient Population Size “N”	Minimum Required Stratum Sample Size “n”
≥ 151	16
61 - 150	10% of Initial Patient Population size
6 - 60	6
< 6	No sampling; 100% Initial Patient Population required

### Sample Size Examples

**Note:** All sampled strata in SCIP should be used in the calculation of all SCIP Infection, Venous Thromboembolism (VTE), and Cardiac measures, including the several surgery-specific measures (e.g., SCIP-Inf-7, Colorectal Surgery Patients with Immediate Postoperative Normothermia). All of the SCIP measures' specific exclusion criteria are used to filter out cases that do not belong in the measure denominator. Using SCIP-Inf-7 as an example, include cases covering all sampled strata, although the measure-specific exclusion criteria would only allow cases in the colorectal stratum to be included in the denominator.

- Quarterly sampling:
  - When applicable, larger hospitals must also abide by the required quarterly sample sizes for the seven individual measure **stratums** and the 8<sup>th</sup> SCIP **stratum** (Table 5.25 in Appendix A) a minimum of 16 required sample cases per strata when Initial Patient Population size is 16 or greater.
  - The SCIP Initial Patient Population sizes for a hospital are 5, 50, 15, 140, 35, 201, 3, and 481 patients respectively per **stratum** for the quarter. **Since the total Initial Patient Population for SCIP is 930, the hospital must submit patient level data.** The required quarterly sample sizes **for each stratum** would be 5, 16, 15, 16, 16, 21, 3, and 48.
  - The 1<sup>st</sup>, 3<sup>rd</sup>, and 7<sup>th</sup> strata are less than the minimum required quarterly sample size, so 100% of each of these strata are sampled.

- The 2<sup>nd</sup>, 4<sup>th</sup>, and 5<sup>th</sup> strata each require 16 cases to be sampled.
  - The 6<sup>th</sup> stratum has 201 patients per quarter, which requires a 10% sample size, or 21 cases (ten percent of 201 equals 20.1 rounded to the next highest whole number = 21).
  - The 8<sup>th</sup> stratum is more than the maximum required quarterly sample size, so this stratum requires 48 cases to be sampled.
  - The SCIP Initial Patient Population sizes for a hospital are 1, 1, 0, 0, 1, 0, 1, and 1 patients respectively per stratum for the quarter. Since the total Initial Patient Population for SCIP is 5, the hospital may choose to not submit patient level data. If the hospital chooses to submit patient level data, the required quarterly sample sizes for each stratum would be 1, 1, 0, 0, 1, 0, 1, and 1.
  - The 1<sup>st</sup>, 2<sup>nd</sup>, 5<sup>th</sup>, 7<sup>th</sup> and 8<sup>th</sup> strata are less than the minimum required quarterly sample size, so 100% of each of these strata are sampled.
  - There is no data to sample for the 3<sup>rd</sup>, 4<sup>th</sup>, and 6<sup>th</sup> strata.
- Monthly sampling
 

When applicable, larger hospitals must also abide by the required monthly sample sizes for the seven individual measure stratum and the 8<sup>th</sup> SCIP strata (Table 5.25 in Appendix A) a minimum of 6 required sample cases per strata when Initial Patient Population size is 6 or greater.

    - The SCIP Initial Patient Population sizes for a hospital are 5, 50, 15, 141, 35, 201, 3, and 481 patients respectively in June. The required monthly sample sizes would be 5, 6, 6, 15, 6, 16, 3, and 16.
    - The 1<sup>st</sup> and 7<sup>th</sup> strata are less than the minimum required monthly sample size, so 100% of each of these strata are sampled.
    - The 2<sup>nd</sup>, 3<sup>rd</sup>, and 5<sup>th</sup> strata each require 6 cases to be sampled.
    - The 4<sup>th</sup> stratum has 141 patients per month, which requires a 10% sample size, or 15 cases (ten percent of 141 equals 14.1 rounded to the next highest whole number = 15).
    - The 6<sup>th</sup> and 8<sup>th</sup> strata are each more than the maximum required monthly sample size, so each of these strata requires 16 cases to be sampled.