

How to Add and Analyze Surgeon Codes in NHSN

Guidance for the Patient Safety Component

January 2021

This guide provides instructions for the process of entering and analyzing SSI data by surgeon code.

Surgeon codes are optional data fields that may be entered into NHSN and used in surgical site infection (SSI) data analysis reports. To analyze SSI data by surgeon code, first, facilities must enter the surgeon codes into NHSN. Alternatively, surgeon codes may be uploaded into NHSN using CSV file. Once the surgeon codes are entered or uploaded into NHSN, the codes can be selected when entering or uploading procedures. After the first two steps have been performed sequentially, SSI data can be analyzed by surgeon codes.

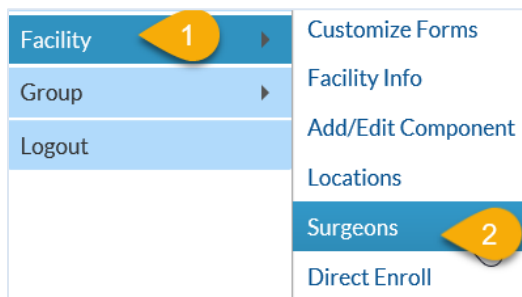
These instructions include the following:

- 1) How to add surgeon codes to NHSN Patient Safety (PS) Component
- 2) How to enter or upload procedure records with surgeon codes into NHSN
- 3) How to analyze SSI data by surgeon codes in NHSN

How to Add Surgeon Codes in NHSN Patient Safety (PS) Component

Option 1: How to Manually Add Surgeon Codes

1. Within NHSN, navigate to Facility → Surgeons.



2. Fill in the form with the required fields and any desired optional values. Then click on the Add button. Repeat this step for all the surgeon codes you want to enter. Each surgeon code can only be applied to one single surgeon.



**Centers for Disease Control
and Prevention**
National Center for Emerging and
Zoonotic Infectious Diseases

Surgeon codes and NHSN analysis reports – Guidance for PSC

For procedure denominator form - specify sort order of surgeons: Surgeon Code Surgeon Last Name
Mandatory fields to "Add" or "Edit" a record marked with *

Surgeon Code *: 1
Last Name: 2
First Name: 3
Middle Name:
Status *: Active ▾ 4

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Option 2: How to Import Surgeon Codes using CSV file

1. Prepare a CSV file with columns bearing surgeon code, last name, first name and status. Save the CSV file.
 - a. The format for surgeon code is alphanumeric and can have up to 20 characters

	Surgeon Code	Last Name	First Name	Middle Name		
1	BB123456	Snow	John	Jay		
2	BB123457	Leaves	Greg	Ray		
3	BB123458	Wind	Bryan	North		
4	BB123459	Hunt	Ethan	Goes		
5	BB123460	Bond	James	Love		
6	BB123461	Hoover	Joe	Boover		
7	Surgeon Codes are required					
8	First, last and middle names are optional					


2. Navigate to the Surgeons page in NHSN (via “Facility” > “Surgeons”) and select **Import Surgeon Codes** tab at the bottom of the page

For procedure denominator form - specify sort order of surgeons: Surgeon Code Surgeon Last Name
Mandatory fields to "Add" or "Edit" a record marked with *

Surgeon Code *:
Last Name:
First Name:
Middle Name:
Status *: Active

1

3. On the Import/Export Data page, browse to the path where the CSV surgeon code file is saved and select. Once loaded, select Submit.

 **Import/Export Data**


Surgeons

For information on the accepted file formats and content, click the Help link below.
[Help](#)

1

2

4. On the next page, which is the **Import Editor** page, confirm your surgeon code data imported correctly. If the data are correct, click “Submit”. If your data is incorrect, use the **Edit** button to make changes to each record individually, then submit. You can also use the **Delete** button to remove records from the upload entirely.



Import Editor

These records have no match in the database. For each record you have three options.

- Leave the record as is. It will be inserted when you press the Submit button.
- Ignore the record. Check the box in the Delete column and then press the Delete button.
- Edit the record. Press the Edit button if you need to change any of the record's fields.

Inserts (6)


Page 1 of 1

Delete		Edit			
<input type="checkbox"/>		Edit	BB123456		Snow
<input type="checkbox"/>		Edit	BB123457		Leaves
<input type="checkbox"/>		Edit	BB123458		Wind
<input type="checkbox"/>		Edit	BB123459		Hunt
<input type="checkbox"/>		Edit	BB123460		Bond
<input type="checkbox"/>		Edit	BB123461		Hoover

Page 1 of 1

Submit
Back

5. Once you have submitted the data, you will receive confirmation that data successfully imported, as shown in the screenshot below.



Import/Export Data

✔
Data successfully imported.

Surgeons
▼

For information on the accepted file formats and content, click the Help link below.

Help

CSV

Browse...

Submit
Back

Once the surgeon codes are in the application, they become available to select on the procedure form. ★

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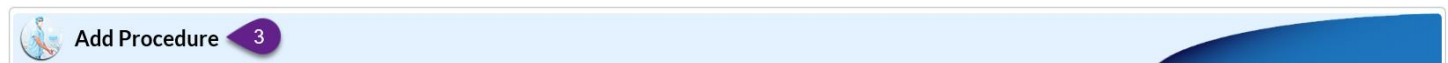
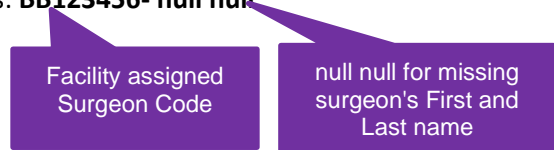
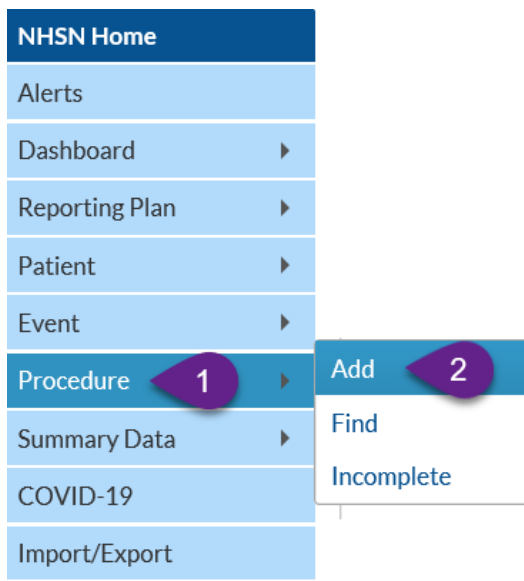
How to enter or upload procedures with surgeon codes into NHSN

Facilities have the option to include the Surgeon Codes on the procedure forms once the codes are entered into NHSN. Procedures can be entered manually into NHSN using the “Add Procedure” form or uploaded using a CSV file.

Option 1: How to Manually Add Surgeon Codes on the Procedure Form

To manually enter procedures into NHSN, please use the steps described in the screenshots below. In the NHSN application, navigate to the left-hand panel and:

1. Select **Procedure** from the left navigation bar
2. Click **Add**
3. On the **Add Procedure** page, complete the form with the patient and procedure level data required or conditionally required
4. In the **Surgeon Code** dropdown, select the appropriate surgeon code for the procedure. Note: if the surgeon code is entered with no first or last name, the code will appear in the dropdown list, followed by null. For example, a surgeon code entered with no first or last name will appear as: **BB123456- null null**



Procedure Details

Outpatient *: Duration (Hrs:Mins) *: :

Wound Class *: General Anesthesia *:

ASA Score *:

Emergency *: Trauma *: Scope *:

Diabetes Mellitus *: Closure Technique *:

Surgeon Code:

Height *: or m

Weight *: lbs or kg BMI

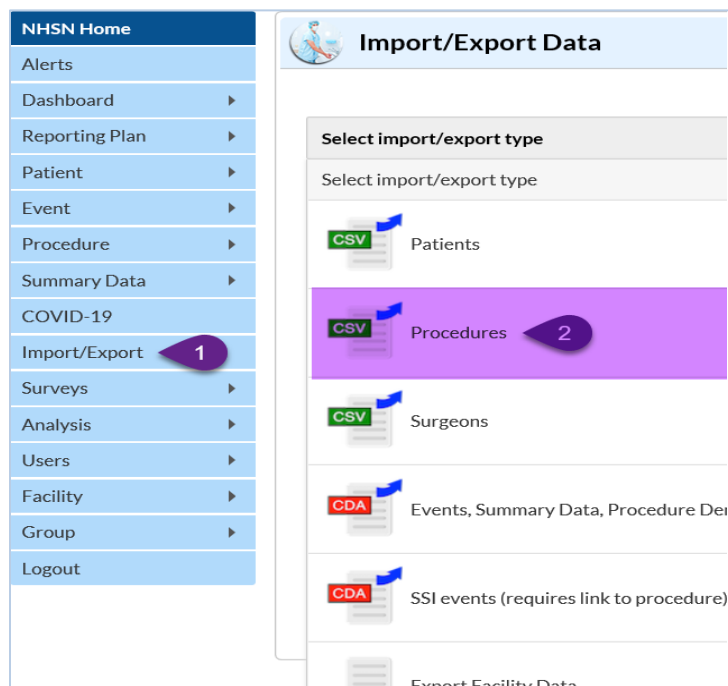
The Surgeon Code can be added to the procedure form by selecting from the drop down. NOTE: Surgeon Codes must be entered or uploaded into prior to this step.

Option 2: How to Upload Procedures with Surgeon Codes

To upload procedures into NHSN using CSV file, first create a CSV file of your procedures and save. For detailed instructions on how to create the procedures CSV file for upload including required data fields formats, please see the guide: <https://www.cdc.gov/nhsn/pdfs/ps-analysis-resources/ImportingProcedureData.pdf>

General											
	A	B	C	D	E	F	G	H	I	J	K
1	patID	gender	dob	surgeonCode	emergency	closure	anesthesia	trauma	spinalLevel	medicareID	procCo
2	BBB-2000	F	6/14/1942	BB123456	N	PRI	Y	N			AAA
3	BBB-3000	M	9/18/1947	BB123457	N	OTH	Y	N			KPRO
4	BBB-4000	M	4/16/1998	BB123458	y	PRI	Y	Y	CD	9876523	FUSN
5											

In the NHSN application, navigate to the left-hand panel and:



1. Select **Import/Export** from the left navigation bar
2. Click **CSV Procedures**

3. On the **Import/Export Data** page, complete the form and **Browse** to the path at which the CSV file is saved and select the appropriate file and then **Submit**

Import/Export Data

Procedures **A**

For information on the accepted file formats and content, click the Help link below.

[Help](#)

By default, records in the import file will be accepted under the following conditions:

1. The procedure date occurs in a month for which a Monthly Reporting Plan exists, and
2. That Plan specifies the procedure code in the import file record.

If you wish to import records for procedures not in the Plan, you must specify which procedures to include. Check the box for each procedure to accept, or check the All Procedures box if you want to allow the importation of any procedure. Note, however, that there must still be a Monthly Reporting Plan for the procedure date in the record.

B All Procedures

AAA - Abdominal aortic aneurysm repair

APPY - Appendix surgery

BILL - Bile duct, liver or pancreatic surgery

CARD - Cardiac surgery

CBGC - Coronary bypass graft with chest incision

CHOL - Gallbladder surgery

CRAN - Craniotomy

FUSN - Spinal fusion

GAST - Gastric surgery

HPRO - Hip prosthesis

HYST - Abdominal hysterectomy

AMP - Limb amputation

AVSD - AV shunt for dialysis

BRST - Breast surgery

CBGB - Coronary bypass w/ chest & donor incisions

CEA - Carotid endarterectomy

COLO - Colon surgery

CSEC - Cesarean section

FX - Open reduction of fracture

HER - Herniorrhaphy

HTP - Heart transplant

KPRO - Knee prosthesis

Select Import file: **C** Browse...

D

4. On the **Import Editor** page, review and submit the uploaded procedures. Use the **Edit** button to edit and update the procedure record if needed. Use the **Delete** button to remove procedure record(s) from the upload process. Once review is completed, click Submit.

Import Editor **1**

These records have no match in the database. For each record you have three options.

- Leave the record as is. It will be inserted when you press the Submit button.
- Ignore the record. Check the box in the Delete column and then press the Delete button.
- Edit the record. Press the Edit button if you need to change any of the record's fields.

Inserts (3)

Use the **Edit** button to edit parts or whole of the procedure record

Delete		Patient ID *	Gender *	Date of Birth *	Procedure code *	Procedure date *	Outpatient *	Duration (Hrs) *	Duration (Mins) *	Wound Class *	ASA Score	Scope *	Surgeon Code
<input type="checkbox"/>	<input type="button" value="Edit"/>	BBB-2000	F	06/14/1942	AAA	01/01/2020	N	2	16	CC	2	N	BB123456
<input type="checkbox"/>	<input type="button" value="Edit"/>	BBB-3000	M	09/18/1947	KPRO	01/15/2020	N	2	10	C	1	N	BB123457
<input type="checkbox"/>	<input type="button" value="Edit"/>	BBB-4000	M	04/16/1998	FUSN	04/13/2020	N	5	36	C	1	N	BB123458

Use the **Delete** button to delete procedure record

2

How to Analyze SSI Data by Surgeon Codes in NHSN

List of SSI reports with surgeon codes in NHSN Analysis Reports

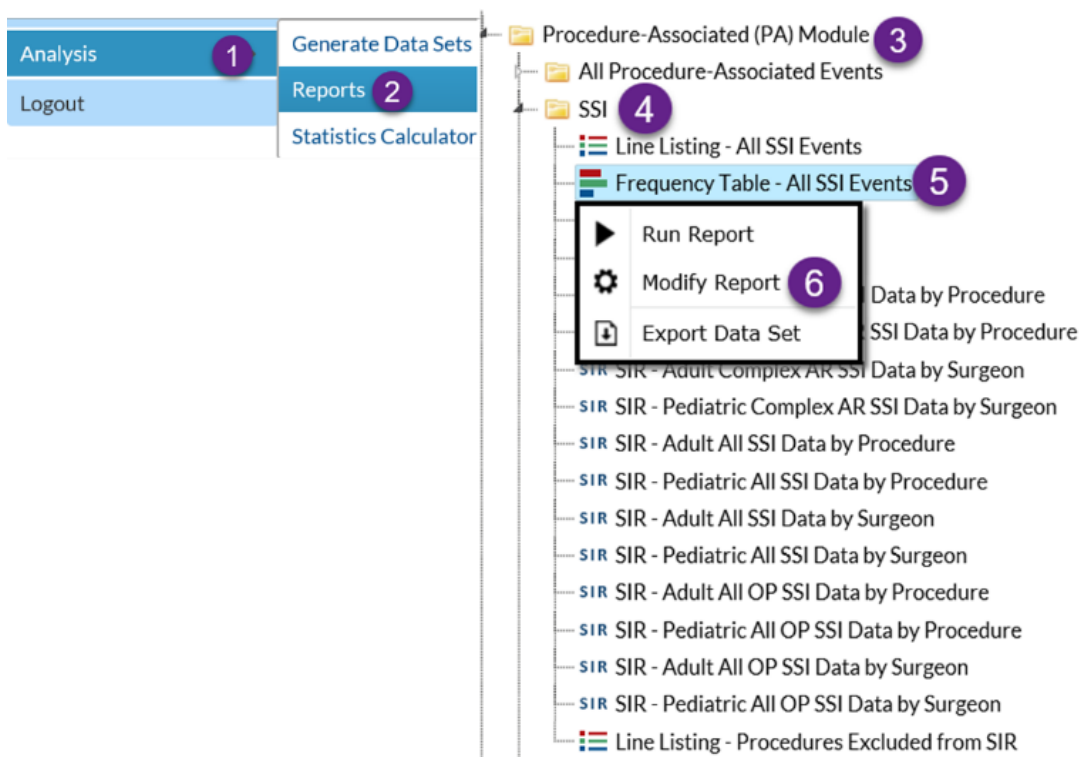
Surgeon codes can be analyzed in NHSN using descriptive analysis reports or standardized infection ratio and rate reports.

Descriptive Analysis Reports for SSI Events/Procedures

- A. SSI events in Line List, Frequency Table, Bar Chart or Pie Chart reports
- B. All procedures in Line List, Frequency Tables, Bar Chart or Pie Chart

A list of SSI events can be generated for a specific or group of surgeon codes using the **Filters** tab on the “Line Listing -All SSI Events” report in NHSN Analysis Report function. Alternatively, a list of all SSI events entered in your facility can be generated using the same report; the surgeon code for each SSI can be viewed by selecting the surgeon code variable on the **Display Variables** tab. The Frequency Table, Bar Chart and Pie Chart reports in the NHSN Analysis Report function also allow users to analyze SSI data by surgeon codes using the **Filter** or **Display Options** tabs.

Below is an example of how to analyze SSI events by surgeon code using the “Frequency Table -All SSI Events” report in NHSN. In Analysis→Reports→Procedures-Associated (PA) Module folder, select the SSI subfolder and click on the Frequency Table- All SSI Events report



Modify the report as shown in the screenshot below. Additional modifications to the **Title/Format** and **Time Period** tabs may be made (not shown here).

Modify "Frequency Table - All SSI Events"

Show descriptive variable names [\(Print List\)](#) Analysis Data Set: SSI_Events Type: Frequency Table Last Generated: November 16, 2020 6:52 PM

Title/Format Time Period **Filters** Display Options

Additional Filters:

AND OR

Specific Event Description
 Specific type of Hemi HPRO/KPRO
 Specific type of Hemi HPRO/KPRO Description
 Specific type of Resurfacing HPRO
 Specific type of Resurfacing HPRO Description
 Specific type of Total HPRO/KPRO
 Specific type of Total HPRO/KPRO Description
 Spinal Level
 Spinal Level Description
 SSI Event Detected
 SSN
 Surgeon Code
 Surgeon First Name
 Surgeon Last Name
 Surgeon Middle Name
 Surgeon Status

AND OR

Select surgeon codes in Filter tab

Use "in" for a group of codes or "equal" for a single code

Surgeon Code	Operator	Value	Action
BB123456 - John Snow	in	BB123457 - Greg Leaves	<input checked="" type="checkbox"/>
BB123459 - Ethan Hunt	in	BB123460 - James Bond	<input checked="" type="checkbox"/>
		BB123458 - Bryan Wind	<input checked="" type="checkbox"/>
		BB123461 - Joe Hoover	<input checked="" type="checkbox"/>

Modify "Frequency Table - All SSI Events"

Show descriptive variable names [\(Print List\)](#) Analysis Data Set: SSI_Events Type: Frequency Table Last Generated: November 18, 2020 3:32 PM

Title/Format Time Period Filters **Display Options**

Frequency Table Options:

Selected Variables to include in report:

Row	Column	Page by
Procedure Code	Surgeon Code	

Frequency Table Options:

Table percent - Display cell frequency divided by table total

Missing - Include observations with missing values

Print the table in list form

Two-Way Table Options:

Row Percent - Display cell frequency divided by row total

Column Percent - Display cell frequency divided by column total

Expected - Expected cell frequencies

Chi-square - Test for independence

The output of the report will show the number of SSI events resulting from procedures linked to the surgeon codes selected. According to the output, 3 of the surgeon codes listed on the Modify screen of the Frequency Table performed procedures that resulted in SSI events. Users can use the "Line Listing- All SSI Events" reports to generate details of any or all of the SSI events summarized in the table below.

National Healthcare Safety Network
Frequency Table for All Surgical Site Infection Events
As of: November 18, 2020 at 4:26 PM
Date Range: SSI_EVENTS procDateYr 2020 to 2020

Frequency Percent Row Pct Col Pct	Table of procCode by surgeonCode				
	procCode(Procedure Code)	surgeonCode(Surgeon Code)			Total
		BB123456	BB123457	BB123458	
AAA		1	0	0	1
		33.33	0.00	0.00	33.33
		100.00	0.00	0.00	
		100.00	0.00	0.00	
FUSN		0	0	1	1
		0.00	0.00	33.33	33.33
		0.00	0.00	100.00	
		0.00	0.00	100.00	
KPRO		0	1	0	1
		0.00	33.33	0.00	33.33
		0.00	100.00	0.00	
		0.00	100.00	0.00	
Total		1	1	1	3
		33.33	33.33	33.33	100.00

Standardized Infection Ratio (SIR) and Rate Analysis Reports for SSI Data

C. SSI rate table

The rate table for SSI data, uses a basic risk index that comprises 3 dichotomous variables: ASA score (3, 4, or 5), wound classification (contaminated or dirty), and procedure duration in minutes (175th percentile). Each risk factor represents 1 point; thus, the NHSN SSI risk index ranges from 0 (lowest risk) to 3 (greatest risk). The rate table for SSI data in NHSN is available by surgeon, procedure, and risk index. See the green outlined screen shot below for the path leading to the SSI rate table reports.

D. SIR reports

There are 3 main SSI SIR models in NHSN: The All SSI SIR model, the Complex Admission-Readmission SSI SIR model (also called the Complex A-R model), and the Complex 30-day SSI SIR model. The All SSI SIR model, and the Complex A-R model are each separated by adult and pediatric data. In addition, the All SSI SIR model and the Complex A-R model have separate reports available that allow stratification by procedure category and by surgeon code. The All SSI SIR model can also be analyzed for inpatient procedures and outpatient procedures separately. The Complex 30-day SSI SIR model analysis report, which is used by CDC when reporting SSI data to the Centers for Medicare and Medicaid (CMS) Hospital Inpatient Quality Reporting Program, can be analyzed by procedure category and by surgeon code. The Complex 30-day SSI SIR by surgeon code is located in the Procedure-level Data folder of the Analysis Advanced folder. For instructions on how to generate SIR reports in NHSN, please see the Quick Reference Guides listed below.

The All SSI Data and Complex AR SSI Data by Adult/Pediatric and Surgeon reports are in Analysis→Reports→Procedure-Associated Events (PA) Module→SSI folder

- SIR SIR - Adult Complex AR SSI Data by Procedure
- SIR SIR - Pediatric Complex AR SSI Data by Procedure
- SIR SIR - Adult Complex AR SSI Data by Surgeon
- SIR SIR - Pediatric Complex AR SSI Data by Surgeon
- SIR SIR - Adult All SSI Data by Procedure
- SIR SIR - Pediatric All SSI Data by Procedure
- SIR SIR - Adult All SSI Data by Surgeon
- SIR SIR - Pediatric All SSI Data by Surgeon
- SIR SIR - Adult All OP SSI Data by Procedure
- SIR SIR - Pediatric All OP SSI Data by Procedure
- SIR SIR - Adult All OP SSI Data by Surgeon
- SIR SIR - Pediatric All OP SSI Data by Surgeon
- Line Listing - Procedures Excluded from SIR

Complex 30-day by Surgeon report and the Rate Table are in the Analysis→Reports→Advanced→Procedure-Level Data folder

- Advanced
 - Patient-level Data
 - Event-level Data
 - Procedure-level Data
 - Line Listing - All Procedures
 - Frequency Table - All Procedures
 - Bar Chart - All Procedures
 - Pie Chart - All Procedures
 - SIR SIR - Complex 30-Day SSI Data by Surgeon
 - Rate Table - SSI Data by Procedure and Risk Index
 - Run Chart - SSI Data by Procedure and Risk Index
 - Rate Table - Specific Event SSI Rates by Procedure
 - Run Chart - Specific Event SSI Data by Procedure
 - Rate Table - SSI Data by Surgeon, Procedure, and Risk Index
 - Run Chart - SSI Data by Surgeon, Procedure, and Risk Index

Additional Resources:

Analysis Quick Reference Guides: <https://www.cdc.gov/nhsn/ps-analysis-resources/reference-guides.html>

How to obtain a line list of procedures: <https://www.cdc.gov/nhsn/pdfs/ps-analysis-resources/faq-procedure-line-list.pdf>

Analysis Training: <https://www.cdc.gov/nhsn/training/analysis/index.html>

SIR Table: Surgical Site Infections: <https://www.cdc.gov/nhsn/pdfs/ps-analysis-resources/sirtablessi.pdf>

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

NHSN Helpdesk: nhsn@cdc.gov

SSI Rate Table: https://www.cdc.gov/nhsn/PDFs/pscManual/SSI_ModelPaper.pdf



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