



# Outpatient Procedure Component 101

## 2024 Annual Training

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# Objectives: Protocol, Training and Enrollment

We will demonstrate how to implement a surveillance program for your Ambulatory Surgery Center. By the end of this presentation, the user will be able to:

- Understand how to enroll in NHSN and the Outpatient Procedure Component
- Determine how to implement a Surgical Site Infection [SSI] and Same Day Outcome Measure [SDOM] surveillance program for your Ambulatory Surgery Center using NHSN
- Identify benefits of using OPC for SSI and SDOM surveillance and reporting

*DISCLAIMER: All data presented in this presentation is fictitious for training purposes and does not represent any facility's data*



# Objectives: Analysis

- We will demonstrate how to conduct analysis on OPC reports for the Surgical Site Infection Module. By the end of this lesson, you will be able to:
  - Understand the importance of OPC analysis reports
  - Navigate the NHSN application to access the OPC analysis reports
  - Analyze BRST data entered in OPC through line listing reports
  - Interpret results of the analytic report

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# Background



# Background

You are the newly appointed Infection Preventionist at Downtown Surgery Center. This facility meets the definition of an Ambulatory Surgery Center as defined in the NHSN Outpatient Procedure Component (OPC):

*An Ambulatory Surgical Center (ASC) means any distinct entity that operates exclusively for the purpose of providing surgical services to patients not requiring hospitalization and in which the expected duration of services would not exceed 24 hours following an admission. An ASC must be certified by the Center for Medicare & Medicaid Services, licensed by a state agency or both.*



# Background

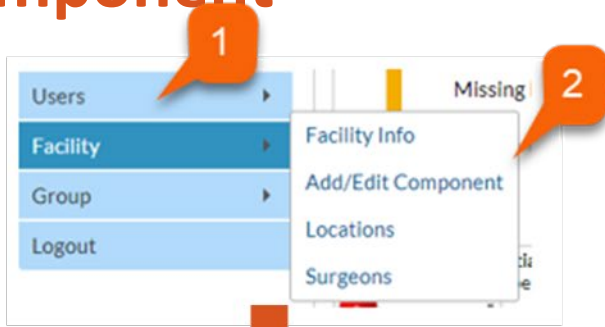
- Your state does not mandate reporting SSIs, but in order to best understand how your prevention efforts are impacting the occurrence of SSI events in your facility, you have decided to begin reporting SSI data into NHSN. In addition, you have opted to report SDOM data in order to track and trend adverse outcomes at your facility.
- Your facility primarily performs breast procedures, so you will begin by reporting BRST procedures and SSI events.
- For SDOM, you will report all procedure categories.



# Step #1 - Enrollment



# Adding OPC if you already are enrolled in another component



## Components Followed

Follow/ Followed	Component	Activated	Deactivated	Agreement Accepted	View Agreement
<input type="checkbox"/>	Biovigilance				
<input type="checkbox"/>	Dialysis				
<input type="checkbox"/>	Healthcare Personnel Safety				
<input type="checkbox"/>	Long Term Care Facility				
<input type="checkbox"/>	Medication Safety (pilot facilities only)				
<input type="checkbox"/>	Neonatal				
<input checked="" type="checkbox"/>	Outpatient Procedure			Y	<a href="#">View Agreement</a>
<input type="checkbox"/>	Patient Safety				





# Enrolling with NHSN as a new user

## Prepare your computer

- Use an up-to-date browser
- Add [cdc.gov](https://www.cdc.gov) and [verisign.com](https://www.verisign.com) to your trusted website and permit pop-ups
- Check spam-blocker settings and allow emails from [NHSN@cdc.gov](mailto:NHSN@cdc.gov) and [SAMS-NO-REPLY@cdc.gov](mailto:SAMS-NO-REPLY@cdc.gov)

## Register your facility with NHSN

- Agree to NHSN rules of behavior
- Enter all required fields including name, correct email address and CMS Certification Number [if applicable]
- You may request a temporary enrollment number from NHSN
- Select AMB-SURG Outpatient Surgery Facility as your facility type

## Register with Secure Access Management Services (SAMS)

- You will receive two emails after you register your facility.
- Using the 'Invitation to Register with SAMS' email, you will select the link and follow the steps to complete you SAMS Registration.

## Complete NHSN ASC Enrollment

- Access SAMS log-in page by clicking on this link <https://sams.cdc.gov>.
- Enter your username and password to login.
- On the SAMS homepage, under "My Applications" click on the "**NHSN Enrollment**" link to go to the NHSN Enrollment page.
- Next, select '**Enroll a Facility**'.
- You will see the pop-up "*nhsn2cdc.gov says*", select "**OK**"



# Setting Up Your Facility: Adding Surgeon Codes

**NHSN Home**

- Alerts
- Reporting Plan
- Patient
- Event
- Procedure
- Summary Data
- Import/Export
- Surveys
- Analysis
- Users
- Facility**
  - Facility Info
  - Add/Edit Component
  - Locations
  - Surgeons**
- Group
- Logout

## Surgeons

**Instructions**

- To **Add** a record, fill in the form with the required fields and any desired optional values. Then click on the **Add** button.
- To **Find** a record, click on the **Find** button. One or more fields can be filled in to restrict the search to those values.
- To **Edit** a record, perform a **Find** on the desired record. Click on the desired record to fill in its values into the form and edit the values. To save the changes, click on the **Save** button.
- To **Delete** one or more records, perform a **Find** on the desired record(s). Check the corresponding box(es), then click on the **Delete** button.
- Press the **Clear** button to start over with a new form.

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 \*:

**Find** **Add** **Clear** **Export Surgeon List** **Import Surgeon Codes**

**Step #2 – Enter a Monthly Reporting Plan**



# Entering your Monthly Reporting Plan (MRP)

The screenshot shows the NHSN Home navigation menu. Callout 1 points to the 'Reporting Plan' menu item. Callout 2 points to the 'Add' button in the dropdown menu that appears when 'Reporting Plan' is selected. Below the menu, there are sections for 'COMPLETE THESE ITEMS' and 'ALERTS'.

The screenshot shows the 'Add Monthly Reporting Plan' form. It includes the following sections and fields:

- Mandatory fields marked with \***
  - Facility ID \*: ASC Test Facility for OPC Users (ID 57258)
  - Month \*: February
  - Year \*: 2024
  - No NHSN Outpatient Reporting this month
- Same Day Quality Measures**
  - Same Day Outcome Measures
- Surgical Site Infection (SSI) Surveillance**
  - Targeted SSI surveillance for specific NHSN Operative Procedure Categories

Actions	Specify which procedure category(ies) is (are) being monitored (list all that apply):	SSI
	BRST - Breast surgery	OUT: <input checked="" type="checkbox"/>

Buttons: Add Row, Clear All Rows, Copy from Previous Month
- Buttons:** Save, Back

# Step #3 – Collect your Procedure Data



# Required Fields for OPC SSI Procedure Reporting

Reporting Detail	Outpatient Procedure Requirement
Patient Data: ID, Gender, Date of Birth	✓
NHSN Procedure Code [Category]	✓
CPT Code	✓
Date of operative procedure	✓
Duration	✓
Wound Class	✓
General Anesthesia	✓
ASA Score	✓
Scope	✓
Diabetes	✓
Height	✓
Weight	✓



# Step #4 – Enter your Procedure Data



# Procedure Collection

- Procedure data may be entered:
  - Manually for each procedure
  - Via comma-separated values (.csv) file

Visit [https://www.cdc.gov/nhsn/ambulatory\\_surgery/ssi/index.html](https://www.cdc.gov/nhsn/ambulatory_surgery/ssi/index.html) and look in Supporting Materials header to access the CSV Import Guide and File





# Manual Procedure Reporting

All fields marked with \* are required fields

### Add Procedure

Mandatory fields marked with \*  
Fields required when in Plan marked with >

**Patient Information**

Facility ID \*: JE\_AMB-SURG\_TestFacility (ID 54536) v

Patient ID \*:  Find Find Procedures for Patient

Secondary ID:

Last Name:

Middle Name:

Gender \*:  v

Ethnicity:  v

Race:  American Indian/Alaska Native  Asian  
 Black or African American  Native Hawaiian/Other Pacific Islander  
 White

Procedure #:

Social Security #:

Medicare #:

First Name:

Date of Birth \*:  4

**Procedure Information**

NHSN Procedure Code \*:  v

CPT Code \*:

Procedure Date \*:  4 Link/Unlink to Event

**Procedure Details**

Duration (Hrs:Min) \*:  :

Wound Class \*:  v General Anesthesia \*:  v

ASA Score \*:  v

Scope \*:  v

Diabetes Mellitus \*:  v

Surgeon Code:  v

Height \*:   or  m

Weight \*:  lbs or  kg BMI



# CSV Upload of Procedure Data

Please see below test file for OPC CSV File Import

patID	gender	dob	medicareI	procCode	procCPTC	procDate	procDurat	procDurat	swClass	asa	scope	surgeonCc	anesthesia	htFeet	htInches	htMetric	wtEnglish	wtMetric	diabetes	comment
OP-2000	F	#####	12345678	APPY	44900	1/1/2020	1	10	CC	2	Y		Y	5	6		167		N	New surge
OP-2001	F	#####	23456789	BRST	11970	1/2/2020	2	20	C	2	N		Y	5	6		167		N	New surge
OP-3000	M	#####	34567891	COLO	44025	1/3/2020	3	30	CO	3	N		Y	5	8		234		Y	New surge
OP-4000	O	#####		GAST	43117	1/4/2020	4	40	D	1	N		Y			1.8		89.2	Y	New surge
OP-5000	M	6/6/1966		PRST	55705	1/5/2020	5	50	C	1	Y		Y			1.8		89.2	N	New surge
OP-6000	F	6/7/1967		HYST	58150	1/6/2020	6	59	CC	1	N		Y			1.8		89.2	N	

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# CSV Upload of Procedure Data

The image shows a screenshot of the NHSN Home interface. On the left is a vertical navigation menu with the following items: NHSN Home, Alerts, Reporting Plan, Patient, Event, Procedure, Summary Data, Import/Export, Surveys, Analysis, Users, Facility, and Group. An orange callout bubble with the number '1' points to the 'Summary Data' item. On the right is the 'Import/Export Data' page, which has a header with a globe icon and the text 'Import/Export Data'. Below the header is a section titled 'Select import/export type' with a dropdown menu also labeled 'Select import/export type'. Underneath are three options, each with a 'CSV' icon and a blue arrow pointing right: 'Patients', 'Procedures', and 'Surgeons'. An orange callout bubble with the number '2' points to the 'Procedures' option.



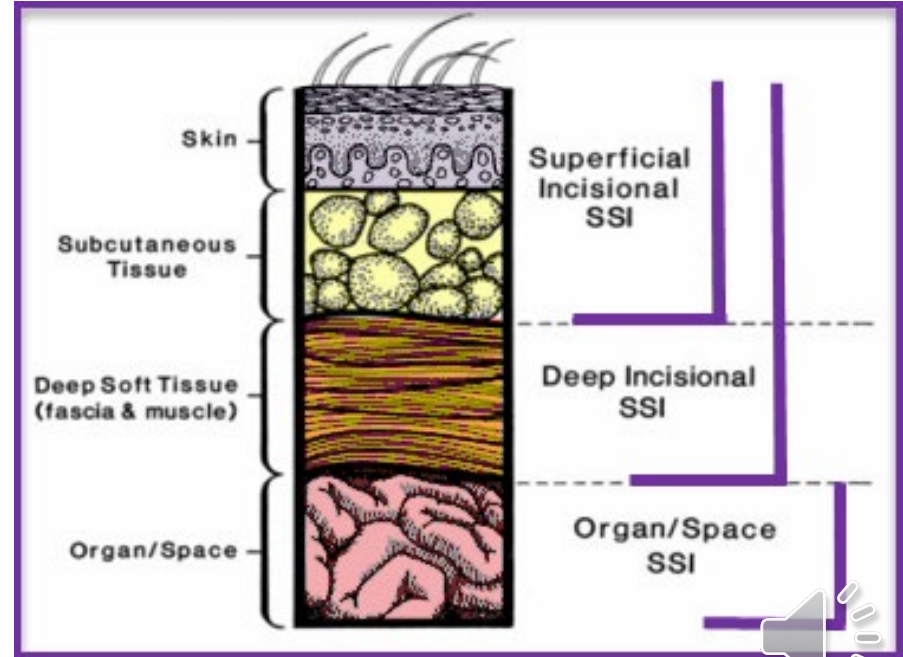
# Step #5 – Perform Surveillance for SSI Events



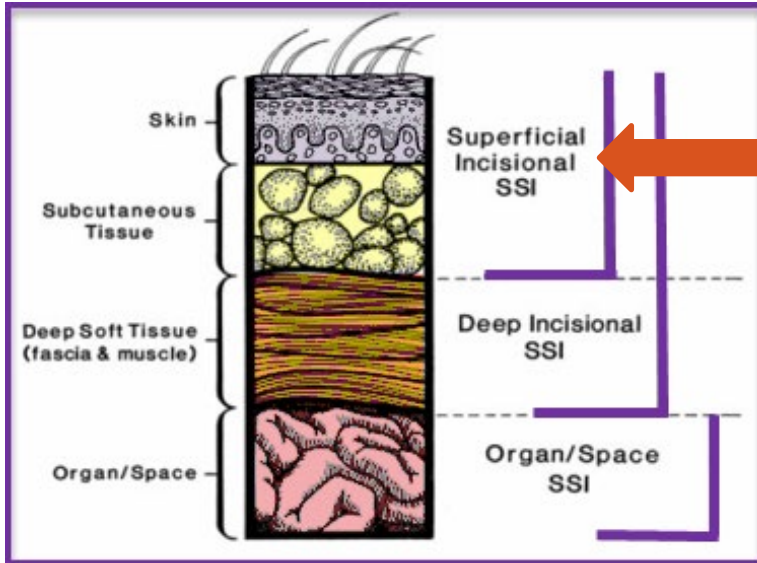
# OPC Surgical Site Infection Module

SSIs are identified as:

- *Superficial Incisional SSI*
- *Deep Incisional SSI*
- *Organ/Space SSI*



# Superficial Incisional SSI



## OPC General – Superficial Incisional SSI

Must meet the following criteria:

Date of event for infection occurs within 30 days following the NHSN operative procedure (where day 1 = the procedure date)

**AND**

involves only skin and subcutaneous tissue of the incision

**AND**

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

- purulent drainage from the superficial incision.
- organisms identified from an aseptically-obtained specimen from the superficial incision or subcutaneous tissue 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]).
- a superficial incision that is deliberately opened by a surgeon, physician or physician designee and culture or non-culture based testing of the superficial incision or subcutaneous tissue is not performed.

**And**

- patient has at least one of the following signs or symptoms: localized pain or tenderness; localized swelling; erythema; or heat.
- diagnosis of a superficial incisional SSI by a physician or physician designee.

**Comments:** The two specific types of superficial incisional SSIs are:

- Superficial incisional primary (SIP) – a superficial incisional SSI that is identified in the primary incision in a patient that has had an operation with one or more incisions (for example, the knee incision for KPRO procedure).
- Superficial incisional secondary (SIS) – a superficial incisional SSI that is identified in the secondary incision in a patient that has had an operation with more than one incision (for example, abdominal incision site for VSHN).

## OPC BRST - Superficial incisional SSI

Must meet the following criteria:

Date of event for infection occurs within 30 days following a BRST operative procedure; where day 1 = the procedure date

**AND**

involves either the skin, subcutaneous tissue (for example, fatty tissue) or breast parenchyma (for example, milk ducts and glands that produce milk) at the incision

**AND**

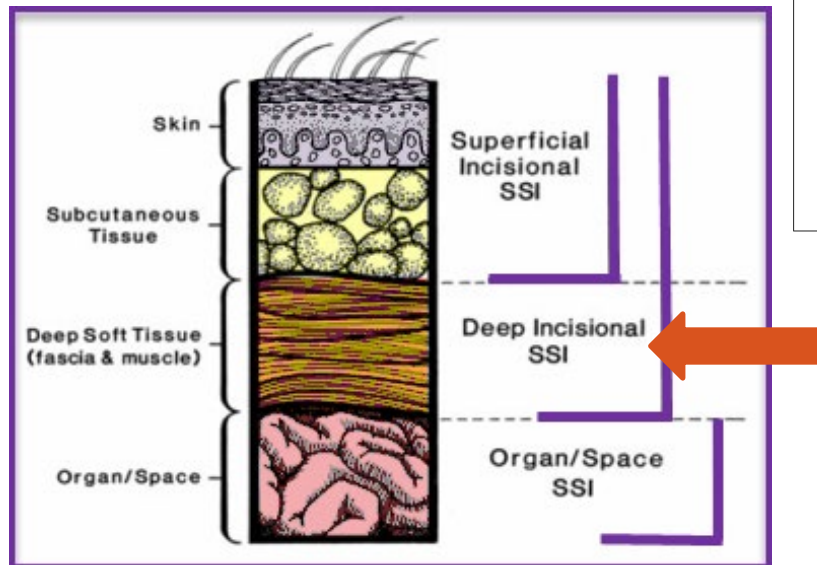
patient has at least one of the following:

- purulent drainage from the superficial incision.
- organisms identified from an aseptically-obtained specimen from the superficial incision or subcutaneous tissue 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]).
- a superficial incision that is deliberately opened by a surgeon, physician or physician designee and culture or non-culture based testing of the superficial incision or subcutaneous tissue is not performed.

**And**

- patient has at least **one** of the following signs or symptoms: localized pain or tenderness; localized swelling; redness (erythema); or heat. A culture or non-culture based test that has a negative finding does not meet this criterion.
- diagnosis of a superficial incisional SSI by a physician or physician designee.

# Deep Incisional SSI



## OPC General - Deep Incisional SSI

Must meet the following criteria:

The date of event for infection occurs within 30 or 90 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:

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

**And**

organism is identified from the deep soft tissues of the incision by a culture or non-culture based microbiologic testing method from the deep soft tissues which is performed for purposes of clinical diagnosis or treatment (for example, not Active Surveillance Culture/Testing [ASC/AST]) or culture or non-culture based microbiologic testing method is **not performed**. A culture or non-culture 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.

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

## OPC BRST - Deep incisional SSI

Must meet the following criteria:

Date of event for infection occurs within 90 days following a BRST operative procedure; where day 1 = the procedure date

**AND**

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

**AND**

patient has at least one of the following:

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

**And**

organism is 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 non-culture based microbiologic testing method is not performed. A culture or non-culture based test that has a negative finding does not meet this criterion.

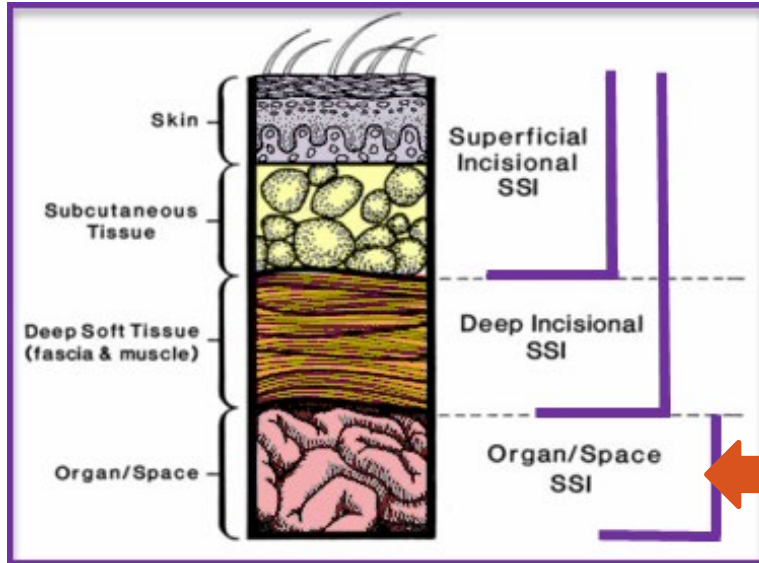
**And**

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

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



# Organ/Space SSI



## OPC General - Organ/Space SSI

Must meet the following criteria:

Date of event for infection occurs within 30 or 90 days following the NHSN operative procedure (where day 1 = the procedure date) according to the list in [Table 2](#)

**AND**

infection 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:

- purulent drainage from a drain placed into the organ/space (for example, closed suction drainage system, open drain, T-tube drain, and CT guided drainage).
- organisms are identified from an aseptically-obtained 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]).
- an abscess or other evidence of infection involving the organ/space detected on:
  - gross anatomical
  - histopathologic exam
  - imaging test consistent with infection.

### NOTE:

Meeting additional infection criteria found in the Patient Safety Component [Chapter 17, CDC/NHSN Surveillance Definitions for Specific Types of Infections](#) is **NOT** a part of the OPC General - Organ/Space SSIs reporting criteria.

## OPC BRST - Organ/Space SSI

Must meet the following criteria:

Date of event for infection occurs within 90 days following a BRST operative procedure; where day 1 = the procedure date

**AND**

infection involves any part of the breast deeper than the fascial/muscle layers (subpectoral), that is opened or manipulated during the operative procedure.

**AND**

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

- purulent drainage from a drain placed into the organ/space (for example, closed suction drainage system, open drain, T-tube drain, and CT guided drainage).
- organisms identified from affected breast tissue or fluid obtained by invasive procedure 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]).
- breast abscess or other evidence of infection detected on gross anatomic or histopathologic exam or imaging test consistent with breast infection.



# Why is there a separate SSI criteria for Breast Surgery (BRST)?

- Breast procedures identified as highest volume and highest SSI risk among ASCs reporting into NHSN
- Measure specifications developed by CDC/NHSN & ASC QC
- Consensus-based entity endorsed



# Post-Discharge Surveillance Toolkit

January 2024

Outpatient Procedure Component – Surgical Site Infection

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## Appendix A: Post-discharge Surveillance Toolkit

This toolkit was developed by NHSN to assist facilities in implementing an effective post-discharge surgical site infection surveillance process.

### **Contents:**

The toolkit contains samples of a: Sample Letter, Post-discharge SSI Worksheet and Procedure Line List by Surgeon, along with instructions and helpful suggestions.

**NOTE:** *If the facility already has an active standardized SSI surveillance process in place that is successfully identifying patients with infections post-discharge and is obtaining information from surgeons about potential SSIs, the facility may continue to use that process as long as the requirements of this Post-Discharge Surveillance Toolkit are met.*

### **Instructions:**

Based on the NHSN OPC-SSI Protocol, operative procedures must be followed for either a 30- or 90-day surveillance period after the operative episode in order to identify a potential SSI ([Table 2](#)).



# Post-discharge Surveillance

- Active post-discharge surveillance process
  - Recommended for the detection of SSIs
  - *Example: post-discharge survey sent to surgeon for feedback*
- Passive surveillance process
  - *Example: patient/caregiver contacts the outpatient facility to report an SSI*



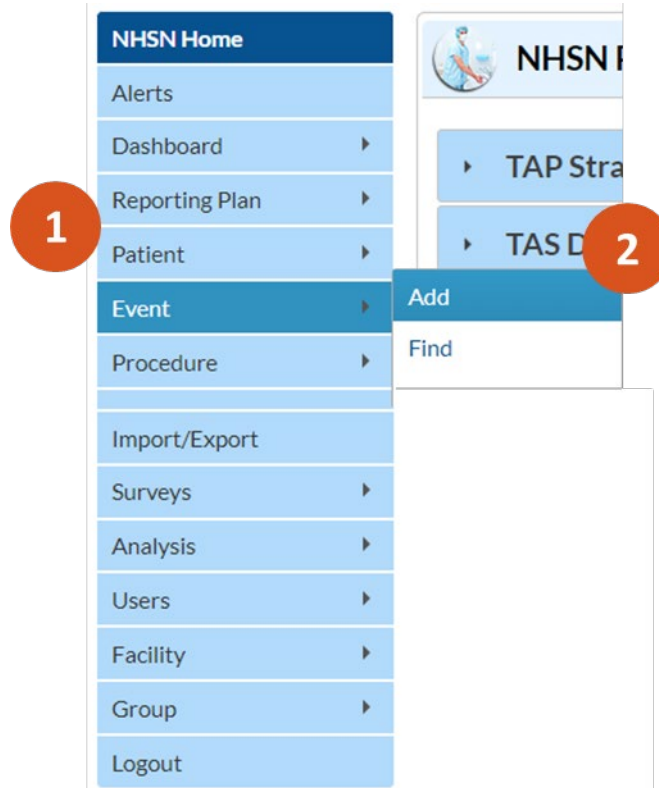
# Step #6 – Enter SSI Events



# Adding an SSI Event


In NHSN left menu

1. Click Event
2. Select Add



# Adding an SSI Event

Enter all mandatory fields marked with a red asterisk.

 **Add Event** 3

Mandatory fields marked with \*

Fields required for record completion marked with \*\*

Fields required when in Plan marked with >

---

**Patient Information**

Facility ID *:	<input type="text" value="You Facility Name"/>	Event #:	<input type="text"/>
Patient ID *:	<input type="text"/> <input type="button" value="Find"/> <input type="button" value="Reassign"/> <input type="button" value="Find Events for Patient"/>	Social Security #:	<input type="text"/>
Secondary ID:	<input type="text"/>	Medicare #:	<input type="text"/>
Last Name:	<input type="text"/>	First Name:	<input type="text"/>
Middle Name:	<input type="text"/>	Date of Birth *:	<input type="text" value="3"/>
Gender *:	<input type="text"/>		
Ethnicity:	<input type="text"/>		
Race:	<input type="checkbox"/> American Indian/Alaska Native	<input type="checkbox"/> Asian	
	<input type="checkbox"/> Black or African American	<input type="checkbox"/> Native Hawaiian/Other Pacific Islander	
	<input type="checkbox"/> White		



# Completing the SSI Event Information Section

Complete Event Information, all mandatory fields marked with a red asterisk.

4

Event Information

Event Type \*: OPSSI - Surgical Site Infection

NHSN Procedure Code \*: KPRO - Knee prosthesis

CPT Code \*: 27440

Procedure Date \*: 02/01/2023 [Link/Unlink Procedure](#)  Event Linked

Location:

Date of Encounter \*: 02/01/2023

SSI Level \*: OS - Organ Space

Date of Event \*: 02/23/2023

Specify Criteria Used \* (check all that apply)

Signs & Symptoms (check all that apply)

Any patient

- Abscess
- Erythema or redness
- Fever
- Heat
- Incision deliberately opened/drained
- Localized swelling
- Pain or tenderness
- Purulent drainage or material
- Wound spontaneously dehisces
- Other evidence of infection found on invasive procedure, gross anatomic exam, or histopathologic exam

Laboratory

- Organism(s) identified
- Culture or non-culture based testing not performed
- Imaging test consistent with infection

Clinical Diagnosis

- Diagnosis of superficial SSI by surgeon or attending physician


SSI Event Detected \*:  Active surveillance - SSI was identified through the facility's active surveillance process.

(check all that apply)

- Review of patient's medical record
- Post-discharge surgeon survey
- Post-discharge patient letter
- Post-discharge phone call
- Cooperative infection prevention process between facilities
- Passive surveillance - The facility became aware of the SSI through passive means that were not initiated by facility

Died \*\*: N - No

Pathogens Identified \*: N - No





Save Back

# SSI Event Reporting

All fields marked with \*  
are required fields

## Add Event

Mandatory fields marked with \*

Fields required for record completion marked with \*\*

Fields required when in Plan marked with >

---

### Patient Information

Facility ID *:	<input type="text"/>	<input type="button" value="Find"/>	<input type="button" value="Find Event for Patient"/>	Event #:	<input type="text"/>
Patient ID *:	<input type="text"/>			Social Security #:	<input type="text"/>
Secondary ID:	<input type="text"/>			Medicare #:	<input type="text"/>
Last Name:	<input type="text"/>			First Name:	<input type="text"/>
Middle Name:	<input type="text"/>			Date of Birth *:	<input type="text"/>
Gender *:	<input type="text"/>				
Ethnicity:	<input type="text"/>				
Race:	<input type="checkbox"/> American Indian/Alaska Native		<input type="checkbox"/> Asian		
	<input type="checkbox"/> Black or African American		<input type="checkbox"/> Native Hawaiian/Other Pacific Islander		
	<input type="checkbox"/> White				

---

### Event Information

Event Type *:	<input type="text" value="OPSSI - Surgical Site Infection"/>	Date of Event *:	<input type="text"/>
NHSN Procedure Code *:	<input type="text"/>		
CPT Code *:	<input type="text"/>		
Procedure Date *:	<input type="text"/>	<input type="button" value="Link to Procedure"/>	
Location:	<input type="text"/>		
Date of Encounter >:	<input type="text"/>		
SSI Level >:	<input type="text"/>		
SSI Event Detected *:	<input type="checkbox"/> Active surveillance - SSI was identified through the facility's active surveillance process.		
	<input type="checkbox"/> Passive surveillance - The facility became aware of the SSI through passive means that were not initiated by facility.		
Died **:	<input type="text"/>		
Pathogens Identified >:	N - No		





# SDOM Events



# Which categories do I monitor?

For SDOM events, you will monitor ALL encounters, regardless of operative procedure category



## Key Term: Encounter

- A patient's visit to an outpatient facility where the **patient completes** the registration process
- Some outpatient facilities may refer to this as an admission



# SDOM Module

Includes four distinct measures which should be monitored:

- SDOM-1 Patient Burn
- SDOM-2 Patient Fall
- SDOM-3 Wrong Site, Wrong Side, Wrong Patient, Wrong Procedure, Wrong Implant
- SDOM-4 All-Cause Hospital Transfer/Admission

**Surveillance is all or nothing: When following SDOM, ASCs will monitor all patient encounters for all four SDOM events**



# Brief Overview of Each SDOM

## ➤ Patient Burn

- unintended tissue injury caused by scalds, contact, fire, chemicals, electricity, or radiation

## ➤ Patient Fall

- sudden, uncontrolled, unintentional downward displacement of the body

## ➤ “Wrong” Event

- procedure performed is inconsistent with documented informed consent

## ➤ All-cause Hospital Transfer/Admission

- transfer/admission to hospital directly from the ASC for any reason



# Same Day Outcome Measures Module

Numerator	Number of SDOM events for each measure
Denominator	All ASC encounters



# Benefits of Using OPC



# Benefits to using OPC for SDOM and SSI

- The OPC-SSI protocol was created specifically for ASCs
- Centralized system for collecting and analyzing adverse event data
- Minimize reporting burden for ASCs while assuring data are validated, credible, and actionable
- Provides an opportunity to analyze multiple payer data
- Monitor outcome of adherence to infection prevention/control clinical practice guidelines and strategies





# Benefits to using OPC for SDOM and SSI

- Track incidence of surgical site infections and other adverse healthcare outcomes
- Enable use of surveillance data for:
  - Measuring clinical quality and benchmarking performance against nationally aggregated data
  - Exerting positive change(s) in patient care practices
  - Public reporting and other accountability purposes
  - Building knowledge related to infection risk in the ASC environment



# Accessing Analysis Reports in OPC

A Beginner's Guide

# Utilizing Data Analysis Tools for Breast Data in the Outpatient Procedure Component (OPC)

- Informed Decision Making: by analyzing datasets, healthcare providers can identify patterns in their data
- Quality Improvement: ASCs can track key performance indicators and monitor patient outcomes (i.e., infection detection methods)
- Drive continuous improvement: by providing insights into disease trends and at-risk population (i.e., post-discharge surveillance)



# Generate Data Sets

- After you have completed data entry, it is important to generate a data set so that all additions can be incorporated in the analysis reports
- Purpose of generating data sets:
  - This process freezes NHSN data at a specific point in time and copies those data to defined data sets
  - This process is necessary each time you would like to see changes made to the data reflected in the analysis reports
  - Data sets are user-specific, therefore, each user in NHSN who wishes to analyze data must generate data sets
- Detailed guide on generating data sets: [How to Generate Data Sets \(cdc.gov\)](https://www.cdc.gov/ncidod/dhqp/nhsn/analysis/guide/guide.html)

# Generating Data Sets: a closer look

- The “Generate Data Sets (Outpatient Procedure)” box will prompt you to select a beginning and end date as your date parameter
- ALL analysis reports will be restricted to the time period that the user specifies on this screen. Any data that exists outside of this time period will not appear in analysis reports

The screenshot shows a web interface titled "Generate Data Sets (Outpatient Procedure)". It features a "Reporting Data Sets" section with a "Include data for the following time period:" label. Below this, there are "Beginning" and "Ending" date fields. The "Beginning" field is set to "11/2018" and the "Ending" field is set to "1 mm/yyyy". A "Generate Reporting Data Sets" button is visible, along with a "Last Generated:" status box showing "February 2, 2024 3:17 PM to include data beginning 11/2018".

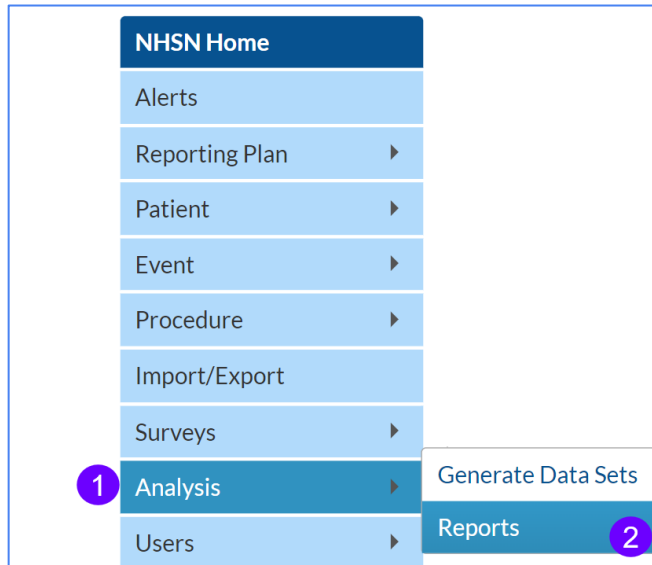
**The beginning date is how far back you want the application to incorporate data changes**

**Once time period has been indicated, click here!**

**The ending date is the limit at when you want the data to stop generating**

# Accessing Analysis Reports in OPC

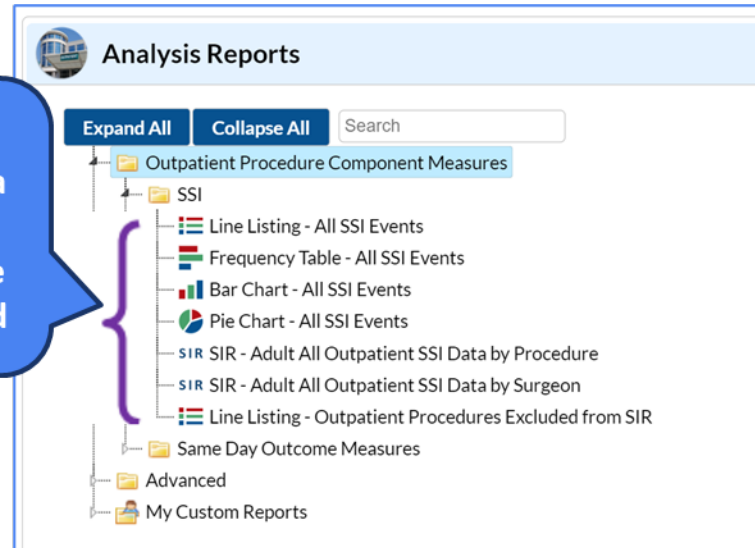
- Once data set generation is completed, you will select “**Analysis**” from the NHSN Left-hand navigation pane and select “**Reports**”



# Selecting Analysis Reports: Measure-specific

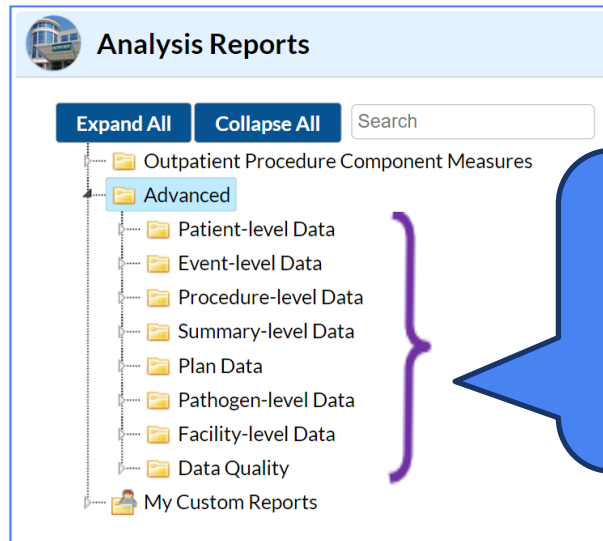
- Once you are in the analysis treeview, there are subfolders under the “Outpatient Procedure Component Measures” folder.

When you click the folder labeled “SSI,” a series of analysis reports related to the measure is populated



## Selecting Analysis Reports: Additional Reports

- Similar to identifying analytic reports under the specific OPC measures, you have the option to view additional reports that highlight different elements of the data (i.e., procedures, events, facility and plan information, etc.)



When you click on each analysis folder, it expands to show you all the analytic reports associated with it

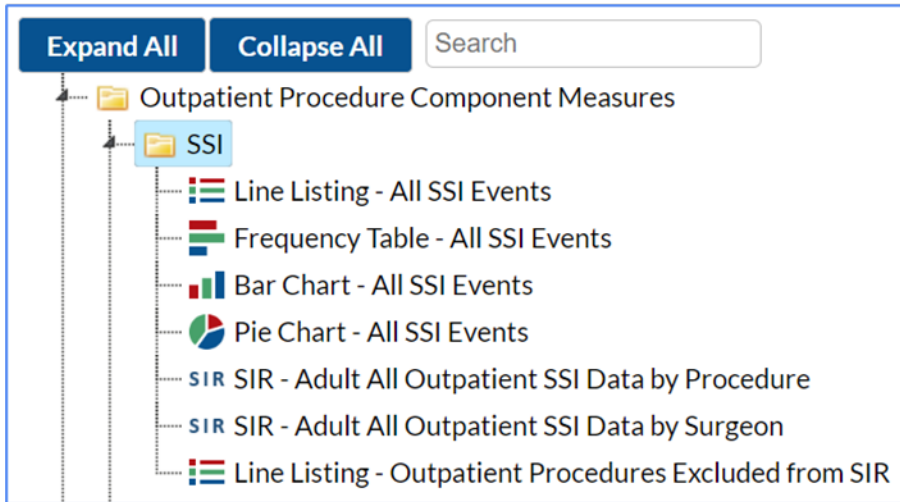


# Utilizing the Procedure-level Data Analytic Reports

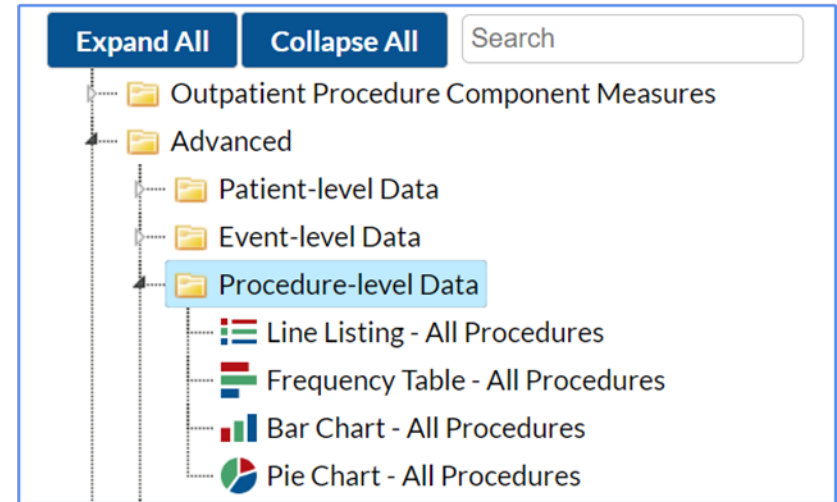
- We want to analyze the Breast surgery (BRST) data entered. One of the ideal methods is to run a line listing of BRST procedure records and BRST event records
  - Ensures a data quality check
  - Leads to record-level review
  - Modifications can be made to look at variables of interest

# Analytic Reports for Analyzing Procedures and Events

## Event-Level Data



## Procedure-Level Data



# Review Case Example

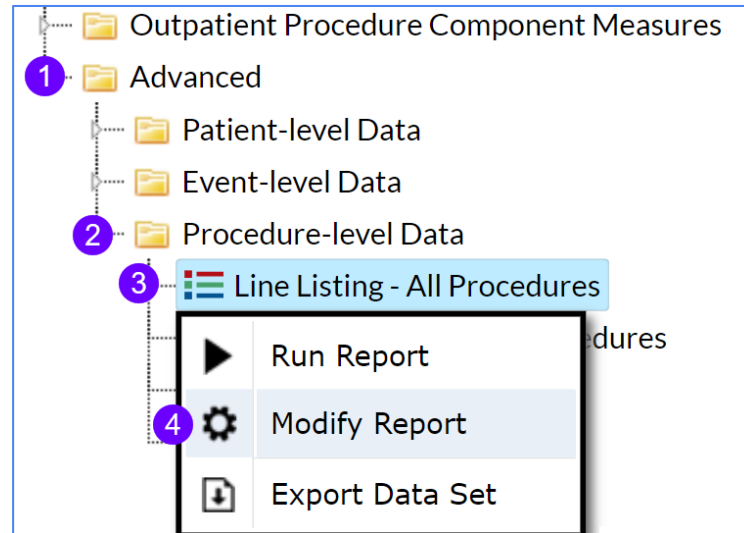
Analyze BRST data utilizing line listing reports

# Analytic Report: Line Listing

- A line list is an organized, detailed list of each record entered into NHSN
- NHSN applies default variables when there are no modifications made to the report
- Example: Your ASC facility entered 15 Breast Surgery Procedures with a reporting of 8 SSI Events in third quarter (Q3) of 2023. You want to know
  1. All 15 procedure records were recorded into NHSN
  2. The detection method of the SSI Events identified

# Modify Line Listing: to determine if all 15 procedures were entered into NHSN OPC

- Parameters can be modified to customize analysis to specific needs or requirements. In this instance, our line list will be adjusted to tailor the analysis to different subsets of data and to account for specific variables.



# Modify Line Listing of Procedures

1 Advanced

2 Procedure-level Data

3 Line Listing - All Procedures

4 Modify Report

- Run Report
- Modify Report
- Export Data Set

Modify "Line Listing - All Procedures"

Show descriptive variable names ([Print List](#))

Title/Format | Time Period | Filters | Display Variables | Sort Variables | Display Options

Title:  
Line Listing of All Procedures

Format:

html  pdf  xls  rtf

# Modify Line Listing of Procedures

- We are interested in confirming that the 15 BRST procedure records we entered for 2023 Q3 is accurately reflected in our procedure specific line list.
- Modifications to the report include: time period and procedure category

# Modifying Time Period

- The “**Time Period**” tab allows you to select a specific time period for your report.
- To restrict a report to a specific time period, select a date variable from the “**Date Variable**” drop down menu and specify the beginning and ending date for the desired time period.
- If the “**Ending**” date is left blank, the results will include all data from the beginning time period and up to data indicated on the dataset generation screen.
- **Note:** If you do not select a time period, your results will include all data reported, for the time period included in your analysis datasets



# Modifying Time Period

Modify "Line Listing - All Procedures"

Show descriptive variable names ([Print List](#))

Format **Time Period** Filters Display Variables Sort Variables Display Options

Time Period:

Date Variable	Beginning	Ending	
<input type="text" value=""/>	<input type="text" value=""/>	<input type="text" value=""/>	<input type="button" value="Clear Time Period"/>

Enter Date Range period at the time you click the Run button

This is a helpful tool to utilize to view the user-friendly variable-labels in the report output

The available date variables can vary with each report option. You can filter your report by year, half-year, quarter, or month. Date variables are based on the calendar year; if fiscal year is desired, specify time period by exact date or month range.

# Specifying Time Variable

Specify by	Date Variable	Beginning	Ending
Date	procDate	01/01/2018	12/31/2018
Year	procDateYr	2018	2018
Half-Year	procDateYH	2018H1	2018H2
Quarter	procDateYQ	2018Q1	2018Q4
Month	procDateYM	01/2018	12/2018

- **Tip:** When entering Beginning and Ending dates, the application will automatically enter the slash marks “/” and letters (H, Q) when applicable.

# Case Example Modifications on Procedure Line List

- We wish to analyze procedure data that occurred in Q3 of 2023. One way to do this would be to select the date variable “**procDateYQ**”, indicating that you wish to restrict the report to procedures performed during this time period, by quarter.
- The *beginning* and *ending* values would be **2023Q3**; the only procedures included in the analysis report will be those procedures where the procedure date was in Q3 of 2023 (July through September 2023)

Note: You only need to type “2023” and the quarter number “3”; the Q will be auto-populated

The screenshot shows a software interface with a top navigation bar containing tabs: Title/Format, Time Period (highlighted in green), Filters, Display Variables, Sort Variables, and Display Options. Below the tabs, the 'Time Period' section is active. It features a 'Time Period:' label, a table with columns for 'Date Variable', 'Beginning', and 'Ending', and a 'Clear Time Period' button. The 'Date Variable' dropdown is set to 'procDateYQ'. The 'Beginning' and 'Ending' text boxes both contain '2023Q3'. Below the table is a checkbox labeled 'Enter Date variable/Time period at the time you click the Run button', which is currently unchecked.

Date Variable	Beginning	Ending
procDateYQ	2023Q3	2023Q3

Enter Date variable/Time period at the time you click the Run button

# Modifying Filters

- The report allows for filtering of the data that will be considered for the report. The list of available variables is dependent on the data set used for the report (i.e., procedures data, event data, facility data, etc. will each have a unique dataset).

The screenshot displays a report configuration interface with the following components:

- Navigation Bar:** A series of tabs including "Title/Format", "Time Period", "Filters" (highlighted in green), "Display Variables", "Sort Variables", and "Display Options".
- Additional Filters:** A section with a "Show" button (with a magnifying glass icon) and a "Clear" button (with an 'X' icon).
- Filter Logic:** A visual tree structure for defining filters. It starts with a root level containing "AND" and "OR" options. Below this, a "Add group" button is visible. A second level contains another "AND/OR" logic box, followed by a "Add rule" button. The third level shows a dropdown menu (with a downward arrow) and a "Delete" button.

# Modifying Filters: a closer look

The screenshot shows a software interface with a top navigation bar containing tabs: "Title/Format", "Time Period", "Filters" (highlighted in green), "Display Variables", and "Sort Variables". Below the tabs, there is a section for "Additional Filters:" with a "Show" button. The main area contains a hierarchical filter structure. At the top level, there is a group with an "AND/OR" selector and an "Add group" button. Below it, a rule is defined with an "AND/OR" selector, an "Add rule" button, and a "Delete" button. The rule consists of a variable selection dropdown, an operator dropdown, and a value input field. A callout box points to the variable dropdown, stating: "Use the drop-down feature to select a variable". Another callout points to the operator dropdown, which is open, listing options: "equal", "not equal", "in", "not in", "less", "less or equal", "greater", "greater or equal", and "between". A callout points to the value input field, stating: "After selecting a variable to filter, click in the empty box with the drop-down arrow to select the operator (for example, 'equal') then specify desired values of that variable that should be included in the report. Various operators can be selected to modify the report". A third callout points to the "Add group" button, stating: "A 'Group' in this section refers to a set of rules combined to make one filter". A fourth callout points to the "AND/OR" selector, stating: "Enter value criteria or use the drop-down for pre-selected values where appropriate".

Additional Filters:  Show

AND OR

AND OR

equal  
not equal  
in  
not in  
less  
less or equal  
greater  
greater or equal  
between

Add group

Add rule

Delete

Use the drop-down feature to select a variable

Enter value criteria or use the drop-down for pre-selected values where appropriate

After selecting a variable to filter, click in the empty box with the drop-down arrow to select the operator (for example, "equal") then specify desired values of that variable that should be included in the report. Various operators can be selected to modify the report

A "Group" in this section refers to a set of rules combined to make one filter.

# Case Example Modifications on Procedure Line List

- We wish to analyze Breast surgery procedures. You would use the drop-down to select the variable called “procCode”, which refers to procedure categories.
- We want to restrict the line listing report to only display Breast surgeries, therefore, we set the operator to **equal** and type in the procedure code as BRST

Note: procCode variables refer to the procedure category

The screenshot displays a software interface with a navigation bar at the top containing tabs for 'Title/Format', 'Time Period', 'Filters' (which is highlighted in green), 'Display Variables', 'Sort Variables', and 'Display Options'. Below the navigation bar, there is a section for 'Additional Filters:' with 'Show' and 'Clear' buttons. The main area shows a hierarchical filter structure. At the top level, there are 'AND' and 'OR' options and an 'Add group' button. Below this, a nested filter is shown with its own 'AND' and 'OR' options and an 'Add rule' button. The nested filter contains a rule with a dropdown menu set to 'procCode', an operator dropdown set to 'equal', and a text input field containing 'BRST'. A 'Delete' button is located to the right of this rule.

# Report Modification Options

- Title/Format-customize the report name and choose format in which to display report
- Time Period – sets the date to restrict records
- Filters – ability to choose different elements to show in the report
- Display Variables – ability to select more variables to display on report
- Sort Variables – place selected variables in order of viewing
- Display Options – organizing the pages in the report

The screenshot displays a report configuration interface with the following elements:

- Navigation Tabs:** Title/Format (selected), Time Period, Filters, Display Variables, Sort Variables, Display Options.
- Title:** A text input field containing "Line Listing of All Procedures".
- Format:** A selection area with four options:
  - html:** Represented by a purple globe icon, selected with a radio button.
  - pdf:** Represented by a red document icon, unselected.
  - xls:** Represented by a green spreadsheet icon, unselected.
  - rtf:** Represented by a green document icon, unselected.
- Buttons:** Run, Save..., and Export... located at the bottom of the interface.

Run the report, save the report for future use or export the analysis data set

# Case Example: Review Procedure-Level Data

- We modified our line listing of procedures to be limited to 2023 Q3 and Breast Procedures
- All 15 records are included in the line list based on the report modifications
- Since no changes were made to the variables displayed on the report, NHSN pre-selected variables populated
- The line list could be used for data quality purposes, ensuring no typos were made during data entry, no missing gender/DOB values, etc.

## National Healthcare Safety Network Line Listing of All Procedures

As of: February 12, 2024 at 8:42 AM

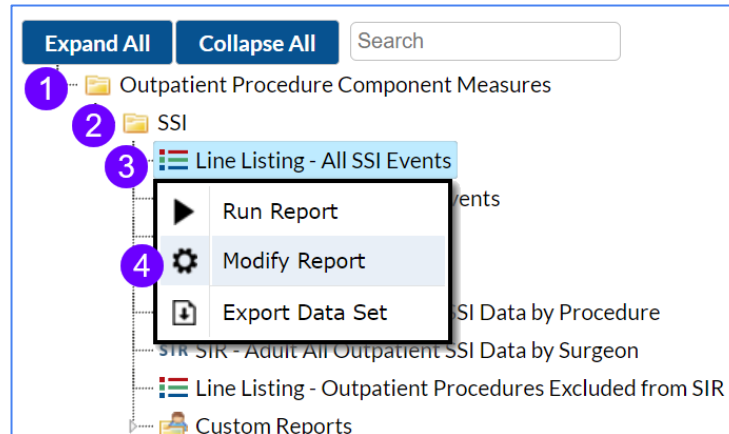
Date Range: OP\_PROCEDURES procDateYQ 2023Q3 to 2023Q3  
if (((procCode = "BRST" ) ))

orgID	patID	dob	gender	procID	procDate	procCode
14913	OP-4000	04/16/1997	F	120943	07/23/2023	BRST
14913	OP-3000	09/18/1946	M	120942	07/15/2023	BRST
14913	OP-6000	06/07/1967	F	120945	08/05/2023	BRST
14913	OP-12000	06/14/1941	F	120951	09/17/2023	BRST
14913	OP-10000	06/06/1966	F	120949	09/02/2023	BRST
14913	OP-15000	06/06/1966	F	120954	07/18/2023	BRST
14913	OP-14000	04/16/1997	F	120953	07/10/2023	BRST
14913	OP-16000	06/07/1967	F	120955	09/06/2023	BRST
14913	OP-7000	06/14/1941	F	120946	08/12/2023	BRST
14913	OP-8000	09/18/1946	M	120947	08/20/2023	BRST
14913	OP-5000	06/06/1966	M	120944	07/29/2023	BRST
14913	OP-11000	02/07/1967	F	120950	09/09/2023	BRST
14913	OP-9000	03/16/1997	F	120948	08/27/2023	BRST
14913	OP-2000	06/14/1941	F	120941	07/08/2023	BRST
14913	OP-13000	07/18/1946	F	120952	09/24/2023	BRST



# Case Example Modifications on SSI Event Line List: to determine SSI Event detection type

- Now that we have determined the BRST procedures we entered are correctly reflected in the analysis report, we can analyze an SSI Event Line List to see the patterns in SSI event detection
- From the Analysis Reports treeview, select (1) **Outpatient Procedure Component Measures** >> (2) **SSI** >> (3) **Line Listing – All SSI Events** >> (4) **Modify Report**



# Case Example SSI Event Line List Report

- Our modifications include: time period of 2023Q3, BRST procedures only
- Note:** No modifications were made to variables shown on report. The variables seen are the NHSN pre-selected default variables

## National Healthcare Safety Network

### Line Listing of All Surgical Site Infection Events

As of: February 12, 2024 at 9:11 AM

Date Range: OP\_SSI\_EVENTS procDateYQ 2023Q3 to 2023Q3

if (((procCode = "BRST" ) ) )

orgID	patID	opeventType	opspcEvent	procDate	procCode	dob	ageAtProc	gender	procDurationHr	procDurationMin	outpatient	whenDetected	allAdultExcl
14913	OP-2000	OPSSI	DIS	07/08/2023	BRST	06/14/1941	82	F	1	10	Y	PASSIVE	1
14913	OP-4000	OPSSI	DIS	07/23/2023	BRST	04/16/1997	26	F	4	40	Y	PASSIVE	1
14913	OP-6000	OPSSI	DIS	08/05/2023	BRST	06/07/1967	56	F	6	59	Y	PASSIVE	1
14913	OP-8000	OPSSI	OS	08/20/2023	BRST	09/18/1946	76	M	3	30	Y	ACTIVE	0
14913	OP-10000	OPSSI	DIP	09/02/2023	BRST	06/06/1966	57	F	5	50	Y	PASSIVE	0
14913	OP-12000	OPSSI	SIP	09/17/2023	BRST	06/14/1941	82	F	1	10	Y	PASSIVE	0
14913	OP-14000	OPSSI	SIS	07/10/2023	BRST	04/16/1997	26	F	4	40	Y	ACTIVE	1
14913	OP-16000	OPSSI	SIP	09/06/2023	BRST	06/07/1967	56	F	6	59	Y	PASSIVE	1

DISCLAIMER: All data presented in this presentation is fictitious for training purposes and does not represent any facility's data

# SSI Event Line List Report: a closer look

## National Healthcare Safety Network

### Line Listing of All Surgical Site Infection Events

As of: February 12, 2024 at 9:11 AM

Date Range: OP\_SSI\_EVENTS procDateYQ 2023Q3 to 2023Q3

if (((procCode = "BRST" )))

orgID	patID	opeventType	opspcEvent	procDate	procCode	dob	ageAtProc	gender	procDurationHr	procDurationMin	outpatient	whenDetected	allAdultExcl
14913	OP-2000	OPSSI	DIS	07/08/2023	BRST	06/14/1941	82	F	1	10	Y	PASSIVE	1
14913	OP-4000	OPSSI	DIS	07/23/2023	BRST	04/16/1997	26	F	4	40	Y	PASSIVE	1
14913	OP-6000	OPSSI	DIS	08/05/2023	BRST	06/07/1967	56	F	6	59	Y	PASSIVE	1
14913	OP-8000	OPSSI	OS	08/20/2023	BRST	09/18/1946	76	M	3	30	Y	ACTIVE	0
14913	OP-10000	OPSSI	DIP	09/02/2023	BRST	06/06/1966	57	F	5	50	Y	PASSIVE	0
14913	OP-12000	OPSSI	SIP	09/17/2023	BRST	06/14/1941	82	F	1	10	Y	PASSIVE	0
14913	OP-14000	OPSSI	SIS	07/10/2023	BRST	04/16/1997	26	F	4	40	Y	ACTIVE	1
14913	OP-16000	OPSSI	SIP	09/06/2023	BRST	06/07/1967	56	F	6	59	Y	PASSIVE	1

DISCLAIMER: All data presented in this presentation is fictitious for training purposes and does not represent any facility's data



Identify patterns in the line list

# Interpretation of SSI Event Line List

- The data shows us that in 2023Q3, there was a total of eight SSI Events detected across the 15 BRST procedures that were performed in the same time period.
- The **whenDetected** refers to the post-discharge surveillance methods of SSI identification

- Active Surveillance
- Passive Surveillance

Event	whenDetected	Count
	PASSIVE	1
	PASSIVE	1
	PASSIVE	1
	ACTIVE	6
	PASSIVE	0
	PASSIVE	0
	ACTIVE	1
	PASSIVE	1

## Interpretation of SSI Event Line List

- There were more SSIs identified via Passive Surveillance. This observation may prompt an ASC to ramp up their post-discharge surveillance process so that SSIs can be detected earlier, and patients can avoid an adverse event from their outpatient procedure.

# Enhancing Pattern Detection in Frequency Tables for Large Facilities

- For larger facilities, patterns may be more easily detected in frequency tables, especially if there are a lot of rows appearing on a line list.
- Users can utilize the SSI Frequency Table and they can get the same conclusion as the line list, which will show the total count of SSI events for each detection method.

Expand All Collapse All Search

- Outpatient Procedure Component Measures
  - SSI
    - Line Listing - All SSI Events
    - Frequency Table - All SSI Events**
    - Bar Chart - All SSI Events
    - Pie Chart - All SSI Events
    - SIR SIR - Adult All Outpatient SSI Data by Procedure
    - SIR SIR - Adult All Outpatient SSI Data by Surgeon
    - Line Listing - Outpatient Procedures Excluded from SIR

**National Healthcare Safety Network**  
**Frequency Table of All Surgical Site Infection Events**  
 As of: February 28, 2024 at 5:14 PM  
 Date Range: All OP\_SSI\_EVENTS  
 if (((procCode = "BRST" ) AND (whenDetected ~="A" ) ) )

Frequency Percent Row Pct Col Pct	Table of procCode by whenDetected		
	procCode(Procedure Code)	whenDetected(SSI Event Detected)	
		ACTIVE	PASSIVE
BRST	2 25.00 25.00 100.00	6 75.00 75.00 100.00	8 100.00
Total	2 25.00	6 75.00	8 100.00

# Summary

- Analytic tools in NHSN allows ASCs to optimize resources, enhance patient outcomes, and ultimately improve the overall delivery of healthcare services in the outpatient setting.
- There are many analysis reports found in the **Outpatient Procedure Component Measures** folder and the **Advanced** analysis folder.
- The use of a line list is a valuable tool in healthcare for organizing and tracking data and identifying patterns to help target interventions more effectively.

# Resources

- Generate Data Set
  - <https://www.cdc.gov/nhsn/pdfs/opc/opc-datasets-508.pdf>
- Filter Data by Time Period
  - <https://www.cdc.gov/nhsn/pdfs/opc/opc-filter-time-period-508.pdf>
- Modify Reports
  - <https://www.cdc.gov/nhsn/pdfs/opc/opc-modify-report-508.pdf>
- ASC Surveillance in NHSN OPC
  - <https://www.cdc.gov/nhsn/opc/ssi/index.html>



# For any questions or concerns, contact the NHSN Helpdesk using

**NHSN-ServiceNow** to submit questions to the NHSN Help Desk.

The new portal can be accessed at <https://servicedesk.cdc.gov/nhsncsp>.

Users will be authenticated using CDC's Secure Access Management Services (SAMS) the same way you access NHSN. If you do not have a SAMS login, or are unable to access ServiceNow, you can still email the NHSN Help Desk at [nhsn@cdc.gov](mailto:nhsn@cdc.gov).

**For more information please contact Centers for Disease Control and Prevention**

1600 Clifton Road NE, Atlanta, GA 30333

Telephone, 1-800-CDC-INFO (232-4636)/TTY: 1-888-232-6348

E-mail: [cdcinfo@cdc.gov](mailto:cdcinfo@cdc.gov) Web: [www.cdc.gov](http://www.cdc.gov)

The findings and conclusions in this report are those of the authors and do not necessarily represent the official position of the Centers for Disease Control and Prevention.

