

Patient Safety Component – Surgical Site Infections (PSC - SSIs)

How to Analyze Custom Procedure and Events

NHSN Acute Care Analytics Team

Division of Healthcare Quality Promotion, CDC

Goals for Today

- After the completion of this training, the PS user will be able to:
 - Identify the reports available for data analysis of custom procedures and events
 - Perform analysis of procedure and SSI event data using the custom reports
 - Review the analysis output
 - Save custom analysis reports



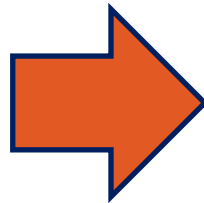
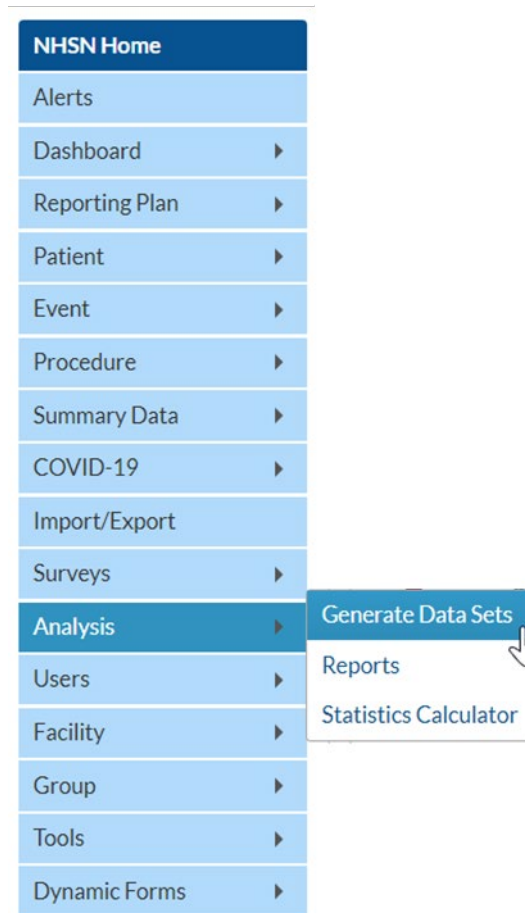
This Quick Learn is part 2 of a series on creating and analyzing custom procedures and events in the NHSN application

Custom Procedure, Events and Fields

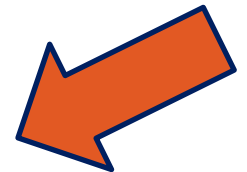
- NHSN custom data tools are surveillance resources that allow a facility to tailor its data collections needs
 - Use of these tools is **optional**
 - Custom procedures and events are off-plan reporting
 - Not benchmarking available for custom created procedures
 - SIRS can not be calculated

Running Analysis Reports in PSC

- Before running any analysis reports for NHSN component, make sure your data set is current, and generate a new data set if needed.
- The guide for generating data sets can be found at – [Generate Datasets PSC \(cdc.gov\)](https://www.cdc.gov/patient-safety/data-sets/)

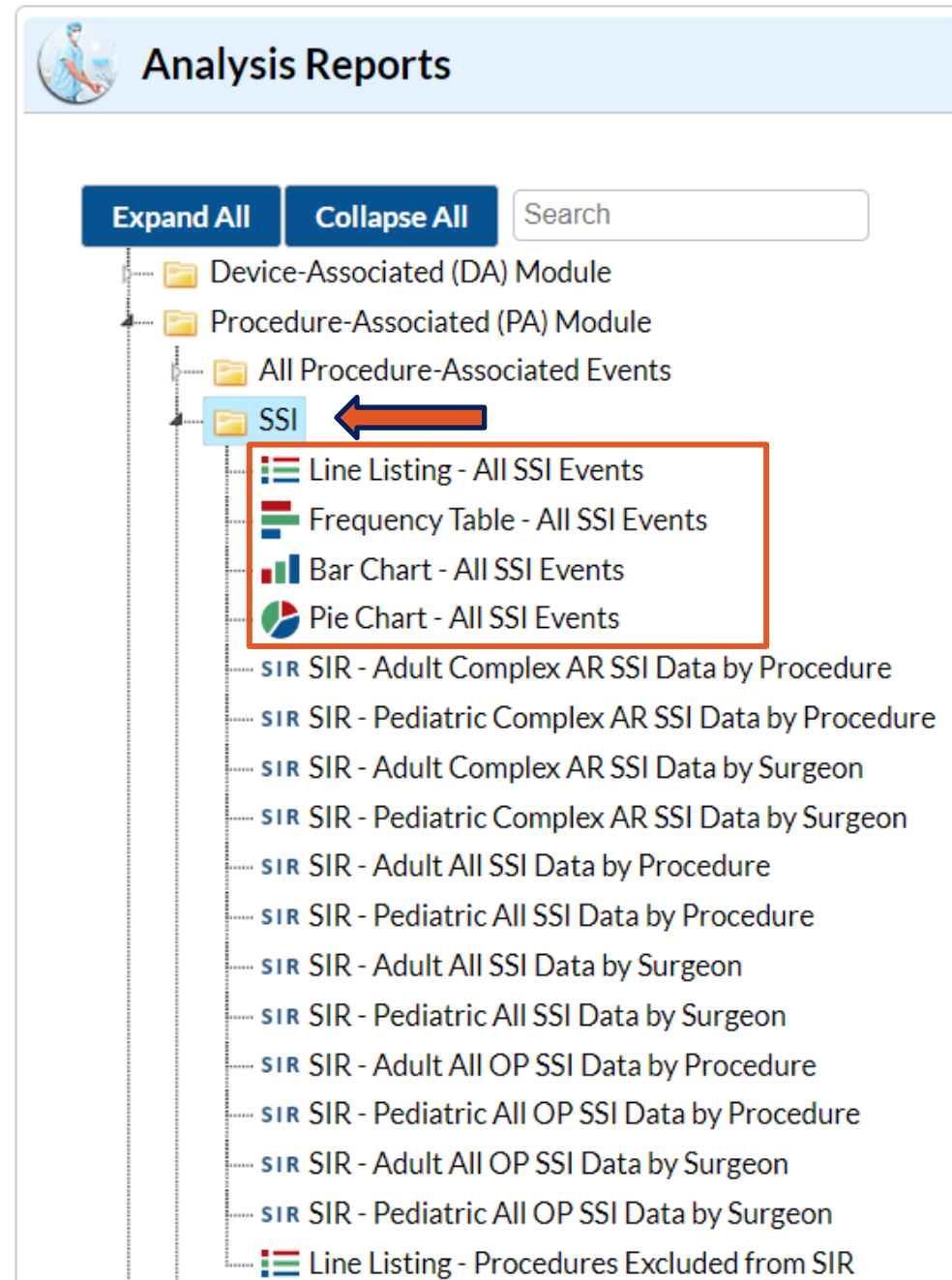
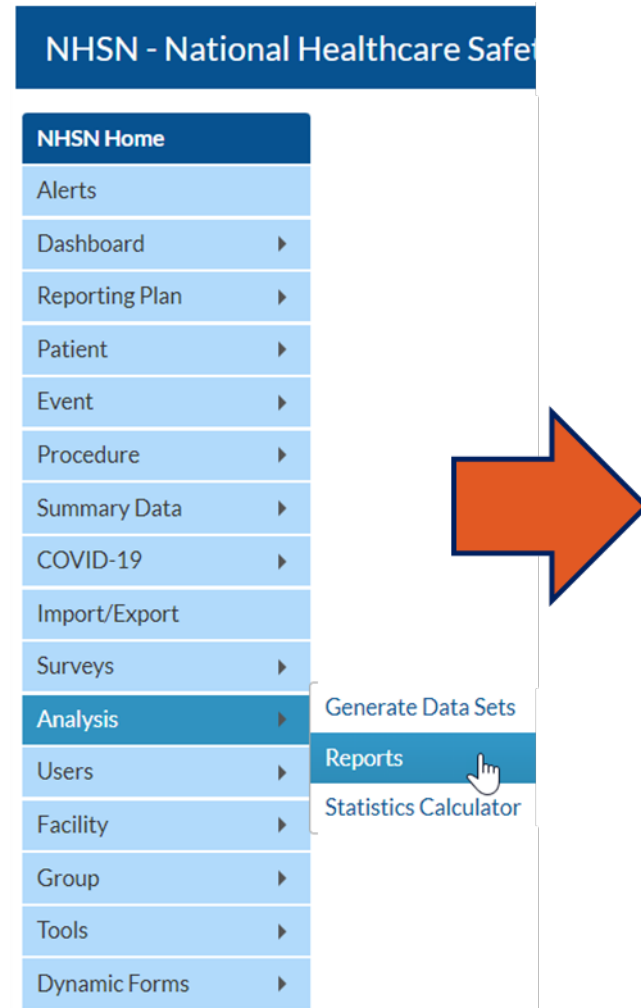


A screenshot of the 'Generate Data Sets (Patient Safety)' page. The page has a light blue header with the title 'Generate Data Sets (Patient Safety)' and a small icon of a person in a blue uniform. Below the header is a green button labeled 'Reporting Data Sets'. To the left of the main content area is a circular icon with a server rack and a gear. Below this icon is a blue button labeled 'Generate Reporting Data Sets', which is circled in orange. To the right of the icon is a section titled 'Include data for the following time period:'. This section contains two date pickers labeled 'Beginning' and 'Ending', each with a calendar icon and a dropdown menu showing '1'. To the right of the date pickers is a blue button labeled 'Clear Time Period'. Below the date pickers is a yellow box with the text 'Last Generated: March 7, 2022 10:04 AM to include data beginning 06/2018 and ending 03/2022'.



Accessing PSC Analysis Reports in NHSN

- Each **Report** option will have a drop-down menu for selection of specific report types



Additional Analysis Reports

- Additional reports can allow you to create line listings, frequency tables, and graphs based on report type
- You can also create custom reports to save as a template for future use

The screenshot displays the 'Analysis Reports' section of a software interface. At the top, there is a header with a user icon and the title 'Analysis Reports'. Below the header, there are two buttons: 'Expand All' and 'Collapse All', followed by a search bar. A list of report categories is shown, including 'Device-Associated (DA) Module', 'Procedure-Associated (PA) Module', 'HAI Antimicrobial Resistance (DA+PA Modules)', 'Antimicrobial Use and Resistance Module', 'MDRO/CDI Module - LABID Event Reporting', 'MDRO/CDI Module - Infection Surveillance', 'MDRO/CDI Module - Process Measures', 'MDRO/CDI Module - Outcome Measures', 'CMS Reports', 'TAP Reports', 'Baseline Set 1', and 'Baseline Set 2'. The 'Advanced' category is highlighted with a blue background and is enclosed in an orange rectangular box. Below 'Advanced', there is a list of sub-categories: 'Patient-level Data', 'Event-level Data', 'Procedure-level Data', 'Summary-level Data', 'Plan Data', 'Pathogen-level Data', 'Facility-level Data', 'Vendor Information', 'Data Quality', 'Historical COVID-19 Module Reports', and 'Custom Reports'. The 'Custom Reports' category is highlighted with a blue background and is enclosed in a blue rectangular box. Below 'Custom Reports', there are two more categories: 'My Custom Reports' and 'Published Reports'. An orange arrow points from the first bullet point in the text to the 'Advanced' category, and a blue arrow points from the second bullet point to the 'My Custom Reports' category.

Analysis Reports

Expand All Collapse All Search

- Device-Associated (DA) Module
- Procedure-Associated (PA) Module
- HAI Antimicrobial Resistance (DA+PA Modules)
- Antimicrobial Use and Resistance Module
- MDRO/CDI Module - LABID Event Reporting
- MDRO/CDI Module - Infection Surveillance
- MDRO/CDI Module - Process Measures
- MDRO/CDI Module - Outcome Measures
- CMS Reports
- TAP Reports
- Baseline Set 1
- Baseline Set 2
- Advanced**
 - Patient-level Data
 - Event-level Data
 - Procedure-level Data
 - Summary-level Data
 - Plan Data
 - Pathogen-level Data
 - Facility-level Data
 - Vendor Information
 - Data Quality
 - Historical COVID-19 Module Reports
 - Custom Reports
- My Custom Reports
- Published Reports

Scenario No.1

- The health department has reported an increase in the incidence of Bladder cancer in the most recent cancer report for the state. Facility A wants to see how many Radical Cystectomy (RC) procedures the hospital performed since monitoring of the procedure started.
- How can you find this information?
 - Create a custom report using the procedures data set
 - All the report types will help you answer this question

New Report

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

Analysis Data Set: Procedures ▼ Type: Frequency Table ▼ Last Generated:

Title/Format Time Period Filters Display Options

Title:
Procedures

Format:

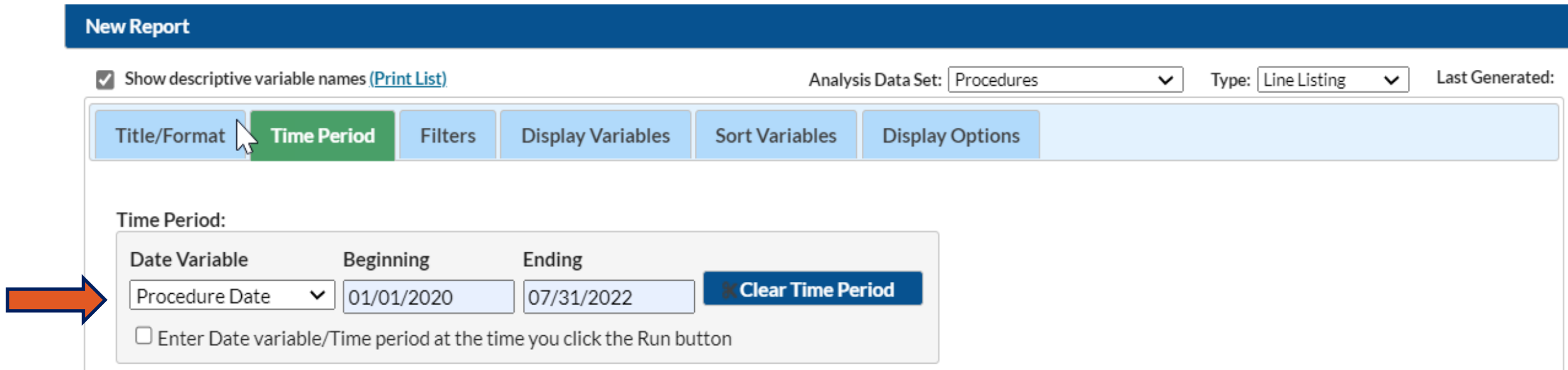
☒ html ☐ pdf ☐ xls ☐ rtf

Frequency Table
Line Listing
Bar Chart
Pie Chart

How to modify a Report: [How to Modify a Report \(cdc.gov\)](https://www.cdc.gov/data/toolkit/how-to-modify-a-report/)

Example No. 1 – Modify the Report Time Period

- Time period July 2020 through July 2022 (two years of data)



The screenshot shows the 'New Report' interface. At the top, there is a blue header bar with the text 'New Report'. Below this, there is a row of controls: a checked checkbox for 'Show descriptive variable names' with a link '(Print List)', a dropdown for 'Analysis Data Set' set to 'Procedures', a dropdown for 'Type' set to 'Line Listing', and a label 'Last Generated:'. Below these controls is a horizontal bar with several tabs: 'Title/Format', 'Time Period' (which is highlighted in green), 'Filters', 'Display Variables', 'Sort Variables', and 'Display Options'. Below the tabs, the 'Time Period' section is visible. It contains a 'Time Period:' label, a table with three columns: 'Date Variable', 'Beginning', and 'Ending'. The 'Date Variable' column has a dropdown menu with 'Procedure Date' selected. The 'Beginning' column has a text box with '01/01/2020'. The 'Ending' column has a text box with '07/31/2022'. To the right of these text boxes is a blue button with a trash icon and the text 'Clear Time Period'. Below the table is a checkbox labeled 'Enter Date variable/Time period at the time you click the Run button'. An orange arrow points to the 'Date Variable' dropdown menu.

New Report

☒ Show descriptive variable names ([Print List](#)) Analysis Data Set: Procedures Type: Line Listing Last Generated:

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

Time Period:

Date Variable	Beginning	Ending
Procedure Date	01/01/2020	07/31/2022

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

Clear Time Period

- Date variable: Search by procedure date because procedure carries the risk of infection

Example No. 1 – Add a Procedure Code Filter

- The NHSN application allows the user to filter on one or more variables to with in the analysis data set.

The screenshot shows the 'New Report' interface with the 'Filters' tab selected. The 'Analysis Data Set' is 'Procedures' and the 'Type' is 'Line Listing'. The 'Additional Filters' section shows a filter rule: 'Procedure Code' equal to 'CYST - RADICAL CYSTECTOMY - RC'. An orange arrow points to the filter rule.

New Report

☒ Show descriptive variable names ([Print List](#)) Analysis Data Set: Procedures Type: Line Listing Last Generated:

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

Additional Filters: ☐ Show ☒ Clear

AND OR Add group

AND OR Add rule

Procedure Code equal CYST - RADICAL CYSTECTOMY - RC Delete

- For this example, the procedure data set is filtered for “CYST” procedures only.

Example No. 1 - Line Listing Report Output

- Provides a list of all CYST procedures
 - Several variables can be added to the report based on user preference

**National Healthcare Safety Network
Procedures**
As of: August 29, 2022 at 12:01 PM
Date Range: PROCEDURES procDate 01/01/2020 to 07/31/2022

Procedure Code=CYST

Facility Org ID	Patient ID	Procedure Date	Procedure Code	Procedure Code Description	Sex	Age on Proc Date
10018	MD-11000	02/24/2021	CYST	CYST	M	65
10018	MD-15000	07/05/2020	CYST	CYST	M	74
10018	MD-23000	05/16/2021	CYST	CYST	M	72
10018	MD-25000	10/11/2020	CYST	CYST	M	64
10018	MD-2000	11/02/2020	CYST	CYST	M	66
10018	MD-3000	07/21/2022	CYST	CYST	M	67
10018	MD-5000	12/18/2021	CYST	CYST	M	64
10018	MD-6000	09/12/2020	CYST	CYST	M	50
10018	MD-16000	06/17/2022	CYST	CYST	M	76
10018	MD-21000	07/08/2020	CYST	CYST	M	70
10018	MD-9000	02/15/2022	CYST	CYST	M	61
10018	MD-10000	11/14/2021	CYST	CYST	M	81
10018	MD-12000	10/29/2020	CYST	CYST	M	51
10018	MD-13000	03/28/2022	CYST	CYST	M	67
10018	MD-18000	08/02/2021	CYST	CYST	M	74

Example No. 1 – Frequency Table

- Provides a summary of the CYST procedures based on user input
 - This provides the number of CYST procedures preformed in each year (2020 – 2022)

National Healthcare Safety Network

Procedures

As of: August 29, 2022 at 12:13 PM

Date Range: PROCEDURES procDateYr 2020 to 2022

if (((procCode = "CYST")))

Sex =F

Frequency	Table of procDateYr by procCode		
	procDateYr	procCode	
		CYST	Total
	2020	3	3
	2021	16	16
	2022	6	6
	Total	25	25

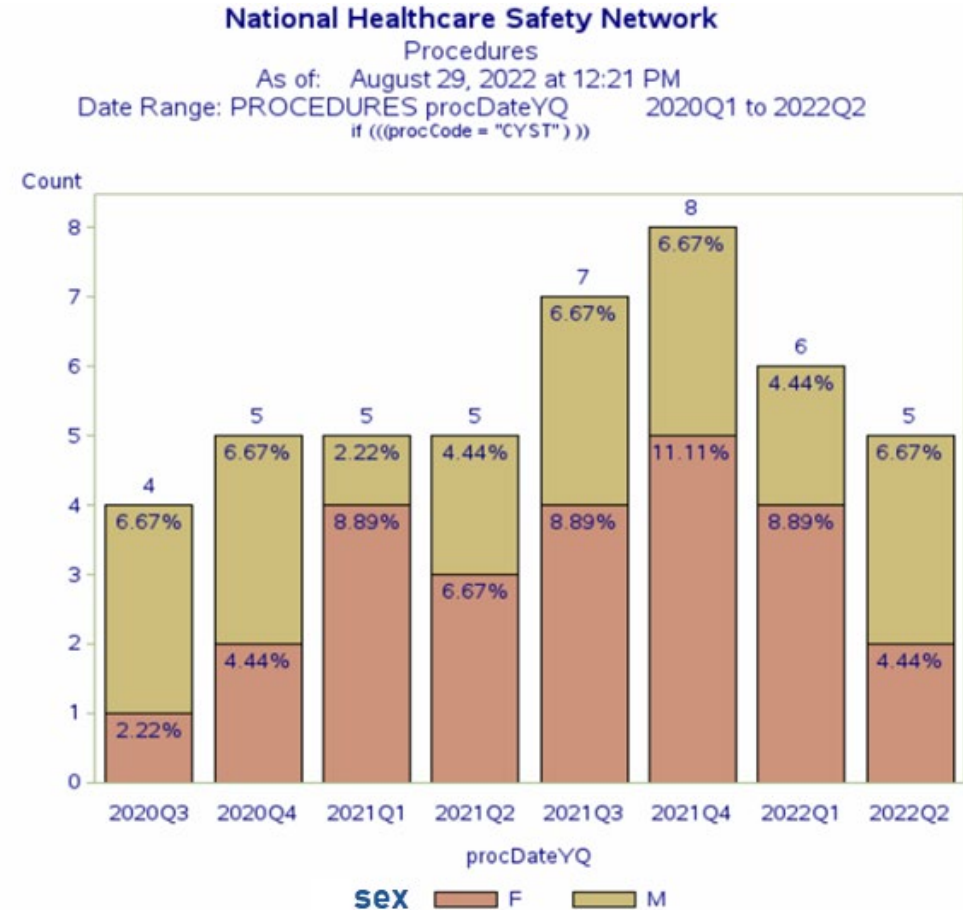
Sex =M

Frequency	Table of procDateYr by procCode		
	procDateYr	procCode	
		CYST	Total
	2020	6	6
	2021	9	9
	2022	6	6
	Total	21	21

Example No. 1 – Bar Chart

- Provides a graphic summary of the CYST procedures based on user input
 - This provides a bar chart summary of male and female CYST procedures by quarter (2020 – 2022)

Quick Reference Guide for Bar Charts -
<https://www.cdc.gov/nhsn/pdfs/ps-analysis-resources/BarCharts.pdf>



Data contained in this report were last generated on August 29, 2022 at 9:36 AM to include data beginning June 2018 through July 2022 .

Saving a Custom Report

New Report





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

Analysis Data Set: Procedures Type: Frequency Table Last Generated:

Title/Format Time Period Filters Display Options

Title:
Procedures

Format:

☒  ☐  ☐  ☐ 

Frequency Table
Line Listing
Bar Chart
Pie Chart

Run Save... Export... Close

Every report can be customized and saved for future use by clicking on the Save button

Scenario No.2

- After reviewing your data for CYST procedures, you want to know how many has an SSI event linked to the procedure.
- How can you find this information?
 - Create a custom report using the SSI_Events data set
 - All the report types can help you answer this question

New Report

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

Analysis Data Set: SSI_Events

Type: Line Listing

Last Generated:

Title/Format

Time Period

Filters

Display Variables

Sort Variables

Display Options

Title:

SSI_Events

Format:

html

pdf

xls

rtf

How to modify a Report: [How to Modify a Report \(cdc.gov\)](https://www.cdc.gov/data/toolkit/how-to-modify-a-report/)

Example No. 2 - Line Listing Report Output

- Provides a list of all patients that had a CYST procedure linked with an SSI event
 - Several variables can be added to the report based on user preference

National Healthcare Safety Network

SSI_Events

As of: August 29, 2022 at 1:18 PM

Date Range: SSI_EVENTS procDateYr 2020 to 2022

if (((procCode = "CYST")))

Procedure Code=CYST

Patient ID	sex	Event ID	Procedure Code	Procedure Year	Procedure Date	Event Date	Days: Procedure to Event	Event Type	Abscess?	Pain or tenderness?
MD-12000	M	111555	CYST	2020	10/29/2020	11/15/2020	18	SSI	Y	Y
MD-24000	M	111556	CYST	2021	07/09/2021	08/01/2021	24	SSI	Y	Y
MD-5000	M	111554	CYST	2021	12/18/2021	01/04/2022	18	SSI	Y	Y
MD-40000	F	111557	CYST	2022	01/28/2022	02/11/2022	15	SSI	Y	Y
MD-50000	F	111558	CYST	2022	06/21/2022	07/05/2022	15	SSI	Y	Y

In Summary

- Reports such as line listings, frequency tables and graphical charts can be used to analyze patterns in the data
- Analysis reports to provide insight into trends for prevention initiatives



Thank you for viewing this 2022 NHSN Quick Learn presentation!

- Please submit any questions about the content of the presentation to NHSN@cdc.gov

Additional NHSN training resources:
<https://www.cdc.gov/nhsn/training/>

Training Questions – NHSNTrain@cdc.gov