

## Patient Safety Component How to Add and Analyze Custom Procedure and Events

Jennifer Donnelly, MPH

NHSN Acute Care Analytics Team, Division of Healthcare Quality Promotion

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### **Goals for Today**

- This training will provide an overview of NHSN Custom Reporting
- After the completion of this training, you will be able to:
  - Create a Custom Procedure
  - Produce a Custom Event
  - Locate reports available for data analysis
  - Perform analysis of procedure and SSI event data
  - Save custom analysis reports

### **NHSN Defined Procedures and Events – Patient Safety**

January 2023 Procedure-associated Module
SSI Events

### Table 1. Surgical Site Infection Criteria

Criterion	Surgical Site Infection (SSI)							
	Superficial incisional SSI	Γ						
	Must meet the following criteria:							
	Date of event occurs within 30 days following the NHSN operative p							
	(where day 1 = the procedure date)							
	AN							
	in NHSN Defined Events	ision						
	AND							
	patient has at least <u>one</u> of the following:							
	<ul> <li>a. purulent drainage from the superficial inc</li> </ul>							
	<ul> <li>b. organism(s) identified from an aseptically</li> </ul>							
	from the superficial incision or subcutant							
	culture based microbiologic testing meth	od which is performed fo						
	purposes of clinical diagnosis or treatmer							
	Surveillance Culture/Testing [ASC/AST]).	A						

January 2023 Procedure-associated Module
SSI Events

Table 2. Surveillance Periods for SSI Following Selected NHSN Operative Procedure Categories. Day 1 = the date of the procedure.

30-day Surveillance											
Category	Operative Procedure	Category	Operative Procedure								
AAA	Abdominal aortic aneurysm repair	LAM	Laminectomy								
AMP	Limb amputation LTP Liver transplant										
APPY	Appendix: NILICAL OBORO	tivo									
AVSD	Shunt for NHSN Operative										
BILI	Bile duct, I Procedure Ca	ategori	<b>es</b> y								
CEA	Carotid endarterectomy	PRST	Prostate surgery								
CHOL	Gallbladder surgery	REC	Rectal surgery								
COLO	Colon surgery	SB	Small bowel surgery								
CSEC	Cesarean section	SPLE	Spleen surgery								
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### **NHSN Defined Procedures and Events**

What if your facility wants to report and analyze data for procedures that are not an NHSN defined procedure?

 Answer – Create a custom procedure that fits your reporting needs in NHSN.

### **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 and must be defined by the facility
- The facility should define their own criteria prior to creating custom options

Custom procedure	<ul> <li>Not an NHSN procedure</li> <li>Not included in Monthly Reporting Plan Off-plan reporting</li> </ul>					
Custom event	No NHSN Event criteria					
Custom field	<ul><li>Not an NHSN variable</li><li>May be added to an NHSN defined procedure</li></ul>					
There is not benchmarking available for custom created procedures.  SIRS can not be calculated						

# Creating a New Procedure – Radical Cystectomy (RC)

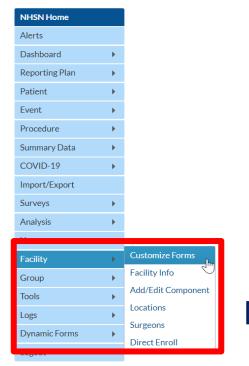
 Cystectomy is a procedure that removes the bladder for treatment of invasive bladder cancer

 An incision is made through the abdomen to remove the bladder and, potentially, other organs and affected tissue

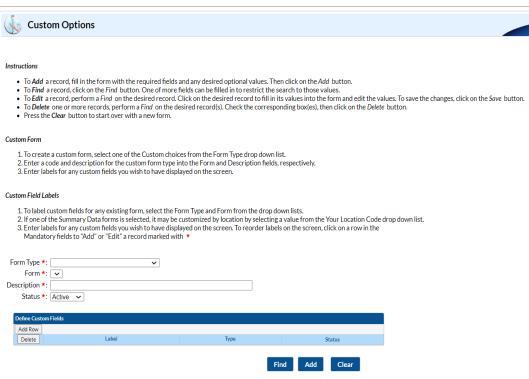
 A 2016 Mayo clinic study found that 12.7% of patients that underwent an RC procedure were diagnosed with a postoperative SSI infection within 30 days

### **Custom Options Function (PSC)**

- Accessed from the NHSN Facility side menu by access custom forms
- The page provides instructions and options for new variables, procedures and events that you can add

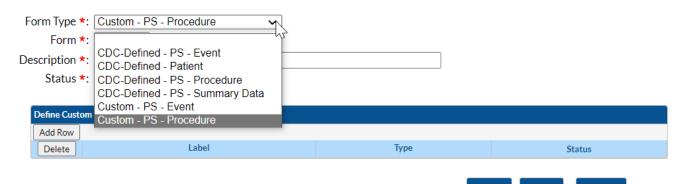






### **Selecting the Appropriate Form**

- 1) Selecting form type
  - a) CDC-Defined options are for adding new variables to existing CDC events and Procedures (example: COLO procedure, SSI event)
  - b) Custom indicates you want to create a new procedure category or event type that does not exist in the PSC
  - c) We want to add a <u>"Custom-PS-Procedure"</u> and <u>"CDC-Defined-PS-Event"</u> for this presentation.



Find

Clear

### **Creating a New Procedure**

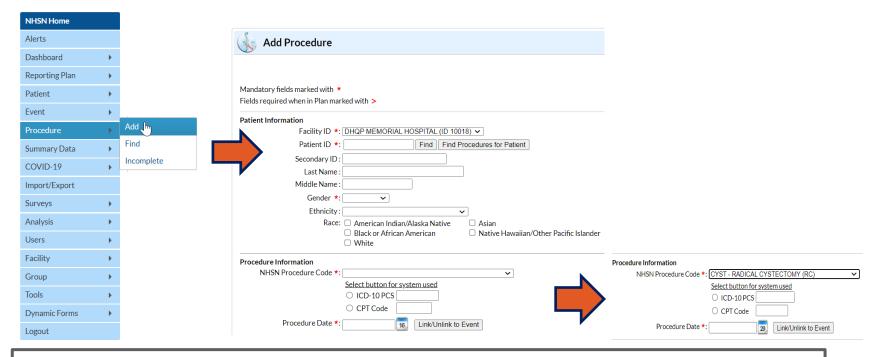
- 2) Enter a Form: User defined code to assign your procedure
- Enter a description: Detailed name of the procedure you are creating
- 4) Keep status <u>"Active"</u> for procedures

Form Type \*: Custom - PS - Procedure Form \*: CYST Description \*: Status \*: . ~ Form Type \*: Custom - PS - Procedure Form \*: CYST Description \*: RADICAL CYSTECTOMY (RC) Status \*: Active V Form Type \*: Custom - PS - Procedure Form \*: CYST Description \*: RADICAL CYSTECTOMY (RC) Status ★: Active ✓ Find Clear

Remember to click to Add Button

### **Creating a New Procedure (cont.)**

Quality check to see if the new procedure category can be used



Follow the same steps to manually add individual procedure records

https://www.cdc.gov/nhsn/pdfs/training/2022/SSI-Reporting-508.pdf

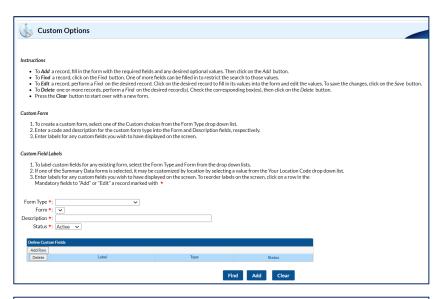
### **Creating a New SSI Event (PSC)**

- Similar process as creating a new procedure
  - For events additional details are added to an already existing event form (SSI event)
- For this presentation, a new field will be added to indicate if urine leakage was responsible for an Intra-abdominal infection that can be linked to the newly created procedure <u>Radical Cystectomy (RC)</u>

# Creating a New SSI Event (cont.)

Start on the <u>"Customize Forms"</u> page:

- Select the form type for the new field – CDC – Defined-PS -Event
- Assign the new field to an existing form
- 3) Enter a description that clearly describes the field
- 4) Ensure the status is set to active.

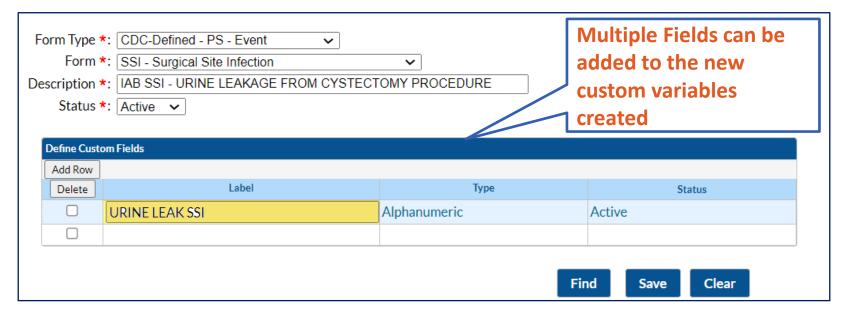


Form Type *:	CDC-Defined - PS - Event
Form *:	<b>▼</b>
Description *:	
Status *:	Active 🗸

Form Type *:	CDC-Defined - PS - Event
Form *:	SSI - Surgical Site Infection
Description *:	IAB SSI - URINE LEAKAGE FROM CYSTECTOMY PROCEDURE
Status *:	Active 🗸

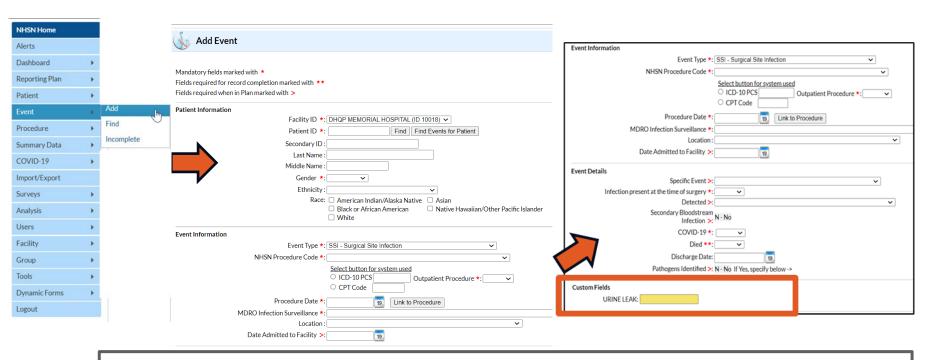
### **Creating a New SSI Event (cont.)**

- 5) Add a label to the field. This will be the label that appears on the form.
- 6) Select the type of variable (alpha-numeric, numeric, or date)
- Save the newly created field



### **Creating a New SSI Event (continued)**

Check to see if the new field is added to the event form



Follow the same steps to manually add individual event records
 https://www.cdc.gov/nhsn/pdfs/training/2022/SSI-Reporting-508.pdf

### **Import Custom Procedure File**

- Option to add multiple procedure records at once
- Data must be imported with a header row and the header names must match the variable names as they appear in the template file
- Must be uploaded via .cvs file
- Required fields must be completed in order to upload the file successfully
  - CPT codes are not required for custom procedures, but encouraged

patID	gender	dob	Medicare ID		Proc CPTC	Proc Date	Proc Duratio nHr	Proc Duratio nMin	Sw Class	asa	scope	Surgeo n Code	anestnesi	Ht Feet	Ht Inches	Wt English	diabetes	custom1
001534	F	5/24/53	2345671M	CSY		2/15/22	5	37	CC	2	Υ	5698	Υ	5	2	147	N	Υ
004558	М	9/16/43	3456892M	CSY		5/9/22	6	7	CC	2	Υ	7623	Υ	6	0	197	y	Υ

Follow the same steps to import .cvs files for the patient safety component <a href="https://www.cdc.gov/nhsn/pdfs/ps-analysisresources/ImportingProcedureData.pdf">https://www.cdc.gov/nhsn/pdfs/ps-analysisresources/ImportingProcedureData.pdf</a>

### **Resources for Importing Custom Files**

- Found on the PSC SSI website
  - Instructions on how to import SSI event data
  - (Importing Patient Safety Procedure Data (cdc.gov))
- Import template file to add procedures to
  - Provides example of how data is entered in a .cvs file format

	patID	gender	dob	Medicare ID		Proc CPTC	Proc Date	Proc Duration Hr	Proc Duration Min	Sw Class	asa	scope	Surgeon Code	anesthesia	<u>Ht</u> Feet	Ht Inches	Wt English	diabetes	custom1
	001534	F	5/24/53	2345671M	CSY		2/15/22	5	37	СС	2	Υ	5698	Υ	5	2	147	N	Υ
L	004558	M	<u>0/16/43</u>	3456892M	CSY		5/9/22	6	7	CO.	2	Y	7623	V	6		197		- V

### Supporting Materials

NHSN Organism List (All Organisms, Common Commensals, MBI Organisms, and UTI Bacteria) – June 2022 [XLS – 560 KB]

Sample Procedure Import File 🏚 [XLSX – 25 KB]

How to Import Patient
Safety Procedure Data,
January 2020

[PDF − 400 KB]

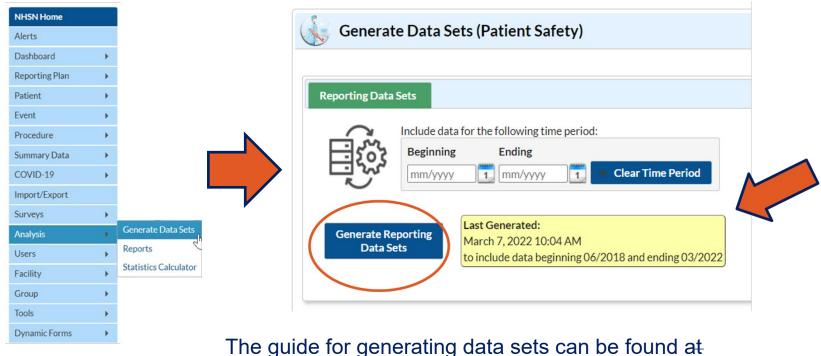
### **Create and Add Custom Procedure Wrap-Up**

- ✓ Custom procedures and events are great tools to use for facilities that perform procedures outside of the NHSN defined procedure categories.
- ✓ Custom procedures are not NHSN defined procedure categories and cannot be part of in-plan reporting.
- ✓ Multiple fields can be added to existing forms (SSI Events, Procedure Forms, etc.).
- ✓ Custom procedures can be added individually or imported via a .csv file.
- ✓ Records for custom procedures and events can be analyzed in NHSN Analysis Reports.

# How to Access and Run Analysis Reports in the Patient Safety Component (PSC)

### **Running Analysis Reports in PSC**

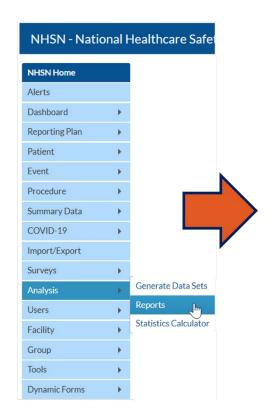
Before running any analysis reports for NHSN component, make sure your data set is current, and generate a new data set if needed.

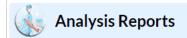


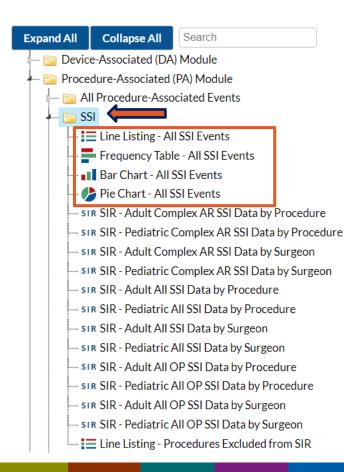
Generate Datasets PSC (cdc.gov)

## Accessing PSC Analysis Reports in NHSN

 Each <u>Report</u> option will have a dropdown menu for selection of specific report types

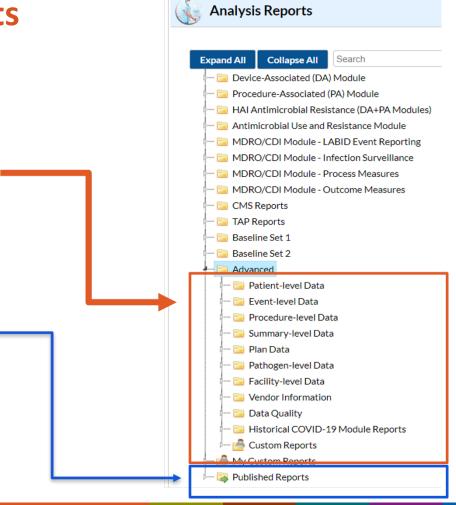






### **Additional Analysis Reports**

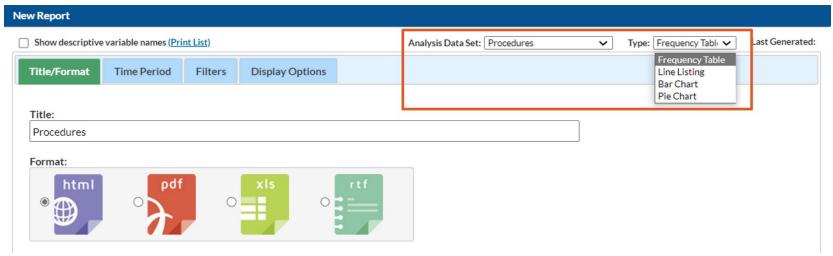
- Additional reports can allow you to create line listings, frequency tables, and graphs based on report type
- You can also create custom reports to save as a template for future use



### **Analysis Report Examples**

### Scenario No.1

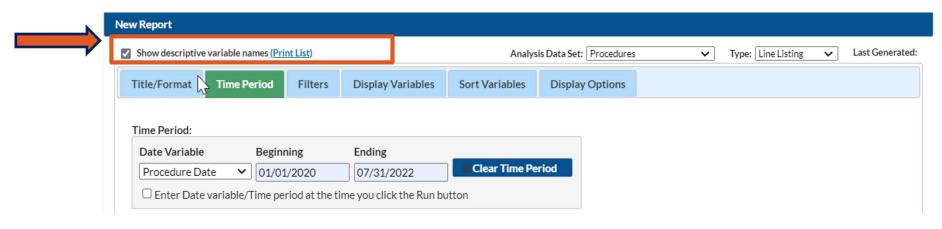
- The health department has reported in increase in the incidence of Bladder cancer in the most recent cancer report for the state. Facility A wants to see how many Radical Cystectomy (RC) procedures the hospital performed since monitoring of the procedure started.
- How can you find this information?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



How to modify a Report: How to Modify a Report (cdc.gov)

### Example No. 1 – Modify the Report Time Period

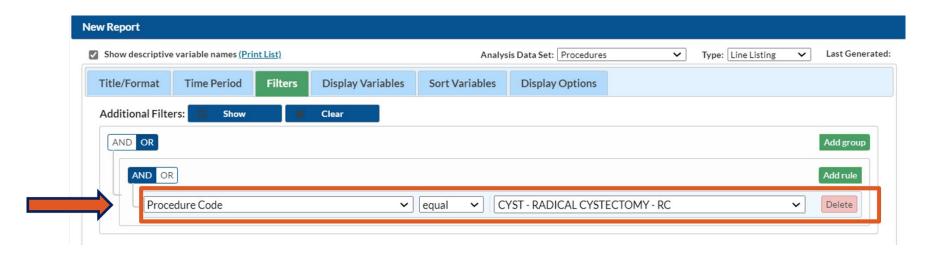
Time period July 2020 through July 2022 (two years of data)



- Show descriptive variable names + variable labels on the report
  - ProcDateYQ = procedure date year quarter
- Date variable: Search by procedure date because <u>procedure carries the risk of infection</u>

### Example No. 1 – Add a Procedure Code Filter

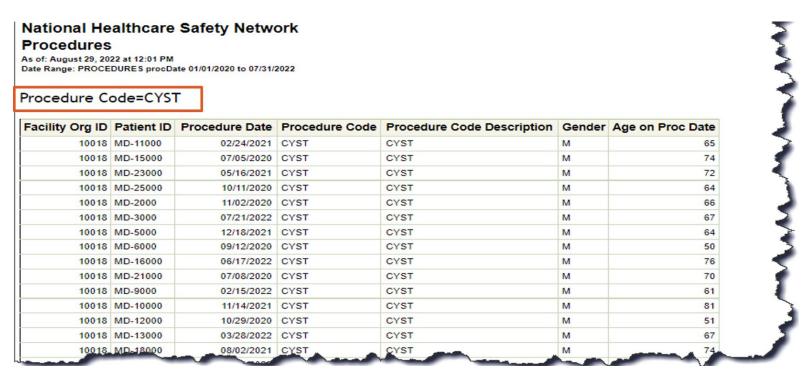
 The NHSN application allows the user to filter on one or more variables to with in the analysis data set.



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



Quick reference guide for Line List Reports https://www.cdc.gov/nhsn/pdfs/ps-

### 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")))

### gender=F

Frequency

Table of procDa	teYr by pro	ocCode						
	procCode							
procDateYr	CYST	Total						
2020	3	3						
2021	16	16						
2022	6	6						
Total	25	25						

### gender=M

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

Quick Reference Guide on Frequency Table https://www.cdc.gov/nhsn/pdfs/ps-analysis-resources/frequencytables.pdf

### 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

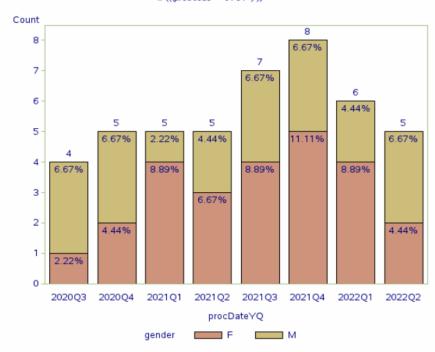
#### National Healthcare Safety Network

Procedures

As of: August 29, 2022 at 12:21 PM

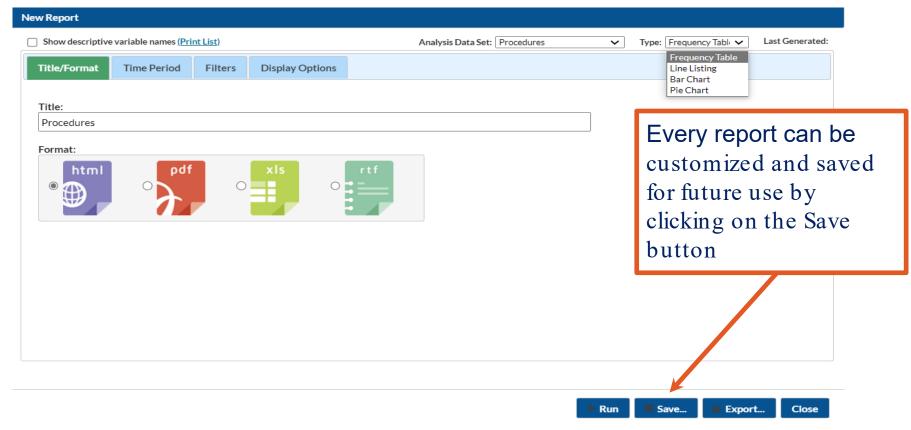
Date Range: PROCEDURES procDateYQ 2020Q1 to 2022Q2

If (((procCode = "CYST") ))



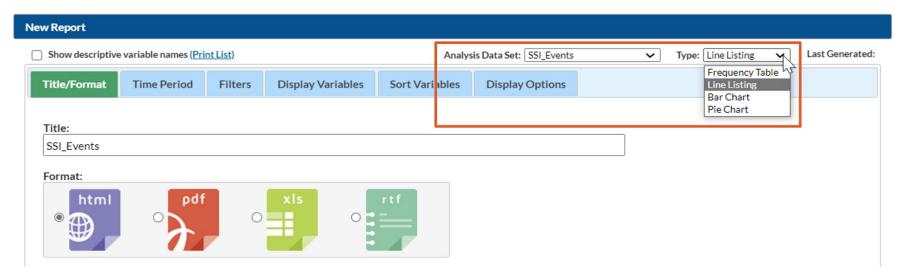
Data contained in this report were last generated on August 29, 2022 at 9:36 AM to include data beginning June 2018 through July 2022

### **Saving a Custom Report**



### 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



How to modify a Report: How to Modify a Report (cdc.gov)

### **Example No. 1- Line Listing Report Output**

- Provides a list of all patients that had an 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	Gender	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	Υ	Υ
MD-24000	M	111556	CYST	2021	07/09/2021	08/01/2021	24	SSI	Υ	Y
MD-5000	M	111554	CYST	2021	12/18/2021	01/04/2022	18	SSI	Υ	Υ
MD-40000	F	111557	CYST	2022	01/28/2022	02/11/2022	15	SSI	Υ	Υ
MD-50000	F	111558	CYST	2022	06/21/2022	07/05/2022	15	SSI	Υ	Υ

### **In Summary**

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

### References

- 1. U.S. Cancer Statistics Working Group. U.S. Cancer Statistics Data Visualizations Tool, based on 2021 submission data (1999-2019): U.S. Department of Health and Human Services, Centers for Disease Control and Prevention and National Cancer Institute; <a href="www.cdc.gov/cancer/dataviz">www.cdc.gov/cancer/dataviz</a>, released in June 2022.
- 2. Parker WP, Tollefson MK, Heins CN, Hanson KT, Habermann EB, Zaid HB, Frank I, Thompson RH, Boorjian SA. Characterization of perioperative infection risk among patients undergoing radical cystectomy: Results from the national surgical quality improvement program. Urol Oncol. 2016 Dec;34(12):532.e13-532.e19. doi: 10.1016/j.urolonc.2016.07.001. Epub 2016 Aug 5. PMID: 27503783.
- 3. Brown KG, Solomon MJ, Latif ER, Koh CE, Vasilaras A, Eisinger D, Sved P. Urological complications after cystectomy as part of pelvic exenteration are higher than that after cystectomy for primary bladder malignancy. J Surg Oncol. 2017 Mar;115(3):307-311. doi: 10.1002/jso.24511. Epub 2016 Nov 18. PMID: 27859276.
- 4. Centers for Disease Control and Prevention, N. C. (2023, January 20). *Patient Safety Analysis Resources*. Retrieved from https://www.cdc.gov/nhsn/ps-analysis-resources/index.html

### **Questions or Need Help?**

# For any questions or concerns, contact the NHSN Helpdesk at <a href="mailto:nhsn@cdc.gov">nhsn@cdc.gov</a>

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: <a href="mailto:cdcinfo@cdc.gov">cdcinfo@cdc.gov</a> Web: <a href="mailto:www.cdc.gov">www.cdc.gov</a>

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.

