

Introduction to NHSN Analysis for the Patient Safety Component *(Own Your Data!)*

March 2012

Objectives

- ❑ **Review reasons for analyzing your NHSN data**
- ❑ **Describe the dataset generation process**
- ❑ **Discuss the structure of the analysis output options tree view**
- ❑ **Explain standard output options**
- ❑ **Illustrate basic modifications to standard output options**
- ❑ **Describe how data can be exported from NHSN**

Why Analyze?

- ❑ **Analysis tools within NHSN help facilitate internal validation activities.**
- ❑ **Reports generated from NHSN can help inform prioritization and success of prevention activities.**
- ❑ **Data entered into NHSN may be used by: CDC, CMS, your state health department*, your corporation*, special study groups*, etc.**
- ❑ **At the end of the day, these are YOUR data – you should know your data better than anyone else.**
- ❑ **Take ownership and discover how your data can tell a story about your facility!**

*dependent on membership to groups in NHSN and facility's acceptance of conferred rights to data.

GENERATING DATASETS

Generating Datasets

- ❑ **Generating datasets is the first step in performing analysis in NHSN**
 - Organizes data into defined sets for analysis
 - Copies and freezes data
 - Allows for quicker generation of reports
 - When analyzing data in NHSN, you are using a *copy* of your data, not the live database
- ❑ **Each user has his/her own analysis datasets**
 - Based on a user's rights
- ❑ **May take several minutes to complete this process**
- ❑ **You may navigate or leave NHSN while datasets are generating**

Generating Datasets

The screenshot shows the NHSN web application interface. At the top left is the CDC logo. The header includes the text "Department of Health and Human Services" and "Centers for Disease Control and Prevention". Below this is the "NHSN - National Healthcare Safety Network" banner with navigation links for "NHSN Home", "My Info", "Contact us", "Help", and "Log Out".

The left sidebar contains a navigation menu with the following items: NHSN Home, Reporting Plan, Patient, Event, Procedure, Summary Data, Import/Export, Analysis (with sub-items: Generate Data Sets, Output Options, Statistics Calculator), Surveys, Users, Facility, Group, and Log Out.

The main content area is titled "Generate Data Sets" and includes a "HELP" icon. Below the title is the heading "Generate Patient Safety Analysis Data Sets". A table with two columns, "Date Last Generated" and "Action", is displayed. The table contains one row with the date "Dec 19 2011 7:52AM" and a "Generate New" button. Below the table, there is a paragraph of text: "Clicking the 'Generate New' button will schedule your data set generation. You may log out or continue to work in other areas of NHSN. When you return to this screen you will see a progress bar if still processing, otherwise, you will see a time completed." and a "Back" button.

- ❑ To generate datasets, navigate to **Analysis > Generate Datasets**.
- ❑ On the **Generate Datasets** screen, you may see either "Not Generated" or a date and time under "Date Last Generated".

Generating Datasets

Department of Health and Human Services
Centers for Disease Control and Prevention

NHSN - National Healthcare Safety Network

Logged into DHQP Memorial Hospital (ID 10000) as MAGGIE.
Facility DHQP Memorial Hospital (ID 10000) is following the PS component.

Generate Data Sets

HELP

Generate Patient Safety Analysis Data Sets

Date Last Generated	Action
Dec 19 2011 7:52AM	<input type="button" value="Generate New"/>

Clicking the "Generate New" button will log you out or continue to work in other applications. You will see a progress bar if still processing. Once completed, you will see a progress bar if still processing.

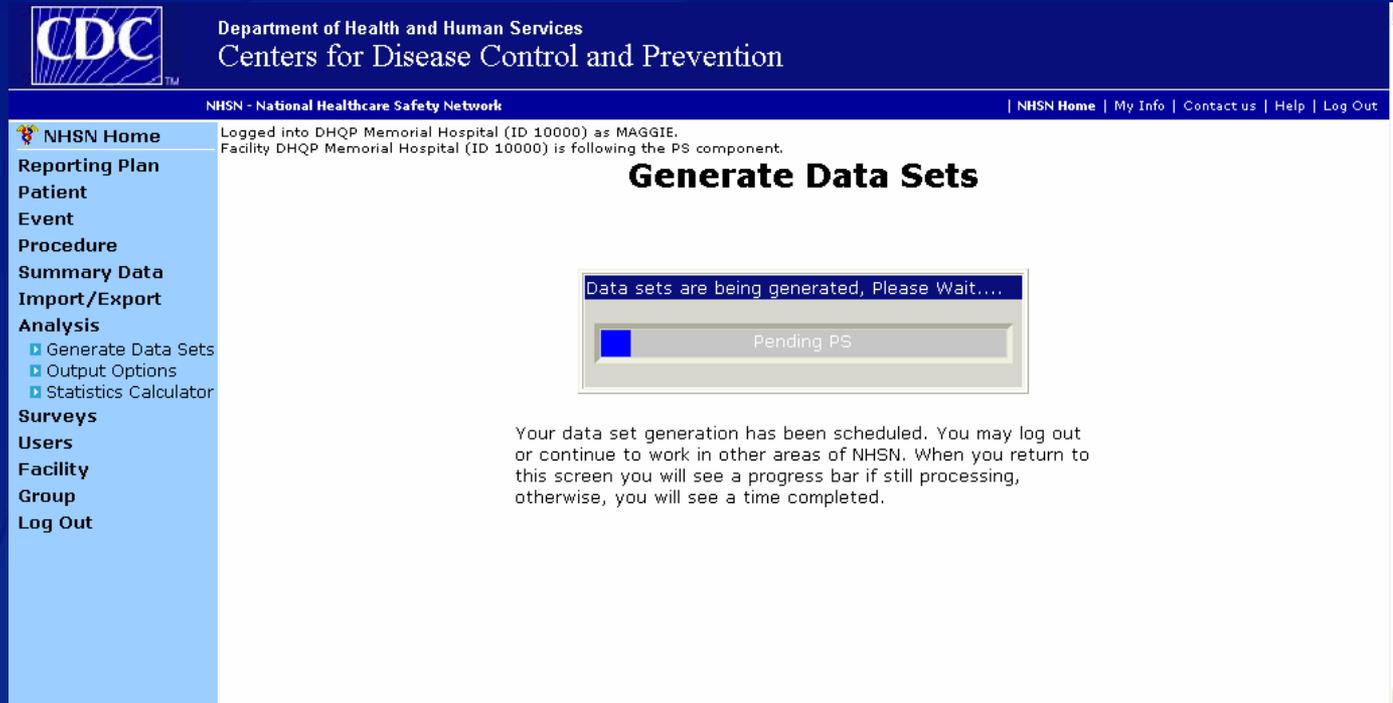
Message from webpage

The current data sets will be overwritten.
Are you sure you want to continue?

OK Cancel

- ❑ On the “Generate Datasets” screen, click the ‘Generate New’ button.
- ❑ Once clicked, you will be asked to confirm that existing datasets will be overwritten. Click ‘OK’.

Generating Datasets



The screenshot shows the NHSN interface. At the top left is the CDC logo. The header text reads "Department of Health and Human Services" and "Centers for Disease Control and Prevention". Below this is a navigation bar with "NHSN - National Healthcare Safety Network" on the left and "NHSN Home | My Info | Contact us | Help | Log Out" on the right. A left-hand menu lists various options: NHSN Home, Reporting Plan, Patient, Event, Procedure, Summary Data, Import/Export, Analysis (with sub-items: Generate Data Sets, Output Options, Statistics Calculator), Surveys, Users, Facility, Group, and Log Out. The main content area is titled "Generate Data Sets" and shows a message box that says "Data sets are being generated, Please Wait...." with a progress bar below it labeled "Pending PS". Below the progress bar, a paragraph of text states: "Your data set generation has been scheduled. You may log out or continue to work in other areas of NHSN. When you return to this screen you will see a progress bar if still processing, otherwise, you will see a time completed."

- ❑ While datasets are generating, you'll see a blue progress bar advance as the process continues.
- ❑ You may leave this screen or even leave NHSN while this process is taking place.

Generating Datasets

CDC Department of Health and Human Services
Centers for Disease Control and Prevention

NHSN - National Healthcare Safety Network | NHSN Home | My Info | Contact us | Help | Log Out

Logged into DHQP Memorial Hospital (ID 10000) as MAGGIE.
Facility DHQP Memorial Hospital (ID 10000) is following the PS component.

Generate Data Sets

[HELP](#)

Generate Patient Safety Analysis Data Sets

Date Last Generated	Action
Dec 20 2011 10:30AM	<input type="button" value="Generate New"/>

Clicking the "Generate New" button will schedule your data set generation. You may log out or continue to work in other areas of NHSN. When you return to this screen you will see a progress bar if still processing, otherwise, you will see a time completed.

- ❑ Once the dataset generation process is complete, the "Date Last Generated" will be updated.
- ❑ You are now ready to analyze data!

ANALYSIS OUTPUT OPTIONS

Analysis Output Options

- ❑ After datasets are generated, you are ready to analyze your data in NHSN**
- ❑ Reports are referred to as “Output Options”**
- ❑ Output options are organized in a “tree view” that will guide you toward the data you wish to analyze**

Analysis Output Options

The screenshot shows the NHSN (National Healthcare Safety Network) interface. At the top left is the CDC logo. The header text reads "Department of Health and Human Services" and "Centers for Disease Control and Prevention". Below this is a navigation bar with "NHSN - National Healthcare Safety Network" and links for "NHSN Home", "My Info", "Contact us", "Help", and "Log Out". The main content area is titled "Patient Safety Component" and "Analysis Output Options". It features two buttons: "Expand All" and "Collapse All". Below these buttons is a tree view of output options organized into folders:

- Device-Associated Module
- Procedure-Associated Module
- MDRO/CDI Module - Infection Surveillance
- MDRO/CDI Module - LABID Event Reporting
- MDRO/CDI Module - Process Measures
- MDRO/CDI Module - Outcome Measures
- Vaccination Module
- Advanced
- My Custom Output
- Published Output

The left sidebar contains a navigation menu with the following items: NHSN Home, Reporting Plan, Patient, Event, Procedure, Summary Data, Import/Export, Analysis (with sub-items: Generate Data Sets, Output Options, Statistics Calculator), Surveys, Users, Facility, Group, and Log Out.

- ❑ To access the output options tree view, navigate to **Analysis > Output Options**.
- ❑ The output options are organized into folders, first by module (e.g., **Device-associated Module**)

Analysis Output Options

Patient Safety Component
Analysis Output Options

Expand All Collapse All

- Device-Associated Module
 - All Device-Associated Events
 - Central Line-Associated BSI
 - Ventilator-Associated PNEU
 - Urinary Catheter-Associated UTI
 - Central Line Insertion Practices
 - Dialysis Events
- Procedure-Associated Module
- MDRO/CDI Module - Infection Surveillance
- MDRO/CDI Module - LABID Event Reporting
- MDRO/CDI Module - Process Measures
- MDRO/CDI Module - Outcome Measures
- Vaccination Module

- As you click on the folder for each module, the folder will expand to show you the event-level options within that folder.

Analysis Output Options

Patient Safety Component
Analysis Output Options

Expand All Collapse All

- Device-Associated Module
 - All Device-Associated Events
 - Central Line-Associated BSI
 - CDC Defined Output
 - Line Listing - All CLAB Events
 - Frequency Table - All CLAB Events
 - Bar Chart - All CLAB Events
 - Pie Chart - All CLAB Events
 - Rate Table - CLAB Data for ICU-Other
 - Run Chart - CLAB Data for ICU-Other
 - Rate Table - UCAB/CLAB Data for NICU
 - Run Chart - UCAB/CLAB Data for NICU
 - Rate Table - CLAB Data for SCA
 - Run Chart - CLAB Data for SCA
 - SIR - In-Plan CLAB Data
 - SIR - All CLAB Data

- Then, each of the event-level folders can be expanded to show the various output options available for your use.
- Click "Run" next to any output option to obtain your data in a CDC-Defined output (report).

Analysis Output Options

□ Line Lists

- Allows for record-level review of data
- Helpful in pinpointing issues in data validity/quality
- Can help inform rates or identify trends
- Most customizable type of output from NHSN

National Healthcare Safety Network CLABSI Events

As of: January 17, 2012 at 11:01 AM

Date Range: CLAB_EVENTS evntDateYr 2011 to 2011

Event ID	Date of Birth	Gender	Fac Admission Date	Event Date	Event Type	Specific Event	Location	Days: Admit to Event	Age on Event Date
234800	09/13/1954	F	02/09/2011	02/11/2011	BSI	LCBI	MICU	3	56
234771	06/15/1956	F	03/20/2011	03/22/2011	BSI	LCBI	71ICU	3	54
234801	07/22/1976	M	02/02/2011	02/05/2011	BSI	LCBI	MICU	4	34
234747	05/13/1953	F	01/31/2011	02/03/2011	BSI	LCBI	71ICU	4	57
234818	09/21/1973	F	01/09/2011	01/12/2011	BSI	LCBI	MICU	4	37
158848	09/13/1942	F	06/10/2011	06/13/2011	BSI	LCBI	MICU	4	68
234802	01/21/2000	F	01/05/2011	01/08/2011	BSI	LCBI	MICU	4	10
234749	09/21/1974	M	03/18/2011	03/21/2011	BSI	LCBI	71ICU	4	36

Analysis Output Options

□ Frequency Tables

- Allows you to obtain counts of records meeting certain criteria
- Example: How many CAUTIs were reported as ABUTI?
- Example: What is the distribution of ASA Score for each of our colon surgery procedures?
- Can also perform chi-square analyses for statistical comparisons

National Healthcare Safety Network

CAUTI Events

As of: January 17, 2012 at 11:04 AM

Date Range: CAU_EVENTS evntDateYr 2011 to 2011

Frequency Percent Row Pct Col Pct	Table of evntDateYQ by spcEvent		
	evntDateYQ(Event~Yr/Qtr)	spcEvent(Specific Event)	
	ABUTI	SUTI	Total
2011Q1	2	3	5
	18.18	27.27	45.45
	40.00	60.00	
	50.00	42.86	
2011Q2	2	4	6
	18.18	36.36	54.55
	33.33	66.67	
	50.00	57.14	
Total	4	7	11
	36.36	63.64	100.00

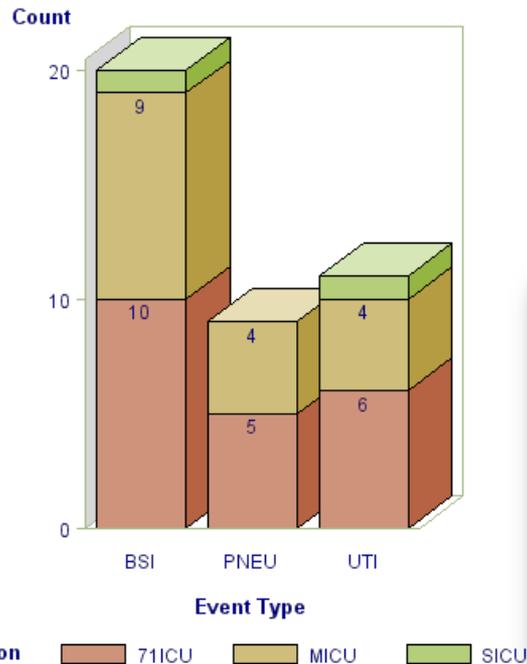
Analysis Output Options

National Healthcare Safety Network

All Device-Associated Events

As of: January 17, 2012 at 11:09 AM

Date Range: DA_EVENTS evntDateYr 2011 to 2011



Bar Charts & Pie Charts

- Graphical report of counts of records meeting certain criteria (think of these as a graphical representation of the frequency table)
- Example: How many CLABSI events occurred in each ICU?
- NOTE: These options do not graphically present rates or standardized infection ratios.

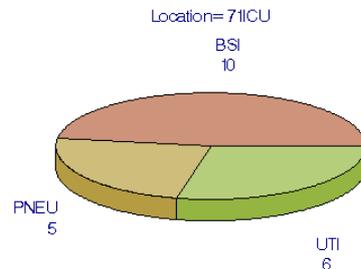
National Healthcare Safety Network

All Device-Associated Events

As of: January 17, 2012 at 11:12 AM

Date Range: DA_EVENTS evntDateYr 2011 to 2011

FREQUENCY of eventType



Analysis Output Options

□ Rate Tables

- Display your facility's calculated rates and device-utilization ratios (where appropriate)
- If available, provide NHSN published pooled means and the comparison of your facility's rates and ratios to the pooled means
- Descriptions of rates can be found in the event-specific chapters of the NHSN Manual

National Healthcare Safety Network
Rate Table for Central Line-Associated BSI Data for ICU-Other
 As of: January 17, 2012 at 11:18 AM
 Date Range: CLAB_RATESICU summaryYr 2011 to 2011

Org ID=10018 CDC Location=IN:ACUTE:CC:CT

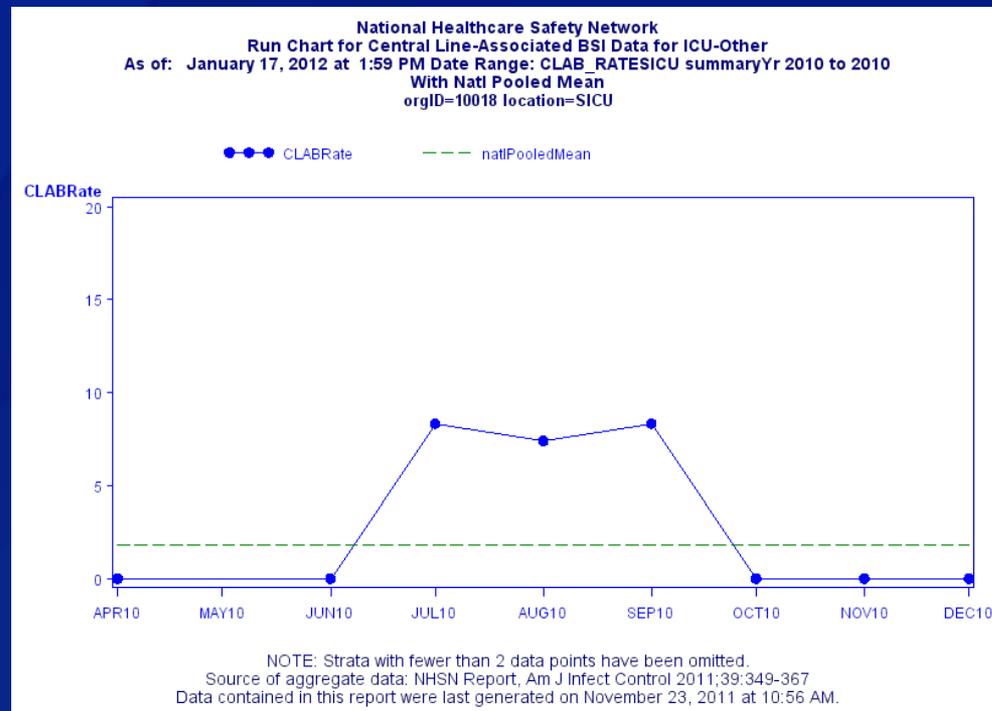
Location	Summary Yr/Qtr	months	CLA BSI Count	Central Line Days	CLA BSIRate	NHSN CLAB Pooled Mean	Incidence Density p-value	Incidence Density Percentile	Patient Days	CL Util Ratio	NHSN Line DU Pooled Mean	Proportion p-value	Proportion Percentile
711ICU	2011Q1	3	6	730	8.219	1.2	0.0003	100	1300	0.562	0.71	0.0000	30
711ICU	2011Q2	2	2	420	4.762	1.2	0.0880	99	1025	0.410	0.71	0.0000	9

Source of aggregate data: NHSN Report, Am J Infect Control 2011;39:349-367
 Data contained in this report were last generated on November 23, 2011 at 10:56 AM.

Analysis Output Options

□ Run Charts

- Allow you to graph rates and device-utilization ratios over time
- Can include NHSN pooled mean and/or other defined reference line



Analysis Output Options

□ Standardized Infection Ratios (SIRs)

- Risk-adjusted summary measure
- Available for CAUTI, CLABSI, and SSI data
- Details can be found in the SIR Newsletter, available at: http://www.cdc.gov/nhsn/PDFs/Newsletters/NHSN_NL_OCT_2010SE_final.pdf

National Healthcare Safety Network

SIR for All Central Line-Associated BSI Data - By OrgID

As of: January 17, 2012 at 2:03 PM

Date Range: CLAB_RATESALL summaryYr 2011 to 2011

orgid=10018

orgid	summaryYH	infCount	numExp	numCLDays	SIR	SIR_pval	SIR95CI
10018	2011H1	17	3.755	2232	4.527	0.0000	2.636, 7.249

If infCount in this table is less than you reported, aggregate data are not available to calculate numExp.

Lower bound of 95% Confidence Interval only calculated if infCount > 0. SIR values only calculated if numExp >= 1.

SIR excludes those months and locations where device days are missing or 0 device days were reported.

Source of aggregate data: NHSN Report, Am J Infect Control 2009;37:783-805

Data contained in this report were last generated on November 23, 2011 at 10:56 AM.

MODIFYING YOUR OUTPUT

Modify Output

- ❑ **All output options can be modified/customized to meet your needs**
- ❑ **Modifications can be saved as “templates” (referred to as Custom Output Options)**
 - Custom output options allow you to run the same modifications on updated datasets
 - RECOMMENDED!!
- ❑ **You can modify output options by changing the output format, changing the title, and filtering your data by multiple criteria**

Modify Output: The Design Modification Screen

- The design modification screen can be described in three main sections...

Line Listing

Analysis Data Set: CLAB_Events [Export Analysis Data Set](#)

Modify Attributes of the Output:

Last Modified On: 11/23/2011

Output Type: **Line Listing**

Output Name:

Output Title:

Select output format:

Output Format:

Use Variable Labels

Select a time period or Leave Blank for Cumulative Time Period:

Date Variable Beginning Ending [Clear Time Period](#)

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

Specify Other Selection Criteria:

[Show Criteria](#) [Column +](#) [Row +](#) [Clear Criteria](#)

| <input type="text" value=""/> |
|-------------------------------|-------------------------------|-------------------------------|-------------------------------|-------------------------------|
| | | | | |
| | | | | |
| | | | | |
| | | | | |

Other Options: [Print Variable Reference List](#)

Modify Variables To Display By Clicking: [Modify List](#)

Specify Sort Variables By Clicking: [Modify List](#)

Select Page by variable:

[Run](#) [Save As](#) [Reset](#) [Back](#) [Export Output Data Set](#)

Design Modification Screen

- ❑ The top section is the same for all output options and allows you to modify output characteristics, such as output name, title, and format.
- ❑ **TIP: The default output format is HTML. Make sure that your browser allows pop-ups from *.cdc.gov!**

Line Listing

Analysis Data Set: CLAB_Events

Modify Attributes of the Output:

Last Modified On: 11/23/2011

Output Type: Line Listing

Output Name:

Output Title:

Select output format:

Output Format:

Use Variable Labels

Design Modification Screen

- ❑ The middle section is the same for all output options and allows you to specify which data will be considered for the output.
- ❑ You can filter by time period, as well as location, specific event type, etc.

Select a time period or Leave Blank for Cumulative Time Period:

Date Variable Beginning Ending

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

Specify Other Selection Criteria:

[Show Criteria](#) [Column +](#) [Row +](#) [Clear Criteria](#)

| <input type="checkbox"/> |
|--------------------------|--------------------------|--------------------------|--------------------------|--------------------------|
| | | | | |
| | | | | |
| | | | | |
| | | | | |
| | | | | |

Design Modification Screen

- ❑ The bottom section allows you to specify how the data in the output will be displayed and organized.
- ❑ These options vary by output type.

Line Lists

Other Options:

Modify Variables To Display By Clicking: [Modify List](#)

Specify Sort Variables By Clicking: [Modify List](#)

Select Page by variable:

Frequency Table

Other Options:

Selected Variables to include in output:

Row: Column: Page by:

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

Rates and SIRs

Other Options:

Group by:

Modifying Output

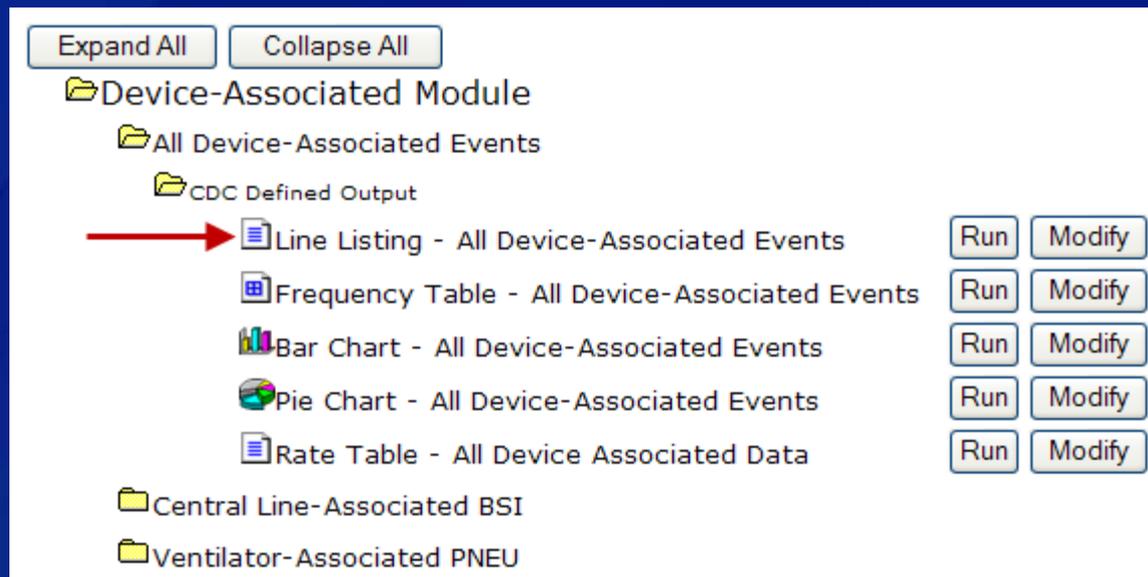
REAL WORLD EXAMPLE

Device-associated Infection Line List

- ❑ Let's say you would like a list of all of the device-associated (DA) infections that your facility has reported to NHSN for the time period January – June 2011. You would like one table per ICU location and you need the list sorted by event date. Additionally, you would like to include the specific event type reported for each infection.
- ❑ You also suspect that you will need this line list on more than one occasion, for different time periods, and would like to save this as a custom report.

DA Line List

- ❑ On the Analysis Output Options screen, open the following folders: Device-associated Module > All Device-associated Events > CDC Defined Output.
- ❑ Click “Modify” next to the ‘Line Listing – All Device-associated Events’.



DA Line List

- ❑ **In the top section of the design modification screen, you would like to change the output name and title.**
- ❑ **WHY?**
 - The output name will help distinguish this as a custom output option.
 - The output title will help describe the data contained in the output and will appear in the header section.

DA Line List

- For this example, both the output name and the output title have been changed to: “Line Listing – All ICU Device-Associated Events”

Modify Attributes of the Output:

Last Modified On: **11/23/2011**

Output Type: **Line Listing**

Output Name:

Output Title:

Select output format:

Output Format:

Use Variable Labels

DA Line List

Modify Attributes of the Output:

Last Modified On: **11/23/2011**

Output Type: **Line Listing**

Output Name:

Output Title:

Select output format:

Output Format:

Use Variable Labels

- ❑ **Still in the top section, you can change the output format. The default format is HTML, indicating that the output will open in a second browser window.**
 - Additional output formats will be discussed later!
- ❑ **You may also wish to use Variable Labels, as we have done here **(RECOMMENDED!)** This option will provide more descriptive column headings to your output. Example: patID (the variable name) will appear as Patient ID (the variable label).**

DA Line List

- ❑ **Next, you can select a time period for your output.**
- ❑ **Note that there are multiple date variables available, depending on the output option type.**
 - For example, on an event line list, you can filter your time period on the date the event occurred (event date), admission date, or discharge date (if reported).

Select a time period or Leave Blank for Cumulative Time Period:

Date Variable	Beginning	Ending	
evntDateYM ▾	01/2011	06/2011	Clear Time Period

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

DA Line List

- ❑ Each date variable has multiple options with which to specify your time period.
- ❑ For example, if you wanted to filter on event date for the calendar year 2011, the following options are available:

Date Variable	Description	Example Format: Beginning	Example Format: Ending
eventDate	Exact date	01/01/2011	12/31/2011
evntDateYH*	Half-year (6-months)	2011H1	2011H2
evntDateYQ*	Quarter	2011Q1	2011Q4
evntDateYM	Month	01/2011	12/2011
evntDateYr*	Year	2011	2011

*NOTE: YH, YQ, and Yr date variables refer to calendar years. Use exact date or YM date variables if a fiscal year time period is needed.

DA Line List

- ❑ For this example, you are interested in events occurring in January – June 2011.
- ❑ While we have specified evntDateYM, we could have also used: evntDate, evntDateYH, or evntDateYQ.

Select a time period or Leave Blank for Cumulative Time Period:

Date Variable	Beginning	Ending	
evntDateYM 	01/2011	06/2011	Clear Time Period

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

DA Line List

- ❑ Remember, you are also interested in running this same line list in the future, but for different time periods.
- ❑ **TIMESAVER TIP:** Check the box next to “Enter Date variable/time period at the time you click the Run button”
- ❑ **WHY?**
 - When these changes are saved as a custom output option, you will be able specify a new time period without going to the design modification screen!

Select a time period or Leave Blank for Cumulative Time Period:

Date Variable	Beginning	Ending	
evntDateYM <input type="button" value="v"/>	<input type="text" value="01/2011"/>	<input type="text" value="06/2011"/>	<input type="button" value="Clear Time Period"/>

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

DA Line List

Specify Other Selection Criteria:

[Show Criteria](#) [Column +](#) [Row +](#) [Clear Criteria](#)

locationType			

- ❑ For this example, you need only those DA events identified in your ICUs.
- ❑ In the first drop-down box in the criteria grid, you can select the variable locationType. This variable will allow you to easily include all ICUs.

DA Line List

Specify Other Selection Criteria:

[Show Criteria](#) [Column +](#) [Row](#)

locationType	▼	

Specify an operator and value(s) for selection criteria:

<u>Variable</u>	<u>Operator</u>	<u>Value(s)</u>
locationType	= ▼	▼

Save Clear Close

- ❑ Once a variable is selected, click in the cell directly below the drop-down box.
- ❑ You'll be shown a gray pop-up window, where you can specify an operator and a value or group of values.

DA Line List

- ❑ The operator allows you to define the range of values that should be included. All of the operators are defined in the table below:

Operator	Description	Operator	Description
=	Equal to	~=	Not equal to
>	Greater than	>=	Greater than or equal to
<	Less than	<=	Less than or equal to
In	In a set of defined values	~in	Not in a set of defined values
Between	Within a range of a values		

DA Line List

Specify Other Selection Criteria:

[Show Criteria](#) [Column +](#) [Row +](#) [Clear Criteria](#)

locationType	▼	

Specify an operator and value(s) for selection criteria:

<u>Variable</u>	<u>Operator</u>	<u>Value(s)</u>
locationType	=	CC-CC

Save Clear Close

- ❑ For this example, “CC-CC” was selected as the value, as it will include all critical care/ICU designated locations.
- ❑ Once the value has been selected, be sure to click “Save”

DA Line List

- ❑ Once the criteria are saved, they appear in the criteria grid.

Specify Other Selection Criteria:

[Show Criteria](#) [Column +](#) [Row +](#) [Clear Criteria](#)

locationType			
= CC			

- ❑ **BUT...what if you need to specify multiple criteria?**
 - EXAMPLE: All DA Events in ICU locations that were identified within 7 days of admission.

DA Line List

- ❑ *EXAMPLE: All DA Events in ICU locations that were identified within 7 days of admission.*
- ❑ **Each row in the criteria grid is treated as a single statement/formula.**
- ❑ **In this “What If?” example, you can specify the second criteria in the second column, on the first row.**

Specify Other Selection Criteria:

[Show Criteria](#) [Column +](#) [Row +](#) [Clear Criteria](#)

locationType	admToEvtDays		
= CC	<= 7		

DA Line List

- ❑ **TIP!** You can always check your criteria by using the “Show Criteria” link above the criteria grid.
- ❑ In this example, your data will include only those DA events where the location type is a CC AND the number of days between admission and event is 7 days.

Specify Other Selection Criteria:

[Show Criteria](#) [Column +](#) [Row +](#) [Clear Criteria](#)

locationType	admToEvtDays
= CC	<= 7

Selection Criteria

((locationType = "CC") AND (admToEvtDays <= "7"))

[Back](#)

DA Line List

- ❑ Back to our original example...
- ❑ Once the criteria have been selected, you can specify other options for the display of your output.

Specify Other Selection Criteria:

[Show Criteria](#) [Column +](#) [Row +](#) [Clear Criteria](#)

locationType			
= CC			

Other Options:

Modify Variables To Display By Clicking: [Modify List](#)

Specify Sort Variables By Clicking: [Modify List](#)

Select Page by variable:

DA Line List

- ❑ The first option allows you to specify which variables will *appear* in the line list.
- ❑ Click “Modify List” to add or remove variables on your line list.

Other Options:

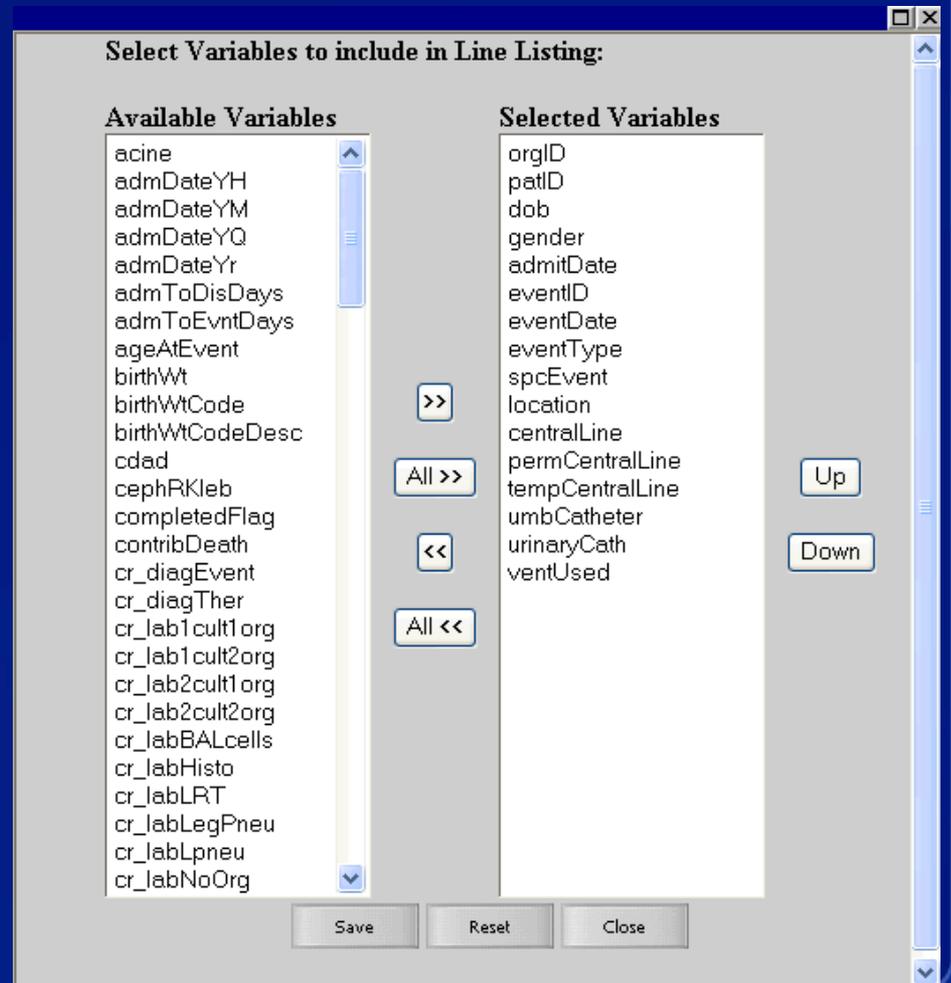
Modify Variables To Display By Clicking: [Modify List](#)

Specify Sort Variables By Clicking: [Modify List](#)

Select Page by variable: 

DA Line List

- ❑ **The gray pop-up window that appears will have two columns:**
 - “Available Variables” is a list of all of the variables in the analysis dataset.
 - “Selected Variables” is a list of variables that will appear in your line list.
- ❑ **Variables can be moved from one column to the other by selecting a variable in the column and clicking one of the buttons between the two columns.**



DA Line List

- ❑ In this example, you need to make sure that the specific event type (spcEvent) and location are in the “Selected Variables” list.
- ❑ Other variables could be added, depending on your needs. For example:
 - Days from admission to event (admToEvntDays)
 - If NICU data, patient’s birthweight (birthWt)
- ❑ Once changes are made, remember to click “Save”!

Select Variables to include in Line Listing:

Available Variables	Selected Variables
acine	orgID
admDateYH	patID
admDateYM	dob
admDateYQ	gender
admDateYr	admitDate
admToDisDays	eventID
admToEvntDays	eventDate
ageAtEvent	eventType
birthWt	spcEvent
birthWtCode	location
birthWtCodeDesc	centralLine
cdad	permCentralLine
cephRkleb	tempCentralLine
completedFlag	umbCatheter
contribDeath	urinaryCath
cr_diagEvent	ventUsed
cr_diagTher	
cr_lab1cult1org	
cr_lab1cult2org	
cr_lab2cult1org	
cr_lab2cult2org	
cr_labBALcells	
cr_labHisto	
cr_labLRT	
cr_labLegPneu	
cr_labLpneu	
cr_labNoOrg	

Buttons: >>, <<, All >>, All <<, Up, Down, Save, Reset, Close

DA Line List

- ❑ The second option allows you to specify which variable(s) will be used to sort the line list.
- ❑ Click “Modify List” to specify “Sort” variables for your line list.

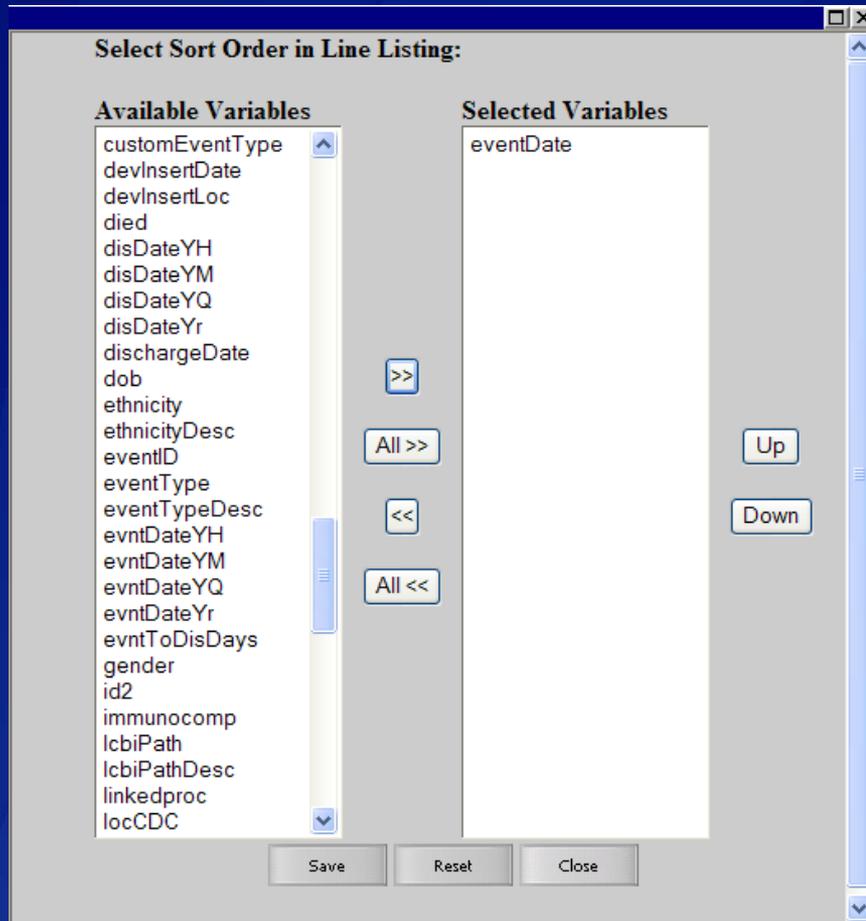
Other Options:

Modify Variables To Display By Clicking: [Modify List](#)

Specify Sort Variables By Clicking: [Modify List](#)

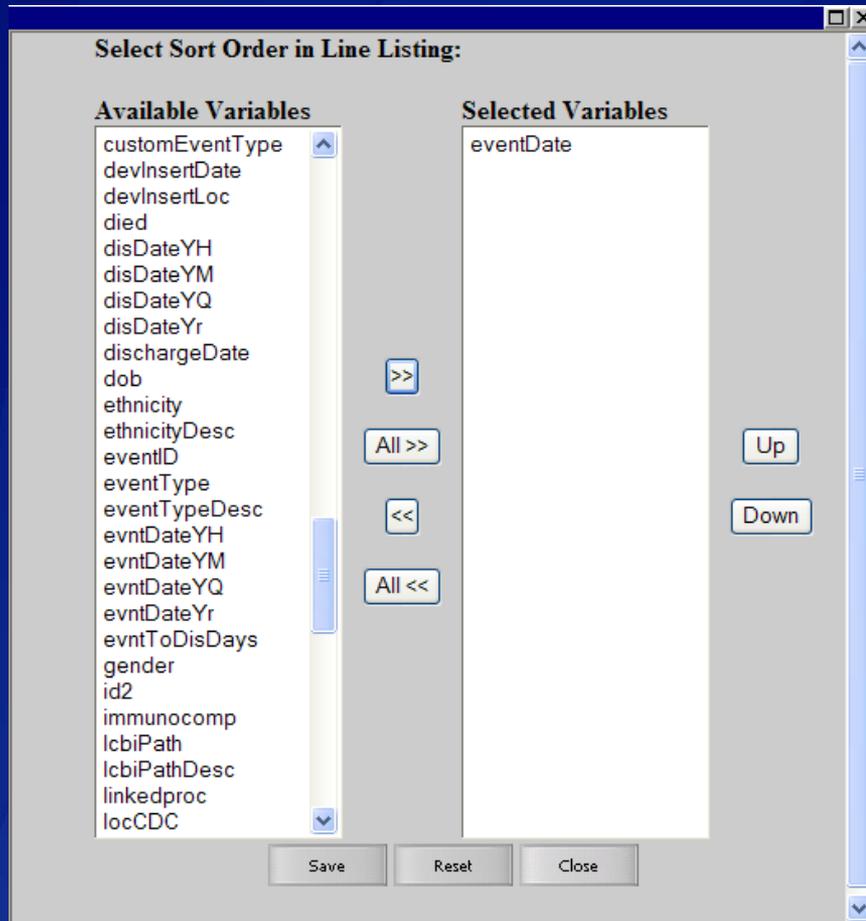
Select Page by variable: 

DA Line List



- **Again, the gray pop-up window that appears will have two columns:**
 - “Available Variables” is a list of all of the variables in the analysis dataset.
 - “Selected Variables” is a list of variables that will be used to sort your line list.
- **Variables can be moved from one column to the other by selecting a variable in the column and clicking one of the buttons between the two columns.**

DA Line List



- ❑ In this example, the line list needs to be sorted on event date.
- ❑ You can sort on more than one variable, depending on your needs.
- ❑ If sorting, remember to include the sort variable(s) in the line list (previous step).
- ❑ Once changes are made, remember to click "Save"!

DA Line List

- ❑ **The third option allows you to specify which variable to use as a “Page By” variable.**
 - “Page By” means that there will be one table per value of that variable.
- ❑ **For this example, there should be one line list per ICU, so the variable location has been selected as our “Page By” variable.**

Other Options:

Modify Variables To Display By Clicking: [Modify List](#)

Specify Sort Variables By Clicking: [Modify List](#)

Select Page by variable:

DA Line List

- ❑ To obtain your modified line list, click “Run” at the bottom of the screen.

Other Options:

[Print Variable Reference List](#)

Modify Variables To Display By Clicking: [Modify List](#)

Specify Sort Variables By Clicking: [Modify List](#)

Select Page by variable: 

Run

Save

Save As

Reset

Back

Publish

Export Output
Data Set

DA Line List RESULTS

- Here are the partial results. Notice that the output heading section contains the time period included in this report (evntDateYM 2011M01 to 2011M06)

National Healthcare Safety Network
Line Listing for All ICU Device-Associated Events
 As of: January 23, 2012 at 3:44 PM
 Date Range: DA_EVENTS evntDateYM 2011M01 to 2011M06

Location=71ICU

Patient ID	Date of Birth	Gender	Fac Admission Date	Event ID	Event Date	Event Type	Specific Event	Location	Central Line?	Tunneled Central Line	Nontunneled Central Line	Umbilical Catheter?	Urinary Catheter	Ventilator?
12120380	08/01/2010	F	01/05/2011	234794	01/08/2011	UTI	SUTI	71ICU					INPLACE	
9782078	08/17/1902	F	01/14/2011	234783	01/17/2011	PNEU	PNU1	71ICU						Y
PKM7182647	06/12/1942	F	12/27/2010	234711	01/28/2011	BSI	LCBI	71ICU	Y					
02320380	02/18/1987	F	01/28/2011	234795	01/29/2011	UTI	SUTI	71ICU					REMOVE	
023840830	05/13/1953	F	01/31/2011	234747	02/03/2011	BSI	LCBI	71ICU	Y					
120837	06/17/1976	M	02/09/2011	234793	02/11/2011	UTI	ABUTI	71ICU					INPLACE	
1281028301	06/19/1958	M	02/20/2011	234778	02/25/2011	PNEU	PNU2	71ICU						Y
0137070	06/13/1925	F	03/05/2011	234791	03/08/2011	PNEU	PNU3	71ICU						Y
07089H56476	08/18/1925	F	03/06/2011	234757	03/10/2011	BSI	LCBI	71ICU	Y					
2810829	06/27/1969	F	03/15/2011	234748	03/20/2011	BSI	LCBI	71ICU	Y					
9820K081	09/21/1974	M	03/18/2011	234749	03/21/2011	BSI	LCBI	71ICU	Y					
2970273120	06/15/1956	F	03/20/2011	234771	03/22/2011	BSI	LCBI	71ICU	Y					
0389034987	01/15/1993	M	03/22/2011	234780	03/23/2011	PNEU	PNU3	71ICU						Y
1045	04/05/1949	M	08/31/2000	19067	04/12/2011	BSI	LCBI	71ICU	Y					

DA Line List RESULTS

- The location is also listed above the table (in this example, location = 71ICU). This is the result of using the "Page By" option.

National Healthcare Safety Network
Line Listing for All ICU Device-Associated Events
 As of: January 23, 2012 at 3:44 PM
 Date Range: DA_EVENTS evntDateYM 2011M01 to 2011M06

Location=71ICU

Patient ID	Date of Birth	Gender	Fac Admission Date	Event ID	Event Date	Event Type	Specific Event	Location	Central Line?	Tunneled Central Line	Nontunneled Central Line	Umbilical Catheter?	Urinary Catheter	Ventilator?
12120380	08/01/2010	F	01/05/2011	234794	01/08/2011	UTI	SUTI	71ICU					INPLACE	
9782078	08/17/1902	F	01/14/2011	234783	01/17/2011	PNEU	PNU1	71ICU						Y
PKM7182647	06/12/1942	F	12/27/2010	234711	01/28/2011	BSI	LCBI	71ICU	Y					
02320380	02/18/1987	F	01/28/2011	234795	01/29/2011	UTI	SUTI	71ICU					REMOVE	
023840830	05/13/1953	F	01/31/2011	234747	02/03/2011	BSI	LCBI	71ICU	Y					
120837	06/17/1976	M	02/09/2011	234793	02/11/2011	UTI	ABUTI	71ICU					INPLACE	
1281028301	06/19/1958	M	02/20/2011	234778	02/25/2011	PNEU	PNU2	71ICU						Y
0137070	06/13/1925	F	03/05/2011	234791	03/08/2011	PNEU	PNU3	71ICU						Y
07089H56476	08/18/1925	F	03/06/2011	234757	03/10/2011	BSI	LCBI	71ICU	Y					
2810829	06/27/1969	F	03/15/2011	234748	03/20/2011	BSI	LCBI	71ICU	Y					
9820K081	09/21/1974	M	03/18/2011	234749	03/21/2011	BSI	LCBI	71ICU	Y					
2970273120	06/15/1956	F	03/20/2011	234771	03/22/2011	BSI	LCBI	71ICU	Y					
0389034987	01/15/1993	M	03/22/2011	234780	03/23/2011	PNEU	PNU3	71ICU						Y
1045	04/05/1949	M	08/31/2000	19067	04/12/2011	BSI	LCBI	71ICU	Y					

DA Line List RESULTS

- In addition, the column headings in this line list are descriptive (e.g., Date of Birth). This is the result of specifying the use of variable labels.

National Healthcare Safety Network Line Listing for All ICU Device-Associated Events

As of: January 23, 2012 at 3:44 PM

Date Range: DA_EVENTS evntDateYM 2011M01 to 2011M06

Location=71ICU

Patient ID	Date of Birth	Gender	Fac Admission Date	Event ID	Event Date	Event Type	Specific Event	Location	Central Line?	Tunneled Central Line	Nontunneled Central Line	Umbilical Catheter?	Urinary Catheter	Ventilator?
12120380	08/01/2010	F	01/05/2011	234794	01/08/2011	UTI	SUTI	71ICU					INPLACE	
9782078	08/17/1902	F	01/14/2011	234783	01/17/2011	PNEU	PNU1	71ICU						Y
PKM7182647	06/12/1942	F	12/27/2010	234711	01/28/2011	BSI	LCBI	71ICU	Y					
02320380	02/18/1987	F	01/28/2011	234795	01/29/2011	UTI	SUTI	71ICU					REMOVE	
023840830	05/13/1953	F	01/31/2011	234747	02/03/2011	BSI	LCBI	71ICU	Y					
120837	06/17/1976	M	02/09/2011	234793	02/11/2011	UTI	ABUTI	71ICU					INPLACE	
1281028301	06/19/1958	M	02/20/2011	234778	02/25/2011	PNEU	PNU2	71ICU						Y
0137070	06/13/1925	F	03/05/2011	234791	03/08/2011	PNEU	PNU3	71ICU						Y
07089H56476	08/18/1925	F	03/06/2011	234757	03/10/2011	BSI	LCBI	71ICU	Y					
2810829	06/27/1969	F	03/15/2011	234748	03/20/2011	BSI	LCBI	71ICU	Y					
9820K081	09/21/1974	M	03/18/2011	234749	03/21/2011	BSI	LCBI	71ICU	Y					
2970273120	06/15/1956	F	03/20/2011	234771	03/22/2011	BSI	LCBI	71ICU	Y					
0389034987	01/15/1993	M	03/22/2011	234780	03/23/2011	PNEU	PNU3	71ICU						Y
1045	04/05/1949	M	08/31/2000	19067	04/12/2011	BSI	LCBI	71ICU	Y					

DA Line List

- ❑ **If you like the modifications that were made, you can choose to Save the modifications for later use.**
 - By clicking “Save As” at the bottom of the modification screen, you can save your modifications as a template, known as “Custom Output”.
 - This will allow you to run the same report, but on updated datasets.
 - NOTE: This step is optional, but recommended.

Other Options: [Print Variable Reference List](#)

Modify Variables To Display By Clicking: [Modify List](#)

Specify Sort Variables By Clicking: [Modify List](#)

Select Page by variable: ▼

DA Line List Custom Output

- **Once saved, this same template can be accessed from two places on the Analysis Output Options page:**
 - Within the “My Custom Output” folder
 - Within the “Custom Output” folder in the original folder from which this output was created

Advanced

My Custom Output

Exercise 1b - DA Events 2009Q1	Run	Modify	Delete
Exercise 1c - DA Events by Location 2009Q1	Run	Modify	Delete
Line Listing - All ICU Device-Associated Events	Run	Modify	Delete
Exercise 1a - CLABSI Line List 2009Q1	Run	Modify	Delete

Device-Associated Module

All Device-Associated Events

CDC Defined Output

Line Listing - All Device-Associated Events	Run	Modify
Frequency Table - All Device-Associated Events	Run	Modify
Bar Chart - All Device-Associated Events	Run	Modify
Pie Chart - All Device-Associated Events	Run	Modify
Rate Table - All Device Associated Data	Run	Modify

Custom Output

Line Listing - All ICU Device-Associated Events	Run	Modify	Delete
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DA Line List Custom Output

- ❑ By clicking “Run” next to the custom output option, you may be asked to specify a time period.

For Line Listing - All ICU Device-Associated Events Choose a Time Period:

Date Variable	Beginning	Ending
evntDateYM <input type="button" value="v"/>	<input type="text" value="07/2011"/>	<input type="text" value="09/2011"/>

- ❑ This is the result of choosing to “Enter Date variable/time period at the time you click the Run button”.
- ❑ **NOTE:** If a date variable and time period aren’t specified, all data in the output dataset will be included in the line list.

Exporting Data

- ❑ **At times, you may wish to export your data for further manipulation or formatting outside of NHSN.**
- ❑ **There are 3 methods for exporting your data...**

Exporting Data

❑ **Export Analysis Dataset**

- An analysis data set consists of data of a particular type created for a user to produce output.
- Exporting the analysis data set will include all data within the output option chosen, without any modifications.

Exporting Data

The screenshot shows a software interface with a white background. At the top, there is a label 'Analysis Data Set: DA_Events' followed by a button labeled 'Export Analysis Data Set'. Below this, a horizontal line separates the header from the main content area. The main content area is titled 'Modify Attributes of the Output:' and contains two rows of text: 'Last Modified On: 11/23/2011' and 'Output Type: Line Listing'.

Analysis Data Set: DA_Events	Export Analysis Data Set
<hr/>	
Modify Attributes of the Output:	
Last Modified On:	11/23/2011
Output Type:	Line Listing

❑ Export Analysis Dataset (continued)

- This option appears at the top of the design modification screen.
- NOTE: When exporting analysis data sets for rates or SIRs, the NHSN aggregate data and comparative statistics will not be included. To export this information, you should export the output data set.

Exporting Data

□ Export Output Dataset

- Exporting the output data set will include all data within the output option chosen, including any modifications.
- This option appears at the bottom of the design modification screen.



Exporting Data

- Exporting the analysis or output data set allows you to select the file type for your export via the Export Output Options screen.

Export Output Options

Exporting data set CLAB_Events: Select data export format

Microsoft Access table (*.mdb) ▼

Microsoft Access table (*.mdb)

Microsoft Access 97 table (*.mdb)

delimited file (comma-separated values) (*.csv)

delimited file (tab-delimited values) (*.txt)

Excel spreadsheet (*.xls)

Excel 5.0 or 7.0 (95) spreadsheet (*.xls)

dBASE 5.0, IV, III+, III, and II files (*.dbf)

SAS for Windows V7/8/9 (*.sas7bdat)

Export

Back

Exporting Data

❑ Change the Output Format

- The default output format for all output options is HTML.
- For all non-graphical output, the output format can be changed to:
 - PDF
 - CSV (will export to Excel)
 - RTF (will export to Word)

Summary

- ❑ **Analyzing your data in NHSN gives you the power to OWN your data and tell a story**
- ❑ **Dataset generation should be performed regularly prior to running analyses**
- ❑ **There are various output options that can be modified to meet your needs and the needs of your facility**
- ❑ **All datasets can be exported for further analysis or manipulation outside of NHSN**

Additional Resources

- ❑ **SIR Newsletter:**

http://www.cdc.gov/nhsn/PDFs/Newsletters/NHSN_NL_OCT_2010SE_final.pdf

- ❑ **NHSN Annual Reports:**

<http://www.cdc.gov/nhsn/dataStat.html>

**Questions?
nhsn@cdc.gov**

