

# ANTIMICROBIAL RESISTANCE EVENT LINE LIST

## Description

The line list is an organized, detailed list of each record entered into NHSN, which can be used by both facilities and groups. The default settings are likely to produce a report that is too lengthy to be useful. Therefore, modifying the AR line list is recommended. The example below demonstrates a sample modification of AR data reported using the AUR Module.

For a more basic explanation of the NHSN modification screen, refer to this document:

<https://www.cdc.gov/nhsn/pdfs/ps-analysis-resources/howtomodifyreport.pdf>.

## Example

Suppose you are interested in looking at all drug-specific susceptibility results for *Staphylococcus aureus* isolates identified in blood specimens in the first quarter of 2016. You would like to produce a line list that includes facility org ID, event ID, patient ID, date of birth, location label, date specimen collected, isolate ID, specimen group, pathogen, drug description, and final interpretation.

There is one AUR Module Antimicrobial Resistance report option to generate a line listing. After generating data sets, to run a line list report, click Analysis > Reports > Antimicrobial Use and Resistance Module > Antimicrobial Resistance Data. After selecting the report, in this case, "Line Listing – All Antimicrobial Resistance Events," a pop-up box will appear that will allow you to "Run Report," "Modify Report," or "Export Data Set." Select "Modify Report" to customize your report.



## Modifying the Report

When you choose to modify the report, the modification screen appears showing multiple tabs containing available modifications for the given report. The "Title/Format" tab allows you to update the report title and select the format in which you want the report displayed, such as HTML or PDF.

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To filter the data by time period, choose the “Time Period” tab at the top of the page. In this example, we have limited the line list to include only antimicrobial resistance data in the first quarter of 2016 (Specimen Date~Yr/Qtr = 2016Q1).

**Tip:** For more descriptive variable labels on your report, check the box “Show descriptive variable names” that appears near the top of the modification window (recommended).

The screenshot shows the 'Modify Line Listing - All Antimicrobial Resistance Events' window. At the top, there is a header bar with the title and a status bar containing:  Show descriptive variable names (Print List), Analysis Data Set: AUR\_Detail, Type: Line Listing, and Data Set Generated On: 03/31/2017 16:09:00. Below the header is a navigation bar with tabs: Title/Format, Time Period (selected), Filters, Display Variables, Sort Variables, and Display Options. The 'Time Period' section contains a 'Date Variable' dropdown set to 'Specimen Date~Yr/Qtr', a 'Beginning' text box with '2016Q1', an 'Ending' text box with '2016Q1', and a 'Clear Time Period' button. There is also a checkbox labeled 'Enter Date variable/Time period at the time you click the Run button'. At the bottom right are buttons for Run, Save..., Export..., and Close.

The “Filters” tab allows you to further filter the data that will be displayed in the report. For our example, we want to filter the report to only show data for Pathogen = Staphylococcus aureus - SA and Specimen group = Blood.

**Tip:** For including more than one item in each filter such as multiple pathogens, the “in” operator can be used instead of the “equal” operator.

The screenshot shows the 'Modify Line Listing - All Antimicrobial Resistance Events' window with the 'Filters' tab selected. The header and status bar are the same as in the previous screenshot. The navigation bar shows 'Filters' as the active tab. Below the navigation bar is an 'Additional Filters' section with 'Show' and 'Clear' buttons. The filter rules are displayed in a tree structure. The top level has 'AND OR' buttons and an 'Add group' button. The first rule has 'AND OR' buttons and an 'Add rule' button. The first rule contains two conditions: 'Pathogen' equal to 'Staphylococcus aureus - SA' and 'Specimen Group' equal to 'Blood'. Each condition has a 'Delete' button. At the bottom right are buttons for Run, Save..., Export..., and Close.

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The “Display Variables” and “Sort Variables” tabs allow you to display and sort specific variables in your report. Both tabs will produce a similar window, shown below, which allows you to move variables from the available list in the left column to the selected list in the right column by using the directional arrows in the center. You can also re-order the selected variables using the “Up” and “Down” buttons, found to the right of the selected variables list.

**Tip:** Not sure of the meaning of the variables in the list? Use the variable reference list: [http://www.cdc.gov/nhsn/pdfs/ps-analysis-resources/varlabelxref-ps\\_current.pdf](http://www.cdc.gov/nhsn/pdfs/ps-analysis-resources/varlabelxref-ps_current.pdf).

**Modify "Line Listing - All Antimicrobial Resistance Events"**

Show descriptive variable names (Print List)    Analysis Data Set: AUR\_Detail    Type: Line Listing    Data Set Generated On: 03/31/2017 16:09:00

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

**Display Variables:**

Available Variables:		Selected Variables:
admitDateYH	All >>	Facility Org ID
admitDateYM	Selected >	Event ID
admitDateYQ	< Selected	Patient ID
admitDateYr	<< All	Date of Birth
Bedsize		Location Label
CDC Location		Date Specimen Collected
CMS Certification Number		Isolate ID
Drug Code		Specimen Group
E-test sign		Pathogen Description
E-test value		Drug Description
Fac Admission Date		Final interpretation
Final interpretation Description		
Gender		
Interpretation of E-test		
Interpretation of E-test Description		

Run    Save...    Export...    Close



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## Final Report

The example line list shown below is the result of the modifications shown in this document.

*Note: This example uses fictitious data for illustrative purposes only.*

**National Healthcare Safety Network**  
**Line Listing - Antimicrobial Resistance Events by Pathogen**  
 As of: April 5, 2017 at 4:53 PM  
 Date Range: AUR\_DETAIL, SpecimenDateYQ 2016Q1 to 2016Q1

Location Label=9W

Facility Org ID	Event ID	Patient ID	Date of Birth	Location Label	Date Specimen Collected	Isolate ID	Specimen Group	Pathogen Description	Drug Description	Final Interpretation	
13860	59768	SAu_BI_DA_0726	11/25/1954	9W	01/21/2016	123-Saur-1a-8	Blood	Staphylococcus aureus - SA	AZITH - Azithromycin	R	
13860	59768	SAu_BI_DA_0726	11/25/1954	9W	01/21/2016	123-Saur-1a-8	Blood	Staphylococcus aureus - SA	CEFOX - Cefoxitin	S	
13860	59768	SAu_BI_DA_0726	11/25/1954	9W	01/21/2016	123-Saur-1a-8	Blood	Staphylococcus aureus - SA	CHLOR - Chloramphenicol	S	
13860	59768	SAu_BI_DA_0726	11/25/1954	9W	01/21/2016	123-Saur-1a-8	Blood	Staphylococcus aureus - SA	CIPRO - Ciprofloxacin	S	
13860	59768	SAu_BI_DA_0726	11/25/1954	9W	01/21/2016	123-Saur-1a-8	Blood	Staphylococcus aureus - SA	CLARTH - Clarithromycin	S	
13860	59768	SAu_BI_DA_0726	11/25/1954	9W	01/21/2016	123-Saur-1a-8	Blood	Staphylococcus aureus - SA	CLIND - Clindamycin	S	
13860	59768	SAu_BI_DA_0726	11/25/1954	9W	01/21/2016	123-Saur-1a-8	Blood	Staphylococcus aureus - SA	DAPTO - Daptomycin	S	
2	13860	59768	SAu_BI_DA_0726	11/25/1954	9W	01/21/2016	123-Saur-1a-8	Blood	Staphylococcus aureus - SA	DOXY - Doxycycline	S
13860	59768	SAu_BI_DA_0726	11/25/1954	9W	01/21/2016	123-Saur-1a-8	Blood	Staphylococcus aureus - SA	ERYTH - Erythromycin	S	
13860	59768	SAu_BI_DA_0726	11/25/1954	9W	01/21/2016	123-Saur-1a-8	Blood	Staphylococcus aureus - SA	SEMTA - Ceftazidime	S	

1. *Staphylococcus aureus* was isolated in the blood specimen collected from the patient on 01/21/2016 and it was resistant to Azithromycin.
2. *Staphylococcus aureus* from the same blood specimen collected from this patient on 01/21/2016 was susceptible to Doxycycline. In fact, *Staphylococcus aureus* was susceptible to multiple drugs as shown in this report snapshot.

## Additional Resources

Introduction to NHSN Analysis: <https://www.cdc.gov/nhsn/pdfs/training/2016/analysis-data-quality-parikh.pdf>

How to Export Data from NHSN: <http://www.cdc.gov/nhsn/pdfs/ps-analysis-resources/exportdata.pdf>

AUR Module Protocol: <http://www.cdc.gov/nhsn/pdfs/pscmanual/11pscacrurrent.pdf>

Surveillance for Antimicrobial Resistance Options: <http://www.cdc.gov/nhsn/acute-care-hospital/aur/>

