

# Multidimensional Analysis Using the POLARIS Analysis Suite

## I. Introduction

The POLARIS Analysis Suite currently provides Predefined Report and Multidimensional Analysis capabilities. The Multidimensional Analysis tool provides access to many NEMSIS elements collected in POLARIS. More elements will be added until all elements are available.

The Multidimensional Analysis tool uses the Pentaho Analysis software, also known as Mondrian, from the Pentaho business intelligence platform (see [www.pentaho.com](http://www.pentaho.com)). Pentaho Analysis implements a query language called Multidimensional Expressions (MDX), a standard developed by Microsoft.

## II. Resources

Pentaho Analysis (Mondrian) software documentation:  
<http://mondrian.pentaho.org/documentation/>

Multidimensional Expression (MDX) language reference:  
<http://technet.microsoft.com/en-us/library/ms145506.aspx>

NEMSIS Data Dictionary:  
<http://www.nemsis.org/dataElements/datasetDictionaries.html>

## III. Dimensions and Measures

Effective analysis skills require an understanding of dimensions and measures. In the Multidimensional Analysis tool, you will be choosing measures that you want to measure, and dimensions by which you want to measure them.

### *Dimensions*

Dimensions are descriptive attributes by which you measure. Examples include dispatch complaints, dates, locations, etc. You will use dimensions to categorize or filter the data that you are measuring.

### *Measures*


Measures are the actual data points you want to measure. They are usually numeric. Examples include record counts, times, fall height, patient weight, etc. Measures are either additive or semiadditive. Additive measures can be added, such as record counts. Semiadditive measures don't make sense when added but they can be aggregated in other ways such as averaging. For example, it would not make sense to add Glasgow Coma Scores across records ("The total GCS of our calls last month was [some big number]."), but it does make sense to average them ("The average GCS of our calls last month was 12.")


## IV. Multidimensional Analysis tool documentation





### **Open OLAP Navigator**

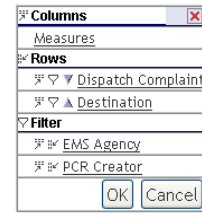
Opens the navigator as shown to the right. This is the main way of selecting what you want to include in your analysis. Click on one of the underlined links to select or filter items within that category.

 Move something to be a column header.

 Move something to be a row header.

 Move something to the filter area (also used to remove something from columns or rows).

 Move something up or down in a hierarchy.



### **Show MDX Editor**

Opens the MDX editor, which shows the MDX query that is used to retrieve your analysis results. If you want to save a particular analysis view, you can copy the contents of the MDX editor; when you come back later, you can paste the contents into the MDX editor to retrieve that view. You can also hand-edit the MDX query by referring to the MDX language reference. You can share MDX queries with other users, and they will see your query applied to their data.



### **Configure Sorting Options**

Displays sorting options, including options such as “top count” (for example, top ten).



### **Show Parent Members**

Changes the layout of the analysis table by showing top-level labels of the dimensions you’ve chosen.



### **Show Spans**

Changes the layout of the analysis table by showing an item repeatedly instead of showing a large span with the item only printed once.



### **Show Properties**

Shows additional information on some items.



### **Suppress Empty Rows/Columns**

Does not display items that have no data. For example, a list of dispatch complaints with “Suppress Empty Rows/Columns” turned off will show all dispatch complaints, regardless of whether your organization has had any patient care reports with each of those dispatch complaints. On the other hand, with “Suppress Empty Rows/Columns” turned on, only the dispatch complaints that have actually happened in your organization will be shown.

 **Swap Axes**

Moves things that are on the rows over to the columns, and things that are on the columns down to the rows.

 **Drill Member**

Puts a red plus or minus next to each dimension member that can be drilled down. When clicking on a red plus or minus, all members with the same position will be drilled into.


 **Drill Position**

Puts a blue plus or minus next to each dimension member that can be drilled down. When clicking on a blue plus or minus, only the member clicked on will be drilled into.

 **Drill Replace**

Puts a red arrow next to each dimension member that can be drilled down. When clicking on a red arrow, the member clicked on will be removed and its parent or children will be shown in its place.

 **Drill Through**

Places a green arrow next to each measure. Clicking on the green arrow for a particular measure will show a table of the detailed data of the actual records that made the measure. The table can be configured to only show certain elements by clicking .

 **Show Chart**

Shows a chart of the data being analyzed.

 **Configure Chart**

Shows chart configuration options for the chart. You can choose chart type, size, fonts, and more. You can also enable drill-through on a chart, so that when you click on a particular area of the chart, the underlying data for that area is displayed in a drill-through table.

 **Configure Print Settings**

Shows the printing configuration settings.

 **Print as PDF**

Downloads the analysis as a PDF.

 **Export to Excel**

Downloads the analysis in Excel format for further manipulation.