



Analytics User Guide

Software Version: 4.1.8033
Last Updated: April 1, 2010

Allscripts Academy

Analytics User Guide (KB Article # 3499)

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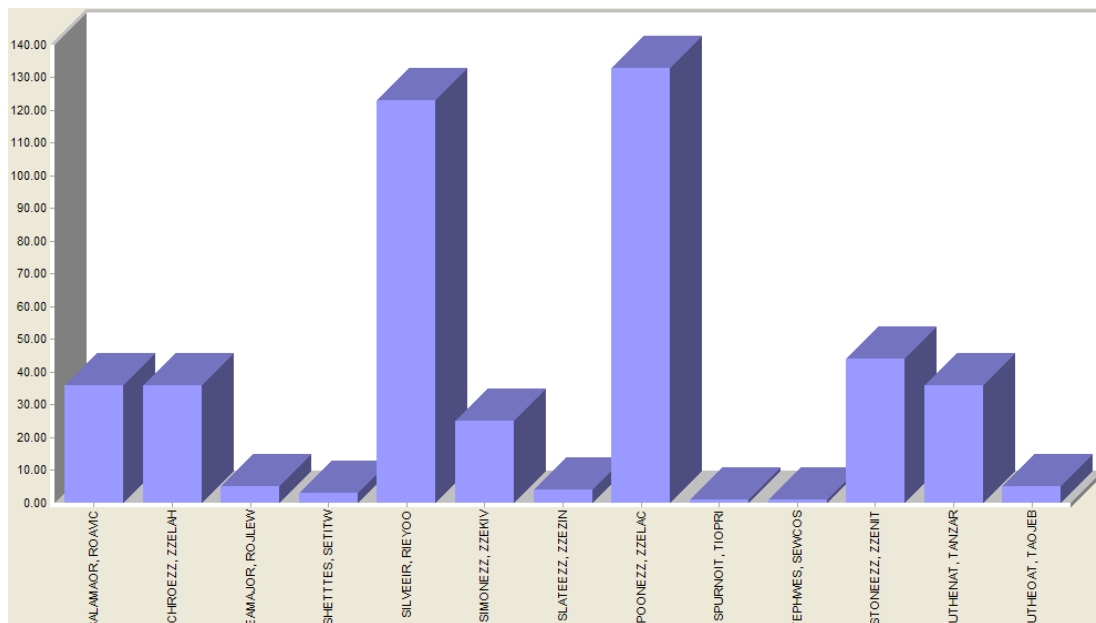
Introduction

Going well beyond standard reports and clinical analysis is the advanced clinical analysis offered by the Enterprise EHR Analytics application – a *fully graphical and relational query engine*.

Enterprise EHR Analytics offers the flexibility to easily view and sort from thousands of data elements. This is particularly useful for today's complex medical practices. Organizations now have the ability to select, view and display data for a number of clinical scenarios.

A powerful part of Enterprise EHRs Analytics is the ability to display the information in a variety of formats. These include:

- Flexible report writer to create presentation quality reports
- Easy to read color-coded dashboard summaries based on user-defined ranges
- Pivot tables for an aggregate view of the clinical information
- Drill-through views displaying detailed data in a spreadsheet format
- Graphical capabilities to show a visual representation of the information
- Ad-Hoc Query to build sophisticated reporting with simple point-and-click tools
- Export capabilities to HTML, PDF, Excel, and Rich Text formats



With the proper analytical tools, organizations can drive clinical excellence by managing pay-for-performance initiatives, measuring key performance indicators, supporting clinical trials, and providing patient population management. Accessing the clinical data in a format designed for near real-time decision making can transform the art and science of delivering healthcare. The Enterprise EHR Analytics toolset will enable organizations to turn the data in the Enterprise EHR system into information that can significantly change business operations.

Who Should Use This Document?

The Analytics Guide is designed to be a tool for learning and training Enterprise EHR Analytics. It is split into 2 sessions: *Analytics Objects* and *Administration* respectively. Front-end functionality and workflows are detailed in the 1st session while application set-up is broken down in the 2nd session. Any user of Enterprise EHR Analytics can utilize this document to help in the creation of various objects and analyze pertinent data.

Workflows and Walkthroughs

There are several areas of the document that detail functionality through the use of walkthrough examples. These are intended to help a user understand how the product works while detailing the step-by-step instructions in a simple, clinically relevant workflow. Organizations can feel free to substitute their own examples when walking through the documentation to make it more relevant to specialties, user workflows, etc.

Application Vendor

Enterprise EHR Analytics utilizes the Precision.BI product developed by Datamasters, Inc. Datamasters, Inc. is a software development company dedicated to providing the healthcare industry with system and service solutions incorporating high intrinsic value at reasonable costs. Allscripts has partnered with Datamasters to deliver a product for analyzing and reporting vital clinical information for Enterprise EHR users.

Extract-Transform-Load

One of the many benefits delivered with the Enterprise EHR Analytics product is that data resides on a separate database and server than the live Enterprise EHR database. Hence, there are no restrictions on when queries, reports and analysis can be run against the database due to concerns over possibly compromising the performance of the live system.

In order to move data from one server/database to another, Microsoft's SQL Server Integration Services (SSIS) is utilized to streamline the data tables in order to provide a simple database structure via a bulk copy process: *Extract-Transform-Load*. There are several database tables that may exist per Enterprise EHR module. As the data is being transferred and loaded into the Analytics database structure, indexes are dropped on the Enterprise EHR side and re-created in a more streamlined format in order to speed up the data transfer. For more information, search for *Integration Services* at Microsoft.com.

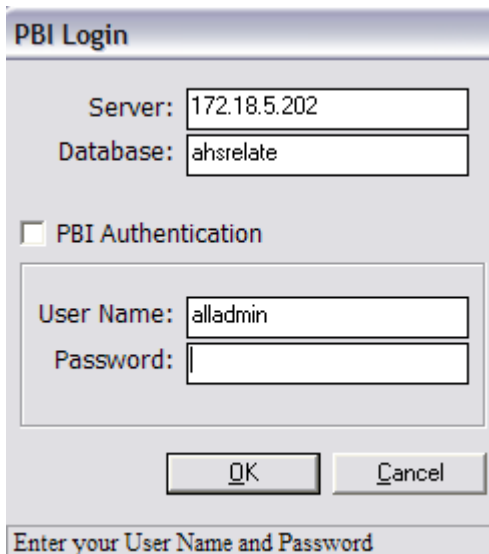
Analytics implementation teams will guide organizations through this process including how often the Analytics database will be updated with Enterprise EHR data. This is not a *real-time* update, but rather a *near real-time* update based on organization needs. For example, an organization may decide to have data loaded nightly, weekly, etc.



Session 1: Analytics Objects

Lesson 1: Getting Down to Basics

Loading Analytics

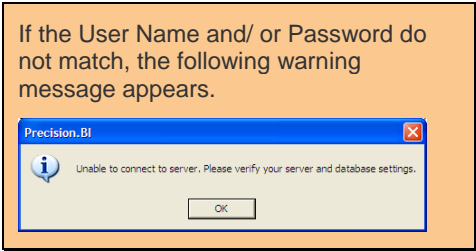


The image shows a 'PBI Login' dialog box. It has a title bar 'PBI Login'. Inside, there are two text boxes: 'Server:' with the value '172.18.5.202' and 'Database:' with the value 'ahsrelate'. Below these is a checkbox labeled 'PBI Authentication' which is unchecked. Underneath the checkbox is a group box containing two text boxes: 'User Name:' with the value 'alladmin' and 'Password:' which is empty. At the bottom are 'OK' and 'Cancel' buttons. A status bar at the very bottom says 'Enter your User Name and Password'.

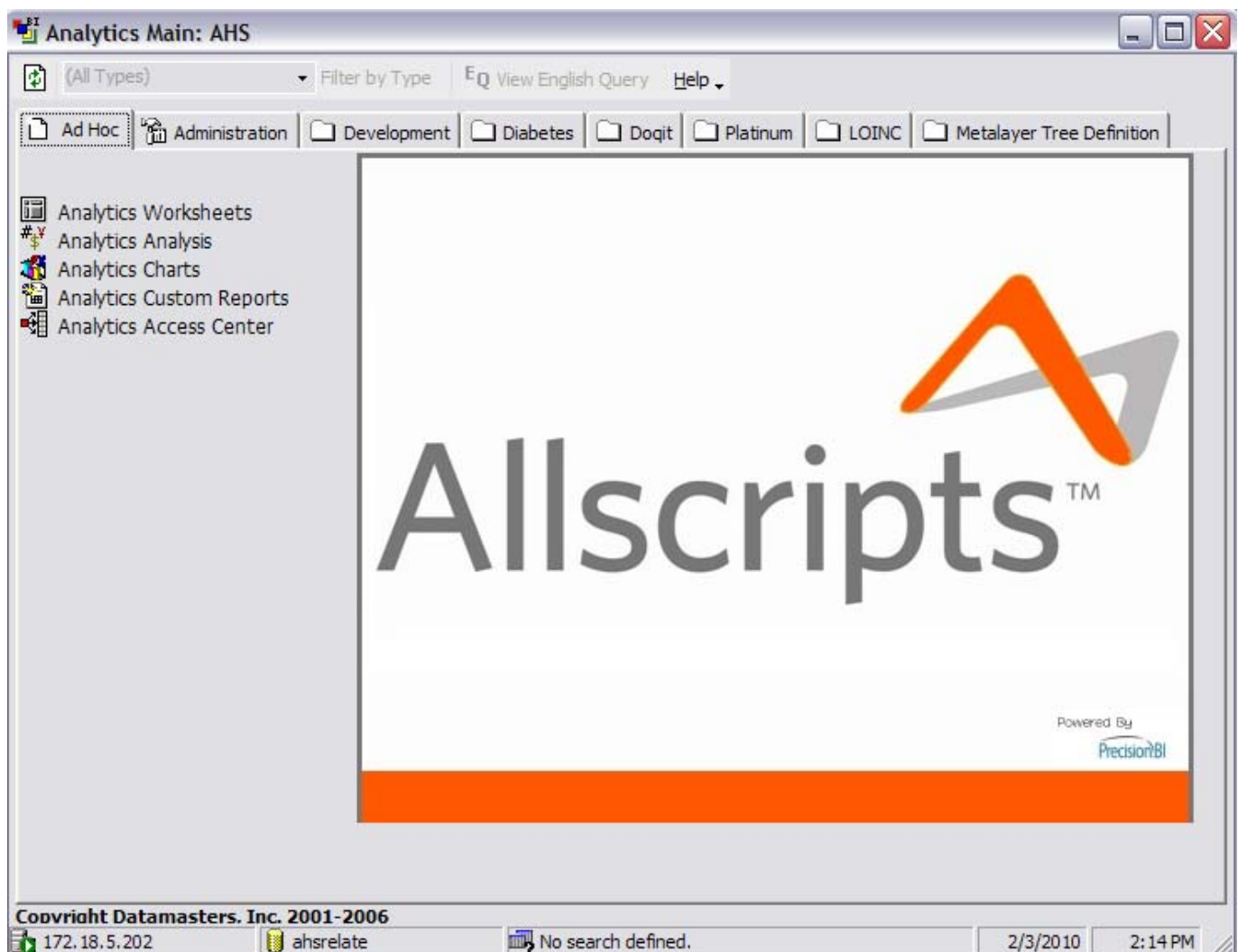
Step-by-Step: Loading Analytics

To login to Analytics, complete the following:

<ol style="list-style-type: none"> 1. Double-click the Analytics icon on the desktop. 	<div style="border: 1px solid black; padding: 5px; background-color: #fde9d9;"> <p>You can also load from the START menu.</p> <p>Select Programs</p> <p>Select Precision.BI</p> <p>Select the Precision.BI application</p> </div>
<ol style="list-style-type: none"> 2. Verify the Server and Database fields. 	<div style="border: 1px solid black; padding: 5px; background-color: #fde9d9;"> <p>A Period "." is used for the Server if the user is currently attempting to access the application directly from the server.</p> </div> <div style="border: 1px solid black; padding: 5px; margin-top: 10px;"> <p>Server: <input type="text" value="."/></p> <p>Database: <input type="text" value="ahsrelate"/></p> </div>
<ol style="list-style-type: none"> 3. Enter the User Name (instructor will provide). 	

4. Enter the Password (instructor will provide).	<div> <div>User Name: TestUser</div> <div>Password: <input type="password"/></div> </div>
5. Click OK .	<p>If the User Name and/ or Password do not match, the following warning message appears.</p> 

Analytics Main Menu



Click the **X** button in the upper right corner to close the application.

Selection Tab



Analytics menu options are divided between two main tabs – *Ad Hoc* & *Administration*. Administrators may limit what items are available to a user(s) based on security rights. For more on security access, see *Security* in this document under *Session 2: Administration*.

Ad Hoc

The *Ad Hoc* section displays all object options a user has been given to access.

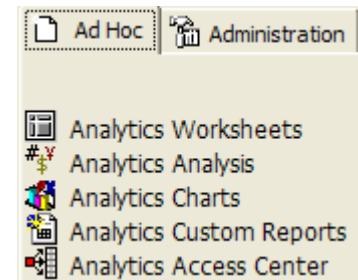
Analytics Worksheets – lists a set of records based on query definitions.

Analytics Analysis – create multiple crosstabs to analyze large amounts of data in a summary view.

Analytics Charts – display results in a graphical format (charts).

Analytics Custom Reports – summarize data by developing a formatted layout for viewing/printing.

Analytics Access Center – a customizable data center for publishing reports, charts, cross tabs, key performance indicators, etc.



Administration

The *Administration* tab is designed for “super” users to control access of several application functions.

Security – establish control over what users may access within the application

Change Password – update the current user's password

Reset User Password – update any user's password

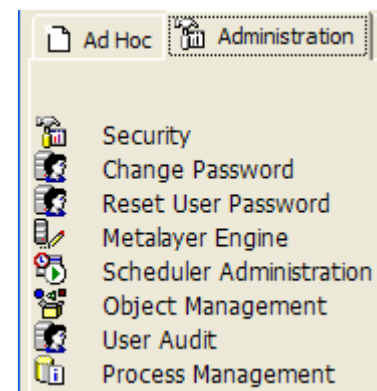
Metalayer Engine – list of all data fields available in the application

Scheduler Administration – set up objects to download when necessary

Object Management – allow administrator to manage all saved objects

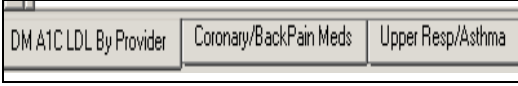
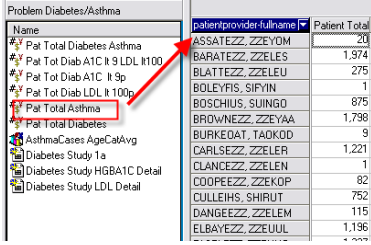
User Audit – area for reviewing user activity

Process Management – review system processes



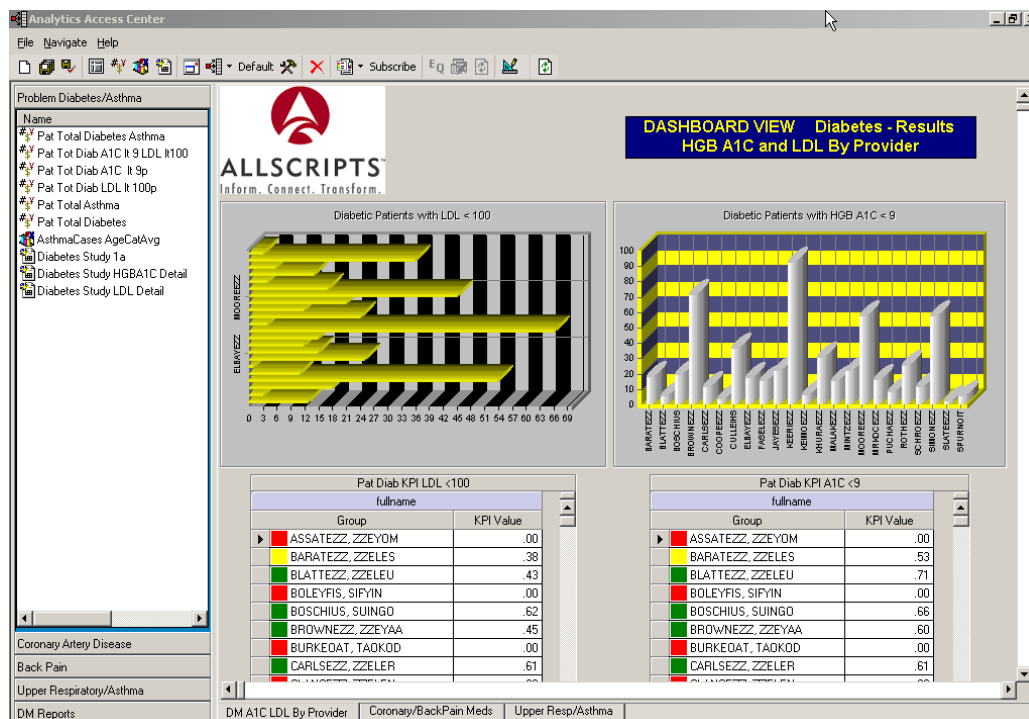
Step-by-Step: Analytics Access Center

To view different published reports, charts, cross tabs displayed in Analytics, complete the following:

1. Double-click Analytics Access Center .	Screen appears displaying (Class Example: a Dashboard View of Diabetic Patients) .
2. View different dashboards by clicking the three tabs at the bottom of screen.	 <p>These tabs come delivered with Percision Bi. It is also possible to create more tabs.</p>
3. Select Pat Total Asthma .	<p>This shows an example of Cross Analysis.</p> 

Additional information on the Analytics Access Center can be found in **Lesson 8**.

Analytics Access Center





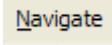


Step-by-Step: Analytics Worksheets

To access Analytics Worksheets, complete the following:






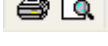
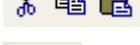


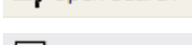

1. Double-click Analytics Worksheets .	Screen appears displaying the MetaLayer Tree on the left side.
2. View different button options.	<i>(Instructor will cover specific ones used in class.)</i>

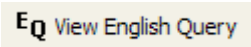





Common Object Menu Bar Options

Across all Objects within the Ad Hoc tab, there are several, common menu bar options. A user can feel comfortable knowing that several features learned in one object will accompany the user as they learn other objects within the Analytics application.

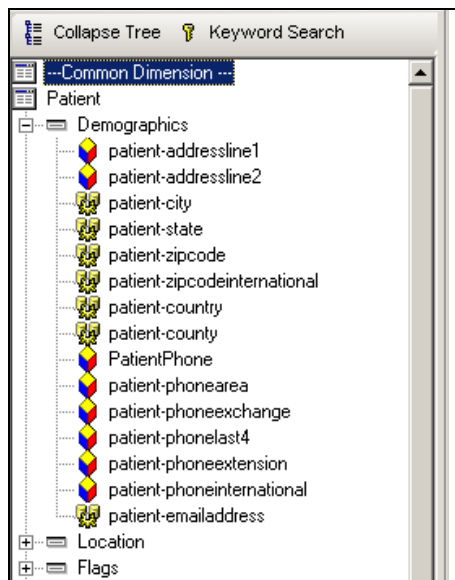
	Menu for common features such as opening/closing an object, saving and printing.
	Run/Stop an object as well as cut, copy, paste, etc.
	Options for sending user to various object areas (Worksheets, Charts, etc.) in application.
	Numerous search options available such as clear, edit, save and Quick Search.
	Loads help tool or general application information.

Common Toolbar Options

	Open a new screen for the current object.
	Open an existing object.
	Save the current object as the same or different name (respectively)
	Run the current object for output
	Stop the current run of an object
	Print or Preview the current object
	Cut, Copy, Paste data currently selected
	Select the dropdown button to utilize multiple Search functions
	Returns the count of rows reflected in the current search and object
	Open a saved search for the current object
	Open a saved worksheet

	Displays the current search in common language
	Navigates the user to the Worksheet section
	Navigates the user to the Analysis Cross tab section
	Navigates the user to the Custom Charts section
	Navigates the user to the Custom Reports section
	Toggle between edit and data view

Metalayer Tree



The **Metalayer Tree** is a view that lists all Enterprise EHR-related fields loaded into the Analytics tool. All fields that the user has access to will appear in the view separated within multiple Content Categories. Examples of **Content Categories**:

Patient	Findings	mTemplate
Problem	Patient List	Chart
Medication	Order	Immunization
Result	Health Maintenance Plan	Allergy
Task	Charge	Audit

Within each Content Category, there is a list of **Data Fields**.



Data field holds only **distinct** values allowing the user to select data provided to them in a list.



Data field holds **non-distinct**.

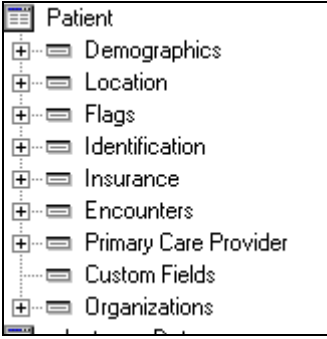
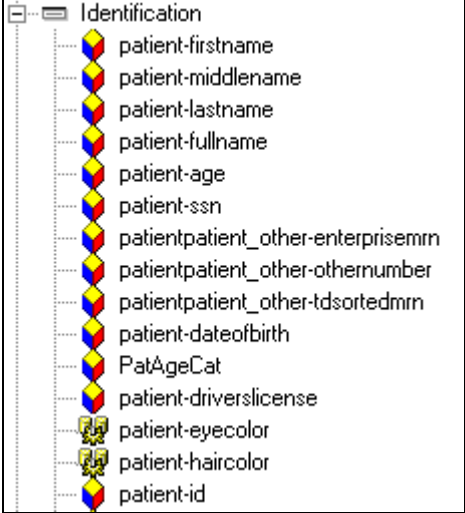
Contact your Analytics Implementation Team for details on what Fields are available via certain application versions.

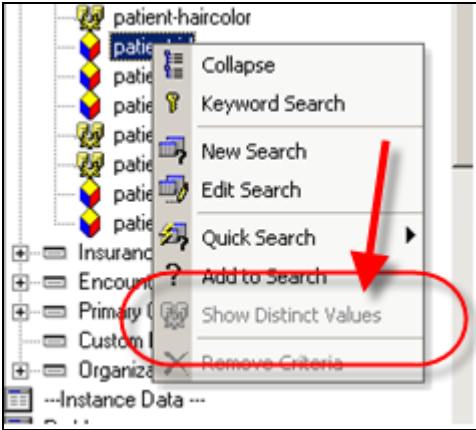
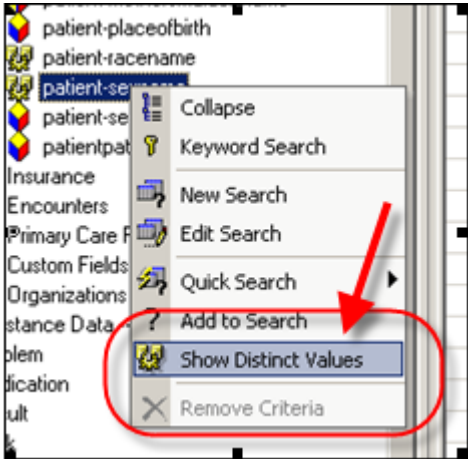
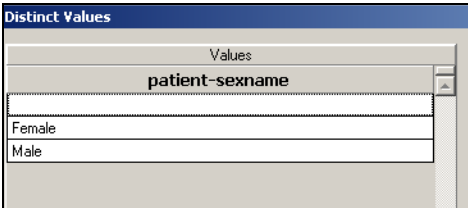
There are two tabs at the bottom of the MetaLayer Tree:

- **Treewiew** – lists all available fields for the user
- **Recent Fields** – lists the fields that have been used, and what fields have been used within saved searches. This is also a place where search criteria may be changed on the fly.

Step-by-Step: Analytics Worksheet (MetaLayer Tree)

To access the MetaLayer Tree within Analytics, complete the following:

1. Double-click Analytics Worksheets .	Screen appears displaying the MetaLayer Tree on the left side.
2. Double-click the Patient Content Category.	
3. Expand Identification .	

<p>4. Right-click patient-id.</p>	<p>The Show Distinct Values option is grayed out as this is a non-distinct Data Field.</p> 
<p>5. Close the search by clicking anywhere outside the box with your mouse.</p>	
<p>6. Right-click on patient-sexname.</p>	<p>The Show Distinct Values option is accessible.</p> 
<p>7. Select Show Distinct Values.</p>	<p>The Distinct Values screen appears displaying Female and Male.</p> 
<p>8. Click Cancel.</p>	<p>This closes the screen.</p>

Lesson 2: Basic Search Options

Overview

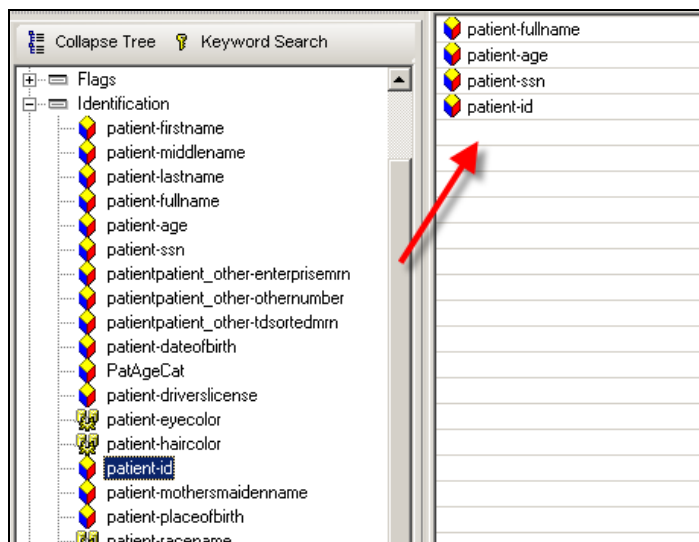
There may be several items added to an object to make it successfully reflect the initial goal put forth by the user. An object may be tweaked often to make sure the data is displayed appropriately. There are two main items necessary for any object to be successful reflecting the user's goal: **data fields** and **searches**.

Data fields are those fields within Enterprise EHR that are to be displayed within the object (patient demographics, problems, results, etc.). Several examples of data fields will be discussed throughout the remainder of this document. As important to any successful object is how the records to be display will populate in the object.

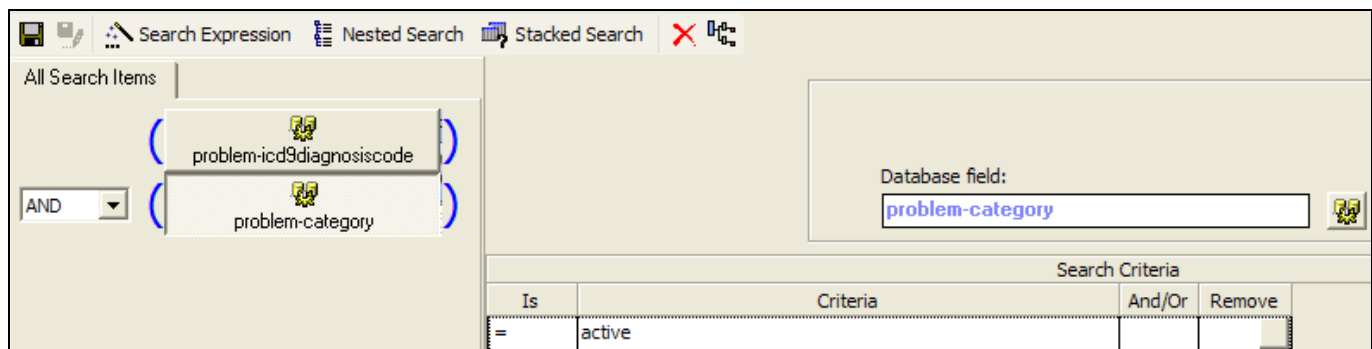
Example of questions to think about when including Data Fields:

- Should the report display all patients in the database or just those patients with Essential Hypertension?
- Should the worksheet display all patients who have had a Lipid Profile in the past 6 months or just those who had an LDL returned with an abnormal level?

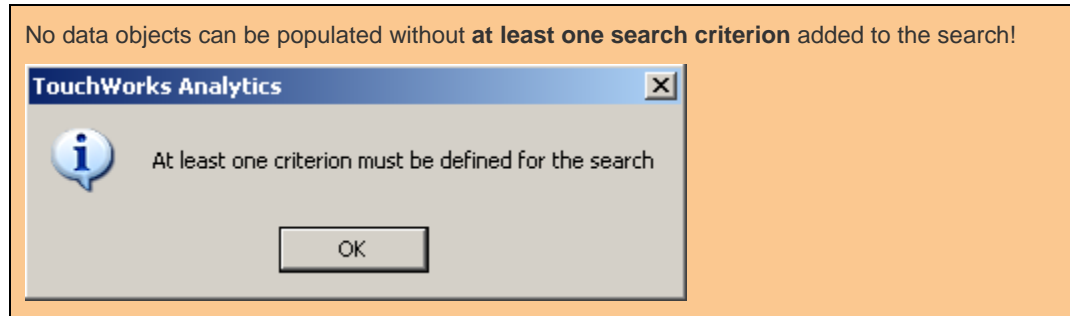
Data Fields used for Search



Data Fields and Search Items



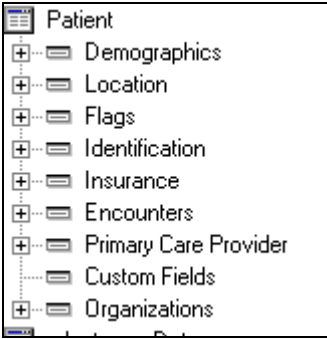
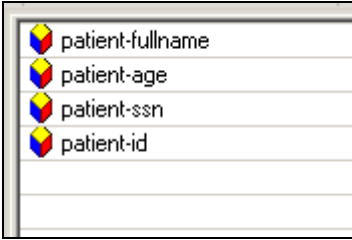
Searches are used to populate the data fields. For example, if a user adds several data fields to a worksheet (patient full name, patient age, SSN, city, state, etc.) and wants to yield a list of patients below the age of three, the user must limit the patient age to less than three. There may be more criteria added to the search in order to further limit what is returned (i.e. city = Chicago), but the following dialog box will present if the user attempts to run a query without adding at least one search criterion to that query.

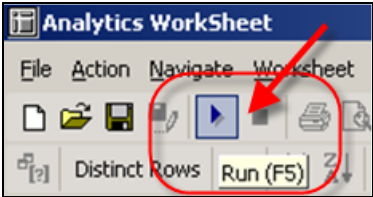
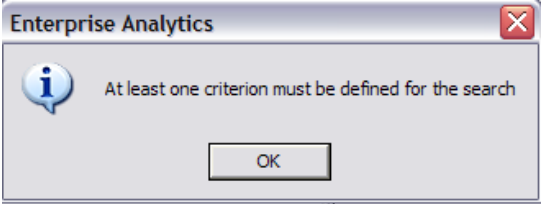


The next section of this document will chronicle several ways a user may add criteria to a search. As is true with many other aspects of software, there is no one way to do something within an application. The user can decide which is a better workflow based on actions and need.

Step-by-Step: Adding Data Fields for a Search

Within the **MetaLayer Tree**, complete the following:

1. Double-click Patient Content Category.	
2. Expand Identification .	
3. Double-click the following Data Fields : <ul style="list-style-type: none"> ▪ Patient-fullname ▪ Patient-age ▪ Patient-dateofbirth ▪ Patient-id 	The fields now appear in the middle of the screen. 

4. Click the Run button (or F5 on your keyboard.)	
5. Click OK on the warning message.	

Standard Search Functions

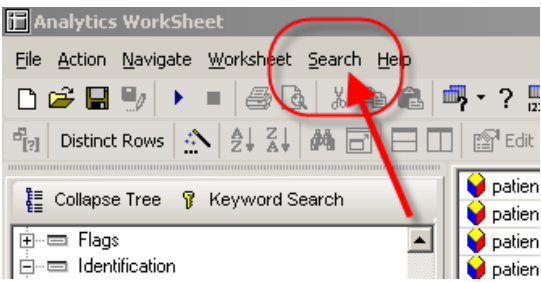
Clear Search

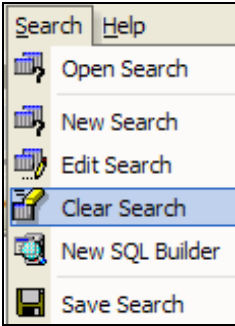
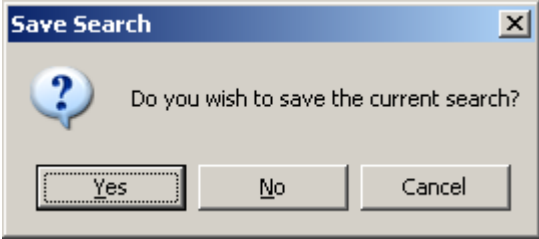
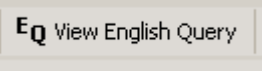
When beginning to populate new search criteria, it is always best to make sure that there are **no existing criteria present**. Otherwise, there could be additional unnecessary fields limiting what is returned.

If search criteria are not cleared, it will transfer to other objects as the user navigates throughout the system. For example, if a user creates a search within the Worksheets object and does not clear the search when leaving the Worksheets object, the criteria will remain in the search as the user navigates to the Analysis object. However, the system will prompt the user to save and/or clear the current search as the user leaves an object.

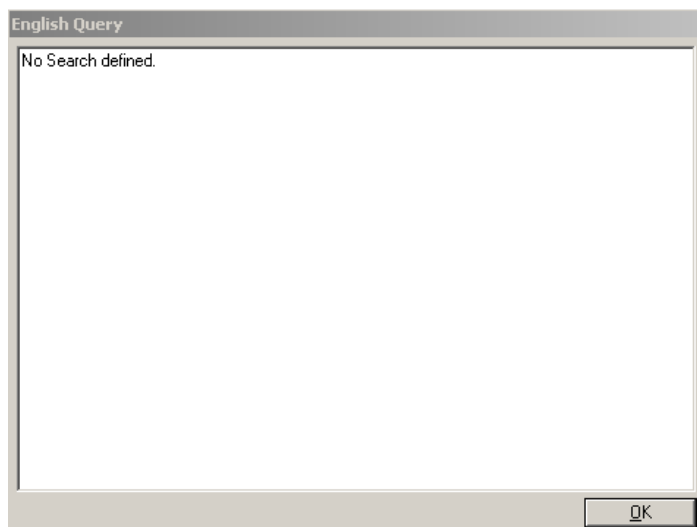
Step-by-Step: Clear the Search

Within the **Analytics Worksheet**, complete the following:

1. Select the Search button at the top of the screen.	
--	--

<p>2. Select Clear Search.</p>	
<p>3. Click Yes to save search or No to clear without saving.</p> <p><i>(You will be prompted to save a search every time you try to clear. If the search has been previously saved, Click No.)</i></p>	
<p>4. Select the View English Query button.</p> 	<p>The English Query screen appears, and there is No Search defined.</p>

View English Query (Search Cleared)

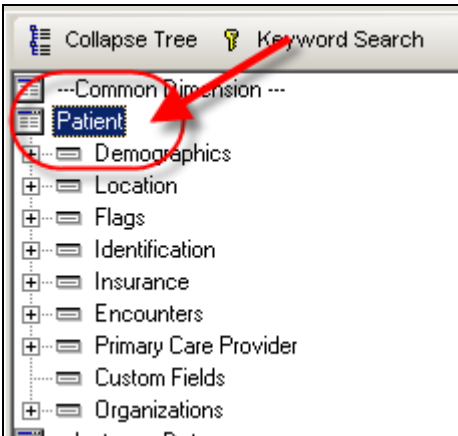
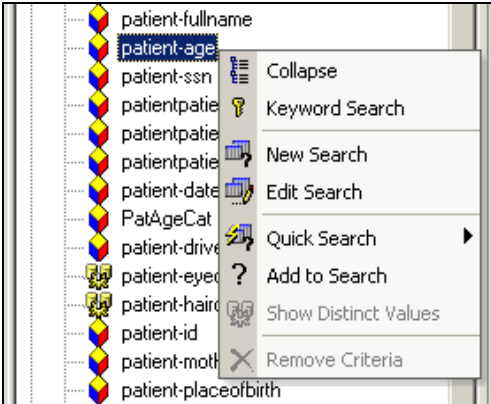
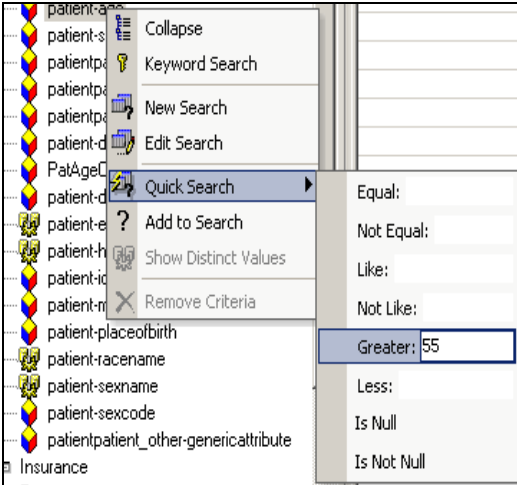


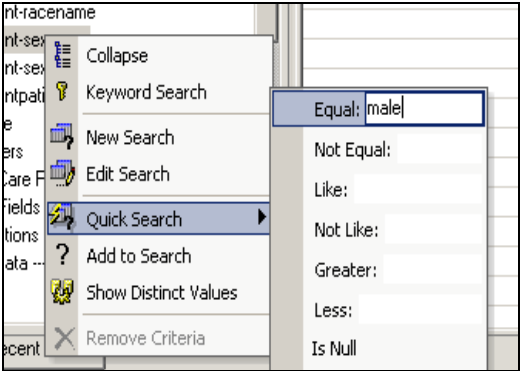
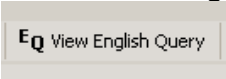
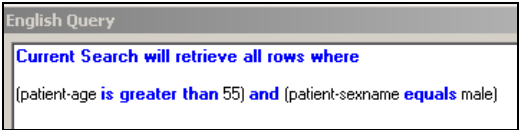
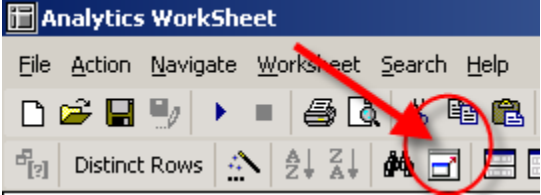
Quick Search

Quick Search is an abbreviated way for users to set search criteria. Instead of having to load the **Search** form each time a data field is added to a search, Quick Search allows the user to add a criterion **directly from the Metalayer Tree**. However, performing a right-click on a data field within the **Search** form will also give the user the option of adding criteria via the Quick Search menu. Once the criteria are set, the Search Item Box will appear with the criteria set.

Step-by-Step: Quick Search

Within the MetaLayer Tree, conduct a **Quick Search** by completing the following:

1. Double-click Patient Content Category.	
2. Expand Identification .	
3. Right-click on patient-age .	
4. Select Quick Search .	
5. Select the following operating field: <ul style="list-style-type: none"> Greater: 55 	

6. Click Enter on your keyboard.	This will save the data.
7. Right-click on patient-sexname .	
8. Select the following operating field: <ul style="list-style-type: none"> ▪ Equal: Male 	 <p>Male can be typed in upper or lower case text.</p>
9. Click Enter on your keyboard.	This will save the data.
10. Click on View English Query  button.	<p>You should see the following data:</p> <p>(patient-age is greater than 55) and (patient-sexname equals male)</p> 
11. Select the Run button (or F5).	The Worksheet displays with the search data.
12. Click the Toggle button. (Right of the Binoculars button)	<p>This returns you back to the Analytics Worksheet with MetaLayer Tree.</p> 

Analytics Worksheet (Male Patients Greater Than Age 55)

Analytics WorkSheet				
File Action Navigate Worksheet Search Help				
Analytics Worksheet Currently on row 1 of 96265				
patient-fullname	patient-age	patient-dateofbirth	patient-id	
▶ MOHAMOODY, YOONC	73.00	09/03/1934	83,349.00	
RAMIROODY, YOONEI	76.00	02/19/1932	83,362.00	
DOS SOOY, YOOMFA	56.00	07/15/1951	83,439.00	
POZZIOODY, YOOLUA	56.00	09/19/1951	83,486.00	
MEHRSOOY, YOOKY	61.00	03/19/1947	83,550.00	
PIERCOOY, YOOKWI	85.00	09/08/1922	83,555.00	
SHULMOOY, YOOKIM	59.00	04/23/1949	83,583.00	
WEAVEOODY, YOQJA	62.00	11/11/1945	83,653.00	
HARRIOOY, YOQJAC	60.00	11/06/1947	83,664.00	
SENGUOODY, YOQINE	80.00	08/26/1927	83,725.00	
TRUMBOOY, YOQIM	57.00	12/27/1950	83,730.00	
BAKEROOY, YOQILC	57.00	04/06/1951	83,735.00	
COHENOODY, YOQHE	60.00	07/29/1947	83,828.00	
LINDEOODY, YOQIA	61.00	09/07/1946	83,871.00	
MENSHOODY, YOQEV	56.00	09/17/1951	83,937.00	
HAIKAOODY, YOQEUJ	66.00	12/04/1941	83,948.00	
AMPILOODY, YOQEUC	75.00	08/30/1932	83,950.00	
HARRIOOY, YOQEK	68.00	03/08/1940	83,993.00	
HOLTOOY, YOQEIM	62.00	05/20/1945	83,998.00	
BERMPOOY, YOQDE	72.00	07/02/1935	84,084.00	
HEITMOOY, YOQCOH	68.00	06/16/1939	84,119.00	
MOHAMOODY, YOQBL	64.00	12/01/1943	84,151.00	
WOODOODY, YOQBA\	85.00	07/04/1922	84,186.00	

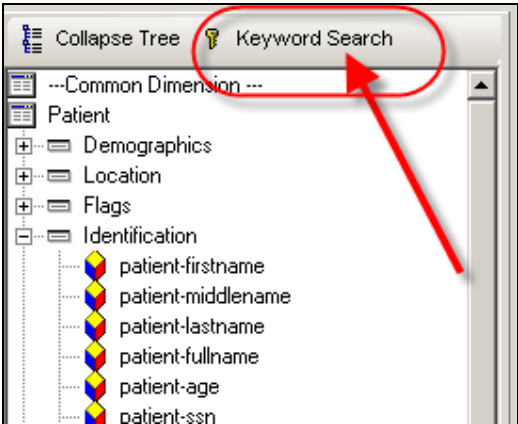

Keyword Search

There are several data fields within the Metalayer Tree. Even as a user becomes comfortable with what fields are available and where most are located, there will be fields the user is not as familiar with or may not have considered in the past. The Keyword Search feature allows the user to type in a word and have the system display any data fields containing the characters entered.

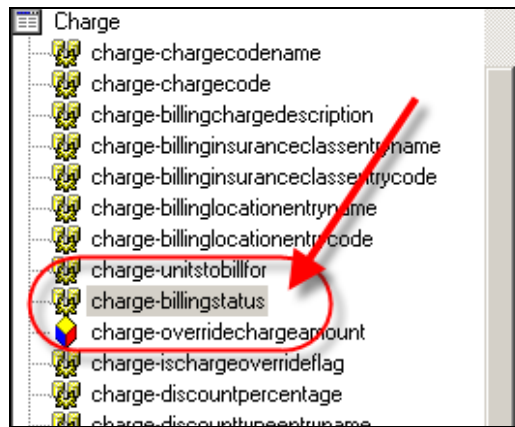
For example, if the user enters *provider* into the Keyword Search, several data fields will be returned due to the fact that the word provider is present in several data fields within several sections of the Metalayer Tree. The system will display fields related to primary care provider, ordering provider, billing provider, etc. The Keyword Search is not limited to certain sections of the Metalayer Tree.

Step-by-Step: Keyword Search

To search using the **Keyword Search**, complete the following:

<p>1. Select the Keyword Search button.</p>	<p>This is located at the top of the MetaLayer Tree.</p>  <p>The Keyword icon on the Toolbar also loads the Keyword Search screen.</p>								
<p>2. Type billing in the Find Field.</p>	<p>Once you start typing the search will find everything starting with the word billing.</p> 								
<p>3. Double-click on charge-billing status.</p>	<p>The dialog box will close and the Metalayer Tree will open to the section where the field selected resides.</p> <table border="1"> <thead> <tr> <th>Field Name</th><th>Keywords</th></tr> </thead> <tbody> <tr> <td>charge-billinglocationentryname</td><td></td></tr> <tr> <td>charge-billingstatus</td><td></td></tr> <tr> <td>chargeapprovingprovider-isbillingprov</td><td></td></tr> </tbody> </table>	Field Name	Keywords	charge-billinglocationentryname		charge-billingstatus		chargeapprovingprovider-isbillingprov	
Field Name	Keywords								
charge-billinglocationentryname									
charge-billingstatus									
chargeapprovingprovider-isbillingprov									

4. View the **MetaLayer Tree** for **charge-billing status**.


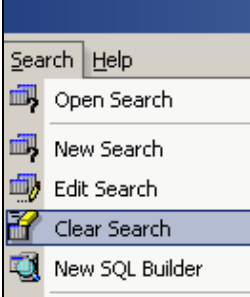
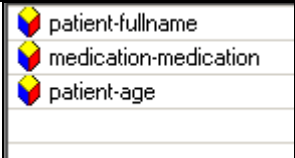


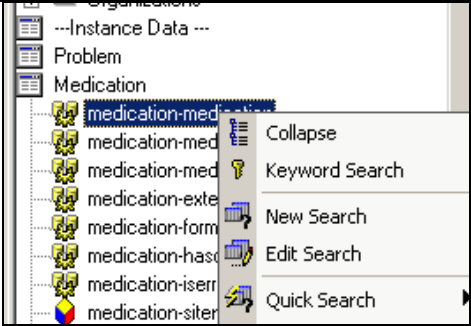
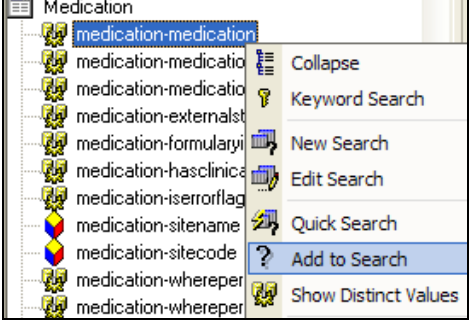

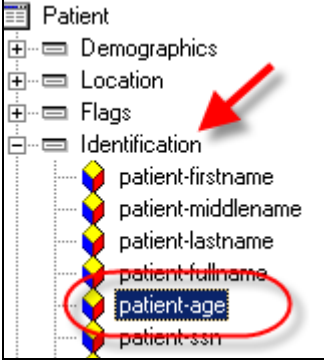
Add Data Field to Search

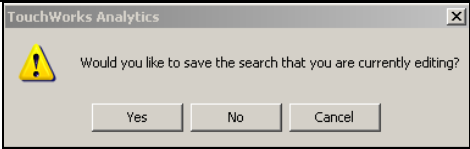

Utilizing the **Add to Search** option will navigate the user to the **Search** form where data fields may be added and existing data fields may be edited as needed.

Step-by-Step: Add Data Fields to Search (Add to Search)

To add **Data Fields to Search**, complete the following:


<p>1. Select the Search dropdown menu, and Clear Search!</p> 	
<p>2. Select No if prompted to save.</p>	
<p>3. Double-click and add the following Data Fields:</p> <ul style="list-style-type: none"> ▪ Patient-fullname ▪ Medication-medication ▪ Patient-age 	


<p>4. Right-click on medication-medication in the MetaLayer Tree.</p>					
<p>5. Select Add to Search.</p>					
<p>6. Set search criteria for the medication-medication data field.</p> <ul style="list-style-type: none"> ▪ Like ▪ Lipitor% 	<table border="1"> <thead> <tr> <th>Is</th><th>Criteria</th></tr> </thead> <tbody> <tr> <td>Like</td><td>Lipitor%</td></tr> </tbody> </table>	Is	Criteria	Like	Lipitor%
Is	Criteria				
Like	Lipitor%				
<p>7. Select the Toggle  button for the MetaLayer Tree (or F8).</p>	<p>This will display the MetaLayer Tree for you to select additional Data Fields to your search.</p>				
<p>8. Double-click the following Data Field:</p> <ul style="list-style-type: none"> ▪ Patient-age 					
<p>9. Set search criteria for the patient-age data field.</p> <ul style="list-style-type: none"> ▪ Between ▪ 18 and 45 	<table border="1"> <thead> <tr> <th>Is</th><th>Criteria</th></tr> </thead> <tbody> <tr> <td>Between</td><td>18 and 45</td></tr> </tbody> </table>	Is	Criteria	Between	18 and 45
Is	Criteria				
Between	18 and 45				
<p>10. Click OK.</p>	<p>You will be prompted to save the search.</p>				

11. Select NO .	 <p>(We will discuss saving the search later in this class)</p>
12. Select the Search dropdown menu.	<p>If you want to check to ensure your search still exists, you can follow the steps 12 and 13.</p>
13. Click Edit Search .	Your search still exists even though you selected No.
14. Select Cancel .	
15. Click the Run button (or F5).	<p>The number of records returned via the search is limited based on how many data fields are defining the search.</p>
16. Click the Toggle  button. (Right of the Binoculars button)	This returns you to the Analytics Worksheet screen with the three defined sections.

Patients with Lipitor between the Ages of 18 and 45

Analytics Worksheet records returned 196		
patient-fullname	medication-medication	patient-age
HARRIKUY, YUKPIL	Lipitor 10 MG TABS	45.00
HARRIKUY, YUKPIL	Lipitor 20 MG Tab	45.00
HAGERLAT, TALKRA	Lipitor 20 MG TABS	45.00
DEMESWAZ, ZAWIE	Lipitor 10 MG TABS	45.00
PRAZULAZ, ZALYEF	Lipitor 40 MG TABS	45.00
KEITTNDG, SONXIA	Lipitor 10 MG TABS	44.00
MAKLEEAT, TAEEOC	Lipitor 20 MG Tab	43.00
POSENAIR, RIACEJ	Lipitor 20 MG Tab	41.00
SOTO-DAY, VADBAH	Lipitor 10 MG TABS	40.00
MADHAENU, UNEBO	Lipitor 40 MG TABS	39.00
SHEFFJET, TEJYIP	Lipitor 10 MG TABS	39.00
TESTNAX, XANVEL	Lipitor 20 MG TABS	39.00
TESTNAX, XANVEL	Lipitor 20 MG TABS	39.00
TESTNAX, XANVEL	Lipitor 20 MG TABS	39.00
HOLLAIES, SEIOJ	Lipitor 10 MG TABS	38.00
BOONEIZ, ZIILAC	Lipitor 10 MG TABS	37.00
BOONEIZ, ZIILAC	Lipitor 40 MG TABS	37.00
BRUNSVAS, SAVDAF	Lipitor 20 MG TABS	37.00
BRUNSVAS, SAVDAF	Lipitor 20 MG TABS	37.00
GOLDSRUT, TURTI	Lipitor 20 MG TABS	36.00
GEORGLEW, WELNZ	Lipitor 20 MG TABS	35.00
GERENEEV, VEETIJ	Lipitor 10 MG Tab	34.00
PINKHOU, UOHEIS	Lipitor 10 MG TABS	33.00

Click the **Red X**  button at the top of the screen to remove a Search Criteria.

Click the **Toggle**  button at the top of the screen to display the MetaLayer Tree.

Data Field Criteria Options



Once a field has been added to a search, the field name will be displayed in a Search Item box (block) at the top-left portion of the screen. Be sure the proper item box is selected (sunken) and begin adding criteria as needed for the field.

The **Is** column represents all of the available operators available for defining the data in the query.

=	Equals (String Name)
>=	Greater Than Or Equal To
<=	Less Than Or Equal To
<	Less Than
<>	Not Equal To
>	Greater Than
Like	Use wildcard (%) to stress data entered is contained within the search string. Ex. – Hyper% will bring back all records that <i>start with Hyper</i> . %Hyper% will return records where the letters H-y-p-e-r reside within the field.
Not Like	Use wildcard (%) to stress data entered is NOT contained within the search string.
Between	Looking for values that are between 2 values. If the user wanted to return all numbers between 35-65, <i>Between</i> would be selected and the use would enter <i>35 and 64</i> in the Criteria column.
is	Used with the criterion of Null .
is Not	Used with the criterion of Null .


And/Or

A user may add several criterions to the same data field within a search if necessary. For example, it may be necessary to pull back results for two or more order types or view patient information pertaining to more than one type of problem. From the initial search criteria entered, change the dropdown in the **And/Or** column to either *And* or *Or* in order for a new line to appear for adding more criteria.

Database field:		<input type="text" value="problem-problem"/>	
Search Criteria			
Is	Criteria	And/Or	Remove
Like	DIABETES MELLITUS TYPE I%	Or	
Like	DIABETES MELLITUS TYPE II%		

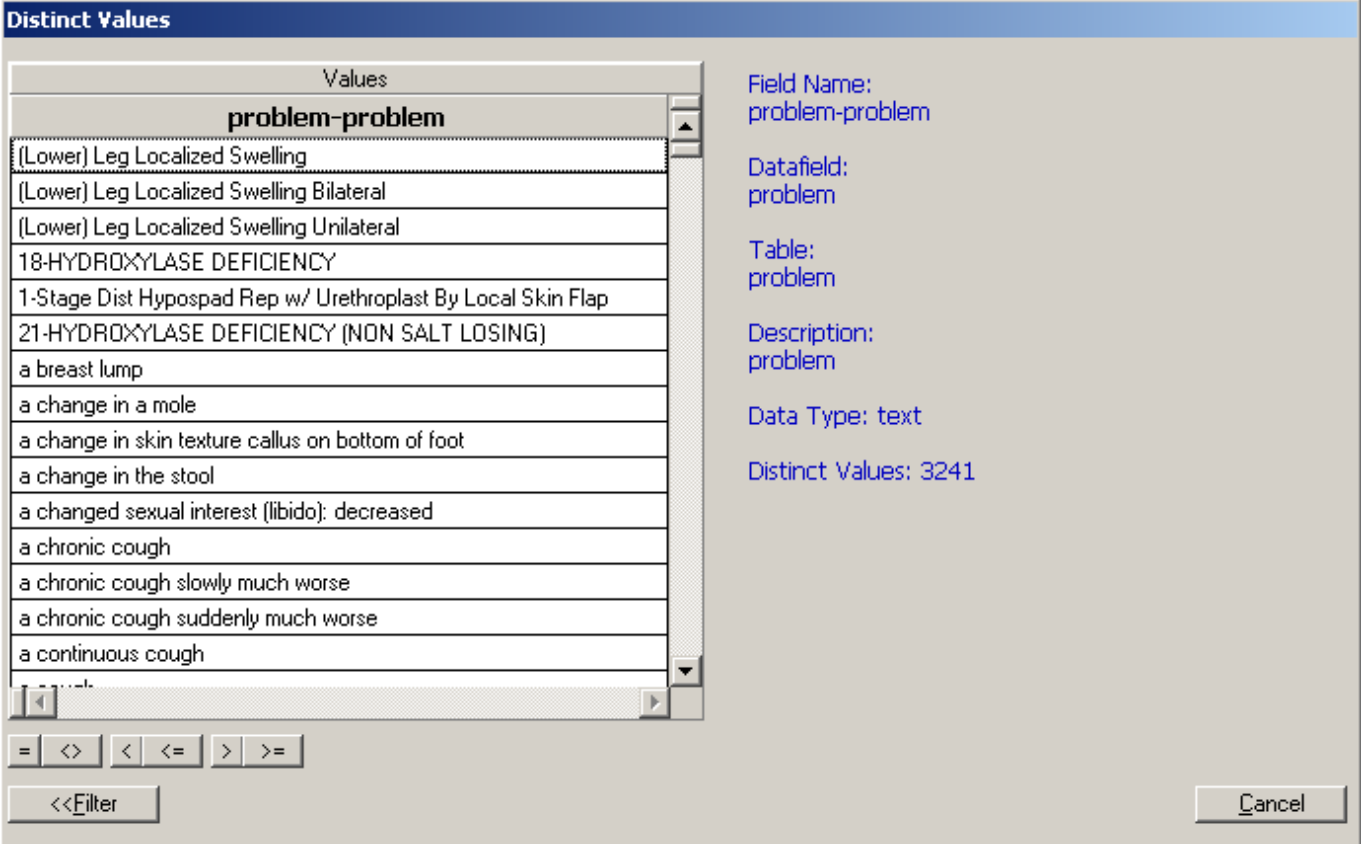
If the user selects *And* from the dropdown, the query will assume that both lines of criteria **MUST** be true in order for records to populate. If the user selects *Or* from the dropdown, the query will assume that either criterion may be true for records to be returned from the database.

Distinct Values

There will be several data fields within the Metalayer Tree that will be labeled as distinct valued fields. A distinct valued field represents a field that contains all unique items. Distinct fields are displayed with the  icon to the left of the data field name.

Distinct values are displayed to aid the user when establishing criteria for a search. For example, a test result is needed to limit returned records from a query. Many patients may have been administered that test, but the test name is the same for all participating patients.

Distinct Values



Distinct Values

Values

problem-problem

(Lower) Leg Localized Swelling

(Lower) Leg Localized Swelling Bilateral

(Lower) Leg Localized Swelling Unilateral

18-HYDROXYLASE DEFICIENCY

1-Stage Dist Hypospad Rep w/ Urethroplast By Local Skin Flap

21-HYDROXYLASE DEFICIENCY (NON SALT LOSING)

a breast lump

a change in a mole

a change in skin texture callus on bottom of foot

a change in the stool

a changed sexual interest (libido): decreased

a chronic cough

a chronic cough slowly much worse

a chronic cough suddenly much worse

a continuous cough

Field Name: problem-problem

Datafield: problem

Table: problem

Description: problem

Data Type: text

Distinct Values: 3241

= <> < <= > >=

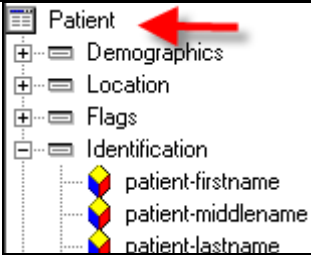
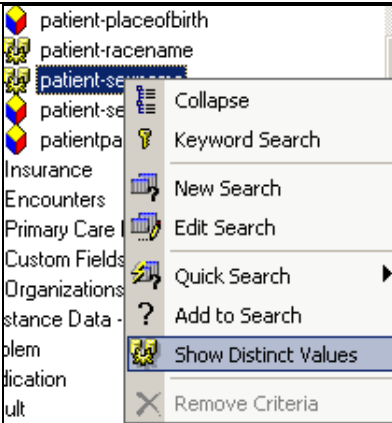
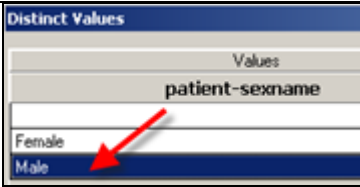
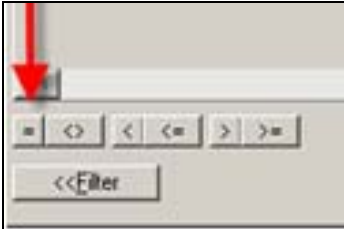
<<Filter

Cancel

Step-by-Step: Show Distinct Values


To show a **Distinct Value**, complete the following:

1. *Keep your current Data Fields and Search Criteria from the previous steps!*

2. Double-click on the Patient Content Category.	
3. Expand Identification .	
4. Right-click the patient-sexname data field.	
5. Select Show Distinct Values .	
6. Highlight Male .	
7. Select the Equal = button.	<p>In your search you want to see Male patients only.</p> 
8. Select the View English Query button.	<p>You should see the following:</p> <p>(medication-medication Like Lipitor%) and (patient-age Between 18 and 45) and (patient-sexname equals Male)</p>
9. Click OK on the View English Query.	

10. Click the Run button (or F5).	You have now defined that you are only looking at Male patients between the ages of 18 and 45 taking Lipitor.
--	---

Values are displayed in the Distinct Value form if at least one patient has been tied to that item in the database. It does not mean that all patients have been tied to that item.

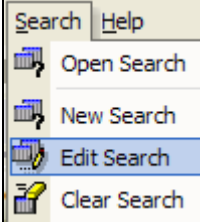
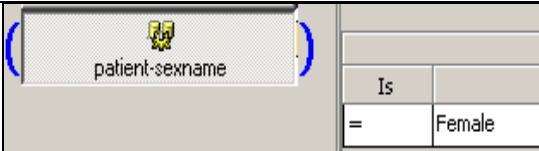
For example, a user may navigate to the distinct value form for the field  patient-isinactiveflag. There will typically be a "Y" or "N" displayed, but not all patients may have this flag set. If only one patient in the system has this flag set to "Y" and another patient has the flag set to "N", then the fields will populate. **Please review how data is populated in Enterprise EHR before assuming a field is being used for all patients.**


Modify Search

Once criteria have been set and the search has been executed, a user may change what criteria is being used to query the database.

Step-by-Step: Modify a Search

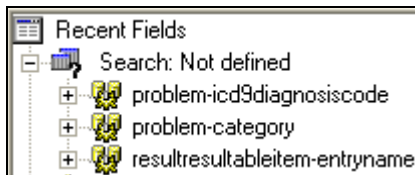
To **Modify a Search**, complete the following:

1. Toggle back to Analytics Worksheet .	
2. Select Search from the dropdown menu.	
3. Select Edit Search .	
4. Change patient-sexname to equal = Female	
5. Click OK .	
6. Click No when prompted to save.	

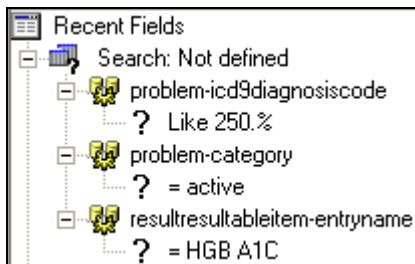
7. Click Run Button (or F5).	
8. Click the Toggle  Button.	

Recent Fields

As search criteria is added, the fields being used along with the criteria will display under the **Recent Fields** tab at the bottom of the Metalayer Tree.



Expanding each of the data fields displayed in the search criteria will display the specific settings.



To edit the criteria from this screen, *double-click* the necessary setting (*Like 250.%*) and make the appropriate changes before clicking **OK**. Double-clicking the field name will navigate the user to the *Search* screen.

Delete Search Criteria

There will be times when certain search criteria will need to be removed. For example, if a search is looking for Amoxicillin or Zithromax, the user may delete Amoxicillin in order to just search for Zithromax.

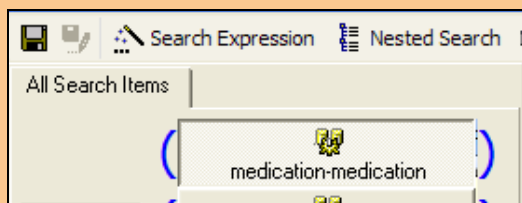
Step-by-Step: Delete Search Criteria

To **Delete Search Criteria**, complete the following:

1. <i>Keep your current Data Fields and Search Criteria from the previous steps!</i>	
2. Select Search from the dropdown menu.	

3. Select Edit Search .										
4. Select medication-medication data field.										
5. Select the dropdown and choose Or .	<table><tr><td></td><td>And/Or</td></tr><tr><td></td><td>Or</td></tr></table>		And/Or		Or					
	And/Or									
	Or									
6. Add another search criteria for the medication-medication data field. <ul style="list-style-type: none">▪ Like▪ Zithromax%	<table><tr><th>Is</th><th>Criteria</th><th>And/Or</th></tr><tr><td>Like</td><td>Lipitor%</td><td>Or</td></tr><tr><td>Like</td><td>Zithromax%</td><td></td></tr></table>	Is	Criteria	And/Or	Like	Lipitor%	Or	Like	Zithromax%	
Is	Criteria	And/Or								
Like	Lipitor%	Or								
Like	Zithromax%									
7. Click the Run Button (or F5) .										
8. Click the Toggle Button										
9. Select the Remove button to remove Zithromax% .	<table><tr><td>Remove</td></tr><tr><td></td></tr></table>	Remove								
Remove										
10. Click the Run Button (or F5) .										
11. Click the Toggle Button										

If you want to delete an entire block of search criteria from a search object, you can select an search object and click the **Red X** button.

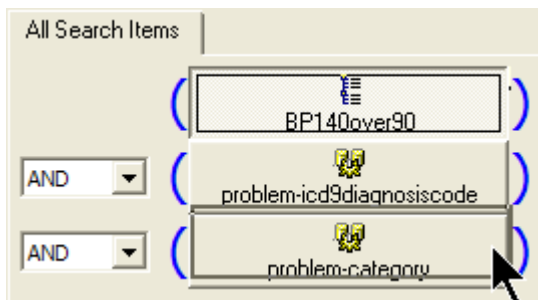


Update Search Criteria Order

Starting with Analytics 4.1.1011, a user may switch the order of search criteria within the *Search* screen. The order of the search field blocks is typically from top to bottom, but there are exceptions such as when using some Nested search criteria.

If the order of the search criteria needs to be changed, simply click the search object needing to be moved and drag it over the area it will be placed.

Drag/Drop the Search Object



Save Search

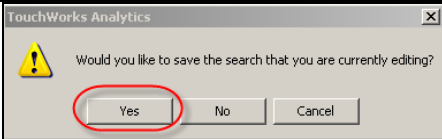
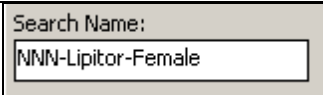
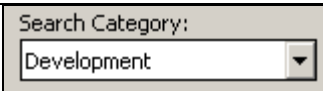
As in any other application, Enterprise EHR Analytics will prompt the user to save data throughout the application's use whenever data has been created or updated. However, there is an added category feature that allows the user to decide if the changes are ready to go to a state of production or remain in development. If initially saved in the category of *development* for example, the data may be promoted to a state of *production* or other categories determined by the administrator. For example, other common categories may be *gold* or *platinum*. This gives the administrator the flexibility to determine what data items may be portrayed as a work in progress. For more information about managing categories, see *Edit Categories* within the *Object Management* section in this document.

When prompted to save information to the Analytics server, the user must enter a name and category type before moving forward. However, the description field is optional.

The following example illustrates how to save a Search object. However, the fields detailed are common when saving any object.

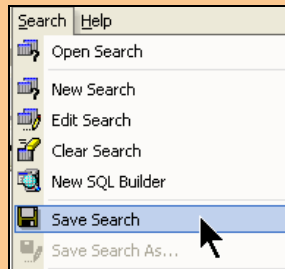
Step-by-Step: Saving Search Criteria

To **Save Search Criteria**, complete the following:

1. Click OK at the bottom of the screen.	
2. Select Yes .	
3. Enter Search Name : <ul style="list-style-type: none"> ▪ NNN – Lipitor – Female (<i>NNN represents your initials</i>) 	
4. Enter a Search Category : <ul style="list-style-type: none"> ▪ Development 	 <i>These Categories will be discussed later during this class.</i>

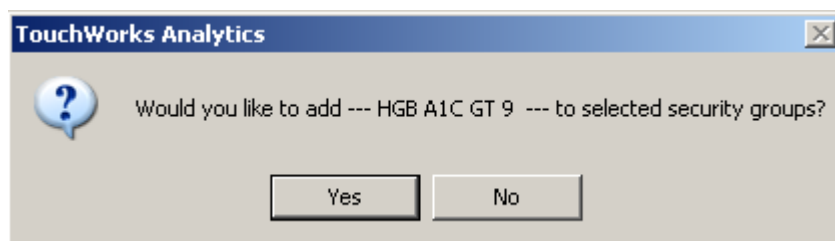
5. Add a Search Description : <ul style="list-style-type: none"> ▪ Female patients between the ages of 18 and 45 taking Lipitor. 	This is an optional field.
6. Click OK .	

You can also save your search from the Analytics Worksheet by selecting the **Search** dropdown menu and selecting **Save Search**.



Granting Access to User Groups

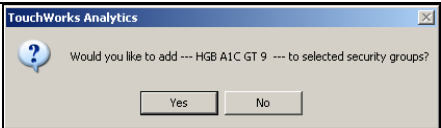
After saving an object to the database initially, a user can grant access to that object to one or more user groups. The following dialog box will display after the user clicks **OK**.

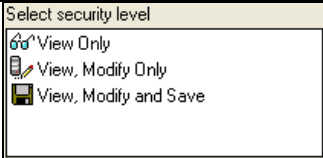


- **Clicking No:** allows the user to bypass the access rights.
- **Clicking Yes:** allows the user to add user groups.

Step-by-Step: Granting Access to User Groups

To **Grant Access to User Groups**, complete the following:

1. Click Yes .	
2. Select Administrator and AllObjects checkboxes.	

3. Select a Security Level :	
-------------------------------------	--

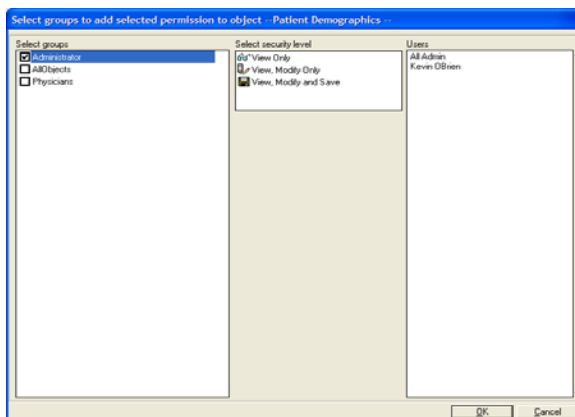
View Only – user *cannot* modify an object

View, Modify Only – user may modify an object, but will only be able to save the object as a different name

View, Modify and Save – user has been given full rights to view, modify and save changes to an object.

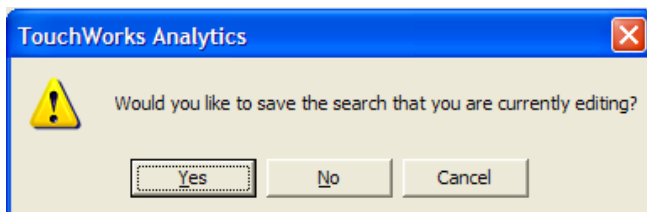
4. Select View, Modify Only .	
5. Click OK .	Selected Users can modify an object and save as a different name.

Select User Groups



Adding/Updating Criteria **WITHOUT** Saving

Throughout the Enterprise EHR Analytics application, the user has the option to bypass saving while adding and/or testing criteria to several different data objects. For example, a user may want to just test search criteria within the Worksheets object that does not require saving to the database. When prompted to save the changes, the user will receive the following dialog box.



In most cases if the user clicks NO, the user will not be required to save the changes to the database and will still have the changes available within the current object. This gives the user the flexibility to test several options before settling on the final criteria. Obviously, save any changes in order to use them moving forward prior to exiting the object and/or application.

Lesson 3: Worksheets

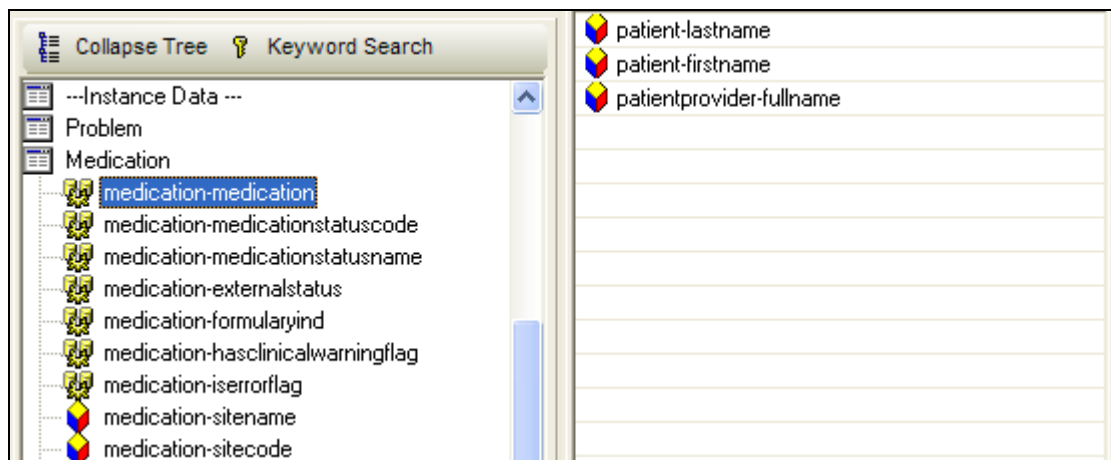
Overview

Worksheets are for listing the results of a search in a spreadsheet format utilizing data fields chosen by the user. Enterprise EHR data displayed in the resulting table can have its properties changed, sorted, filtered or exported as desired.

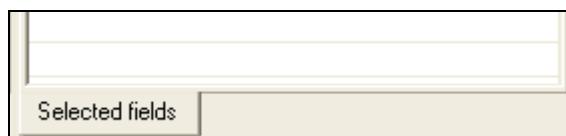
Like Searches, Worksheets may also be saved in order to be used at a later time. For example, if there are data fields from the Metalayer Tree used often, those fields can be saved to the database via a Worksheet in order to save the user time adding fields. It is also possible to attach saved Search criteria to a Worksheet if a particular Search or Searches are needed to populate proper data to a Worksheet.

At least one Search criterion must be present in order for a Worksheet to return any data.

Adding Fields to the Worksheet

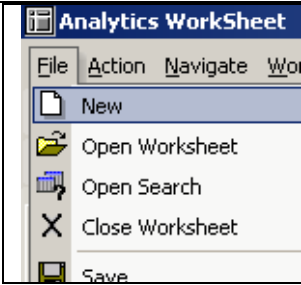
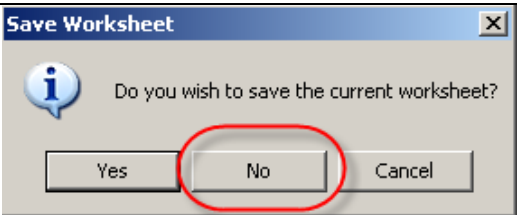

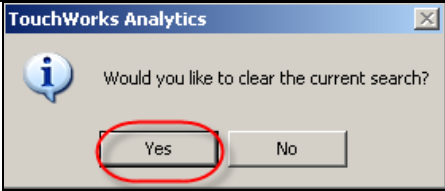
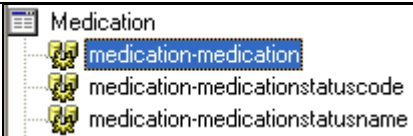

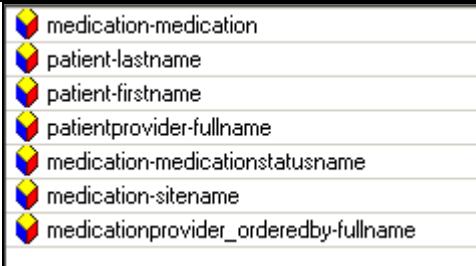


In order to view results of a query using Worksheets, fields from the Metalayer Tree must be added. When added, the fields will display in the **Selected Fields** pane in the center of the screen.



Step-by-Step: Adding Fields to a Worksheet

To **Add Fields to a Worksheet**, complete the following:

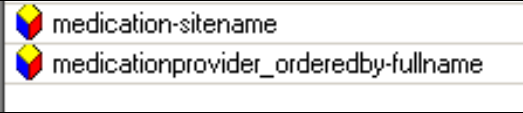
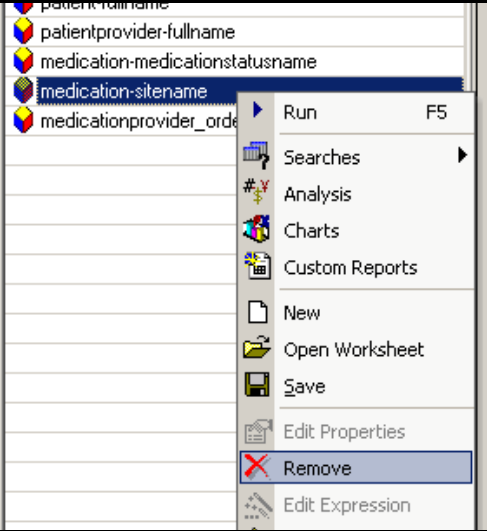
1. Select File .	
2. Select New .	
3. Select No when prompted to save the current worksheet.	 <p>You saved the search earlier, but for this example we are not going to save the worksheet. <i>This is discussed later in the class.</i></p>
4. Select Yes to Clear Search .	 
5. Double-click Medication Content Category.	
6. Double-click the medication-medication Data Field.	
7. Select the following Data Fields:	<ul style="list-style-type: none"> ▪ Patient-lastname ▪ Patient-firstname ▪ Patientprovider-fullname ▪ Medication-medicationstatusname ▪ Medication-sitename ▪ Medicationprovider_orderedby-fullname 

Removing Fields from a Worksheet

Once fields have been added to a Worksheet, it may be necessary to remove certain fields if the goal for the Worksheet has changed or the user is altering the query.

Step-by-Step: Removing Fields

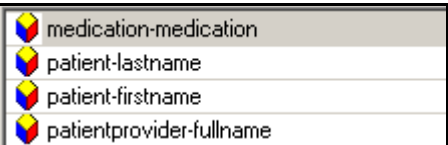
To **Remove Fields to a Worksheet**, complete the following:

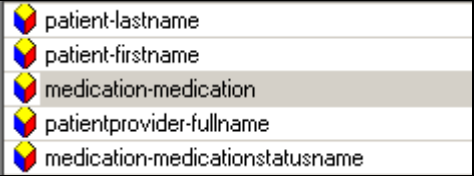
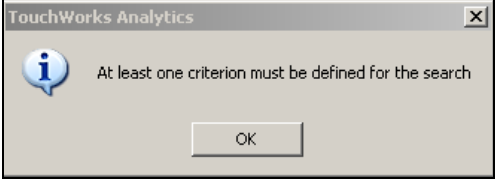
<ol style="list-style-type: none"> Right-click the following Data Fields: <ul style="list-style-type: none"> Medication-sitename Medicationprovider_orderedby-fullname 	
<ol style="list-style-type: none"> Select Remove. 	 <div data-bbox="738 1329 1209 1444" style="border: 1px solid black; padding: 5px; margin-top: 10px;"> <p>Fields may also be removed by simply selecting the field and clicking Delete on the keyboard.</p> </div>

Changing Selected Data Fields Order

Step-by-Step: Changing Data Fields

To **Change Data Fields** around, complete the following:

<ol style="list-style-type: none"> Select the medication-medication Data Field. 	
---	--

2. Drag/Drop the data field under patient-firstname .	
3. Select the Run button (or F5).	<p>A warning message appears stating you must have at least one criterion selected.</p> 

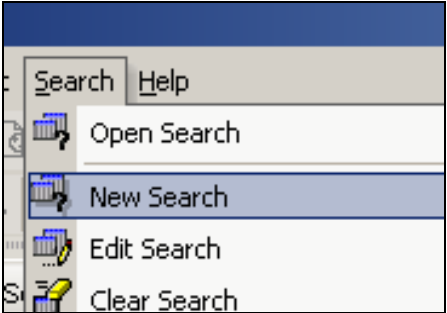

Running/Loading Worksheets

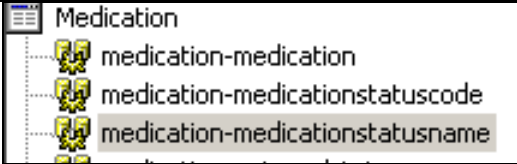
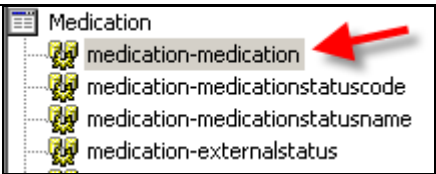
After the appropriate data fields have been added to the Worksheet and an associated Search has been loaded, the data is ready to be displayed. The data fields in the Worksheet will be the only indicator to what data was returned in the query. For example, if the patient's full name and insurance are added to the Worksheet, then all patients and their insurance will display based on the definition of the Search.

The Search determines how many rows are returning as well as what data is displayed. For example, if the Search is only returning records of those patients with insurance type of Aetna, then only those patients with Aetna insurance will load into the Worksheet.

Step-by-Step: Running/ Loading Worksheets

To **Change Data Fields** around, complete the following:

1. Select the Search dropdown menu.	
2. Select New Search .	<p>This allows you to now enter in the search criteria.</p> 
3. Click the Toggle  button for the MetaLayer Tree.	

4. Double-click the Medications Content Category.					
5. Right-click on medication-medicationstatusname , and select Add to Search .					
6. Select the search criteria: <ul style="list-style-type: none"> ▪ Equals ▪ Active 	<table border="1"> <thead> <tr> <th>Is</th><th>Criteria</th></tr> </thead> <tbody> <tr> <td>=</td><td>Active</td></tr> </tbody> </table>	Is	Criteria	=	Active
Is	Criteria				
=	Active				
7. Right-click on medication-medication , and select Add to Search .					
8. Select the search criteria: <ul style="list-style-type: none"> ▪ Like ▪ Lipitor% 	<table border="1"> <thead> <tr> <th>Is</th><th>Criteria</th></tr> </thead> <tbody> <tr> <td>Like</td><td>Lipitor%</td></tr> </tbody> </table>	Is	Criteria	Like	Lipitor%
Is	Criteria				
Like	Lipitor%				
9. Click OK .					
10. Select No when prompted to save.					
11. Click the Run button (or F5).					

Patients Actively on Lipitor

Analytics Worksheet Currently on row 1 of 4004

patient-lastname	patient-firstname	patientprovider-fullname	medication-medication	medication-medicationstatusname
FAYYAKUY	YUKWEH	ELBAYEZZ, ZZEUUL	Lipitor 20 MG Tab	Active
LEWISIVZ	ZVIRDA	ELBAYEZZ, ZZEUUL	Lipitor 20 MG TABS	Active
TABRILUZ	ZULSNO	ELBAYEZZ, ZZEUUL	Lipitor 10 MG TABS	Active
WINFILEZ	ZELMAP	ELBAYEZZ, ZZEUUL	Lipitor 20 MG TABS	Active
WHELALAZ	ZELKWI	ELBAYEZZ, ZZEUUL	Lipitor 10 MG TABS	Active
SULLIKEZ	ZEKZII	ELBAYEZZ, ZZEUUL	Lipitor 10 MG TABS	Active
MOSKOOOY	YOOOVI	ELBAYEZZ, ZZEUUL	Lipitor 20 MG Tab	Active
JORQUKEY	YEKABE	ELBAYEZZ, ZZEUUL	Lipitor 20 MG TABS	Active
BLANTSOV	VOSIAT	ELBAYEZZ, ZZEUUL	Lipitor 20 MG TABS	Active
ABBOUEMU	UMEITE	ELBAYEZZ, ZZEUUL	Lipitor 20 MG TABS	Active
FOWLELIZ	ZILNIV	ELBAYEZZ, ZZEUUL	Lipitor 10 MG TABS	Active
KANAAEQZ	ZDENOF	ELBAYEZZ, ZZEUUL	Lipitor 10 MG TABS	Active
HEATHBEZ	ZEBWIN	ELBAYEZZ, ZZEUUL	Lipitor 20 MG TABS	Active
GRESHIBY	YBINEL	ELBAYEZZ, ZZEUUL	Lipitor 80 MG TABS	Active
WEISSLEZ	ZELRUI	ELBAYEZZ, ZZEUUL	Lipitor 10 MG Tab	Active
PHELAIHZ	ZHIEAG	ELBAYEZZ, ZZEUUL	Lipitor 10 MG TABS	Active
PHELAIHZ	ZHIEAG	ELBAYEZZ, ZZEUUL	Lipitor 10 MG Tab	Active
LEESIW	WISKAY	ELBAYEZZ, ZZEUUL	Lipitor 20 MG TABS	Active
ULANQUY	YUQJAG	ELBAYEZZ, ZZEUUL	Lipitor 20 MG Tab	Active
SHAFEGUY	YUGEMU	ELBAYEZZ, ZZEUUL	Lipitor 20 MG Tab	Active
REIBEELY	YLEQUA	ELBAYEZZ, ZZEUUL	Lipitor 10 MG TABS	Active
LEHNEQAY	YAOHOE	ELBAYEZZ, ZZEUUL	Lipitor 10 MG TABS	Active
ONLEYLAY	YALOB	ELBAYEZZ, ZZEUUL	Lipitor 40 MG TABS	Active
TRANEAY	YAEPAW	ELBAYEZZ, ZZEUUL	Lipitor 20 MG TABS	Active
PERSIRUX	XURIYT	ELBAYEZZ, ZZEUUL	Lipitor 10 MG TABS	Active
SCHIFLOZ	ZOLEAF	ELBAYEZZ, ZZEUUL	Lipitor 20 MG TABS	Active
TAYLOEHZ	ZHEOYR	ELBAYEZZ, ZZEUUL	Lipitor 10 MG TABS	Active
DAVISEHZ	ZHEACE	ELBAYEZZ, ZZEUUL	Lipitor 20 MG TABS	Active
BASSEAV	VAEIEL	ELBAYEZZ, ZZEUUL	Lipitor 10 MG TABS	Active
WILLIHUW	WUHIEW	ELBAYEZZ, ZZEUUL	Lipitor 10 MG TABS	Active
RHODEBRU	URBPY	ELBAYEZZ, ZZEUUL	Lipitor 20 MG TABS	Active
KELLNEUS	SUEEID	ROTHEZZ, ZZEIAJ	Lipitor 10 MG TABS	Active

Distinct Rows

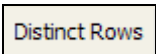
Based on certain Search criteria and/or fields chosen to display in a Worksheet, duplicate rows of data may appear. For example, if within a Search the user wants to display all patients who have had an a particular test n the past 2 years, a patient may display more than once if they have in fact taken the test multiple times during that time period. However, even if there is no field in the **Selected Fields** pane making the rows return unique for a particular patient – i.e. Encounter date or numeric test result –the patient may still show up multiple times with the same exact data if these example fields were used in the search criteria.

patient-lastname	patient-firstname	resultresultableitem-entryname
ABBOTOAY	YAOJIM	HEMOGLOBIN A1C
ABDELAIR	RIATUR	HEMOGLOBIN A1C
ADAMSWES	SEWOYM	HEMOGLOBIN A1C
ADENAMR	RMATAC	HEMOGLOBIN A1C
ADENAMR	RMATAC	HEMOGLOBIN A1C
AKALEJER	REJANA	HEMOGLOBIN A1C

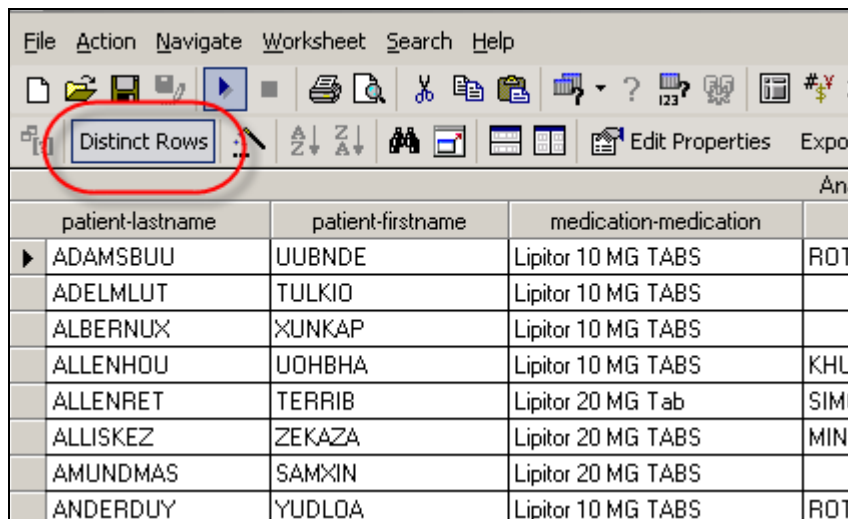
Step-by-Step: Limiting Rows Returned that are Unique

To **Change Data Fields** around, complete the following:

1. Remain on the worksheet you just ran!

2. Select the Distinct Rows button.							
3. Click the Run button (or F5).	<p>You should return 2024 records.</p> <p>Analytics Worksheet records returned: 2024</p> <table border="1"> <thead> <tr> <th>medication-medication</th><th>medic</th></tr> </thead> <tbody> <tr> <td>Lipitor 10 MG TABS</td><td>Active</td></tr> <tr> <td>Lipitor 10 MG TABS</td><td>Active</td></tr> </tbody> </table>	medication-medication	medic	Lipitor 10 MG TABS	Active	Lipitor 10 MG TABS	Active
medication-medication	medic						
Lipitor 10 MG TABS	Active						
Lipitor 10 MG TABS	Active						

Distinct Rows button



The **Distinct Rows** icon will remain highlighted until re-selected or the user leaves the Worksheet object.

For More Practice:

- Step 1: **Clear Search**
- Step 2: **View English Query**
- Step 3: Double-click the **Problems** content category
- Step 4: Right-click the **problem-icd9diagnosiscode** data field
- Step 6: Select **Quick Search**
- Step 7: **Like 250%**
- Step 8: Click **Enter** on your keyboard
- Step 9: Run the query
- Step 10: Click the **Distinct Rows** button
- Step 11: Re-run the query

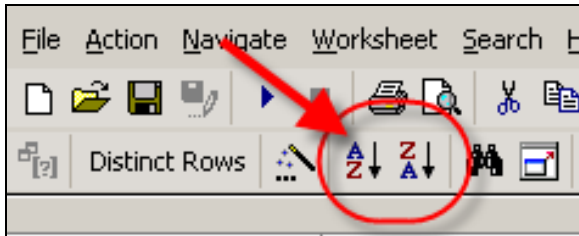
Managing Worksheets

Once data has been populated into a Worksheet, it may be displayed in various ways using different tools. The spreadsheet data can also be exported to other file types in order to share with others in the organization that may not have access to the Analytics product or for further managing of the data.

Sorting Records



One or more columns in the Worksheet may be sorted either in ascending or descending order.

Ascending or Descending Buttons



Step-by-Step: Sorting Columns in the Worksheet

To **Sort Columns**, complete the following:

1. Remain on the worksheet you just ran!															
2. Highlight the patient-lastname column.	<table border="1"> <thead> <tr> <th>patient-lastname</th><th>patie</th></tr> </thead> <tbody> <tr><td>ADAMSBUE</td><td>UUBND</td></tr> <tr><td>ADELMLUT</td><td>TULKIO</td></tr> <tr><td>ALBERNUX</td><td>XUNKAI</td></tr> <tr><td>ALLENHOU</td><td>UOHBH</td></tr> <tr><td>ALLENRET</td><td>TERRIB</td></tr> <tr><td>ALLISKEZ</td><td>ZEKAZ</td></tr> </tbody> </table>	patient-lastname	patie	ADAMSBUE	UUBND	ADELMLUT	TULKIO	ALBERNUX	XUNKAI	ALLENHOU	UOHBH	ALLENRET	TERRIB	ALLISKEZ	ZEKAZ
patient-lastname	patie														
ADAMSBUE	UUBND														
ADELMLUT	TULKIO														
ALBERNUX	XUNKAI														
ALLENHOU	UOHBH														
ALLENRET	TERRIB														
ALLISKEZ	ZEKAZ														
3. Click the Ascending  or Descending  button options.															

Toggle

When data is initially loaded into a Worksheet, the data is displayed in full view with the Metalayer Tree and Selected Fields pane hidden. To switch back and forth between the data being fully displayed and the ability to edit the fields in the Worksheet, click the following icon in the toolbar.



The icon above is also available in the Analysis and Chart objects within Analytics. However, “hovering” over the icon with the mouse arrow will display a different name depending on the section of Analytics the user is presently accessing. In Worksheets, the icon is labeled *Toggles between full screen and edit*.

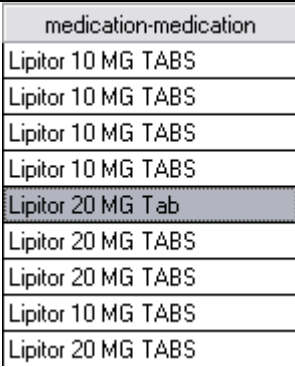

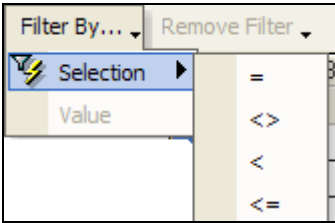
Filter Records

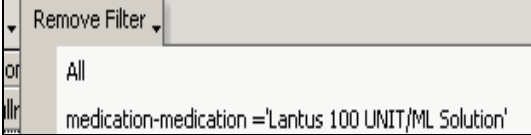
Once rows of data have been returned in a Worksheet, the information can be filtered in order to only display rows based on criteria set by the user. Of course the user may edit the Search driving the rows displayed, but filtering gives the user a bit more flexibility without having to change the Search criteria or re-run the query against the database.

Worksheets are filtered based on selected fields of data within the returned rows of information. For example, if age was a field being returned in the Worksheet, a field in the age column can be selected and filtered using the following operator options: =, <>, <, <=, >, >=.

Step-by-Step: Filter Data in a Worksheet



To **Filter the Data**, complete the following:

1. Remain on the worksheet you just ran!	
2. Highlight one cell within the worksheet under medication-medication .	
3. Click the Filter By button.	
4. Choose the Selection option.	<p>A dropdown menu appears with several options.</p> 
5. Select the Equals = sign.	<p>You are filtering to see the patients on a particular medication only.</p>

6. Select Remove Filter button.	
7. Select the All option.	<div style="border: 1px solid black; padding: 5px; background-color: #f9cb9c;"> Multiple filters can be done for a worksheet, so you have the choice to select All or a specific filter defined. </div>

Splitting a Worksheet Screen

Splitting the screen allows the user to see two or more copies of the worksheet simultaneously.

- Click  to split the Worksheet screen horizontally.
- Click  to split the Worksheet screen vertically.

Split Worksheet

patient-lastname	patient-firstname	patient-zipcode	patientpatient_other-enterprisemn	patient-age	patientprovider-lastname
▶ ABBOTDAY	YAOJIM	12345	143450201	40	
ABDELAIR	RIATUR	12345	143420806	60	
ADAMSWES	SEWDYM	12345	333428472	37	
ADENAMR	RMATAC	12345	333490501	53	
ADENAMR	RMATAC	12345	333490501	53	
AKALEJER	REJANA	12345	343415374	74	
AKRIDBOR	ROBUYK	12345	333488124	84	
AL HUAOR	ROAICH	12345	333489787	27	
ALSTOPAZ	ZAPBAG	12345	133400594	51	
AMAYAIER	REIORE	12345	343415860	44	
ANTONCOY	YOCUOL	12345	133433731	63	FASELEZZ
AZIMNUS	SUNKUS	12345	323485056	47	
BACOTORY	YROLEE	12345	103459197	43	
BANKSPIY	YIPAAN	12345	143400407	98	
BARROOYR	RYDMRA	12345	333462838	58	
BACKELIV	YUHNEDV	12345	173451265	55	KEEDIC77
patient-lastname	patient-firstname	patient-zipcode	patientpatient_other-enterprisemn	patient-age	patientprovider-lastname
▶ ABBOTDAY	YAOJIM	12345	143450201	40	
ABDELAIR	RIATUR	12345	143420806	60	
ADAMSWES	SEWDYM	12345	333428472	37	
ADENAMR	RMATAC	12345	333490501	53	
ADENAMR	RMATAC	12345	333490501	53	
AKALEJER	REJANA	12345	343415374	74	
AKRIDBOR	ROBUYK	12345	333488124	84	
AL HUAOR	ROAICH	12345	333489787	27	
ALSTOPAZ	ZAPBAG	12345	133400594	51	
AMAYAIER	REIORE	12345	343415860	44	
ANTONCOY	YOCUOL	12345	133433731	63	FASELEZZ
AZIMNUS	SUNKUS	12345	323485056	47	
BACOTORY	YROLEE	12345	103459197	43	
BANKSPIY	YIPAAN	12345	143400407	98	

There is no Undo button!


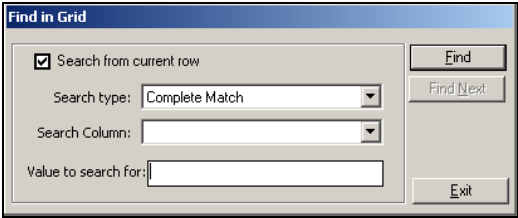
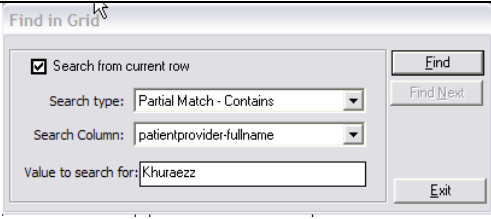
You must drag the split portion of the screen to the bottom to view a full screen again.

Find Records

With the possibility for many rows to be returned in a Worksheet, it may be necessary for the user to find certain rows of data containing particular information.

Step-by-Step: Find Records in a Worksheet

To **Find Records in a Worksheet**, complete the following:

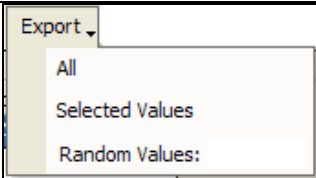
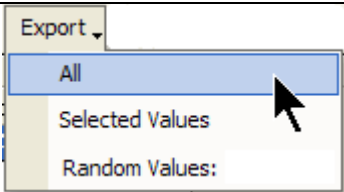
<ol style="list-style-type: none"> Click the Binoculars  button to locate data within the Worksheet. 	 <p>The 'Find in Grid' dialog box is shown. It has a checked box for 'Search from current row'. The 'Search type' is set to 'Complete Match'. The 'Search Column' is empty. The 'Value to search for' is empty. Buttons for 'Find', 'Find Next', and 'Exit' are on the right.</p>
<ol style="list-style-type: none"> Select the appropriate Search type, Search Column (if necessary), and a Value. 	 <p>The 'Find in Grid' dialog box is shown. The 'Search type' is set to 'Partial Match - Contains'. The 'Search Column' is set to 'patientprovider-fullname'. The 'Value to search for' is 'Khuraezz'. Buttons for 'Find', 'Find Next', and 'Exit' are on the right.</p>
<ol style="list-style-type: none"> Click Find. 	

Export

A user may export information from the Analytics application into other file types such as delimited text files, CSV files and Excel. Analytics will export the data exactly as it appears on the screen. So, if a filter has been applied to a Worksheet, only the filtered data will be exported and not all of the rows that were returned via the Search.

Step-by-Step: Exporting Data

To **Export Data**, complete the following:

<ol style="list-style-type: none"> Select the Export button option on the toolbar. 	 <p>The 'Export' button dropdown menu is shown. It has three options: 'All', 'Selected Values', and 'Random Values:'. The 'All' option is highlighted.</p>
<ol style="list-style-type: none"> Choose one of the following options: <ul style="list-style-type: none"> All to export all rows in the Worksheet. Selected Values if the user selected only certain rows by utilizing the Shift and/or Ctrl keys. 	 <p>The 'Export' button dropdown menu is shown. The 'All' option is highlighted, and a mouse cursor is pointing at it.</p>

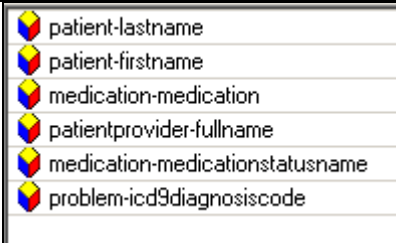
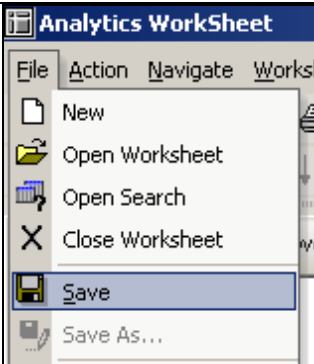
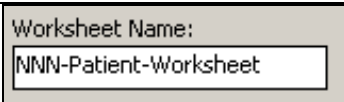
- **Random Values** to export a random *sample of rows*. For example, entering a 10 will export 10 random rows from the Worksheet.

Saving Worksheets

If there are fields from the Metalayer Tree commonly added to a Worksheet, the entire Worksheet may be saved so that users will not have to add the same fields each time they want to view a particular list of fields. Worksheets run weekly, quarterly, yearly, etc. can be saved in order to have those Worksheets available on demand.

Step-by-Step: Saving a Worksheet

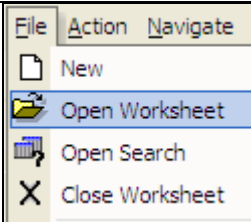
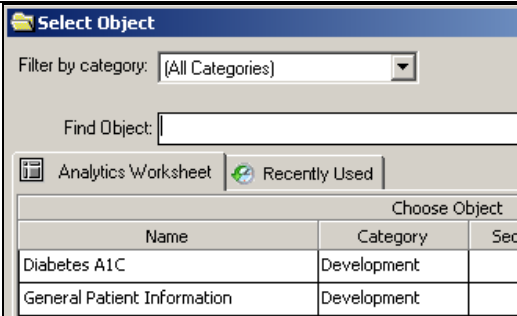
To **Export Data**, complete the following:

1. Select the Toggle button.	
2. Ensure the appropriate data fields are listed: <ul style="list-style-type: none"> ▪ Patient-lastname ▪ Patient-firstname ▪ Medication-medication ▪ Patientprovider-fullname ▪ Medication-medicationstatusname ▪ Problem-icd9diagnosiscode 	
3. Select File .	
4. Select Save .	
5. Enter the Worksheet Name: <ul style="list-style-type: none"> ▪ NNN – Patient – Worksheet <p><i>The NNN represents your initials</i></p>	

6. Enter the Worksheet Category: ▪ Development	
7. Click OK .	<i>We will discuss linking a worksheet to a search later in this class.</i>

Step-by-Step: Opening a Save Worksheet

To **Export Data**, complete the following:

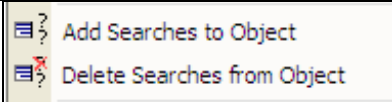
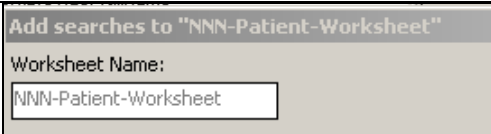
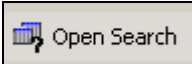
1. Select the File dropdown menu.	
2. Select Open Worksheet .	
3. Locate your worksheet name in the Find Object field: ▪ NNN – Patient – Worksheet	 <div style="border: 1px solid black; padding: 5px; margin-top: 10px; background-color: #fff9c4;"> <p>Select category from the Filter by category dropdown list to filter by the category tied to the Worksheet when Saved.</p> </div>
4. Highlight the worksheet and click OK .	

Link Saved Search to a Worksheet

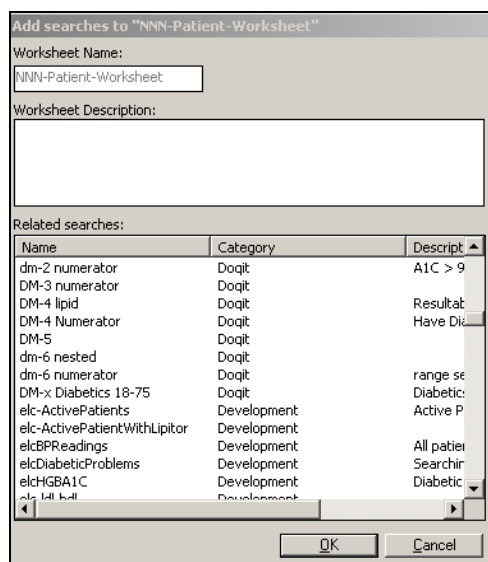
If one or more saved Searches are used to populate data in a Worksheet, those Searches can be linked to a particular Worksheet. This can save a user time – especially those users who are not familiar with the Worksheet-Search relationship – when needing to populate information as fast as possible.

Step-by-Step: Linking a Saved Search to a Worksheet

To **Link a Saved Search to a Worksheet**, complete the following:

1. Select the Search dropdown menu.	
2. Select Add Searches to Object .	
3. The Worksheet Name should be displayed (grayed out).	
4. Highlight your Search below. <ul style="list-style-type: none"> ▪ NNN – Lipitor – Female 	
5. Click OK .	This will link the Search to the Worksheet. After the Worksheet is loaded, the associated Search will be listed when the user select Open Search.
6. Select Open Search from the toolbar.	
7. Click Cancel .	

Add Searches to Worksheet



Add searches to "NNN-Patient-Worksheet"

Worksheet Name:
NNN-Patient-Worksheet

Worksheet Description:

Related searches:

Name	Category	Descript
dm-2 numerator	Doqit	A1C > 9
DM-3 numerator	Doqit	
DM-4 lipid	Doqit	Resultat
DM-4 Numerator	Doqit	Have Di
DM-5	Doqit	
dm-6 nested	Doqit	
dm-6 numerator	Doqit	range se
DM-x Diabetics 18-75	Doqit	Diabetic
elc-ActivePatients	Development	Active P
elc-ActivePatientWithLipitor	Development	
elcBPreReadings	Development	All patie
elcDiabeticProblems	Development	Searchir
elcHGBA1C	Development	Diabetic
elcLdlHdl	Development	

OK Cancel

Lesson 4: Advanced Search Options

Multi-Search

When completing a comprehensive search, all results from the search will display based on what was queried from the database. For example, if a search is constructed to return every time a patient took a Lipid Panel in the last year, the same patient may display more than once if they took that test more than once during that timeframe. No matter how small the date parameters set, a patient may still show up multiple times or not enough rows are returned in order to make the sample valid or meaningful.

Analytics provides the opportunity to display just the *last* instance each of the search criterion was met. Using a Multi-Search, the *last time* the patient had certain results from a Lipid Panel in the past year would show up and not all instances of the test.

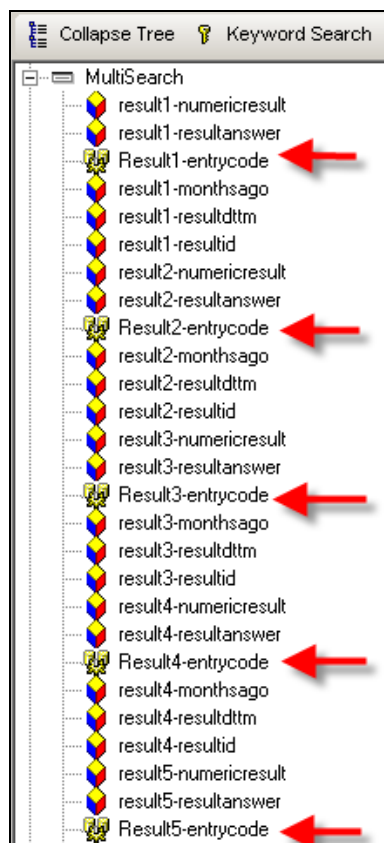
Multi-Search is available in the **Results** and **Findings** content categories.

There are up to six different criteria a user can set when utilizing Multi-Search. For example, using Multi-Search for Results means the user can set up to six different resultable items (i.e. LDL, A1C) as criteria for the search.

So if searching for all patients who have had a Lipid Panel in the past year with HDL Cholesterol less than 60, LDL Cholesterol above 130 and Triglycerides greater than 180 – three of the possible six Multi-Search groups can be used in order to find the most recent tests of patients who have fallen under the criteria.


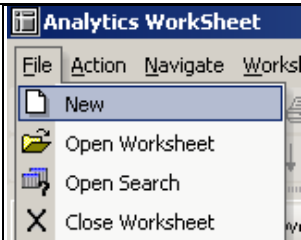
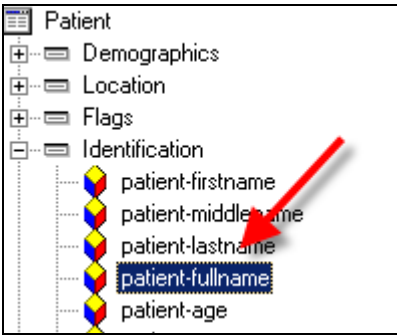
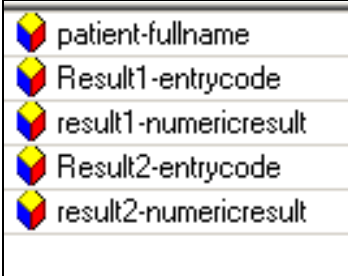
It is important to keep the resultables used in the search separate – thus, the reason why there are separate groupings for what is being used in the search criteria.

Results Content Category (MultiSearch)



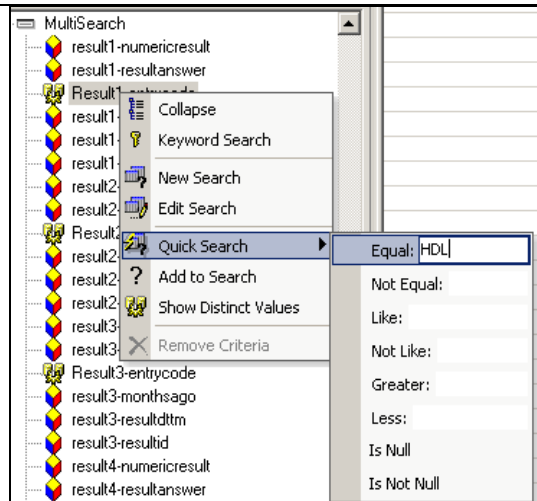
Step-by-Step: Add Criteria using a MultiSearch

To Add Criteria using a **MultiSearch**, complete the following:

<p>1. Select the Search dropdown menu, and Clear Search.</p>	
<p>2. Select File from the dropdown menu.</p>	
<p>3. Select New.</p>	
<p>4. Double-click Patient Content Category.</p>	
<p>5. Double-click patient-fullname.</p>	<p>This adds to the middle section of the screen.</p> 
<p>6. Double-click Results Content Category.</p>	
<p>7. Expand the MultiSearch.</p>	
<p>8. Double-click the following Data Fields:</p> <ul style="list-style-type: none"> ▪ Result1-entrycode ▪ Result1-numericresult ▪ Result2-entrycode ▪ Result2-numericresult 	


9. Use the **Quick Search** to enter in search data:

- Result1-entrycode = HDL
- Result1-numericresult < 60
- Result2-entrycode = LDL
- Result2-numericresult > 130



10. Click the **Run** button (or **F5**).

11. Select the **View English Query**

 View English Query

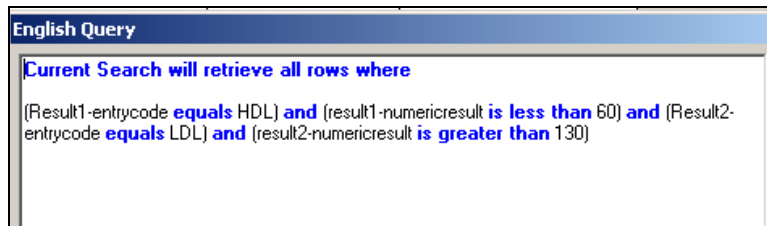
button.

You should see the following:

(Result1-entrycode equals HDL) and (result1-numericresult is less than 60) and (Result2-entrycode equals LDL) and (result2-numericresult is greater than 130)

12. Click **OK**.

View English Query



Patients with HDL and LDL Results

patient-fullname	Result1-entrycode	result1-numericresult	Result2-entrycode	result2-numericresult
WHEELJET, TEJHUE	HDL	55.00	LDL	154.00
REINHGWU, UWGSE	HDL	47.00	LDL	145.00
HOLLAGWU, UWGNI	HDL	51.00	LDL	199.00
KUNDAGWU, UWGN	HDL	36.00	LDL	147.00
HERNAGWU, UWGM	HDL	46.00	LDL	137.00
BARNEGWU, UWGF	HDL	39.00	LDL	229.00
HAMANGWU, UWGE	HDL	40.00	LDL	132.00
YARBOEWU, UWEYI	HDL	47.00	LDL	139.00
NORTOMUU, UUMIT	HDL	43.00	LDL	139.00
KIRWIMUU, UUMARI	HDL	44.00	LDL	137.00
PRASALUU, UULRO	HDL	46.00	LDL	144.00
MALEKLUU, UULNA	HDL	52.00	LDL	168.00
CURLELUU, UULAN	HDL	58.00	LDL	153.00
LOPEZBUU, UUBKI	HDL	54.00	LDL	215.00

AND vs. OR Using Multi-Search

The scenario above assumes the logic that the user is interested in finding out the last time a patient had an HDL result less than 60 **AND** LDL result greater than 130. Simply adding search criteria to a Multi-Search will assume that the user is interested in both scenarios coming true – hence, the AND clause.

However, if a user is interested in finding out the last time a patient had HDL results less than 60 **OR** LDL result greater than 130, the user must utilize the same, initial Multi-Search option (i.e. Result1 or Finding1) for as many criteria that are necessary. For example, the previous scenario – looking for HDL < 60 OR LDL > 130 would have the search criteria set up like the following:

English Query

Current Search will retrieve all rows where

(Result1-entrycode **equals** HDL **and** result1-numericresult **is less than** 60) **or** (Result1-entrycode **equals** LDL **and** result1-numericresult **is greater than** 130)



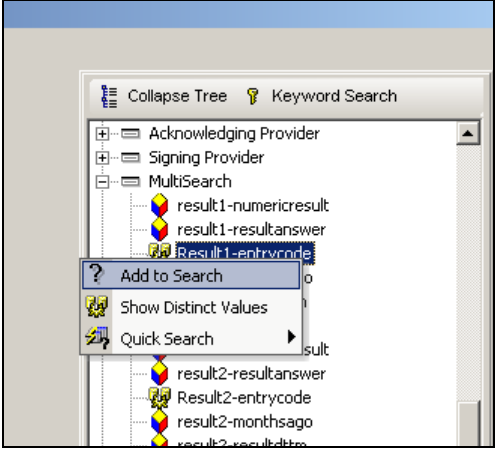
It is important to remember that the user cannot use one search object (Result1) that includes both sets of criteria such as below. The system will not know which value (60 or 130) goes with which result (HDL or LDL).

Database field:		Result1-entrycode	
Search Criteria			
Is	Criteria	And/Or	Remove
=	HDL	Or	<input type="button" value="Remove"/>
=	LDL		<input type="button" value="Remove"/>

Database field:		result1-numericresult	
Search Criteria			
Is	Criteria	And/Or	Remove
<	60	Or	<input type="button" value="Remove"/>
>	130		<input type="button" value="Remove"/>

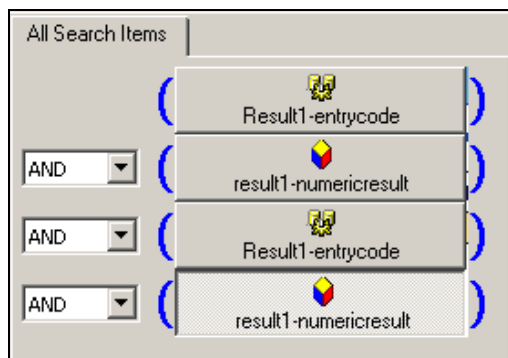
Step-by-Step: Querying One Result OR Another Result using MultiSearch

To set up **Querying One Result OR Another Result**, complete the following:

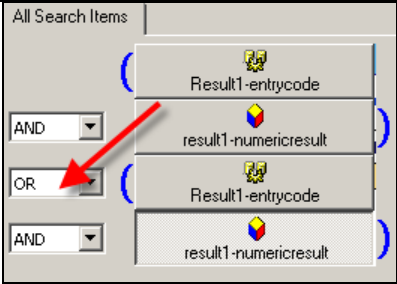

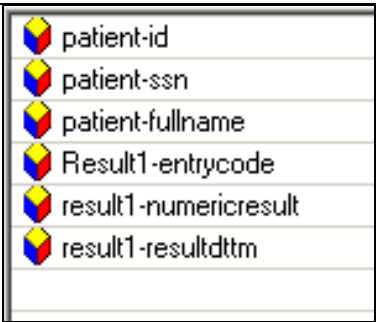
<ol style="list-style-type: none"> 1. Select the Search dropdown menu, and Clear Search. 					
<ol style="list-style-type: none"> 2. Click No if prompted to save search. 					
<ol style="list-style-type: none"> 3. Select the Search dropdown menu 					
<ol style="list-style-type: none"> 4. Select New Search. 					
<ol style="list-style-type: none"> 5. Select the Toggle  button to open the MetaLayer Tree. 					
<ol style="list-style-type: none"> 6. Double-click Results Content Category. 					
<ol style="list-style-type: none"> 7. Expand the MultiSearch. 					
<ol style="list-style-type: none"> 8. Right-click on Result1-entrycode, and Add to Search. 					
<ol style="list-style-type: none"> 9. Enter the following: <ul style="list-style-type: none"> ▪ Is ▪ HDL 	<table border="1"> <thead> <tr> <th>Is</th><th>Criteria</th></tr> </thead> <tbody> <tr> <td>=</td><td>HDL</td></tr> </tbody> </table>	Is	Criteria	=	HDL
Is	Criteria				
=	HDL				
<ol style="list-style-type: none"> 10. Right-click on Result1-numericresult, and Add to Search. 					

11. Enter the following: <ul style="list-style-type: none"> ▪ < ▪ 60 	<table border="1"> <thead> <tr> <th>Is</th><th>Criteria</th></tr> </thead> <tbody> <tr> <td><</td><td>60</td></tr> </tbody> </table>	Is	Criteria	<	60
Is	Criteria				
<	60				
12. Right-click on Result1-entrycode , and Add to Search .					
13. Enter the following: <ul style="list-style-type: none"> ▪ = ▪ LDL 					
14. Right-click on result1-numericresult , and Add to Search .					
15. Enter the following: <ul style="list-style-type: none"> ▪ > ▪ 130 					

Four Search Items Display (Result 1)



16. Double-click the Parenthesis to separate out the Results.	<p>The HDL value and the LDL value are now separate from each other.</p>
--	--

<p>17. Select OR for the second dropdown menu option.</p>	
<p>18. Click OK.</p>	
<p>19. Click Yes to save the search.</p>	
<p>20. Enter the Search Name:</p> <ul style="list-style-type: none"> ▪ NNN-HDL-LDL <i>NNN represents your Initials</i> 	
<p>21. Enter Search Category:</p> <ul style="list-style-type: none"> ▪ Development 	
<p>22. Enter Search Description:</p> <ul style="list-style-type: none"> ▪ Searching for Patients with HDL less than 60...OR...Patients with LDL greater than 130. 	
<p>23. Click OK.</p>	
<p>24. Select No to add to Security Groups.</p>	
<p>25. Click View English Query.</p>	
<p>26. Click OK.</p>	
<p>27. Add the following Data Fields:</p> <ul style="list-style-type: none"> ▪ Patient-id ▪ Patient-fullname ▪ Result1-entrycode ▪ Result1-numericresult ▪ Result1-resultdtm <p><i>Remove any Data Fields in the middle of the screen.</i></p>	
<p>28. Click the Run button (or F5).</p>	

Patients with HDL or LDL Values

patient-id	patient-ssn	patient-fullname	Result1-entrycode	result1-numericresult	result1-resultdtm
131130	789868869	CARREKEY, YEFUN	HDL	40.00	07/06/2001 4:55:00 PM
131130	789868869	CARREKEY, YEFUN	LDL	177.00	07/06/2001 4:55:00 PM
439061	789560938	HENRYBAU, UABRE	HDL	49.00	07/06/2001 3:18:00 PM
440613	789559386	CARLEUZI, TZUTES	HDL	32.00	07/06/2001 8:30:00 AM
440617	789559382	MOLINUZI, TZUTEH	HDL	38.00	07/06/2001 4:58:00 PM
440623	789559376	ONYANUZI, TZUTAT	HDL	40.00	07/06/2001 4:56:00 PM
440623	789559376	ONYANUZI, TZUTAT	LDL	142.00	07/06/2001 4:56:00 PM
308831	789691168	WILLIAZI, UZAXUR	LDL	174.00	07/10/2001 11:50:00 AM
441090	789558909	HARPEUZI, TZUMEI	LDL	158.00	07/10/2001 12:45:00 PM
441147	789558852	KURATUZI, TZULIV	HDL	33.00	07/10/2001 5:02:00 PM
441152	789558847	BIDDYUZI, TZULIN	HDL	48.00	07/10/2001 11:00:00 AM
441152	789558847	BIDDYUZI, TZULIN	LDL	150.00	07/10/2001 11:00:00 AM
441199	789558800	SELLEUZI, TZUKWI	HDL	41.00	07/10/2001 2:00:00 PM
441199	789558800	SELLEUZI, TZUKWI	LDL	137.00	07/10/2001 2:00:00 PM
94325	789905674	EKANDCOY, YOCAYF	HDL	54.00	07/10/2001 11:40:00 AM
94325	789905674	EKANDCOY, YOCAYF	LDL	162.00	07/10/2001 11:40:00 AM
24385	789975614	SHACKAIZ, ZIAMIL	LDL	175.00	07/10/2001 2:00:00 PM
243923	789756076	FISHEEDW, WDEJAK	HDL	48.00	07/10/2001 4:00:00 PM
102342	789897657	HEILILY, YLIAS	HDL	41.00	07/10/2001 11:30:00 AM
80223	789919776	FLEISROY, YORKEL	HDL	43.00	07/10/2001 8:03:00 AM

Nested Searches

Enterprise EHR Analytics provides the user the ability to eliminate duplicates returned from a search and focus primarily on determining if search criteria exist within a patient's record. **Nested Searches are for returning a unique list of patients** without returning any of the ancillary details to why the search was constructed such as problems diagnosed, patient encounters, tests taken, etc.

The user should only display a simple list – such as patient name – no matter how much criteria is going into the construction of the search.


Nested Search Scenario


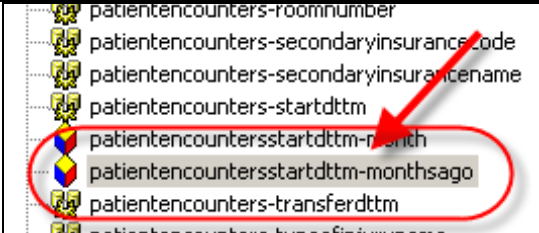
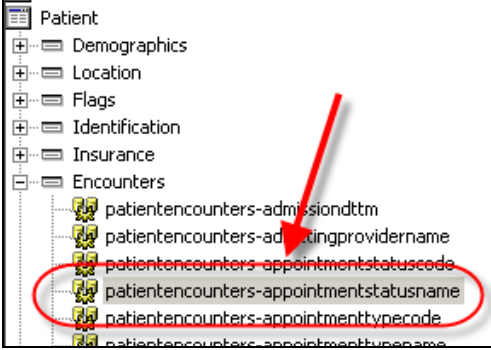
A user wants to determine if a patient has had an encounter in the past year. Using a simple, regular search a patient may show up more than once if the patient has had multiple encounters during that timeframe. However, *Nesting* the same search will return patients with multiple encounters *once* because **the Nested search will determine if the criteria exists for a patient** – period – as opposed to listing all encounters for the patient.


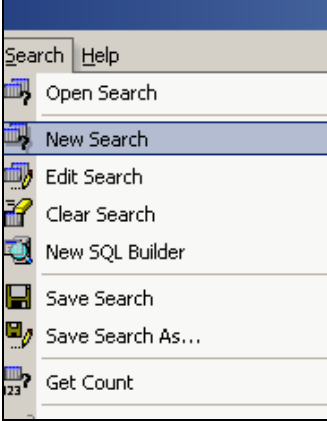

The patient will display only once as long as the user displays fields such as patient name, SSN and/or MRN and not the encounter date in the display object (ex. Worksheets).

Step-by-Step: Creating a Nested Search

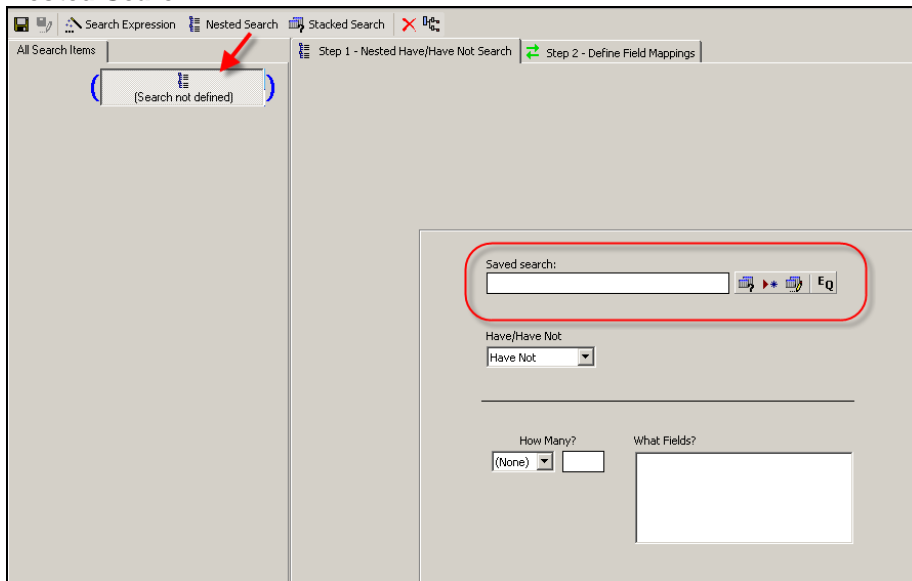
To create a **Nested Search**, complete the following:


1. Select the Search dropdown menu, and Clear Search .	
	
2. Select No if prompted to save search.	
3. Select File .	
4. Select New .	
<i>If prompted to save the worksheet, click No.</i>	
5. Select the Search dropdown menu.	
6. Select New Search .	

7. Select the Toggle  button for the MetaLayer Tree.					
8. Double-click the Patient Content Category.					
9. Expand Encounters .					
10. Right-click patientencountersstartdtm-monthsago Data Field, and Add to Search .					
11. Enter the following: <ul style="list-style-type: none"> ▪ < ▪ 60 	<table border="1"> <thead> <tr> <th>Is</th><th>Criteria</th></tr> </thead> <tbody> <tr> <td><</td><td>60</td></tr> </tbody> </table>	Is	Criteria	<	60
Is	Criteria				
<	60				
12. Right-click patientencounter-appointmentstatusname Data Field, and Add to Search .					
13. Enter the following: <ul style="list-style-type: none"> ▪ = ▪ Arrived 					
14. Click OK .					
15. Click Yes to save search.	<div style="border: 1px solid black; padding: 5px; background-color: #f9e79f;"> <p>It's important to save each search, so the search can be added as a Nested Search at a later time.</p> </div>				

<p>16. Enter the Search Name:</p> <ul style="list-style-type: none"> ▪ NNN – Active – Patients 	 <p>The 'Save Search' dialog box is shown with the 'Search Name' field containing the text 'NNN-Active-Patients'.</p>
<p>17. Enter the Search Category:</p> <ul style="list-style-type: none"> ▪ Development 	
<p>18. Click OK.</p>	
<p>19. Click No if prompted to save to User Groups.</p>	
<p>20. Select the Search dropdown menu, and Clear Search.</p> 	
<p>21. Select the Search dropdown menu, and select New Search.</p>	 <p>The 'Search' dropdown menu is open, showing options: Open Search, New Search (highlighted), Edit Search, Clear Search, New SQL Builder, Save Search, Save Search As..., and Get Count.</p>
<p>22. Select the Nested Search button.</p> 	

Nested Search

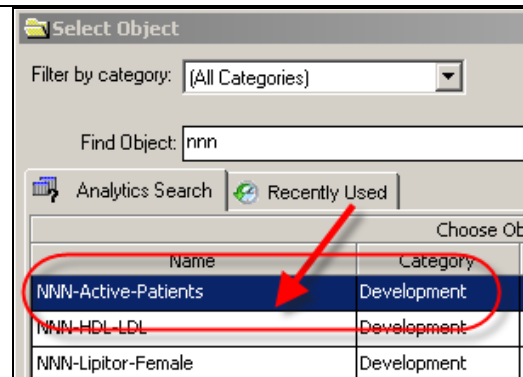


23. Select the **Search**  button to locate the Search you just created.

Nested searches can be used as stand-alone criteria or combined with other search criteria.

24. Locate the following:

- **NNN – Active – Patients**



25. **Highlight** and click **OK**.

The remaining icons are described below:



Create New Search

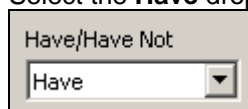


Edit Selected Search



View English Query

26. Select the **Have** dropdown menu.



If all records returned from the Nested search are to be included, select Have.

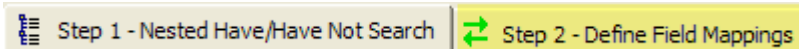
If all records except those returned from the Nested search are to be included, select Have Not.

How Many?

Use the **How Many?** dropdown and textbox to place a limit on how many records are returned out of the Nested search. Does there have to be at least two instances of the search criteria found per patient? No more than 10 per patient?

Use the **What Fields?** box to indicate the field or fields that will be considered when returning the count. Using the previous example of patient encounters in the past year, this section may limit the list of patients to those who have had more than 1 patient visit (encounter) in the past year. If so, change the *How Many?* dropdown list to **>** and the textbox to 1 to indicate that more than one encounter must have taken place in order for the patient name to be returned. Since the query is looking for patient encounters, use a field such as *patientencounters-encounterdtm* in the Metalayer Tree and click/drag the data field to the box. Double-click the field to remove the data field if necessary.

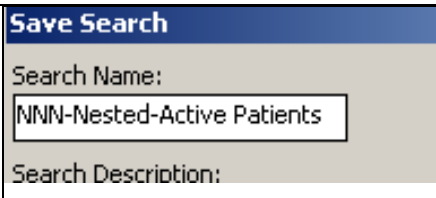

Define Field Mappings



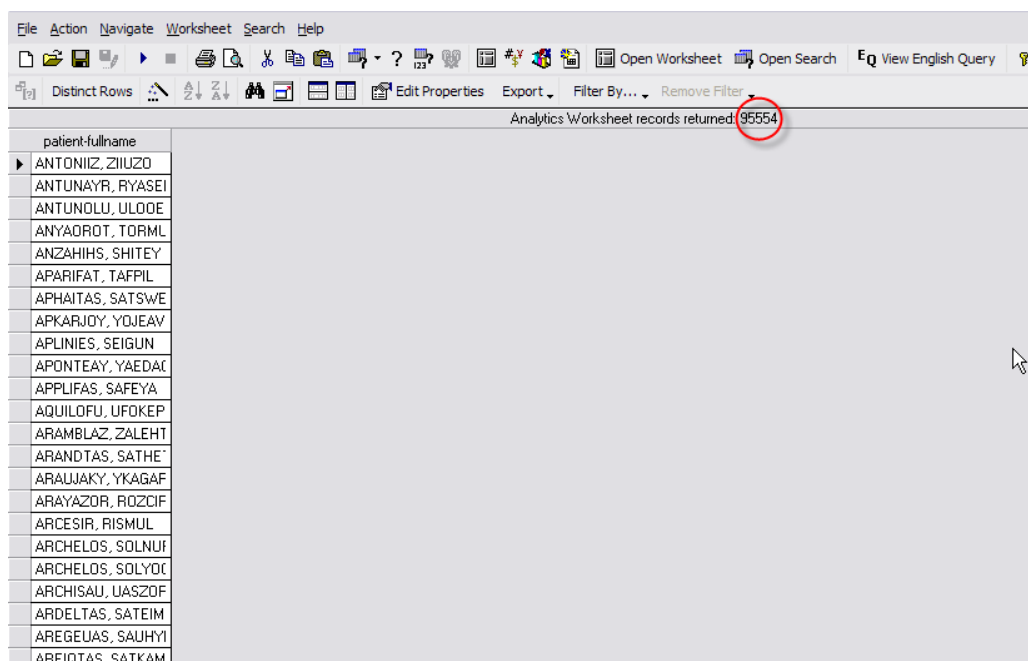
Since the job of the Nested query (*Encounters in Past Year*) is to return unique values, it is necessary to determine what field or fields will be used to ensure that all data returned is tied to a unique patient. These fields typically are unique data fields – such as patient id – or some other combination of fields such as Last Name, SSN and Date of Birth.

Since most information residing in Enterprise EHR is patient-centric, Patient-ID is typically used to define this mapping of fields because it is a database-generated field tied to each patient. Even though there are several rows available for mapping, one link between the *Parent Fields* column and *Child Fields* column is usually all that is necessary. The only time to use multiple rows was if the user wanted to use multiple fields to ensure unique data.

27. Select the Step 2 – Define Field Mappings tab.	
28. Double-click the Patient Content Category	
29. Double-click Identification .	
30. Double-click patient-id (TWICE) .	<p>The Parent and Child Fields populate.</p>
31. Click OK .	

32. Click Yes to save the search.	
33. Enter the Search Name : <ul style="list-style-type: none"> NNN-Nested-Active Patients 	 <p>The dialog box has a title bar 'Save Search'. It contains two fields: 'Search Name:' with the text 'NNN-Nested-Active Patients' entered, and 'Search Description:' which is empty.</p>
34. Enter the Search Category : <ul style="list-style-type: none"> Development 	
35. Click OK .	
36. Click Yes to save to User Groups. <i>(Add to a couple user groups, and View, Modify Only)</i>	
37. Add patient-fullname to the worksheet.	 <p>A text box containing a small icon and the text 'patient-fullname'.</p>
38. Click Run (or F5) .	<div style="border: 1px solid black; padding: 10px; background-color: #fff9c4;"> <p>The system will return all patients who have had an encounter in the past year (unique list), but only display patients from the list who are defined as “active” in Enterprise EHR.</p> </div>

Worksheet with Nested Search



The screenshot shows the 'Analytics Worksheet' interface. The menu bar includes File, Action, Navigate, Worksheet, Search, and Help. The toolbar contains various icons for file operations, navigation, and data manipulation. Below the toolbar, there are buttons for 'Distinct Rows', 'Filter By...', and 'Remove Filter'. A status bar at the top of the worksheet area indicates 'Analytics Worksheet records returned: 95554', with the number circled in red. The main area of the worksheet displays a list of patient names under the column header 'patient-fullname'. The list includes names such as ANTONIIZ, ZIUZO; ANTUNAYR, RYASEI; ANTUNOLU, ULDOE; ANYAOROT, TORML; ANZAHHS, SHITEY; APARIFAT, TAFPIL; APHAITAS, SATSWE; APKARJOY, YQJEAV; APLINIES, SEIGUN; APONTEAY, YAEDA; APPLIFAS, SAFEYA; AQUILOFU, UFOKEP; ARAMBLAZ, ZALEHT; ARANDTAS, SATHE; ARAUJAKY, YKAGAF; ARAYAZOR, ROZCIF; ARCESIR, RISMUL; ARCHELOS, SOLNUF; ARCHELOS, SOLYOC; ARCHISAU, UASZOF; ARDELTAS, SATEIM; AREGEUAS, SAUHYI; and AREIQTAS, SATKAM.

Stacked Searches

Combining/Appending the criteria accumulated from multiple searches is referred to as **Stacked searches**. If there is a search that has been saved to the database that can be added to different search criteria the user is building, then that search can be “stacked” on top of the existing search in lieu of having to re-enter that criteria as part of the current query. Why should a user have to add complex criteria to a search if that user (or another user) has already saved those criteria to the database previously?







For example, if a search already exists that returns all “Active” patients, that search can be stacked with search criteria looking for those patients who have been diagnosed with a particular problem. “Active Patients” is a popular search object that can then be stacked with most queries in the database in order to ensure that only active patients are used in any search. They are similar to nested searches, with this distinction:

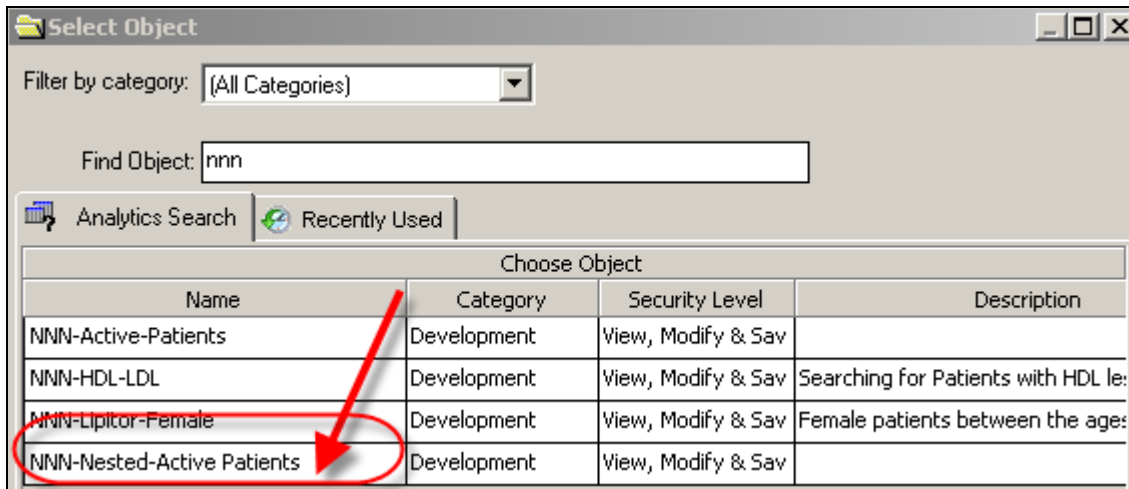
A Stacked search is different than a Nested search because a Nested Search considers a secondary search as a subset of the first. This means that only records meeting the conditions of the sub-search will be considered available to the main query.

With stacked searches, all searches are equal, and all conditions in all searches will apply.

Step-by-Step: Stacking a Search

To **Combine a Search with Current Search Criteria**, complete the following:

1. Select the Search dropdown menu.	
2. Select New Search .	
3. Click the Stacked Search button on the toolbar.	 <p>A Search block will be added to the top left of the screen along with the following:</p> 
4. Click the Save/ Search  button.	<p>The remaining icons are described below:</p> <div>  Create New Search </div> <div>  Edit Selected Search </div> <div>  View English Query </div>
5. Locate the Nested Search you created previously: <ul style="list-style-type: none"> ▪ NNN-Nested-Active Patients 	



6. Highlight and click **OK**.

7. Click the **Stacked Search** button again.

8. Click the **Save/ Search**  button.

9. Locate the your Lipitor search:

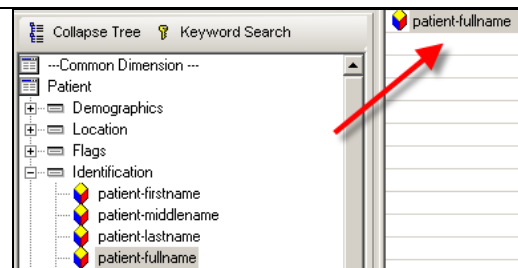
- **NNN-Lipitor-Female**

10. Highlight and click **OK**.

11. Click **OK** at the bottom of the screen.

DO NOT SAVE.

12. Select **patient-fullname**.



13. Click **Run (or F5)**.

Search Expressions

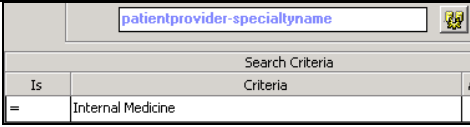


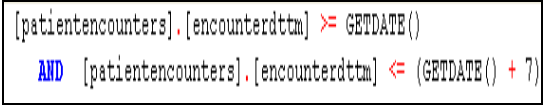
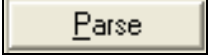
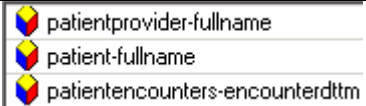
There are multiple possibilities for users when establishing Searches in Analytics. There are multiple Enterprise EHR fields that allow for many combinations of data to analyze, report or simply display detailed information. However, there are times when standard search capabilities are not enough for desired results.

Search for Future Appointments Using an Expression

Expressions are a good way for an organization to view patients already on a providers schedule in the future. The following example displays an expression that looks for patient encounters from now through the next 7 days.

Step-by-Step: Building Search Expressions for Future Appointments

To **Build a Search Expression**, complete the following:

1. Select the Search dropdown menu.	
2. Select New Search .	
3. Enter the appropriate fields for the overall search if necessary. The example to the right is searching for those providers tied to the specialty of <i>Internal Medicine</i> .	
4. Click the Search Expression button.	 <p>This will add the <i>Expression</i> search block to the left of the screen.</p>
5. Click the MetaLayer Tree  button.	
6. Add the appropriate fields to the Expression using the operators.	 <p>In the example, the expression is looking for differences between today's date/time and 7 days from now.</p>
7. Select the Syntax of the Expression by clicking Parse .	
8. Add the appropriate fields to the object and run the query.	

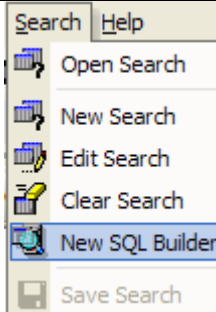
SQL Builder

For “power users” who wish to modify the syntax of a query directly, Analytics provides the **SQL Builder**. The statement that a user creates on the SQL Builder screen only represents the WHERE condition of a SQL statement. The field and table references also required in a complete SQL statement are provided through the application’s code.

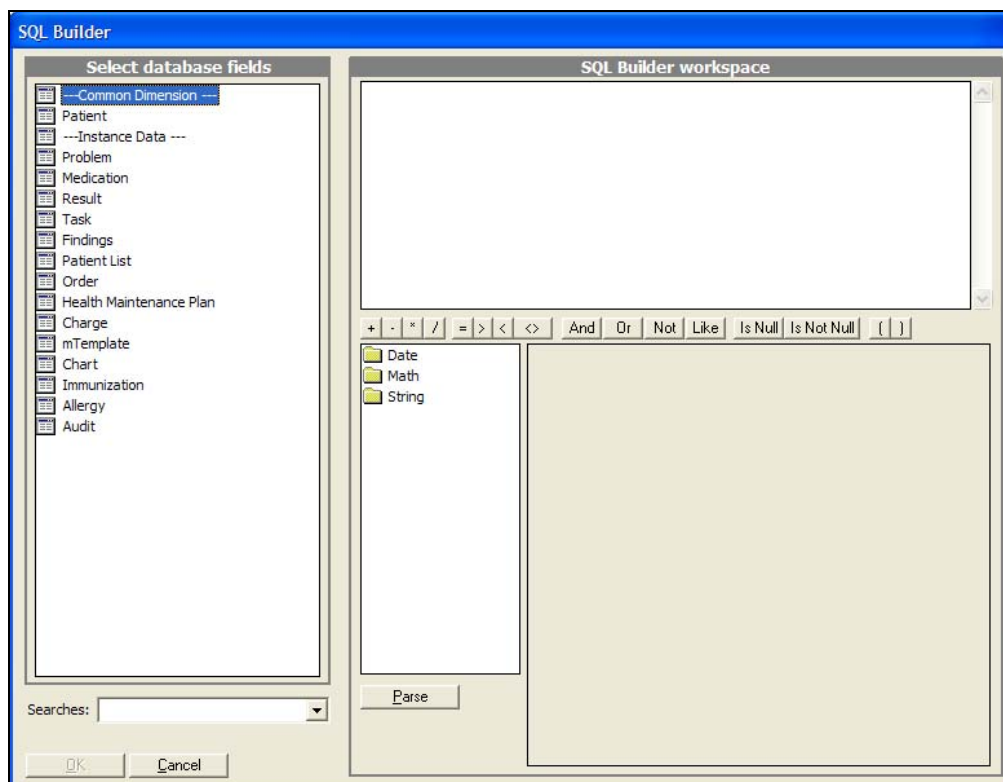
Step-by-Step: Building a Query using SQL

To **Build a Query using SQL**, complete the following:

1. Click **Search** from the menu bar and select **New SQL Build** from the dropdown list.



The SQL Builder Dialog Screen

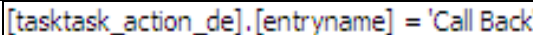
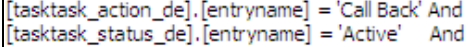
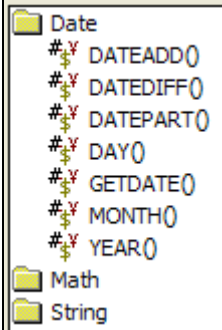
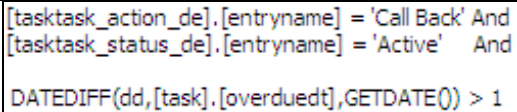




The goal of the following workflow is to determine if the overdue date of an *Active* Call Back task is greater than the current date.

The user will first establish within **SQL Builder** that the query will only be looking for tasks that are labeled *Call Back* and *active* before calculating the difference between the current and overdue dates.



When using SQL Builder, the user must include *all* WHERE clause options within the SQL Builder screen. The user will not be able to access Quick Search or the Search screen once items have been added to SQL Builder. Attempting to access the Search screen will populate SQL Builder.

<p>2. Use the MetaLayer Tree to find the appropriate date fields.</p> <p>From within the SQL Builder dialog box, double-click tasktask_action_de-entryname from the Task content category in the Metalayer Tree to add it to the <i>SQL Builder Workspace</i>. Type = and then <i>Call Back</i> surrounding the task with single quotes (see screenshot to the right).</p>	
<p>3. Add on space before typing And. Type another space (use Enter key to move to new line).</p> <p>Double-click tasktask_status_de-entryname from the Task content category to add it to the <i>SQL Builder Workspace</i>. Type = and then <i>Active</i> surrounding the status type with single quotes.</p> <p>Add another space before typing And again and another space.</p>	
<p>4. Double-click the Date folder under the <i>SQL Builder Workspace</i>.</p> <p>Double-click the DATEDIFF() option to add the formula to the <i>SQL Builder Workspace</i>.</p>	
<p>5. Just inside the opening parentheses, type dd as the <i>datepart</i> section of the formula.</p> <p><i>Datepart</i> is a condition of the equation and is detailed in the function description box below the <i>SQL Builder</i></p>	

<p><i>Workspace</i> after selecting the function.</p> <p>Next type a comma and add the <i>task overdue date</i> data field from the Metalayer Tree.</p> <p>The new field will append to the end of the script, so be sure to cut/past the field name to the appropriate location in the function.</p> <p>Type a comma and double-click the GETDATE() formula to ensure the current date is used.</p> <p>Be sure the end of the formula has a closing parenthesis and add > 1 to the end of the statement in order to only return those call back tasks that are a day overdue.</p>	
<p>6. Click the Parse button to ensure proper syntax.</p>	
<p>7. Click OK.</p>	
<p>8. Add the appropriate fields to the object (ex. Worksheet) and run the query.</p>	

Lesson 5: Crosstab Analysis

Overview

Analytics Analysis provides crosstab functionality for breaking down data at a high level with the help of summary columns/rows and ad hoc expressions/calculations while still being able to populate data from the Metalayer Tree. Even though the Analysis tool provides a higher view of any organization's data, users can still view the details of the analysis as necessary by accessing the Analytics Worksheets object from within the Analysis object.

Crosstabs are for examining the relationship between different variables of information within Enterprise EHR. Within a Crosstab, information can be totaled at the bottom of each column of data analyzed. In the example below, the columns from left to right represent patient provider, a count of those provider's active patients, how many are hypertensive and how many of those hypertensive patients have had BP levels less than 140 (systolic) over 90 (diastolic) respectively.

patientprovider-fullname	patient-id	Hypertensive Pts	BP Less 140 Over 90
SCHROEZZ, ZZELAH	248	12	4
SIMONEZZ, ZZEKIV	1,613	202	55
SLATEEZZ, ZZEZIN	389	6	2
SPURNOIT, TIOPRI	480	15	9
STONEZZ, ZZENIT	128	1	
STRICEZZ, ZZEKYU	107		
STWEEZZ, ZZENIR	1		
Totals	2,966	236	70

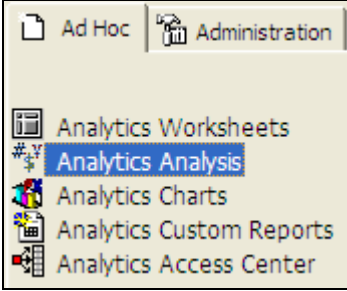
Information can also be analyzed in such a way so that expressions are built inside of the crosstab to see summary information or look at percentages from one column to another. The two additional columns represent the percent of patients who are hypertensive and the percent of hypertensive patients with BP levels less than 140/90 respectively.

patientprovider-fullname	patient-id	Hypertensive Pts	Percent Hypertensive	BP Less 140 Over 90	% BP Less Than 140/90
ASSATEZZ, ZZEYOM	20		.00 %		.00 %
BARATEZZ, ZZELES	1,968	64	3.25 %	35	54.69 %
BLATTEZZ, ZZELEU	273	6	2.20 %	1	16.67 %
BOLEYFIS, SIFYIN	1		.00 %		.00 %
BOSCHIUS, SUINGO	874	64	7.32 %	18	28.13 %
BROWNEZZ, ZZEYAA	1,792	172	9.60 %	59	34.30 %

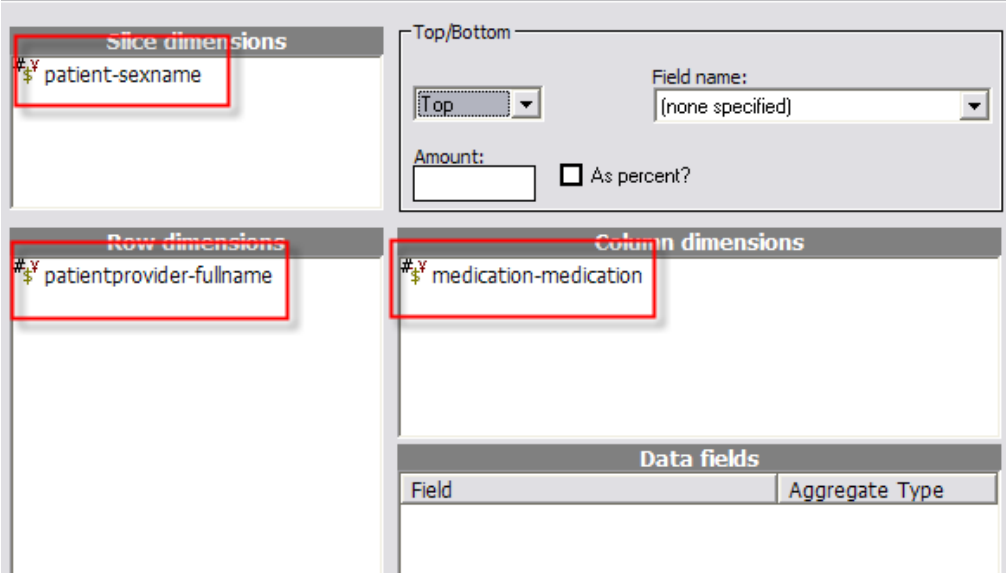
For percent column totals at the bottom of the crosstab analysis, the average of the percentages in the corresponding column will appear.

Step-by-Step: Viewing Crosstab Analysis

To **View a Crosstab**, complete the following:

1. Select the Analytics Analysis option.	
2. Select the following from the MetaLayer Tree: <ul style="list-style-type: none"> ▪ Patient-sexname ▪ Patientprovider-fullname ▪ Medication-medication 	

Crosstab Sections



The screenshot displays the configuration interface for a Crosstab Analysis. It is divided into several sections:

- Slice dimensions:** Contains the field `patient-sexname`.
- Row dimensions:** Contains the field `patientprovider-fullname`.
- Column dimensions:** Contains the field `medication-medication`.
- Top/Bottom:** Includes a dropdown set to `Top`, a `Field name:` dropdown set to `(none specified)`, an `Amount:` input field, and an `As percent?` checkbox.
- Data fields:** A table with two columns: `Field` and `Aggregate Type`.

Below is a description for each crosstab sections within the Analysis object:

Row Dimensions - establishes what field(s) will be defining how the data is measured. For example, placing the patient provider field in the Row Dimension section will list all data by patient provider.

Data Fields - lists placeholders for data to be populated and/or analyzed. For example, *Lipitor Meds* (medications-medications renamed) is a field representing a count of Lipitor meds per provider.

Column Dimensions – provides the ability to break down column information by a particular value from the Metalayer Tree.

Slice Dimensions – fields to add ah-hoc within the crosstab after the crosstab has been populated.

Top/Bottom – Users can decide to only view the top/bottom number or percent of items from a search.

Overview

Analytics Analysis provides the ability to populate information into a crosstab displaying data in a summary format. The next walkthrough will provide an example for the following scenario:

Analysis Scenario

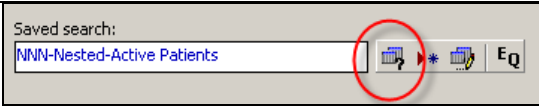
Populate a crosstab analysis that displays the number of active patients actively taking Lipitor and prescribed in the past 2 weeks per prescribing provider.

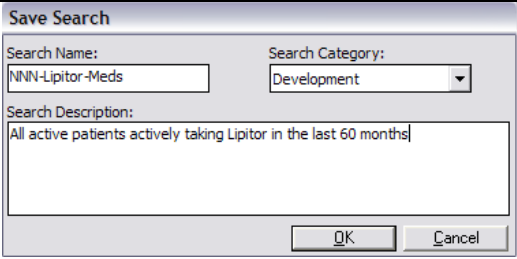
Create a Search for this Analysis Scenario

As is the case for any Analytics object, a Crosstab Analysis requires at least one set of search criterion to be set in order for any data to be returned. For this scenario, an assumption will be made that the user is only interested in viewing a count of active patients currently taking Lipitor, prescribed in the past 2 weeks and displayed by prescribing provider.

Step-by-Step: Creating a Crosstab Analysis

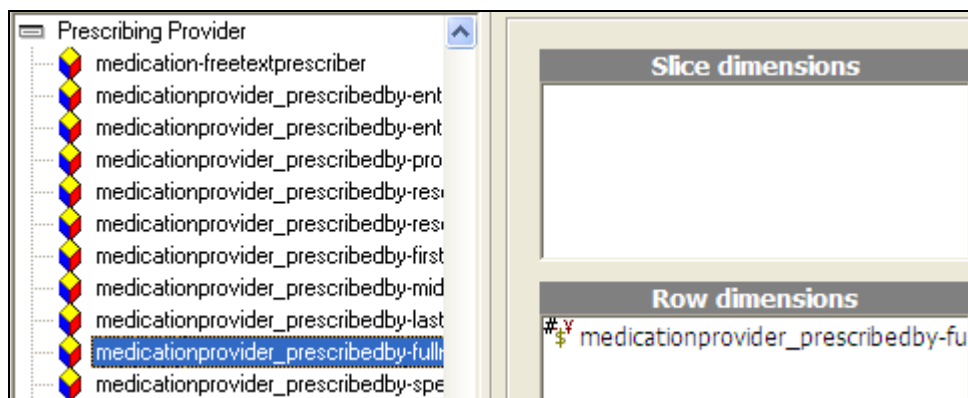
To **View a Crosstab**, complete the following:

1. Select the Search dropdown menu.					
2. Select New Search .					
3. Click the Stacked Search button.					
4. Locate your Nested Search: <ul style="list-style-type: none"> NNN-Nested-Active Patients 					
5. Add the following Search Criteria: <ul style="list-style-type: none"> Medication-medication Like Lipitor% 	<table border="1"> <thead> <tr> <th>Is</th><th>Criteria</th></tr> </thead> <tbody> <tr> <td>Like</td><td>Lipitor%</td></tr> </tbody> </table>	Is	Criteria	Like	Lipitor%
Is	Criteria				
Like	Lipitor%				
6. Add the following Search Criteria: <ul style="list-style-type: none"> Medication-medicationstatusname Equals Active 	<table border="1"> <thead> <tr> <th>Is</th><th>Criteria</th></tr> </thead> <tbody> <tr> <td>=</td><td>Active</td></tr> </tbody> </table>	Is	Criteria	=	Active
Is	Criteria				
=	Active				

<p>7. Click OK, and Save the Search.</p> <ul style="list-style-type: none"> ▪ NNN-Lipitor-Meds ▪ Development ▪ All Active patients actively taking Lipitor in the last 60 months 	 <p>The 'Save Search' dialog box has two sections. The top section contains 'Search Name:' with a text box containing 'NNN-Lipitor-Meds' and 'Search Category:' with a dropdown menu showing 'Development'. The bottom section contains 'Search Description:' with a text box containing 'All active patients actively taking Lipitor in the last 60 months'. At the bottom right are 'OK' and 'Cancel' buttons.</p>
<p>8. Click OK.</p>	
<p>9. Save to your Users. (Optional)</p>	<p>Once you have saved the Search, your next step will be to add the Data Fields to the Crosstab.</p> <p><i>(You will see this in the next section of this chapter!)</i></p>

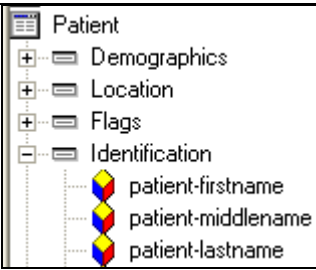
Adding Fields to a Crosstab Analysis

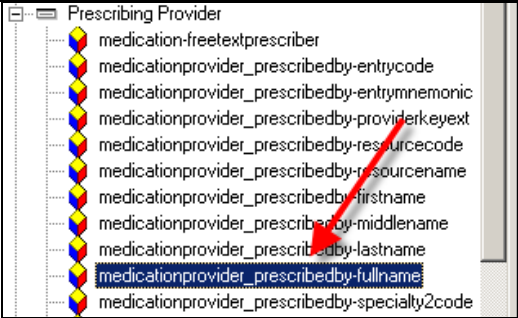
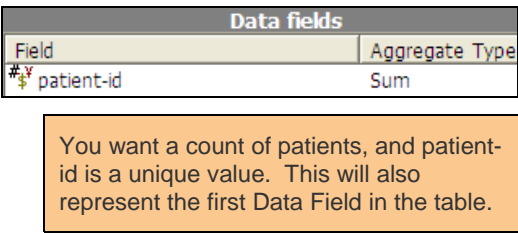
Data fields are added from the Metalayer Tree to the appropriate crosstab section by performing a click/drag from the field in the Metalayer Tree to the section. Some fields may show up in the proper section via a double-click action, but not always.



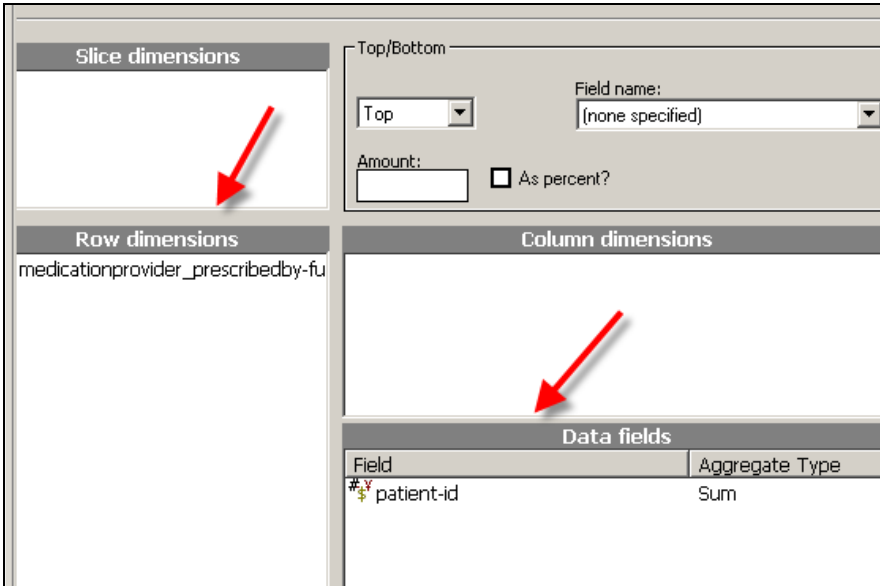
Step-by-Step: Adding Fields to a Crosstab

To **Add Fields to a Crosstab**, complete the following:

<p>1. Locate and open the appropriate sections of the Metalayer Tree.</p>	 <p>The Metalayer Tree shows the 'Patient' section expanded, revealing sub-sections: 'Demographics', 'Location', 'Flags', and 'Identification'. Under 'Identification', three fields are listed: 'patient-firstname', 'patient-middlename', and 'patient-lastname', each with a small icon.</p>
---	---

<p>2. Click/Drag the following field:</p> <p>Row Dimensions:</p> <ul style="list-style-type: none"> ▪ Medicationprovider_prescribedby-fullname 	
<p>3. Click/Drag the following field:</p> <p>Data Fields:</p> <ul style="list-style-type: none"> ▪ Patient-id 	

Crosstab Data Fields

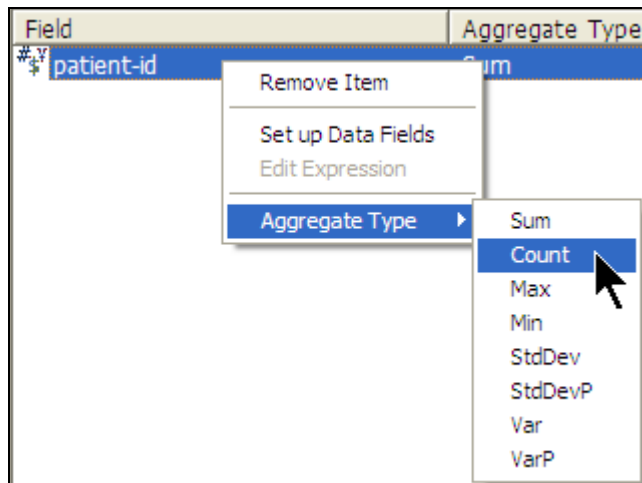


The screenshot shows the 'Crosstab Data Fields' configuration window. It has four main sections: 'Slice dimensions', 'Row dimensions', 'Column dimensions', and 'Data fields'. The 'Row dimensions' section contains the field 'medicationprovider_prescribedby-fu'. The 'Data fields' section contains a table with two columns: 'Field' and 'Aggregate Type'. The table has one row with 'patient-id' in the 'Field' column and 'Sum' in the 'Aggregate Type' column. A red arrow points to the 'Row dimensions' section, and another red arrow points to the 'Data fields' table.

Changing Data Field Aggregate Types


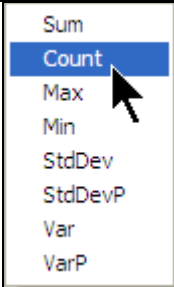
Based on the type of information analyzed in the crosstab, it may be necessary to change how the information is displayed. For example, if the user is displaying a count of patients by using the “patient-id” field, it is important to make sure that the aggregate type is *Count* as opposed to *Sum*. If the field is left as *Sum*, then a sum of all patient ids will display instead of a count of the patients themselves.

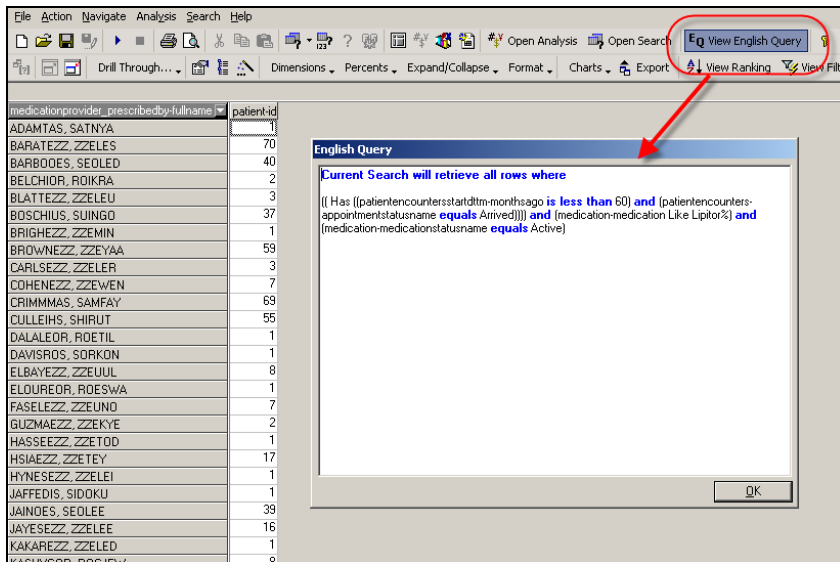
Count of Patients



Step-by-Step: Changing Aggregate Types for Data Fields

To **Change Aggregate Types**, complete the following:

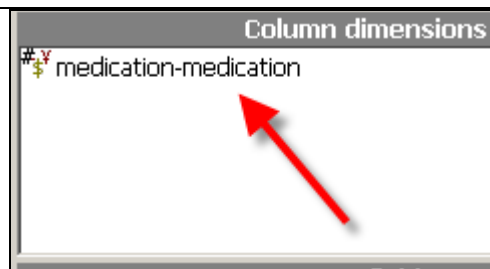
1. Right-click on patient-id .	
2. Select Aggregate Type , and select Count .	 <p>The aggregate type column will display as <i>Count</i>.</p>
3. Click Run button (or F5).	<p><i>Class should see 69 Records appear!</i></p> <div style="border: 1px solid black; padding: 5px; background-color: #fff9c4;"> <p>There will be a total per column at the bottom of the Crosstab Analysis.</p> </div>
4. Select the View English Query to view all your Search Criteria.	



5. Close the **View English Query**.

6. Toggle back to the Crosstab screen.

7. Add **medication-medication** to the **Column Dimension**.



8. Click the **Run** button (or **F5**).

Notice how the columns now sort by Medications!

medicationprovider_prescribedby-fullname	medication-medication	patient-id
ADAMTAS, SATNYA	Lipitor 20 MG TABS	1
	Total	1
BARATEZZ, ZZELES	Lipitor 10 MG TABS	35
	Lipitor 10 MG Tab	17
	Lipitor 20 MG TABS	6
	Lipitor 20 MG Tab	3
	Lipitor 40 MG TABS	5
	Lipitor 40 MG Tab	2
	Lipitor 80 MG TABS	2
	Total	70
BARBOOES, SEOLED	Lipitor 10 MG TABS	13
	Lipitor 20 MG TABS	13
	Lipitor 20 MG Tab	5

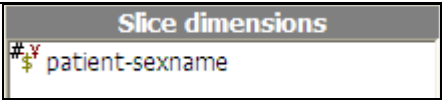
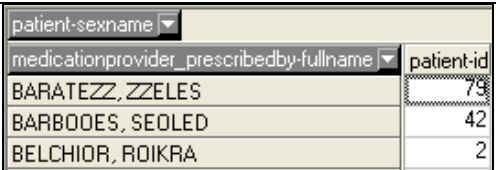

Slice Dimensions

Crosstab Analysis provides the user with the flexibility to add fields to a populated Crosstab on the fly. For example, if the user would like to break the populated data down by gender, a gender-specific field from the Metalayer Tree can be added to the *Slice Dimensions* section before re-loading the crosstab. Once loaded, the field(s) added to the Slice Dimensions section will display above the column represented in the *Row Dimensions* section of the crosstab.

medicationprovider_prescribedby-fullname	patient-sexname	patient-id
BARATEZZ, ZZELES	Female	46
	Male	33
	Total	79
BARBOOES, SEOLED	Female	31
	Male	11
	Total	42

Step-by-Step: Add Fields to Slice Dimensions

To **Add Fields to Slice Dimensions**, complete the following:

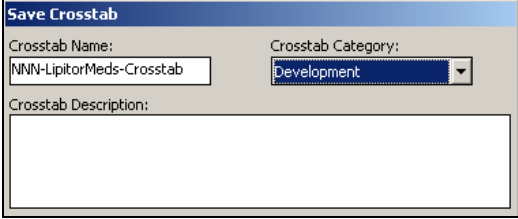
1. Click/Drag the field patient-sexname to the Slice Dimensions section.	
2. Click the Run button (or F5).	
3. Locate the slice dimension field above the column containing the row dimension field.	
4. Click/Drag the slice after the first column.	

Saving Crosstabs

Step-by-Step: Saving a Crosstab Analysis

To **Save a Crosstab Analysis**, complete the following:

1. Select the File dropdown menu, and select Save .	
---	---

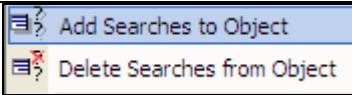
2. Enter the following information: <ul style="list-style-type: none"> ▪ NNN-LipitorMeds-Crosstab ▪ Development ▪ All active patients actively on Lipitor in the last 60 months Crosstab Worksheet 	 <p>The 'Save Crosstab' dialog box shows 'Crosstab Name' as 'NNN-LipitorMeds-Crosstab', 'Crosstab Category' as 'Development', and a large empty 'Crosstab Description' text area.</p>
3. Save the Crosstab to Users (optional).	

Add Search to Crosstab Analysis Object

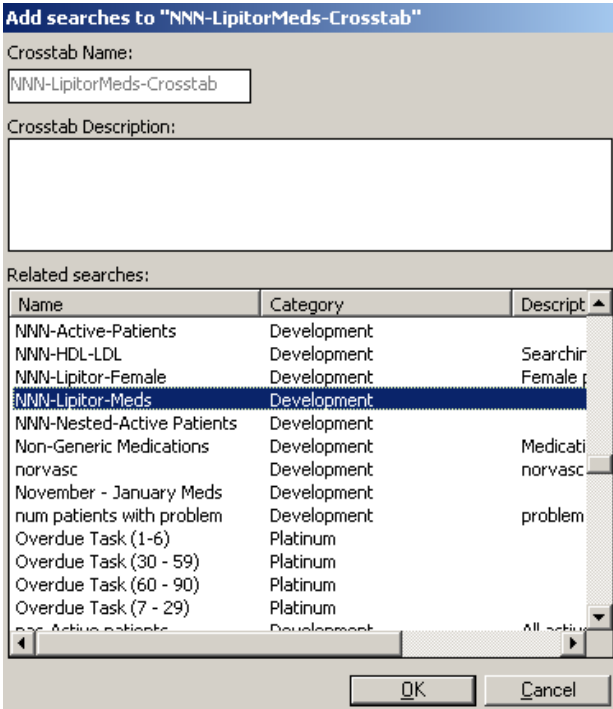
Crosstab Analysis objects are multi-dimensional and extremely beneficial to any organization. Because there may be several run each week, quarter, year, etc. organizations may decide to make sure that certain search criteria is always linked to certain Analysis objects in order to keep everything straight and consistent. It does not mean that there are only certain searches that can be run for certain objects. It just means that users will have an easier time deciding which search objects go with which Crosstab Analysis objects.

Step-by-Step: Linking Search Objects to a Crosstab Object

To **Link a Search Object**, complete the following:

1. Select Search from the dropdown menu, and select Add Searches to Object .	 <p>The image shows a dropdown menu with two options: 'Add Searches to Object' (highlighted) and 'Delete Searches from Object'.</p>
--	--

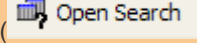
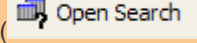
Link a Search Object



The dialog box 'Add searches to "NNN-LipitorMeds-Crosstab"' contains the following fields and controls:

- Crosstab Name:** A text box containing 'NNN-LipitorMeds-Crosstab'.
- Crosstab Description:** A large empty text area.
- Related searches:** A table listing various search objects.
- Buttons:** 'OK' and 'Cancel' at the bottom.

Name	Category	Descript
NNN-Active-Patients	Development	
NNN-HDL-LDL	Development	
NNN-Lipitor-Female	Development	Female p
NNN-Lipitor-Meds	Development	
NNN-Nested-Active Patients	Development	
Non-Generic Medications	Development	Medicati
norvasc	Development	norvasc
November - January Meds	Development	
num patients with problem	Development	problem
Overdue Task (1-6)	Platinum	
Overdue Task (30 - 59)	Platinum	
Overdue Task (60 - 90)	Platinum	
Overdue Task (7 - 29)	Platinum	
...

2. Highlight the following search criteria created earlier:	
<ul style="list-style-type: none"> ▪ NNN-Lipitor-Meds 	
3. Click OK .	<div> <p>The next time this Crosstab Analysis object is loaded as an object, the selected search object(s) will default when selecting the Open Search</p>  <p>() icon.</p> </div>

Analysis Walkthrough – w/ Link Groups

Overview

Analytics Analysis provides the ability to populate information into a crosstab displaying data in a summary format. Utilizing a Link Group column will provide the user the ability to tie further Search objects to an existing Crosstab Analysis in order to provide additional information than that of the original Search object.

For example, it is possible to have one column displaying the total number of active patients per provider and another column to list how many of those active patients are diabetic. The same Search object cannot be used to populate BOTH columns. There must be one search object for the active patient's column and another search object for the diabetic patient count.

It is also possible for additional columns to be added that will calculate a percentage, sum, etc. based on other columns in the Crosstab. For example, listing the percentage of patients who are diabetic compared to those that are actively tied to a provider.

problemprovider_identifiedby-fullname ▼	patient-id	Diabetics Over 60	% Of Pts - Diabetic and Over 60
ABOU-JOR, ROJLES	2		.00 %
ADAMTAS, SATNYA	7	1	14.29 %
ARAGDIOR, ROIFLO	7		.00 %
ASSEROAT, TADJEM	4		.00 %
AZEVEJOR, ROJLIB	52		.00 %
BARATEZZ, ZZELES	174		.00 %
BARBOOES, SEOLED	1,039	17	1.64 %
BASHIMOR, ROMARU	3		.00 %

The next walkthrough is an example for the following scenario:

Link Group Scenario

Populate a Crosstab Analysis that displays the number of active patients per primary care provider, the number of those active patients who are over the age of 60 and actively diagnosed with some form of Diabetes and the percentage of those diabetic patients per active patients.

The number of items a user is looking to populate in the Analysis should correspond to the number of columns to be populated. For example, the scenario above is looking for 3 items per provider:

- Count of active patients
- Count of those active patients who are diagnosed with some form of Diabetes and over the age of 60
- The % of patients with Diabetes over the age of 60 to active patients

Create a Search for this Link Group Analysis Scenario

As is the case for any Analytics object, a Crosstab Analysis requires at least one set of search criterion to be set in order for any data to be returned. For this scenario, an assumption will be made that the user is only interested in viewing a count of active patients per *primary care provider*.



The key difference between Crosstab Analysis with Link Groups and without is that there may be several Search objects utilized within a Crosstab Analysis using Link Groups. **The main search criteria will be used to populate the 1st column in the Crosstab Analysis ONLY!** Any additional search criterion for other columns will be populated using Link Groups later in this section of the document.

As in previous examples throughout this document, search criteria must be populated in order to return any data. Since the main search criteria is what is used to populate the initial column of the crosstab only, create and save a search object that will generate *active* patients.

Step-by-Step: Create Crosstab Analysis w/ Link Groups

To Create a Crosstab Analysis with Link Groups, complete the following:

1. Select Search from the dropdown menu, and select New Search .	
2. Select the Stacked Search button.	
3. Locate the Nested Search created earlier: <ul style="list-style-type: none"> ▪ NNN-Nested-Active Patients 	
4. Click OK.	
5. Click/Drag the following fields: Row Dimension: <ul style="list-style-type: none"> ▪ patientprovider-fullname 	
6. Click/Drag the following fields: Data Fields: <ul style="list-style-type: none"> ▪ patient-id 	

7. Right-click on patient-id, and select Aggregate Type .	
8. Select Count .	 <div data-bbox="737 693 1214 810" style="border: 1px solid black; padding: 5px; margin-top: 10px;"> <p>The <i>patient-id</i> field will represent the total count of active patients per primary care provider.</p> </div>

Adding Additional Data Fields

Since multiple columns may be populated within a Crosstab Analysis, there may be more than one column that is populating multiple patient counts based on separate criteria. In this example, not only will active patients per provider be populated (1st column), but also the total number of patients over 60 and diagnosed with some form of Diabetes per primary care provider (2nd column). Thus, there needs to be two fields representing each count in the Data Fields section.

In the 1st column, the example utilized *patient-id* as the unique identifier to best capture the proper amount of patients. The 2nd column will utilize the *same* field (patient-id) in order to take advantage of the unique values tied to that field. The second field may be renamed in order to help separate it from the initial instance of patient-id (see *Setting Up Data Fields and Expressions in this chapter*).

Step-by-Step: Adding Additional Data Fields

To **Add Additional Fields**, complete the following:

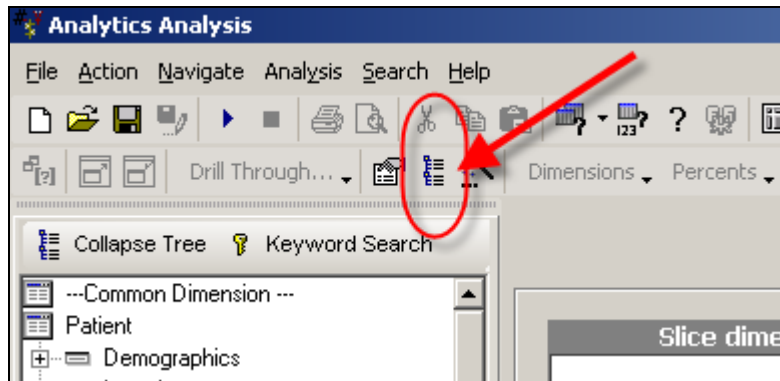
1. Drag/Drop the patient-id field under Data Fields.	<p>You should have two patient-ids listed.</p> <table border="1" data-bbox="695 1524 1211 1633"> <thead> <tr> <th colspan="2">Data fields</th></tr> <tr> <th>Field</th><th>Aggregate Type</th></tr> </thead> <tbody> <tr> <td># patient-id</td><td>Count</td></tr> <tr> <td># patient-id2</td><td>Sum</td></tr> </tbody> </table>	Data fields		Field	Aggregate Type	# patient-id	Count	# patient-id2	Sum
Data fields									
Field	Aggregate Type								
# patient-id	Count								
# patient-id2	Sum								
2. Right-click on the patient-id, and select the Aggregate Type . Change to Count .									

Associating Link Groups to Crosstabs

Link Search Criteria



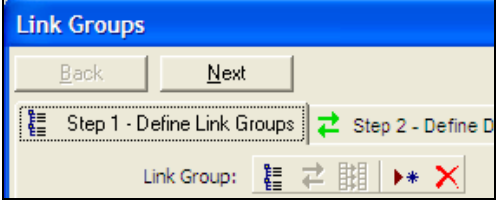
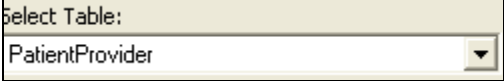
In order to populate another column of data, a secondary search must be created and tied to the appropriate column. This is accomplished through a **Link Group**.

Edit Link Button



Step-by-Step: Linking Groups

To **Link a Group**, complete the following:

<ol style="list-style-type: none"> Click on the Edit link group definition  button. 	<p>This opens the Link Groups screen where you can define a link group and associate a search.</p>
<ol style="list-style-type: none"> Click the Add new link group  button. 	
<ol style="list-style-type: none"> Type in a Link Group: <ul style="list-style-type: none"> Diabetics 	<p>This is arbitrary, so name it something meaningful.</p>
<ol style="list-style-type: none"> Select PatientProvider under the dropdown menu. 	

The table tied to this Link Group should contain the field used in the Row Dimensions section. In this walkthrough, the field for which the data is based is patientprovider-fullname. So, it is important to choose a table that contains the same field as the one being used in the Row Dimensions section. However, it is not necessary to physically select the field from the *Field Name* list box – just the table.


New Group

Link Group: Select Table:





Field Name

- patientprovider-addressline1
- patientprovider-addressline2
- patientprovider-alternatelicse
- patientprovider-billingproviderid
- patientprovider-city
- patientprovider-cmepilotnumber
- patientprovider-country
- patientprovider-county
- patientprovider-credentials
- patientprovider-dateofbirth
- patientprovider-deanumber
- patientprovider-difficultyfactor
- patientprovider-entrycode
- patientprovider-entrymnemonic
- patientprovider-expirationdt
- patientprovider-firstname
- patientprovider-fk_dimdate_deaexpirationdtm
- patientprovider-fullname**
- patientprovider-id
- patientprovider-isbillingproviderflag
- patientprovider-isinactiveflag
- patientprovider-ispcpflag
- patientprovider-lastediteddtm
- patientprovider-lastname
- patientprovider-mededucnumber

5. Select the **Save Search** button.

You want to associate a search with this new Linked Group. If a new search object must be created, click the **Create New Search** () icon from the *Saved search* section.

Saved search:

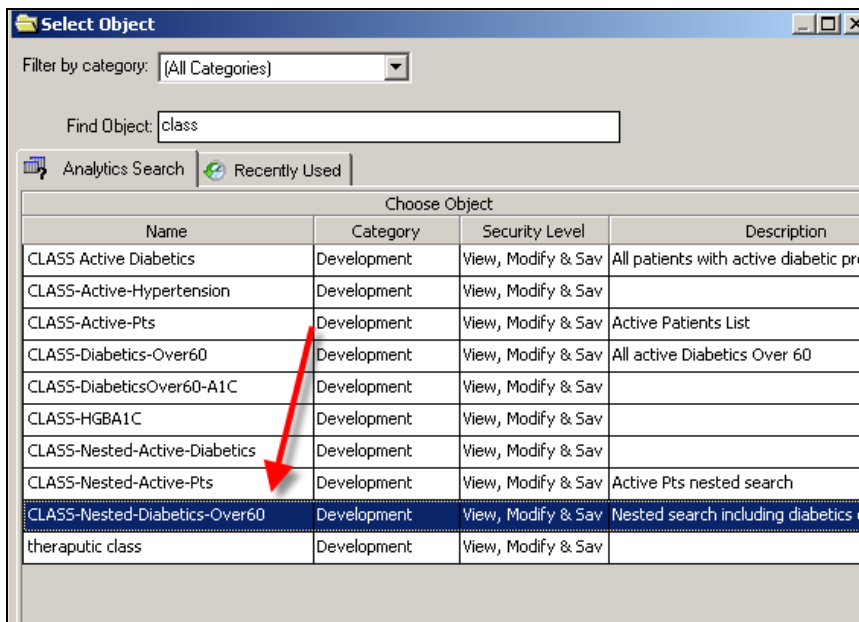
☒ Stack current search?

6. Locate the following Search Criteria (created for classroom use).

- **CLASS-Active Diabetics**

This is set up for you in class!

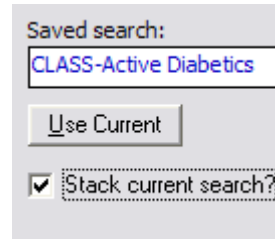
Nesting the following search is important because it will ensure that the Analysis does not include the same patient multiple times. In the event that the patient was diagnosed with some form of Diabetes multiple times, then the patient will be included more than once in the column and the count will be incorrect.



7. Highlight the correct search, and click **OK**.

8. Click the **Stack current search** checkbox.

To utilize the search populating the 1st column of the Crosstab, you will need to select the checkbox. This will save the user from having to re-enter criteria for active patients to the Link Group's search criteria.



Mapping Dimensions

It is necessary to map the Link Group back to the row dimension since this Crosstab Analysis will be displayed per patient provider (row dimension data field).

Step-by-Step: Mapping

To **Map**, complete the following:

<p>1. Click the Step 2 – Define Dimension Mappings tab.</p>	
<p>2. Click the Automap dimensions </p>	<p>This will link fields between the data field residing in the Row Dimensions section and the table selected for the Link Group.</p>

button.

If the patientprovider-fullname field does not populate to the right, simply re-select the group name (i.e. *Diabetics Over 60*) to refresh the screen.

Map Data Fields


The final step is for tying the Link Group to the proper Crosstab Analysis column. In this walkthrough, there is search criteria for Diabetics older than 60. It is now time to associate that search (Link Group) to the column that will be displaying the number of Diabetic patients older than 60 (patient-id2).

Step-by-Step: Mapping Data Fields

To **Map Data Fields**, complete the following:

1. Click the Step 3 – Map Data Fields tab.	
2. Highlight the patient-id2 .	
3. Click the dropdown menu and select Diabetics .	
4. Click OK .	
5. Click the Run button (or F5).	<p>Once all data fields, search criteria and Link Groups have been created, the data may be loaded into the Crosstab Analysis for users to analyze and/or distribute.</p> <p><i>Results may vary for class.</i></p>

Analytics Analysis		
File Action Navigate Analysis Search Help		
Drill Through... Dimensions Percents E		
patientprovider-fullname	patient-id	patient-id2
	113,484	202
ASSATEZZ, ZZEYOM	15	
BARATEZZ, ZZELES	1,808	8
BLATTEZZ, ZZELEU	226	4
BOLEYFIS, SIFYIN	1	
BOSCHIUS, SUINGO	793	7
BROWNEZZ, ZZEYAA	1,688	14
BURKEOAT, TAOKOD	9	
CARLSEZZ, ZZELEU	1,058	8
COOPEZZ, ZZEKOP	74	3
CULLEIHS, SHIRUT	708	20
DANGEEZZ, ZZELEM	101	
ELBAYEZZ, ZZEUL	1,135	11
FASELEZZ, ZZEUNO	1,159	8
GEORGEZZ, ZZEKOB	1	
HARAPEZZ, ZZEKIN	1	

To return to the screen to edit the Crosstab Analysis, click the  icon on the toolbar.

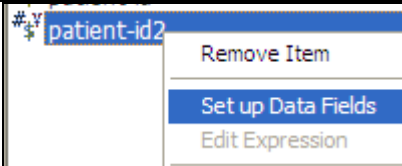
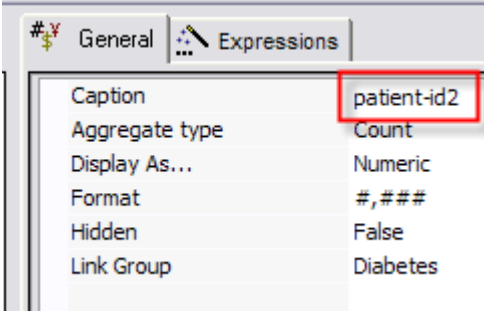
Setting Up Data Fields and Expressions

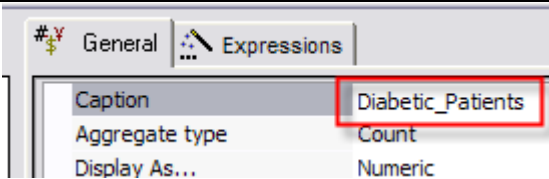
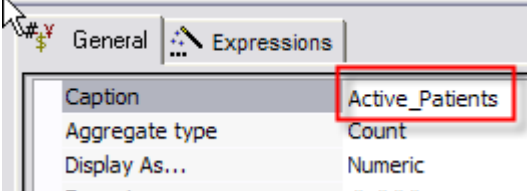
Once fields have been added to the Data Fields section, those fields can be defined further such as the display name and other properties. Further, additional fields can be created and/or calculated based on existing fields in the Crosstab Analysis via expressions.

Continuing this workflow, the display name for the existing two patient-id fields will be changed as well as adding a 3rd field to the Crosstab in order to calculate the percentage of diabetic patients tied to a primary care provider.

Step-by-Step: Setting up Data Fields and Expressions

To **Set up Data Fields**, complete the following:

1. Right-click on patient-id2 , and select Set up Data Fields .	
2. Click on the patient-id2 under the General tab.	

3. Type the following: <ul style="list-style-type: none"> ▪ Diabetic_Patients 	
4. Change patient-id under the General tab.	
5. Type the following: <ul style="list-style-type: none"> ▪ Active_Patients 	
6. Click OK .	
7. Click the Run button (or F5).	Notice the new headings!

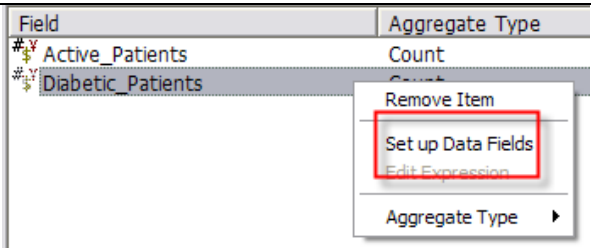
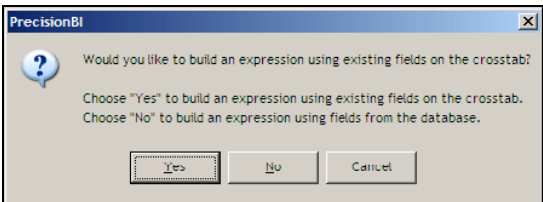
patientprovider-fullname	Active Patients	Diabetic Pts Over 60
	113,484	202
ASSATEZZ, ZZEYOM	15	
BARATEZZ, ZZELES	1,808	8
BLATTEZZ, ZZELEU	226	4
BOLEYFIS, SIFYIN	1	
BOSCHIUS, SUINGO	793	7
BROWNEZZ, ZZEYAA	1,688	14
BURKEQAT, TAOKOD	9	
CARLSEZZ, ZZELER	1,058	8
COOPEEZZ, ZZEKOP	74	3
CULLEIHS, SHIRUT	708	20
DANGEEZZ, ZZELEM	101	
ELBAYEZZ, ZZEUUL	1,135	11
FASELEZZ, ZZEUNO	1,159	8
GEORGEZZ, ZZEKOB	1	
HARAPEZZ, ZZEKIN	1	
HYNESEZZ, ZZELEI	275	
JAYESEZZ, ZZELEE	838	16

Add Expression to Crosstab Analysis

A 3rd column in the Crosstab Analysis will display the **percentage of patients** with Type II Diabetes Mellitus over 60 per primary care provider.

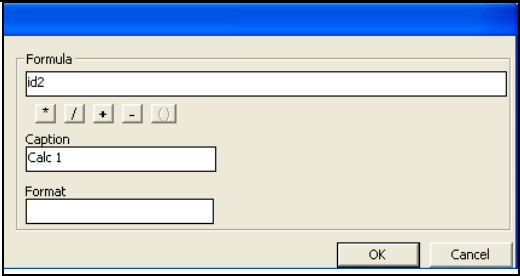

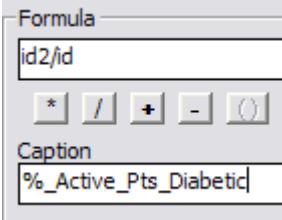
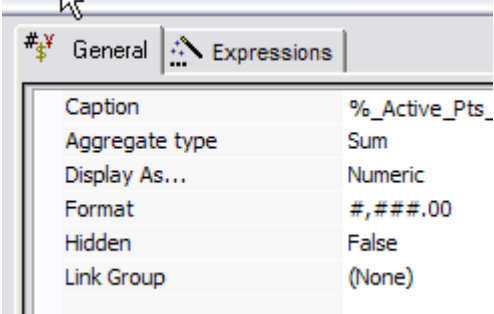
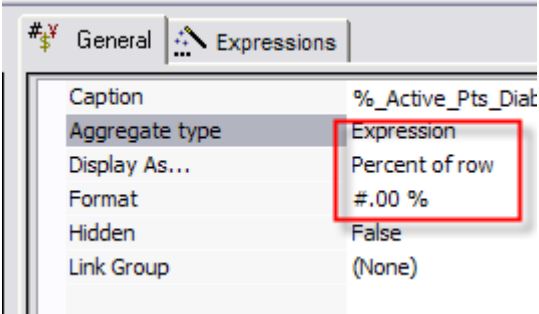
Step-by-Step: Adding Expressions

To **Add Expressions**, complete the following:

1. Right-click on the Diabetic_Patients in the Data Fields.	
2. Select Set up Data Fields .	
3. Click the Expressions tab.	
4. Click Add New .	<p>This message box appears:</p> 
5. Select Yes .	<p>Clicking YES means an expression is created using fields already displayed in the Crosstab. Clicking NO means the user can select existing fields from the database to create an expression. CANCEL will close the dialog box with no action taken.</p>

Since fields already existing in the Data Fields section will be used to populate another column, an expression will calculate the number of Diabetic patients over 60 (2nd column) divided by the number of active patients (1st column) per primary care provider.

6. Double-click Diabetic_Patients .	The id (id2) will display in the Formula textbox.
--	---

	
7. Click the Divider  button.	
8. Double-click the Active_Patients .	You should see (id2/id).
9. Rename the Caption : <ul style="list-style-type: none"> ▪ %_Active_Pts_Diabetic 	
10. Click OK .	
11. Select the General tab.	
12. Update the following fields for %_Active_Pts_Diabetic : <ul style="list-style-type: none"> ▪ Aggregate Type: Expression ▪ Display As: Percent of row 	 <p>Expression is used because the field was created via Expression.</p> <p>Percent of Row is selected because the field is going to be displayed as a percent based on fields in the same row as the expression displayed.</p>
13. Click OK .	

	Data fields	
	Field	Aggregate
	# Active Patients	Count
	# Diabetic Pts Over 60	Count
	% Active Pts Diabetic Over 60	Expression
14. Click the Run button (or F5).		

Working with Crosstab Analysis Results

After a Crosstab Analysis has been populated, users can utilize other features of the object.

Drill Through to Worksheets

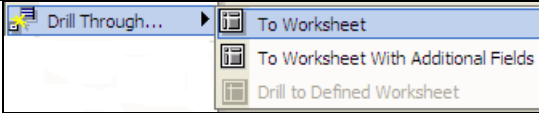
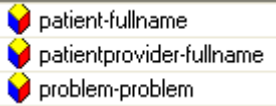
Analytics provides the user access to different objects (Worksheets, Analysis, Charts, etc.) from the current object loaded. However, within the Analysis object, a user can select a cell from a populated Crosstab and load the details of that cell via the Worksheets object. This is called **Drill Through** functionality.

For example, the following Crosstab Analysis results are for patients actively diagnosed with some back ailment per patient provider. The 1st cell in the *Patient Total* column is selected (contains the number 6).

patientprovider-fullname	Patient Total
BARATEZZ, ZZELES	6
BROWNEZZ, ZZEYAA	3
CARLSEZZ, ZZELER	1
CULLEIHS, SHIRUT	18
ELBAYEZZ, ZZEUUL	2
HYNESEZZ, ZZELEI	1
JAYESEZZ, ZZELEF	6

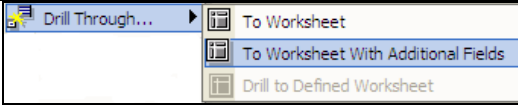
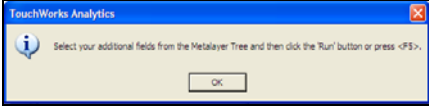

Step-by-Step: Drill Through to a Worksheet Using Existing Fields


To Conduct a Drill Through, complete the following:

1. Right-click the cell desired.	
2. Select Drill Through , and then select To Worksheet .	 <p>The application will automatically navigate to the Worksheet object and load the data with the field(s) listed in the Row Dimensions section of the Crosstab Analysis.</p>
3. Select more Data Fields if necessary to see more information.	

Step-by-Step: Drill Through to a Worksheet & Add Additional Fields


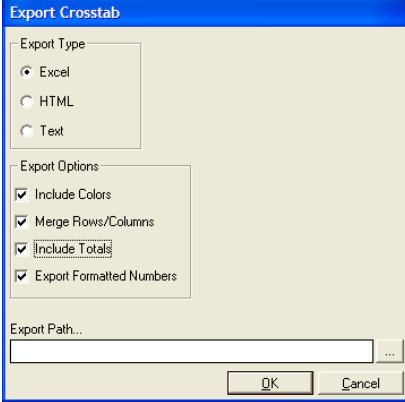
To **Add Additional Fields to a Worksheet** during a Drill Through, complete the following:

1. Right-click the cell desired.	
2. Select Drill Through , and then select To Worksheet With Additional Fields .	 <p>You are sent back to the Worksheet Object.</p>
3. Click OK when prompted to select additional fields.	
4. Select more Data Fields if necessary to see more information.	
5. Click the Run button (or F5).	More columns of data appear.

Click the X  button in the upper right corner of the screen to return back to the Analysis object.

Step-by-Step: Export Results from a Crosstab Analysis Object

To **Export Results**, complete the following:

1. Click the Export  button at the top of the screen (toolbar).	
2. Enter the appropriate Export Type, options, and path.	
3. Click OK .	

Lesson 6: Charts

Overview

Analytics Charts provide a way to display data in a graphical format. Results, trends, etc can be easily displayed and deciphered due to the Chart object's easily configured interface.

Step-by-Step: Accessing the Analytics Charts

To access the **Analytics Charts**, complete the following:

1. Double-click the **Analytics Charts** for the Ad-Hoc tab on the main menu screen.

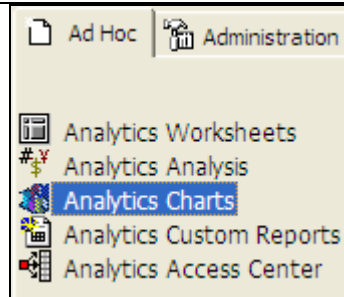
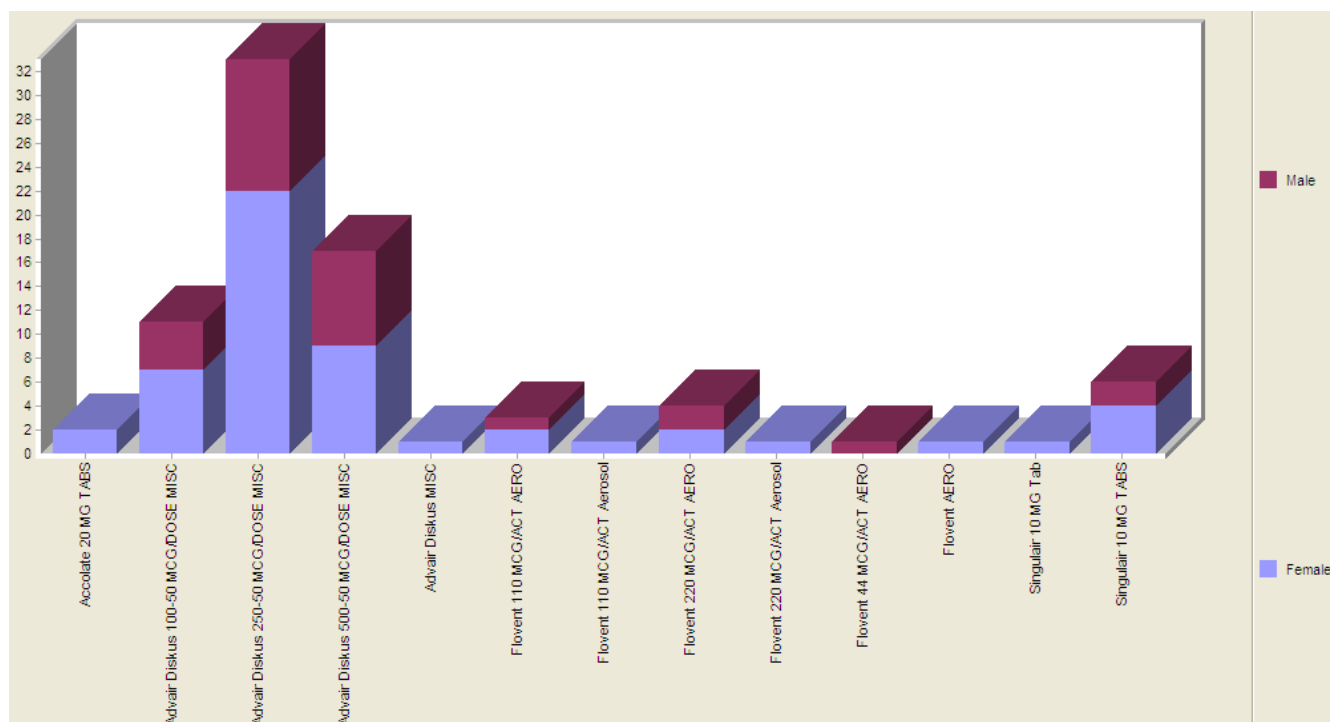


Chart Workflow

In the following workflow, a Custom Report will be displayed to provide a count of patients on particular medications for their actively diagnosed Asthma. Throughout the walkthrough, various property set-up options pertaining to Analytics Charts will be detailed such as a Crosstab Chart and the legend box.



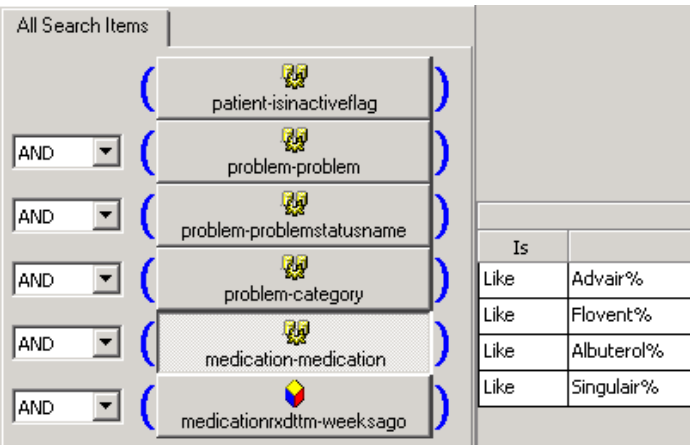
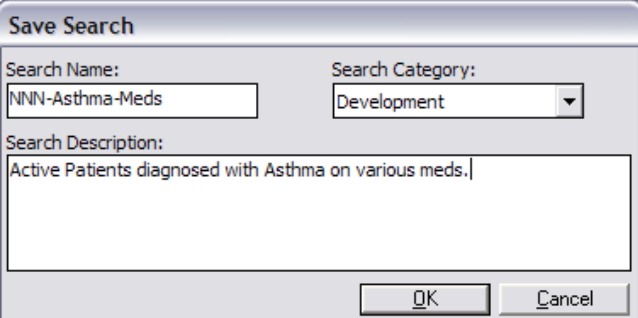
Analytics Chart Workflow

Setting Search Criteria

Build a search that will pull all patients *actively* diagnosed with asthma and taking at least one of a list of medications.

This search is necessary in order to pull the data to be populated in the chart. Search criteria can be created via the Analytics Worksheets section or via the Metalayer data tree within the Analytics Charts object.

Step-by-Step: Set Search Criteria for Chart Object

1	<p>Set the following search criteria:</p> <ul style="list-style-type: none"> patient-isinactiveflag = N Problem-problem LIKE Asthma% Problem-problemstatusname = Active Problem-category = Active Medication-Medication LIKE Advair% OR LIKE Flovent% OR LIKE Albuterol% OR LIKE Singulair% Medicationrxdtm-weeksago <= 300 <p><i>Organizations may define active patients in a different manner. This workflow utilizes the patient-isinactiveflag data field only.</i></p>	
2	<p>Save the Search to the database;</p> <ul style="list-style-type: none"> NNN-Asthma-Meds Development Active Patients diagnosed with Asthma on various meds. 	

Add/Remove fields within Chart Sections

X-Axis

Data loaded into the X-Axis section will detail how the chart is defined. For example, adding problemprovider-identifiedby-fullname into the X-Axis section will list data by the full name of the provider identifying (assessing) a patient's problem. If Medication-Medication is added into the section, the data will be defined by individual medication. A basic question to ask when deciding what field to add to the X-Axis section may be – what is the chart based on (Provider, Medication, Problem, etc.)?

Data Items

Data Fields added to the Data Items section define what the chart is depicting by total count, average, sum, etc. For example, adding patient-id with aggregate type COUNT to the Data Items section will list how many patients are returned for a particular scenario such as number of patients diagnosed with a particular problem. A question to consider asking when deciding what field to add to the Data Items section may be – what is the chart attempting to measure (medication type, type of problem, number of patients)?

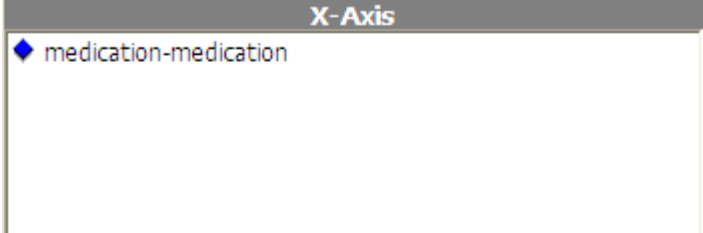
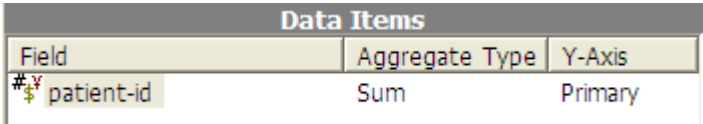
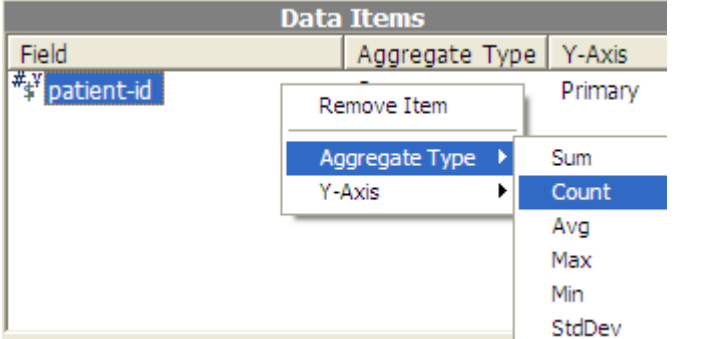
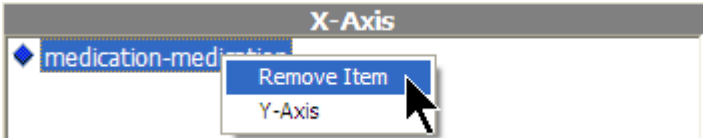
For this walkthrough, the chart compiled will be based on particular medications taken and is measured by the number of patients taking those medications. Thus, medication is the X-Axis value and the count of patients is the Data Item.



To return an accurate number of patients, utilize the patient-id field from the Metalayer Tree. This is a unique identifier that is created by the database. Test patients and duplicate patients can make fields such as MRN and SSN difficult to trust unless properly updated.

To add fields to the necessary chart sections, complete the following:

Step-by-Step: Adding Fields to a Chart


1	<p>Click/Drag the field medication-medication to the X-Axis section or simply double-click the field name.</p> <p><i>When double-clicking a field name in the Metalayer Tree, be sure the field loads to the proper section.</i></p>	
2	<p>Click/Drag the field patient-id to the Data Items section.</p>	
3	<p>Right-click the patient-id field, trace to Aggregate Type and select Count.</p>	 <p><i>Since the goal of this workflow is to list a count of how many asthmatic patients are taking a certain medication, the aggregate type needs to be changed to COUNT.</i></p>
4	<p>To remove a field from a section, right-click the field to remove and select Remove Item.</p>	

The chart, when loaded, will display a total count of actively diagnosed asthmatic patients per medication.

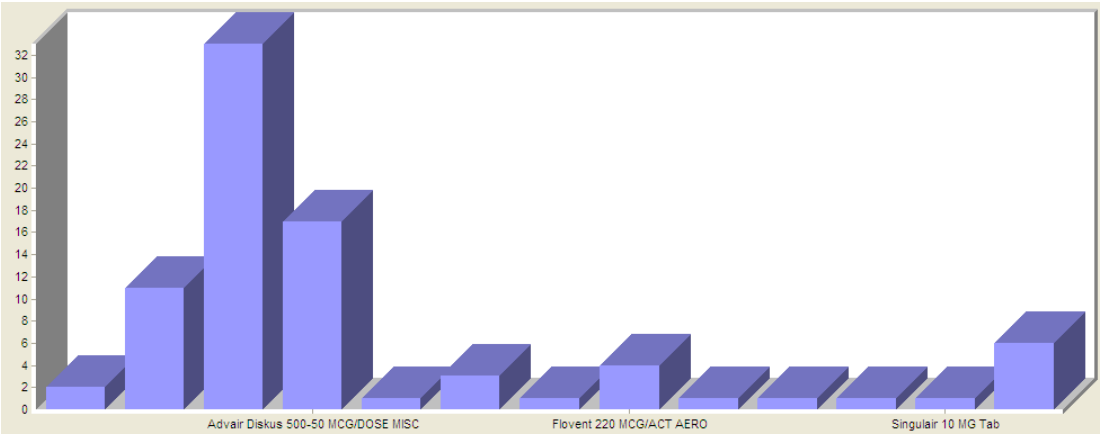
Loading a Chart

Once all search criteria has been established and sections of the chart have been properly defined, it is now time to view the results of the populated chart.

Step-by-Step: Adding Fields to a Chart

1	Verify that all appropriate data fields are populated.	
2	Click the Run (or F5) .	

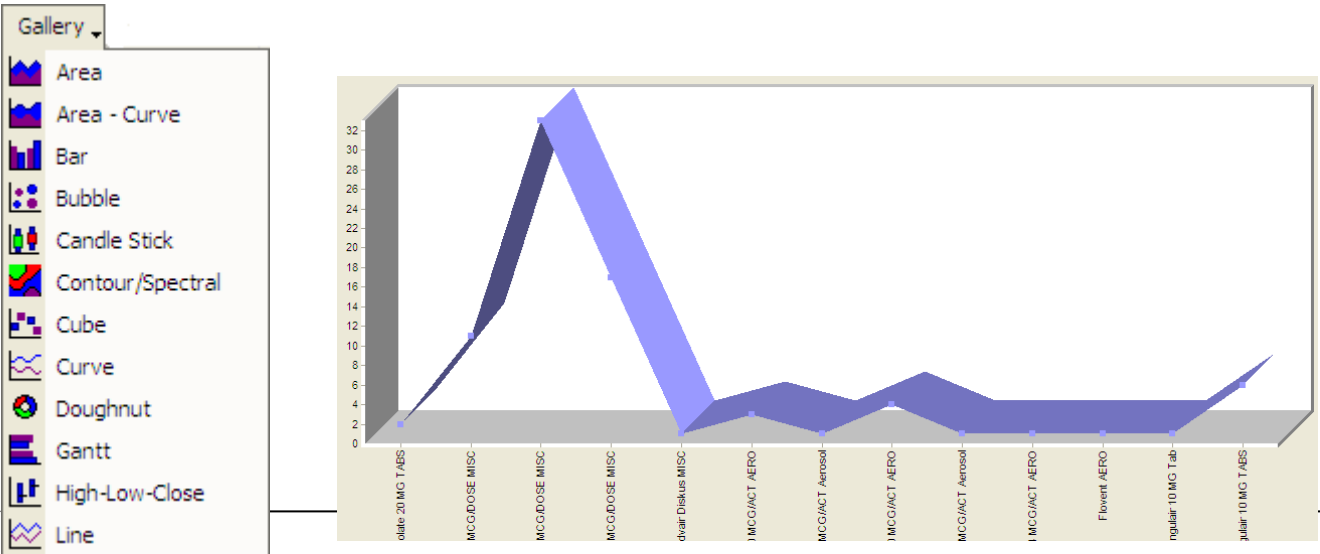
Below is an example of what the chart may look like. However, results will vary based on the data within the organization’s Enterprise EHR system.



Format Options for the Chart

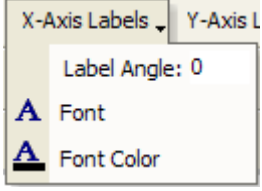
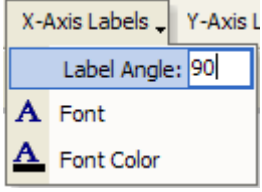
Gallery ▾ Properties ▾ Drill Through... ▾ Show Slice Show Chart Toolbar Show Annotation Toolbar Point Labels ▾ X-Axis Labels ▾ Y-Axis Labels ▾ Export To... ▾

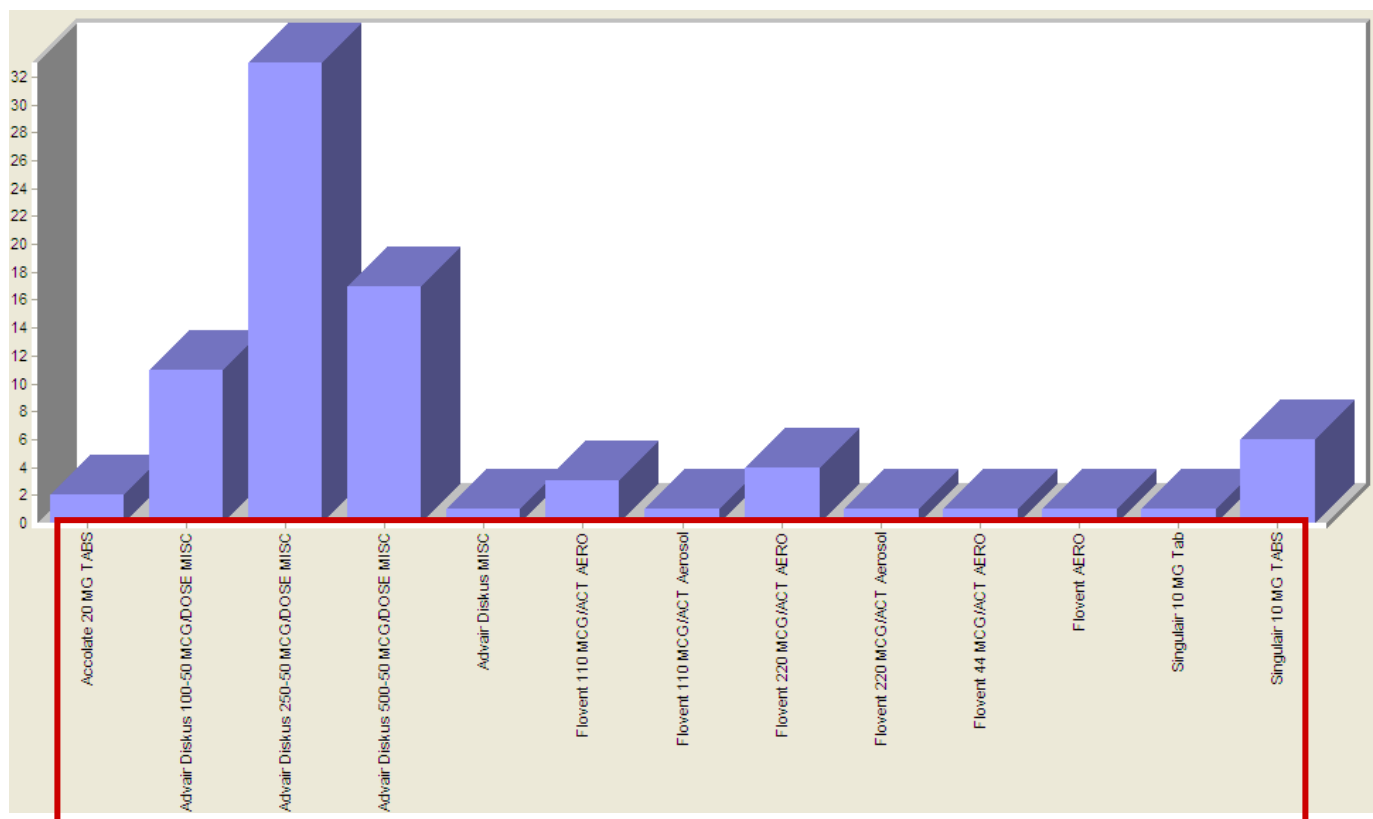
Click the Gallery icon to display a list of chart type options (pie, line, etc.) for displaying the data results. The chart will default to *Bar*, but can be changed and gallery option saved.

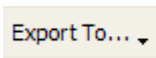


The **X-Axis Labels** icon gives the user options to alter how the labels on the X-Axis will display on the chart.

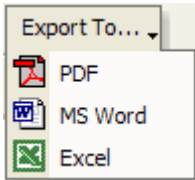
Step-by-Step: Display X-Axis Labels Vertically

1	Click the down arrow on the X-Axis Labels icon within the toolbar once the chart has been loaded.	
2	Click in the textbox to the right of the Label Angle field and change the field from 0 to 45 .	
3	Click the ENTER key.	





Charts may be exported to a file/folder via three different options – PDF, Word or Excel.



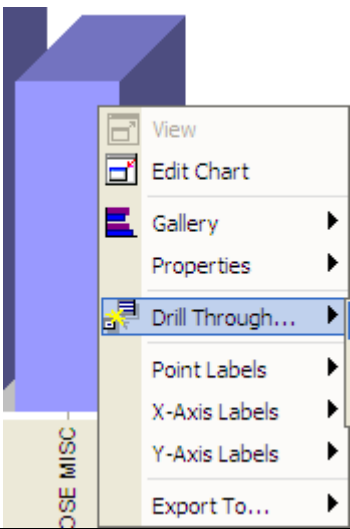
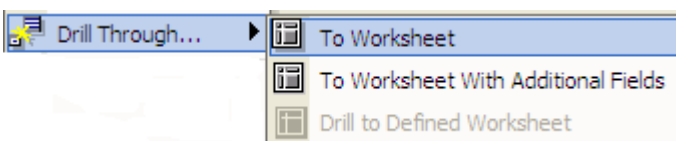
The *Edit Chart* icon will navigate the user back to the screen where chart definitions are declared. From here, a user may change how the chart is pulling data from the database and/or which fields will define the chart.

Drill Through to Worksheets

Analytics provides the user access to different objects (Worksheets, Analysis, Charts, etc.) from the current object loaded. However, within the Chart object, a user can select a section of the chart and load the details of that section via the Worksheets object. This is called **Drill Through** functionality.

To *Drill Through* to a Worksheet using the fields associated with the X-Axis and Data Items sections of a populated Chart complete the following:

Step-by-Step: Drill Through to a Worksheet Using


1	<p>Right-click a section of the chart containing the count to detail.</p>	
2	<p>Trace to Drill Through and select To Worksheet.</p>	

3	The application will automatically navigate to the Worksheet object and load the data with the fields listed in the X-Axis and Data Fields section of the Chart.	<table><tr><th>medication-medication</th><th>patient-id</th></tr><tr><td>Advair Diskus 500-50 MCG/D</td><td>17243</td></tr><tr><td>Advair Diskus 500-50 MCG/D</td><td>45313</td></tr><tr><td>Advair Diskus 500-50 MCG/D</td><td>47223</td></tr><tr><td>Advair Diskus 500-50 MCG/D</td><td>54533</td></tr><tr><td>Advair Diskus 500-50 MCG/D</td><td>56209</td></tr></table>	medication-medication	patient-id	Advair Diskus 500-50 MCG/D	17243	Advair Diskus 500-50 MCG/D	45313	Advair Diskus 500-50 MCG/D	47223	Advair Diskus 500-50 MCG/D	54533	Advair Diskus 500-50 MCG/D	56209
medication-medication	patient-id													
Advair Diskus 500-50 MCG/D	17243													
Advair Diskus 500-50 MCG/D	45313													
Advair Diskus 500-50 MCG/D	47223													
Advair Diskus 500-50 MCG/D	54533													
Advair Diskus 500-50 MCG/D	56209													
4	Add additional fields from the Metalayer Tree to the <i>Selected Fields</i> section if necessary and re-run the Worksheet.	<div><div></div>patient-lastname</div> <div><div></div>patient-firstname</div> <div><div></div>medication-medication</div>												

To *Drill Through* to a Worksheet using additional fields associated by the user, complete the following:

Step-by-Step: Drill Through to a Worksheet & Add Additional Fields


1	<p>Right-click the cell containing the count to detail.</p>	
2	<p>Trace to Drill Through and select To Worksheet With Additional Fields.</p>	
3	<p>The user will be sent to the Worksheet object.</p> <p>Click OK when prompted to select additional fields from the Metalayer Tree.</p>	
4	<p>Add the necessary fields from the Metalayer Tree to the <i>Selected Fields</i> section of the Worksheet.</p>	

5	Click Run (or F5).	<table border="1"> <thead> <tr> <th>patient-lastname</th><th>patient-firstname</th><th>medication-medication</th></tr> </thead> <tbody> <tr> <td>ADAMAAZZ</td><td>ZZAAVI</td><td>Advair Diskus 500-50 MCG/DOSE</td></tr> <tr> <td>CLEMOUHT</td><td>THUMIW</td><td>Advair Diskus 500-50 MCG/DOSE</td></tr> <tr> <td>CUZONMAT</td><td>TAMUOH</td><td>Advair Diskus 500-50 MCG/DOSE</td></tr> <tr> <td>JOHNSFIS</td><td>SIFGAP</td><td>Advair Diskus 500-50 MCG/DOSE</td></tr> <tr> <td>GOVINEOR</td><td>ROEMIG</td><td>Advair Diskus 500-50 MCG/DOSE</td></tr> <tr> <td>WILLIEOZ</td><td>ZOEHAU</td><td>Advair Diskus 500-50 MCG/DOSE</td></tr> </tbody> </table>	patient-lastname	patient-firstname	medication-medication	ADAMAAZZ	ZZAAVI	Advair Diskus 500-50 MCG/DOSE	CLEMOUHT	THUMIW	Advair Diskus 500-50 MCG/DOSE	CUZONMAT	TAMUOH	Advair Diskus 500-50 MCG/DOSE	JOHNSFIS	SIFGAP	Advair Diskus 500-50 MCG/DOSE	GOVINEOR	ROEMIG	Advair Diskus 500-50 MCG/DOSE	WILLIEOZ	ZOEHAU	Advair Diskus 500-50 MCG/DOSE
patient-lastname	patient-firstname	medication-medication																					
ADAMAAZZ	ZZAAVI	Advair Diskus 500-50 MCG/DOSE																					
CLEMOUHT	THUMIW	Advair Diskus 500-50 MCG/DOSE																					
CUZONMAT	TAMUOH	Advair Diskus 500-50 MCG/DOSE																					
JOHNSFIS	SIFGAP	Advair Diskus 500-50 MCG/DOSE																					
GOVINEOR	ROEMIG	Advair Diskus 500-50 MCG/DOSE																					
WILLIEOZ	ZOEHAU	Advair Diskus 500-50 MCG/DOSE																					
6	<p>To Navigate back to the Chart object from the Worksheet Object, click the X at the top-right of the screen.</p> <p>This should take the user back to the Chart object.</p>																						

Crosstab Charts

Charts may be defined by more than the X-Axis and Data Items. A **Cross Tab** will add the *Series Items* section to the chart in order to better display how data fields are displayed in the chart. Examples of fields that can be used in a cross tab (gender, age category, etc.) can vary, so this walkthrough will use gender to illustrate.

Step-by-Step: Create a Crosstab Chart

1	Click the empty checkbox next to Crosstab Chart?	<input type="checkbox"/> Crosstab Chart?
2	<p>Click Yes when prompted to continue.</p> <p>This will load the Series Items section to the screen.</p>	
3	Click/Drag the field Patient-sexname to the Series Items section.	<input checked="" type="checkbox"/> Crosstab Chart? <div> Series Items <p>◆ patient-sexname</p> </div>
	Click Run (or F5).	

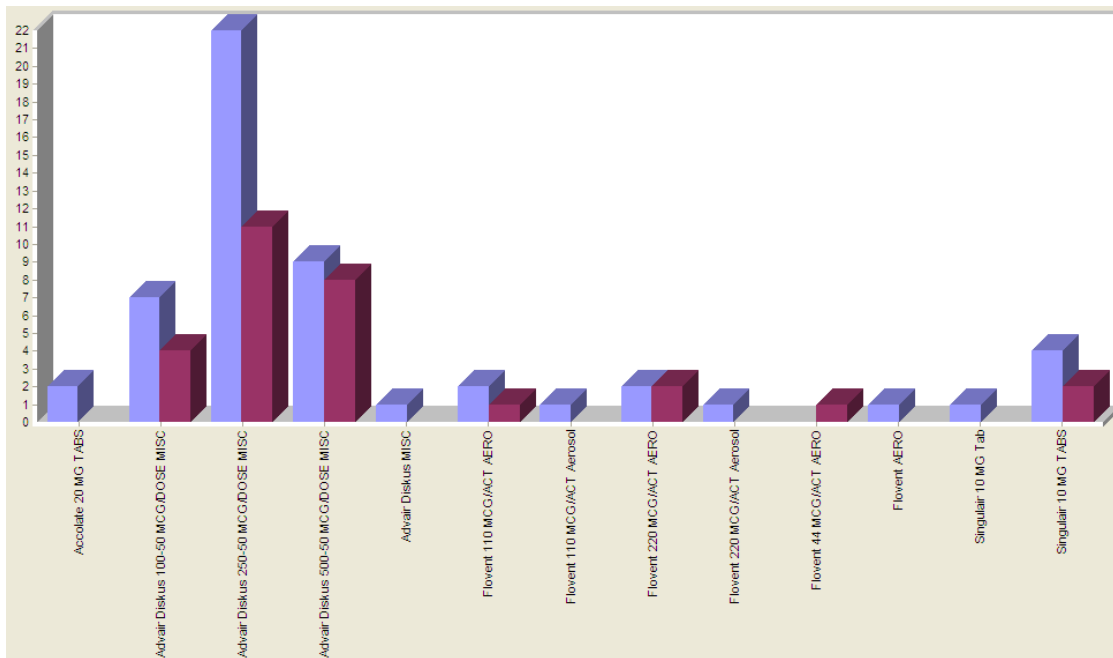



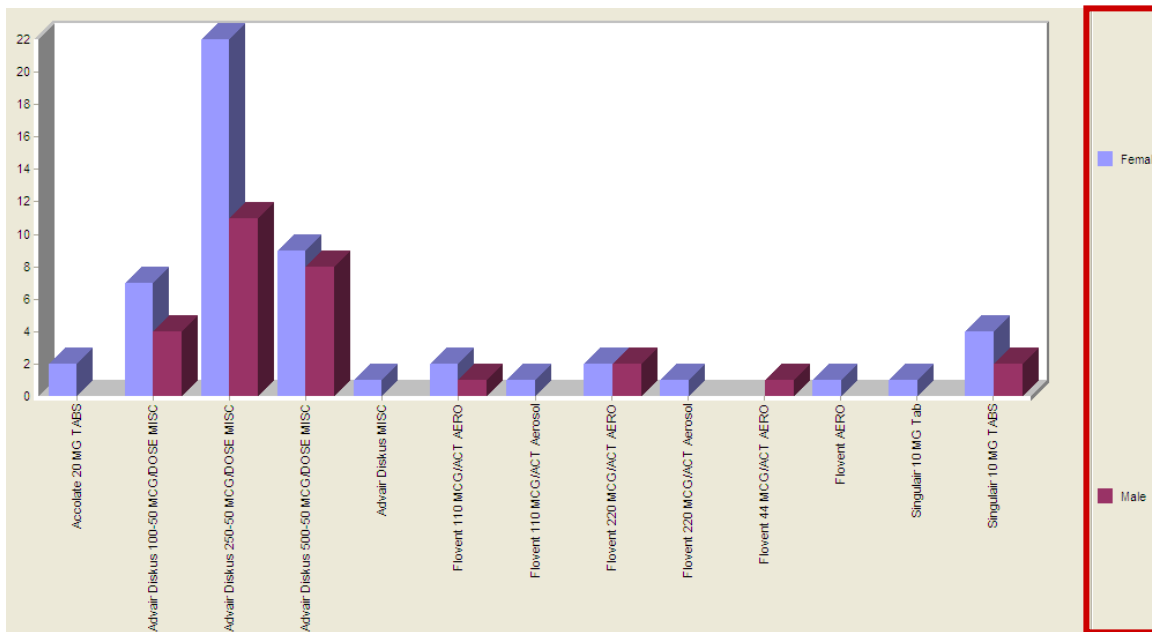
Chart Toolbar

Show Chart Toolbar

The *Show Chart Toolbar* will display another layer of toolbar options for displaying data on the chart. Additional icons include *Legend Box*, *Rotate*, and *Zoom*.



To display the legend box to help users quickly understand the differences in color on the chart (if necessary), click the legend box  on the Chart Toolbar. This will pop open a legend to the right of the chart (see below).



Other Chart Toolbar Options include:



Open an existing Chart



Save the loaded Chart



Copy the loaded Chart to the clipboard as either a bit map, metafile or text file (data only)



Alternate way to change the chart view



Change color



Add vertical and/or horizontal gridlines behind the chart

Populate the data editor where the individual counts can be viewed per data item type.

For example:



	Accolate 20 MG TABS	Advair Diskus 100-50 MCG/DOSE MISC
Female	2	7
Male		4



Loads the properties window



3d/2d icon – toggle the chart between 3D and 2D view. When selected, the chart is in 3D view while 2D when unselected.



Rotate the chart as well as changing depth and perspective parameters



Z-clustered icon



Zoom, Print Preview and Print icons (respectively) for loaded Chart

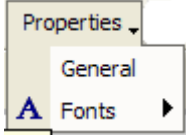
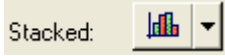
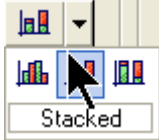


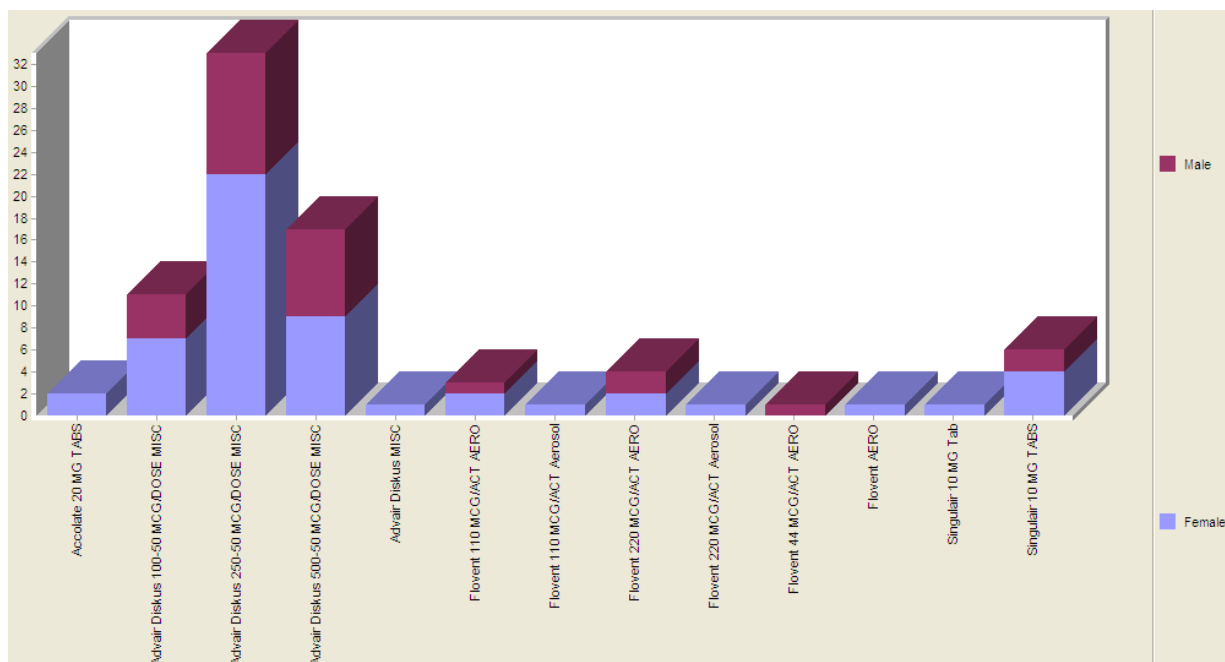
Tools icon that displays additional toolbar options such as Values Legend, Series Legend and Data Editor via a dropdown. Also allows user to toggle between Toolbar, Palette Bar and Pattern Bar views.

Stacked Chart

Displaying data with multiple, colored bars within the chart/graph can get a little difficult to read. In order to save some room on the chart's X-Axis, the chart type can be changed to a stacked chart in order to stack all appropriate series information along the X-Axis.

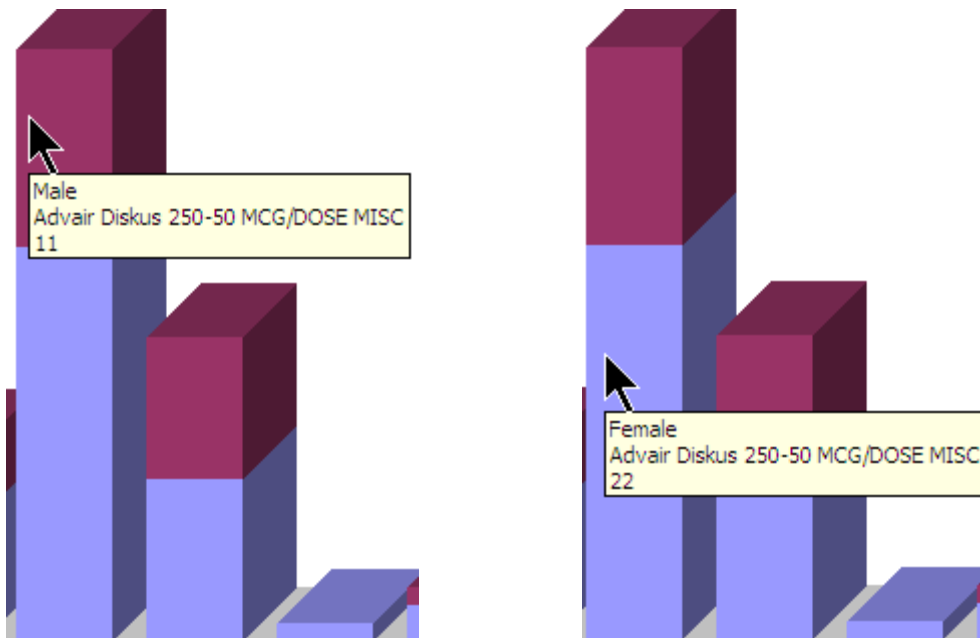
Step-by-Step: Changing a Side-By-Side Chart to Stacked

1	Once the chart has been loaded, click Properties on the toolbar. Select General .	
2	From the General (1 st) tab, locate the Stacked label within the <i>Effects</i> section.	
3	Click the down arrow on the Stacked icon. Click the Stacked icon option.	
4	Click OK	



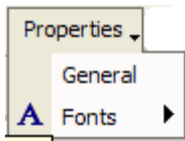
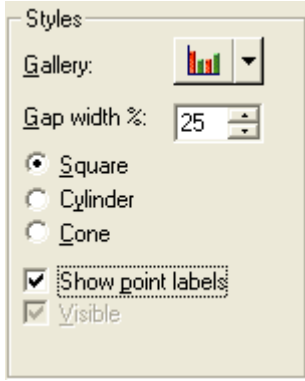
Display Data Values

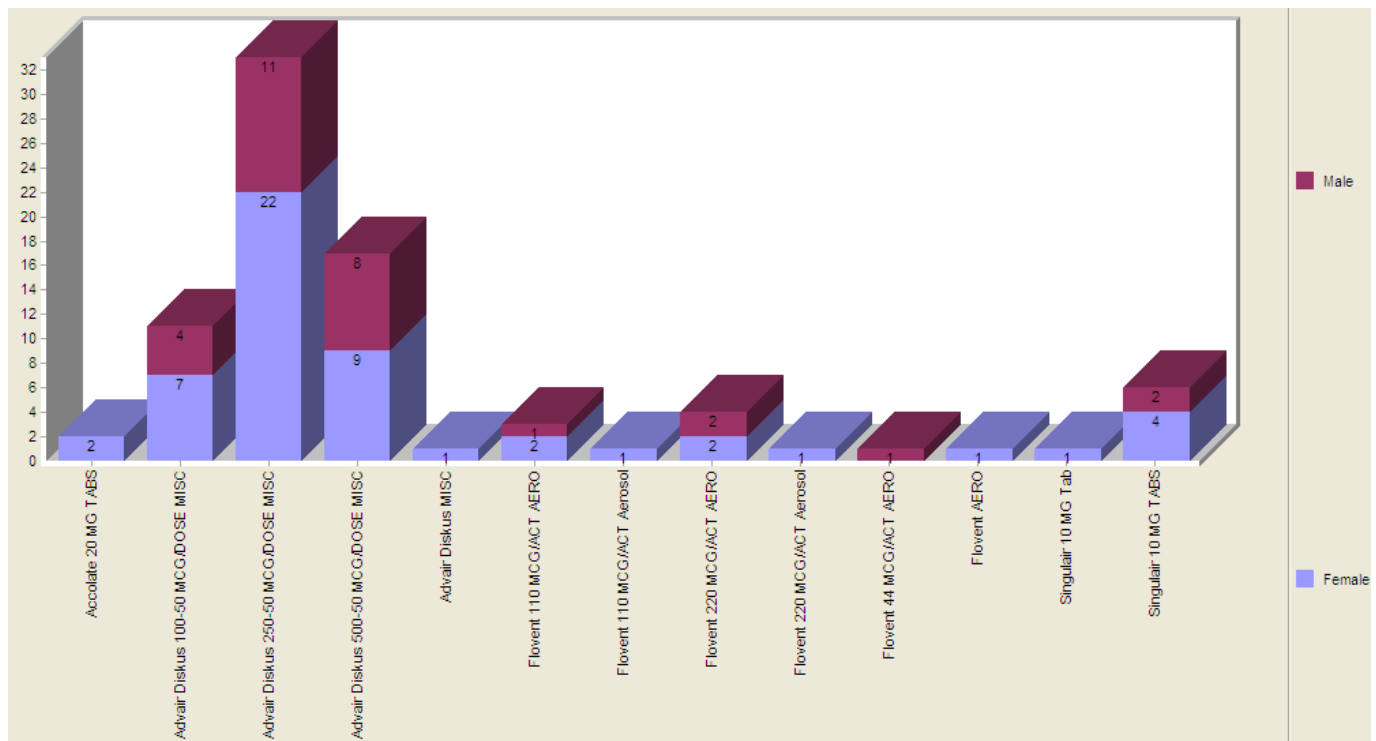
Data values can be viewed by hovering over particular columns:



Data will display once the user hovers the arrow over a stacked section showing the proper series item type (gender), the X-Axis field (medication name) and the number (count) of patients that fall under the selected criteria.

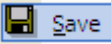
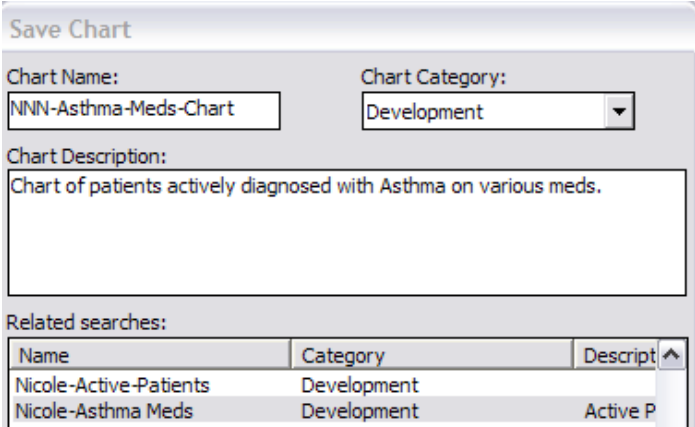
Step-by-Step: Change Data Values

1	<p>Once the chart has been loaded, click Properties on the toolbar.</p> <p>Select General.</p>	
2	<p>From the Series (2nd) tab, click the checkbox next to Show point labels.</p> <p>Click OK</p>	



Saving Charts

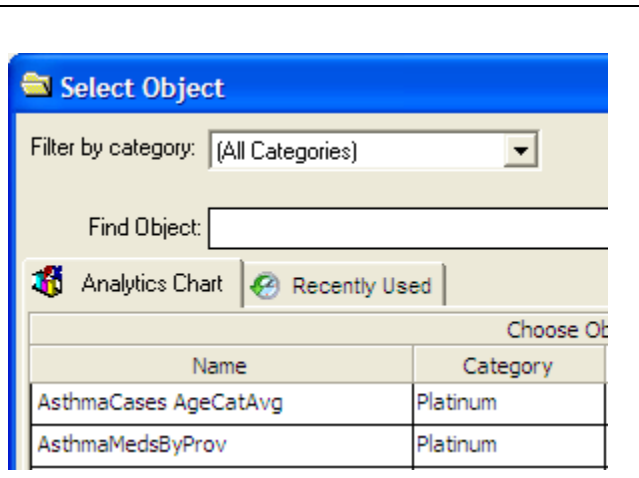
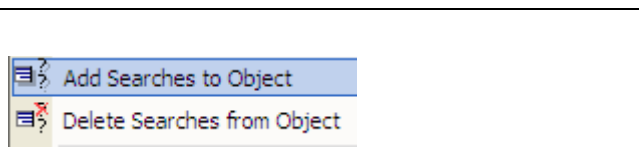
Step-by-Step: Save a Chart Object

1	From the File menu, trace to and select Save .										
2	<p>Save the Chart with the following information:</p> <ul style="list-style-type: none"> Chart Name: NNN-Asthma-Meds-Chart Category: Development Description: Chart of patients actively diagnosed with Asthma on various meds. <p>Click OK.</p>	 <p>The 'Save Chart' dialog box shows the following fields:</p> <ul style="list-style-type: none"> Chart Name: NNN-Asthma-Meds-Chart Chart Category: Development (selected from a dropdown) Chart Description: Chart of patients actively diagnosed with Asthma on various meds. <p>Below the description is a 'Related searches:' section with a table:</p> <table border="1"> <thead> <tr> <th>Name</th> <th>Category</th> <th>Descript</th> </tr> </thead> <tbody> <tr> <td>Nicole-Active-Patients</td> <td>Development</td> <td></td> </tr> <tr> <td>Nicole-Asthma Meds</td> <td>Development</td> <td>Active P</td> </tr> </tbody> </table>	Name	Category	Descript	Nicole-Active-Patients	Development		Nicole-Asthma Meds	Development	Active P
Name	Category	Descript									
Nicole-Active-Patients	Development										
Nicole-Asthma Meds	Development	Active P									

Add Search to Chart Object

Because there may be Charts populated often, organizations can make sure that certain search criteria is always linked to certain Chart objects in order to keep everything straight and consistent. It does not mean that there are only certain searches that can be run for certain objects. It just means that users will have an easier time deciding which search objects go with which Chart objects.

Step-by-Step: Link a Search Object to a Chart Object

1	<p>Be sure the Chart object is saved as well as at least one Search object.</p>	
2	<p>With the Chart object saved and opened, select Search from the menu bar before tracing to and selecting Add Searches To Object.</p>	

The following window will display:

Add searches to "AsthmaMedsByProv"

Chart Name:

AsthmaMedsByProv

Chart Description:


Related searches:

Name	Category	Descript
iA1C in last year	Doqit	A1C tes
Active CAD	Development	
Active Diabetes	Development	problem
Active Diabetics	Doqit	
Active HIV	Development	
Active Hypertensive 46 - 85	Development	
Active ICD9 410 - 414, 45.8...	Development	Active I
Active Major Depressive Dis...	Development	For PQR
Active Med - Like Aspirin	Development	
Active Med Nest - Like Aspirin	Development	
active med therapeutic class ...	Development	anti hyp
Active problems	Development	
ag_nested_diabetic	Development	
All Diabetic Pat	Development	

OK

Cancel

3	<p>With the appropriate Chart listed in the <i>Chart Name</i> textbox, select one or more search objects from the <i>Related searches</i> table.</p> <p>Use the Ctrl or Shift keys to select multiple Search objects.</p> <p>Click OK</p>	<div><div>Related searches:</div><table><thead><tr><th>Name</th><th>Category</th><th>Descript</th></tr></thead><tbody><tr><td>MedNestKetek</td><td>Platinum</td><td></td></tr><tr><td>MedsByProvAsthma</td><td>Platinum</td><td></td></tr><tr><td>MedsByProvBackPain</td><td>Platinum</td><td></td></tr><tr><td>MedsByProvUpperResp</td><td>Platinum</td><td></td></tr><tr><td>MedsNotNull</td><td>Platinum</td><td></td></tr></tbody></table></div>	Name	Category	Descript	MedNestKetek	Platinum		MedsByProvAsthma	Platinum		MedsByProvBackPain	Platinum		MedsByProvUpperResp	Platinum		MedsNotNull	Platinum	
Name	Category	Descript																		
MedNestKetek	Platinum																			
MedsByProvAsthma	Platinum																			
MedsByProvBackPain	Platinum																			
MedsByProvUpperResp	Platinum																			
MedsNotNull	Platinum																			

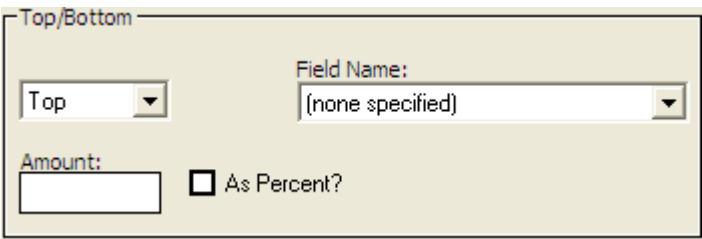
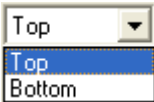
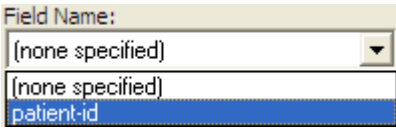
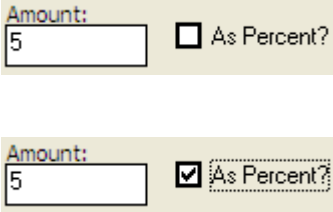

The next time this Chart is loaded as an object, the selected search object(s) will default when selecting the **Open Search** ( Open Search) icon from the toolbar.

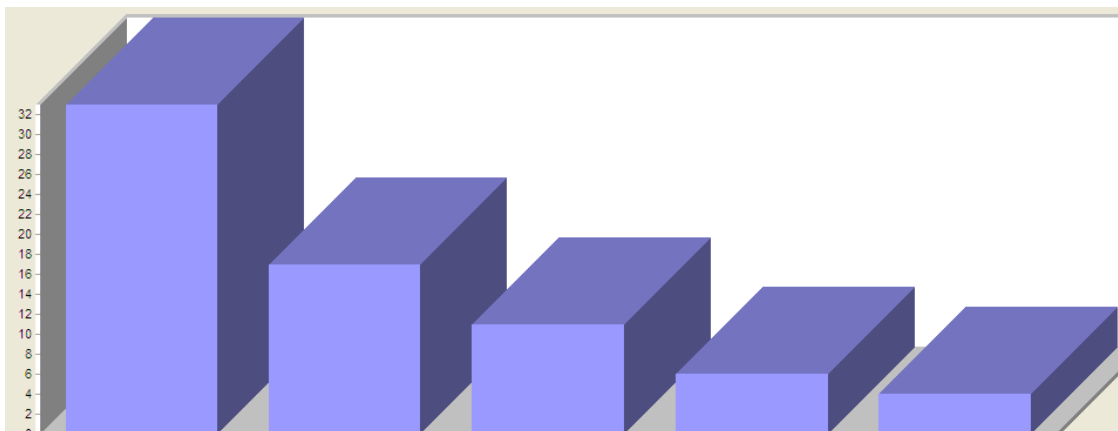
Additional Chart Features

Top/Bottom

Users can decide to only display in a chart the top or bottom number or percent of items from a search.

Step-by-Step: Display Top or Bottom Results

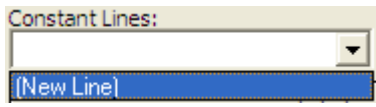
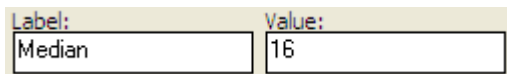
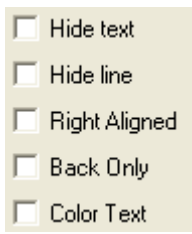

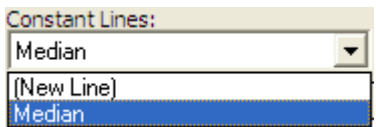
1	Locate the Top/Bottom section within the edit chart workspace.	
2	Select Top from the Top/Bottom dropdown.	
3	Select the Data Field patient-id from the Field Name dropdown list.	
4	Enter the number 5 to return the top 4 items from your chart. <i>Check the As Percent? checkbox if the top/bottom number will represent a percentage.</i>	
5	Click Run (or F5).	



Constant Lines

A line can be added to the chart to represent any significant median, average or target values.

Step-by-Step: Add a Constant Line

1	From the Constant Line section at the bottom of the edit chart screen, choose New Line .	
2	Enter the following information: <ul style="list-style-type: none"> Label: Median Value: 16 Axis: X-Axis Line Style: Solid Line Width: 2 	
4	Change the line color from black (default) if necessary by clicking the Line Color icon.	
5	Set any other Constant Line parameters by checking the appropriate checkboxes to the right of the Constant Line section of the screen.	
6	Click Add to load the new Constant Line definition to the Constant Lines dropdown list.	
7	Select the new Constant Line (Median) definition from the Constant Lines dropdown list.	
8	Click Run (or F5).	

Lesson 7: Custom Reports

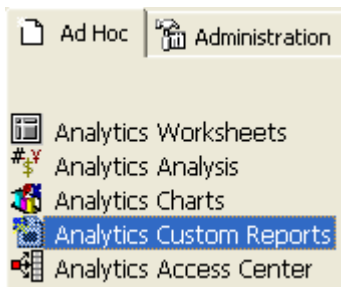
Overview

Analytics Custom Reports provides users with a report building tool that can drive Pay for Performance initiatives, data analysis and organization utilization review amongst other critical needs. With organizations constantly in need of reports to dissect client and organizational trends, Analytics Custom Reports is a solution that will deliver these needs utilizing a simple user interface.

Report Tool Basics

Getting Started

Double-click **Analytics Custom Reports** from the *Ad-Hoc* tab on the main screen to load the object.



Headers/Footers

There are three types of report headers/footers that can be displayed or hidden in a report:

Report – any labels, images, etc. added to a report header/footer will display at the top/bottom of the report only.

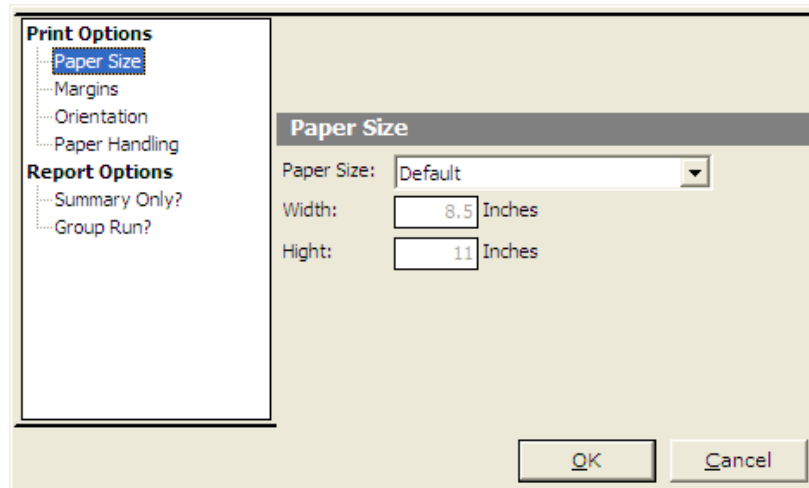
Page – any labels, images, etc. added to a page header/footer will display at the top/bottom of each page in the report.

Group – Group headers are for combining or “grouping” common data together in the report. For example, if a patient name data field is placed in a group header section, (when report is loaded) all pertinent data in the report tied to that patient will be listed together instead of scattered throughout the report.

Align Toolbar Icons

There are several icons tied to the Custom Reports object that can enhance a report for users:

Set properties pertaining to print and report options



Set parameters and defaults for prompting user prior to the report loading to define what group or groups of data will be populated in the report

Add/View a report title

Insert a Report, Page or Group section into the report

Change sort direction of data based within a grouped section

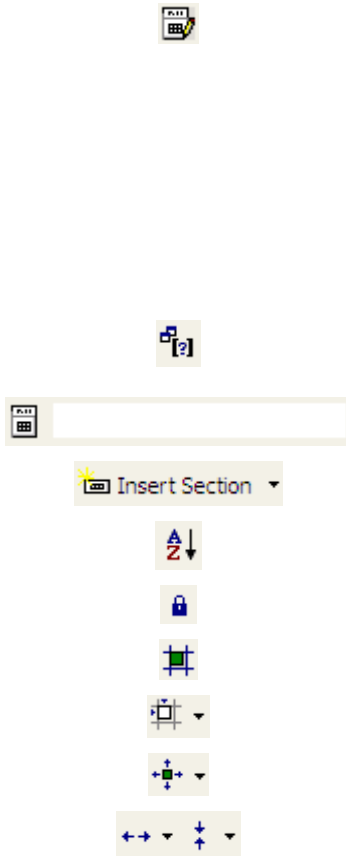
Lock all controls in the report so they cannot be moved

Snap to Grid will automatically align items within a section of the report















Align selected items to a common edge

Resize selected items to a common dimension

Adjust horizontal or Vertical spacing of selected items, respectively





Toolbox Controls

	Select
	Label
	Textbox
	Image
	Line
	Shape
	Rich Text Edit
	Frame
	Sub Report
	Page Break
	Barcode
	Add Chart to Report
	Page Number
	Visual Basic Editor

Properties Window


The Properties Window is for changing/updating parameters for an individual control within the report sections. Click a control (label, data field, image, etc.) within the report and update properties such as alignment, back color, caption name and font parameters (size, style, effects).

(Name)	lblProvider
Alignment	2 - ddTXCenter
Angle	0
BackColor	
BackStyle	1 - ddBKNormal
Caption	Provider
Font	Arial
ForeColor	
height	270
left	90
MultiLine	True

Report Scenario

To demonstrate functionality within the Custom Reports object, the following scenario will be used.

Populate a Custom Report displaying all patients who have had a Hemoglobin A1C by provider. For all test results that are greater than or equal to 9, the background color will display in Red, while results less than or equal to 9 will display in Blue. Format the report by adding labels, images, page numbers and date where necessary.



ALLSCRIPTS™
Inform. Connect. Transform.

Study 1 Follow Up Detail HGB A1C Results

Result <= 9
Result >= 9

Provider	Patient	Clinical Date	Result
BARATE ZZ, ZZELE S			
2208	GRAYSAZZ, ZZA OYP	07/18/2003	11.1
2738	BELK AZZ, ZZAIRA	12/29/2004	7
7774	BAHLUZ, ZULIUP	05/17/2004	7
		08/24/2004	6.7
		08/29/2003	7.2
		02/23/2004	7.9
10933	DICKELOZ, ZOLLUZ	11/11/2004	7.8
		02/02/2005	7.6
12721	SIMMOIOZ, ZOIKOB	05/20/2003	5.8
17719	SELVARIZ, ZIRLIJ	06/10/2003	6.8
		04/08/2004	6.9
		02/15/2005	6.5

Custom Reports Walkthrough

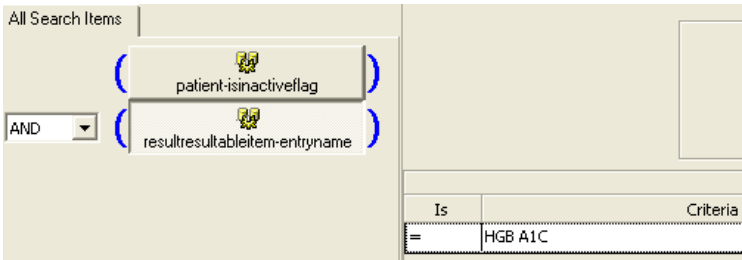
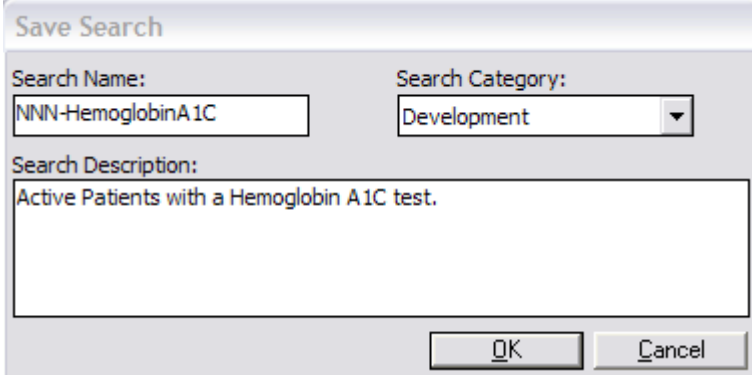
Setting Search Criteria

Build a search that will pull all active patients who have had a Hemoglobin A1C per primary care provider.

This search is necessary in order to pull the data to be populated in the report. Search criteria can be created via the Analytics Worksheets section or via the Metalayer Tree within the Custom Reports object.

The following parameters for the search are **examples** of both a way to limit patients who are active and a particular resultable name. However, each organization may have these data items defined differently.

Step-by-Step: Set Search Criteria for Report Object

1	<p>Set the following search criteria:</p> <ul style="list-style-type: none"> patient-isinactiveflag = N resultresultableitem-entryname = HGB A1C <p><i>Organizations may define active patients in a different manner as well as have different vendor codes when it comes to test results. This workflow utilizes the patient-isinactiveflag data field only for active patients and HGB A1C for the test code name.</i></p>	
2	<p>Save the Search with the following details:</p> <ul style="list-style-type: none"> NNN-HemoglobinA1C Development Active Patients with a Hemoglobin A1C test. 	


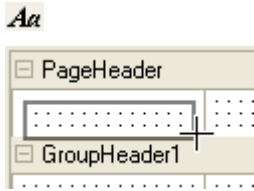
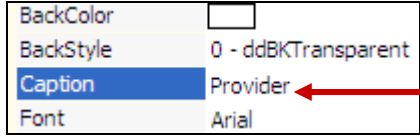
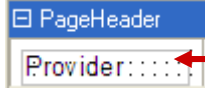
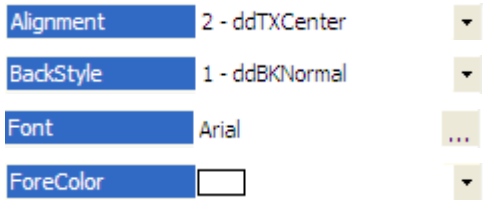
Adding Elements to the Report Template

Adding Non-Data-Fields

Custom Reports not only depend on the hard data that is generated via a custom search, but also how the data elements are labeled and formatted in order to make the report easier to comprehend by any user. The following sections take the user through adding and formatting data elements such as labels, images and lines.

Adding a Label



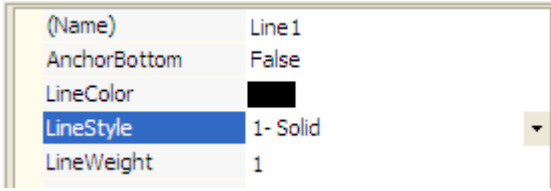
Step-by-Step: Add a Label Control to Report

1	<p>Click the Label icon in the Toolbox Controls toolbar to the left of the screen.</p> <p>Navigate to a section in the report, the mouse pointer will change from an arrow to .</p> <p>Click/Drag a label box at the bottom-left of the PageHeader section of the report template.</p>	
2	<p>Re-select the label and locate the properties window at the top-right of the screen.</p> <p>Replace what is currently in the Caption field with Provider.</p>	 
3	<p>Within the Properties window pane change the following properties:</p> <ul style="list-style-type: none"> Alignment: 2 – ddTXCenter Back Color: Color or your choice Back Style: 1 – ddBKNormal Font Style: Bold Fore Color: Color of your choice 	

When changing the **BackColor** of a control to a desired color, the color will only display if the **BackStyle** is set to **Normal**.


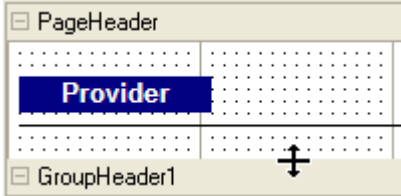


Adding a Line

Step-by-Step: Add a Line Control to Report

1	<p>Click the Line icon in the Toolbox Controls toolbar to the left of the screen.</p> <p>Navigate to a section in the report, the mouse pointer will change from an arrow to .</p> <p>Click/Drag a line extending from the bottom-left of the PageHeader section over to the bottom-right in the report template.</p>	
2	<p>Change properties for the line control to the following:</p> <ul style="list-style-type: none"> Line Color: Black Line Style: 1 – Solid Line Weight: 3 	

Adding an Image

Step-by-Step: Add an Image Control to Report

1	<p>If necessary, extend the section by moving the arrow of the mouse over the bottom of the section until seeing the .</p> <p>Click/Drag until enough space is visible. Move other controls as needed.</p>	
2	<p>Click the Image icon in the Toolbox Controls toolbar to the left of the screen.</p> <p>Navigate to a section in the report, the mouse pointer will change from an arrow to .</p> <p>Click/Drag an image box within the PageHeader section of the report template.</p>	

What controls to add to a report template is up to each organization. To continue with this workflow, add the labels, images, lines, etc. in order to generate a report that displays the following header information.



If the size and format of labels is to be consistent, simply build one label control and copy/paste it back into the header. The caption can simply be changed for the other labels keeping the format similar and saving the user time.

Adding Data Fields

Custom Reports requires adding the fields from the Metalayer Tree. Open the appropriate content categories and complete the following workflow for examples.

Clicking F8 will toggle the display of the Metalayer Tree.

Identifying Necessary Data Fields

Necessary fields to display in the report must 1st be added to the *Properties/Selected Fields* pane.

Step-by-Step: Add Data Fields for Report

1. Locate the following fields from the Metalayer Tree and **double-click** each field to add to the **Properties/Selected Fields** section at the bottom-right of the screen.

- **patientprovider-fullname**
- **patient-fullname**
- **patientpatient_other-enterprisemrn**
- **result-numericresult**
- **result-clinicaldtm**

Fields	Data Field
◆ patientprovider-fullname	fullname
◆ patient-fullname	fullname
◆ patientpatient_other-enterprisemrn	enterprisemrn
◆ result-numericresult	numericresult
◆ result-clinicaldtm	clinicaldtm

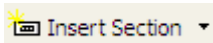
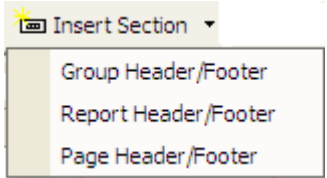
Properties/Selected Fields

Grouping Common Data

It is beneficial to put common information together within a report. For example, all patient test results can be listed together by patient instead of having the patient's name and test results scattered throughout the report. This is called **grouping** and it streamlines report information to make it easier to find common data per provider, patient, etc.

Be sure to have at least one **GroupHeader** header/footer section added to the report template.

Step-by-Step: Add a Header/Footer Section

1	Click the down arrow to the right of the Insert Section icon within the toolbar.	
2	Select Group Header/Footer twice.	

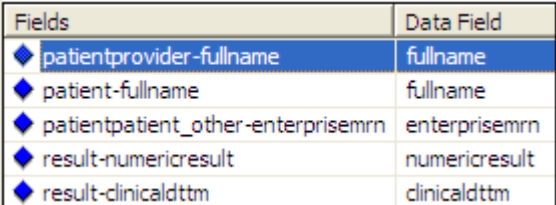
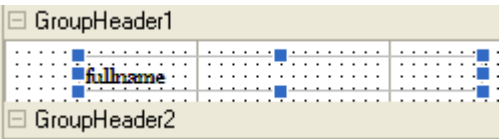
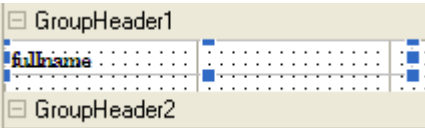
To add Header/Footer sections into the report template, see *Headers/Footers* in this document. **To continue using the workflow scenario, add 2 group header/footer sections.**

PageHeader				
GroupHeader1				
GroupHeader2				
Detail				
GroupFooter2				
GroupFooter1				
PageFooter				

Add Selected Fields to the Report Template


Once the necessary data fields have been added to the *Properties/Selected Fields* pane, it is now time to place those fields in the proper section(s) of the report template.

Step-by-Step: Place Selected Data Fields into Report

1	Select the data field from the <i>Properties/Selected Fields</i> pane at the bottom-right of the screen.	
2	<p>Click/Drag with the mouse the identified field to the appropriate section of the report template and let go of the mouse to drop the field where necessary.</p> <p><i>The mouse pointer will turn to a grey box when dragging the field to the template.</i></p>	
3	<p>Where the field now resides in the report template, click/drag the field again to place it in the proper spot.</p> <p><i>Hold down the ctrl button and use the keyboard arrows to move the field without using the mouse.</i></p>	
4	<p>Add the following data fields to the areas listed:</p> <ul style="list-style-type: none"> ▪ GroupHeader1: <ul style="list-style-type: none"> ▪ patientprovider-fullname ▪ GroupHeader2: <ul style="list-style-type: none"> ▪ patient-fullname ▪ Patientpatient_other-enterprisemrn ▪ Detail: <ul style="list-style-type: none"> ▪ result-numericresult ▪ result-clinicaldtm 	

When adding fields to the *Detail* section, a corresponding label will appear in the group header section above the detail section. You can choose to leave this and take out the corresponding date and result labels in the *PageHeader* section or take them out of the group header section.

For a field placement example, use the following screenshot:

		Study 1 Follow Up Detail HGB A1C Results		
Provider	Patient		Clinical Date	Result
GroupHeader1				
fullname				
GroupHeader2				
enterpriseid	fullname			
Detail				
			clinicaldtm	numericresult
GroupFooter2				
GroupFooter1				
PageFooter				

In order to save space and pages in your report, collapse the sections so that only the data fields are displayed. The report will not only display the data fields, but also any space that has been left open within the sections. The screenshot above displays the footer sections completely closed and the header sections enclosed around the data fields.


Running/Loading a Report Template

Once all data fields have been added to the report template and a proper search has been constructed, the report must be previewed to verify results.

Step-by-Step: Load a Report Template

1	Click the Print Preview icon () in the toolbar.	
---	---	---

To run reports from a given computer, a default printer must be associated.



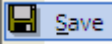
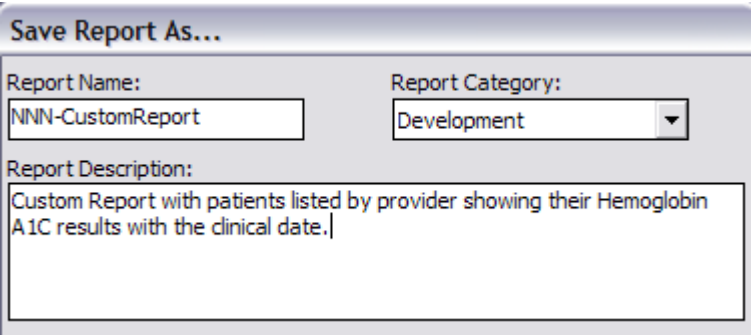
**Study 1 Follow Up
Detail HGB A1C
Results**

Provider	Patient	Clinical Date	Result
003414898	BENENER, RENOJO	2/10/2005 9:21:00 AM	6.3
		2/10/2005 9:21:00 AM	6.3
003449870	BIBBSVEZ, ZEVBON	10/26/2004 12:51:00 PM	6.5
		10/26/2004 12:51:00 PM	6.5
		6/30/2003 12:25:00 PM	6.1
		6/30/2003	6.1

To return to the design view, click the  tab at the bottom-left of the screen.

Saving Custom Reports

Step-by-Step: Save a Custom Report

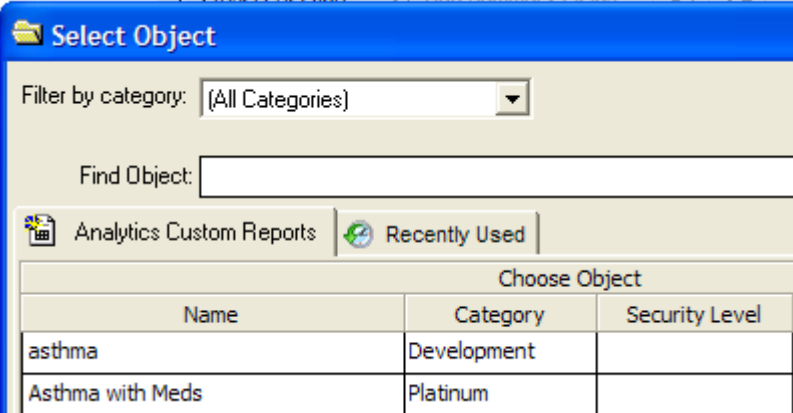
1	From the File menu, trace to and select Save .	
2	<p>Enter the following information:</p> <ul style="list-style-type: none"> Report Name: NNN-CustomReport Category: Development Description: Custom Report with patients listed by provider showing their Hemoglobin A1C results with the clinical dates. <p>Click OK.</p> <p><i>After saving a Custom Report object initially, the user has the option to grant certain access rights to one or more user groups. See Users Granting Object Rights within the Administration session of this document for further instruction.</i></p>	

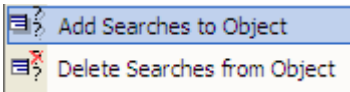
Add Search to Custom Report Object

Because Custom Report objects may be run several times each week, quarter, year, etc. organizations can decide to make sure that certain search criteria is always linked to certain Report objects in order to keep everything straight and consistent. It does not mean that there are only certain searches that can be run for certain objects. It just means that users will have an easier time deciding which search objects go with which Custom Report objects.

To link one or more searches to an individual Report, complete the following.

Step-by-Step: Link a Search Object to a Report Object

1	Be sure the current Custom Report object is saved as well as at least one Search object.	 <table border="1"> <thead> <tr> <th colspan="3">Choose Object</th> </tr> <tr> <th>Name</th> <th>Category</th> <th>Security Level</th> </tr> </thead> <tbody> <tr> <td>asthma</td> <td>Development</td> <td></td> </tr> <tr> <td>Asthma with Meds</td> <td>Platinum</td> <td></td> </tr> </tbody> </table>	Choose Object			Name	Category	Security Level	asthma	Development		Asthma with Meds	Platinum	
Choose Object														
Name	Category	Security Level												
asthma	Development													
Asthma with Meds	Platinum													

2	With the Custom Report object saved and opened, select Search from the menu bar before tracing to and selecting Add Searches To Object .	
---	--	--

The following window will display:

Add searches to "Asthma with Meds"

Report Name:
Asthma with Meds

Report Description:


Related searches:

Name	Category	Descript
A1C in last year	Doqit	A1C tes
Active CAD	Development	
Active Diabetes	Development	problem
Active Diabetics	Doqit	
Active HIV	Development	
Active Hypertensive 46 - 85	Development	
Active ICD9 410 - 414, 45.8...	Development	Active I
Active Major Depressive Dis...	Development	For PQR
Active Med - Like Aspirin	Development	
Active Med Nest - Like Aspirin	Development	
active med therapeutic class ...	Development	anti hyp
Active problems	Development	
ActivePatients	Development	All Activ
All Diabetic Sts	Development	

OK Cancel

3	<p>Use the Ctrl or Shift keys to select multiple Search objects.</p> <p>Click OK.</p>	<p>Related searches:</p> <table border="1"> <thead> <tr> <th>Name</th> <th>Category</th> <th>Descript</th> </tr> </thead> <tbody> <tr> <td>A1C in last year</td> <td>Doqit</td> <td>A1C tes</td> </tr> <tr> <td>Active CAD</td> <td>Development</td> <td></td> </tr> <tr> <td>Active Diabetes</td> <td>Development</td> <td>problem</td> </tr> <tr> <td>Active Diabetics</td> <td>Doqit</td> <td></td> </tr> <tr> <td>Active HIV</td> <td>Development</td> <td></td> </tr> <tr> <td>Active Hypertensive 46 - 85</td> <td>Development</td> <td></td> </tr> <tr> <td>Active ICD9 410 - 414, 45.8...</td> <td>Development</td> <td>Active I</td> </tr> <tr> <td>Active Major Depressive Dis...</td> <td>Development</td> <td>For PQR</td> </tr> <tr> <td>Active Med - Like Aspirin</td> <td>Development</td> <td></td> </tr> <tr> <td>Active Med Nest - Like Aspirin</td> <td>Development</td> <td></td> </tr> <tr> <td>active med therapeutic class ...</td> <td>Development</td> <td>anti hyp</td> </tr> <tr> <td>Active problems</td> <td>Development</td> <td></td> </tr> <tr> <td>ActivePatients</td> <td>Development</td> <td>All Activ</td> </tr> <tr> <td>All Diabetic Sts</td> <td>Development</td> <td></td> </tr> </tbody> </table> <p>OK Cancel</p>	Name	Category	Descript	A1C in last year	Doqit	A1C tes	Active CAD	Development		Active Diabetes	Development	problem	Active Diabetics	Doqit		Active HIV	Development		Active Hypertensive 46 - 85	Development		Active ICD9 410 - 414, 45.8...	Development	Active I	Active Major Depressive Dis...	Development	For PQR	Active Med - Like Aspirin	Development		Active Med Nest - Like Aspirin	Development		active med therapeutic class ...	Development	anti hyp	Active problems	Development		ActivePatients	Development	All Activ	All Diabetic Sts	Development	
Name	Category	Descript																																													
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All Diabetic Sts	Development																																														


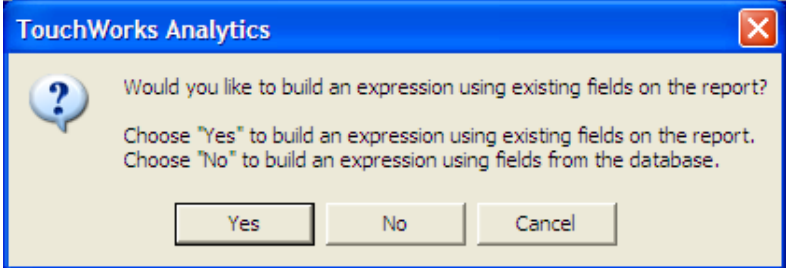
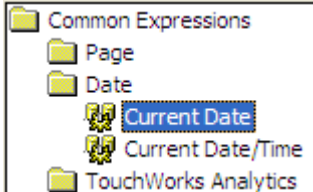
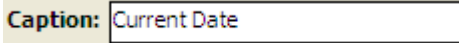
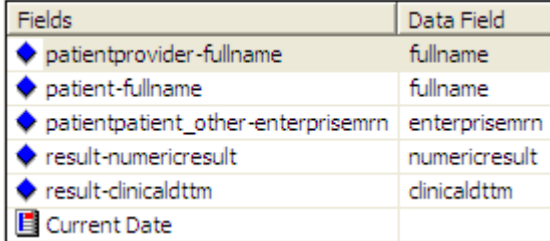
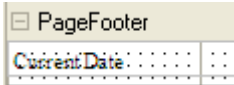
The next time this Custom Report object is loaded, the selected search object(s) will default when selecting the

Open Search ( Open Search) icon in the toolbar.

Use Standard Expressions

The report can also show standard field definitions such as a date field, page numbers, and an English query.

Step-by-Step: Add Standard Fields to an Expression


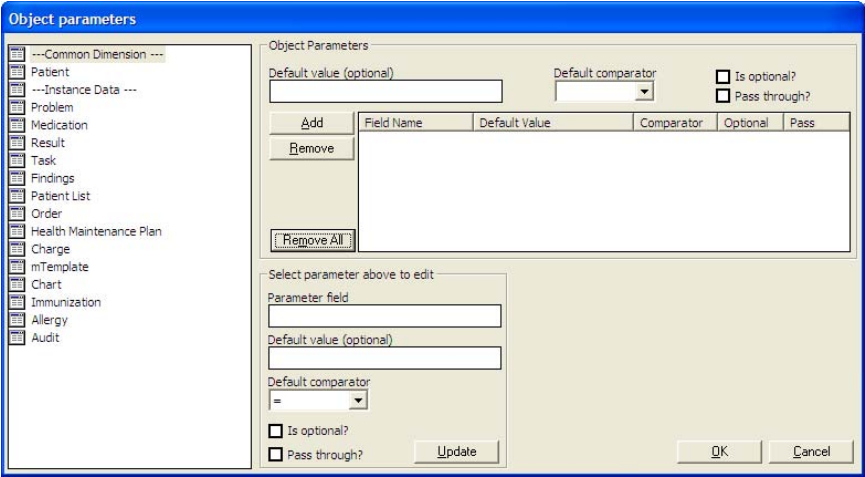
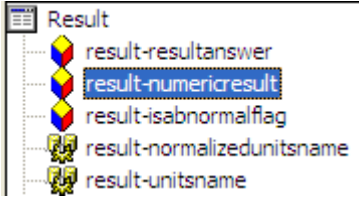
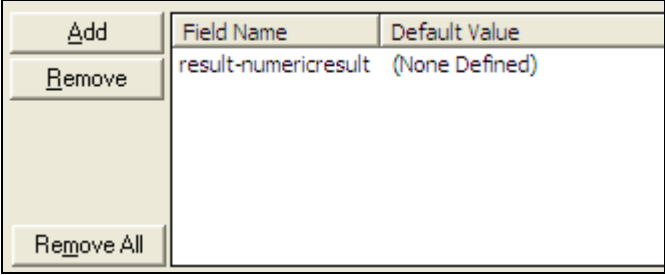
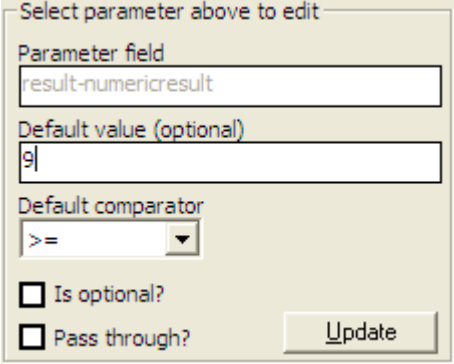
1	In the Toolbar, click the Expressions icon.	
2	<p>Click Yes to build an expression using fields already in the report.</p> <p>Clicking YES means an expression is created using fields already displayed in the report.</p> <p>Clicking NO means the user can select existing fields from the database to create an expression.</p> <p>CANCEL will close the dialog box with no action taken.</p>	
3	<p>Double-click the Common Expressions folder.</p> <p>Double-click one of the common expression options – <i>Page</i>, <i>Date</i> or <i>Enterprise EHR Analytics</i>.</p>	
4	Name the expression in the caption field and click OK .	
5	This expression will now appear in the <i>Properties/Selected Fields</i> pane.	
6	Click/Drag the new expression field to the desired section within the report template.	


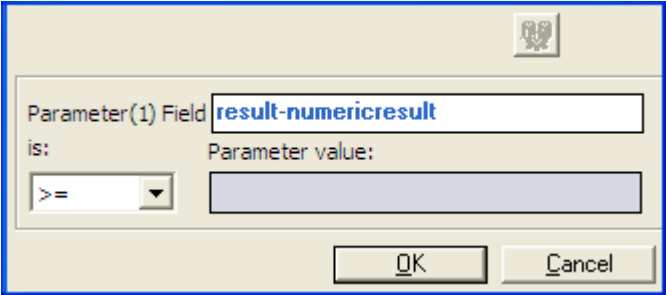
For information on how to add expressions not tied to existing fields in the report, see *SQL Builder* in this document.

Setting Report Parameters

Parameters can be set in order to allow users to limit what is returned in the report. For example, a report may generally return 500 records based on Hemoglobin A1C results. However, a parameter can be set to force the user to select only certain providers or test result parameters in order to limit the records to 150.

Step-by-Step: Set Report Parameters


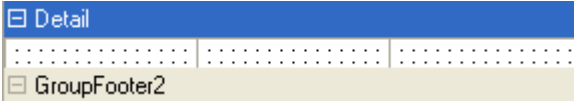
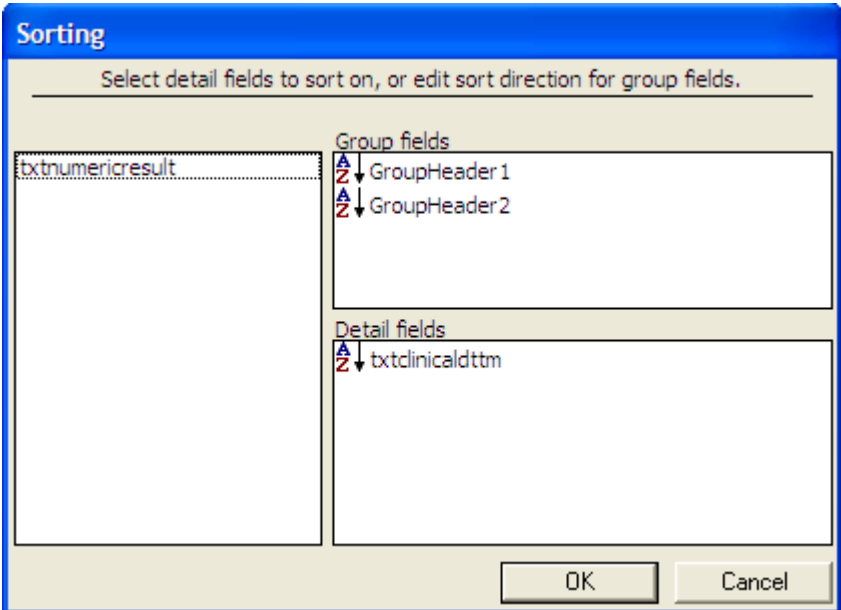
1	Click the Report Parameters icon in the toolbar () to load the Object Parameters dialog box.	 <p>The 'Object parameters' dialog box is shown. It features a tree view on the left with categories like 'Common Dimension', 'Patient', 'Problem', 'Medication', 'Result', 'Task', 'Findings', 'Patient List', 'Order', 'Health Maintenance Plan', 'Charge', 'mTemplate', 'Chart', 'Immunization', 'Allergy', and 'Audit'. The 'Result' category is expanded. On the right, there are fields for 'Default value (optional)', 'Default comparator', and checkboxes for 'Is optional?' and 'Pass through?'. Below these is a table with columns 'Field Name', 'Default Value', 'Comparator', 'Optional', and 'Pass'. Buttons for 'Add', 'Remove', and 'Remove All' are present. At the bottom, there is a section 'Select parameter above to edit' with fields for 'Parameter field', 'Default value (optional)', 'Default comparator', and checkboxes for 'Is optional?' and 'Pass through?'. 'Update', 'OK', and 'Cancel' buttons are at the bottom right.</p>
2	Find the data field in the Metalayer Tree that will be used to limit report results.	 <p>The Metalayer Tree is shown with the 'Result' category expanded. The following fields are listed: 'result-resultanswer', 'result-numericresult' (highlighted with a blue border), 'result-isabnormalflag', 'result-normalizedunitsname', and 'result-unitsname'.</p>
3	Double-click the field to move the field to the object parameters section.	 <p>The 'Object parameters' dialog box is shown with the 'result-numericresult' field added to the table. The table has columns 'Field Name' and 'Default Value'. The 'Field Name' is 'result-numericresult' and the 'Default Value' is '(None Defined)'. Buttons for 'Add', 'Remove', and 'Remove All' are on the left.</p>
4	Set default parameters if necessary: Select field in the <i>Object Parameter</i> box. Enter the default values. Click Update .	 <p>The 'Object parameters' dialog box is shown with the 'result-numericresult' field selected. The 'Default value (optional)' field contains '9'. The 'Default comparator' dropdown is set to '>='. The 'Is optional?' and 'Pass through?' checkboxes are unchecked. The 'Update' button is highlighted.</p>

5	<p>When finished adding/updating object parameters for the report, click OK.</p> <p>Run the report.</p>	
6	<p>When prompted, enter parameters for this report.</p> <p>Click OK to load the report.</p>	

Edit Sort Values

The report template can be sorted by individual fields populated.

Step-by-Step: Sort a Report Template

1	<p>Select a section of the report that contains fields for sorting the report.</p> <p>Click  in the toolbar to load the Sorting dialog box.</p>	
2	<p>Double-click or click/drag the field to sort the section to the <i>Detail Fields</i> list box.</p> <p>Repeat for all fields to sort.</p> <p>Double-click the field in the <i>Detail fields</i> section to change the sort order from ascending to descending.</p> <p>When finished, click OK.</p>	

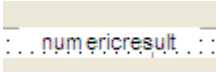
Custom Report Advanced Features

Visual Basic Editor

Analytics Custom Reports provides the ability to format fields based on data that is pulled into the report template. For example, if certain results need to be highlighted due to their critical readings, the **Visual Basic Editor** tool can be utilized for placing Visual Basic code on a particular field to set up default fonts, back color, etc. based on what is returned for a given data field.

The following example sets formatting specifications on a field that resides in the *Detail* section of the report template walkthrough example. The screenshots below provide *examples* of VB code, but is not a comprehensive tutorial on Visual Basic in general. Administrators will need to understand VB programming to continue to add more advanced options in the script.

Step-by-Step: Format a Field Using Visual Basic Code

1	<p>Click the data field numericresult within the Detail section.</p> <p>Change the Back Style property for the field from ddBKNormal.</p> <p>This will allow the colors to properly display once the report is loaded.</p>	 
2	<p>Click the Visual Basic Editor icon from the Toolbar Function list.</p>	
3	<p>There are 2 dropdown lists at the top of the screen.</p> <p>Select Detail from the left dropdown list.</p> <p>Select OnFormat within the right dropdown list.</p> <p>.</p>	<pre> Sub Detail_OnFormat '----- ' Procedure : OnFormat ' DateTime : 6/26/2007 2:49:26 PM ' Author : All Admin ' Purpose : '----- End Sub </pre>

4	<p>Enter the following code AFTER the light green description section:</p> <pre> If Rpt.txtnumericresult.DataValue >= 9 Then Rpt.txtnumericresult.backcolor=vbred Rpt.txtnumericresult.forecolor=vbwhite Rpt.txtnumericresult.font.bold=true Else Rpt.txtnumericresult.backcolor=vbblue Rpt.txtnumericresult.forecolor=vbwhite Rpt.txtnumericresult.font.bold=true End If </pre>	
---	---	--

In the example above, any value returned to the *txtnumericresult* field that is greater than or equal to 9 will display with a red background and white, bold text. Otherwise, the background will display in blue with white, bold text.

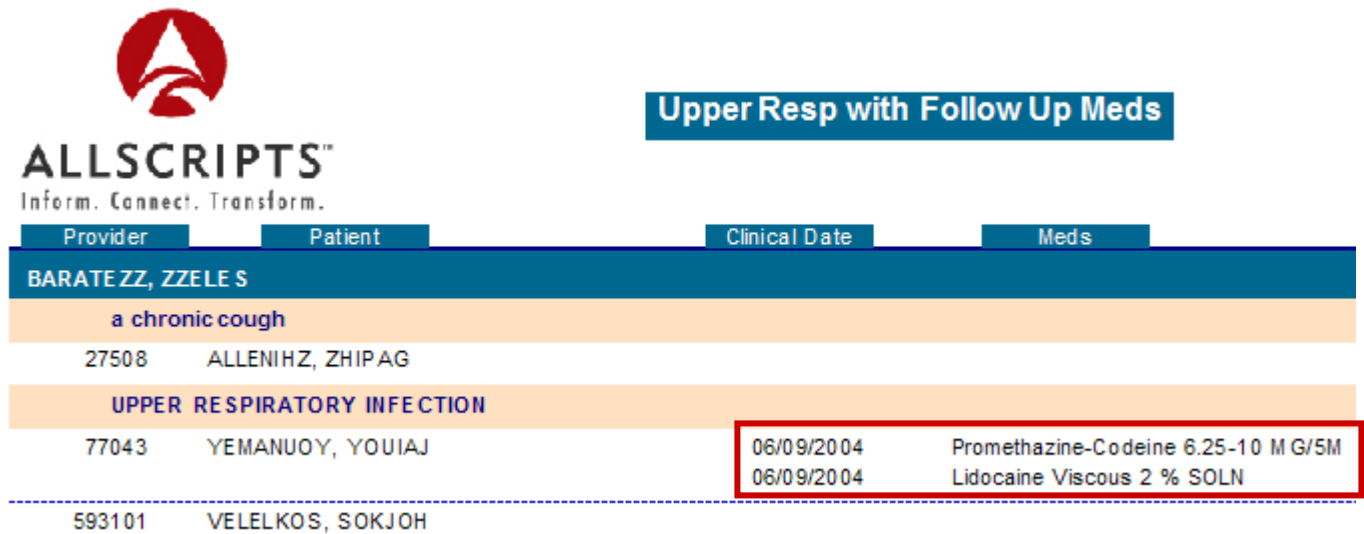
As the user types this information into the editor, some field options may auto-display (such as **DataValue**) and others will not (**backcolor**, **forecolor**). For those that do not auto-display, continue to manually type those entries into the script.

5	When finished adding the necessary Visual Basic code, click OK .	
6	Click Run (or F5).	

Provider	Patient	Clinical Date	Result
BARATEZZ, ZZELES			
013459491	BUSSIRUY, YURLIG		
		06/11/2003	10.6
		07/29/2003	8.8
		11/05/2003	8.9
		04/09/2004	9
		06/24/2004	9.3
		11/17/2004	8.3
		12/28/2004	8.6
		01/28/2005	7.7

Sub Reports

A **Sub Report** is a separate Custom Report object embedded within another report. The Sub Report is considered the “child” report embedded within the main or “parent” report. This is a powerful tool because it provides the user with the ability to pull data from multiple tables and display the data in one report.



Provider	Patient	Clinical Date	Meds
BARATE ZZ, ZZELE S			
a chronic cough			
27508	ALLENHIZ, ZHIPAG		
UPPER RESPIRATORY INFECTION			
77043	YEMANUOY, YOUIAJ	06/09/2004	Promethazine-Codeine 6.25-10 M G/5M
		06/09/2004	Lidocaine Viscous 2 % SOLN
593101	VELELKOS, SOKJOH		

The screenshot above displays patients with upper respiratory problems by provider. The information inside of the box to the right of the patient's name represents a Sub Report linking medication information to the patient in the parent report. The medication information is pulled from a separate report and search criteria developed outside of the parent report.

Build Sub Report

Sub Reports are small reports that generally include only data fields. However, a Sub Report **MUST** include at least one data field that is also listed in the parent report. This is necessary in order to link the proper data in the Sub Report to the proper, grouped data fields (i.e. Patient ID, Provider Name) in the parent report.

Create a Custom Report that will display the date a medication was prescribed as well as the medication name.

There will be no header information, so there is no need to have a report or page header/footer section in the report.

Select the following fields from the Metalayer Tree and place them in the appropriate sections of the report:

<u>Fields</u>	<u>Report Section</u>
patientprovider-fullname	GroupHeader1
problem-problem	GroupHeader1
patient-id	GroupHeader1
patient-fullname	GroupHeader1
medication-medication	Detail
medication-rxdtm	Detail

GroupHeader1			
fullname			
problem			
id	fullname		
Detail			
rxdtm	medication		
GroupFooter1			

When adding fields to the *Detail* section, a corresponding label will appear in the group header section above the detail section. You can take the labels out of the group header section for this walk-through.

The reason for adding fields to the GroupHeader1 section is that those fields will be available to link to the same fields displayed in the parent report. However, it is not necessary to display these grouped fields in the Sub Report, so the section can be collapsed – only displaying the medication information in the Sub Report (see below).

GroupHeader1			
Detail			
rxdtm	medication		
GroupFooter1			

Create search criteria that will limit the results returned in the Sub Report. There will be separate search criteria for the parent report.

English Query
<p>Current Search will retrieve all rows where</p> <p>(medication-medication is not NULL) and (medication-rxdtm is greater than 1/1/2008)</p>

Save the Custom Report and accompanying search criteria.

Save Report As...		
Report Name:	Report Category:	
<input type="text"/>	<input type="text"/>	
Report Description:		
<input type="text"/>		
Related searches:		
Name	Category	Descript
A1C in last year	Doqit	A1C tes
Active CAD	Development	

Add/Link the search criteria to the Custom report in order to save time finding the appropriate search criteria when adding as a Sub Report later in this section.

Build Parent Report

The Sub Report is run as an embedded report within another parent report. Create a parent report that will utilize the Sub Report's detailed data fields (i.e. medication and prescription date). The Sub Report will be added last, so just add the appropriate header/footer information as well as other data fields that will be driven by the parent report's search criteria.

The screenshot shows the Allscripts report builder interface. The report structure is as follows:

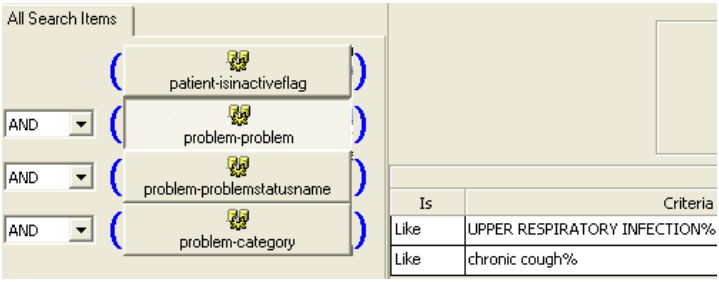
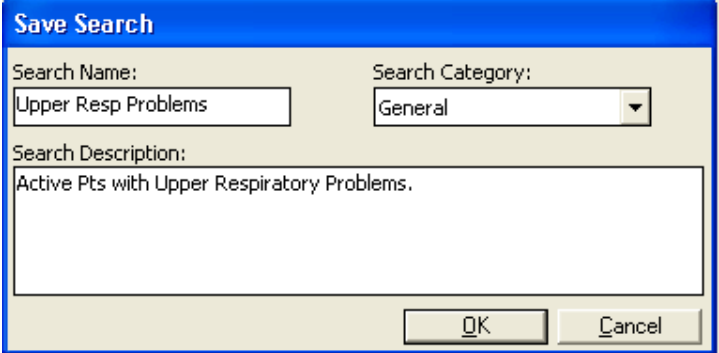
- ReportHeader**: Contains the Allscripts logo and the title "Upper Resp with Follow Up Meds".
- PageHeader**: Contains the text "Inform. Connect. Transform."
- GroupHeader1**: Contains the field "fullname".
- GroupHeader2**: Contains the field "problem".
- GroupHeader3**: Contains the fields "id" and "patient-fullname".
- Detail**: The main data section.
- PageFooter**: Contains the text "Page #".
- ReportFooter**: The footer section.

In the screenshot above, the fields in the GroupHeader1, GroupHeader2 & GroupHeader3 sections (fullname, problem, id and patient-fullname) are the same fields added to the GroupHeader1 section of the Sub Report (see *Build Sub Report*). These will be used for linking the parent and child reports.


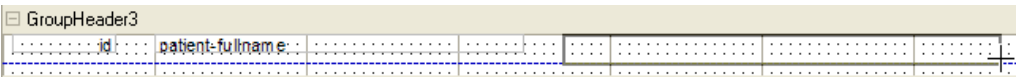
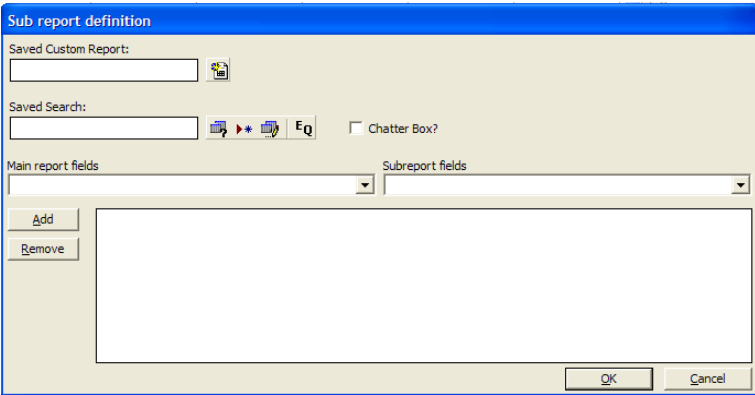
Fields	Data Field
patientprovider-fullname	fullname
problem-problem	problem
patient-id	id
patient-fullname	fullname



As in previous examples throughout this document, search criteria must be populated in order to return any data. Since the main search criteria is what is used to populate the main report, create and save a search object that will generate patients with upper respiratory problems.

Step-by-Step: Set Search Criteria

1	<p>Set the following search criteria:</p> <ul style="list-style-type: none"> • patient-isinactiveflag = N • problem-problem LIKE = UPPER RESPIRATORY INFECTION% OR LIKE chronic cough% • problem-problemstatusname = Active • problem-category = Active <p>Organizations may define <i>active</i> patients in a different manner. This workflow utilizes the patient-isinactiveflag data field only.</p>	
2	<p>Save the Search to the database (see <i>Save Search</i> on page 18 for instructions).</p>	

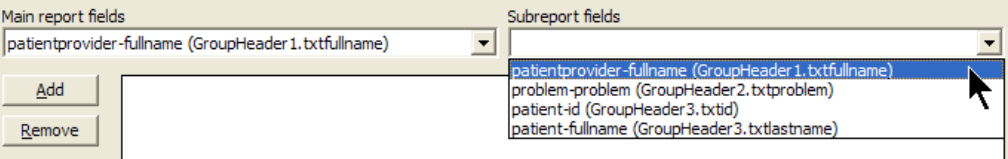
Step-by-Step: Add a Sub-Report to an Existing Report

1	<p>Click  in the Toolbox Controls list to the left of the screen.</p> <p>Click/Drag to draw where the Sub Report will reside in the parent report.</p>	
2	<p>After letting go of the mouse, the Sub report definition dialog box will display.</p>	

3	<p>Click the  icon to the right of the Saved Custom Report textbox. Load the appropriate report that will be used as the Sub Report.</p> <p>Load or create the accompanying search criteria via the Saved Search textbox.</p>	
---	--	--

Chatter Box


The example used in this workflow will display a Sub Report for each patient provider that is listed in the report. The **Chatter Box** option determines how often the search for the Sub Report will execute. If the Chatter Box is set to False (unchecked), the search for the Sub Report will execute once — then each set of joins will be evaluated in turn, against the results of that search. If the Chatter Box is set to True (checked), the join fields become part of the search criteria run for the Sub Report. Hence, the query will run twenty times if the parent report is displaying 20 doctors. When tying a Sub Report to a field that is being used to group data – i.e. Provider – leave the box unchecked to have the query run faster.

4	<p>The data fields displayed in the parent report are listed in the Main report fields dropdown list while the data fields displayed in the Sub Report are listed in the Subreport fields dropdown list.</p> <p>Choose a common field from the Main report fields and Subreport fields dropdown lists.</p>	
---	--	--

5	<p>Click Add.</p> <p>Repeat for linking all necessary fields from both reports.</p> <p>Click OK.</p>	<div> <div>Main report fields</div> <div>Subreport fields</div> <div> <div>Add</div> <div>Remove</div> </div> <div> <p>patientprovider-fullname (GroupHeader1.txtfullname) = patientprovider-fullname (GroupHeader1.txtfullname)</p> <p>problem-problem (GroupHeader2.txtproblem) = problem-problem (GroupHeader2.txtproblem)</p> <p>patient-id (GroupHeader3.txtid) = patient-id (GroupHeader3.txtid)</p> </div> </div>
---	--	--

Be sure to add appropriate search criteria to the parent report in order to pull the proper data initially into the report. The search criteria used in the Sub Report is for the data populated within the Sub Report section ONLY. The rest of the parent report is driven by the search criteria tied to the parent (main) report.

When all Custom Report fields/labels are set as well as the search criteria, run the report to populate the results.



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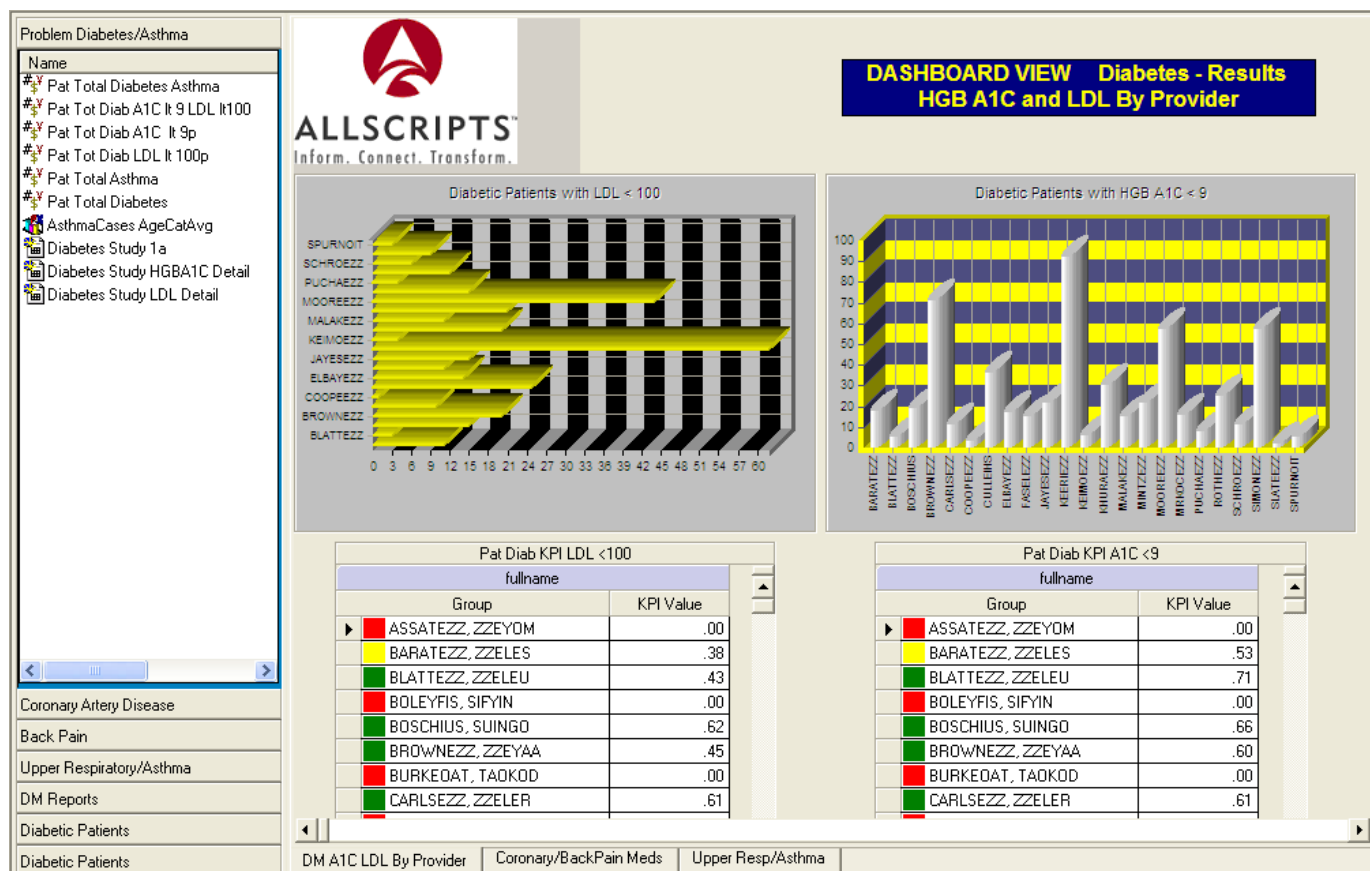
Upper Resp with Follow Up Meds

Provider	Patient	Clinical Date	Meds
BARATEZZ, ZZELE S			
a chronic cough			
27508	ALLENHIZ, ZHIPAG		
UPPER RESPIRATORY INFECTION			
77043	YEMANUOY, YOUIAJ	06/09/2004	Promethazine-Codeine 6.25-
		06/09/2004	Lidocaine Viscous 2 % SOLI
593101	VELELKOS, SOKJOH	12/27/2004	Yasmin 28 3-0.03 MG Tab
594607	GOLDBJOS, SOJMEI		
UPPER RESPIRATORY INFECTION ACUTE			
333340	PAYTOATU, UTAJAC	11/30/2004	Toprol XL 50 MG TB24
		01/19/2005	Albuterol 90 MCG/ACT Aero
		02/02/2005	Advair Diskus 250-50 MCG/I

Lesson 8: Access Center

Overview

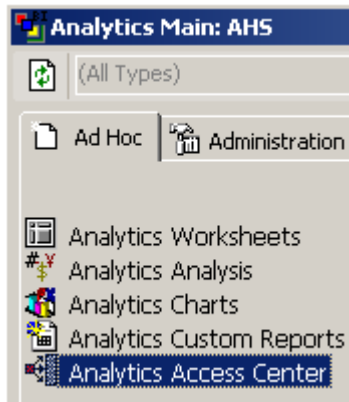
The Analytics Access Center is a collection of one or more objects (Reports, Charts, Crosstabs) allowing users instant access to key indicators and information pertaining to provider data and/or organizational operations. Users may be assigned multiple Access Center dashboards and object panels that display the information pertinent to the user's needs on a daily basis. If there is one Access Center option that the user views frequently, the user can make those objects load automatically when entering the Access Center object.



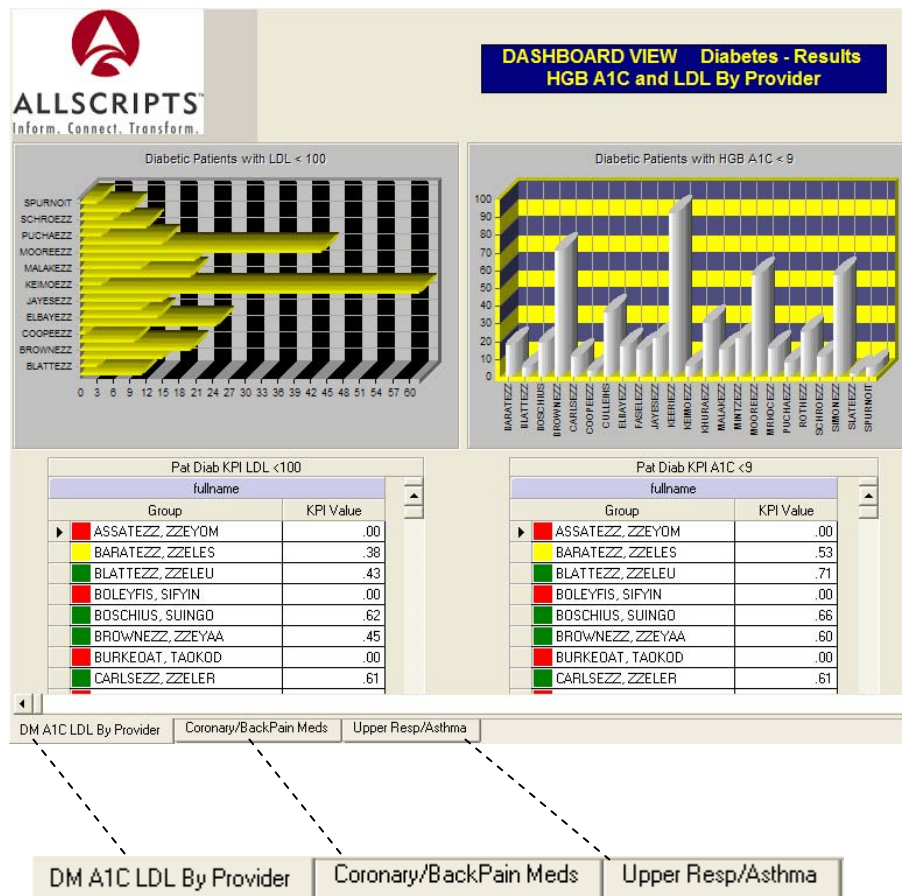
Access Center Basics

Getting Started

Double-click **Analytics Access Center** from the *Ad-Hoc* tab on the main screen to load the object.

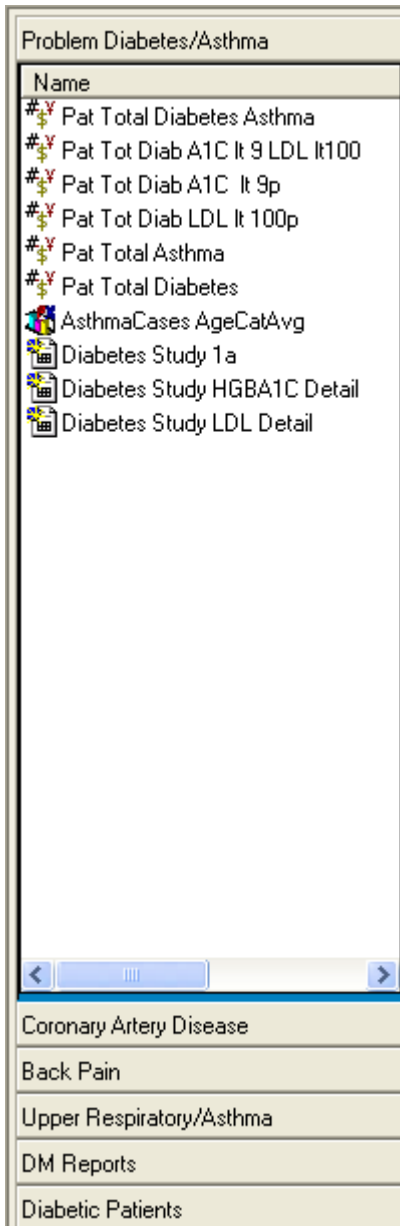


There are two major components to the Analytics Access Center: **Dashboard** and **Object Pane**.



The **Dashboard** is the large pane to the right of the screen. The Dashboard can display multiple images, labels, Charts, Crosstab Analysis objects as well as an object called Key Performance Indicators (KPI). Administrators can add multiple Dashboard viewer tabs to an Access Center containing various objects. In the screenshot to the left, the different Dashboard viewer tabs are listed from left to right in the following order:

- DM A1C LDL By Provider
- Coronary/Back Pain Meds
- Upper Resp/Asthma



The **Object Pane** displays multiple objects listed within one or more user-defined categories. These categories are displayed to the left of the screen and can be labeled any way the user chooses, in any order and can contain any available type of object. In the screenshot to the left, the categories are listed from top to bottom in the following order:

- Problem Diabetes/Asthma
- Coronary Artery Disease
- Back Pain
- Upper Respiratory/Asthma
- DM Reports
- Diabetic Patients


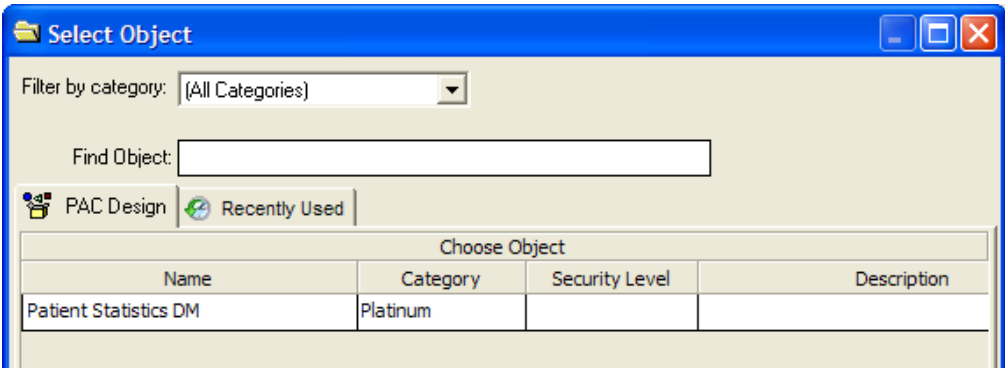
Selecting an object from one of the Object Pane categories will display the object within the Dashboard component. Below is the *Pat Total Diabetes Asthma* (Crosstab Analysis) object from the Problem Diabetes/Asthma category.

Problem Diabetes/Asthma							
Name		patientprovider-fullname ▼	Patient Total	Patient Diabetic	Perc Diab	Patient Asthma	Perc Asth
Pat Total Diabetes Asthma		ASSATEZZ, ZZEYOM	20		0.00%		0.00%
Pat Tot Diab A1C It 9 LDL It100		BARATEZZ, ZZELES	1,974	34	1.72%	16	0.81%
Pat Tot Diab A1C It 9p		BLATTEZZ, ZZELEU	275	7	2.55%	2	0.73%
Pat Tot Diab LDL It 100p		BOLEYFIS, SIFYIN	1		0.00%		0.00%
Pat Total Asthma		BOSCHIUS, SUIINGO	875	29	3.31%	33	3.77%
Pat Total Diabetes		BROWNEZZ, ZZEYAA	1,798	119	6.62%	48	2.67%
AsthmaCases AgeCatAvg		BURKEQAT, TAOKOD	9		0.00%		0.00%
Diabetes Study 1a		CARLSEZZ, ZZELEU	1,221	18	1.47%	3	0.25%
Diabetes Study HGBA1C Detail		CLANCEZZ, ZZELEN	1		0.00%		0.00%
Diabetes Study LDL Detail		COOPEEZZ, ZZEKOP	82	3	3.66%		0.00%
		CULLEIHS, SHIRUT	752	58	7.71%	18	2.39%

Open a Saved Access Center Object


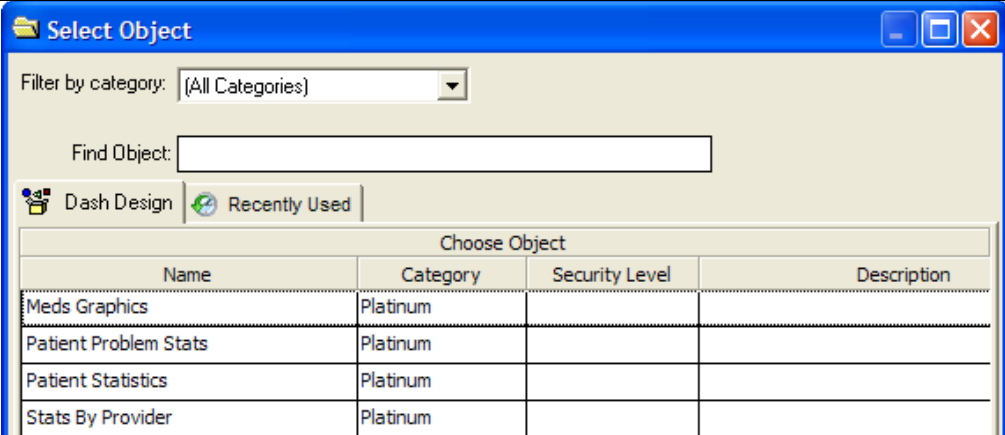
An Access Center object is a combination of one or more Dashboards and Object Panes containing several items created from various objects within the Analytics application. All combinations of items can be saved into one Access Center Object and opened as needed.

Step-by-Step: Open an Existing Access Center Object

1	Click the Open PAC Definition icon on the toolbar.													
2	<p>From the Select Object dialog box, locate the saved Access Center to load and select the row.</p> <p>Click OK to load the saved Access Center.</p>	 <table><thead><tr><th colspan="4">Choose Object</th></tr><tr><th>Name</th><th>Category</th><th>Security Level</th><th>Description</th></tr></thead><tbody><tr><td>Patient Statistics DM</td><td>Platinum</td><td></td><td></td></tr></tbody></table>	Choose Object				Name	Category	Security Level	Description	Patient Statistics DM	Platinum		
Choose Object														
Name	Category	Security Level	Description											
Patient Statistics DM	Platinum													

Open a Saved Dashboard Definition

Step-by-Step: Open an Existing Dashboard Definition

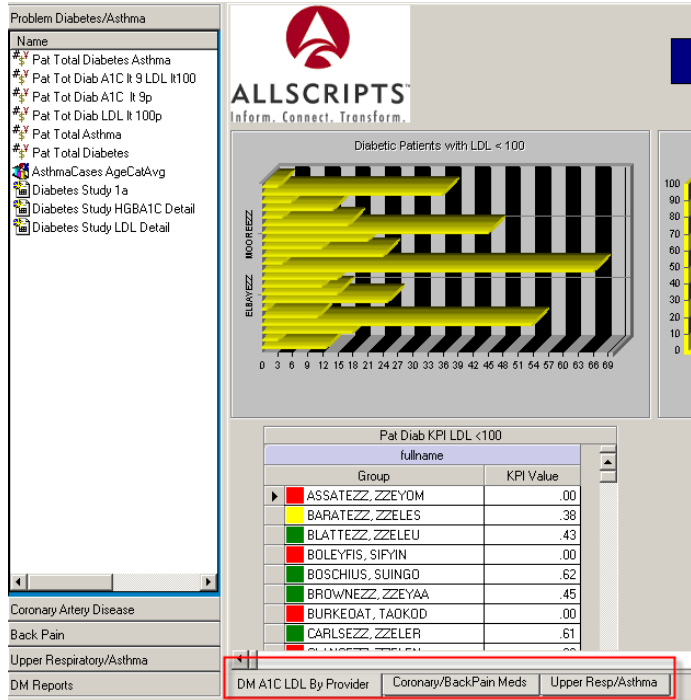
1	Click the Open Dashboard Definition icon on the toolbar.																									
2	<p>From the Select Object screen, locate the saved Dashboard to load and select the row.</p> <p>Click OK to load the saved Dashboard Definition.</p>	 <table><thead><tr><th colspan="4">Choose Object</th></tr><tr><th>Name</th><th>Category</th><th>Security Level</th><th>Description</th></tr></thead><tbody><tr><td>Meds Graphics</td><td>Platinum</td><td></td><td></td></tr><tr><td>Patient Problem Stats</td><td>Platinum</td><td></td><td></td></tr><tr><td>Patient Statistics</td><td>Platinum</td><td></td><td></td></tr><tr><td>Stats By Provider</td><td>Platinum</td><td></td><td></td></tr></tbody></table>	Choose Object				Name	Category	Security Level	Description	Meds Graphics	Platinum			Patient Problem Stats	Platinum			Patient Statistics	Platinum			Stats By Provider	Platinum		
Choose Object																										
Name	Category	Security Level	Description																							
Meds Graphics	Platinum																									
Patient Problem Stats	Platinum																									
Patient Statistics	Platinum																									
Stats By Provider	Platinum																									

Object Panes are created, edited and saved as part of the Access Center object and not individually like Dashboards.

Close an Object from the Object Pane

When an object from the Object Pane is loaded, it may hide the different dashboard tabs that are visible once an Access Center is loaded to the workspace.

Before Selecting an Object Pane Item



After Loading an Object Pane Item

patient/provider-fullname	Patient Total	Patient Diabetic	Perc Diab	Patient Ast
ASSATEZZ, ZZEYOM	20		0.00%	
BARATEZZ, ZZELES	1,974	34	1.72%	
BLATTEZZ, ZZELEU	275	7	2.55%	
BOLEYFIS, SIFYIN	1		0.00%	
BOSCHIUS, SUINGO	875	29	3.31%	
BROWNEZZ, ZZEYAA	1,798	119	6.62%	
BURKEQAT, TADKOD	9		0.00%	
CARLSEZZ, ZZELE	1,221	18	1.47%	
CLANCEZZ, ZZELEN	1		0.00%	
COOPPEZZ, ZZEKOP	82	3	3.66%	
CULLEIHS, SHIRUT	752	58	7.71%	
DANGEEZZ, ZZELEM	115		0.00%	
ELBAYEZZ, ZZEUL	1,196	22	1.84%	
FASELEZZ, ZZEUNO	1,237	22	1.78%	
GEORGEZZ, ZZEKOB	1		0.00%	
HARAPEZZ, ZZEKIN	1		0.00%	
HYNESEZZ, ZZELEI	371		0.00%	
JAYESEZZ, ZZELEE	1,084	35	3.23%	
KEERIEZZ, ZZELEA	2,162	141	6.52%	
KEIMOEZZ, ZZELEY	139	8	5.76%	
KHURAEZZ, ZZESIM	1,591	52	3.27%	
MALAKEZZ, ZZERID	523	18	3.44%	
MARTIEZZ, ZZEREM	319		0.00%	
MINTZEZZ, ZZELEV	1,183	33	2.79%	
MOLLIEZZ, ZZELAT	197		0.00%	
MOOREZZ, ZZELAP	1,811	97	5.36%	
MRKOEZZ, ZZEPRI	1,309	25	1.91%	
PARROEZZ, ZZEOTE	26		0.00%	
PUCHAEZZ, ZZEODI	336	8	2.38%	
ROTHEZZ, ZZELEJ	1,366	34	2.49%	
SCHROEZZ, ZZELEH	250	13	5.20%	
SIMONEZZ, ZZEKIV	1,621	74	4.57%	
SLATEZZ, ZZEZIN	397	5	1.26%	

DM A1C LDL By Provider | Coronary/BackPain Meds | Upper Resp/Asthma


To re-load the dashboard definitions, click the **Close Desktop Item** icon () in the toolbar at the top of the screen.

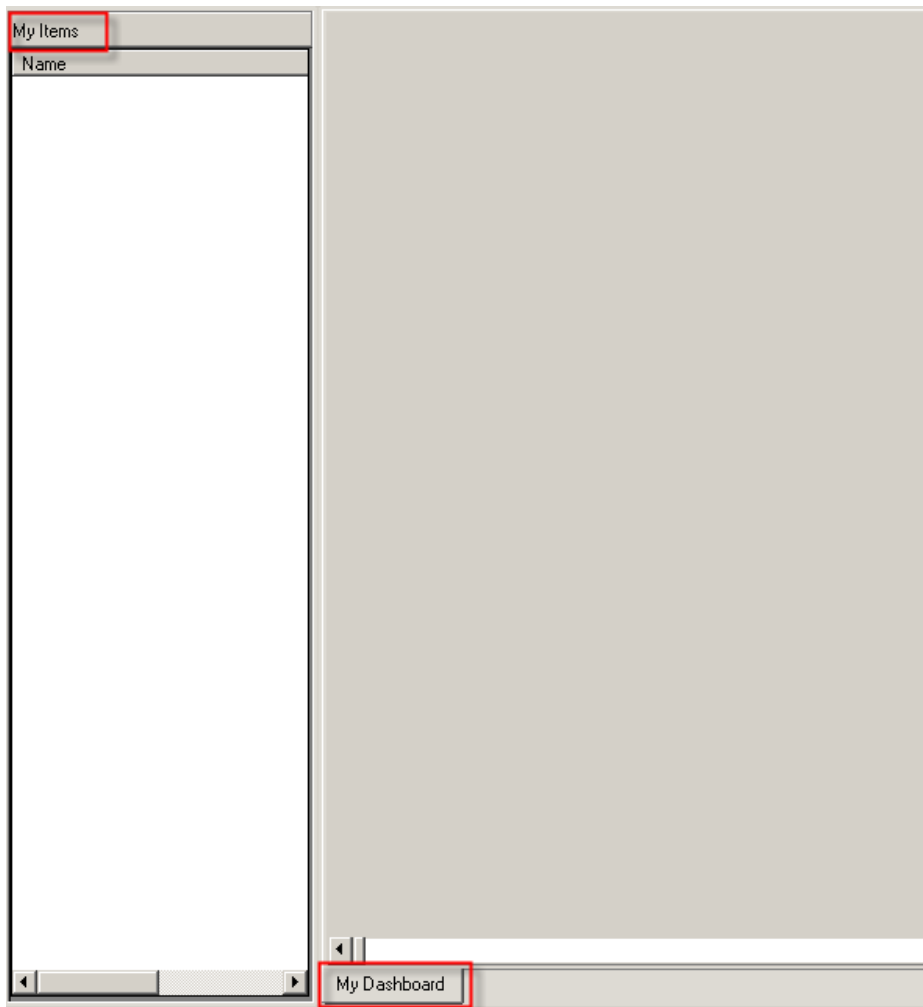
Analytics Access Center Setup

Creating a New Analytics Access Center

Administrators can create completely new Analytics Access Centers.

Step-by-Step: Create a New Access Center


1	Select New PAC from the File menu or click the <i>New PAC Design</i> icon () from the toolbar.	This will clear the screen for the user to begin defining Object Pane categories and Dashboard definitions.
2	Once the screen is cleared, My Items will be the default Object Pane category and My Dashboard will be the single, default Dashboard item. Each of these names can be changed when defining each Access Center component.	

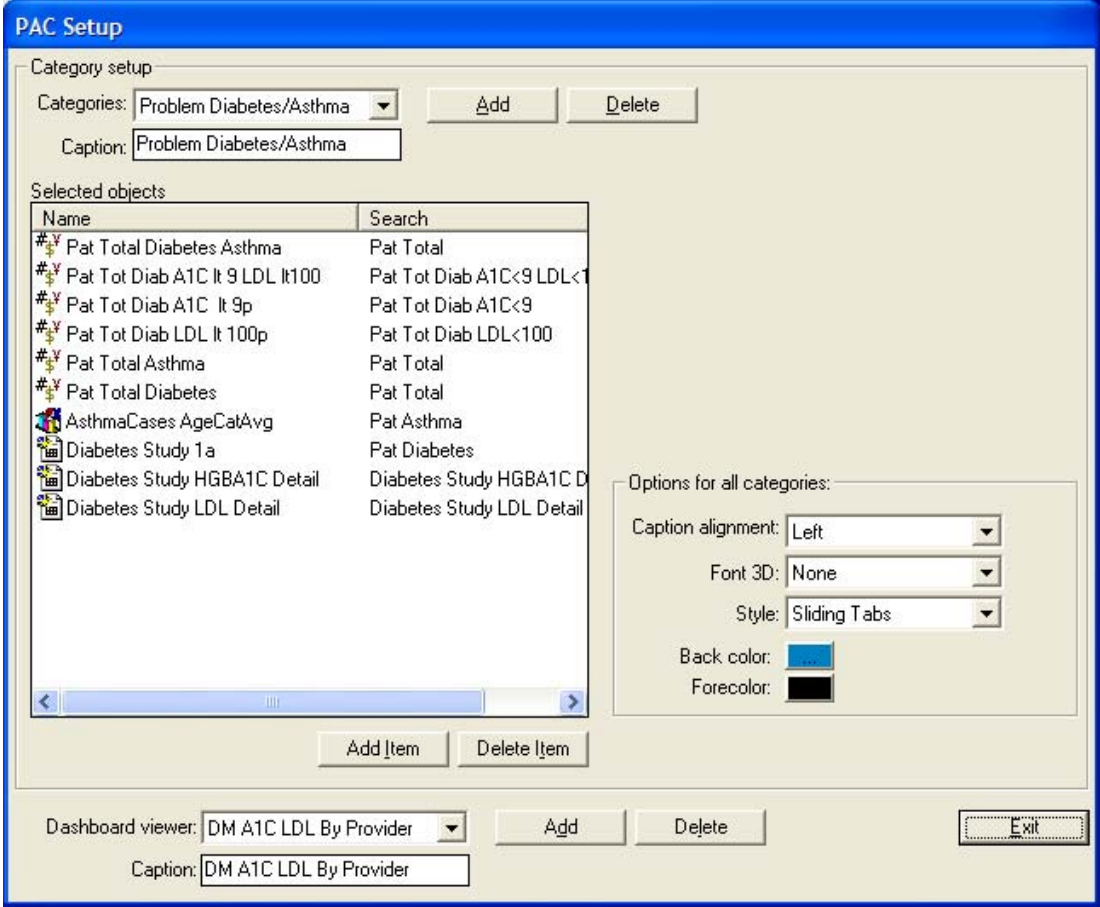


Since there are two main components included in the Analytics Access Center – Dashboards and Object Panes – there are two setup areas for the administrator to choose depending on what components are to be added and/or edited.

Define Access Center Components

An Access Center can contain one or more Object Pane categories or Dashboard definitions defined as each organization desires. To add and/or edit components, complete the following:

Open the PAC Setup dialog box by clicking the **PAC Setup** () icon.




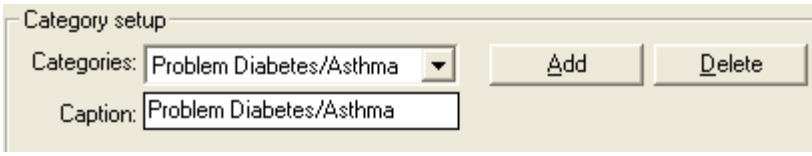
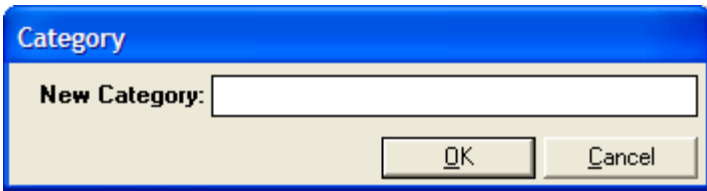
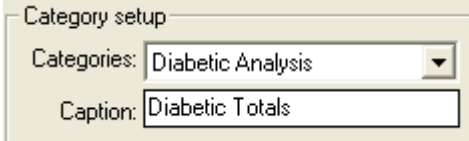
The PAC Setup dialog box is titled "PAC Setup" and is divided into two main sections. The top section, "Category setup", contains a "Categories:" dropdown menu with "Problem Diabetes/Asthma" selected, an "Add" button, and a "Delete" button. Below this is a "Caption:" text box containing "Problem Diabetes/Asthma". The middle section, "Selected objects", features a table with two columns: "Name" and "Search". The table lists several objects, including "Pat Total Diabetes Asthma", "Pat Tot Diab A1C lt 9 LDL lt 100", "Pat Tot Diab A1C lt 9p", "Pat Tot Diab LDL lt 100p", "Pat Total Asthma", "Pat Total Diabetes", "AsthmaCases AgeCatAvg", "Diabetes Study 1a", "Diabetes Study HGBA1C Detail", and "Diabetes Study LDL Detail". To the right of the table is a search bar. Below the table are "Add Item" and "Delete Item" buttons. The bottom section, "Options for all categories:", includes a "Caption alignment:" dropdown set to "Left", a "Font 3D:" dropdown set to "None", a "Style:" dropdown set to "Sliding Tabs", a "Back color:" color picker set to blue, and a "Forecolor:" color picker set to black. At the very bottom, there is a "Dashboard viewer:" dropdown menu with "DM A1C LDL By Provider" selected, an "Add" button, a "Delete" button, and an "Exit" button. A "Caption:" text box below the dropdown contains "DM A1C LDL By Provider".

Name	Search
# Pat Total Diabetes Asthma	Pat Total
# Pat Tot Diab A1C lt 9 LDL lt 100	Pat Tot Diab A1C<9 LDL<100
# Pat Tot Diab A1C lt 9p	Pat Tot Diab A1C<9
# Pat Tot Diab LDL lt 100p	Pat Tot Diab LDL<100
# Pat Total Asthma	Pat Total
# Pat Total Diabetes	Pat Total
AsthmaCases AgeCatAvg	Pat Asthma
Diabetes Study 1a	Pat Diabetes
Diabetes Study HGBA1C Detail	Diabetes Study HGBA1C Detail
Diabetes Study LDL Detail	Diabetes Study LDL Detail

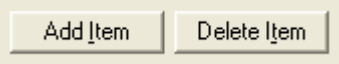
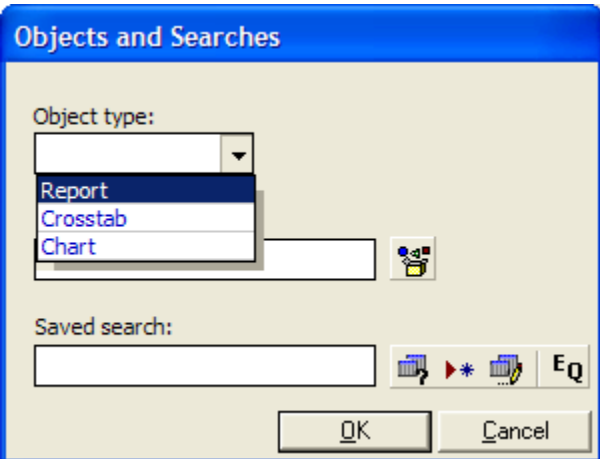
The **PAC Setup** dialog box is split into two sections. A majority of the dialog box is reserved for defining Object Pane categories. The very bottom of the screen is reserved for defining Dashboard definition tabs. All Object Pane parameters – categories and objects per category – are defined within this screen. Only the Dashboard definition tabs at the bottom of the screen are defined within this screen.


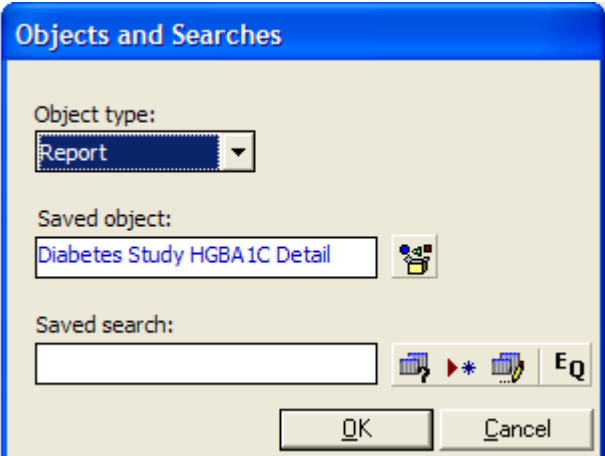


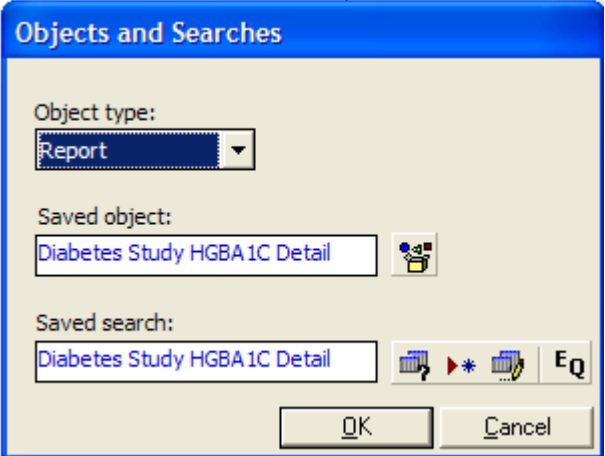
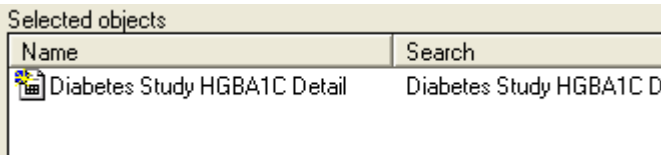
Objects added to a Dashboard definition are defined while a selected Dashboard viewer tab is in design mode. This will be covered later in this chapter.

Step-by-Step: Add Object Pane Categories



1	<p>Open the PAC Setup dialog box by clicking the PAC Setup () icon on the toolbar.</p> <p>Within the <i>Category setup</i> section of the PAC Setup dialog box, click Add.</p>	
2	<p>Enter a new category name in the Category dialog box.</p> <p>Click OK.</p>	
3	<p>If the user wants the category name displayed to be different than the new category name, edit the <i>Caption</i> field.</p>	

Step-by-Step: Add Objects to an Object Pane Category



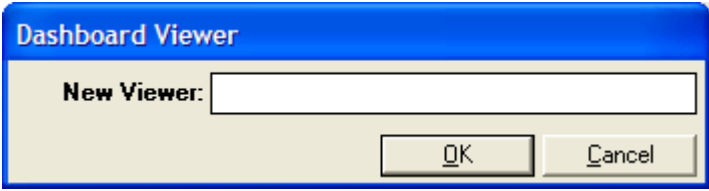
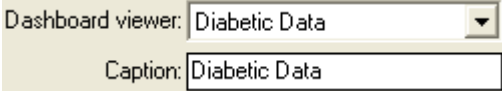

1	<p>Within the PAC Setup dialog box, navigate to the <i>Selected objects</i> list box within the <i>Category setup</i> section of the PAC Setup dialog box and click Add Item.</p>	
2	<p>From the Object and Searches dialog box, select the object type to add from the Object type dropdown list – <i>Report</i>, <i>Crosstab</i>, or <i>Chart</i>.</p>	

3	<p>Click the  icon to select an object from the Select Object dialog box.</p> <p>Only objects with the same type as the item chosen from the Object type dropdown list will appear. For example, only report options will display if <i>Report</i> is selected.</p>	 <p>The dialog box titled "Objects and Searches" shows "Object type:" set to "Report". The "Saved object:" field contains "Diabetes Study HGBA1C Detail" with a small icon to its right. The "Saved search:" field is empty. At the bottom are "OK" and "Cancel" buttons. To the right of the "Saved search:" field are icons for loading a saved search, creating a new search, and a search icon.</p>
4	<p>Either load a saved search () or create a new search () for the saved object.</p>	 <p>The dialog box is identical to the previous one, but the "Saved search:" field now contains "Diabetes Study HGBA1C Detail".</p>
5	<p>Click OK to add the selected object (with accompanying search) to the <i>Selected objects</i> list box.</p> <p>When finished, click Exit.</p>	 <p>The "Selected objects" list box contains a table with two columns: "Name" and "Search". The first row shows "Diabetes Study HGBA1C Detail" in the "Name" column and "Diabetes Study HGBA1C D" in the "Search" column.</p>

Step-by-Step: Delete an Object Pane Category or Items






1	<p>To delete an item from an Object Pane category, select the item from the <i>Selected objects</i> list box and click Delete Item.</p>	
2	<p>To delete an entire Object Pane category, select the category from the <i>Categories</i> dropdown box and click Delete.</p>	


Step-by-Step: Add a Dashboard Viewer Tab

1	<p>Open the PAC Setup dialog box by clicking the PAC Setup () icon on the toolbar.</p> <p>At the bottom of the screen within the Dashboard section, click Add.</p>	
2	<p>Enter a new Dashboard Viewer tab name in the Dashboard Viewer dialog box.</p> <p>Click OK.</p>	
3	<p>If the user wants the Dashboard Viewer tab name displayed to be different than the new Dashboard Viewer tab name, edit the <i>Caption</i> field.</p> <p>When finished, click Exit.</p>	
4	<p>To delete a Dashboard Viewer tab from a Dashboard, select the item from the Dashboard viewer dropdown box and click Delete at the bottom of the screen.</p>	

Dashboard Setup

After a Dashboard Viewer tab has been added to the Access Center, it needs to be populated with any of the following items:

-  To place a label on the Dashboard
-  To place an Image on the Dashboard
-  Add a Key Performance Indicator (KPI) to the Dashboard
-  To place a Daily Monitor on the Dashboard
-  Add an existing Chart to the Dashboard





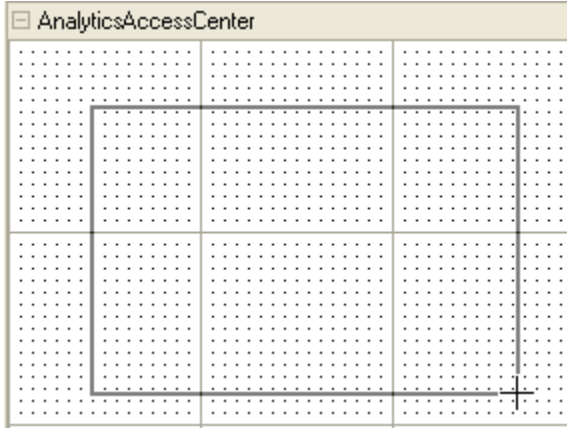


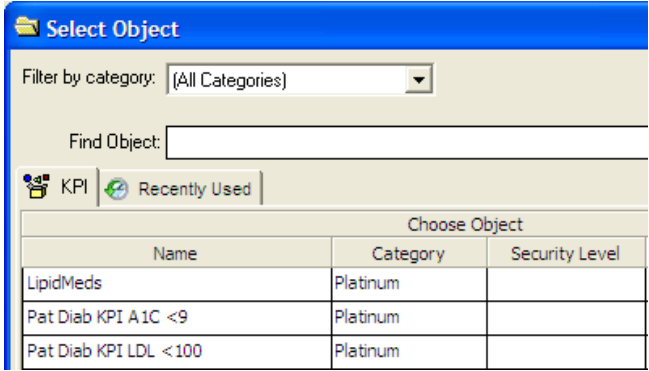
To add any of the above items to a selected Dashboard, click  in the toolbar to enter design mode. To load changes to the Dashboard and leave design mode, re-select the icon.

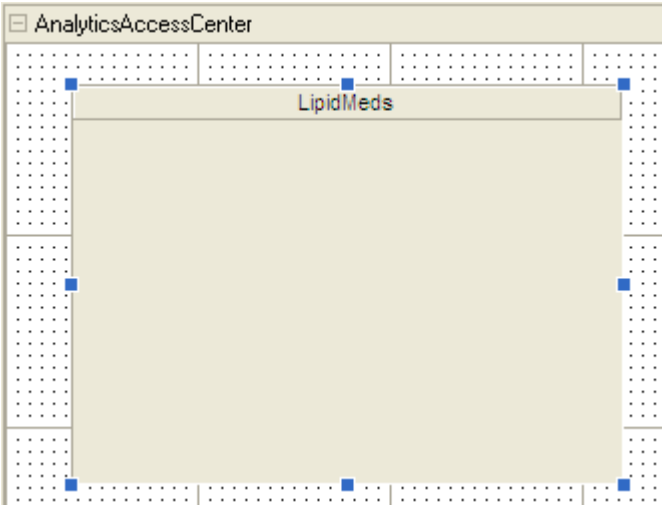

Key Performance Indicators

Key Performance Indicators (KPI) display numeric results based on certain Worksheet or Analysis objects as well as database sources. Administrators can establish specific, color-coded parameters for the data displayed in order to give users identifiable indicators to report trends, etc.

If a KPI has already been saved to the database, it can be loaded to a Dashboard viewer tab.

Step-by-Step: Add an Existing KPI





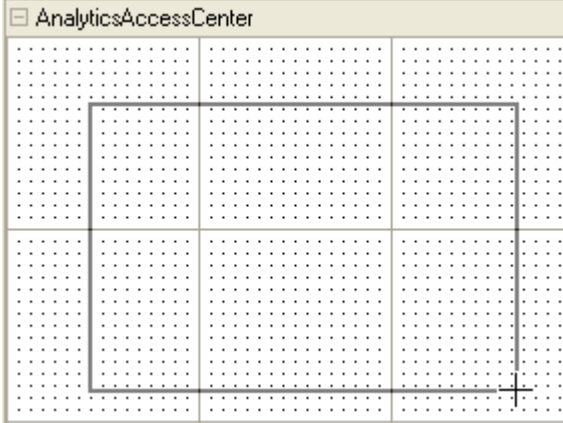
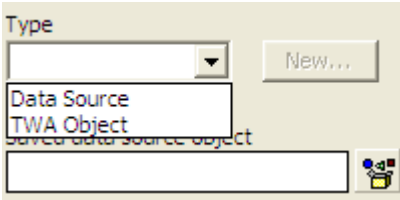

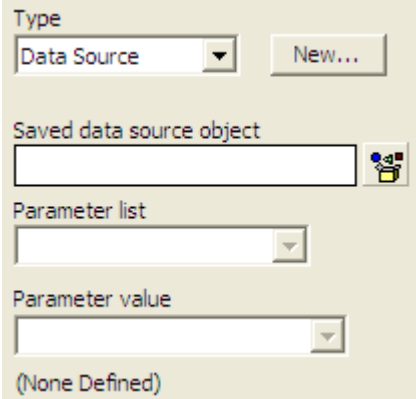
1	<p>Select the proper Dashboard Viewer tab and click  in the toolbar to enter design mode.</p> <p>Click the Add KPI to PAC () icon in the toolbar.</p>																
2	<p>Move the cursor to the Dashboard Viewer (design mode). The cursor will turn to a cross () .</p> <p>Click/Drag the cursor until an appropriately-sized box is displayed on the screen. The KPI Definition dialog box will appear after letting go of the mouse.</p>																
3	<p>From the KPI Definition dialog box, click the Select Object icon () to load the Select Object dialog box.</p> <p>Select an existing KPI definition and click OK.</p> <p>To review an/or modify a selected KPI, click .</p>	 <table border="1" data-bbox="852 1438 1474 1591"> <thead> <tr> <th colspan="3">Choose Object</th> </tr> <tr> <th>Name</th> <th>Category</th> <th>Security Level</th> </tr> </thead> <tbody> <tr> <td>LipidMeds</td> <td>Platinum</td> <td></td> </tr> <tr> <td>Pat Diab KPI A1C <9</td> <td>Platinum</td> <td></td> </tr> <tr> <td>Pat Diab KPI LDL <100</td> <td>Platinum</td> <td></td> </tr> </tbody> </table>	Choose Object			Name	Category	Security Level	LipidMeds	Platinum		Pat Diab KPI A1C <9	Platinum		Pat Diab KPI LDL <100	Platinum	
Choose Object																	
Name	Category	Security Level															
LipidMeds	Platinum																
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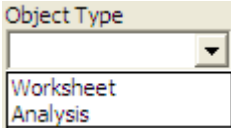


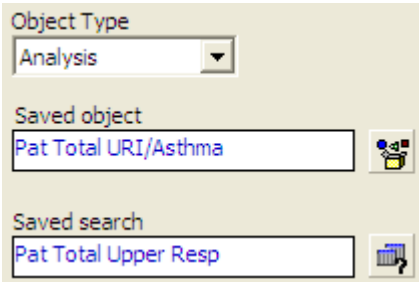
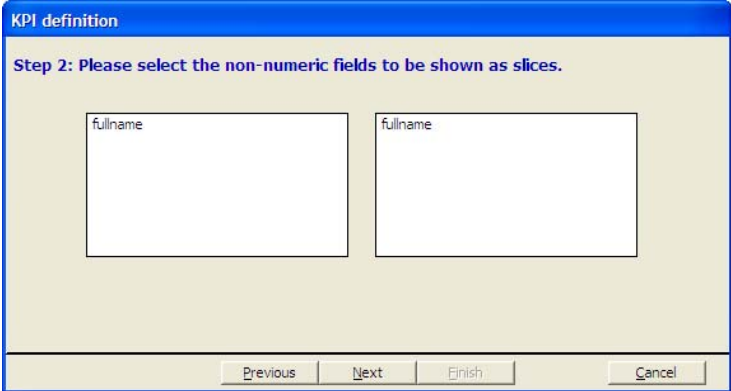
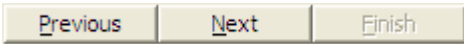
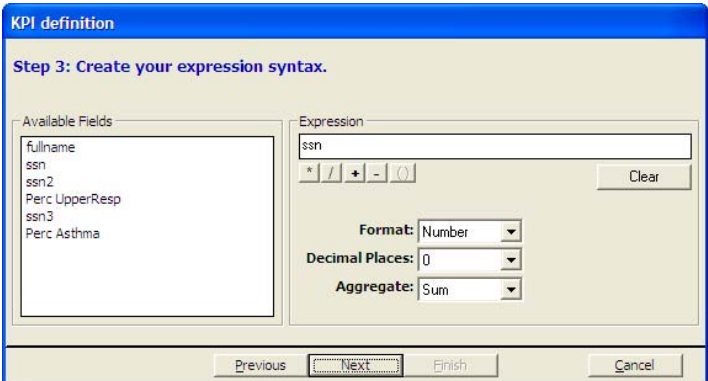
4	Click OK to load the KPI definition to the Dashboard Viewer.	
5	To view the actual KPI results in the Dashboard, re-select the Design icon in the toolbar.	

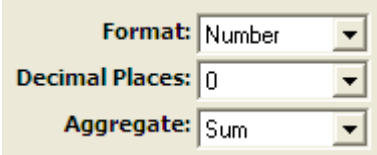
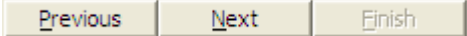
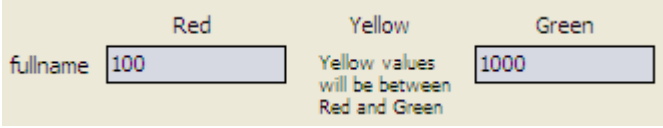
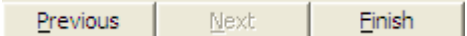
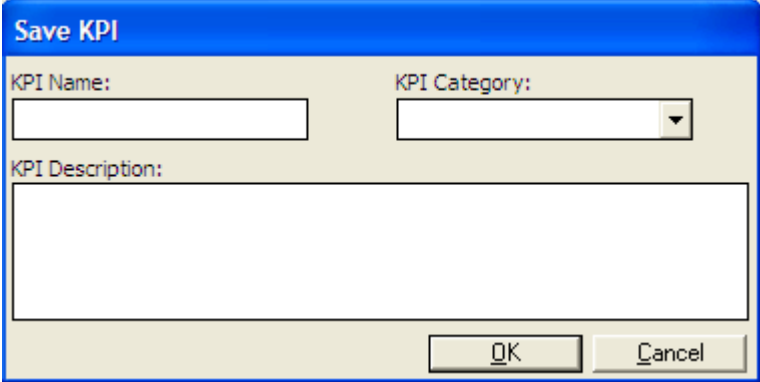

LipidMeds		
medication		
Group		KPI Value
▶	Lescol 20 MG CAPS	5
	Lescol 40 MG CAPS	8
	Lescol CAPS	1
	Lipitor 10 MG Tab	105
	Lipitor 10 MG TABS	486
	Lipitor 20 MG Tab	79
	Lipitor 20 MG TABS	384
	Lipitor 40 MG Tab	44

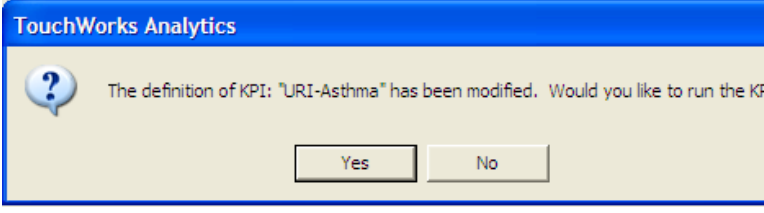
Administrators can create new KPI items to add to a Dashboard Viewer tab based on existing objects. However, the user must 1st enter into design mode within the selected Dashboard.

Step-by-Step: Create a New KPI for the Dashboard

1	<p>Select the proper Dashboard Viewer tab and click  in the toolbar to enter design mode.</p> <p>Click the Add KPI to PAC () icon in the toolbar.</p>	
2	<p>Move the cursor to the Dashboard Viewer (design mode). The cursor will turn to a cross () .</p> <p>Click/Drag the cursor until an appropriately-sized box is displayed on the screen. The KPI Definition dialog box will appear after letting go of the mouse.</p> <p>Click New... from the KPI Definition dialog box.</p>	
3	<p>Select a type and source for the KPI</p> <p>Click the down arrow next to the Type dropdown list at the top-left of the screen.</p>	
4	<p>If selecting a type of Data Source, the user can select a saved database source object by clicking  next to the Saved data source object box. This will enable the Parameter list dropdown listing the parameter(s) associated with that database source. Select a parameter from the list, then select an associated parameter value from the drop-down box below. Enter an appropriate value if necessary.</p> <p>The user can also click New... to create a new data source for this KPI.</p>	

5	<p>If selecting a type of TWA Object, the user can choose to add either a <i>Worksheet</i> or an <i>Analysis</i> to the KPI.</p> <p>After selecting an object, the fields to the right of the screen will enable.</p>	
6	<p>Once an Object Type has been selected, choose a corresponding object () and search () that have been saved to the database prior.</p> <p>Click Next.</p>	
7	<p>Select the field(s) to serve as slices or group levels for the data returned. The field(s) will display automatically depending on the objects selected in the previous step.</p> <p>Double-click the fields desired to add to the region on the right.</p> <p>In the screenshot to the right, <i>fullname</i> represents the patient-provider's full name from the selected Crosstab Analysis.</p> <p>To remove a field from the selected list, double-click the name in the selected list.</p>	
8	<p>Click Next.</p>	
9	<p>Create an expression that will color-code the values returned. Expressions are typically numeric fields, but can be text fields if a count is the only aggregate type that is needed.</p> <p>Double-click the field from the <i>Available Fields</i> list box that will be used in the expression to move the selected field to the Expression box to the right.</p> <p>To clear the expression, click Clear.</p>	

10	<p>Select a proper <i>Format</i>, number of <i>Decimal Places</i> to display in the KPI and the <i>Aggregate</i> type.</p> <p>The values used to format the results will depend on the type of data that is being returned. In the example to the right, the aggregate type of <i>Sum</i> is used for returning the sum of patients per patient-provider.</p>	
11	Click Next .	
12	<p>Establish threshold levels to determine a value's color based on parameters. These levels are based on the values tied to the slice field added in step 2.</p> <p>In the Red column fields, enter a number. Any values returned in the KPI that are less than or equal to this number will display a red indicator.</p> <p>In the Green column fields, enter a number. Any values returned in the KPI that are greater than or equal to this number will display a green indicator.</p> <p>Values in-between will display a yellow indicator.</p>	
13	<p>After threshold values are entered, click Finish.</p> <p>Click OK from the KPI Definition dialog box.</p>	
14	<p>If the KPI has yet to be saved to the database, the Save KPI dialog box will appear.</p> <p>Enter a <i>KPI Name</i>, <i>KPI Category</i> and <i>KPI Description</i> in the dialog box.</p> <p>Click OK.</p>	
	Re-select the Design icon () to leave	

15	<p>design mode and load the KPI.</p> <p>If the results do not auto-populate, click inside the KPI item and click Yes when prompted to re-run the object.</p>	 <p>The definition of KPI: "URI-Asthma" has been modified. Would you like to run the KPI?</p> <p>Yes No</p>
----	---	---

Below is an example of a finished KPI:

URI-Asthma		
fullname		
Group		KPI Value
ASSATEZZ, ZZEYOM		20
BARATEZZ, ZZELES		1,974
BLATTEZZ, ZZELEU		275
BOLEYFIS, SIFYIN		1
BOSCHIUS, SUINGO		875
BROWNEZZ, ZZEYAA		1,798
BURKEOAT, TAOKOD		9
CARLSEZZ, ZZELER		1,221
CLANCEZZ, ZZELEN		1
COOPEEZZ, ZZEKOP		82
CULLEIHS, SHIRUT		752

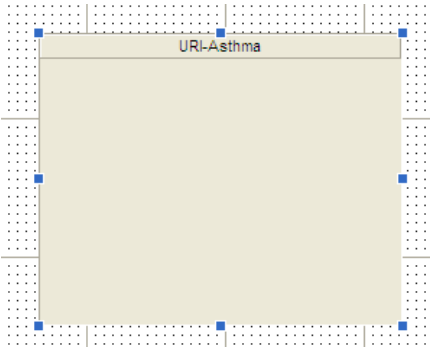

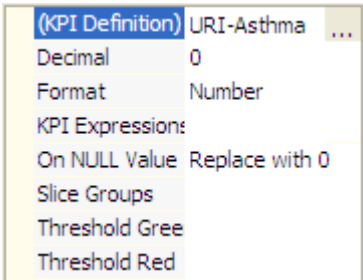

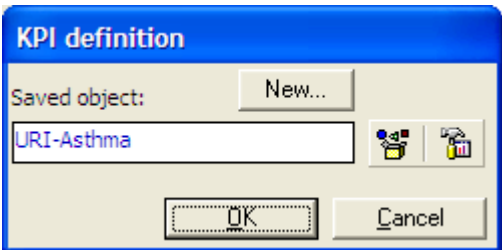
To verify that the results in the KPI Value column are correctly reflecting the total count of patients per provider that the Analysis object displays, match rows of information from the following Crosstab Analysis to the KPI results.

patientprovider-fullname	Patient Total	Patient UpperResp	Perc UpperResp
FASELEZZ, ZZEUNO	1,237	3	0.24%
CULLEIHS, SHIRUT	752	2	0.27%
CARLSEZZ, ZZELER	1,221	2	0.16%
BOSCHIUS, SUINGO	875	2	0.23%
DANGEEZZ, ZZELEM	115	1	0.87%
BROWNEZZ, ZZEYAA	1,798	1	0.06%
ELBAYEZZ, ZZEUUL	1,196		0.00%
COOPEEZZ, ZZEKOP	82		0.00%
CLANCEZZ, ZZELEN	1		0.00%
BURKEOAT, TAOKOD	9		0.00%
BOLEYFIS, SIFYIN	1		0.00%
BLATTEZZ, ZZELEU	275		0.00%
ASSATEZZ, ZZEYOM	20		0.00%

Modifying KPI Definitions

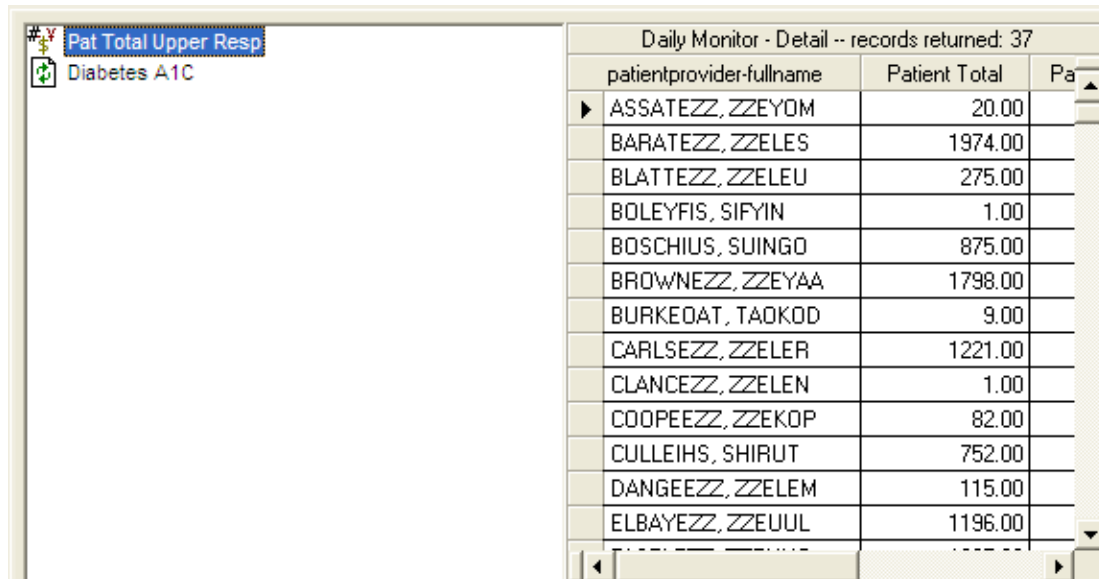
Once a KPI has been defined and saved to the database, it can be modified as necessary.

Step-by-Step: Modify an Existing KPI

1	<p>From design mode, select the appropriate KPI from the Dashboard Viewer. The KPI will be grey and not displaying data when in design mode.</p>	
2	<p>In the properties window to the right, click the  icon in the KPI Definition (1st) row.</p>	
3	<p>From the KPI Definition dialog box, click the Set up object icon () to load the KPI Definition dialog box.</p> <p>Make modifications as necessary.</p>	





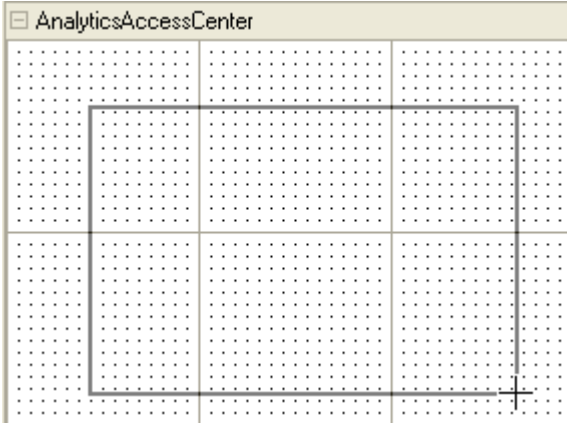
Daily Monitors



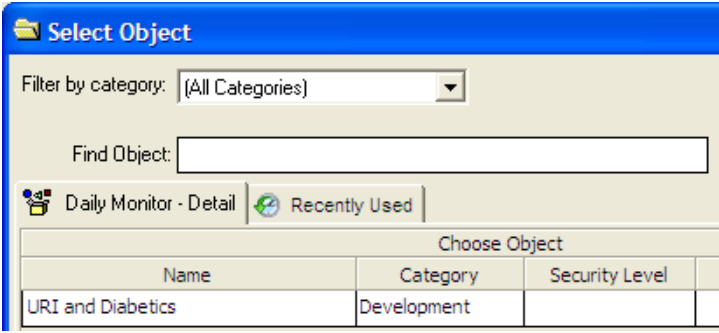
Daily Monitors provide the user a way to toggle between objects within one section of the Dashboard Viewer tab. The options to display within the Daily Monitor are Worksheets, Crosstab Analysis and a Data Source.



patientprovider-fullname	Patient Total	Pa
ASSATEZZ, ZZEYOM	20.00	
BARATEZZ, ZZELES	1974.00	
BLATTEZZ, ZZELEU	275.00	
BOLEYFIS, SIFYIN	1.00	
BOSCHIUS, SINGO	875.00	
BROWNEZZ, ZZEYAA	1798.00	
BURKEQAT, TAOKOD	9.00	
CARLSEZZ, ZZELER	1221.00	
CLANCEZZ, ZZELN	1.00	
COOPEZZ, ZZKOP	82.00	
CULLEIHS, SHIRUT	752.00	
DANGEEZZ, ZZELEM	115.00	
ELBAYEZZ, ZZEUUL	1196.00	

Step-by-Step: Add an Existing Daily Monitor





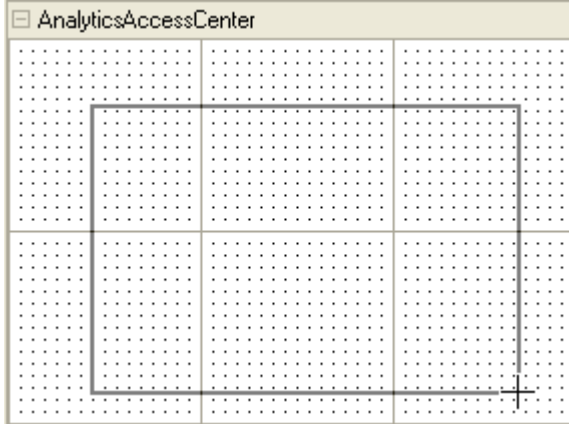
1	<p>Select the proper Dashboard Viewer tab and click  in the toolbar to enter design mode.</p> <p>Click the Add Daily Monitor to PAC () icon in the toolbar.</p>	
2	<p>Move the cursor to the Dashboard Viewer (design mode). The cursor will turn to a cross () .</p> <p>Click/Drag the cursor until an appropriately-sized box is displayed on the screen. The Daily Monitor – Detail definition dialog box will appear after letting go of the mouse.</p>	

<p>3</p>	<p>From the Daily Monitor – Detail definition dialog box, click the Select Object icon () to load the Select Object dialog box.</p> <p>Select an existing Daily Monitor and click OK.</p> <p>To review an/or modify a selected Daily Monitor, click .</p>	 <p>The Select Object dialog box has a blue title bar. Below it is a 'Filter by category:' dropdown menu set to '(All Categories)'. A 'Find Object:' text box is below that. There are two tabs: 'Daily Monitor - Detail' (selected) and 'Recently Used'. Below the tabs is a table titled 'Choose Object'.</p> <table border="1"> <thead> <tr> <th>Name</th> <th>Category</th> <th>Security Level</th> </tr> </thead> <tbody> <tr> <td>URI and Diabetics</td> <td>Development</td> <td></td> </tr> </tbody> </table>	Name	Category	Security Level	URI and Diabetics	Development	
Name	Category	Security Level						
URI and Diabetics	Development							

Creating a New Daily Monitor

The Analytics Access Center provides administrators with the ability to create customized Daily Monitor definitions for a Dashboard Viewer tab.

Step-by-Step: Create a New Daily Monitor

<p>1</p>	<p>Select the proper Dashboard Viewer tab and click  in the toolbar to enter design mode.</p> <p>Click the Add Daily Monitor to PAC () icon in the toolbar.</p>	 <p>The toolbar contains several icons: a pencil, a document, a folder, a 'New...' dropdown, a mouse cursor, a text 'Aa' icon, a color palette, a refresh icon, and a 'Daily Monitor' icon (a blue box with a white 'D' and a red plus sign).</p>
<p>2</p>	<p>Move the cursor to the Dashboard Viewer (design mode). The cursor will turn to a cross ().</p> <p>Click/Drag the cursor until an appropriately-sized box is displayed on the screen. The Daily Monitor – Detail definition dialog box will appear after letting go of the mouse.</p> <p>Click New... from the Daily Monitor – Detail definition dialog box.</p>	 <p>The design grid shows a header 'AnalyticsAccessCenter' above a grid of dots. A rectangular box is drawn over the grid, indicating the area for the new Daily Monitor.</p>

The following dialog box will populate:

Daily Monitor Setup

Name	Description	Search
------	-------------	--------

Caption

Add

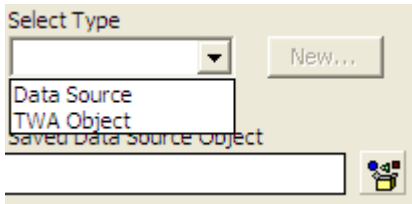

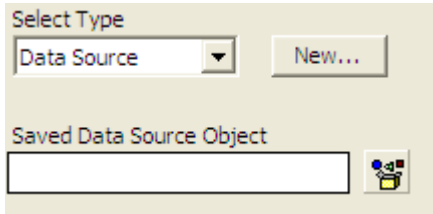
Delete

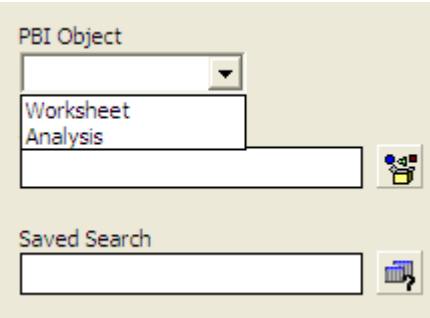


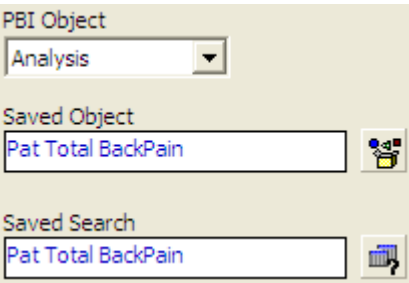
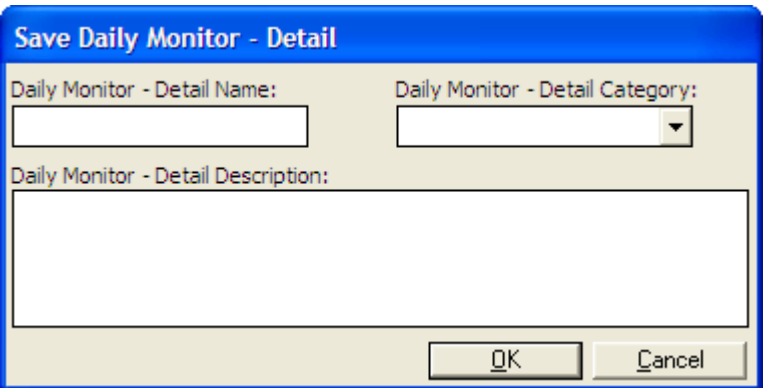

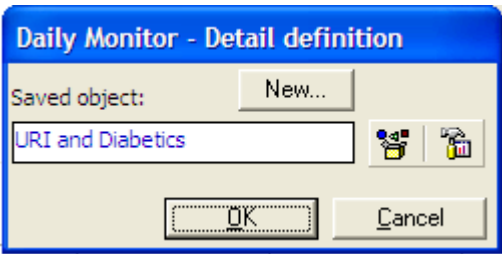
Parameter list

Parameter value

OK

Cancel

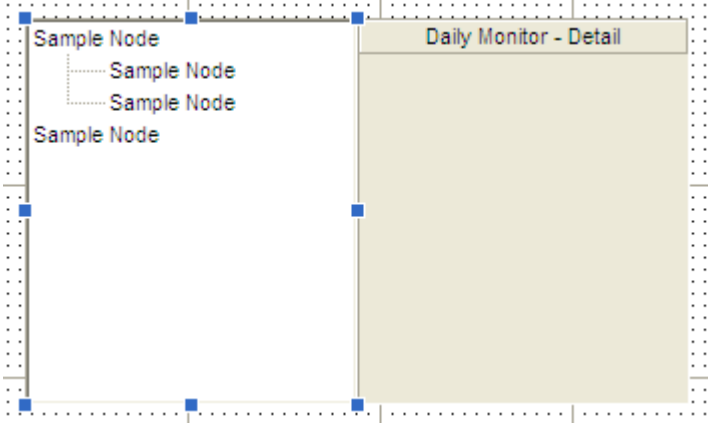

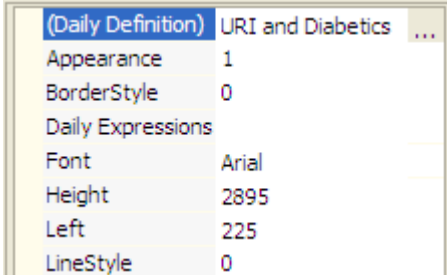


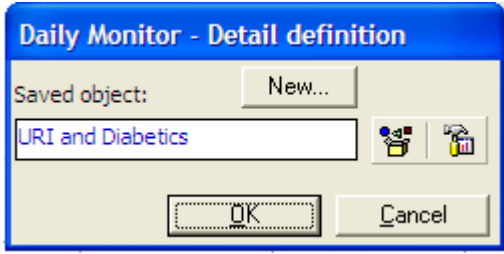
3	From the Daily Monitor Setup dialog box, click Add to populate a secondary Daily Monitor Setup page.	
4	<p>If selecting a type of Data Source, the user can select a saved database source object by clicking  next to the Saved data source object box.</p> <p>The user can also click New... to create a new data source for this Daily Monitor definition.</p>	

5	<p>If selecting a type of TWA Object, the user can choose to add either a <i>Worksheet</i> or an <i>Analysis</i> to the Daily Monitor.</p> <p>After selecting an object, the fields to the right of the screen will enable.</p>	
6	<p>Once an Object Type has been selected, choose a corresponding object () and search () that have been saved to the database prior.</p> <p>The Caption for this item will auto-generate.</p> <p>Repeat the previous steps for every object necessary for this Daily Monitor definition.</p> <p>Click OK.</p>	
7	<p>If the Daily Monitor definition has yet to be saved to the database, the Save Daily Monitor – Detail dialog box will appear.</p> <p>Enter a <i>Daily Monitor – Detail Name</i>, <i>Daily Monitor – Detail Category</i> and <i>Daily Monitor – Detail Description</i> in the dialog box.</p> <p>Click OK.</p>	
8	<p>After Returning to the Daily Monitor – Detail definition dialog box, click OK.</p> <p>Re-select the Design icon () to leave design mode and load the Daily Monitor definition.</p>	

Modifying Daily Monitor Definitions

Once a Daily Monitor has been defined and saved to the database, it can be modified as necessary.

Step-by-Step: Modify Daily Monitor Definitions

1	<p>From design mode, locate the appropriate Daily Monitor from the Dashboard Viewer and select the left pane (see right). There will be blue markers surrounding the left pane.</p> <p>The Daily Monitor will be grey and not displaying data when in design mode.</p>	
2	<p>In the properties window to the right, click the  icon in the Daily Definition (1st) row.</p>	
3	<p>From the Daily Monitor – Detail Definition dialog box, click the Set up object icon () to load the Daily Monitor Setup dialog box.</p> <p>Make modifications as necessary and click Exit when finished.</p> <p>After Returning to the Daily Monitor – Detail definition dialog box, click OK.</p> <p>Re-select the Design icon () to leave design mode and load the Daily Monitor definition with modifications.</p>	

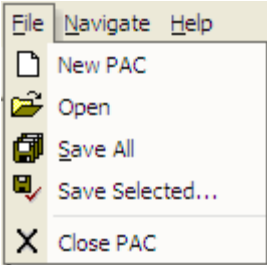
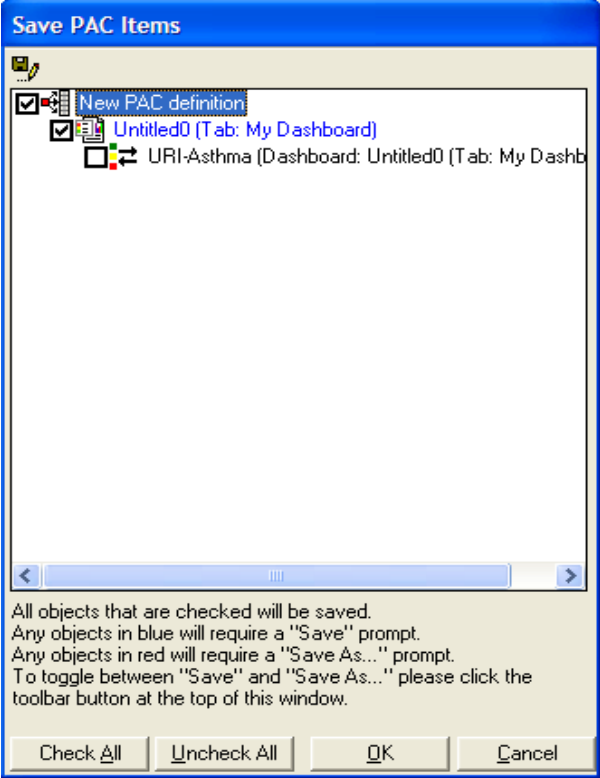
Saving Access Centers and Access Center Objects

Analytics Access Centers contain many components, categories and objects. All of these items can be saved simultaneously or individually utilizing the **Save PAC Items** dialog box. When any aspect of the Access Center is added or modified, the user will be prompted to save to the database.

Any items added or modified to the **Object Panel** component (left side of the screen) will prompt the user to save the Access Center itself. All other items that are created or modified apply to the Dashboard Viewer.

To save all objects within the Access Center, select **Save All** from the **File** menu bar.

Step-by-Step: Save Individual Objects

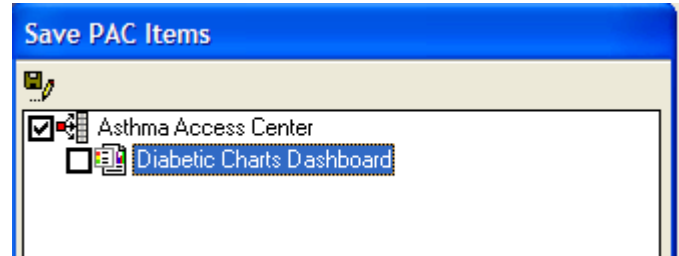
1	<p>Select File from the menu bar.</p> <p>Trace to and select Save Selected...</p>	
2	<p>All objects available to the Access Center will be displayed. Any items that are new or have been modified will have a checked checkbox next to the items in the Save PAC Items dialog box.</p> <p>Any Dashboard or Access Center item listed in blue text is a new item. Any item listed in red text is an item that has been changed and the user has the rights to modify.</p> <p>KPI and Daily Monitor definitions as well as Data Sources are saved when created, so those items will not need to be saved in this dialog box.</p>	

At the top-left of the **Save PAC Items** dialog box is the **Toggle between Save and Save As** icon



However, certain scenarios drive what level of saving a user can apply to changes made in the Access Center:

- If the item is new and unsaved (blue text), there is no affect and only the **Save** option applies.
- Placing a check next to an unsaved item (black text) will change the text to red and prompt the user to **Save As**. A user must have the proper access to modify an object before **Save As** applies.
- If the item is a KPI or Daily Monitor the entire Dashboard Viewer must be saved.
- If the checked item has been modified (red text), and the user has rights to save the object, the node will change to black text and a **Save** will be performed. If the user has view/modify rights only, changes to the original object cannot be saved and the toggle will have no effect. Thus, **Save As** will be the only option available



Session 2: Administration

Analytics provides several administrative tools for configuring the product that ensure users have the proper access to objects, tools and data. The Administrative portion of the Analytics application is for users making decisions on how the application is to be configured, which users will have access to the product and at what level of access do users have while utilizing the product.



Specifically, the Administration portion of Analytics is for:

- Creating Users/User Groups
- Granting Permission/Access
- Re-setting Passwords
- Reviewing Available Data Fields
- Scheduling Jobs to Process Automatically
- Manage Objects
- Audit User Activity
- Review/Audit Processes

Lesson 1: Security

Overview

Along with planning for and generating reports and analysis for utilization, it is crucial for organizations to plan and establish parameters surrounding user access in order to ensure that patient confidentiality and user trends are kept secure.

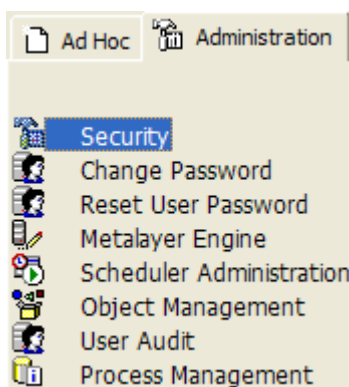
This document has been about defining objects (reports, analysis, search criteria, etc.) in Analytics. Each user that has access to creating a particular object will automatically be given full access (view, modify and save) to that object created. However, this is the only time that access rights are granted *directly* to an individual user. Any other user of the application must be given access to that saved object through **User Groups**. Each user will be tied to one or more User Groups in order to streamline how access rights to objects are distributed. Over the course of time organizations will create many objects, thus making it increasingly difficult to assign rights to a user who may need access to numerous objects. If an administrator has already established a User Group that has been given access to the objects a new user needs, it is easier to tie the user to the group instead of picking out all of the possible objects and individually granting those objects to the user.

When a user creates an object and saves it the first time, access rights may be granted to one or more user groups. However, granting rights to an object is not limited to the user creating the object. An administrator can utilize the Administration section of Analytics to grant access to user groups after establishing and defining those user groups.

Administrators Granting Access Rights

Even though a user can grant access as objects are being saved to the Analytics database (see *Save Search on page 18 for more*), it is still the job of system administrators to supervise everything associated with security within the product. Administrators create users and user groups as well as determining what items are available to those users and groups.

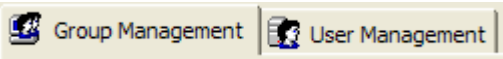
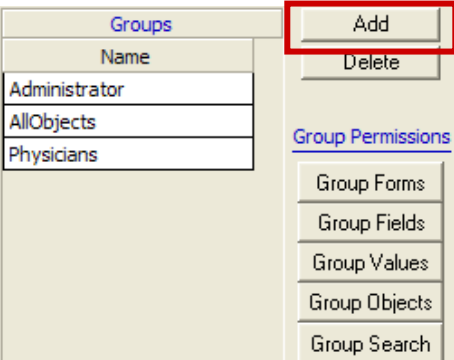
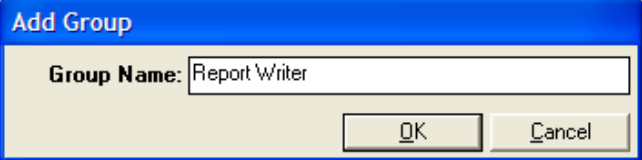
To access all security features for the product, double-click **Security** from the *Administration* tab on the main menu.



Creating User Groups

User Groups are for granting access rights to one or more users simultaneously.

Step-by-Step: Create a User Group

1	From the <i>Analytics Security</i> workspace, select the Group Management tab.	
2	Click the Add button to the right of the <i>Groups</i> label and list.	
3	When prompted, enter a Group name.	

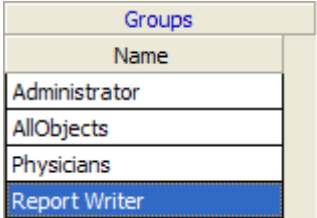

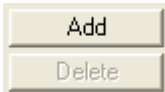
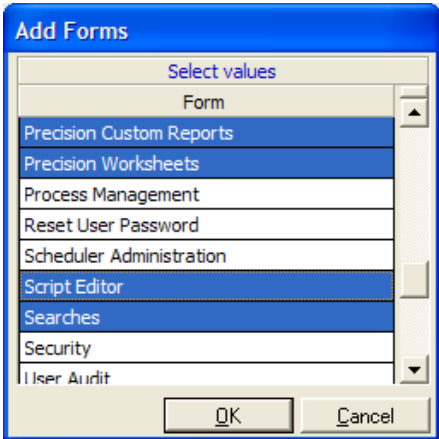
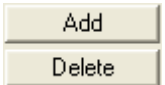
Granting Group Permissions

Once a User Group has been created, permissions must be granted in order to establish what access is available for this group. There are five levels of permissions that may be set per User Group.

Group Forms

Group Forms establish what areas and/or objects of the product are accessible to a User Group.

Step-by-Step: Set Permissions for Group Forms

1	From the <i>Group Management</i> tab, select a User Group from the <i>Name</i> list. This will highlight the name in blue in the list.	
2	<p>Select Group Forms from the <i>Group Permissions</i> list of buttons.</p> <p>A list of existing forms tied to the selected group will appear in the <i>Form Name</i> list box.</p>	
3	Click Add located to the right of the <i>Form Name</i> list box (top-right of screen).	
4	<p>Select one or more forms from the Add Forms dialog box and click OK.</p> <p>Use Shift and/or Ctrl buttons to multi-select forms</p> <p>Only forms not already tied to the selected User Group will display in the Add Forms dialog box.</p>	
5	To remove a form from a User Group, select the form(s) from the <i>Form Name</i> section and click the Delete button at the top-right of the screen.	

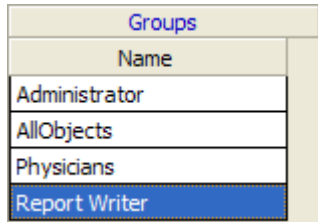

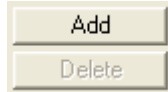
Group Fields

Analytics security provides the ability to conceal or hide certain data fields. For example, certain groups of users may not need to see social security numbers displayed within a given object. Fields added to the **Group Fields** section of security will be hidden in the Metalayer Tree.

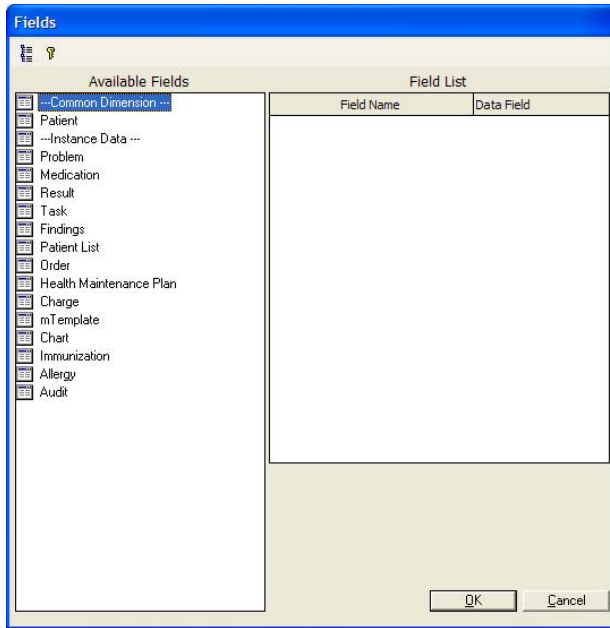
Not only will a field added to the Group Fields permissions section be hidden, objects that depend on the hidden field to run will not populate. For example, if social security number is a criterion set within a search and that search is populating data into a report, the report will not run for a group of users who do not have access to that field because the driving force of the report is not accessible to the user group.

To add a data field to the Group Fields section, complete the following:

Step-by-Step: Restrict Data Fields

1	From the <i>Group Management</i> tab, select a User Group from the <i>Name</i> list. This will highlight the name in blue in the list.	
2	Select Group Fields from the <i>Group Permissions</i> list of buttons. A list of existing fields already hidden from the selected group will appear in the <i>Hidden fields for group</i> list box.	
3	Click Add located to the right of the <i>Hidden fields for group</i> list box (top-right of screen).	

The following dialog box will display:



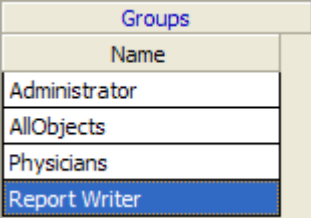

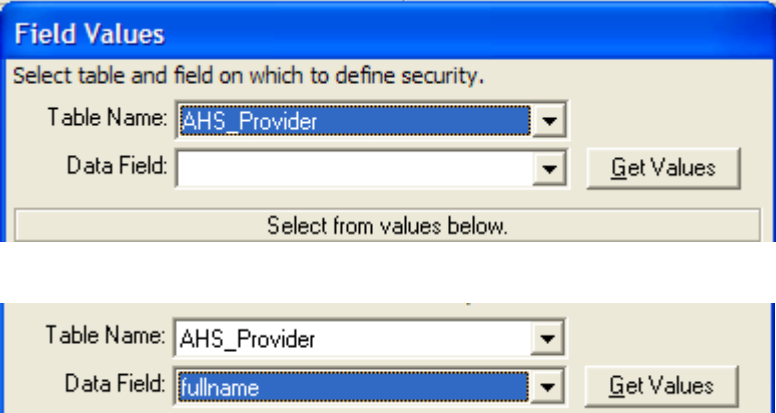
4	<p>Locate the field(s) that is to be hidden within the Metalayer Tree.</p> <p>Double-click the data field to move it to the <i>Field List</i>.</p>	
5	Click OK .	
6	<p>To remove a data field from the hidden list, select the field(s) from the <i>Hidden fields for group</i> section and click the Delete button at the top-right of the screen.</p>	

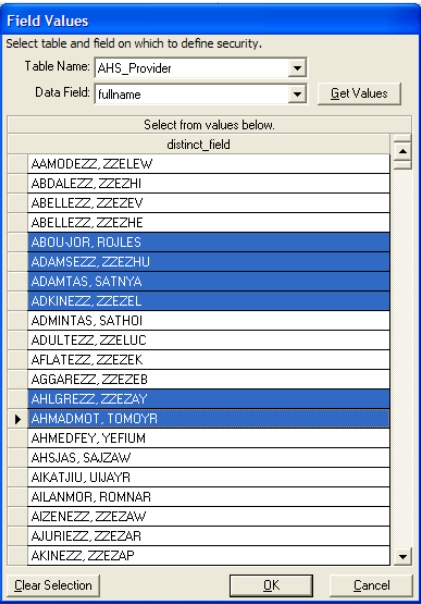
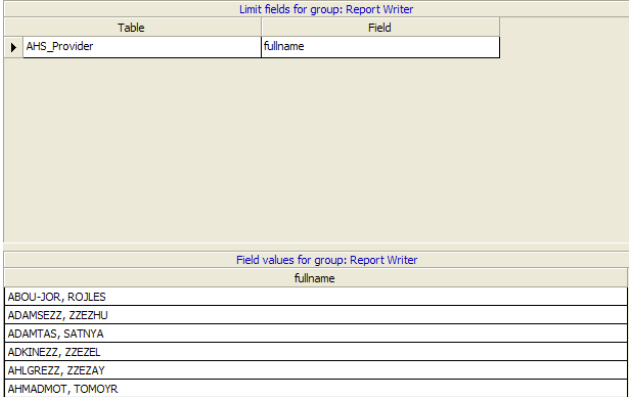
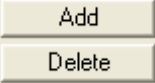
Group Values

The **Group Values** section is for limiting what data fields from selected Analytics tables are available to a User Group. For example, if certain provider's names are added to this section, those providers are the **ONLY** providers a group of users can have access to. This is the opposite of *Group Fields* where User Groups did not have access to fields added to the Group Fields sections. Anything added to *Group Values* establishes what the User Group *can* view.

Leaving this section blank means the group has access to all fields in all tables. Adding just one field from a table now **limits all access** to just the fields added to the *Group Values* security section.

Step-by-Step: Restrict Data Field Values

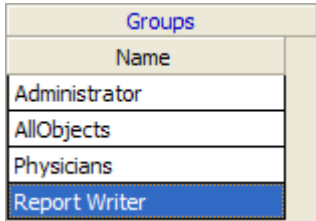

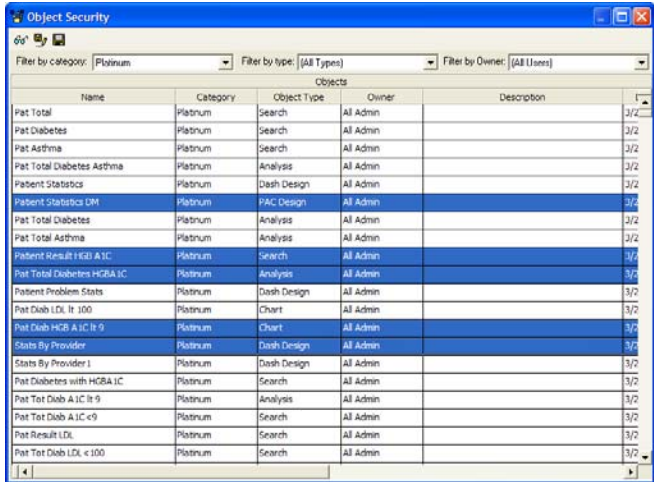
1	<p>From the <i>Group Management</i> tab, select a User Group from the <i>Name</i> list. This will highlight the name in blue in the list.</p>	 <p>The screenshot shows a window titled 'Groups' with a list of names: Administrator, AllObjects, Physicians, and Report Writer. 'Report Writer' is highlighted in blue.</p>
2	<p>Select Group Values from the <i>Group Permissions</i> list of buttons.</p> <p>A list of existing fields already tied to the selected group will appear in the <i>Limit fields for group</i> list box.</p> <p>Click Add located to the right of the <i>Limit fields for group</i> list box (top-right of screen).</p>	 <p>The screenshot shows a 'Group Permissions' dialog box with several buttons: Group Forms, Group Fields, Group Values (selected), Group Objects, and Group Search.</p>
3	<p>From the Field Values dialog box select the necessary table from the Table Name dropdown.</p> <p>Select the data field within the selected table from the Data Field dropdown to populate all available values.</p>	 <p>The top screenshot shows the 'Field Values' dialog box with 'Table Name' set to 'AHS_Provider' and 'Data Field' empty. The bottom screenshot shows the same dialog box with 'Data Field' set to 'fullname'.</p>






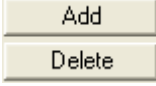
4	<p>Select the item(s) that will be available for the User Group based on the table and data field type selected from the dropdown lists.</p> <p>Use Shift and/or Ctrl buttons to multi-select fields.</p>	
5	<p>Click OK.</p> <p>The table and field will display on a row at the top of the screen with the field values listed at the bottom of the screen.</p>	
6	<p>To remove a data field, select the field(s) from the <i>Limit fields for group</i> section and click the Delete button at the top-right of the screen.</p>	

Group Objects

All *user-created* objects can be assigned to User Groups by administrators.

Step-by-Step: Set Available Objects for Groups

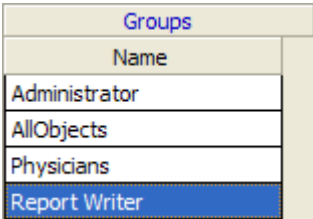

1	<p>From the <i>Group Management</i> tab, select a User Group from the <i>Name</i> list. This will highlight the name in blue in the list.</p>	
2	<p>Select Group Objects from the <i>Group Permissions</i> list of buttons.</p> <p>A list of existing fields already tied to the selected group will appear in the <i>Available objects for group</i> list box.</p> <p>Click Add located to the right of the <i>Available objects for group</i> list box (top-right of screen).</p>	
3	<p>From the Object Security dialog box select the object(s) from the <i>Object</i> table.</p> <p>Use Shift and/or Ctrl buttons to multi-select fields.</p> <p>Only objects not already tied to the selected User Group will display in the Object Security dialog box.</p>	

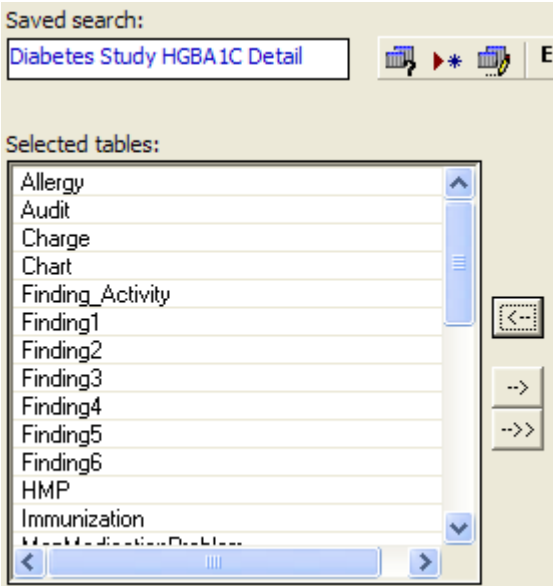
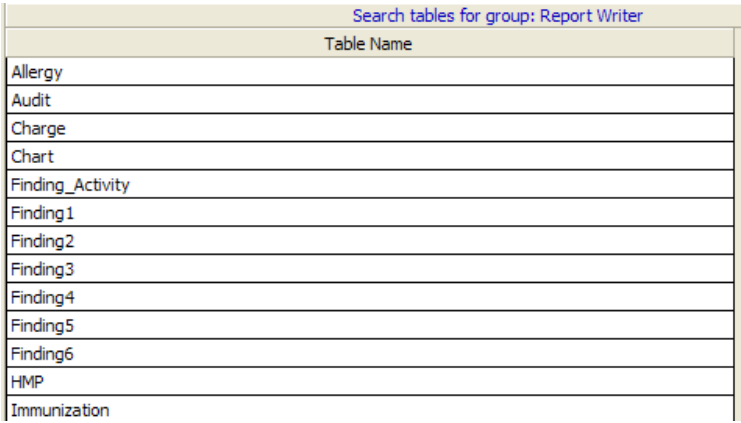
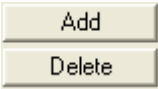

4	<p>Choose the proper security access (top-left of screen) for the selected object(s):</p> <p>View Only () – user <i>cannot</i> modify an object</p> <p>View, Modify Only () – user may modify an object, but will only be able to save the object as a different name</p> <p>View, Modify and Save () – user has been given full rights to view, modify and save changes to an object.</p>	
5	<p>When finished assigning objects to a User Group, click the “X” at the top-right of the dialog box.</p>	
6	<p>To remove an object, select the object(s) from the <i>Available objects for group</i> section and click the Delete button at the top-right of the screen.</p>	

Group Search

Group Search provides the ability to limit access to tables that have already been associated to search criteria tied to an established search object. A User Group may have access to a certain search object, but this section gives an administrator the ability to lock down tables used within that Search.

Step-by-Step: Restrict Search Object Tables

1	<p>From the <i>Group Management</i> tab, select a User Group from the <i>Name</i> list. This will highlight the name in blue in the list.</p>	
2	<p>Select Group Objects from the <i>Group Permissions</i> list of buttons.</p> <p>Existing search objects already tied to the selected group will appear in the <i>Searches for group</i> list box.</p>	

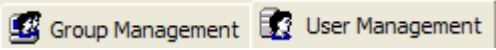
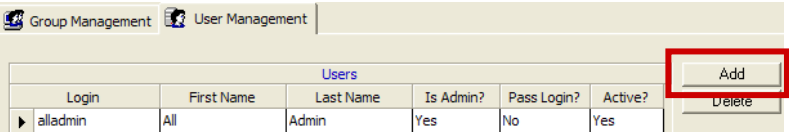
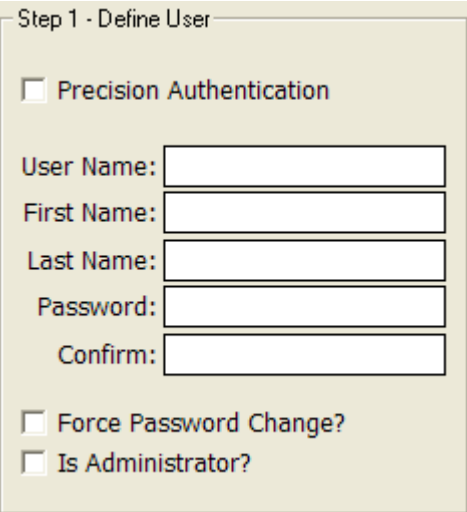
3	<p>Click Add located to the right of the <i>Searches for group</i> list box (top-right of screen).</p> <p>From the Group Search Definition dialog box load an existing search object from the database. Tables associated with the search object will display in the <i>Selected tables</i> list box.</p> <p>Click OK.</p>	
4	<p>A list of tables available for this User Group will be displayed in the <i>Search tables for group</i> table.</p>	
5	<p>To remove a search table, select the field(s) from the <i>Search tables for group</i> table and click the Delete button to the right of the table.</p>	
6	<p>To remove a search object, select the search from the <i>Search for group</i> table and click the Delete button to the right of the table.</p> <p>Click Edit to modify the group search definitions.</p>	

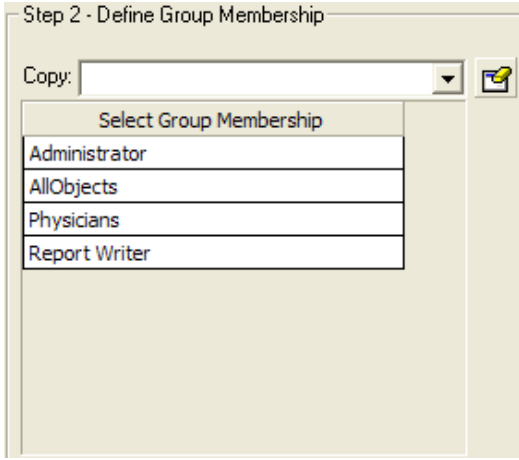
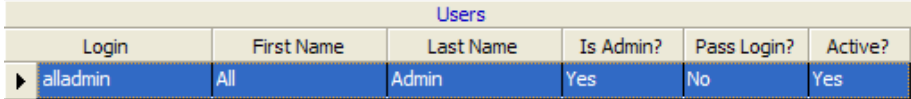
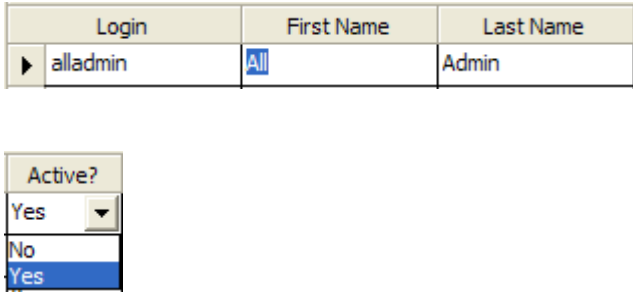
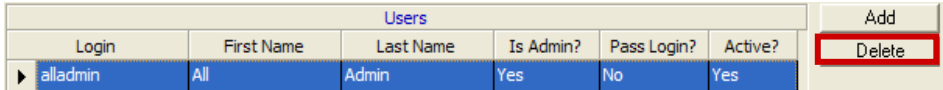
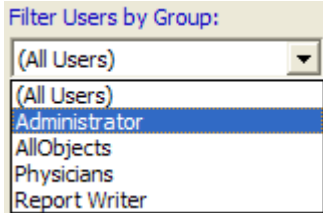
User Management

System administrators can add, edit or delete users from the Analytics application by navigating to the **User Management** tab within Analytics Security.

Security rights are not assigned to users directly, but through User Groups. For information pertaining to User Groups, see *Creating User Groups*.

Step-by-Step: Define a User for Analytics

1	From the <i>Analytics Security</i> workspace, select the User Management tab.	
2	Click the Add button to the right of the <i>Users</i> table located on the left side of the screen.	
3	<p>From the Enterprise EHR Analytics Login dialog box, enter the following information:</p> <p>Step 1 – Define User</p> <p>Username, First Name, Last Name, Password & Confirm (re-enter password).</p> <p>Precision Authentication – utilizing Windows authentication by adding windows domain reference to the user name. Analytics does not use this feature at the moment.</p> <p>Force Password Change – user will be forced to change their password at next login.</p> <p>Is Administrator? – Admin privileges granted to the user.</p>	

4	<p>Step 2 – Define Group Membership</p> <p>Select one or more User Groups from the <i>Select Group Membership</i> table.</p> <p>If an existing user has access that is similar to what the new user will be granted, select the user from the Copy dropdown list.</p> <p>Click Add.</p>	
5	<p>The new user will be displayed in the <i>Users</i> table.</p>	
6	<p>Editing the set-up for a user may be done by modifying values in the <i>Users</i> table.</p> <p>For modifying Login, First Name or Last Name, double-click within the appropriate cell.</p> <p>To modify values in the Is Admin?, Pass Login?, or Active? cells, change the dropdown value in the cell.</p>	
7	<p>To delete a user, click the row selector button for the user to delete and click the Delete button to the right of the <i>Users</i> table.</p>	
8	<p>The <i>Filters User by Group</i> dropdown list is for filtering the <i>Users</i> list to the left of the screen by the selected group.</p>	

Lesson 2: Password Management

Overview

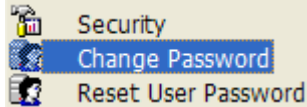
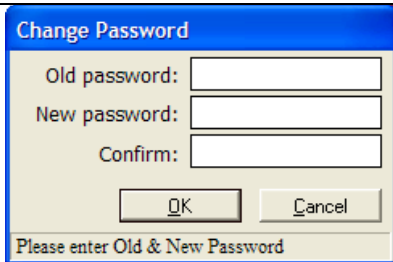


There are two areas within Enterprise EHR Analytics where user passwords can be changed.

Change Password

Change Password gives a user the opportunity to change their password only.

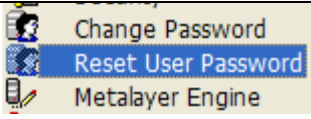
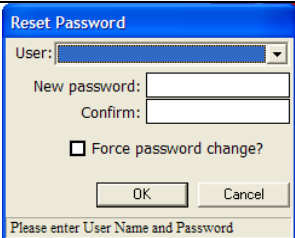
Step-by-Step: User Changing Password

1	For a user to change their password, double-click Change Password from the <i>Administration</i> tab on the main menu.	
2	From the Change Password dialog box, enter the user's Old Password , New Password and Confirm (re-enter new password). Click OK .	

Reset User Password

Reset User Password gives an administrator the opportunity to change any user's password.

Step-by-Step: Reset Password

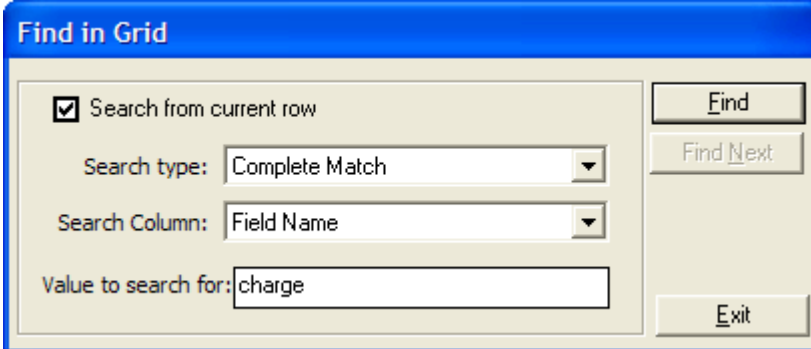
1	For an administrator to change passwords, double-click Reset User Password from the <i>Administration</i> tab on the main menu.	
2	From the Reset Password dialog box, select a User and enter a New Password and Confirm (re-enter new password). Choose Force password change? to force the user to change their password at next login Click OK .	


Lesson 3: Metalayer Engine

Overview

The **Metalayer Engine** provides a listing of all fields within the Metalayer Tree as well as how those fields are defined. Only a limited number of “super” users should have access to this section because editing field definitions could cause issues running objects in the system.


Find Value in Grid



Click  in the toolbar to load the **Find in Grid** dialog box. Enter a **Search Type**, **Search Column**, and a value in the **Value to search for** text box before clicking **Find**.


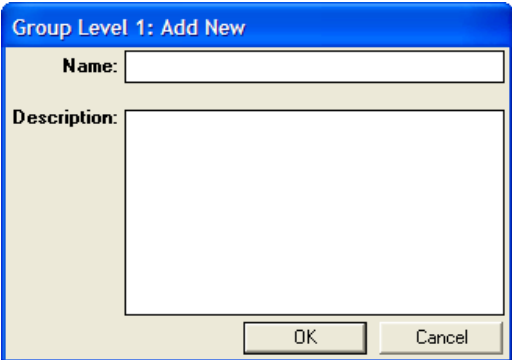
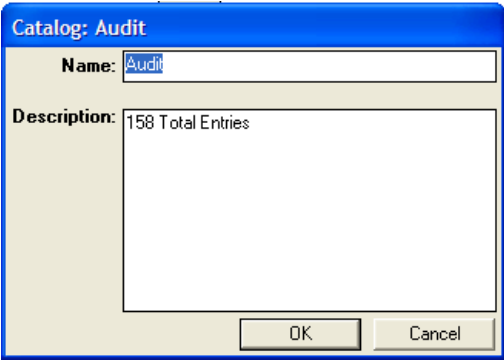
Build Metalayer Tree

All available data fields to a user are listed within the Metalayer Tree. However, an administrator can modify content category names as well as where data fields reside and in what order the data fields are listed.


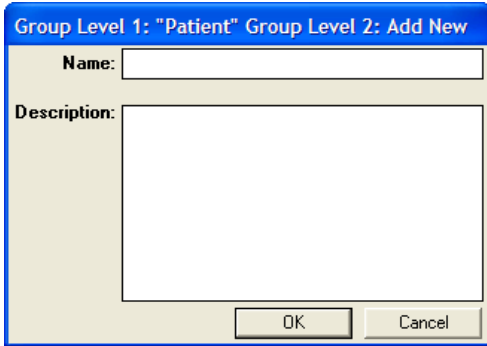
Click  in the toolbar to load the **Metalayer Tree** workspace. There are four panes within the Metalayer Tree dialog workspace:

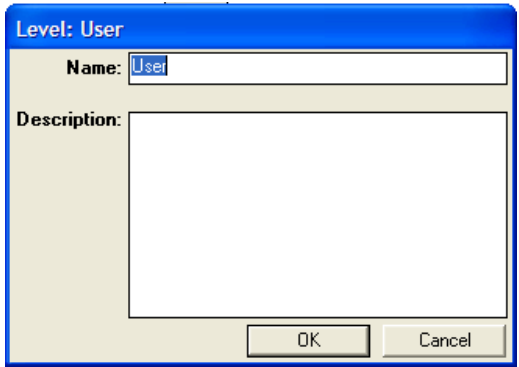
- Metalayer Tree – current Metalayer Tree definition
- Group Level 1 – current list of content categories
- Group Level 2 – list of sections under a selected content category
- Fields – list of data fields within a selected section

Step-by-Step: Adding/Modifying Content Categories


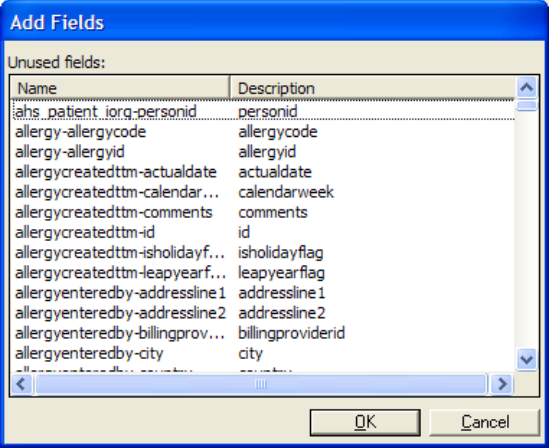
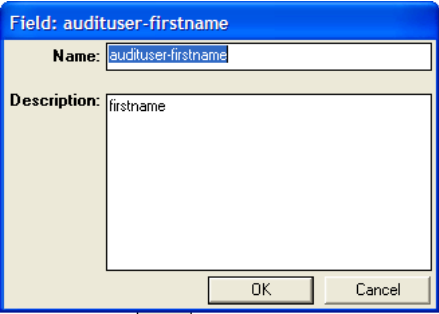
1	Under the <i>Group Level 1</i> pane, click Add Level 1 .	
2	From the Group Level 1: Add New dialog box, enter a Name and Description . Click OK .	
3	To modify a content category, double-click the content category. Make changes and click OK .	

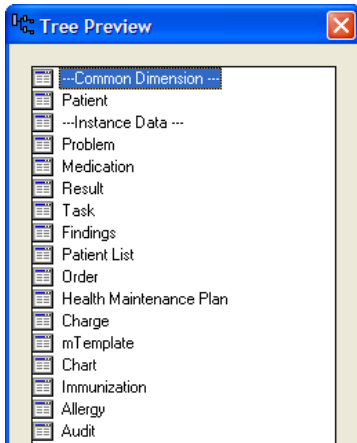
Step-by-Step: Adding/Modifying Content Category Sections



1	Select a content category from the <i>Group Level 1</i> pane and click Add Level 2 under the <i>Group Level 2</i> pane.	
2	From the Group Level 1: "Patient" Group Level 2: Add New dialog box, enter a Name and Description . Click OK .	

3	<p>To modify a content category section, double-click the content category section in the <i>Group Level 2</i> pane</p> <p>Make changes and click OK.</p>	
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Step-by-Step: Add/Modify Data Fields to Content Category Section

1	<p>Select a content category from the <i>Group Level 1</i> pane and a content category section from the <i>Group Level 2</i> pane.</p> <p>Click Add Field.</p>	
2	<p>Select a field from the Add Fields dialog box.</p> <p>Click OK.</p>	
3	<p>To modify a data field, double-click the field within the <i>Fields</i> pane.</p> <p>Make appropriate changes and click OK.</p>	




All additions and/or modifications to the Metalayer Tree must be saved by clicking  in the toolbar. To preview how the new additions and/or modifications will appear in the Metalayer Tree, click  in the toolbar.

Add New Metalayer Field

It is possible to add new data fields from existing tables or to create a data field based on an expression. Expressions are handy to add to a Metalayer Tree in order to cut down on the time it takes to populate calculated fields via a search object. If the calculation already exists within a data field in the Metalayer Tree, then the user can just select the data field as if it were representing a data field in the Enterprise EHR database.

Even though adding data fields and/or expressions is available, **please contact Allscripts** prior to adding to the Metalayer Tree because the field and/or expression could be added to the database permanently in the next product release if found necessary for all clients.

Click  in the Analytics Metalayer toolbar to load the **Add metalayer field** dialog box.

Enter data for the following appropriate fields:

Field Name - data field description.

Report Label – the designation seen on reports.


Description – enter a description for the field or expression.

If referencing a field from an existing table:

Table Name/Data field – if referencing an existing field value, select the appropriate table and field from the drop-down boxes.

-OR-

If adding a field using an expression:


Expression – enter expression into the **Expression** textbox or click the **Expression Builder**  icon to create an expression associated with the new Metalayer field.

Data Type – select either text, number, or date from the dropdown.

Default Format – enter a default format for the data type.

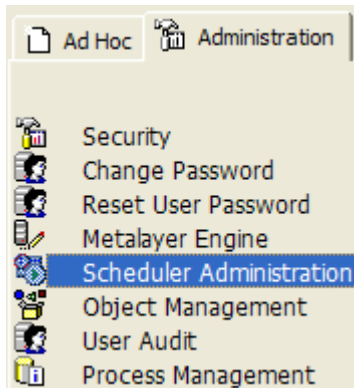
Keywords – keywords are used as an aid in searching for the new Metalayer field. To enter multiple keywords for a data field, separate the keywords with commas.

Allow Distinct Value Selection – click this checkbox if users can select distinct values for the new Metalayer field.

When all pertinent data has been added, click **Add**. All additions and/or modifications to the Metalayer Tree must be saved by clicking  in the toolbar.

Lesson 4: Scheduler Administration

Overview





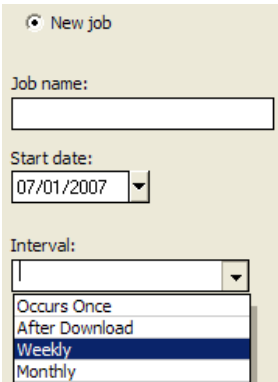
Scheduler Administration provides administrators with a scheduling tool in order to set off jobs that will run specified Analytics objects and make those objects available to users via email, shared drive/folder or printer.

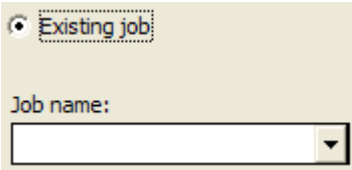
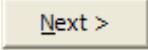
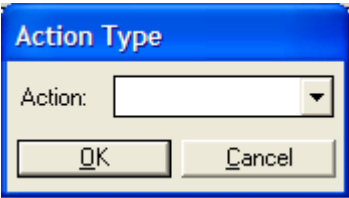
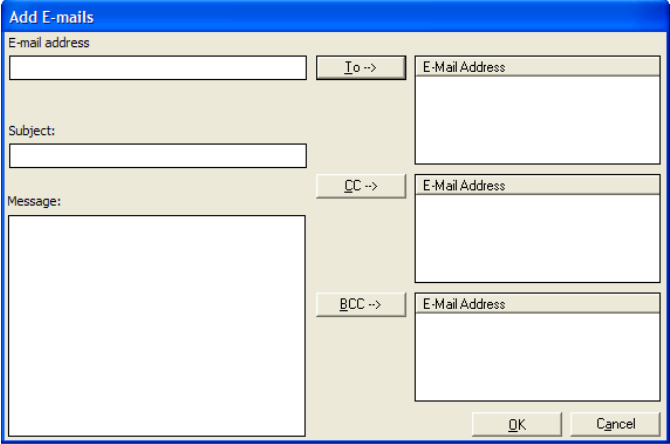
Double-click **Scheduler Administration** from the *Administration* tab.

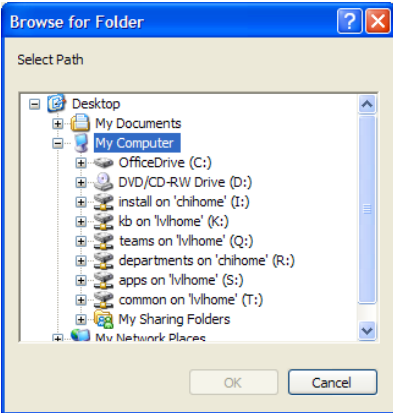
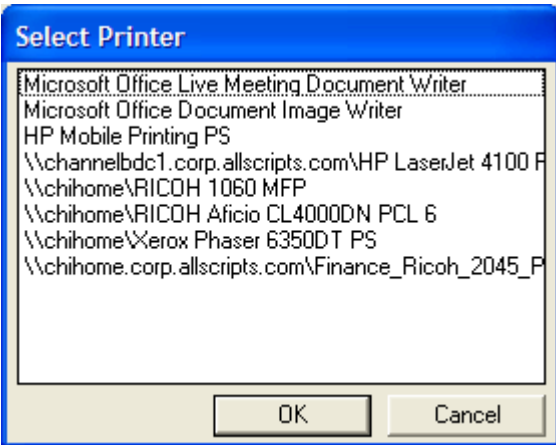
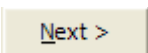
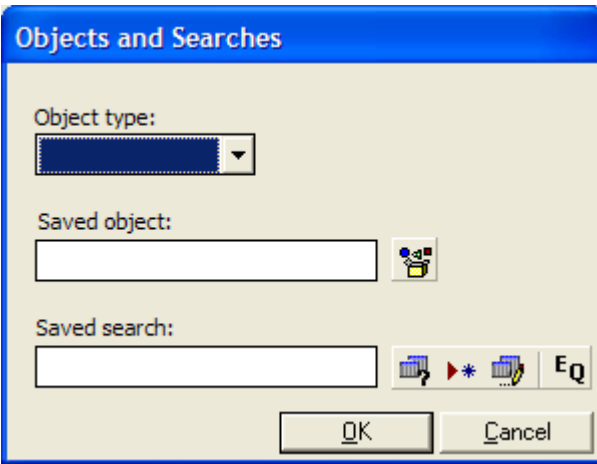
Scheduler Wizard

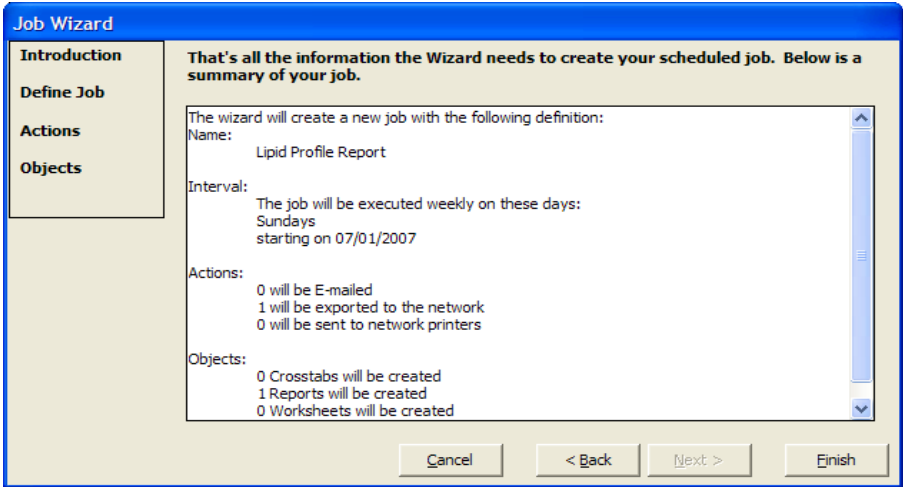
Enterprise EHR Analytics is a tool for scheduling jobs to run on the server. A **job** consists of tasks that the server must execute at specified times. For example, a job is set up to run a report on Friday each week.

Step-by-Step: Schedule a Job Using the Scheduler Wizard

1	<p>Within the Scheduler Administration workspace, click  Scheduler Wizard from the toolbar to load the Job Wizard dialog box.</p> <p>Click Next.</p>	
2	<p>Define the job to run by creating a new job or selecting an existing job.</p> <p>For new jobs, select the New Job radio button and enter in a Job Name, Start Date, and time Interval – <i>Occurs Once, After Download, Weekly or Monthly</i>.</p> <p>If <i>Weekly</i> is selected, the user will be prompted to pick a day of the week checkbox.</p>	

3	<p>For scheduling existing jobs, select the Existing Job radio button and enter an existing job name from the Job Name dropdown list.</p>	
4	<p>After choosing to schedule a new or existing job, click Next.</p>	
5	<p>At the next screen with the label Choose one or more actions and destinations for the job at the top, click Add to load the Action Type dialog box. Choose from the following action list:</p> <p>E-mail – send object to user(s) via email.</p> <p>Network – send object to a shared network drive.</p> <p>Printer – send object to a designated printer.</p> <p>Click OK.</p>	
6	<p>Depending on the action selected in the previous step, a different dialog box will load. For the action of <i>E-mail</i>, the Add Email box will load.</p> <p>Enter an e-mail address into the E-mail address textbox. Click To, CC, or BCC depending on what level the recipient is receiving the message.</p> <p>Enter a Subject and Message.</p> <p>Click OK.</p>	

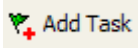
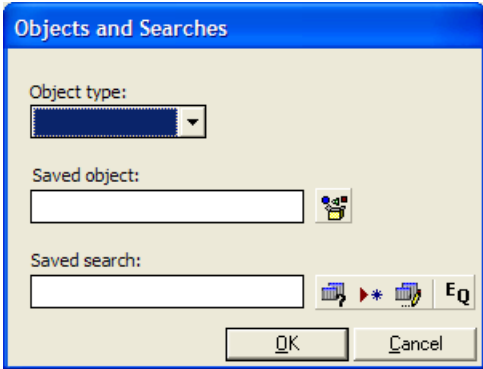
7	<p>For the action of <i>Network</i>, the Browse for Folder box will load.</p> <p>Navigate and select the appropriate drive and folder from the server.</p> <p>Click OK.</p>	
8	<p>For the action of <i>Printer</i>, the Select Printer box will load.</p> <p>Select the appropriate printer.</p> <p>Click OK.</p>	
9	<p>After choosing a destination, click Next.</p>	
10	<p>At the next screen with the label Add saved objects and searches at the top, click Add to load the Objects and Searches dialog box.</p> <p>Select an Object Type (Chart, Crosstab, Report or Worksheet), Saved Object and Saved Search.</p> <p>Click OK.</p> <p>Click Next.</p>	

11	<p>Review the job definition before clicking Finish.</p> <p>The new job is added to the job list and will run when scheduled.</p>	
----	--	--


Adding Tasks

All jobs contain one or more tasks (worksheets, reports, charts or crosstab analysis) to run on a particular schedule.

Step-by-Step: Add Tasks

1	<p>From the Scheduler Administration workspace, click Add Task from the toolbar.</p>	
2	<p>From the Objects and Searches dialog box, select an Object Type (Chart, Crosstab, Report or Worksheet), Saved Object and Saved Search.</p> <p>Click OK.</p>	

View Job Details

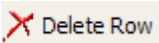
Click  next to a job to open and view all details of the selected job.

Lipid Profile Report			Weekly		7/1/2007		Yes			
Job Destinations										
Destination Type		Destination Value		Enabled?						
Network		C:\My_DOCS		Yes						
Task Definitions										
General Setup					Notification Setup		Alert Setup			
Object	Type	File Name	Export Type	Enabled?	Merged	Notify?	Condition	Alert?	Include Object?	Last History
						Notify List		Alert Threshold		Thresh Compare
								Alert Text		Last Duration
Back Pain with Me	Report		Adobe Acrobat (.pdf)	Yes		No		No	No	
CAD With Meds W	Crosstab		MS Excel (.xls)	Yes		No		No	No	

Job details may be modified after the job has been scheduled and/or tasks have been assigned.

Export Type	Enabled?
Adobe Acrobat (.pdf)	Yes
Adobe Acrobat (.pdf)	
HTML (.html)	
MS Excel (.xls)	
PAC Item	
Printer	
Rich Text Format (.rtf)	Yes
Text Document (.txt)	
Website	

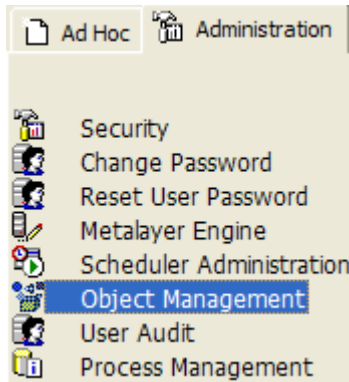
Delete Jobs

Select a row in the *Job Definition* table and either click  from the toolbar or right-click the row selected and select **Delete Row**.

Lipid Profile Report	
Run Job	F5
Scheduler Wizard	
Delete Row	
Add Task	
Collapse Rows	

Lesson 5: Object Management

Overview



Object Management provides a workspace for managing Analytics objects, tying search objects to other objects as well as managing object categories.

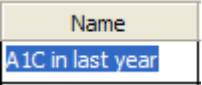

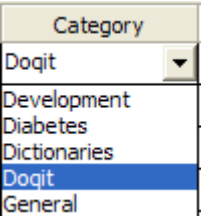
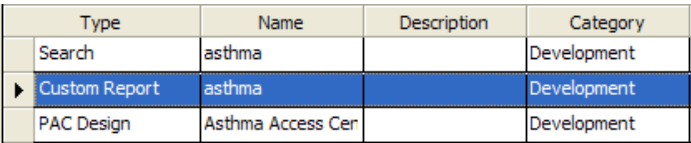

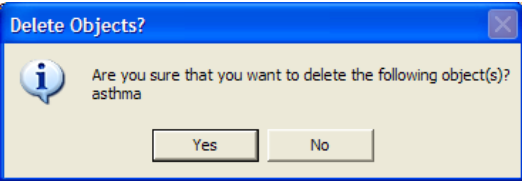
Double-click **Object Management** from the *Administration* tab.

Managing Objects

Analytics objects can be edited or deleted within the Object Management workspace.

Step-by-Step: Managing Objects


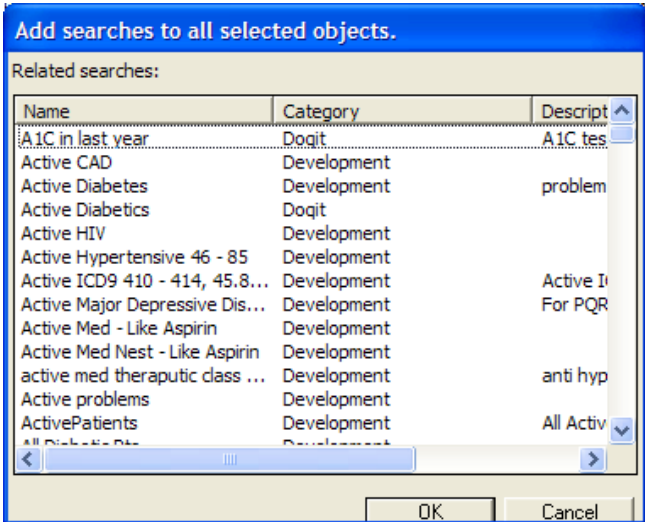

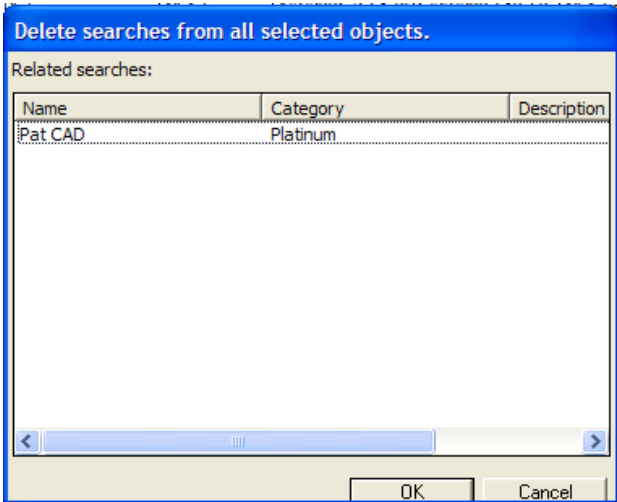
Step 1: Step 1: Managing Objects

1	Each cell contained in a row of information for an object is editable. Columns such as Name and Description are textboxes that can be modified via double-click.	
2	Columns such as Category and Owner can be modified by choosing an item in the dropdown in the cell. After modifying object information, click  in the Object Management toolbar	
3	To delete an object, select the appropriate row(s) from the <i>Objects</i> table.	
4	Click  from the toolbar. Click Yes when prompted to delete the object.	

Link/Unlink Search Objects to other Objects

If an existing Search is used to populate data in an object (Worksheet, Chart, Crosstab Analysis or Custom Report), the Search (or multiple searches) can be linked to a particular object. This can save a user time when needing to populate information as fast as possible. It is also possible for an administrator to un-link a search from an object if necessary.

Step-by-Step: Link/Unlink Search Objects

1	Select the appropriate row from the Objects table that is not a Search Type (Worksheet, Chart or Custom Report).	<table><tr><th>Type</th><th>Name</th><th>Description</th><th>Category</th></tr><tr><td>Search</td><td>asthma</td><td></td><td>Development</td></tr><tr><td>▶ Custom Report</td><td>asthma</td><td></td><td>Development</td></tr><tr><td>PAC Design</td><td>Asthma Access Cer</td><td></td><td>Development</td></tr></table>	Type	Name	Description	Category	Search	asthma		Development	▶ Custom Report	asthma		Development	PAC Design	Asthma Access Cer		Development
Type	Name	Description	Category															
Search	asthma		Development															
▶ Custom Report	asthma		Development															
PAC Design	Asthma Access Cer		Development															
2	<p>To link a search to an existing object, click  from the toolbar to load the Add searches to all selected objects dialog box.</p> <p>Select a search object(s) form the Related searches list.</p> <p>Use the Ctrl or Shift keys to select multiple Search objects.</p> <p>Click OK.</p>																	
3	<p>To un-link a search to an existing object, click  from the toolbar to load the Delete searches from all selected objects dialog box.</p> <p>Select a search object(s) form the <i>Related searches</i> list.</p> <p>Use the Ctrl or Shift keys to select multiple Search objects.</p> <p>Click OK.</p>																	

Edit Categories

Each time an object is saved to the database there are two pieces of information required: an object name and category. The list of categories available to users can be modified using the **Edit Categories** dropdown within the Object Management workspace.

Edit Categories ▼

Object Categories		
Category	Sequence	Active?
Development	2	Yes
Diabetes	5	Yes
Dictionaries	4	Yes
Doqit	6	Yes
General	1	Yes
Gold	3	Yes
OLD	8	No
Platinum	7	Yes
PQRI	9	Yes

Add Delete Cancel

Step-by-Step: Add a Category

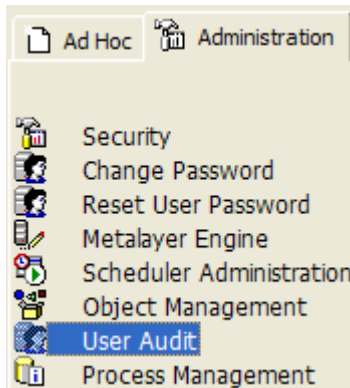
1	Click Add from <i>Edit Categories</i> .	Edit Categories ▼																					
2	<p>Enter a category name, sequence and if the category is active. Sequence will place the list of categories in a particular numbered order.</p> <p>Click OK.</p>	<table border="1"> <thead> <tr> <th>Category</th><th>Sequence</th><th>Active?</th></tr> </thead> <tbody> <tr> <td>General</td><td>1</td><td>Yes</td></tr> <tr> <td>Gold</td><td>3</td><td>Yes</td></tr> <tr> <td>OLD</td><td>8</td><td>No</td></tr> <tr> <td>Platinum</td><td>7</td><td>Yes</td></tr> <tr> <td>PQRI</td><td>9</td><td>Yes</td></tr> <tr> <td></td><td></td><td></td></tr> </tbody> </table>	Category	Sequence	Active?	General	1	Yes	Gold	3	Yes	OLD	8	No	Platinum	7	Yes	PQRI	9	Yes			
Category	Sequence	Active?																					
General	1	Yes																					
Gold	3	Yes																					
OLD	8	No																					
Platinum	7	Yes																					
PQRI	9	Yes																					

Step-by-Step: Delete a Category

1	Select a category from <i>Edit Categories</i> .	Edit Categories ▼
2	Click Delete .	Delete

Lesson 6: User Audit

Overview



User Audit provides a workspace for administrators to review all activity for any user utilizing the Analytics application.

Double-click **User Audit** from the *Administration* tab.

The User Audit workspace is separated into three sections. The top section lists all user settings, the middle section is for defining audit options while the bottom section lists the audit results.

User Audit

File Action Help

Collapse Rows

User Settings								
User Name	Max Rows	Query Limit (In seconds)	Password Change (In days)	Force password change?	Log Search?	Log Worksheet?	Log Analysis?	Log Custom
▶ All Admin	0	0	0	No	Yes	Yes	Yes	Yes
Jim Bresee	0	0	0	No	Yes	Yes	Yes	Yes
John Altermatt	0	0	0	No	Yes	Yes	Yes	Yes
Kevin OBrien	0	0	0	No	Yes	Yes	Yes	Yes

Options

From: 06/19/2007 To: 06/19/2007

Select users to audit:

- All Admin
- Jim Bresee
- John Altermatt
- Kevin OBrien

☒ Show Search Audit?

☒ Show Worksheet Audit?

☒ Show Analysis Audit?

☒ Show Custom Reports Audit?

User Audit

Users

User Name

▶ All Admin

Worksheet Stats					
Date	Network Login	Computer Name	IP Address	Worksheet Name	
6/19/2007 9:57:02 AM	HP17676297873\Ad	HP17676297873	172.19.7.163	(Ad-hoc)	+
6/19/2007 9:58:02 AM	BVTUVM6\Administr	BVTUVM6	172.19.7.142	(Ad-hoc)	+
6/19/2007 10:41:48 A	BVTUVM2\Administr	BVTUVM2	172.19.7.210	(Ad-hoc)	+
6/19/2007 10:42:24 A	HP18515684732\Ad	HP18515684732	172.19.7.162	(Ad-hoc)	+
6/19/2007 10:43:14 A	BVTUVM4\Administr	BVTUVM4	172.19.7.211	(Ad-hoc)	+
6/19/2007 10:44:39 A	BVTUVM12\Adminis	BVTUVM12	172.19.7.209	(Ad-hoc)	+

Modifying User Settings

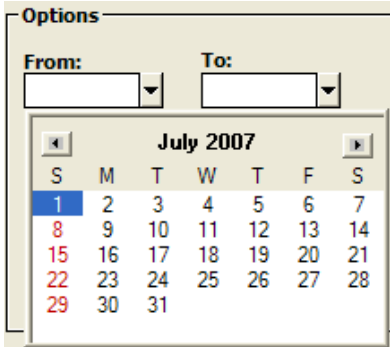
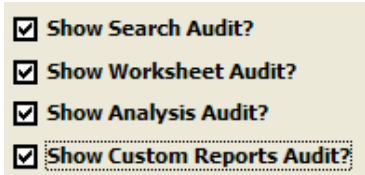
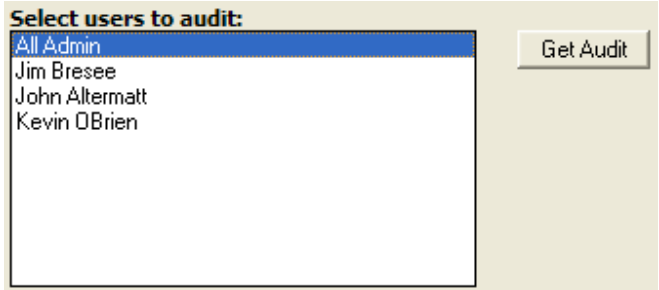
There are additional user settings that can be set within the **User Audit** workspace.


Max Rows – the maximum number of rows that a user can return within an object.


Query Limit – set a maximum amount a time (in seconds) that a query can run against the database.

Password Change – set the number of days a password is active before the user is forced to change.

Step-by-Step: Running an Audit Report

1	Within the Options section of the User Audit workspace, select a From and To date to determine the date parameters for the audit report.	
2	Select one or more objects to include in the audit.	
3	<p>Select a user(s) to audit in the report.</p> <p>Use the Ctrl or Shift keys to select multiple Search objects.</p> <p>Click Get Audit.</p>	

Click  next to a line item to view details.

User Name	Worksheet Stats				
All Admin	Date	Network Login	Computer Name	IP Address	Worksheet Name
	6/19/2007 9:57:02 AM	HP17676297873\Ad	HP17676297873	172.19.7.163	(Ad-hoc)

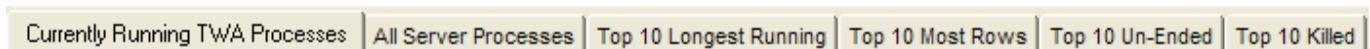
Lesson 7: Process Management

Overview



Process Management provides a workspace for administrators to review all process activity.

Double-click **Process Management** from the *Administration* tab.



The tabs above allow the administrator to review processes that are running currently, running the longest, returning the most rows of data from the database as well as the most often “killed” processes.

Managing Processes

The following are options for an administrator to help manage processes in Enterprise EHR Analytics.

	Delete a selected running process. Only available within the <i>Currently Running TWA Processes</i> tab.
	Refresh the currently selected tab.
Top: 10 User (All Users) Start Date End Date	Filter the list of items by number of rows (Top), User and Start/End Date . Only available within a tab labeled with <i>Top 10</i> .
	Copy a selected process's SQL code to the clipboard.
Export All Selected Values	Export rows of information to an external file.
E-mail All Selected	Email rows of information to necessary users.