

R E L E A S E

9.2.6

JReview®

Exploring Clinical  
Data using JReview



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# Introduction

---

## *What is JReview?*

JReview is the web-enabled version of Integrated Review. It allows users to view, create, print, and interact with their Integrated Review objects locally on an Intranet or securely over the Internet. JReview can be run in two different modes of operation (authoring and non-authoring) in addition to two modes of communication (clear-text and SSL).

- Plaintext Non-authoring
- Plaintext Authoring
- SSL Non-authoring
- SSL Authoring

---

## *Authoring versus Non-Authoring*

Non-authoring mode of JReview presents a run-time, read-only environment for browsing and re-executing IReview objects. While the objects will interact as they would in IReview or authoring JReview, the user has no control over the specific object definitions. This mode is preferable when either trying to restrict how the data can be reviewed (e.g. using a library of validated objects) or when the end-user does not need to know the intricacies of creating objects.

The authoring mode of JReview allows the creation of most kinds of objects (reports, graphs, crosstabs, patient profiles, etc). Objects are completely compatible across Integrated Clinical Systems' products. which currently include Integrated Review (IReview), and JReview.

JReview authoring mode supports the creation of nonformatted reports, cross tabs, shift tables, graphs, Patient SelectionCriteria, Workbook and Graphical Patient Profiles. Advanced authoring areas were added in version 9.0.3; such as Alerts, New Ranges, New Items, Pivot Panels, Import SQL and Graphic Patient Profile Template authoring have been added with version 9.0.3.

JReview can run as a Java™ 2 applet or Java Webstart application (requiring Sun Java 2 Plug-in version 1.4.2+) and execute under Microsoft Internet Explorer, Mozilla Firefox and other browsers supporting the Java Plug-in. Because of its platform-independent design, JReview also runs under Apple Mac OS X and potentially Sun Solaris, and Linux. The Sun Java Plug-in can be installed such that does not impact the default browser JVM.

Object Type Support	Non-Authoring	Authoring
Patient Profile Workbook	X	X
Formatted Patient Profile	X	X
Graphic Patient Profile	X	X
Detail Data Listing	X	X
Summary Listing	X	X
Formatted Detail Data Listing	X	X
Formatted Summary Listing	X	X
Patient Visit Data Report	X	X
Detail Data Graph	X	X
Summary Graph	X	X
CrossTab	X	X
Shift Table	X	X
SAS Proc	X	Basic
SAS Program	X	X (SAS Program Management – future release)
Alerts	X	X
New Range, New Items, Pivot Panels, Import SQL	X	X
Dashboard	X	X

**Intuitive** to use; no programming knowledge required.

**Direct and immediate access to data** stored in existing clinical database systems.

**Patient Selection Criteria**; select the project, studies, and data types, and focus on data values, ranges, and populations by clicking on the appropriate clinical trial data, operators, and values in the Patient Selection Criteria window.

**Multiple selections of data across different time periods.**

Patient Listings, Panel Views of subject data, CRF images and Audit Trail accessible from the **Data Browser**. Post notes on Patient data for private use or to share and interact with colleagues, in the **Notes Browser**.

Detail and Summary reports, formatted reports, and Patient Visit Data reports cross panels from the **Report Browser**.

**Patient Profiles Browser**; generate tabular profiles in spreadsheet and formatted displays available for export to PDF, HTML or Excel spreadsheets.

Create time oriented graphical displays (days on drug) with **Graphic Profiles** with duration bars for AEs, Concomitant Meds, Dosage, etc. Display line and trend plots for Labs and Vitals with normal range color region high/low normal symbols. Generate PDFs directly.

**CrossTab Browser** of multi-dimensional clinical data analysis capabilities to identify patients underlying patient counts within cells. Specify 'Percent Denominator' for all patients or subset populations with CrossTabs and Shift Tables.

**Graph Browser** provides line charts, scatter plots, bar charts, and frequency distributions. **Patient identification** supported within graphs.

**ALERTS Browser**: sweeps data for the occurrence of specified event or if specified criteria has been met.

**Risk Assessment Analysis** to evaluate the 'distribution' of patients when investigating different Adverse Events.

**Patient Narratives Browser** for Medical Writers to define narrative templates, create narrative and track review process for edits.

# Installing the application

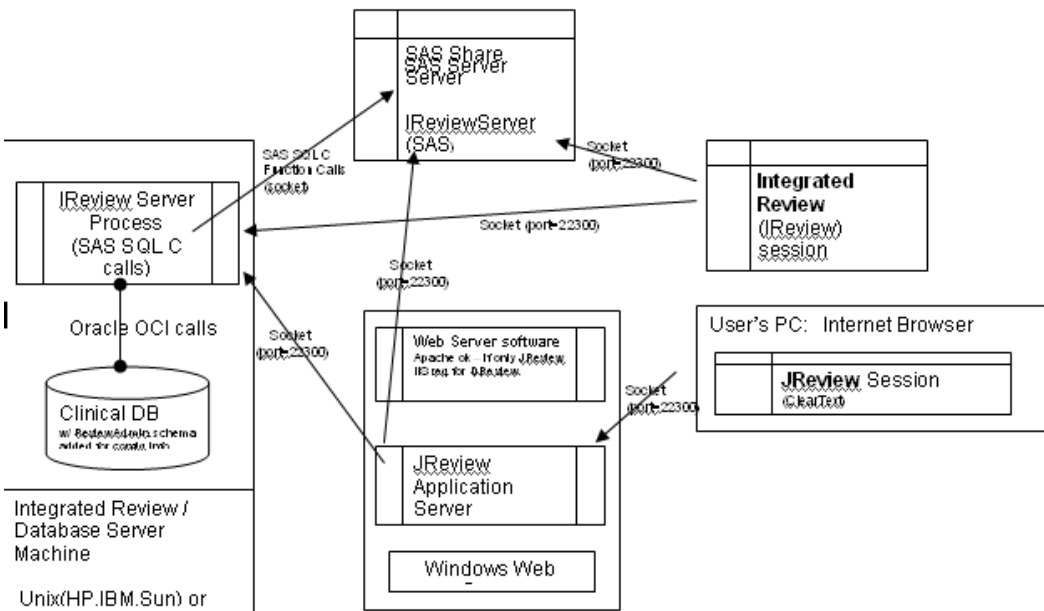
## JReview Setup/Install

*Refer to the JReview Application Server Installation and Administrator Guide. This document assumes you are the end user and details how to use the application functions.*

The setup/install is best executed from Microsoft Internet Explorer (although JReview™ runs equally well under Microsoft and Netscape browsers). Internet Explorer affords better automation of the JRE install through it's ActiveX interface. You may use Internet Explorer to perform the setup/install and subsequently use Netscape to execute JReview™ if you wish.

The setup/install procedure must be performed on any PC or laptop from which JReview™ execution is desired. This procedure may be required once every 6 to 12 months for release updates. This procedure can be invoked from your web server or from CD.

## Integrated Review™ and JReview® Architecture



When you are ready to conduct JReview client access tests we recommend progressing from simple access testing to more complex production environment testing. *Detailed steps are provided in the [JReview Application Server Installation and Administrator Guide for Trouble Shooting Client Access](#).* There are three phases to these tests:

1. Invoking the JAS as an application on your Web Server desktop and testing JReview client access directly on the Web Server.
2. Invoking the JAS as an application on your Web Server desktop and testing JReview client access from a desktop representative of your JReview user's environment.
3. Optional installation of the JAS as a Windows Service on your Web Server and testing JReview client access from a desktop representative of your JReview user's environment.

*Contact your IT support personnel or server administrator for assistance with problems accessing the JReview application.*

Any other logon/JReview start-up options (e.g. autologon, single-signon) may be provided and are custom to the JReview customer's web portal and the responsibility of the JReview customer to document since they create the portal.

Therefore, the JReview users have 4 possible links and at most TWO at their installation; Auth & non-Auth Plaintext links (aka clear-text) OR Auth & non-Auth SSL links. Most likely, JReview users will only see ONE link depending on whether their JReview admin allows them Authoring or non-Authoring mode.

- 
- If this is your first time running JReview, please click [HERE](#).
  - Or try our [Troubleshooting page](#)!
- 

## Which version of JReview would you like to run?:

[Plaintext Non-authoring](#)

[Plaintext Authoring](#)

[SSL Non-authoring](#)

[SSL Authoring](#)

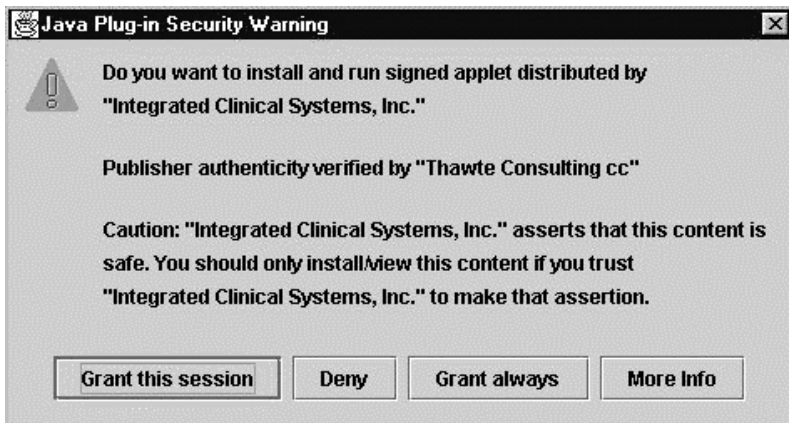
---



*Note: SSL JReview users only have the "Secure JReview Access over the Internet (1st time Java(tm) Plug-In download from the ICS's site)" link on their JReview Splash pages as the link they use to start JReview.*

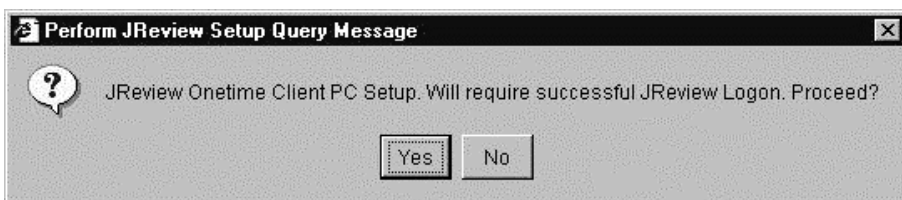
If you need assistance with the JReview Installation, click on the **Troubleshooting page**. Choose defaults or options specified by your PC administrator. (The install process requires 25M free on the C: drive, but results in use of 5 - 7M.)

4. On some machines, a reboot is required after the Java Plug-In install. If that is the case, after reboot, **reload the JReview™ Web page and press the same JReview™ Setup/Install link again**. Once the plug-in install is complete, the process will continue with the install of the JReview™ support JAR. The screen will briefly show:
5. Verify that Integrated Clinical Systems, Inc. is the distributor, then choose **"Grant Always"** to allow JReview™ to install it's components.



If you are installing from your web site, the following dialog box opens. Answer **"Yes"**.

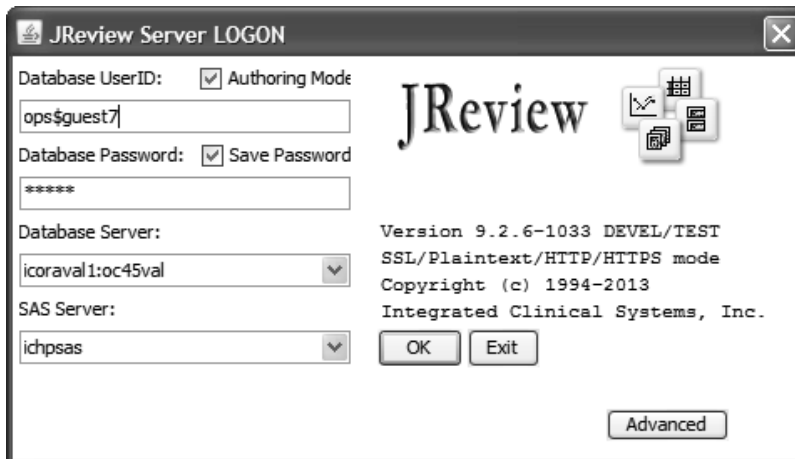
A similar confirmation will occur for installs from CD. The system will check to ensure that the support JAR is indeed necessary



A JARs program runs a signing certificate to prompt the user with a dialog asking to accept the signing certificate.

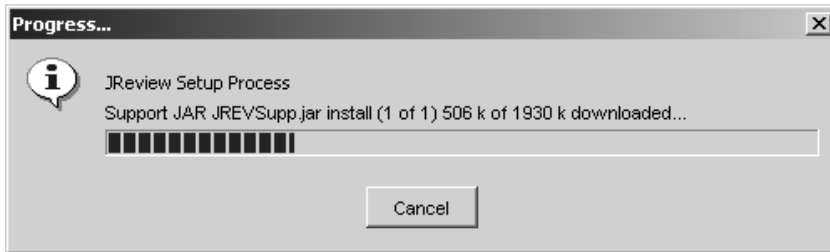


If you are installing from your web site, you will need to successfully login through the JReview Server LOGON window. Enter information provided by your administrator and press "OK".



If you are installing from a CD, a JReview™ Setup Progress Bar will appear. Successful execution of the JReview install applet will display showing the progress of the JReview™ Support JAR install. **DO NOT** interrupt the progress.

6. Execute the JReview applet through your Website JReview page. All subsequent access can be through that link.



If you entered incorrect information, or if the JReview™ Server Process is not running or is inaccessible, an error message may display. If such errors occur, see "Trouble Shooting" section and contact your system administrator for assistance.



When the JReview™ setup/install process is complete and successful, the following dialog box will appear. Follow the instructions and exit all of your internet browser sessions. You are now ready to run JReview™ from your link on your web site as directed by your administrator.



---

## Starting the application

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### Logging on

Go to your JReview Web site's home page. The login dialog can vary between sites based on the installation. The following is being shown as a typical installation.

1. Select your JReview link (SSL for normal Internet use, Clear-text for LAN/in-office use). Authoring versions are available if you have permission to create and save objects in JReview™.



---

### Which version of JReview would you like to run?:

[Plaintext Non-authoring](#)

[Plaintext Authoring](#)

[SSL Non-authoring](#)

[SSL Authoring](#)

2. Enter your web server logon information.



Connect to www.jreview.com

www.jreview.com

User name:

Password:

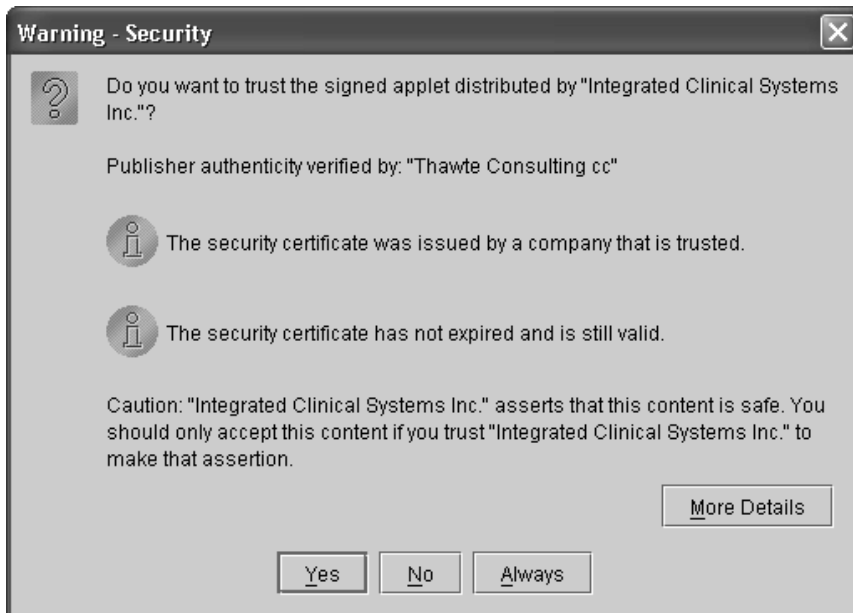
Remember my password

OK Cancel

3. If your web server is protected, enter your web server logon information.



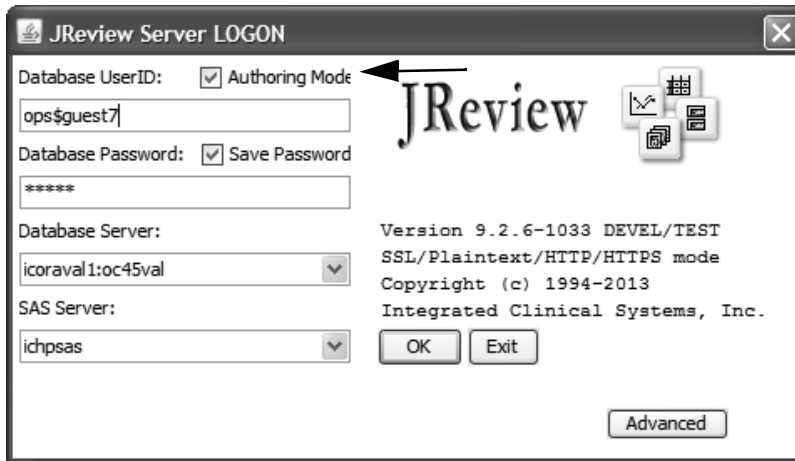
4. Click **Yes** to the Security Warning.



5. Enter your Database UserID, password and server names (and instance ID where applicable), to connect to the appropriate Database and SAS servers, using the tab key to move from field to field.

The **Authoring Mode** checkbox overrides any link request. There is a checkbox to Save Password.

The Database UserID and Password are the same as your IReview entries.



6. Click **OK**.

---

### *Database and SAS server*

The Database and SAS server hostnames or IP addresses in the JReview LOGON screen default to 'localhost'. Using localhost in these two fields tells the JRserver the clinical database is running on the Web server (an unlikely setup). Your administrator should provide the Database and SAS IP addresses or hostnames for access to your clinical data. They will be the same addresses used in the IReview LOGON screen.

The Database and SAS server entries have the hostname or IP address of the machine(s) running the Oracle instance for your clinical data project (Oracle Server IP) and the IP address of the machine to run SAS jobs (SAS Server IP) if applicable. Therefore, they are the same as the IReview LOGON settings.

---

### *Choosing an ORACLE database*

By default, JReview™ connects to a default ORACLE instance on the specified server. You can specify the instance ID of another ORACLE instance from the client application.

If you want to access an ORACLE database other than the default database that you normally connect to, add the specified database identifier (ORACLE SID) to the end of the ORACLE Server name separated by a colon (:) in the text entry box within the opening Logon dialog box. If the Oracle instance is not the default instance, specify the instance with a colon prefix: **172.16.0.172:oracle8**

---

### *JReview Server*

The JReview server is the IP address or Domain name of the machine running the JRService process. A default of blank indicates that the Web server is running the JRService/JRServer process. If JRService/JRServer is NOT running on the Web server where you loaded JReview, enter the IP address or Domain name of the machine running the JRService process as the IP address. **Most installs require the JReview Server to be blank.**

---

## NODE UserID

When you log into Review, you will need your UserID and Password, as well as the server name and database instance. However it is necessary the each JReview client has a unique NODE UserID. Select the Advance button to designate a unique NODE UserID.

JReview Server LOGON

Database UserID:  Authoring Mode  
ops\$guest7

Database Password:  Save Password  
\*\*\*\*\*

Database Server: Port:   
icoraval1:oc45val ping

SAS Server: Port:   
ichpsas ping

JReview Server:  SSL Socket Mode  ICSPProxy mode  
www3.jreview.com ping

JReview Port Number:   
22301

NODE UserID:   
ops\_guest7

Version 9.2.6-1033 DEVEL/TEST  
SSL/Plaintext/HTTP/HTTPS mode  
Copyright (c) 1994-2013  
Integrated Clinical Systems, Inc.

Proxy IP/Name:   
Proxy Port:   
80  Use Proxy  Detect Proxy

Debug

---

## Wrong password?

If you have entered an incorrect or invalid Database user ID or Database password, the application notifies you after you click **OK**. Review requests that you enter a valid user ID and password.

You are allotted three incorrect entries before the application denies access.

- We recommend that you dedicate an internet browser session to JReview. Open up another session if you want to browse other web pages. Moving to and from the JReview web page will cause JReview to logout and present the login screen.
- We suggest that you use JReview's File -> Exit to leave JReview (although exiting the browser or leaving the JReview web page should achieve the same result). After exiting JReview, the browser will show a blank screen and is ready for the other web browsing.



- If you wish to logout and login again to JReview, use JReview's File -> Exit. After pressing "OK" to shut down JReview, press your browser "Refresh" or "Reload" key. This should redisplay JReview's logon screen without exiting the browser.

---

### *Change password*

If a user changes their password in the CDMS and they have scheduled jobs in JReview, and they do NOT login to JReview to force the password change through to the jobschedule table; then the reporting server process continually tries to run that job and login with the incorrect password. Eventually this could lock out the user from the database due to too many failed login attempts.

The user needs to login to JReview after changing their password to have the password change propagated through to the scheduling table. However, this current behavior could be changed in the future to eliminate the need to do that or at least not have this process try so many times that the user/password gets locked.

---

### *Trouble shooting*

This section describes potential difficulties you may initially encounter attempting to use JReview. Please review these suggestions and if problems persist, contact Integrated Clinical Systems Technical Support.

*Problem:* I pressed the JReview Setup/Install link and I get "Your browser understands the tag but isn't running the applet, for some reason (Java Plug-In 1.4.2 not available?)."

*Remedy:* The Sun Java 2 Plug-in Version 1.4.2 did not install properly. For LAN/Fast connections choose the link "Press for JReview Setup/Install with Java(tm) Plug-In download from your Web site", for Modem/Slow connections choose the "Press for JReview Setup/Install with Java(tm) Plug-In download from Sun's site", and assure the plugin installs correctly. Reboot if asked to do so.

*Problem:* I installed the Sun Java 2 Plug-in, rebooted and pressed the "Press here to access JReview" link. I get "Loading Java Applet" then a gray screen and the message "Start: Applet not inited" in the browser status bar.

*Remedy:* You have not successfully downloaded/installed the JReview Support JAR. JReview client setup is a 2-step process; 1) Java 2 Plug-in install, 2) JReview Support JAR install. Choose the "JReview

Setup/Install link" you chose previously and allow JReview to download and install the Support JAR. Assure that you close all browsers after the support JAR download prior to accessing JReview.

*Problem:* I cannot successfully logon to JReview, I get "Opening SocketÖ", a delay, then a communications warning box. The JReview Logon screen is re-presented.

*Remedy:* Several conditions can be the cause:

- 1)The JReview Server process is not running on the web server.
- 2) You are trying to connect through a proxy server or firewall that prevents the socket connection. JReview installations without the Security Module/SSL and proper proxy server/firewall configuration will prevent JReview communications.
- 3) An Integrated Review Server process is not running on the host/ip you have entered in the Oracle Server field of the JReview Logon screen.

In all the above cases, contact your Web/JReview administrator. If he/she has difficulty correcting the problem, he/she can contact Integrated Clinical Systems Technical Support.

*Problem:* I've logged on to JReview and used it for a while when it seemed to freeze and presented a communications warning box.

*Remedy:* A communications or logic error has caused JReview/JRServer to suspend or abort the JReview client session. Close your browser and restart JReview. If the problem is reproducible, please record the steps to reproduce the problem and contact your Web/JReview administrator On-line Help and Integrated Clinical Systems Technical Support.

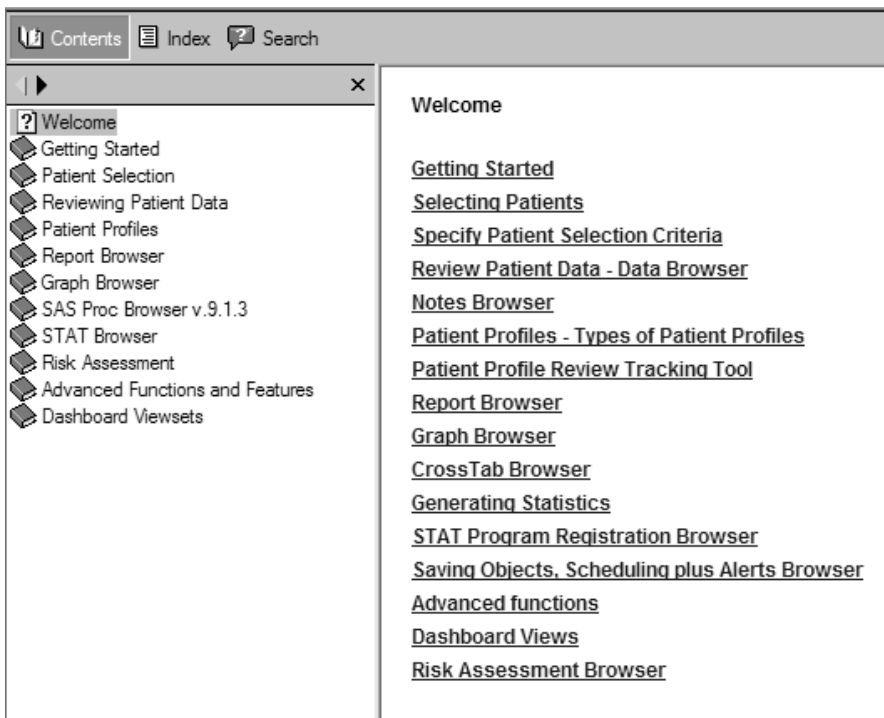
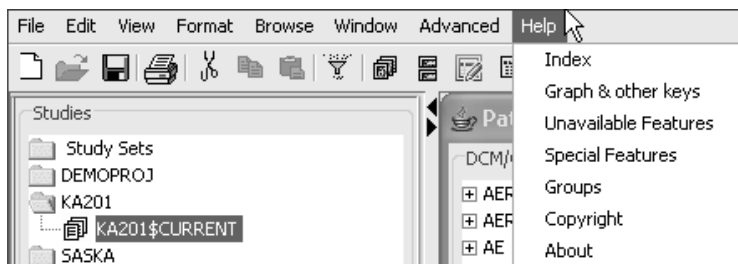
---

# Quick tour

---

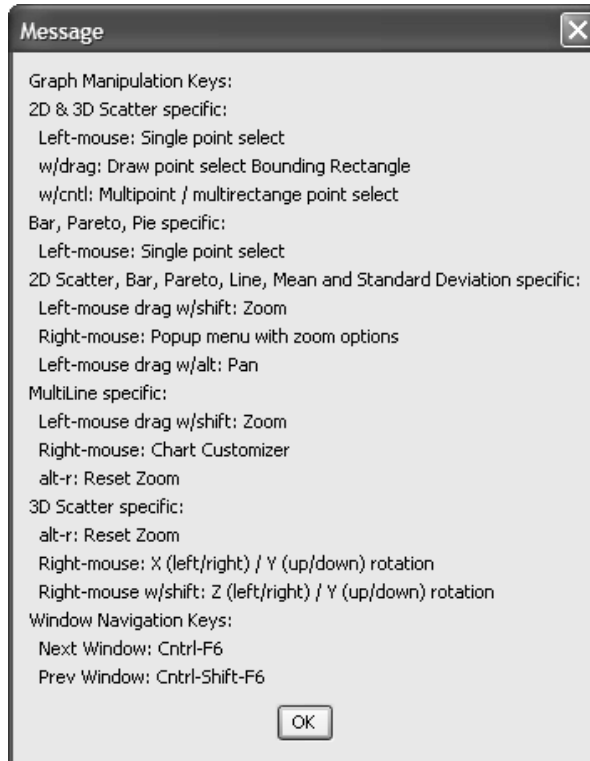
## On-line Help

Our system of **On-line Help** can be accessed by clicking **Help** from the Menu Bar and select **Index**.

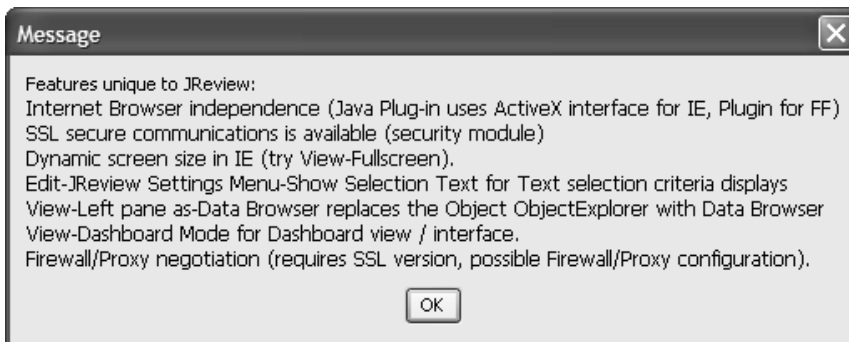


You can view information about application version, groups, products features and user tips by clicking on **Help** in the menu bar. Select choices from the drop down menu.

- Select to view information for **Graph & other keys**.



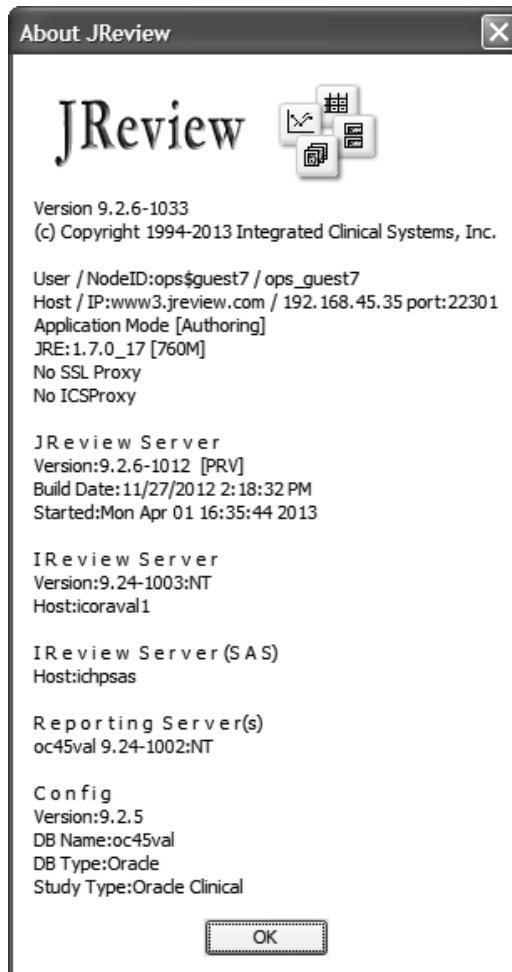
- Select to view information about **Special Features**.



- Select **Groups** to view information for UserGroup usage.



- Select **About** for JReview's client version information to help understand the environment for Customer Support Tickets.



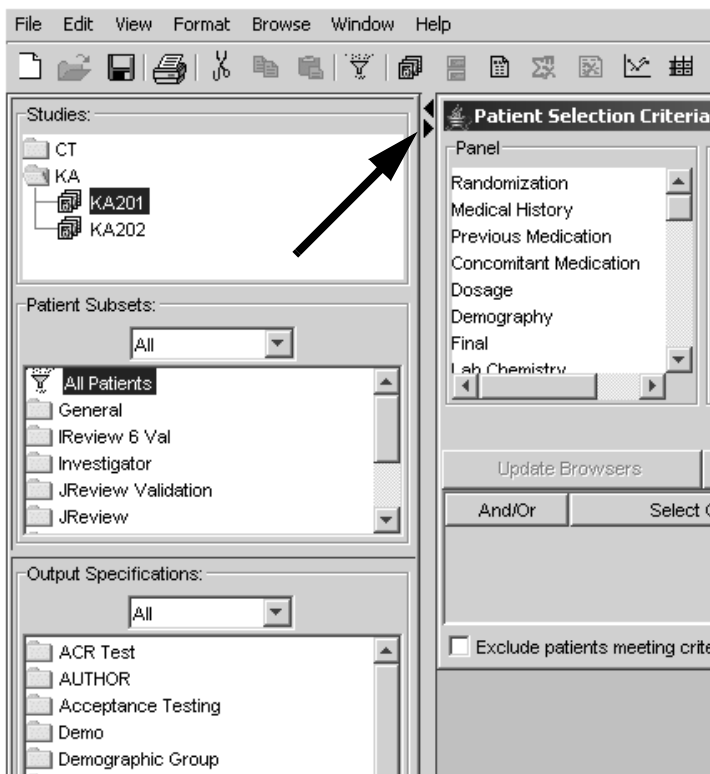
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## Main window

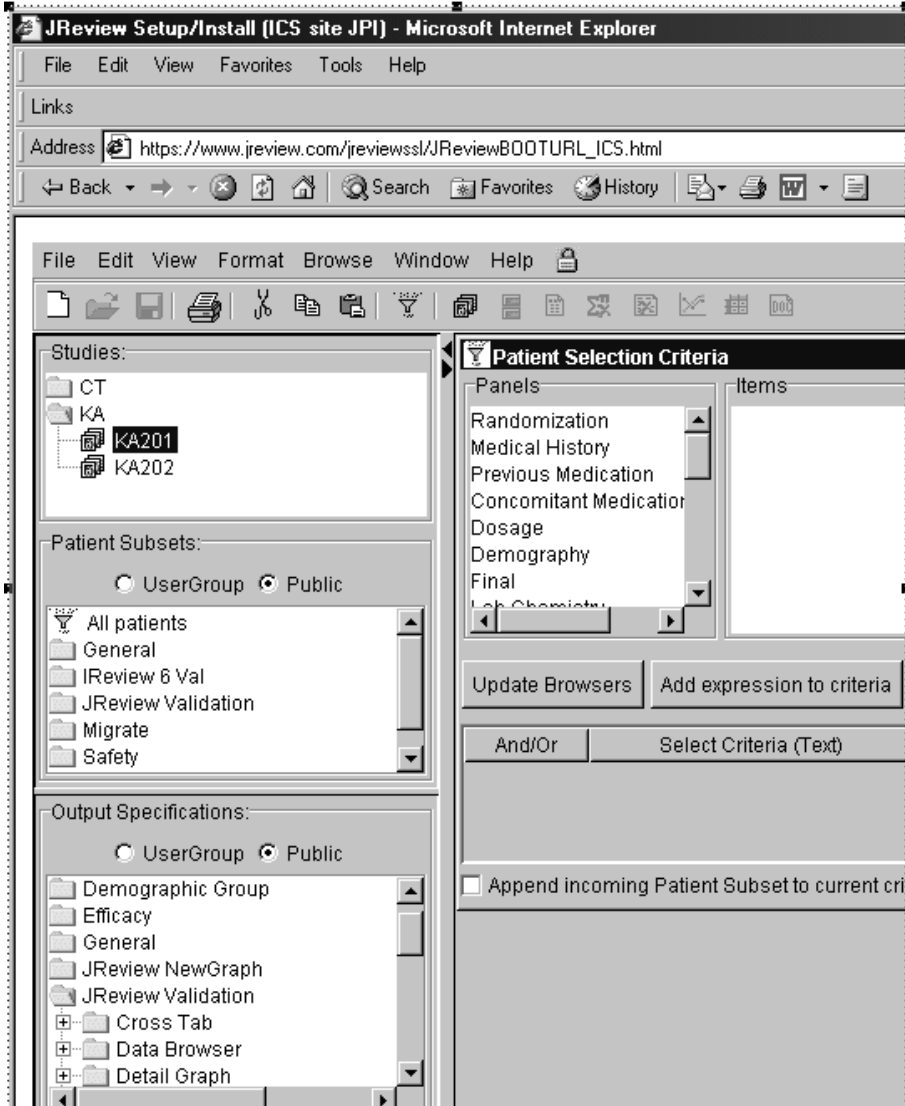
After you successfully log into the ORACLE database (on the computer storing your clinical data), the main window of JReview opens.

The Object Explorer Window is docked at the left side. The main split pane divider between the Explorer pane and desktop pane now can be re-sized with one touch expandable arrows. This allows you to quickly pan the divider left and right to decrease or increase the window area as needed.

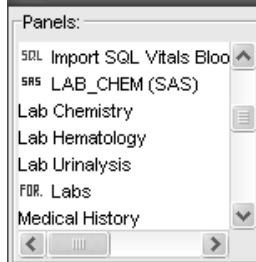
In the Object Explorer Window select a project, for example 'Drug KA' and protocol 'KA201'. JReview retrieves all previously stored Output Specification objects created and organized in folders.



*Note: SSL JReview has a little yellow lock in the JReview menu bar which isn't displayed in clear text JReview.*



To assist you, a colored prefix may be displayed in front of a panel or file name to identify the data source as SAS, SQL or FOR (Foreign).



The following chapters discuss the individual browsers used for building, modifying and saving Output Specification objects into folders viewed through JReview. Once the objects are saved, they can be quickly located and launched from within these folders in JReview. The results are displayed in the Output Specifications window and Patient Subsets window.

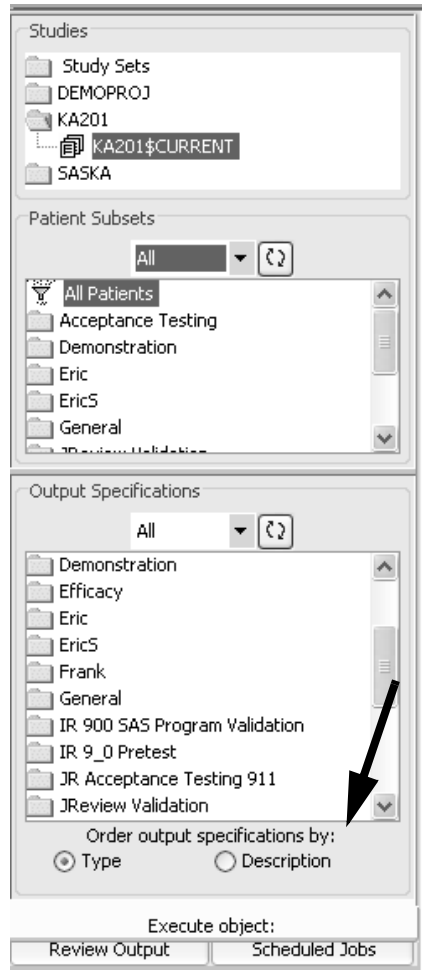
***Note: The individual who creates and saves an object definition has sole security to delete or modify it. SuperUsers have extended privileges.***

In addition, a browser icon displays along side the object description to quickly identify the various output results, such as Reports, Graphs, CrossTabs, Registered SAS Programs, etc. A filter icon lets you know that a patient selection criteria was saved with the output specification object. A red colored filter icon saved with the output specification object means the patient selection criteria is required for the output object. Patient selection criteria may also be saved as separate objects in the Patient Subsets window.

In JReview, the saved objects in UserGroup and Public levels are displayed from IReview. The stored Private level objects in IReview are not displayed in JReview.

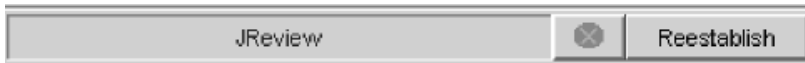


Once you selected a study(s) any saved objects are displayed in their designated folders under the Patient Subsets and Output Specifications windows. You can change sort for the Order Output Specifications to display by the icon type or object descriptions. Simply click on your preference to change the order display.



Once the application has started, you select your patient population. You can double click on a saved object in the Patient Subsets window or build your own Patient Selection Criteria. This topic is covered in detail in the next chapter.

When you initially open JReview or double click on a saved object to generate and display the results output window, a Communication's Progress window will briefly display. This feature is similar to the hour glass symbol typically seen when an application is in processing mode. The process bar is located in the far right corner of the tool bar. Use the 'X' icon to cancel a process. Click **Reestablish** if the connection is dropped.



Not all communication requests are processed in a separate thread. This means that JReview may appear to freeze momentarily upon certain requests. The progress bar will appear for all delayed requests.

JReview Preference options are available from the **Edit Menu** under **Preferences**. When you change a preference, the change is reflected for the duration of the session from that point forward.

The screenshot shows a 'Preferences' dialog box with the following options and descriptions:

- Use OUTER JOINS in Results: If enabled, a patient's data will be included in a Browsers results even if some panels of data are missing for that patient.
- Use FULL JOIN in Select Criteria: If enabled, full automatic joins, including patient, visit and observation joins are used in selection criteria. If disabled, only patient
- Display Panel Names: If enabled, Panel Lists will display the PanelName rather than the Panel Description.
- Display Item Names: If enabled, Item Lists will display the ItemName rather than the Item Description.
- Sort Panels Alphabetically: If enabled, Panel Lists will be sorted alphabetically, otherwise in order created.
- Sort Items Alphabetically: If enabled, Item Lists will be sorted alphabetically, otherwise they're in order created.
- Patient subset footer as text: If enabled, patient selection criteria displayed in print footers will be text, otherwise it will be SQL
- Suppress Panel Item Not Found Warnin...: If enabled, Panel/Item not found dialog will be suppressed when saved Report Output Specifications can be used.
- Include All Items
- Use Grayscale in Graphs: If enabled, graphs are drawn in grayscale instead of in color. This option is intended for users with a color vision deficiency.

At the bottom, there is a text field for 'Email address for alerts' containing 'jlong@i-review.com' and 'OK' and 'Cancel' buttons.

---

## ToolBar and Browser Menu Bar

You can access some functions through the Browser Menu Bar. Icons which cannot be accessed in JReview are disabled in the toolbar. For example, select **Print** for **printing** results output display. (See *individual chapters for printing instructions of output display*.)



**Caution:** Do not use the web menu bar to print. This will generate a system error.

The individual browser toolbar buttons are for creating and saving object specifications. These are the same browser icons displayed along side the stored object descriptions to identify the object type. The ToolBar buttons are as follows:



New: Clears the current specifications in the active area.



Print: Prints the specifications, spreadsheet, report or graph, or whatever is active.



Selection Criteria: Makes the Selection Criteria Window active. Returns to Main Menu in Review.



Data Browser: Starts the Data Browser.



Patient Profile Browser: Starts the Patient Profile Browser.



Patient Narratives: allows medical writers to access created patient narrative templates to enter and check out.



Report Browser: Starts the Report Browser.



Graph Browser: Starts the Graph Browser.



CrossTabs Browser: Starts the CrossTabs Browser.



Risk Assessment Browser: produces a risk difference or risk ratio output typically used to analyze adverse event data.



SAS Proc Browser: Starts the Statistics Browser in IReview only.



STAT Program Browser: Registered SAS Programs Library for immediate execution against selected patient populations in IReview only.



Notes Browser: Opens the Notes Browser.



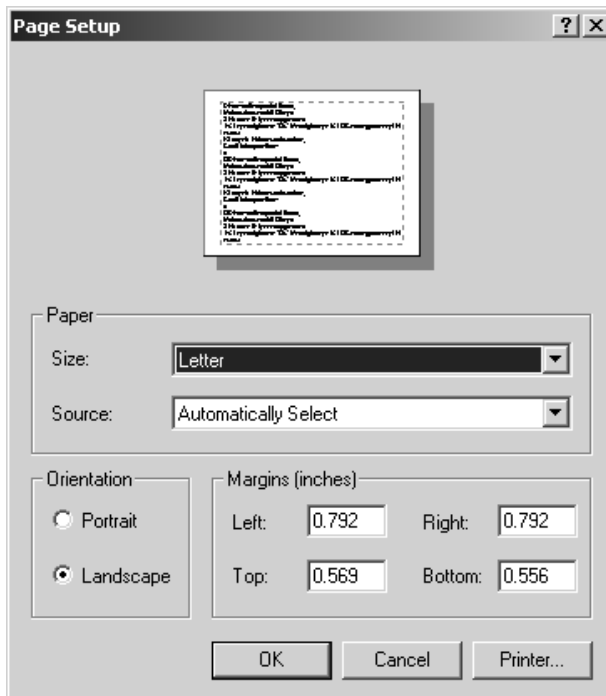
Alerts Browser: Starts the Alerts Browser.

To select an object to print, you must select its frame (make the titlebar blue). See the following suggestions and limitations.

**Caution:** Do not use the Internet Browser's Print button to print, use JReview's Print button or from the **File** menu, select **Print**.



1. Since landscaping printing can present problems, we recommend that you do not change printer orientation settings prior to printing (use the defaults).



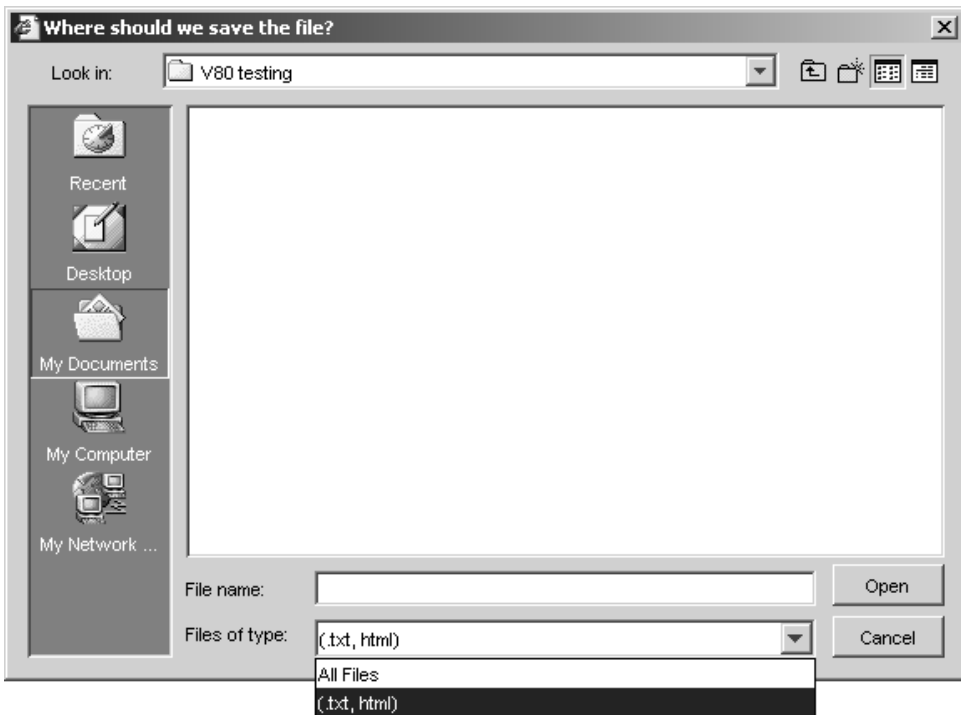
2. If your printer supports reducing the resolution of the printout, we recommend that you reduce the print resolution to 300 dpi. This will significantly speed the printing process.

- In Microsoft Internet Explorer, you may resize (or use View -> Fullscreen) the JReview session screen at anytime. In Netscape, you must resize the browser window prior to starting JReview.
- Most grid objects support copy and paste.

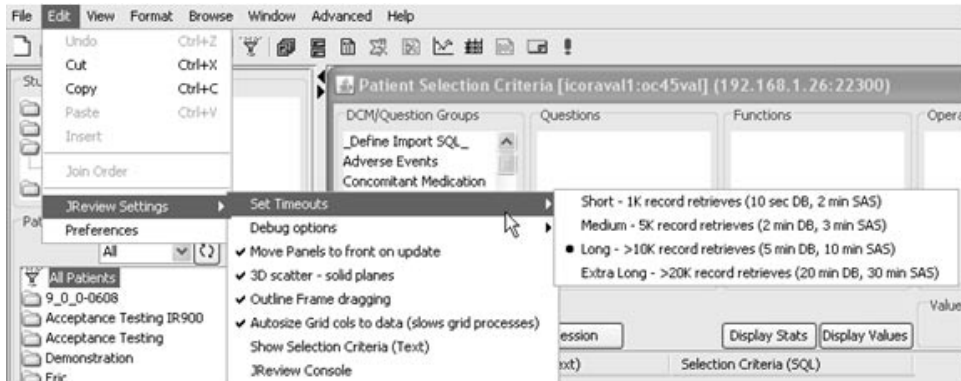
Use the mouse (click and drag) to highlight a range of grid cells, press CNTRL-C (or the copy toolbar icon) and copy the contents to other applications such as Excel. CNTRL-A will select entire grids in most cases.

Or

Use the mouse (click and drag) to highlight a range of grid cells, Select the **Edit** menu and click **Copy**.
- Exporting objects to native file formats is available. To select an object to export, you must select its frame (make the titlebar blue). Select the **File** menu and click **Export**. Select the file type and enter the file name with the appropriate file extension.



JReview execution and viewing options are available from the **Edit Menu** under **JReview Settings**. When you change a setting, the change is reflected for the duration of the session from that point forward.



- **Set Timeouts** – Controls the length of time JReview will wait for a request response from the server. Each timeout profile has two associated times; Database (DB) which refers to standard requests, and BATCH which refers to long-turnaround requests such as SAS jobs and any Formatted output. Default setting is “Medium”, but installations often set this to “Long” via JReview properties file.
- **Debug Options** – Production releases only have the “Debug msgs to your jr\_logs directory” option. This is a debugging assistance setting and should only be used if instructed to do so by your JReview administrator or Integrated Clinical Systems, Inc.
- **Move Panels to front on update** – If enabled (default), causes JReview to bring any open panels (from the Data Browser) to the front/top layer of the JReview desktop when a new subject is selected. Subjects can be selected from a variety of JReview objects including the Data Browser, Detail Reports and Graphs.
- **3D scatter – solid planes** – If enabled (default), causes 3D scatter plot to have solid surface planes. If disabled, points in 3D scatter plots will show through the planes so that points that may be hidden can be selected.
- **Outline Frame dragging** – If enabled (default), JReview will only show the outline of internal window frames as they are dragged or resized. If disabled, JReview will show (repaint) the contents of windows as they are dragged or resized (could be sluggish on some machines).



- **Autosize Grid cols to data** - If enabled (default), JReview will size column widths to data shown in spreadsheet-style reports (considers top 240 rows of data by default). If disabled, JReview will use a fixed size for the columns of a spreadsheet-style report. Older or slower client machines may present reports more quickly if this option is disabled.
- **Show Selection Criteria (Text)** – If disabled (default), JReview will show Select Criteria as SQL code in its “Who?” / PSC object queries. If enabled, JReview will show Selection Criteria Text returned from the server in its “Who?” / PSC object query dialogs.
- **JReview Console** - If selected displays the JReview Console window.
- **Test JPUT** - If selected use to test export function.



# 2

## *Selecting Patients*

---

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# Specify Patient Selection Criteria

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## *Review sub-populations*

Review is segmented into “Browsers” which allows you to build reports, patient profiles, crosstabs and graph clinical data. These objects are built and potentially saved with the ability to share with other. The separation of “Who” versus “What” is critical to Review and the “Who” is defined by the patient selection criteria. You are able to filter the available patient population from the selected protocols into sub-populations using the patient selection criteria. The patient selection criteria allows you to focus on these segregated sub-populations in the production of reports, statistics, patient profiles and graphs. This function supports the concept of the patient paradigm in that all information for the selected patients is available for display including multiple visit data.

If you do not specify a patient selection criteria, by default you have access to the whole patient population.

---

## *Focused analysis*

The patient selection criteria focuses Review’s analysis on the patient sub-population for all available data and doesn’t restrict the results to the individual data observations or visits of the patients to be analyzed. Another function, the Filter Output discussed in the next chapters is designed to focus on particular observations and visits. The Filter Output is another level of filtering used to restrict or select specific patient data for multiple visits, observations and Adverse Events. Access to the Filter Output function is located within each browser when you define your output specification. The patient selection criteria and filter output can be used in conjunction with each other or as individual functions to meet your needs.

The patient selection criteria you create can be saved by description and managed in folders for future use. The saved patient selection criteria are organized in your folders and displayed in the Patient Subsets Window for quick and easy access. If you do not specify a patient selection criteria, you have access to the whole patient population.

---

## Steps for Patient Selection Criteria

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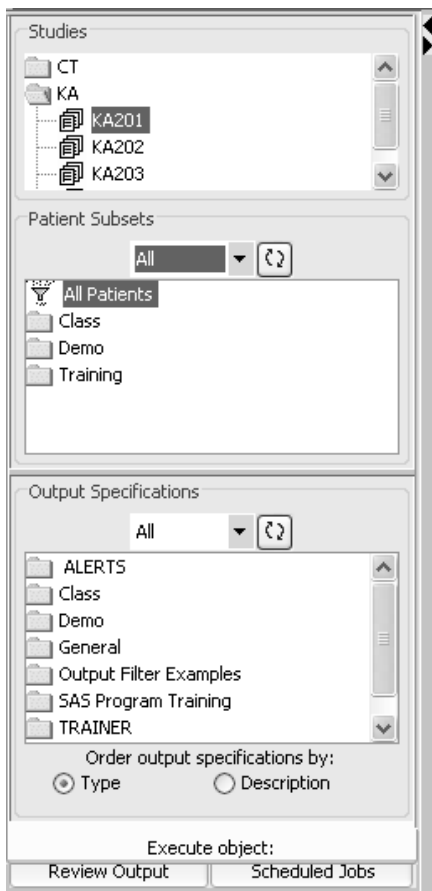
### *Select a project*

In the Object Explorer Window, select a study from the list of project folders by single clicking to open a study folder. As soon as you have selected one of the Projects, for example 'Drug KA', Review opens that project folder to display the protocols stored in your clinical data base.

---

### *Single-protocol mode*

You can click and select a protocol that you want to explore. If you click on one protocol, you are in single-protocol mode. The lists of panels and items that are displayed corresponds to all panels and items in that protocol.

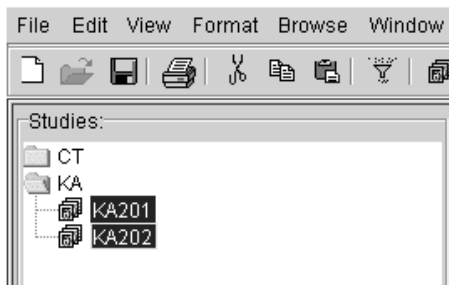


---

## Multi-protocol mode

If you select multiple protocols, you are in multi-protocol mode. The lists of panels and items that you see correspond to common panels and items between the protocols selected.

You can select multiple protocols in one of the following ways:



For contiguous protocols (protocols listed next to each other):

1. Click the first protocol.
2. Hold the shift key and mouse click and drag the cursor over the protocols you would like to review.

For non-contiguous protocols (protocols not listed next to each other):

1. Select the protocols you want while holding the **Ctrl** key.
2. Click each protocol you want to select.

*Note: In Browsers, the item StudyID, is used for protocol comparison.*

---

## Access to SAS datasets

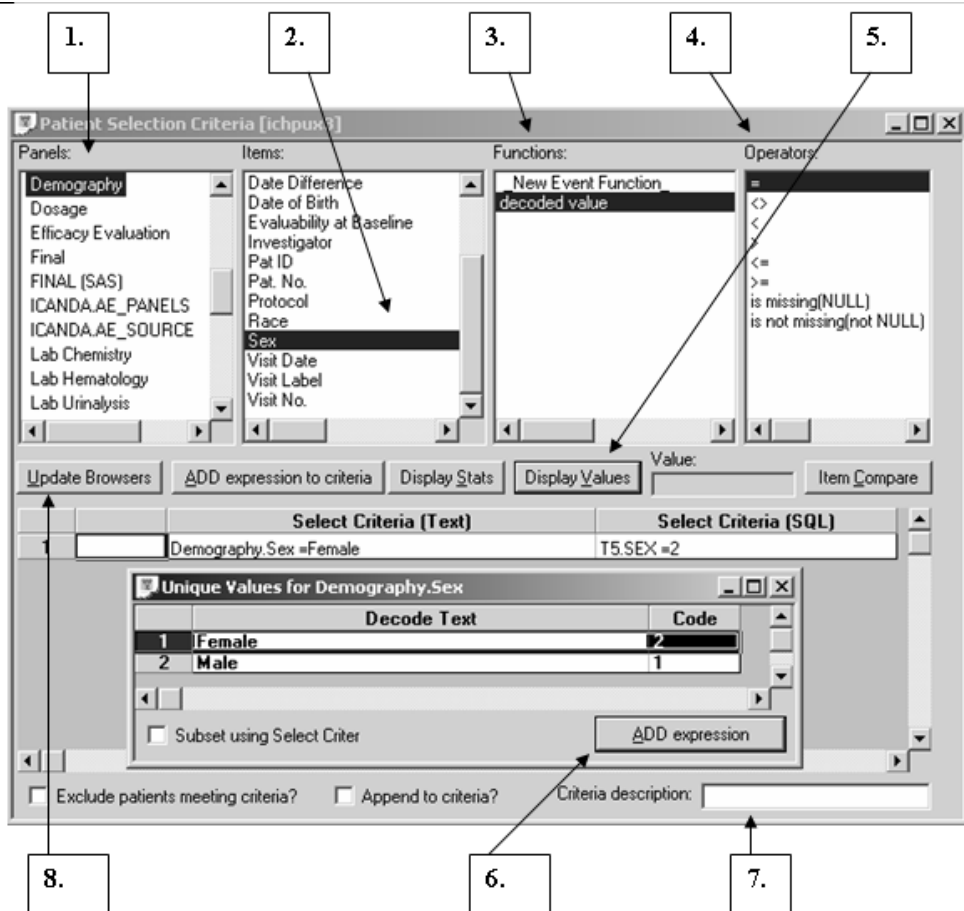
SAS datasets are listed with the panels generated from Oracle tables. Items from SAS datasets can be used like other items for patient selection criteria.

*Note: The current restriction is you cannot mix items from SAS datasets and Oracle table generated panels within the same patient selection criteria expression.*

---

## Steps for selection criteria

After you open a clinical project folder and select a study, you can subset your available patient population using the Patient Selection Criteria.



1. Select a Panel.
2. Select a Item.
3. Select a function.
4. Select an operator.
5. Enter a value or select a value from Display Values.  
Display Statistics (optional), Compare Items (optional).
6. Add expression to criteria.
7. Add criteria description (optional).
8. Update Browsers.



---

## Building criteria expressions

---

### *Criteria expressions*

Patient selection criteria are made up of logical expressions, such as 'AGE > 50', connected by Boolean operators, such as AND, ANDSELECT, or OR. You create these expressions by clicking on various listboxes.

Your goal is to build a patient selection criteria to describe the patient population that you want to explore.

There is a ReviewAdmin Config Options string for 'WARNMULTIABLEOR'. When present, the patient selection criteria issues a warning, with explanations of join logic behavior; if the user has included more than one table, and at least one 'OR' logical operator.

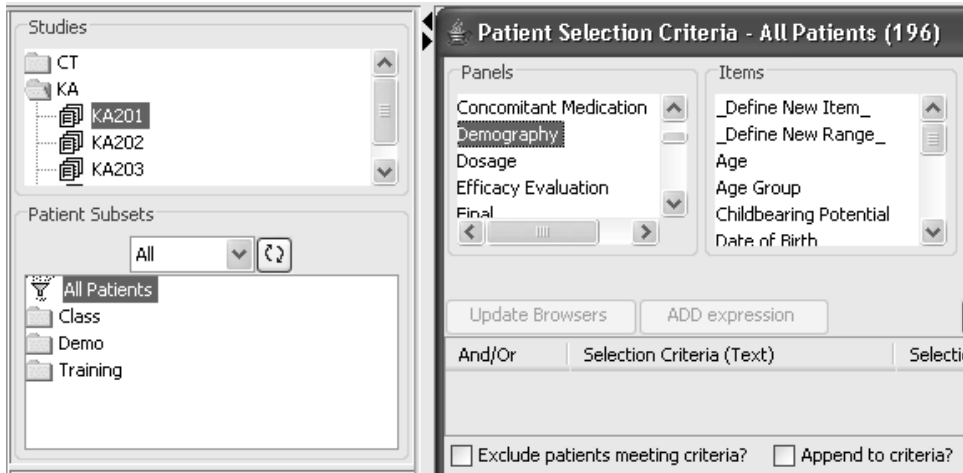
---

### *Selecting a panel*

Panels are logical groups of items for collecting and storing your clinical data, in an on-line representation of your case report form. The Panel you select determines which items are displayed in the item list, such as 'Demography', 'Final Report', and 'Vital Signs'. Each panel contains a group of data items, such as age, sex, race, and date of birth. For the protocol of interest, a panel of data in the database contains all data collected for all observations and all patients (as appropriate for the type of panel) in the protocol.

The first step in defining a logical expression is to select the panel that contains the item to be used in your expression, such as Demography. Panels and items are selected individually to define the selection criteria expressions.

1. Select the panel that contains the item to be used in your expression



---

### Selecting an item

After you have selected the Demography panel, Review retrieves and presents a list of all the items stored in the Demography Panel.

2. Select an item.
3. Select an operator.

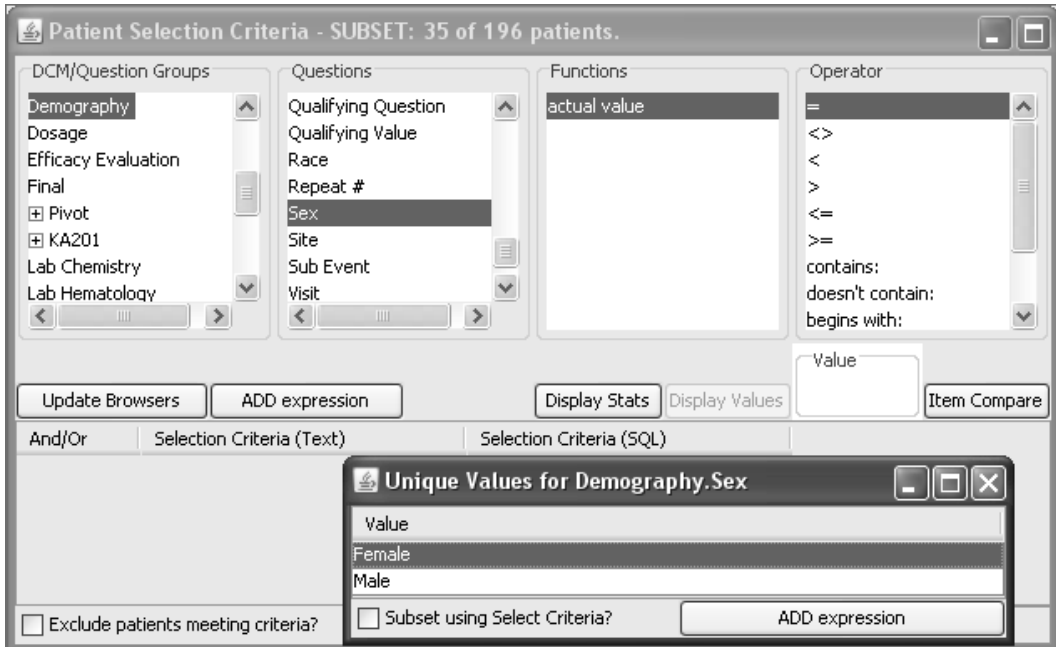
The list of Functions and Operators displayed will vary dependent upon the item's data type.

4. Click **Display Values**. Select the value and click **Add Expression to criteria**.

**Shortcut** - If you double-click on the single value of interest in the Unique Values spreadsheet, the expression is automatically added to the next available row in the Patient Selection Criteria window.

Close the Unique Values Window when you are through adding the expression to your selection criteria.

5. When you are through adding expressions to your selection criteria, click **Update Browsers**.



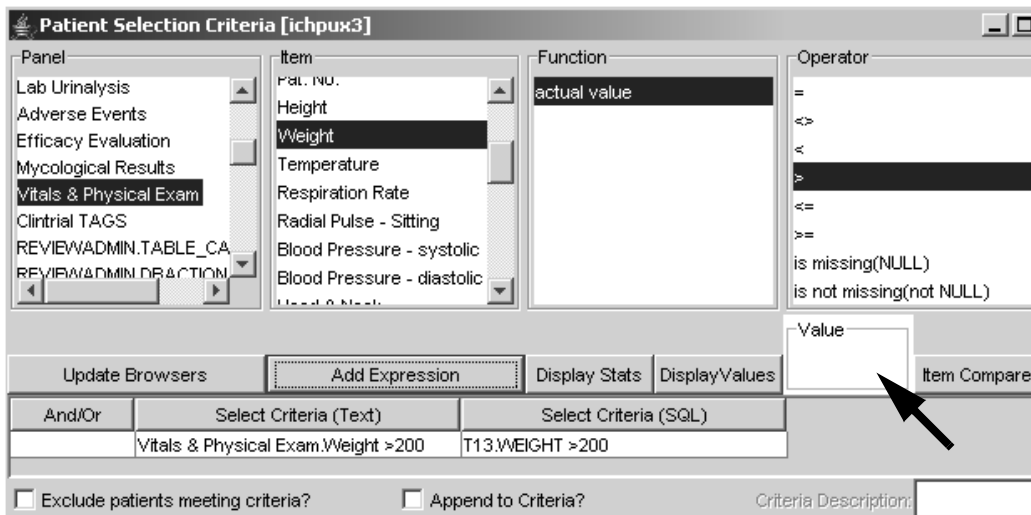
The SUBSET patient count displayed in the title bar is disabled by default, unless the System Administrator sets the ReviewAdmin configuration option for RETRIEVEPATIENTCOUNTS. This setting permits the Patient Selection Criteria header display to update, showing the number of patients in the current active selection criteria.



If you know the value that you want to specify in the expression, you can enter you can enter the value in the **Value box** and click **ADD Expression**.

1. Click on the panel that contains the data.
2. Click on an item.
3. Click on one of the default function values or user-defined functions.
4. Select a logical operator appropriate to the expression you are building, such as '=' or '>'.
5. Enter the value in the **Value box** and click **Add Expression**.
6. Click **Update Browsers**.

The expression is added to the next row of the spreadsheet containing the active **Patient Selection Criteria**. Repeat these steps if you want to continue to add more criteria expressions or click **Update Browsers** when done.



Your expression has been added in two different ways. The expression appears in the Select Criteria (Text) field exactly as specified in the list boxes. Also, the expression appears in the Select Criteria (SQL) column in a way that is understandable to the system.

And/Or	Select Criteria (Text)	Select Criteria (SQL)
	Vitals & Physical Exam.Weight >200	T13.WEIGHT >200

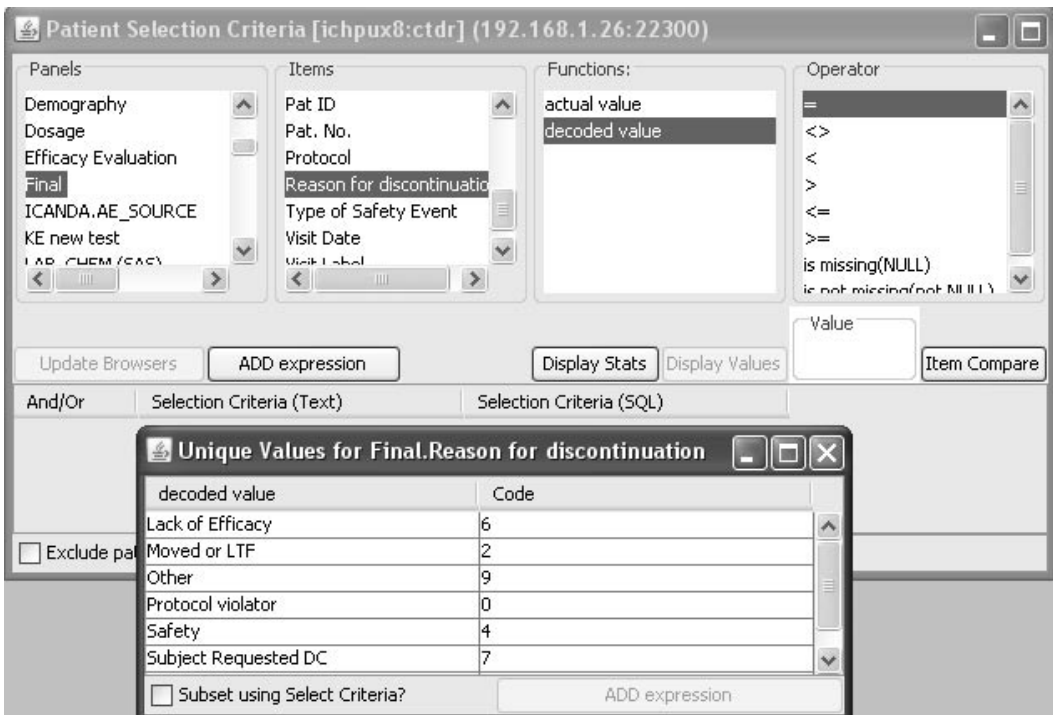
Another way to add select criteria expressions besides directly entering a value is to open the **Display Values** window. Once you have added expressions by entering a value, you can capture perspectives of your data that are uniquely informative. Suppose you are interested in exploring patients who were discontinued from the protocol due to safety issues. For example, select the Final panel and item Reason for discontinuation. This item type references a data dictionary file associated to the discontinuation reasons by a code.

To list all the values of this item in the protocol(s):

1. Select a panel, such as Final Report.
2. Select an item, such as Reason for Discontinuation.
3. Click **Display Values**. The Display Values window does not automatically open for decode items.

Review displays the Unique Values window for the selected item. All the values are displayed with the internal codes if an item is coded.

4. Highlight the selected row and click **ADD expression** or double click on the row.

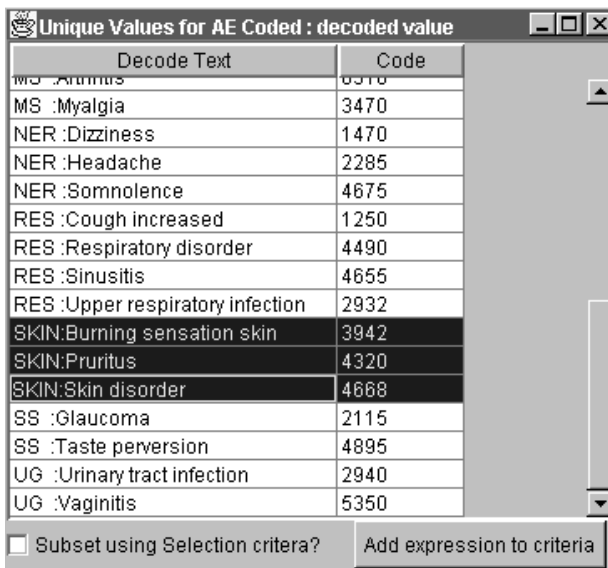


---

## Selecting multiple values

If you need to select multiple items of interest within the same Unique Values window, the selected operator must be '='. Then click **Display Values** to open the Unique Values window.

To select multiple contiguous values, click on a value and drag over the other values. To select multiple non-contiguous values, click on a value and hold down the **Ctrl** key when clicking the other values.



Decode Text	Code
MS :Arrhythmia	6576
MS :Myalgia	3470
NER :Dizziness	1470
NER :Headache	2285
NER :Somnolence	4675
RES :Cough increased	1250
RES :Respiratory disorder	4490
RES :Sinusitis	4655
RES :Upper respiratory infection	2932
SKIN: Burning sensation skin	3942
SKIN: Pruritus	4320
SKIN: Skin disorder	4668
SS :Glaucoma	2115
SS :Taste perversion	4895
UG :Urinary tract infection	2940
UG :Vaginitis	5350

Subset using Selection criteria?    Add expression to criteria

When you click **ADD expression to criteria**, Review adds your expression, including the value you selected from the Unique Values spreadsheet, to the next available row in the Patient Selection Criteria window.

If you want to select multiple values from the Unique Values spreadsheet, the selected operator must be '='. When the expression is pasted into the Patient Selection Criteria window, it is automatically turned into a **SQL 'IN List'** expression, which means that patients will be selected if the value of the item specified is any of those in the list.

And/Or	Select Criteria (Text)	Select Criteria (SQL)
	Adverse Events.AE Coded =3942,4320,4668	T10.SECODE IN ('3942','4320','4668')

Review can refer to item values exactly as they exist in the database by using the function 'actual value', or it can present derived forms of the values, such as Baseline or Endpoint. The list of functions and operators displayed will vary dependent upon the item's data type.

If you select a function other than 'actual value', Review automatically introduces additional calculation or extraction logic options for the expression you are building.

If a selected item's data type is TEXT, the following function is available: actual value. For NUMERIC data, the available functions also include 'chg. from baseline' and '% chg. from baseline'.

**Note: Review automatically selects an appropriate default function based on the data type of the item you have selected.**

The list of **Operators** changes according to the item's data type.

1. Click on the panel that contains the data.
2. Click on the item.
3. Click on one of the default function values or user-defined functions (see below).
4. Select a logical operator appropriate to the expression you are building, such as '=' or '>'.

**Note: If the item is a Text data type, you see the following text strings:**

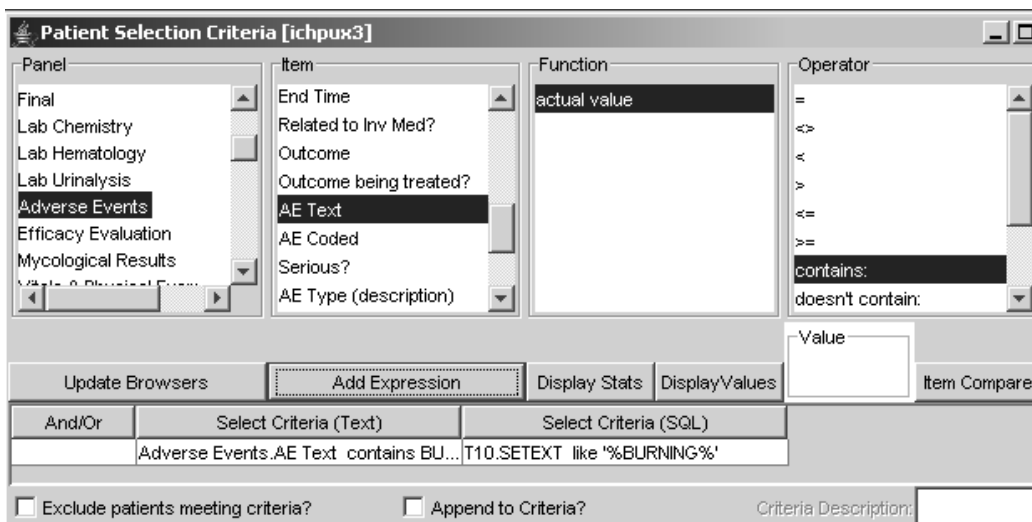
- a. contains:
- b. doesn't contain:
- c. begins with:
- d. ends with:
- e. is missing (NULL)
- f. is not missing (not NULL)

These text string operators allow you to search for partial strings anywhere within the field. If the item is a numeric data type (such as age), or a date field (such as date of birth), the string operators do not appear in the Operator ListBox.

---

## Building a string expression

If you are building a string expression, (for example, patients whose 'Adverse Drug Event' field contains the string 'RASH' anywhere in the text of the item), click the 'contains' operator and enter the string 'RASH' in the 'Value' field. The string search is case sensitive and you can determine how the data is stored by clicking **Display Values**.



---

## Joining criteria expressions

---

### Boolean operators

When you add additional expressions, an AND operator is added between next row of criteria in the Select Criteria logical Operator column. This means that the previous expression and the current expression will be used with an AND between them. The patients selected pass the previous criteria expression AND the current criteria expression so both expressions must be true. In the previous example, for Age > 50 AND Sex = Female, only those patients who meet both criteria expressions as true are selected into the patient sub-population or patient subset for analysis. This is a simple example where the Demography data is a single panel type collected only once for each patient.



---

## Additional criteria expressions

If you want additional criteria applied to the patient selection criteria, repeat the previous steps:

1. Select a panel.
2. Select an item.
3. Select an operator.
4. Supply a value.
5. Add expression to criteria.

When you add additional expressions, an AND operator is added to the second row of criteria. If this is not appropriate, you can change the AND to an OR or ANDSelect.

The screenshot shows the 'Patient Selection Criteria [ichpux3]' dialog box. It has four main sections: Panel, Item, Function, and Operator. The Panel list includes 'Vitals & Physical Exam'. The Item list includes 'Height'. The Function field contains 'actual value'. The Operator list includes '>'. Below these sections are buttons for 'Update Browsers', 'Add Expression', 'Display Stats', 'Display Values', and 'Item Compare'. A table below the buttons shows the criteria being added:

And/Or	Select Criteria (Text)	Select Criteria (SQL)
	Vitals & Physical Exam.Weight >200	T13.WEIGHT >200
AND	Vitals & Physical Exam.Height >60	T13.ICHEIGHT >60

Below the table are checkboxes for 'Items meeting criteria?' and 'Append to Criteria?'. A 'Criteria Description:' field is also present. A dropdown menu is open over the 'AND' cell, showing options: AND, OR, and ANDSelect.

The expression is added to the next row of the spreadsheet containing the active **Patient Selection Criteria**.

6. When you are through adding expressions to your selection criteria, click **Update Browsers**. The title bar updates to show the number of patients in the current active selection criteria.

Patient Selection Criteria - SUBSET: 40 of 196 patients.

---

## AND operator

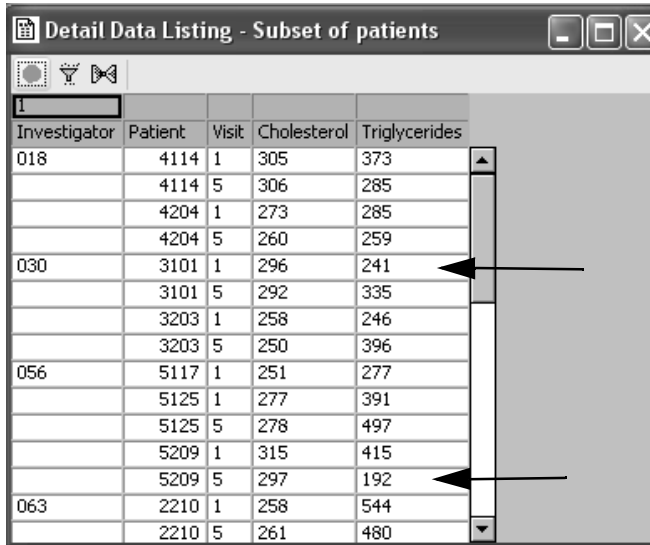
The patient selection criteria becomes more detailed when you choose a multiple record panel or multiple visit panel type for example, Adverse Events, Laboratory Chemistry or Vital Signs. In this example, both of the selected data items came from the same multiple visit panel Laboratory Chemistry.

		Select Criteria (Text)	Select Criteria (SQL)
1		Lab Chemistry.Cholesterol, total >=250	T7.CHO >=250
2	AND	Lab Chemistry.Triglycerides >=250	T7.TRI >=250

The patients selected have a minimum of one visit where both the Cholesterol AND Triglycerides are >= 250 within the same visit. the patient selection criteria results are 20 patients in the patient subset from the total patient population of 196.

 Patient Selection Criteria - SUBSET: 20 of 196 patients.

*Hint: View a detail data listing of the data items in the selection criteria is helpful when defining and validating patient selection criteria with multiple expressions and different operators.*



Investigator	Patient	Visit	Cholesterol	Triglycerides
018	4114	1	305	373
	4114	5	306	285
	4204	1	273	285
	4204	5	260	259
030	3101	1	296	241
	3101	5	292	335
	3203	1	258	246
	3203	5	250	396
056	5117	1	251	277
	5125	1	277	391
	5125	5	278	497
	5209	1	315	415
	5209	5	297	192
063	2210	1	258	544
	2210	5	261	480

Notice in the detail data listing contains some patient visits which do not meet the selection criteria as show by the arrows. Remember the patient selection criteria is based upon the patient paradigm and all the patient's data is displayed. If you do not want the visits (rows) to display in your output, then you would define a Filter Output to be discussed in detail in the browser chapters.

## OR operator

If this is not appropriate, you can change the AND to an OR or ANDSelect. Click on the AND in the Select Criteria logical Operator column to display the dropdown list for other operator options.

And/Or	Select Criteria (Text)	Select Criteria (SQL)
	Lab Chemistry.Cholesterol, total >=250	T7.CHO >=250
AND	Lab Chemistry.Triglycerides >=250	T7.TRI >=250
AND		
OR		
ANDSelect		

Patient Subset to current criteria?  Exclude Patients meeting criteria?

If you use the previous example and change the operator to OR, the patients selected must have the first or second expression as true within the same visit (row). For a patient to be selected they must have a minimum of one visit where either Cholesterol or Triglycerides or both data item values are  $\geq 250$  within the same visit (row). All the patient's visits are displayed for the selected patient subset including the visits where both data items values are  $\leq 250$ . The patient selection criteria results are 69 patients contained in the patient subset from the total patient population of 196.



Investigator	Patient	Visit	Cholesterol	Triglycerides
018	4102	1	252	244
018	4102	5	240	146
018	4103	1	228	103
018	4103	5	225	253
018	4114	1	305	373
018	4114	5	306	285
018	4203	1	172	255
018	4203	5	182	154
018	4204	1	273	285
018	4204	5	260	259
018	4205	1	183	513
018	4205	5	186	169
018	4208	1	125	174
018	4208	5	133	266
030	3101	1	296	241
030	3101	5	292	335
030	3102	1	258	195

## ANDSelect operator

When you change the boolean operator to ANDSELECT, the patient selection criteria is partitioned into two segments executed in succession. ANDSELECT is the equivalent of adding parentheses into the Patient Selection Criteria and forces the execution into a multi-step process.

		Select Criteria (Text)	Select Criteria (SQL)
1		Lab Chemistry.Cholesterol, total >=250	T7.CHO >=250
2	ANDSelect	Lab Chemistry.Triglycerides >=250	T7.TRI >=250

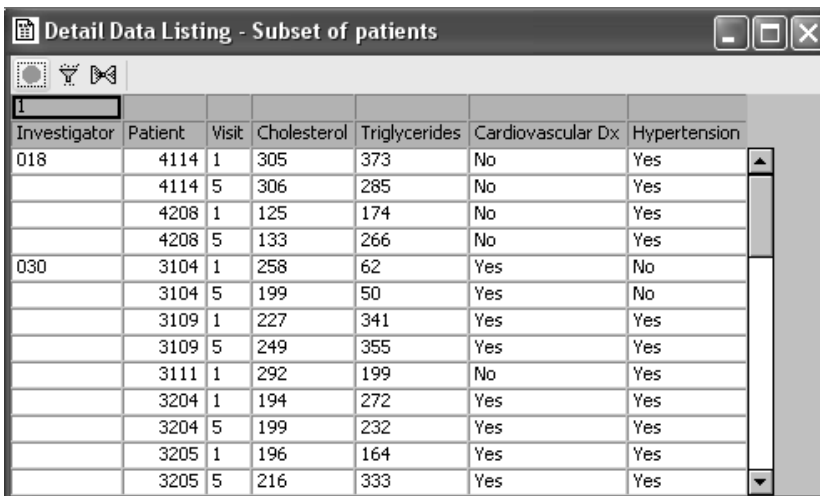
In this example, the data item values are no longer restricted to the same visit (row) for the multiple visit laboratory Chemistry panel due to the ANDSELECT operator. The patient selection criteria results are 21 patients in the patient subset from the total patient population of 196.

Investigator	Patient	Visit	Cholesterol	Triglycerides
018	4114	1	305	373
	4114	5	306	285
	4204	1	273	285
	4204	5	260	259
030	3101	1	296	241
	3101	5	292	335
	3203	1	258	246
	3203	5	250	396
056	5117	1	251	277
	5125	1	277	391
	5125	5	278	497
	5209	1	315	415
	5209	5	297	192

You can apply various combinations of operators to the selection criteria to subset the available patient population. For example, previously we selected patients with elevated Cholesterol OR Triglycerides >= 250 within the same visit. You can add selection criteria from Medical History data items for Cardiovascular Disease OR Hypertension as 'yes' to see if there is any relation to the laboratory results.

		Select Criteria (Text)	Select Criteria (SQL)
1		Lab Chemistry.Cholesterol, total >=250	T7.CHO >=250
2	OR	Lab Chemistry.Triglycerides >=250	T7.TRI >=250
3	ANDSelect	Medical History.Cardiovascular Disease =2	T1.CARDIAC =2
4	OR	Medical History.Hypertension =2	T1.HYPERTEN =2

The ANDSELECT operator partitions the patient selection criteria to be executed into two subqueries. First JReview processes the multiple selection criteria by retrieving a list of patients who meet the first selection criteria subquery for elevated Cholesterol OR Triglycerides. Then from this first subset of patients a second subset of patients is generated who meet the second selection criteria subquery. The second selection criteria subquery results in the final patient subset. In this way the patients meet all the multiple selection criteria.



Investigator	Patient	Visit	Cholesterol	Triglycerides	Cardiovascular Dx	Hypertension
018	4114	1	305	373	No	Yes
	4114	5	306	285	No	Yes
	4208	1	125	174	No	Yes
	4208	5	133	266	No	Yes
030	3104	1	258	62	Yes	No
	3104	5	199	50	Yes	No
	3109	1	227	341	Yes	Yes
	3109	5	249	355	Yes	Yes
	3111	1	292	199	No	Yes
	3204	1	194	272	Yes	Yes
	3204	5	199	232	Yes	Yes
	3205	1	196	164	Yes	Yes
	3205	5	216	333	Yes	Yes

---

*Build a complex patient selection criteria*

Sometimes it is necessary to select patients who meet a particular criteria at a particular visit, (for example, at baseline), and who also meet criteria at another visit (for example, at endpoint). Normally, introducing Visit or any other item twice in the same expression with different selection values yields a “no patients selected” outcome, as they are mutually exclusive. JReview introduces a concept of selection segments to access such patient selection criteria. Each selection segment is tested in succession, not all at once. This provides you with a unique versatility at visualizing and analyzing particular data sets.

To define the start of a new selection segment, click on the ANDSelect logical operator.

An example Patient Selection Criteria using this technique is:

KOHEXAM = 2 (Positive)    **1<sup>st</sup> Subquery**

AND VISIT NO = 1

ANDSelect {Creates nested subqueries}

KOHEXAM = 2 (Positive)    **2<sup>nd</sup> Subquery**

AND VISIT NO = 6

		Select Criteria (Text)	Select Criteria (SQL)
1		Mycological Results.Visit No. =1	T12.VISIT =1
2	AND	Mycological Results.KOH Exam (Inv) =Positive	T12.KOHEXAM =2'
3	ANDSelect	Mycological Results.Visit No. =6	T12.VISIT =6
4	AND	Mycological Results.KOH Exam (Inv) =Positive	T12.KOHEXAM =2'



The ANDSELECT statement partitions this patient selection criteria into two segments. Partitioning this patient selection criterion creates Review's selection segments, which are executed in succession and prevent each segment from excluding the other. The system processes such multiple selection segment criteria by retrieving a list of patients who meet the first selection segment criteria, then retrieving a list of patients who meet the second selection segment criteria, who are also in the first list of patients. The result would be 0 patients if the tests were run without Review's selection segments or run simultaneously. You could not normally test for the mutually exclusive selection values VISITNO = 1 AND VISITNO = 6.

*Note: In order for Review to run a complex SQL statement containing OR or ANDSelect, sometimes it is necessary to add parentheses to the "Select Criteria (SQL)" column dependent. The default processing of the various expressions might be different than the intended behavior. So – it's important to review the intent, and insert (or) in the SQL column (3<sup>rd</sup> column).*

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### Changing the selection criteria

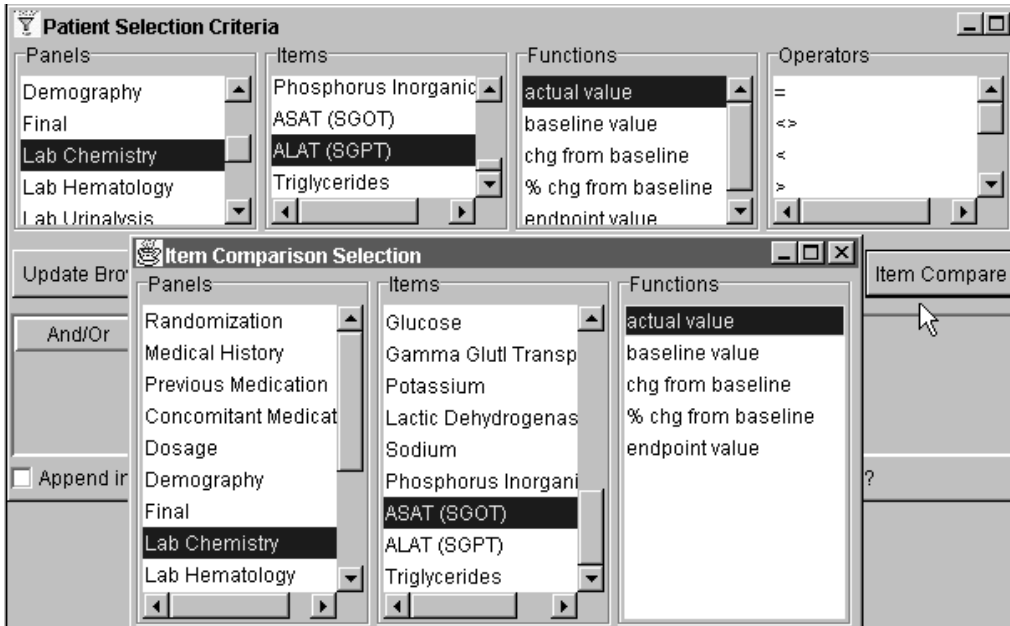
If you want to change the patient selection criteria, click anywhere in the row that you want to change:

1. To modify the patient selection criteria, you can click on the row and edit it.
2. To remove a row, click  or from the **Edit** menu, select **Cut**. This will delete the highlighted row from the expression.
3. To remove all rows, click .
4. Click **Update Browsers** to apply the updated patient selection criteria.

# Item comparison selector

## Compare items

An alternative mechanism to the basic patient selection criteria is the item comparison selector. This mechanism provides the functionality to base selection criteria on the value of another item, not just a fixed value. Select a panel, an item, and an operator. Items can be compared within the same panel or between panels.



1. Click **Item Compare**. The Item Comparison selector window opens:
2. Select the panel, item, and function value to compare to.
3. Click **ADD expression to criteria**.
4. Close the Item Comparison window.
5. Click **Update Browsers**.

*Note: The SQL text that is created when compare Lab Chemistry panel item SGOT > than SGPT actual values:*

	Select Criteria (Text)	Select Criteria (SQL)
1	Lab Chemistry.ASAT (SGOT) >Lab Chemistry.ALAT (SGPT)	T7.SGO >T7.SGP

## Exclude patient criteria

### *Display excluded patients*

You have the ability to view those patients who are not in your current selection criteria by setting **Exclude patients meets criteria?**. Click the button in the lower right corner of the Patient Selection Criteria Window to set this option on. For example, build a patient selection criteria for female patients and open the Data Browser Window to display all patients who meet this selection criteria.

The screenshot shows two windows from a clinical data management software. The top window is titled "Patient Selection Criteria - SUBSET: 35 of 196 patients." It features several panels: "DCM/Question Groups" with a tree view including "Demography", "Dosage", "Efficacy Evaluation", "Final", "Pivot", "KA201", and "Lab Chemistry"; "Questions" with a list including "Qualifying Question", "Qualifying Value", "Race", "Repeat #", "Sex", "Site", and "Sub Event"; "Functions" with "actual value"; and "Operator" with "=" and "contains:". Below these panels are buttons for "Update Browsers", "ADD expression", "Display Stats", "Display Values", and "Item Compare". A table at the bottom shows the selected criteria: "And/Or", "Selection Criteria (Text)", and "Selection Criteria (SQL)". The text criteria is "Demography.Sex =Female" and the SQL criteria is "T2.SEX ='Female'". A checkbox labeled "Exclude patients meeting criteria?" is present at the bottom left of this window.

The bottom window is titled "Data Browser - Subset of patients" and displays a table of patient data. The table has columns for "Study", "PT", and "INV". The data rows are as follows:

Study	PT	INV
KA201\$CURRENT	2102	063
KA201\$CURRENT	2105	063
KA201\$CURRENT	2203	063
KA201\$CURRENT	2204	063
KA201\$CURRENT	3107	030
KA201\$CURRENT	3108	030
KA201\$CURRENT	3111	030
KA201\$CURRENT	3113	030
KA201\$CURRENT	3202	030
KA201\$CURRENT	4103	018

At the bottom of the Data Browser window are buttons for "Prev CASE", "Next CASE", and "Reset Cases". On the right side, there are sections for "Custom DCM/Question Groups" and "DCM/Question Groups" with a list including "AE Cases (AERS)", "AE Events (AERS)", "Adverse Events", "Concomitant Medication", and "SASRegistration".



To view patients excluded from your current selection criteria:

1. Click the box for  Exclude patients meeting criteria?
2. Click **Update Browsers**.

The example shown displays all male patients or all the patients who were not included in the patient selection criteria. You can apply this patient exclude option to any patient select criteria to display all the patients who are not in the current selection criteria. This feature saves you the steps of building a separate selection criteria if you want to see the patients excluded.

The screenshot shows two windows from a clinical trial software interface. The top window is titled "Patient Selection Criteria - SUBSET: 161 of 196 patients." It features several panels: "DCM/Question Groups" with a list including Demography, Dosage, Efficacy Evaluation, Final, Pivot, KA201, and Lab Chemistry; "Questions" with a list including Qualifying Question, Qualifying Value, Race, Repeat #, Sex, Site, and Study Event; "Functions" with "actual value"; and "Operator" with symbols like =, <>, <, >, <=, >=, and contains: / doesn't contain:. Below these panels are buttons for "Update Browsers", "ADD expression", "Display Stats", "Display Values", and "Item Compare". At the bottom, there are tabs for "And/Or", "Selection Criteria (Text)", and "Selection Criteria (SQL)", with the text criteria showing "Demography.Sex =Female" and the SQL criteria showing "T2.SEX ='Female'".

The bottom window is titled "Data Browser - 161 cases selected" and contains a table of patient data. The table has columns for "Study", "PT", and "INV". The "Exclude patients meeting criteria?" checkbox is checked. To the right of the table are sections for "Custom DCM/Question Groups" and "DCM/Question Groups" with a list including AE Cases (AERS), AE Events (AERS), Adverse Events, Concomitant Medication, and SASRegistration.

Study	PT	INV
KA201\$CURRENT	1101	066
KA201\$CURRENT	1102	066
KA201\$CURRENT	1103	066
KA201\$CURRENT	1104	066
KA201\$CURRENT	1105	066
KA201\$CURRENT	1106	066
KA201\$CURRENT	1107	066
KA201\$CURRENT	1108	066
KA201\$CURRENT	1109	066
KA201\$CURRENT	1110	066

---

# Functions

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---

## *Types of function values*

Review can refer to Item values directly and as they exist in the database, or allow for user-defined function values. For example, the function 'actual value' presents the raw data, or 'Baseline' presents a user-defined time-related milestone value.

The list of functions changes according to the data type (Fixed, Text, Date, or Time) of the item selected.

1. Click on the panel that contains the data.
2. Click on the item of interest:
3. Click on one of the default functions or user-defined functions (see below).

---

## *Decoded value*

When you select an item associated with a data dictionary file, the decoded value is the default versus the actual coded value. For example, the default decode for 'Male' versus the code as 'M'.

---

## *Actual value function*

When you select a function other than actual value, which is the actual raw data of the last value entered. Review automatically introduces additional calculation or extraction logic options for the expression you are building.

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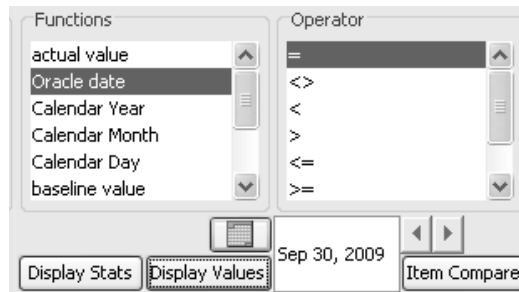
## *Derived function values*

Review provides default derived values, however derived forms of the functions, such as Baseline or Endpoint, can also be selected. The `_New Event Function_` allows you to define a variety of time-related milestone functions in IReview available to select in JReview.

If you select 'Calendar Year' as a function for a Date type item for a selected panel, Review adds programming logic to reference the year portion of the Date type item. For example, you can enter '1994' in the Value box to retrieve all patients whose Date type item is in the year '1994'.

Default date formats are set to 4 digit year (Year 2000 compliance) throughout the product. Also, local country specific conventions for dates and numbers.

For Oracle Clinical data source if the date type (char type) is not stored in standard YYYYMMDD format, a config.options parameter is available. OCDATAEMASK = can be set to tell the system the expected date format for use in the Oracle date function to convert to a real Oracle date.



Character (Text) type data is referenced with the following list of functions:

- actual value
- decoded value (if coded type)
- baseline value
- endpoint value

Numeric type data adds the following functions:

- chg. from baseline: Defined in the configuration tables and/or user-defined using `_New Event Function_`.
- % chg. from baseline: Defined in the configuration tables and/or user-defined using `_New Event Function_`.
- chg. from previous: Default derived value (measure determined from the last two measures).

*Note: Review selects an appropriate function by default with respect for the data type of the item selected. The default function is assigned as the most likely function to be used for that type of item.*

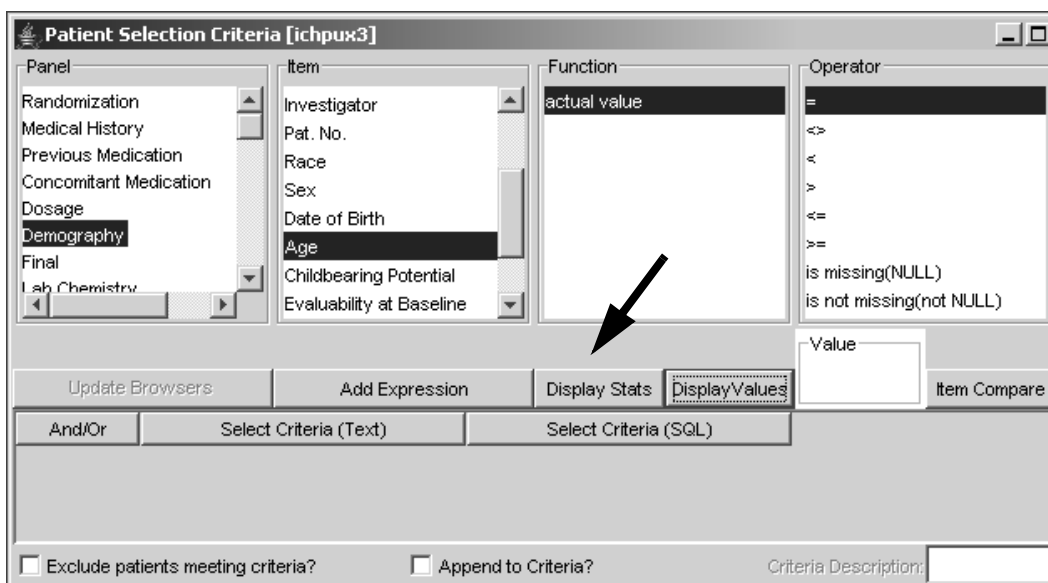
# Item Statistics

## Display item statistics

Alternatively, you can display the range and other basic statistics of the item by selecting an item and clicking **Display Stats**.

*Hint: This function has meaning when applied to numeric data items and may not be significant for other values.*

The example for the patient age shows the total count of values, minimum value and maximum value. If the value is numeric, then the mean and standard deviation are included. This example represents the total population of patients within the protocols selected and the selected function.



The screenshot shows the 'Basic statistics for Demography.Age' dialog box. It contains a table with the following data:

Study	count	min	max	mean	std dev
KA201	196	17	80	44.219	16.193

Below the table is a checkbox labeled 'Subset using Select Criteria?'.

This example for lab item cholesterol counts the individual lab values across multiple visits to display the basic statistics for the lab item.

**Patient Selection Criteria [ichpux3]**

Panel	Item	Function	Operator
Concomitant Medication	Creatinine	actual value	=
Dosage	Bilirubin, total	baseline value	<>
Demography	Uric Acid	chg from baseline	<
Final	Urea Nitrogen	% chg from baseline	>
Lab Chemistry	Calcium	endpoint value	<=
Lab Hematology	Cholesterol, total	rtest	>=
Lab Urinalysis	Chloride		is missing(NULL)
Adverse Events	CO2 Content		is not missing(not NULL)

Update Browsers    Add Expression    Display Stats    **Display Values**    Item Compare

And/Or    Select Criteria (Text)    Select Criteria (SQL)

**Basic statistics for Lab Chemistry.Cholesterol, total**

Study	count	min	max	mean	std dev
KA201	362	118	389	202.442	44.008

Subset using Select Criteria?

*Displaying subsets of protocol population*

You can limit the displayed statistics for the patients meeting the patient selection criteria by checking “Subset using Select Criteria?”. If the checkbox is not checked, the statistics are for the total patient population.

When  **Subset using Select Criteria?** is checked, the statistics in the corresponding window reflect the sub-population of patients that falls within your patient selection criteria. The patient selection criteria will only be applied to the population when **Subset using Selection Criteria** is clicked. Any changes that you make in the Patient Selection Criteria that need to be reflected in the subset statistics must be preceded by clicking **Update Browsers**.

Panel: Demography, Final, Lab Chemistry, Lab Hematology, Lab Urinalysis, Adverse Events, Efficacy Evaluation, Morphological Results

Item: Calcium, Cholesterol, total, Chloride, CO2 Content, Glucose, Gamma Gluti Transpeptide, Potassium

Function: actual value, baseline value, chg from baseline, % chg from baseline, endpoint value, rtest

Operator: =, <>, <, >, <=, >=, is missing(NULL), is not missing(not NULL)

Value: [ ]

Update Browsers, Add Expression, Display Stats, Display Values, Item Compare

And/Or	Select Criteria (Text)	Select Criteria (SQL)
	Medical History.Diabetes =2	T1.DIABETES =2

Basic statistics for Lab Chemistry.Glucose

Study	count	min	max	mean	std dev
KA201	13	108	460	248.769	119.629

Subset using Select Criteria? ←

If multiple protocols are selected the basic statistics display on separate rows for each study.

Basic statistics for Demography.Age

Study	count	min	max	mean	std dev
KA201	196	17	80	44.219	16.193
KA202	196	17	80	44.219	16.193

Subset using Select Criteria?

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# Object storage: Saving your work

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## *Saving the selection criteria*

To save the patient selection criteria you have created for later use:

1. Make certain that the Patient Selection Criteria window is the active window by clicking on its title bar.

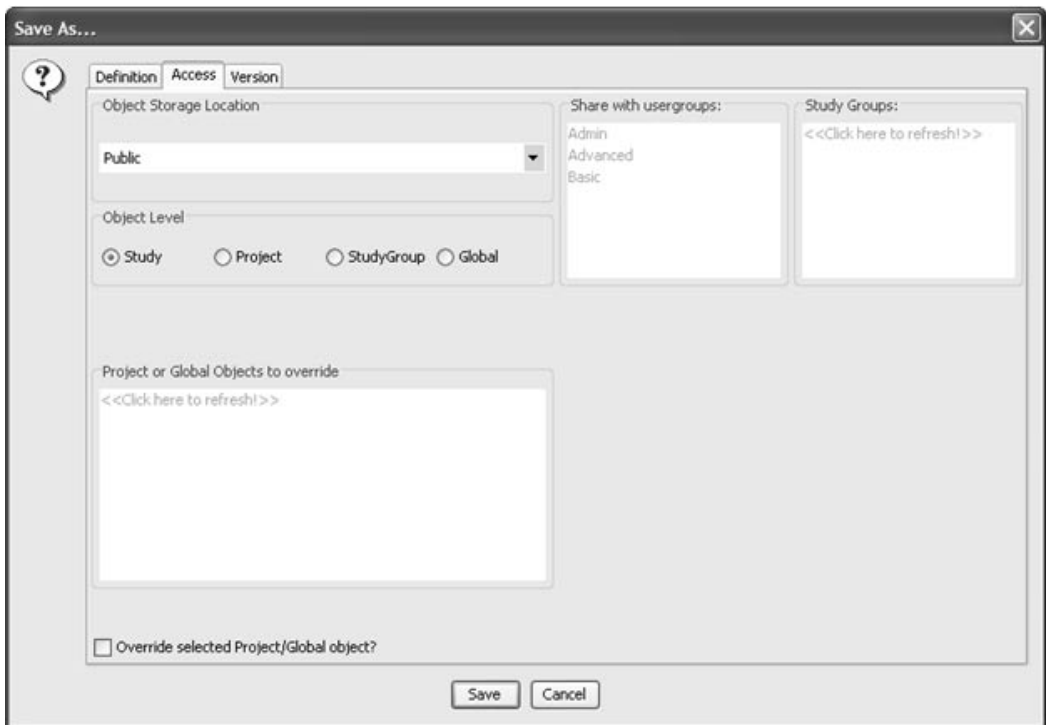
Click , or from the **File** menu select **Save**.

JReview displays the **Save window** organized by tabs associated with saving an object.

---

## *Access tab*

2. The **Save window** opens on the **Access tab**, select an **Object Storage Location**.



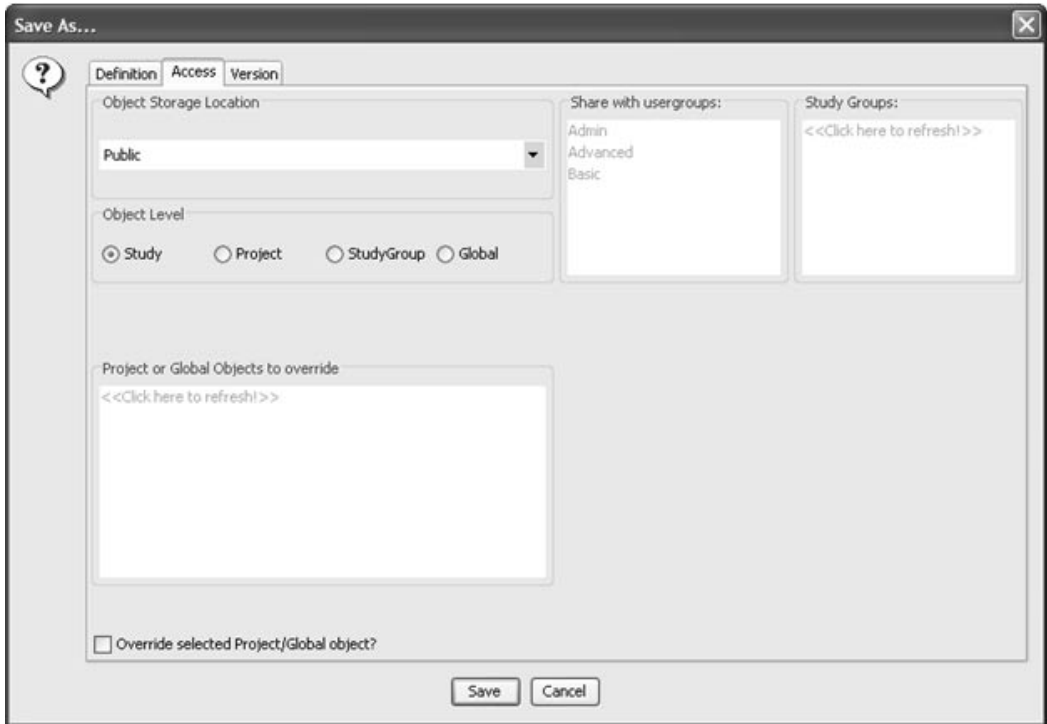
Saving on database object storage sites, requires the author to have “Publishing Authorization” defined in the configuration tables. (See *ReviewAdmin Users Manual*)



There are three user access levels to store the object specification: Private (db), User Group (db) and Public (db). User access levels designated as ‘db’ for database makes the object available for scheduling. Objects may be saved at the study, user group or global level

- **Private** is a database object storage for sole access by the user. IRAdmin review privilege for Protected\_Category at UserID level.
- **User Group** is a database object storage for defined User Groups in the configuration tables. Object storage in User Group level allows you to specify sharing with multiple User Groups. When you are a member in a User Group and click User Group, the ‘Share with usergroups’ list box is made available for selection. Click on a usergroup to share the object, use the CTRL or SHIFT key to make multiple selections.  
IRAdmin review privilege for User Group Save where users in a usergroup can update and delete other user group member objects. The privilege is set at either the UserID or User Group level. Also, IRAdmin review privilege for Protected\_Category at User Group level.
- **Public** also has shared network drive for storage where all users have access to public objects, but authorization is required to save an object as public.





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### *Study Override*

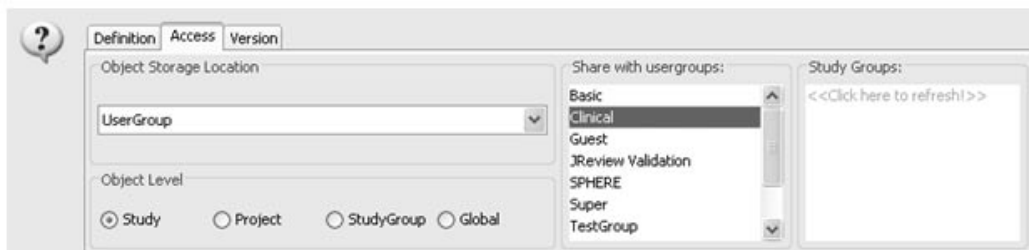
You can override a previously saved object at the Project or Global level with a Study level object. When you select Study level, the 'Override selected Project/Global object?' check box is made available for selection.

Save at the Study Object Level, when you can choose to override a previously saved Project or Global level object. Select the previously saved project or global level object from the 'Projects or Global Objects to override' list. The chosen Project or Global level object will be replaced by the new Study level object when you click SAVE. The original Project/Global object is still available for selection in other studies, but is overridden for the selected study.

---

## Share with user groups

When UserGroup is selected the 'Share with usergroups:' box is enabled allowing you to select other usergroups to share access with the object specification. Use the CTRL or SHIFT key to make multiple selections.

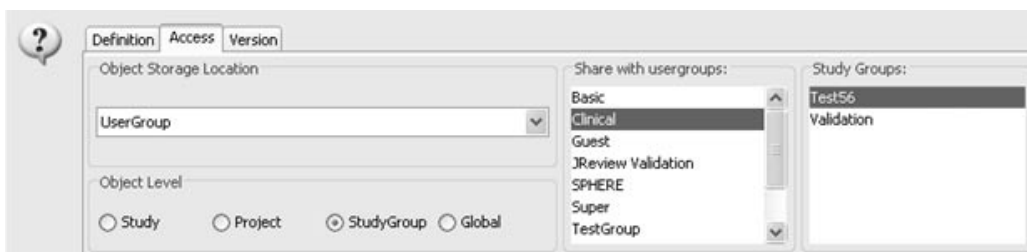


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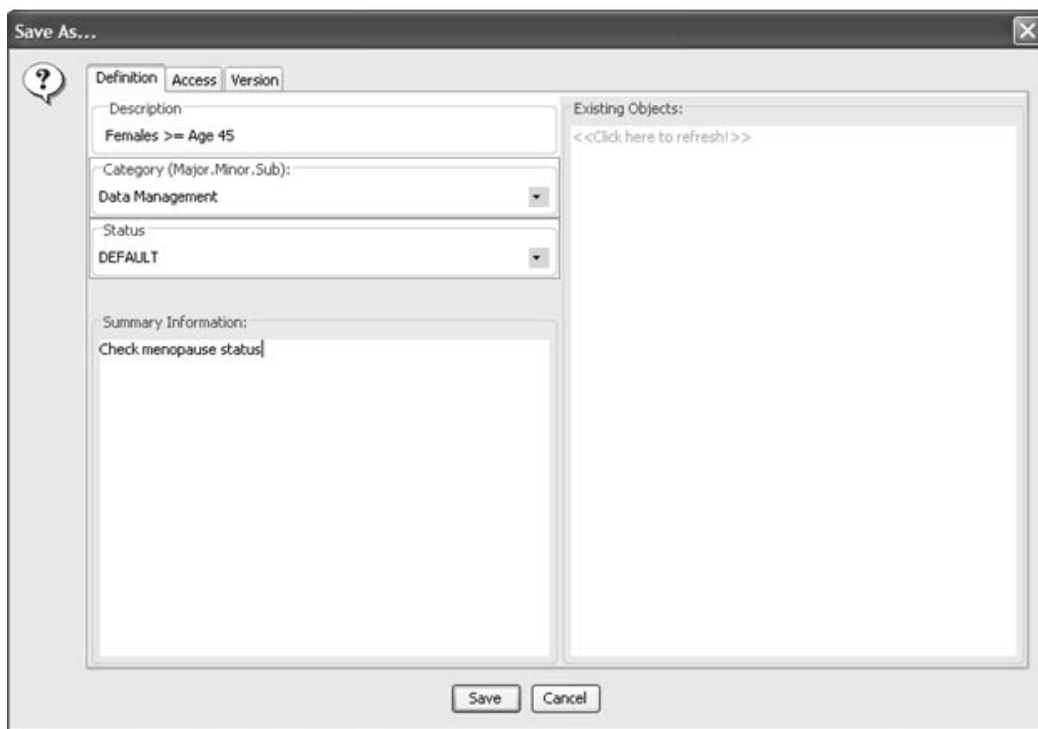
## Publish for study groups

The study group save privilege allows the user to save objects to Study Groups and selected in the 'Publish for Study Groups' list. The Study Groups are non-visual groupings of studies set in Review Admin, and are not project specific. They can, and are intended to cross projects. Users can create a study group from within Review Admin, assign studies when this option is turned ON, objects can be saved to the study group. These groups are not visible in JReview (like project and study are), but rather help group studies of common architecture.

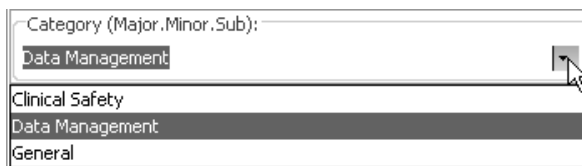
For example, if three ongoing projects were built on one database standard and each may have two studies. The "Standards Committee" decides on new standards which will affect all future studies. So, the next studies that each of the projects start up will use a new standard. This is a good place to create two study groups. The first study group will have the initial six studies (two from each of the three projects) and another study group will contain all future new studies. The user within JReview does not see the study groups until he/she goes to save an object. This option allows the user to be able to save objects as a global report, but only to a subset of studies that could be across protocols.



3. In the **Definition tab**, enter an appropriate **Description**. This description is displayed in the **Object Explorer** window.



4. Enter the folder(s) information in the **Category** box.



Each folder (major, minor and subfolder) is separated by a period where folder titles can consist of more than one word separated by a space. For example, the major folder for 'Safety' has two minor folders 'Safety.AEs' and 'Safety.Labs'.

Folder names are **case-sensitive** and after the folder(s) are initially created, they are selected from the dropdown list box.

5. Enter a **Status** for the object. The Status may be used when managing objects to create Object Groups for launching groups of objects with the same status.

6. You can include **Summary Information** for future reference to be viewed by yourself or others later (optional).

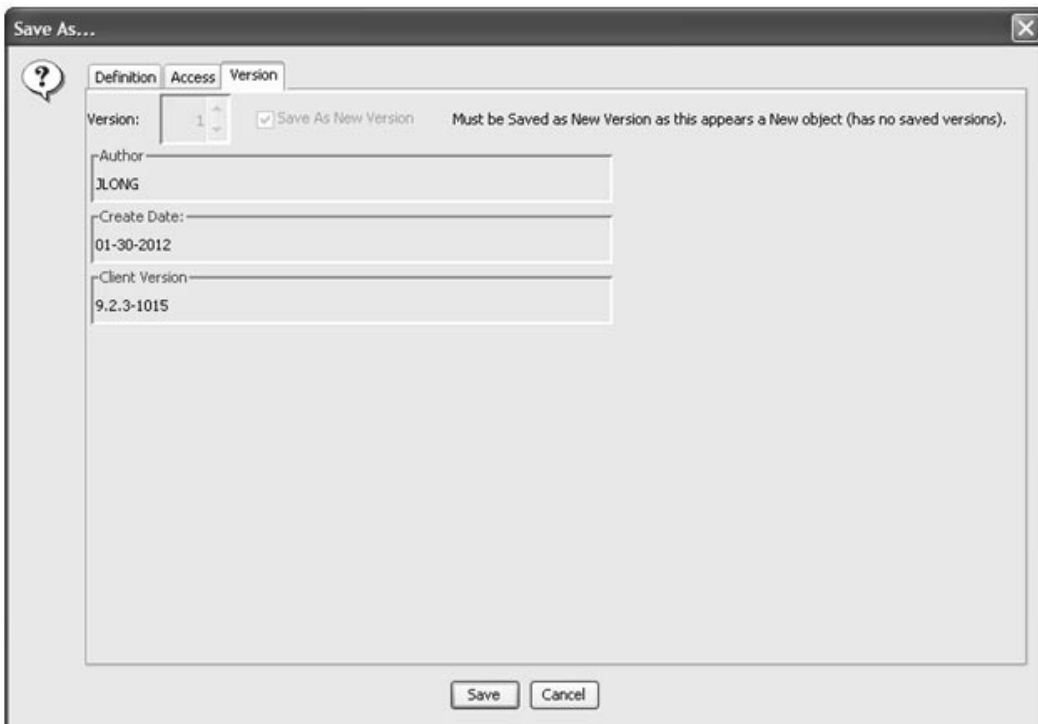
An ID Number is assigned and used internally by Review to track the object.

---

### Version tab

JReview has the following “Allow Updates” privilege settings apply to Save and Update an object. A new object must be saved as New Version as there are no prior saved versions.

Click on **Save**, to save the object specification or defined patient selection criteria to the Object Explorer window.

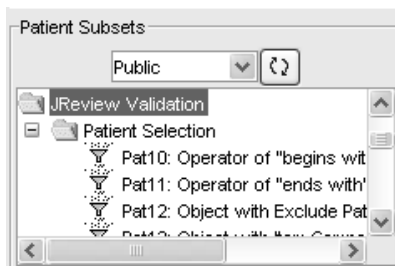


---

## Retrieve a saved selection criteria

If you want to retrieve a saved patient selection criteria:

1. Double click to open a folder. The filter icon displays along side the description to indicate the stored object is a patient selection criteria.



2. Double click to paste the selected patient selection criteria into the Patient Selection Criteria Window.

---

## Append to criteria

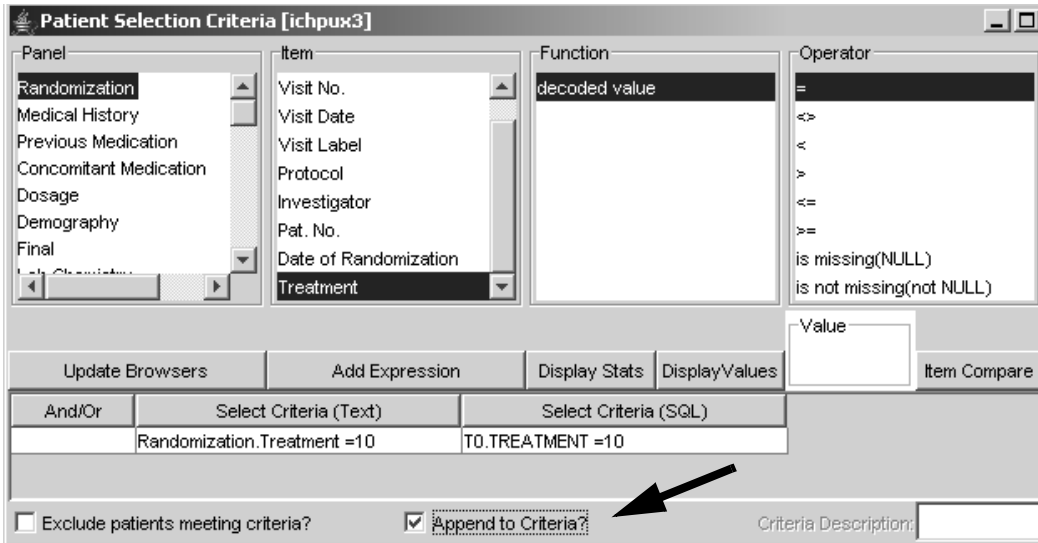
At this point, you can either click Update Browsers to enable your selection criteria, or continue to add more previously saved criteria objects to the end of the currently loaded selection criteria with the 'Append to criteria?' check box. You can modify the patient selection criteria and resave to a new description and folder.

*Note: To save time, you can launch and paste previously saved patient selection criteria from the Object Explorer Window to edit and resave as new stored objects. However, you must load the previously stored object first into the Patient Selection Criteria Window then append to or modify it.*

You can append a saved patient selection criteria to the current saved patient selection criteria object:

1. Select and double click to add the first selection criteria object.
2. Click  Append to criteria? .

3. Select and double click another selection criteria object to append.

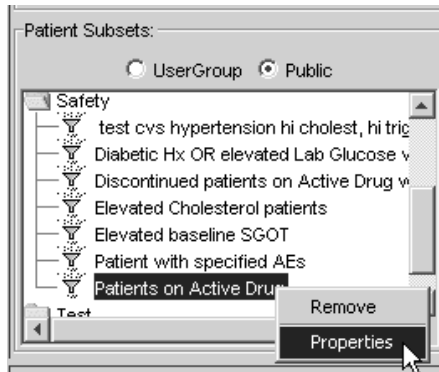


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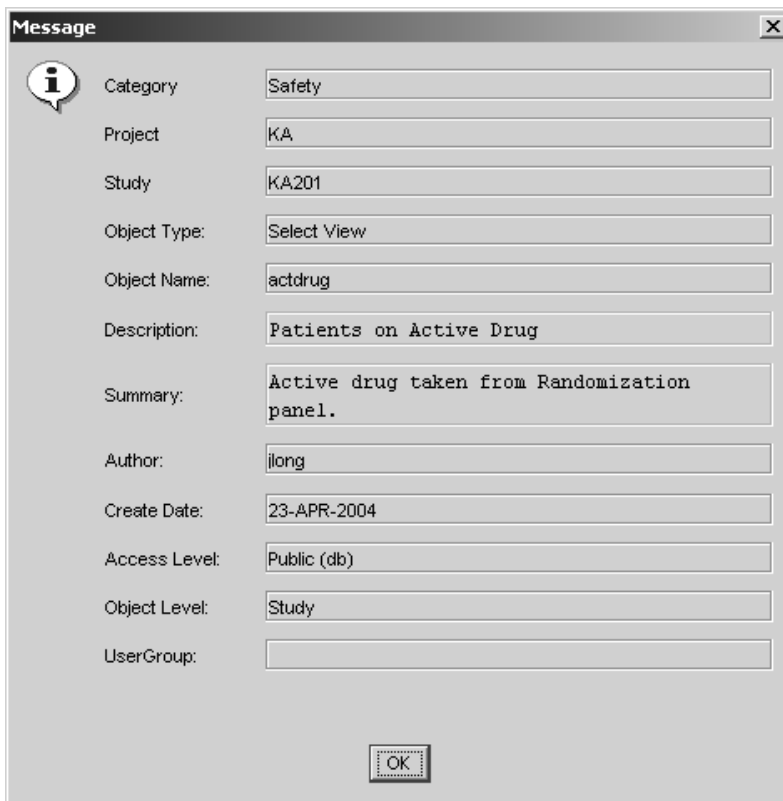
## Object properties

You can view information about an object when you select “Properties”.

1. Select the stored object with a single click.
2. Right-mouse click to display a floating menu.

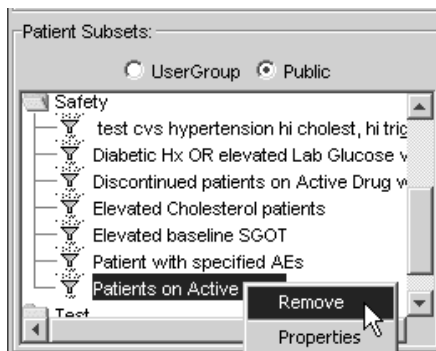


3. Click **Properties** to display details and click **OK** to close window.

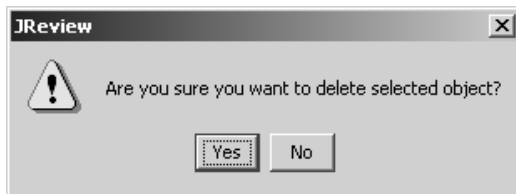


You can quickly delete a saved patient selection criteria in the Object Explorer window under Patient Subsets.

1. Select the stored object with a single click.
2. Right-mouse click to display a floating menu.



3. Then click **Remove**. You are prompted “Are you sure you want to delete the object?” and click **Yes**.



The Remove function is a quick way to delete stored objects provided the user is the creator or a SuperUser. It works for 'UserGroup' or 'Public' objects equally.



# 3

## *Review Patient Data*

---

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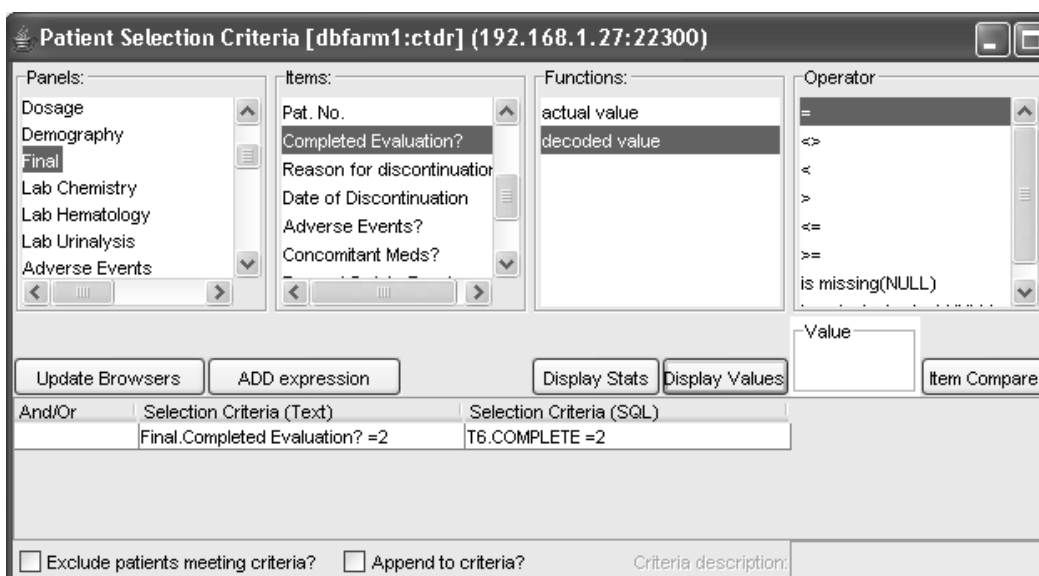
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# Data Browser


## Subset patients

The Data Browser presents a list of patients who meet the current patient selection criteria. It provides the user with the ability to look at data for an individual patient. After building the patient selection criteria, you can quickly view a detailed list of the selected patients by using the Data Browser. If you do not define a patient selection criteria then by default all available patients in the database will display.

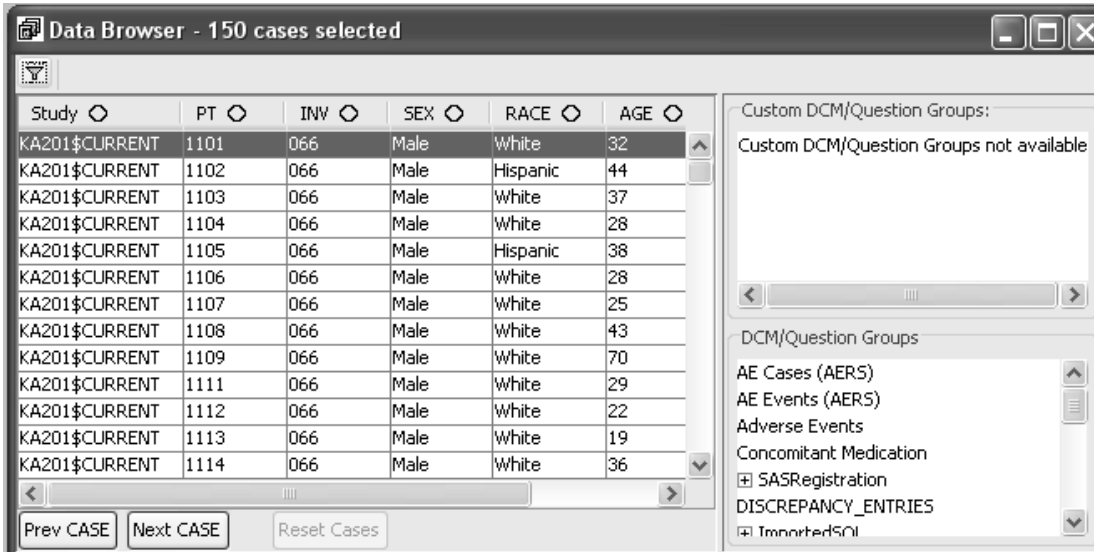


---

## Opening the Data Browser

Click  in the toolbar or from the **Browse** menu, select **Data**.

JReview opens a new window that displays a list of patients who meet the current patient selection criteria.



Study	PT	INV	SEX	RACE	AGE
KA201\$CURRENT	1101	066	Male	White	32
KA201\$CURRENT	1102	066	Male	Hispanic	44
KA201\$CURRENT	1103	066	Male	White	37
KA201\$CURRENT	1104	066	Male	White	28
KA201\$CURRENT	1105	066	Male	Hispanic	38
KA201\$CURRENT	1106	066	Male	White	28
KA201\$CURRENT	1107	066	Male	White	25
KA201\$CURRENT	1108	066	Male	White	43
KA201\$CURRENT	1109	066	Male	White	70
KA201\$CURRENT	1111	066	Male	White	29
KA201\$CURRENT	1112	066	Male	White	22
KA201\$CURRENT	1113	066	Male	White	19
KA201\$CURRENT	1114	066	Male	White	36

JReview displays the number of cases selected before the list of patients. When Oracle Clinical data is the primary source the key clinical information for each patient, such as case ID, sex, age, treatment group, other, are also displayed and are custom-configurable through ReviewAdmin.

When studies are pure SAS datasets there is a study level override in ReviewAdmin to support study level configuration override for the Data Browser patient list from SAS dataset.

---

## Expand spreadsheet columns

When JReview displays multiple observations in the panel view spreadsheet, each column is automatically sized to a fixed width size. You can expand or contract the columns in the spreadsheet just as you would in any window's spreadsheet program.

Click and drag the cursor on the line between the column heading tabs to the width desired.

---

## Sort columns

You may select and sort any column in the main Data Browser window where the column header contains the corresponding symbol next to the description. The **Sort Columns** is only enabled and allowed when there is no patient selection criteria or select patients applied. The corresponding sort symbol is designed not to display when a selection criteria is applied.

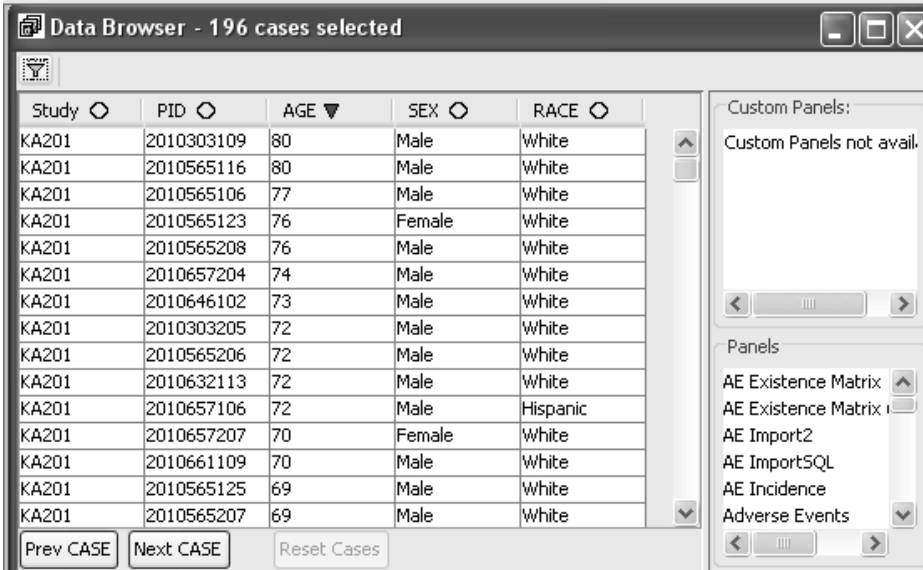
Simply click on the column symbol to change from descending, ascending or return to original display sort.



Click on the column symbol and the green up triangle changes the selected column sort to ascending order.

Study	PID	AGE	SEX	RACE
KA201	2010565103	17	Male	White
KA201	2010184106	18	Male	White
KA201	2010565110	18	Male	White
KA201	2010657114	18	Female	Hispanic
KA201	2010661110	18	Male	Black
KA201	2010661123	18	Male	White
KA201	2010303103	19	Male	White
KA201	2010565121	19	Male	White
KA201	2010661113	19	Male	White
KA201	2010661121	19	Male	White
KA201	2010184109	20	Female	White
KA201	2010565102	20	Female	White
KA201	2010632124	20	Male	White
KA201	2010565129	21	Male	White
KA201	2010661119	21	Male	White

Click on the column symbol and the red down triangle changes the selected column sort to descending order.



---

### Browse patient data

To view individual patient data as follows:

1. Select an individual patient to view their patient data.
2. Select the panels that you are interested in reviewing.
3. Position and size the panel view windows.
4. Click anywhere in the row of the patient of interest. You can use **Prev CASE** or **Next CASE** to view data for the next or previous patient.

Each time another patient is selected, each open panel view window is updated to reflect the data for the currently selected patient.

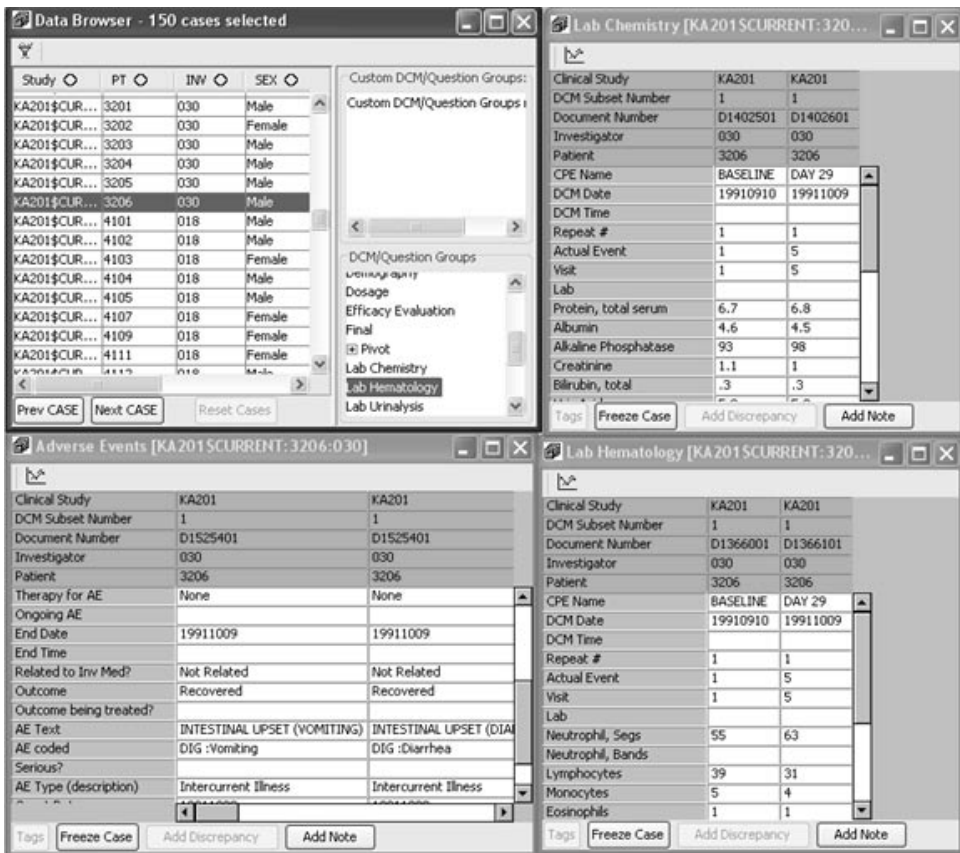
5. If the 'Freeze Case/ Case Frozen' function is toggled to **Case Frozen**, the panel view window displayed remains displayed(frozen) with the patient data they were frozen with.

A Case Frozen Panel View is a static Panel View, even as you select other patients that will update in only **Freeze Case** Panel Views. When tags are on, the tags column updates with the Panel Detail Data View, reflecting the tags for the currently selected patient.

You can select several panels from the list of available panels in the protocol. Each panel selected displays a new window with a spreadsheet containing descriptions and data for the selected patient.

If the panel displayed contains multiple observations, all observations for this patient are displayed in the spreadsheet.

The default vertical panel displays for the data ordered by the Visit Date.



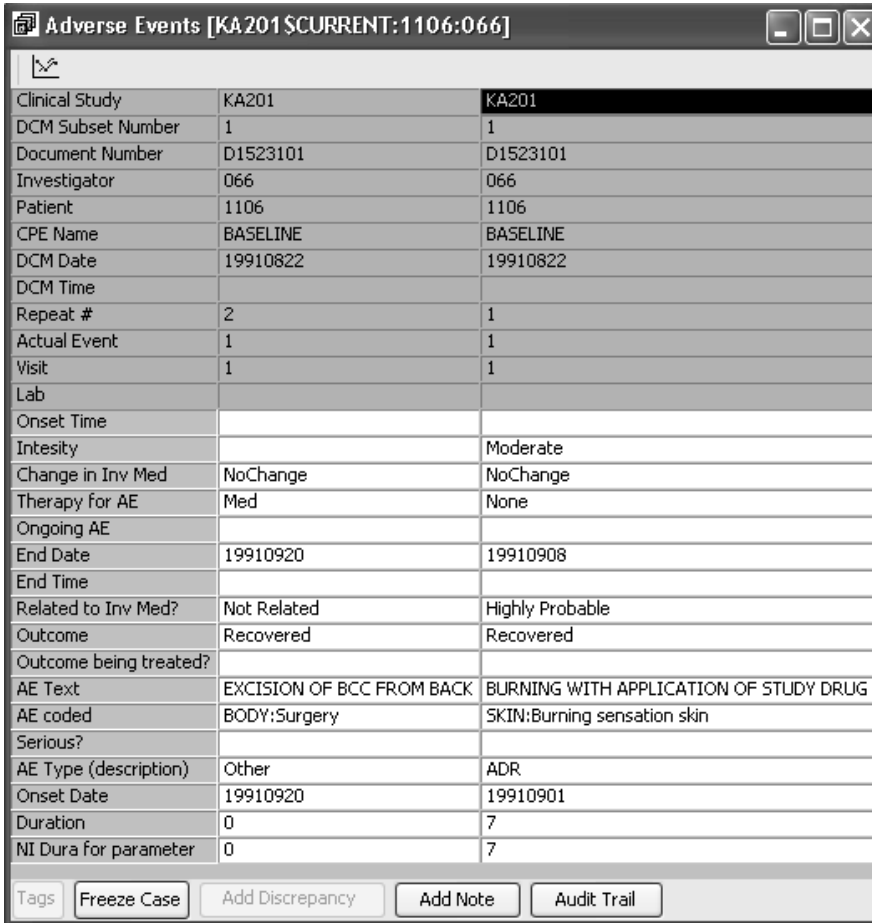
*Note: The Data Browser display cannot be saved as an Output Specification.*

---

## View Audit

You may view select Data Audit information as follows:

1. Select a patient.
2. Select a panel.
3. Select a visit.
4. Click on the Audit Trail button.



The screenshot shows a window titled "Adverse Events [KA201\$CURRENT:1106:066]". It contains a table with two columns representing different states of the same event. The table has 28 rows of data. At the bottom of the window, there are five buttons: "Tags", "Freeze Case", "Add Discrepancy", "Add Note", and "Audit Trail".

	KA201	KA201
Clinical Study	KA201	KA201
DCM Subset Number	1	1
Document Number	D1523101	D1523101
Investigator	066	066
Patient	1106	1106
CPE Name	BASELINE	BASELINE
DCM Date	19910822	19910822
DCM Time		
Repeat #	2	1
Actual Event	1	1
Visit	1	1
Lab		
Onset Time		
Intensity		Moderate
Change in Inv Med	NoChange	NoChange
Therapy for AE	Med	None
Ongoing AE		
End Date	19910920	19910908
End Time		
Related to Inv Med?	Not Related	Highly Probable
Outcome	Recovered	Recovered
Outcome being treated?		
AE Text	EXCISION OF BCC FROM BACK	BURNING WITH APPLICATION OF STUDY DRUG
AE coded	BODY:Surgery	SKIN:Burning sensation skin
Serious?		
AE Type (description)	Other	ADR
Onset Date	19910920	19910901
Duration	0	7
NI Dura for parameter	0	7

Tags Freeze Case Add Discrepancy Add Note Audit Trail



Question	EntryTS	Value	ValidatStat	ChangeReason	DataComment	AuditComment	ExceptionValue	LastDataChange
AE Text	12-OCT-00	0	NNN					12-OCT-00
AE Type (description)	12-OCT-00	ADR	NNN					12-OCT-00
AE coded	12-OCT-00	0	NNN					12-OCT-00
Change in Inv Med	12-OCT-00	NoChange	NNN					12-OCT-00
End Date	12-OCT-00	19910908	NNN					12-OCT-00
End Time	12-OCT-00		NNN				22:00	12-OCT-00
Intensity	12-OCT-00	Moderate	NNN					12-OCT-00
Ongoing AE	12-OCT-00		NNN					12-OCT-00
Onset Date	12-OCT-00	19910901	NNN					12-OCT-00
Onset Time	12-OCT-00		NNN				07:00	12-OCT-00
Outcome	12-OCT-00	Recovered	NNN					12-OCT-00
Outcome being treated?	12-OCT-00		NNN					12-OCT-00
Related to Inv Med?	12-OCT-00	Highly Probable	NNN					12-OCT-00
Serious?	12-OCT-00		NNN					12-OCT-00
Therapy for AE	12-OCT-00	None	NNN					12-OCT-00

*Horizontal data display*

Optional horizontal panel display of the data is supported within ReviewAdmin by a configuration option.

Protocol	Visit No.	Visit Date	Visit Label	Age	Childbearing Potential	Date of Birth	Evaluability at Baseline	Race	Sex
201	1	15-JUL-1991	BASELINE	22		29-JUN-1969	1	White	Male

Tags:

Data sorting by selecting a column is supported for horizontally displayed panels only.

Protocol	Visit No.	Visit Date	Visit Label	Albumin	Alkaline Phosphatase	Creatinine	Bilirubin, total	Uric Acid
201	1	15-JUL-1991	BASELINE	4.5	115	1.1	.4	8.2
201	4	12-AUG-1991	DAY 29	4.9	110	1	.6	8.5

Tags:

Simply click on the column symbol to change the column sort order.

Protocol	Visit No.	Visit Date	Visit Label	Albumin	Alkaline Phosphatase	Creatinine	Bilirubin, total	Uric Acid
201	4	12-AUG-1991	DAY 29	4.9	110	1	.6	8.5
201	1	15-JUL-1991	BASELINE	4.5	115	1.1	.4	8.2

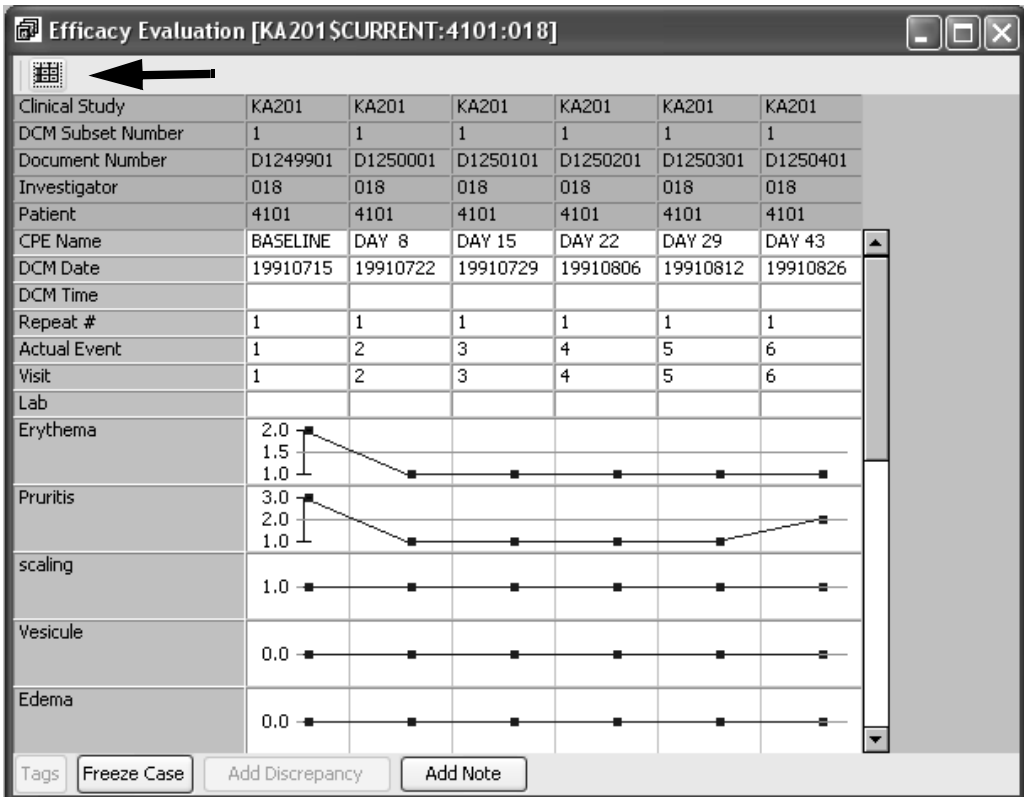
### Graph format display

You can view a graph representation of the data from panels collected as multiple visits or observations with numeric data. Initially when you open a panel the default display is the table format

If you click the graph icon, the data is converted to a graph format.

Clinical Study	KA201	KA201	KA201	KA201	KA201	KA201
DCM Subset Number	1	1	1	1	1	1
Document Number	D1249901	D1250001	D1250101	D1250201	D1250301	D1250401
Investigator	018	018	018	018	018	018
Patient	4101	4101	4101	4101	4101	4101
CPE Name	BASELINE	DAY 8	DAY 15	DAY 22	DAY 29	DAY 43
DCM Date	19910715	19910722	19910729	19910806	19910812	19910826
DCM Time						
Repeat #	1	1	1	1	1	1
Actual Event	1	2	3	4	5	6
Visit	1	2	3	4	5	6
Lab						
Erythema	2	1	1	1	1	1
Pruritis	3	1	1	1	1	2
scaling	1	1	1	1	1	1
Vesicule	0	0	0	0	0	0
Edema	0	0	0	0	0	0
Exudate	0	0	0	0	0	0
Maceration	0	0	0	1	1	1
Papules	0	0	0	0	0	0

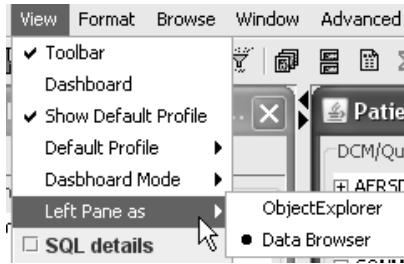
The graph displays as a Trend Plot with the patient's minimum and maximum values listed in the first column. Click the table icon to switch the display back to the spreadsheet format.



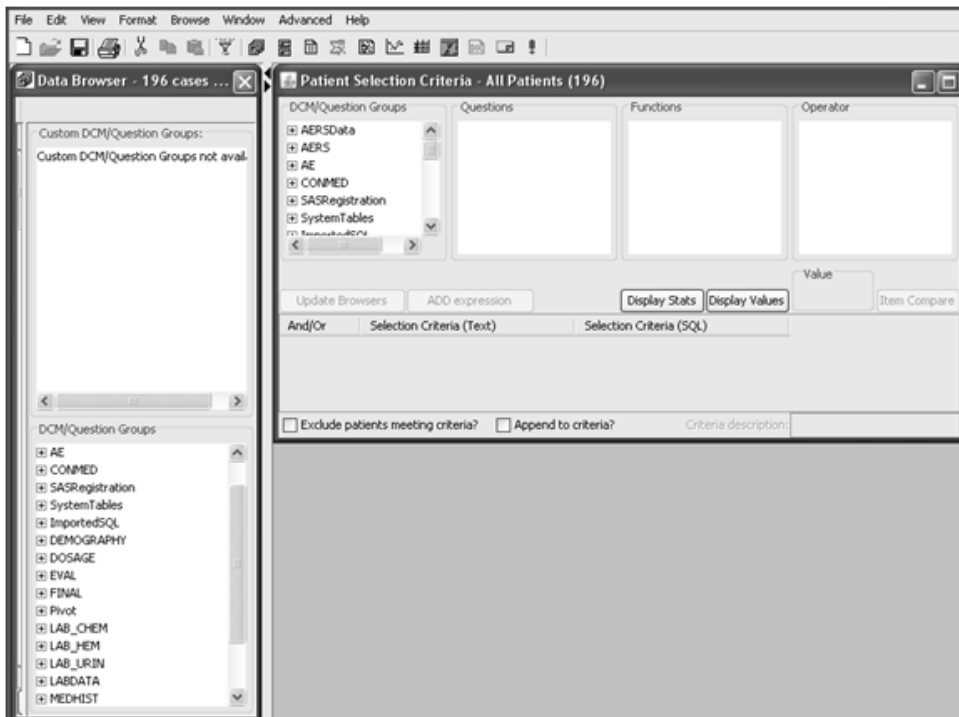
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## View Data Browser

You may optionally replace the Object Explorer left window pane to view the Data Browser when viewing open reports, graphs, crosstabs, etc. Simply click on the View in the Menu bar, select **Left Pane as Data Browser**.



The left window pane is replaced with the Data Browser.



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# Notes Browser

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## Store patient notes

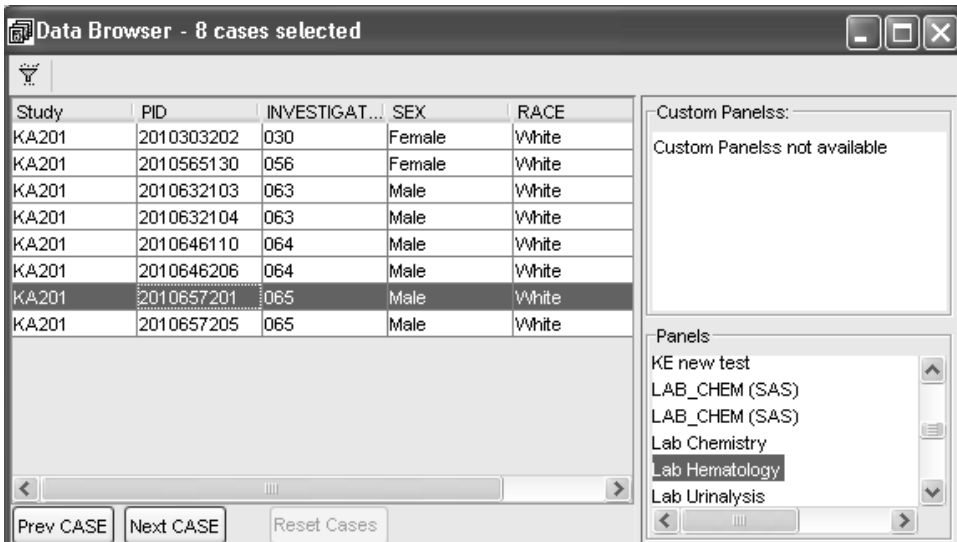
You can store and retrieve patient level notes observed during data review within the Notes Browser. For example, you may need to save a patient note to validate data information for future reference. A separate response may be added later by the note author or another user. The notes can be stored at Object Storage Levels as Private, UserGroup and Public. The author of the note has sole security to edit or remove the note(s), unless the individual has SuperUser privileges. The same restrictions apply to the user entering a response as the author to edit or remove the response. (See *Chapter 12: Advanced Topics: SuperUser Privileges*)

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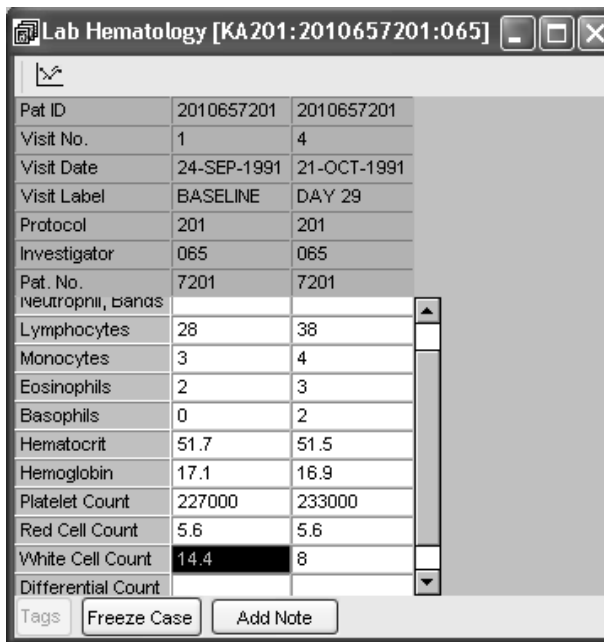
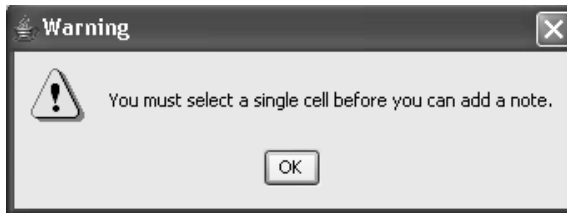
## Add note from Data Browser

You add a patient note from the Data Browser by selecting a patient and a specific panel then adding the note. The note may be added at the patient, panel, visit or item level.

1. Click , or from the **Browse** menu, select **Data**.
2. Select a patient to highlight in the Data Browser.
3. Select the panel that you are interested in reviewing.



4. Click on an item cell within a visit data column. You may not click on a header cell item.



5. Click **Add Note**. The Add Note window opens.

The **Note Level** details display for the selected data column which are later displayed in the Notes Browser spreadsheet after the note is saved. Your note level selection determines if minimal note level details or all note level details are displayed after the note is saved.

When you selected and highlighted the data item for WBC the Note Level is entered as "Item", then all note level details for patient, panel, visit and item are displayed in the Notes Browser spreadsheet.

For example, if your note content is general to the patient or panel type you would select patient or panel level. The columns for visit and item would display as blank in the Notes Browser spreadsheet. Item level displays the most detail in the Notes Browser spreadsheet.

**Add Note**

Note Level

Patient: 2010657201

Panel: Lab Hematology

Visit: 24-SEP-1991, date: 24-SEP-1991

Item: White Cell Count, 14.4

Access Level

Private

User groups

<<Click here to refresh!>>

Note

Add Cancel

6. Enter the **Note** text. Click the cursor in the Note box to enter up to 2000 characters.

**Add Note**

Note Level

Patient: 2010657201

Panel: Lab Hematology

Visit: 24-SEP-1991, date: 24-SEP-1991

Item: White Cell Count, 14.4

Access Level

Public

User groups

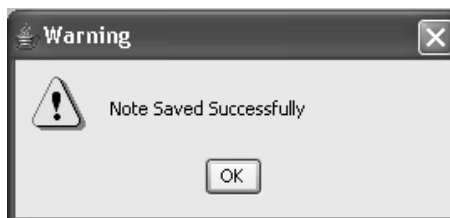
<<Click here to refresh!>>

Note

Patient has elevated WBC and no Adverse Event was reported. Call Inv site to confirm.

Add Cancel

7. Select the **Note Level** to apply the note at either Patient, Panel, Visit or Item level.
8. Select **Note Access Level** for viewing access as Private, UserGroup or Public. Click **Add** to save the note.

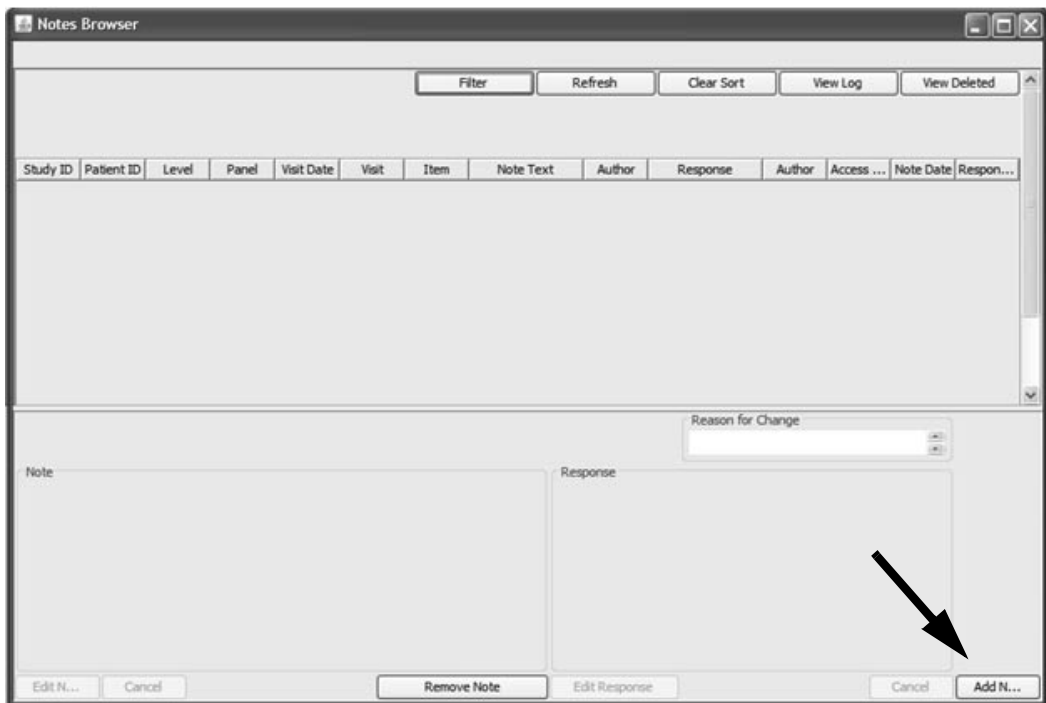




The 'Add Notes' icon is available in certain output displays in the results tool bar. You may apply patient notes from the following Browser output windows:

- **Report Browser** - Detail Data Listing and Patient Visit Data Report types display the Add Note icon in the result tool bar. Click on a patient row to highlight the patient, then click on the Add Note icon.
- **Patient Profile Browser** - displays the Add Note icon in the patient profile output display. Simply click on the Add Note icon in the tool bar.
- **Graph Browser** - Scatter Plots display the Add Note icon in the tool bar. Click on a data point in the graph to highlight the patient, then click on the Add Note icon.

The **Notes Browser** window opens where you would click the **Add Note** button. The **Add Note window** opens to add the patient note details.

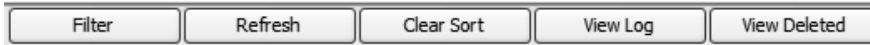


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## Locate patient note

To view patient note details, use the scroll bar and select a patient to display the Note text. If the patient has multiple notes, you may need to select the specific note.

Use the **Filter** and **Sort** buttons to assist in locating patient notes.



1. Click on a column header, to initiate multi-level (up to 3 levels) of column sorting for ascending or descending order. Simply click on the column arrow to reverse the sort order.

Sort on dates, numeric data, PatientID, panel description, Visit, Item, Note Text, Author, and more.

2. Use the **Refresh** and **Clear Sort** buttons to return to the initial notes list.

Study ID	Patient ID	Level	Panel ▼	Visit Date	Visit	Item	Note Text
2001	3202	Item	Lab Hematol...	19910905	5	White Cell C...	Patient has elevated WBC...
2001	7201	Item	Lab Hematol...	19910924	1	White Cell C...	Patient has elevated WBC...
2001	3102	Item	KA201.LABS...			LABVAL:265...	Patient has several elevat...
2001	3110	Item	KA201.LABS...			LABVAL:170...	Patient has several elevat...
2001	7112	Visit	Efficacy Eva...	19920323	2	:	Visit level note visibility to ...
2001	1101	Item	Demography	19910812	0	AGE:32	this is a test saved to UG ...
2001	7112	Panel	Concomitant...			:	Panel level note visibility t...
2001	6102	Item	Adverse Ev...	19910805	1	SECODE:BO...	Patieth had dental surgery.
2001	7112	Item	Adverse Ev...	19920316	1	AE coded:B...	Item level note visibility to...
2001	7112	Item	Adverse Ev...	19920316	1	AE coded:B...	Item level note set to public
2001	1102	Patient #				:	form pat profile add note
2001	5114	Patient #				:	Check elevated Glucose v...
2001	7112	Patient #				:	Patient level not visibility t...

3. When you click on the **Filter** button, the individual data columns display Filter headers. The Notes Browser tool bar changes to display these additional button features.



Use the **Hide Filter** and **Refresh** buttons to return to the initial notes list.

- Select and click on a particular column filter. A drop down list displays for the selected data column item where you select the preferred filter option.

Search Response				Search Note				Hide Filter	
Study ID	Patient ID	Level	Panel	Visit Date	Visit	Item	Note Text	Author	Res
--Filter--	--Filter--	--Filter--	--Filter--	--Filter--	--Filter--	--Filter--	--Filter--	--Filter--	
Study ID	Patient ID	Level	Panel	Visit Date	Visit	Item	Note Text	Author	
2001	1101	Item	Demography	19910812	0	AGE:32	this is a test saved to UG ...	OPS\$KEISEN	
2001	1102	Patient #				:	form pat profile add note	OPS\$GUEST9	add r
2001	3102	Item	KA201.LABS...			LABVAL:265.4	Patient has several elevat...	OPS\$JLONG	Patie
2001	3110	Item	KA201.LABS...			SECODE:BODY	Patient has several elevat...	OPS\$JLONG	Patie
2001	3202	Item	Lab Hematol...	19910905	5	White Cell Cou	Patient has elevated WBC...	OPS\$JLONG	
2001	5114	Patient #				White Cell Cou	Check elevated Glucose v...	OPS\$JLONG	
2001	6102	Item	Adverse Ev...	19910805	1	SECODE:BO...	Patien had dental surgery.	OPS\$GUEST7	Patie
2001	7112	Patient #				:	Patient level not visibility t...	OPS\$GUEST10	
2001	7112	Panel	Concomitant...			:	Panel level note visibility t...	OPS\$GUEST10	Test
2001	7112	Visit	Efficacy Eva...	19920323	2	:	Visit level note visibility to ...	OPS\$GUEST10	
2001	7112	Item	Adverse Ev...	19920316	1	AE coded:B...	Item level note visibility to...	OPS\$GUEST10	
2001	7112	Item	Adverse Ev...	19920316	1	AE coded:B...	Item level note set to public	OPS\$GUEST9	
2001	7201	Item	Lab Hematol...	19910924	1	White Cell C...	Patient has elevated WBC...	OPS\$GUEST5	

- You may search on either a "Search Response" or "Search Note". Double click in the Note, or Response Text box and enter your text search.

Search Response				Search Note			
Study ID	Patient ID	Level	Panel	Visit Date	Visit	Item	Note Text
--Filter--	--Filter--	--Filter--	--Filter--	--Filter--	--Filter--	--Filter--	WBC
Study ID	Patient ID	Level	Panel	Visit Date	Visit	Item	Note Text
2001	1101	Item	Demography	19910812	0	AGE:32	this is a test saved to UG ...
2001	1102	Patient #				:	form pat profile add note
2001	3102	Item	KA201.LABS...			LABVAL:265...	Patient has several elevat...
2001	3110	Item	KA201.LABS...			LABVAL:170...	Patient has several elevat...
2001	3202	Item	Lab Hematol...	19910905	5	White Cell C...	Patient has elevated WBC...
2001	5114	Patient #				:	Check elevated Glucose v...
2001	6102	Item	Adverse Ev...	19910805	1	SECODE:BO...	Patien had dental surgery.
2001	7112	Patient #				:	Patient level not visibility t...
2001	7112	Panel	Concomitant...			:	Panel level note visibility t...
2001	7112	Visit	Efficacy Eva...	19920323	2	:	Visit level note visibility to ...
2001	7112	Item	Adverse Ev...	19920316	1	AE coded:B...	Item level note visibility to...
2001	7112	Item	Adverse Ev...	19920316	1	AE coded:B...	Item level note set to public
2001	7201	Item	Lab Hematol...	19910924	1	White Cell C...	Patient has elevated WBC...

- Then click the corresponding Search Note or Search Response button.

Search Response				Search Note			
Study ID	Patient ID	Level	Panel	Visit Date	Visit	Item	Note Text
--Filter--	--Filter--	--Filter--	--Filter--	--Filter--	--Filter--	--Filter--	WBC
Study ID	Patient ID	Level	Panel	Visit Date	Visit	Item	Note Text
2001	3202	Item	Lab Hematol...	19910905	5	White Cell C...	Patient has elevated WBC...
2001	7201	Item	Lab Hematol...	19910924	1	White Cell C...	Patient has elevated WBC...

An existing note may be edited by the author directly to the Notes Browser at the patient level.

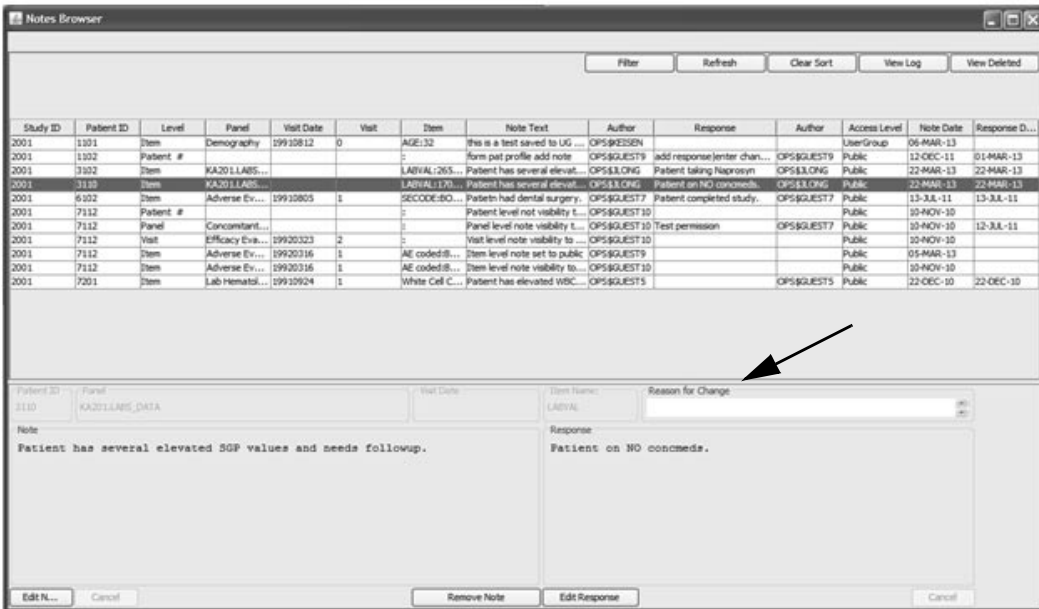
1. Click , or from the **Browse** menu, select **Notes**.

The Notes Browser window opens. All patients with saved notes are listed. You may enter a patient selection criteria to list specific patients.

2. Select and highlight the patient in the patient list.
3. Optionally select **Edit Note** or **Remove Note**. You cannot edit or remove a note if you are not the author.

The patient note information is displayed for the selected patient. The **Edit Note** and **Remove Note** buttons are available.

4. Click the cursor in the Note box to enter up to 2000 characters of text. The Note box is now unshaded and active. If you edit the patient note, the Edit Note button status changes to **Save Note**.
5. You must enter a **Reason for Change** everytime an edit or deletion is performed on a patient's note.



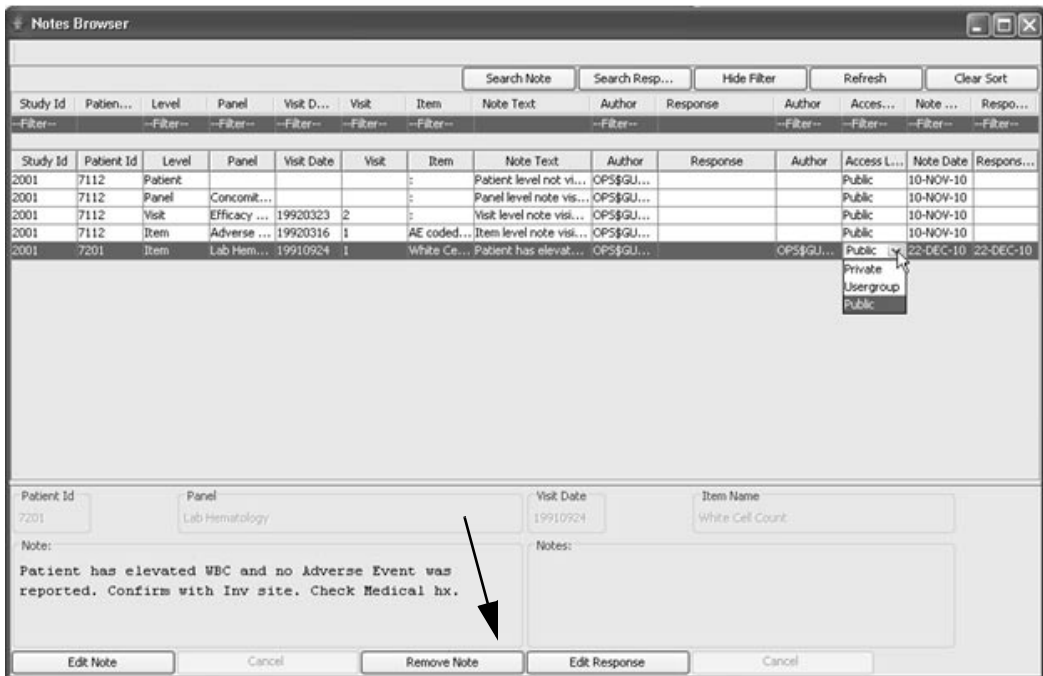
- Click **Save Note**. The note is saved at the “Patient” level in the Notes Browser. If you click **Cancel** before clicking the Save Note button then the note is not added.

The Note box becomes shaded or inactive after clicking Save Note and the button status changes to **Edit Note**. You may select another patient or continue with the same patient.

Only the author of the note may edit or remove the note.



- In the row for the selected patient, the author may change the note Access Level. Click on the patient row for **Access Level**, to display the drop down list for Private, UserGroup or Public.



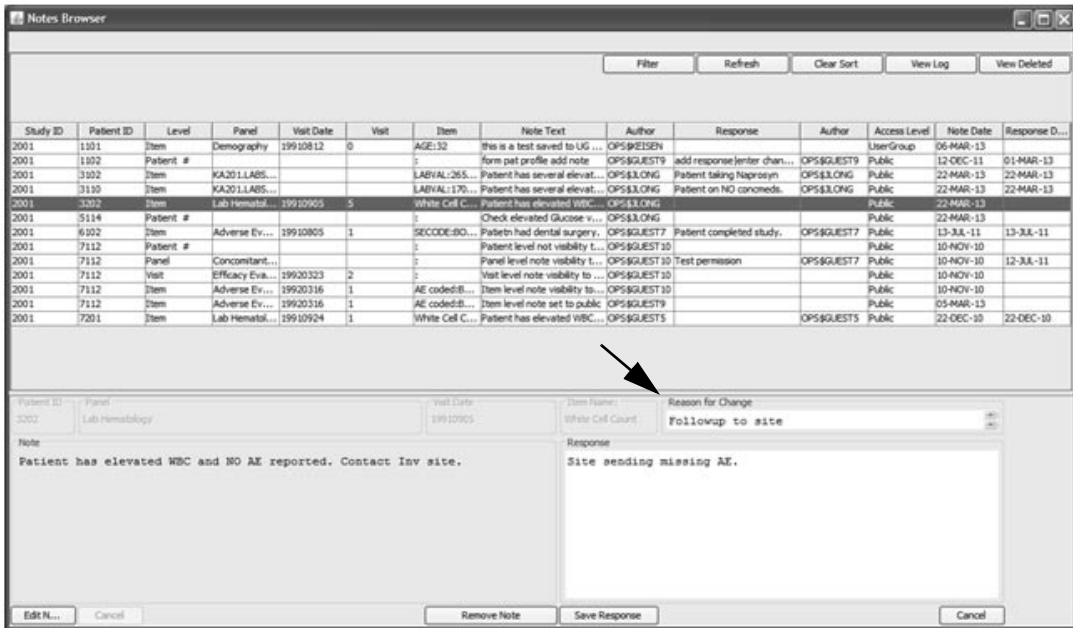
- The Note Author may select a patient note and click **Remove Note**. Close the Notes Browser window.

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## Add response in Notes Browser

A response may be entered by the author of the note or another user with access. Only the author of the response may edit or remove the response after the response has been saved.

1. Click **Edit Response**. The Response box is now unshaded and active.
2. Click the cursor in the Response box to enter up to 2000 characters.



3. You must enter a **Reason for Change** everytime an edit or deletion is performed on a patient's note.
4. Click **Save Response**. The response is saved at the same note level and access level as the original note. If you click **Cancel** before clicking the Save Response button then the response is not added.

The Response box becomes shaded or inactive after clicking Save Response and the button status changes to **Edit Response**.

5. If you need to delete or remove the response and you are the author; click **Edit Response**, edit or delete the text, enter a reason; then click **Save Response**.
6. Close the Notes Browser window.

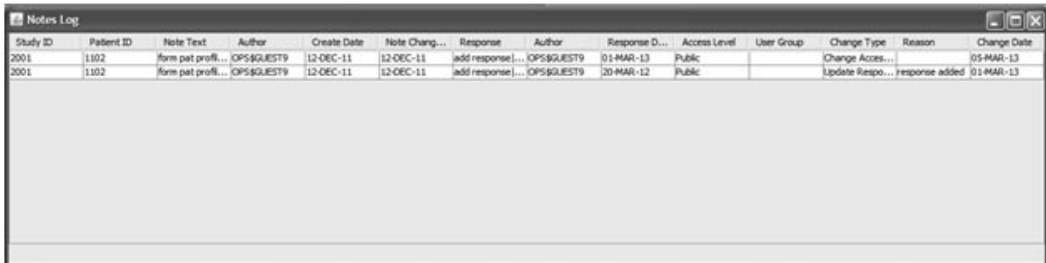
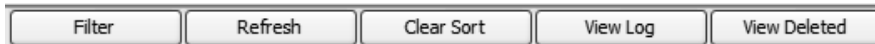
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## View Log

Whenever updating or deleting patient notes a transaction is stored in a companion 'Audit' table for Patient Notes. You may view the Full auditing of patient notes in a transaction log available from the Notes Browser

The information included everytime an edit or deletion is performed on a note is the type of change, reason and date of change.

Select a single patient row in the Notes Browser and click **View Log**.

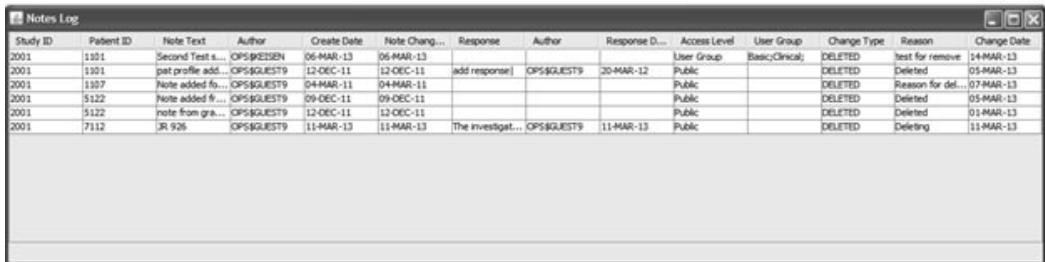


Study ID	Patient ID	Note Text	Author	Create Date	Note Chang...	Response	Author	Response D...	Access Level	User Group	Change Type	Reason	Change Date
2001	1102	form pat profil...	OPS\$GUEST9	12-DEC-11	12-DEC-11	add response]...	OPS\$GUEST9	01-MAR-13	Public		Change Acces...		05-MAR-13
2001	1102	form pat profil...	OPS\$GUEST9	12-DEC-11	12-DEC-11	add response]...	OPS\$GUEST9	20-MAR-12	Public		Update Respo...	response added	01-MAR-13

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## View Delete

The View Delete log will always show all deleted records. Once a record is deleted it will not be displayed in the Notes browser, so the only way to see previously deleted records, click **View Deleted**.

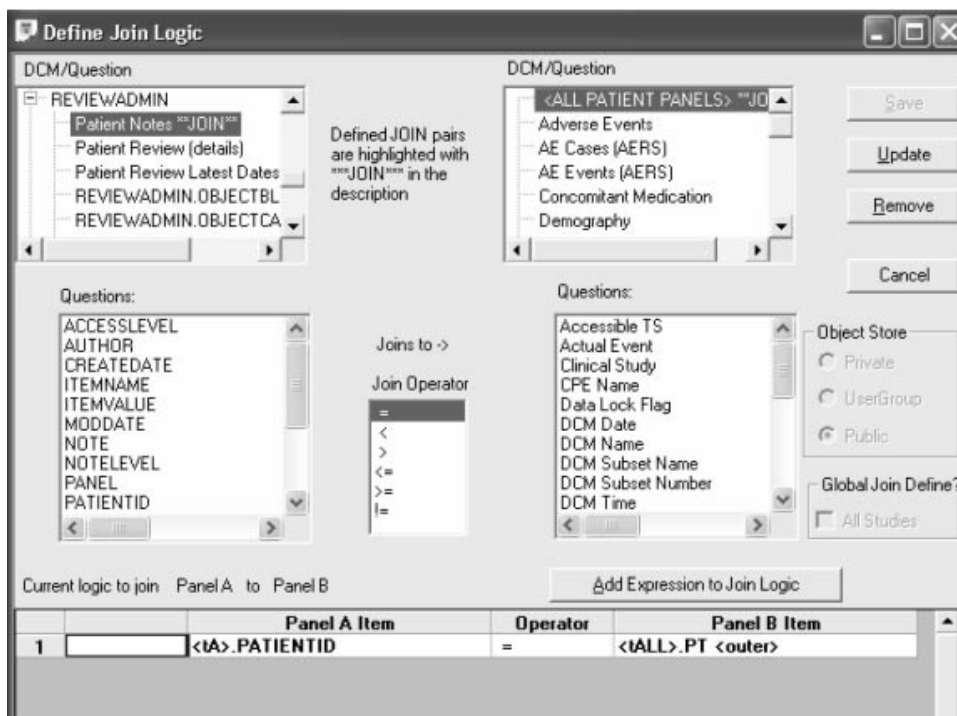


Study ID	Patient ID	Note Text	Author	Create Date	Note Chang...	Response	Author	Response D...	Access Level	User Group	Change Type	Reason	Change Date
2001	1101	Second Test s...	OPS\$K252N	06-MAR-13	06-MAR-13				User Group	Basic/Clinical	DELETED	test for remove	14-MAR-13
2001	1101	pat profile add...	OPS\$GUEST9	12-DEC-11	12-DEC-11	add response]	OPS\$GUEST9	20-MAR-12	Public		DELETED	Deleted	05-MAR-13
2001	1107	Note added fr...	OPS\$GUEST9	04-MAR-11	04-MAR-11				Public		DELETED	Reason for del...	07-MAR-13
2001	5122	Note added fr...	OPS\$GUEST9	09-DEC-11	09-DEC-11				Public		DELETED	Deleted	05-MAR-13
2001	5122	note from gra...	OPS\$GUEST9	12-DEC-11	12-DEC-11				Public		DELETED	Deleted	01-MAR-13
2001	7112	JR 926	OPS\$GUEST9	11-MAR-13	11-MAR-13	The investigat...	OPS\$GUEST9	11-MAR-13	Public		DELETED	Deleting	11-MAR-13

The Notes Browser spreadsheet can be exported, or copied to clipboard with the same features as a report.

Additional supplemental reports may be defined using patient selection criteria and filtering against ReviewAdmin tables to support the Notes Browser. In some circumstances it may be necessary to register Foreign panels (Patient Notes) from ReviewAdmin tables and then define Join Logic. (See *Chapter 12: Advanced Topics - Define Join Logic*)

After the Foreign panels are made available in JReview and the Join Logic is saved, then users may define and apply patient selection criteria, user defined reports and output filters to the data fields in the Notes Browser.





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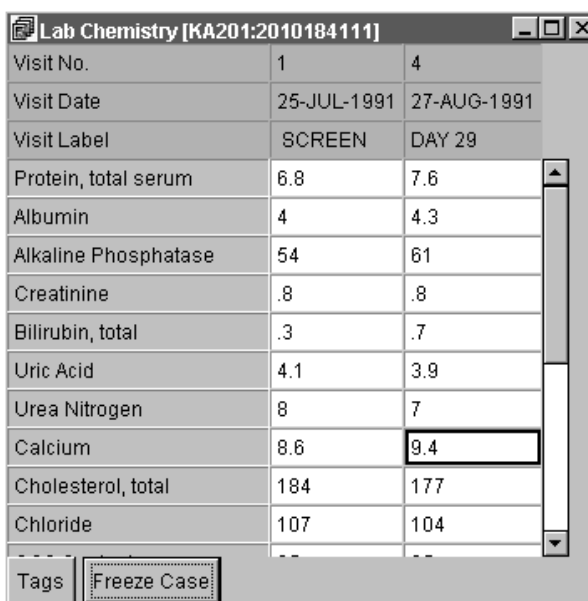
## Multiple-patient mode

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### *Freezing a case*

As you browse through patient data in the Data Browser, you notice that each patient selection updates the open panel views. JReview has an optional multiple-patient mode for the Data Browser. The multiple-patient mode allows the review of different patient's data at the same time.

Each panel view has a **Freeze Case** button in the lower right corner.

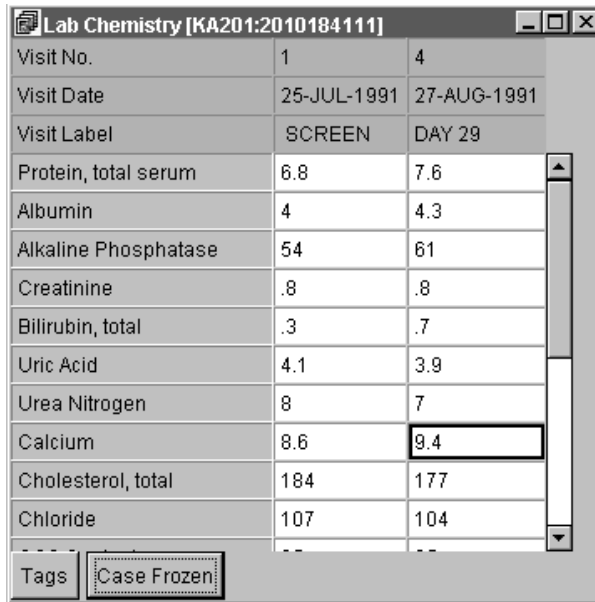


The screenshot shows a window titled "Lab Chemistry [KA201:2010184111]". It contains a table with the following data:

Visit No.	1	4
Visit Date	25-JUL-1991	27-AUG-1991
Visit Label	SCREEN	DAY 29
Protein, total serum	6.8	7.6
Albumin	4	4.3
Alkaline Phosphatase	54	61
Creatinine	.8	.8
Bilirubin, total	.3	.7
Uric Acid	4.1	3.9
Urea Nitrogen	8	7
Calcium	8.6	9.4
Cholesterol, total	184	177
Chloride	107	104

At the bottom of the window, there are two buttons: "Tags" and "Freeze Case". The "Freeze Case" button is highlighted with a dashed border.

When you click this button, the button text changes to **Case Frozen**.



The screenshot shows a window titled "Lab Chemistry [KA201:2010184111]". It contains a table with two columns of data for two different visits. The table has a scrollbar on the right side. Below the table, there are two buttons: "Tags" and "Case Frozen". The "Case Frozen" button is highlighted with a dashed border.

Visit No.	1	4
Visit Date	25-JUL-1991	27-AUG-1991
Visit Label	SCREEN	DAY 29
Protein, total serum	6.8	7.6
Albumin	4	4.3
Alkaline Phosphatase	54	61
Creatinine	.8	.8
Bilirubin, total	.3	.7
Uric Acid	4.1	3.9
Urea Nitrogen	8	7
Calcium	8.6	9.4
Cholesterol, total	184	177
Chloride	107	104

When the **Case Frozen** button is present, data in the panel view is frozen, and will not update when you select another patient.

To freeze multiple panel views:

1. Select a patient.
2. Select a panel.
3. Click **Freeze Case**.

This freezes the panel view on the screen, dedicating it to the patient that was selected at the time of freezing the case. The freezing function allows you to display many patients with the same panel view open at the same time, providing you with a useful comparative clinical protocols tool.

Lab Chemistry [KA202:2020646113]		Lab Chemistry [KA202:2020646122]		
Visit No.	1	Visit No.	1	4
Visit Date	27-SEP-1991	Visit Date	22-NOV-1991	18-DEC-1991
Visit Label	BASELINE	Visit Label	BASELINE	DAY 29
Protein, total serum	6.9	Protein, total serum	7.1	7
Albumin	4	Albumin	4	4.1
Alkaline Phosphatase	198	Alkaline Phosphatase	66	69
Creatinine	1.1	Creatinine	.8	.9
Bilirubin, total	.4	Bilirubin, total	.7	.7
Uric Acid	5.2	Uric Acid	6.6	7.4
Urea Nitrogen	12	Urea Nitrogen	13	11
Calcium	9.7	Calcium	9.5	10
Cholesterol, total	262	Cholesterol, total	206	189
Chloride	102	Chloride	101	101

*Note: A Case Frozen will not update with the selection of a new patient. A new window is generated when you click on the panel to be displayed, and/or updates the previously selected and open panel views not frozen.*

To unfreeze a panel view, click **Case Frozen**.

A panel view that is not frozen will be updated when a different patient is selected. If you have frozen a number of panel views, and would like to unfreeze it and close them, you can close each one with or without unfreezing them by clicking on the System menu button in the upper left corner of each window, or you can close the Data Browser window itself and all open panel views will be closed. If you want to update all the frozen panel views click **Case Frozen** and select a new patient.

The panel view updates to the selected patient and you can proceed to freeze that view for a new comparative exercise.

*Note: If you have opened more than one panel view of the same panel, any left in the unfrozen state become active updating panel views. You may want to individually close all but one unfrozen panel view per panel to reduce screen clutter and needless repetitious presentations of the same data.*

---

## Export and Print listings and panel views

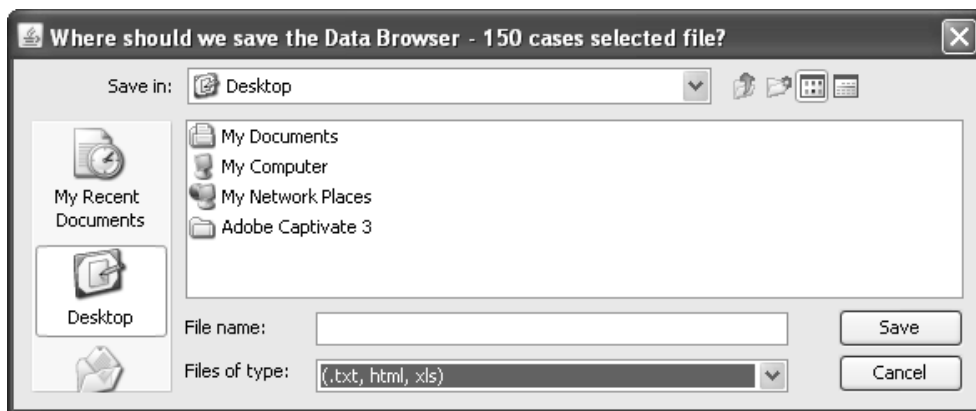
---

### *Export a data browser spreadsheet*

To export the Data Browser window or data from a patient's data panel view in Excel, HTML format or tab delimited files:

1. Select the desired window as the active window.
2. From the **File** menu, select **Export**.

JReview displays the **Save In** window.




3. Open the storage location (folder).
4. Enter a File name.
5. Enter the File type.
6. Click **Save**.

Your patient list or panel view is exported to the currently selected disk directory. (See *Chapter 12: Advanced Topics: Export Browser Display Spreadsheets; Copy and Paste Browser Results; Copying to Clipboard*)

---

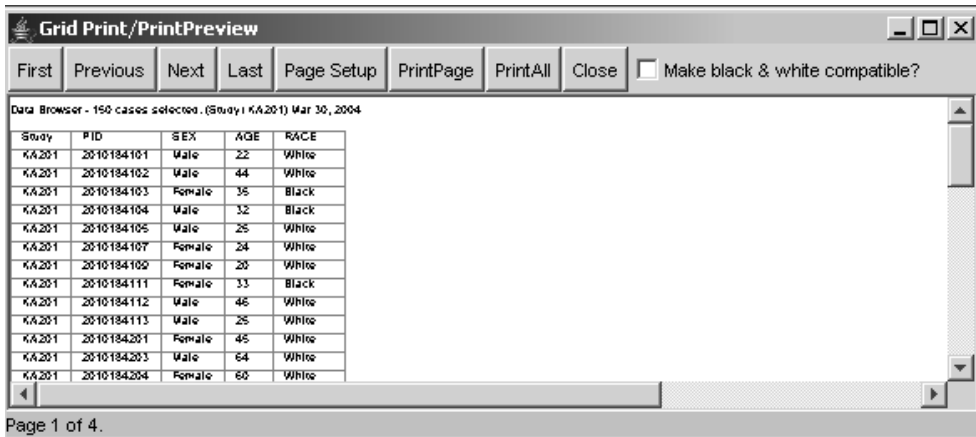
### *Print Preview*

To print patients meeting the current patient selection criteria in the Data Browser window or data from a patient's data panel:

1. Click on the title bar of the Data Browser window or Panel window to make it the active window.
2. Click  , or from the JReview **File** menu, select **Print**.

**Caution: Do not select the Internet Browser's FILE menu Print option. This will cause a system error.**

JReview displays a screen shot of the selected active screen. You can use the buttons to scroll through the pages of the output.



3. Click either **PrintPage**, **PrintAll** or **Close**. The PrintPage option will print only the first page of your output. The PrintAll option will print the entire output.

*Note: Use the **Convert to pure black & white?** option is only applicable to graphs where multiple colors are displayed. If your printer is non-color click this feature for better black and white print resolution of graphs.*

---

## Exploring data

---

### *Changing the patient selection criteria*

Each time you modify the patient selection criteria, the Data Browser instantaneously provides a listing of the patient population that meet the patient selection criteria. Using the Data Browser, you can rapidly review all selected patient data, and compare it to data for other patients or to [CRF image sources](#), and note and review tagged patient data. You can also review all data editing with [audit trail access](#), for any data item. All patient-level browser displays interact with the patient selection criteria similarly, and update to display the patient inclusion defined in the patient selection criteria.

## Patient Identification

You can select and subset multiple patients from all patient level displays of data and CrossTab result tables, to generate corresponding patient listings in the Data Browser and Detail Data Listing Reports. This facilitates patient identification and detailed patient data review via the reviewing tools of the Data Browser.

The screenshot displays the Data Browser interface with several panels:

- Data Browser - 1 case of 196 selected:** A table listing patient data with columns for Study, PID, and SEX. The row for PID 2010632106 is highlighted.
- Final Study Status Listing:** A table showing study details for investigator 063, including patient number, sex, age, AE status, study completion, and reason for discontinuation. The row for patient 2106 is highlighted.
- Lab Chemistry [KA201:2010632106:Male]:** A table comparing lab results at visit 1 (baseline) and visit 4 (day 29).
- Baseline vs Endpoint Scatter Plot:** A scatter plot of Glucose (endpoint) vs Glucose (baseline). The plot shows two groups: Diabetes No (triangles) and Diabetes Yes (circles). An arrow points to a specific data point for a patient with Diabetes Yes, showing a high baseline and high endpoint glucose level.

Study	PID	SEX
.201	201063200	Female
.201	201063209	Female
.201	201063210	Female
.201	2010632101	Male
.201	2010632102	Female
.201	2010632103	Male
.201	2010632104	Male
.201	2010632105	Female
.201	2010632106	Male
.201	2010632107	Male

Investigator	Pat. No.	Sex	Age	AE?	Study?	Completed	Reason for D/C?
063	2101	Male	54	No	Yes		
063	2102	Female	35	No	Yes		
063	2103	Male	42	Yes	Yes		
063	2104	Male	42	Yes	Yes		
063	2105	Female	35	Yes	Yes		
063	2106	Male	65	Yes	Yes		
063	2107	Male	23	Yes	No		Lack of Efficacy
063	2108	Male	36	Yes	Yes		

Visit ID	2010632106	2010632106
Visit No.	1	4
Visit Date	21-OCT-1991	18-NOV-1991
Visit Label	BASELINE	DAY 29
Protocol	201	201
Investigator	063	063
Pat. No.	2106	2106
Protein, total serum	7.2	7.1
Albumin	4.4	4.4
Alkaline Phosphatase	161	185
Creatinine	.8	.9
Bilirubin, total	.5	.4
Uric Acid	4.6	4.3
Urea Nitrogen	13	15
Calcium	9.6	9.6
Cholesterol, total	185	183
Chloride	100	96

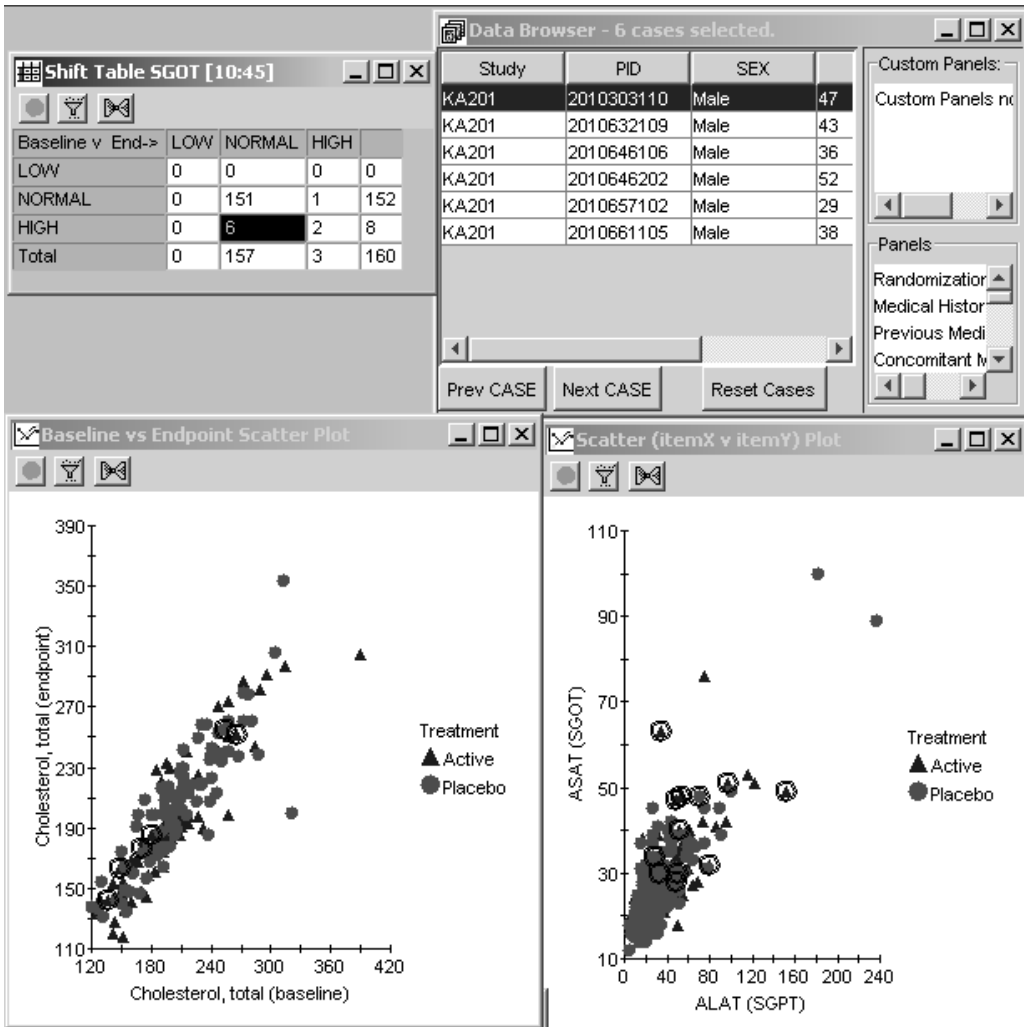
Glucose (baseline)	Glucose (endpoint)	Diabetes
~100	~100	No
~150	~210	No
~250	~110	No
~350	~350	No
~400	~220	No
~420	~460	Yes

---

CrossTab Browser results

Clicking on a patient categorical count in the results CrossTab tables updates the open patient listing in the Data Browser, and refreshes Detail Data Listing reports (if open) to display those patients underlying the selected patient count. This feature facilitates patient identification from the CrossTab categorical patient counts, to the underlying patient data via the Data Browser.

*Note: The CrossTab Browser does not allow multiple protocol selection. (See CrossTab Browser: Patient selection criteria.)*



---

### *Discrepancy reports*

You can manually browse patient data, identify discrepancies and document your review of the study data. You can instantly create automatic discrepancy reports based on the data value, multiple values, or columnar data clusters that you highlight.

---

### *Detail Data Listing reports*

You can click and on a patient row of interest and release. Instantly, the open Data Browser, Scatter Plot Graphs, update to reflect the selected patient. The selected patient will be highlighted in patient listings and highlighted in Scatter Plot Graphs.

---

### *Scatter plot graphs*

You can click and drag to outline a region on a graph. All patients within the outlined region comprise the new patient subset. The open Data Browser patient listing, open Detail Data Listing reports, and other open Scatter Plot graphs update to identify and characterize the new subset of patients.

---

## **Closing panel views and the Data Browser**

---

### *Closing a panel view*

If you are finished reviewing data for a particular panel, double-click on the window's close box, as you would with any other window.

---

### *Closing the Data Browser window*

If you are finished reviewing the panel view completely, double-click on the close box of the Data Browser window. JReview closes all panel views currently opened.



# 4

## *Patient Profiles*

---

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---

# Types of Patient Profiles

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## *Patient profile types*

JReview users with access to Patient Profiles can select different patient profile types to execute. In JReview, Authoring mode is required to define and save patient profile objects at the global, project and study levels. The following three types of patient profiles can be defined and saved for execution in JReview.

JReview users with access to Patient Profiles can define and save the Workbook Profiles, Graphic Profiles and Formatted Profiles.

- **Workbook Profile** generate as a patient profile spreadsheet organized by panels/questions groups or visits and the visit representation as row or column in the spreadsheet display. The results can display and print in single or multiple worksheet modes.
- **Graphic Profile** where first templates are defined and then accessed to create graphic profiles where data is viewed in time oriented graphic displays as duration bars, trend plots and line charts.
- **Formatted Profile** are the workbook profile type with applied formats for fonts, headings, footers, page breaks and panel orientation.

In addition, users may track patient review status with the Patient Review Tracking Tool within all the Patient Profile types.

---

## *Access to SAS datasets*

SAS datasets are listed with the panels generated from Oracle tables. Items from SAS datasets can be used like other items for building patient profiles.

*Note: The current restriction is you cannot mix items from SAS datasets and Oracle table generated panels within the same patient profile.*

---

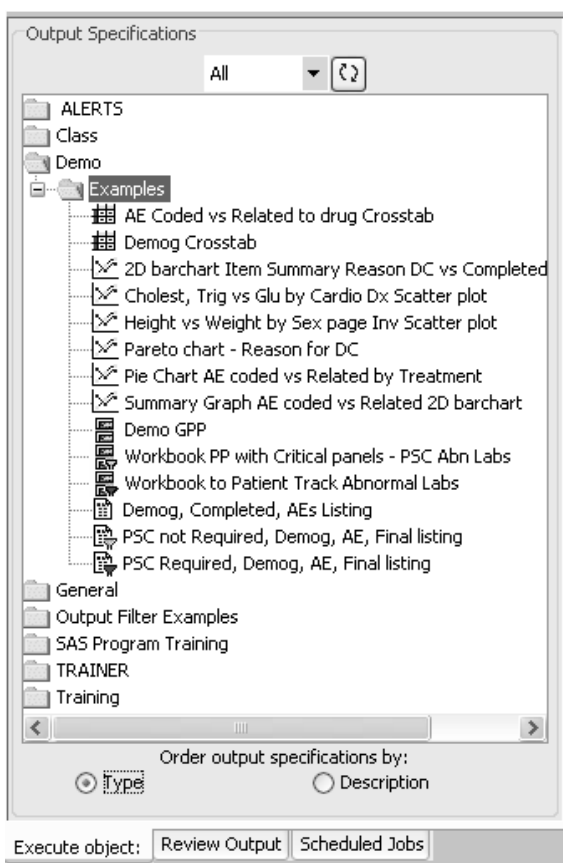
## Execute patient profile

---

### *Quick execute*

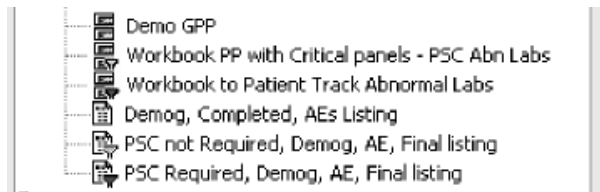
JReview displays a list of categorical folders for stored patient subsets and output specifications at the selected storage location. Simply select one of the storage locations to display its specific folders and contents.

Icons are displayed along with the stored object to identify the source as report, graph, registered SAS program, etc. When a patient selection criteria is saved with the stored object; the filter icon displays with the specific browser icon. JReview aids users to quickly locate and launch these stored objects.



Stored object specifications saved with an included patient selection criteria in the definition will display a filter icon next to the object description.

- If the patient selection criteria was saved as “required”, the filter will display in the color red to indicate the selection criteria cannot be changed.
- If a filter icon is present but is not colored red, then you can alter and update the patient selection criteria for the opened output specification.



---

### *Selection criteria*

In JReview, you can select a previously saved Patient Subset or define your own patient selection criteria for use in the Patient Profile Browser. After launching the patient selection criteria, you can launch a previously saved patient profile object created or define a patient profile in JReview from the Patient Profile Browser.

---

### *Retrieve a stored output specification*

To retrieve a saved output specification:

1. Double click to open a folder in Output Specifications.
2. Double click on the object to launch in a single step. The stored output specification will be launched.

---

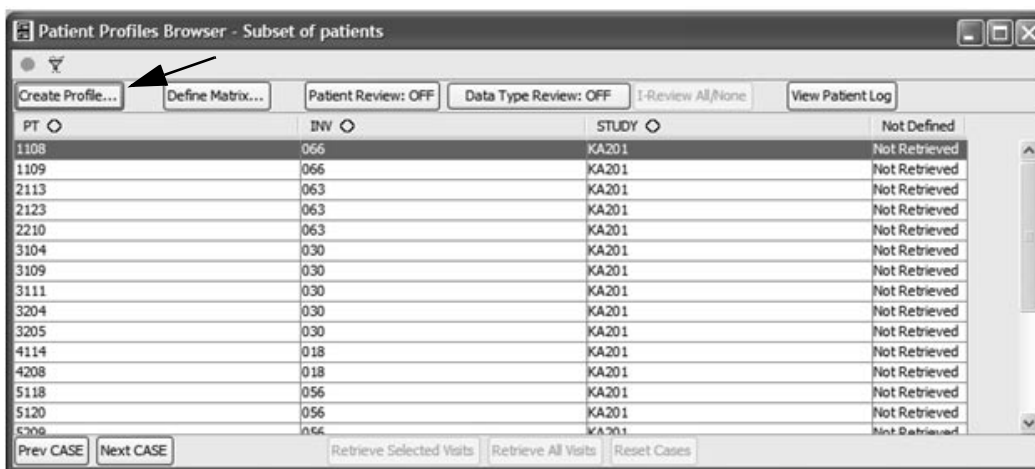
## Patient profile features

---

### *View saved patient profile*

After selecting a previously saved patient profile from the Output Specifications window, JReview opens the Patient Profiles Browser window which displays a list of patients who meet the patient selection criteria, or all patients if no selection criteria was entered.

Select a patient from the list and click **Create Profile**. Only one patient profile can be open at a time and gives a specific stored/required patient selection criteria warning. A warning dialog will be present when trying to open a new Patient Profile if a Snapshot/Frozen or "Req'd PSC" for a Patient Profile is open. The user must close such Patient Profile before a new one can be opened.



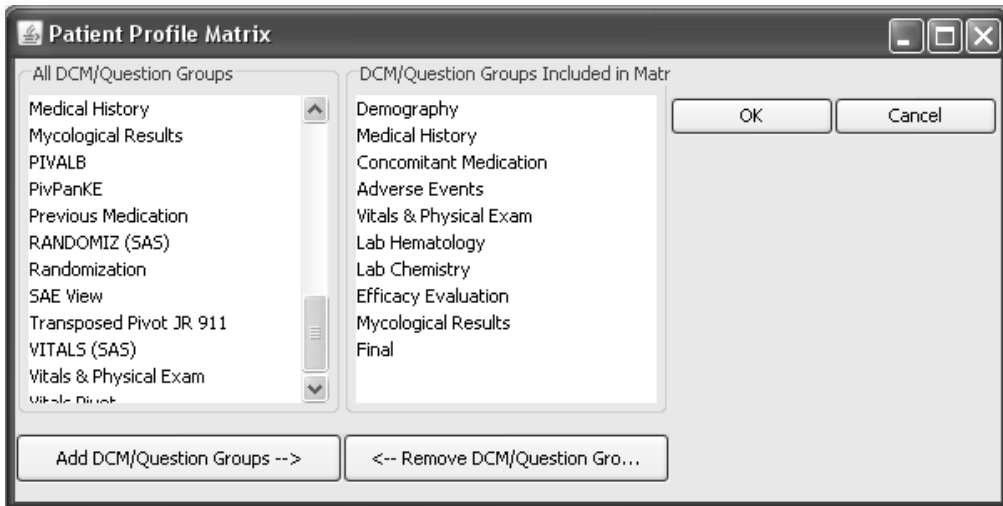
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### *Define patient profile matrix*

Visit numbers for patient related panels found in the database, can be retrieved for display after you Define Matrix. This feature supports a way to track individual patient study status by visit. The visits are not required to display when you select a patient to view their patient profile. *All patient related panels and included items are listed, not foreign panels or pivot panels.*

When the Patient Profiles Browser window initially opens, the patient visit information is not yet retrieved until you define the patient profile matrix. **Define Matrix** is *optional*, and not required to select a patient for **Create Profile**. The patients listed display a message stating 'Not Retrieved'. This allows for faster retrieval of detailed patient visit information and lets you select the patients and visits you want to view.

1. Click **Define Matrix**.
2. Use the **Add Panels** and **Remove Panels** buttons to select panels.
3. Click **OK**.

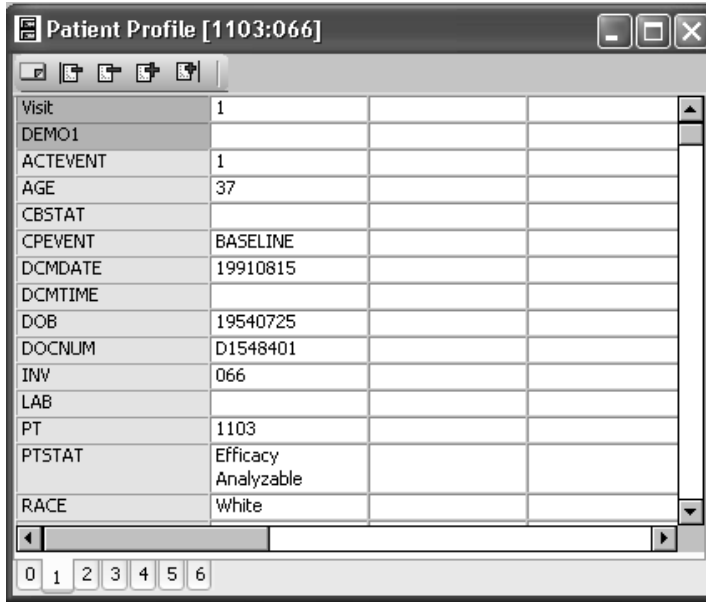


The first 10 patients display all their visit information. All visit numbers are listed for the active patients as a way to track individual patient study status by visit. The remaining patients listed display the message stating 'Not Retrieved'.

4. To retrieve additional patients, highlight multiple patients and click **Retrieve Selected Visits**.
5. Click **Retrieve All Visits** for all remaining patients.



6. Select a patient and click **Create Profile**. The previously saved Workbook profile specification opens for the selected patient.



The screenshot shows a window titled "Patient Profile [1103:066]" with a toolbar containing icons for file operations and a table of patient data. The table has four columns and 17 rows. The first column contains patient attributes, and the second column contains their values. The remaining three columns are empty.

Visit	1		
DEMO1			
ACTEVENT	1		
AGE	37		
CBSTAT			
CPEVENT	BASELINE		
DCMDATE	19910815		
DCMTIME			
DOB	19540725		
DOCNUM	D1548401		
INV	066		
LAB			
PT	1103		
PTSTAT	Efficacy Analyzable		
RACE	White		

---

*Add patient note*

Optionally, you may add patient notes from any patient profile output display. The 'Add Notes' icon is available in the patient profile tool bar (see the first yellow icon).



Simply click on the Add Note icon in the tool bar to add a patient note for the selected patient. The Notes Browser window opens where you would click on Add Note. (See *Chapter 3: Review Patient Data: section on Notes Browser*)




---

# Define Patient Profile

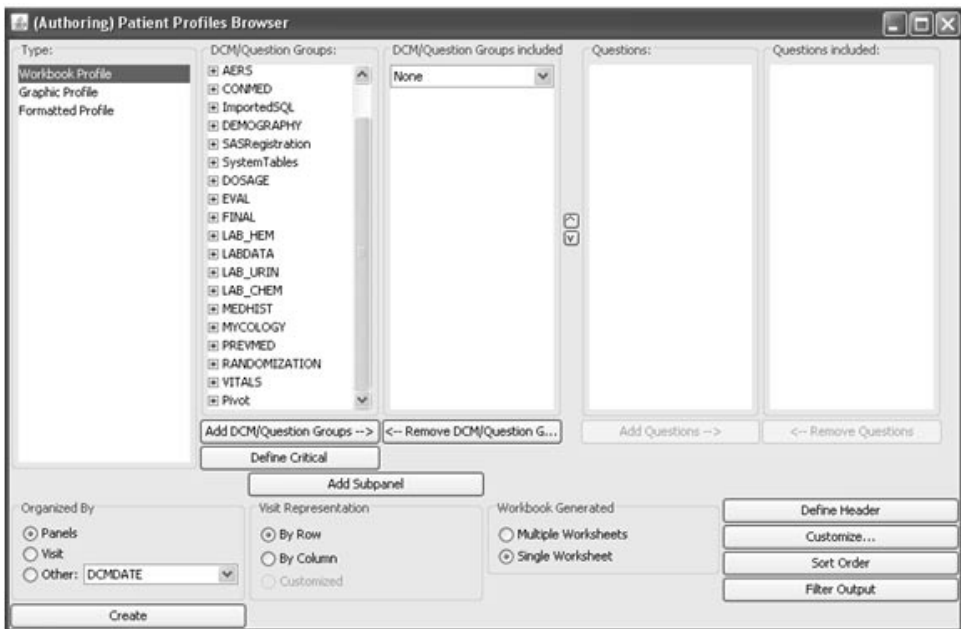
---

## Select workbook profile

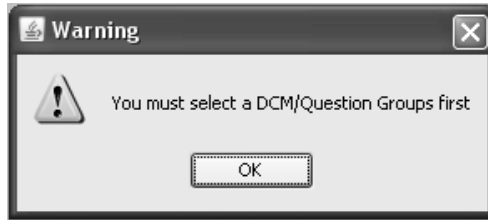
In JReview, Authoring mode is required to define and save patient profile objects. The Patient Profiles Browser facilitates the creation of customized patient profiles of the selected patients into various Workbook Profile types as single worksheet mode or multiple worksheet mode. In addition, the spreadsheet display can be sorted by visit or panel and the visit representation as row or column.

1. Click , or from the **Browser** menu, select **Patient Profiles**.
2. The Patient Profiles Browser window opens, the default profile type is **Workbook Profile**.

A configuration setting controls whether No panels (None), All panels, or Critical Study defined panels are included in the profile by default.

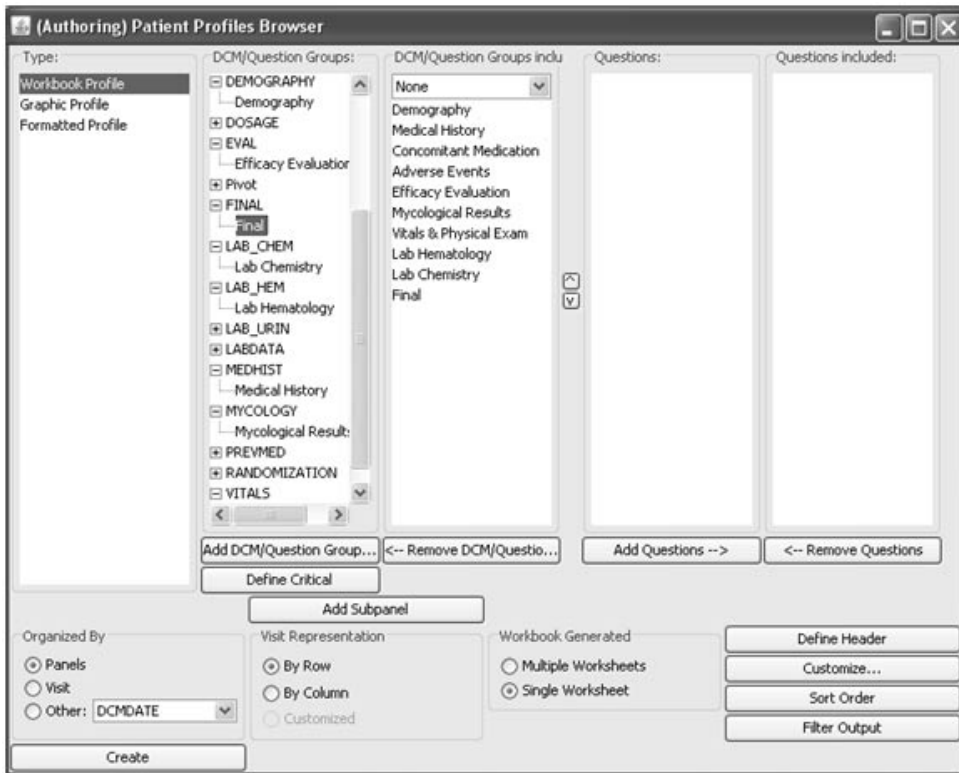


If you click **Create** before defining the patient profile, a message displays indicating that the patient profile contents are empty.

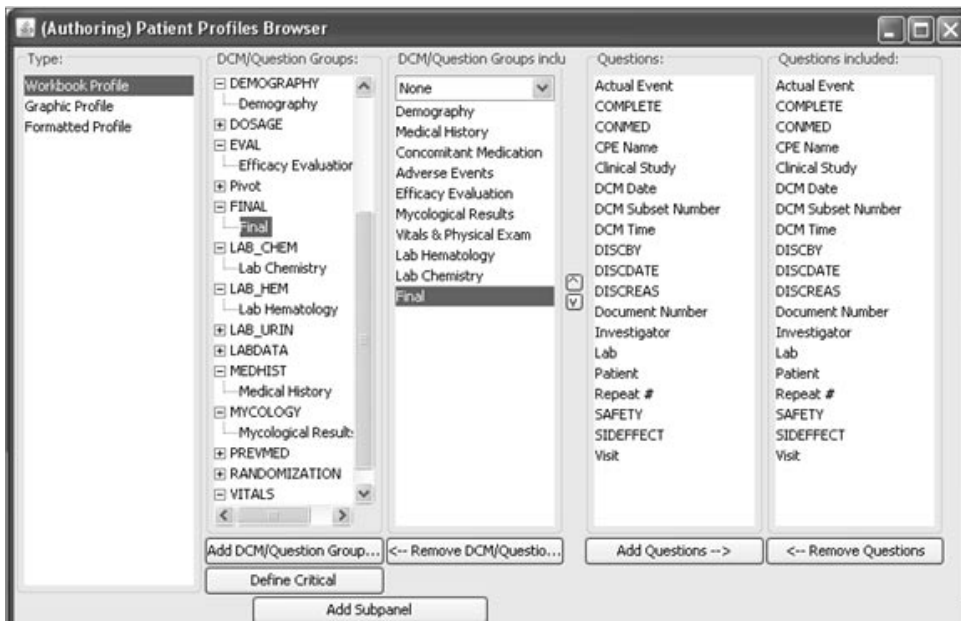


You must first include panels and items for display in the patient profile:

3. Select panels from the **Panels** list to move to the **Panels Included** list. Click the **Add Panels** and **Remove Panels** buttons, to select and move panels defining the patient profile.
4. Use the **Up** and **Down** arrows located next to the **Panels Included** list box, to change the sort order of the panels displayed.

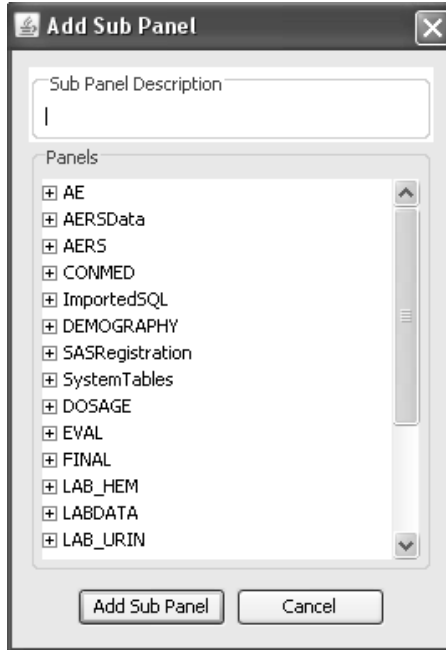


5. Use the **Add Items** and **Remove Items** buttons, to select specific items for display. Select multiple items with the CTRL or SHIFT key.
6. **Reorder** the individual items within a selected panel by using drag and drop.



The **Add Subpanel** function is similar to cloning a panel. If you have a complex panel with different types of data you may wish to divide the panel into more meaningful categories or sub panels. For example, Physical Exam and Vital Signs panel can be split into sub panels for easier viewing.

1. Click the **Add Subpanel button**. The Add Sub Panel window opens.



2. Select the panel. When defining a sub panel you can only select a single panel. Multiple visit panels display as vertical or horizontal.
3. Enter a **Sub Panel Description**.
4. Click **Add Sub Panel**. The new sub panel is added to the Panels Included list for selection to add and remove items for display.

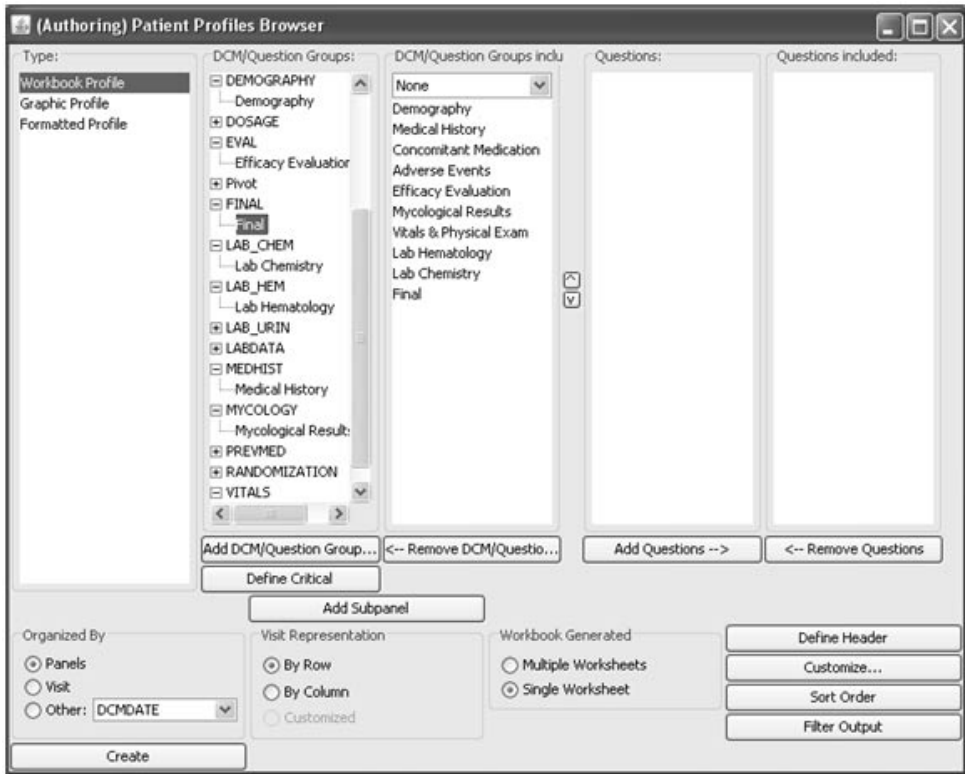
---

# Type of workbook

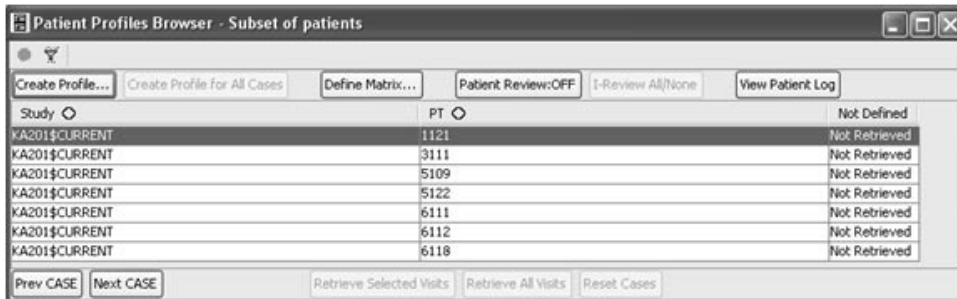
---

## Organize data

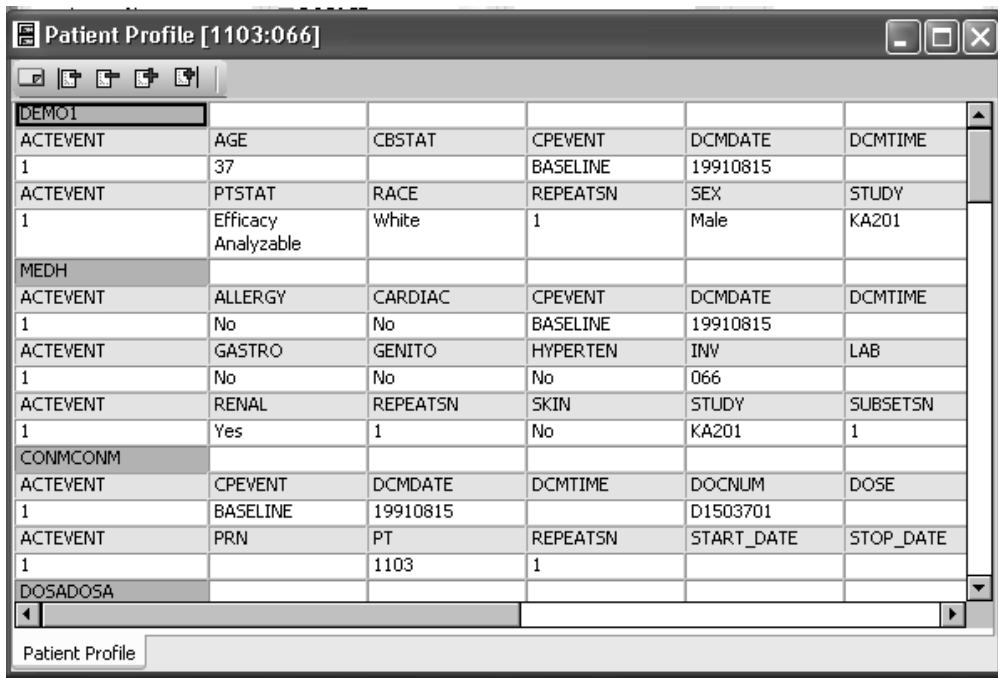
Initially the Patient Profiles Browser opens for **Workbook Profile type** with default settings for the data organized by panels, and visit related data is represented by row for single worksheet display.



After you define the workbook profile by adding selected panels and items; click **Create** to use the default settings. The Patient Profile Browser window displays the patient list for the selected patients.



Select a patient, and click **Create Profile** to view your defined patient profile.



The single worksheet mode can be organized by Panels, Visit or Other (i.e., DCM Date). This topic covers the workbook profile display options.

The screenshot shows a dialog box with three main sections: 'Organized By', 'Visit Representation', and 'Workbook Generated'. Under 'Organized By', there are three radio buttons: 'Panels' (selected), 'Visit', and 'Other: DCMDATE' (with a dropdown arrow). Under 'Visit Representation', there are three radio buttons: 'By Row' (selected), 'By Column', and 'Customized'. Under 'Workbook Generated', there are two radio buttons: 'Multiple Worksheets' and 'Single Worksheet' (selected). A black arrow points to the 'Single Worksheet' radio button. At the bottom left, there is a 'Create' button.

- **By panel** lists a single worksheet for all data for all panels included where there is data for the active patient. It will display in the order that has been defined and visits are sorted numerically.
- **By visit** lists a single worksheet for all data for all visits for the active patient. The visits are sorted numerically.

Visit representation only pertains to data collected as multiple visits where there exists one observation per patient per visit. You select the display option by row where each row represents a visit or by column where each column represents a visit. This applies only when the worksheet is organized *by panel*.

**Note:**When the worksheet mode for *by visit* is selected then the visit representation options are not available.

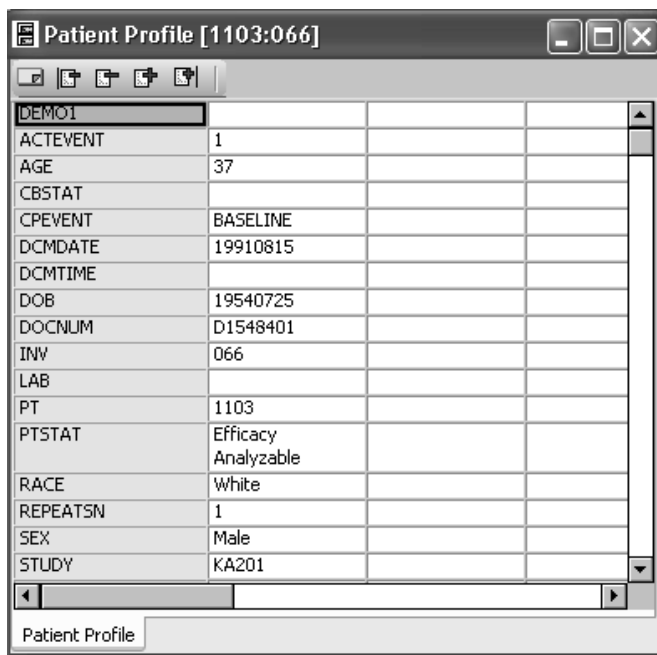
- **By Other (DCM DATE)** lists a single worksheet for all data by the other designated date item for the active patient. The dates are sorted. *(This feature is only available in Oracle Clinical DataBase.)*

The example below shows the Patient Profiles Browser in single worksheet mode for the options *by panel* and visit representation as row.

DEMO1					
ACTEVENT	AGE	CBSTAT	CPEVENT	DCMDATE	DCMTIME
1	37		BASELINE	19910815	
ACTEVENT	PTSTAT	RACE	REPEATSN	SEX	STUDY
1	Efficacy Analyzable	White	1	Male	KA201
MEDH					
ACTEVENT	ALLERGY	CARDIAC	CPEVENT	DCMDATE	DCMTIME
1	No	No	BASELINE	19910815	
ACTEVENT	GASTRO	GENITO	HYPERTEN	INV	LAB
1	No	No	No	066	
ACTEVENT	RENAL	REPEATSN	SKIN	STUDY	SUBSETSN
1	Yes	1	No	KA201	1
CONMCONM					
ACTEVENT	CPEVENT	DCMDATE	DCMTIME	DOCNUM	DOSE
1	BASELINE	19910815		D1503701	
ACTEVENT	PRN	PT	REPEATSN	START_DATE	STOP_DATE
1		1103	1		
DOSADOSA					



The next example shows the Patient Profiles Browser in single worksheet mode for the options *by panel* and visit representation as column.



The screenshot shows a window titled "Patient Profile [1103:066]" with a toolbar and a table of patient data. The table has five columns and 18 rows. The first column contains patient identifiers, and the second column contains various clinical and demographic data points. The remaining three columns are empty.

DEMO1				
ACTEVENT	1			
AGE	37			
CBSTAT				
CPEVENT	BASELINE			
DCMDATE	19910815			
DCMTIME				
DOB	19540725			
DOCNUM	D1548401			
INV	066			
LAB				
PT	1103			
PTSTAT	Efficacy Analyzable			
RACE	White			
REPEATSN	1			
SEX	Male			
STUDY	KA201			

This example shows the Patient Profiles Browser in single worksheet mode *by visit*.

Visit	0				
<b>MYCOMYCO</b>					
ACTEVENT	CPEVENT	CULTID	CULTURE	DATEREAD	DCMDATE
0	SCREEN	T.	Po	19910815	19910802
ACTEVENT	INV	KOHEXAM	LAB	PT	REPEATSN
0	066	Po		1103	1
<b>Visit</b>	1				
<b>DEMO1</b>					
ACTEVENT	AGE	CBSTAT	CPEVENT	DCMDATE	DCMTIME
1	37		BASELINE	19910815	
ACTEVENT	PTSTAT	RACE	REPEATSN	SEX	STUDY
1	Efficacy Analyzable	White	1	Male	KA201
<b>MEDH</b>					
ACTEVENT	ALLERGY	CARDIAC	CPEVENT	DCMDATE	DCMTIME
1	No	No	BASELINE	19910815	
ACTEVENT	GASTRO	GENITO	HYPERTEN	INV	LAB
1	No	No	No	066	
ACTEVENT	RENAL	REPEATSN	SKIN	STUDY	SUBSETSN
1	Yes	1	No	KA201	1
<b>CONMCONM</b>					
ACTEVENT	CPEVENT	DCMDATE	DCMTIME	DOCNUM	DOSE
1	BASELINE	19910815		D1503701	
<b>CONMCONM</b>					
ACTEVENT	PRN	PT	REPEATSN	START_DATE	STOP_DATE
1		1103	1		
<b>DOSADOSA</b>					

---

### Multiple worksheet mode

The multiple worksheet mode can be organized by panel or visit.

- By panel creates separate worksheets for each panel that has been included and there is data for the active patient. It will display in the order that has been defined.
- By visit creates separate worksheets for each visit that has been included and there is data for the active patient. It will display in the order that has been defined.

This example shows the Patient Profiles Browser in multiple worksheet mode for the options *by panel* and visit representation as row.

This option displays the tabs organized by panel label.

The screenshot shows a window titled "Patient Profile [1106:066]" with a standard Windows interface. The main area contains a table with data organized by panel labels. Below the table is a horizontal scroll bar and a row of tabs for different data panels.

EVALEVAL						
ACTEVENT	BURNING	CPEVENT	DCMDATE	DCMTIME	DOCNUM	EDEMA
1	0	BASELINE	19910822		D1210701	1
2	0	DAY 8	19910829		D1210801	1
3	2	DAY 15	19910905		D1210901	1
4	0	DAY 22	19910912		D1211001	1
5	0	DAY 29	19910919		D1211101	0
6	0	DAY 43	19911003		D1211201	0
ACTEVENT	INV	LAB	MACERATE	PAIN	PAPULES	PRURITUS
1	066		2	0	0	3
2	066		2	0	0	1
3	066		2	0	0	1
4	066		1	0	0	0
5	066		0	0	0	0
6	066		0	0	0	0
ACTEVENT	STUDY	SUBSETSN	VESICULE	VISIT_NUMBER		
1	KA201	1	0	1		
2	KA201	1	0	2		
3	KA201	1	0	3		
4	KA201	1	0	4		
5	KA201	1	0	5		
6	KA201	1	0	6		

Below the table is a horizontal scroll bar and a row of tabs:

- Lab Urinalysis
- Efficacy Evaluation
- Mycological Results
- Randomization
- Vitals & Physical Exam
- Final
- Demography
- Medical History
- Adverse Events
- Concomitant Medication
- Dosage
- Lab Hematology
- Lab Chemistry

The next example shows the Patient Profiles Browser in multiple worksheet mode for the options *by panel* and visit representation as column.

The tabs are also organized by panel description.

The screenshot shows a window titled "Patient Profile [1106:066]". The main area contains a table with columns for visits and rows for various clinical parameters. Below the table is a row of tabs representing different data panels.

MYCOMYCO	Visit 0	Visit 1	Visit 3	Visit 5	Visit 6
ACTEVENT	0	1	3	5	6
CPEVENT	SCREEN	BASELINE	DAY 15	DAY 29	DAY 43
CULTID	T.	T.			
CULTURE	Po	Po		Ne	Ne
DATEREAD	19910819	19910829		19911021	19911106
DCMDATE	19910814	19910822	19910905	19910919	19911003
DCMTIME					
DCTRLAB	19910903	19910903	19910916		
DOCNUM	D1131101	D1131201	D1131301	D1131401	D1131501
EXCPTION			Y		
FRESULT	Po	Po	Ne	Ne	Ne
INV	066	066	066	066	066
KOHEXAM	Po	Po	Po	Ne	Ne
LAB					
PT	1106	1106	1106	1106	1106
REPEATSN	1	1	1	1	1
STUDY	KA201	KA201	KA201	KA201	KA201

Below the table, there is a row of tabs:

- Lab Urinalysis
- Efficacy Evaluation
- Mycological Results
- Randomization
- Vitals & Physical Exam
- Final
- Demography
- Medical History
- Adverse Events
- Concomitant Medication
- Dosage
- Lab Hematology
- Lab Chemistry

This example shows the Patient Profiles Browser in multiple worksheet mode for the options *by visit*. The tabs are sequenced by visit number.

Patient Profile [1106:066]

Visit	1					
<b>DEMO1</b>						
ACTEVENT	AGE	CBSTAT	CPEVENT	DCMDATE	DCMTIME	DOB
1	28		BASELINE	19910822		19621129
ACTEVENT	PTSTAT	RACE	REPEATSN	SEX	STUDY	SUBSETSN
1	Efficacy Analyzable	White	1	Male	KA201	1
<b>MEDH</b>						
ACTEVENT	ALLERGY	CARDIAC	CPEVENT	DCMDATE	DCMTIME	DIABETES
1	Yes	No	BASELINE	19910822		No
ACTEVENT	GASTRO	GENITO	HYPERTEN	INV	LAB	MUSCSKEL
1	No	No	No	066		No
ACTEVENT	RENAL	REPEATSN	SKIN	STUDY	SUBSETSN	THYROID
1	No	1	Yes	KA201	1	No
<b>AEAE</b>						
ACTEVENT	AETYPE	CPEVENT	DCMDATE	DCMTIME	DOCNUM	INV
1	Other	BASELINE	19910822		D1523101	066
1	ADR	BASELINE	19910822		D1523101	066
ACTEVENT	SECODE	SEENDD	SEENDT	SEONGO	SEONSETD	SEONSETT
1	BODY:Surgery	19910920			19910920	
1	SKIN:Burning sensation skin	19910908			19910901	
ACTEVENT	SESEVERE	SETEXT	SETRTMNT	STUDY	SUBSETSN	VISIT_NUMBER
1		EXCISION OF BCC FROM BACK	Med	KA201	1	1
1	Moderate	BURNING WITH APPLICATION OF STUDY DRUG	None	KA201	1	1

0 1 2 3 4 5 6

---

## Modify profile

The profile content and appearance can additionally be modified with the following functions:



When defining the profile content you may define a header from all the patient related panels types (not foreign or pivot) that are one observation per patient. The defined header information will appear only once at the top in the single worksheet mode. In the multiple worksheet mode, it will display at the top of each worksheet whether organized by panel or visit.

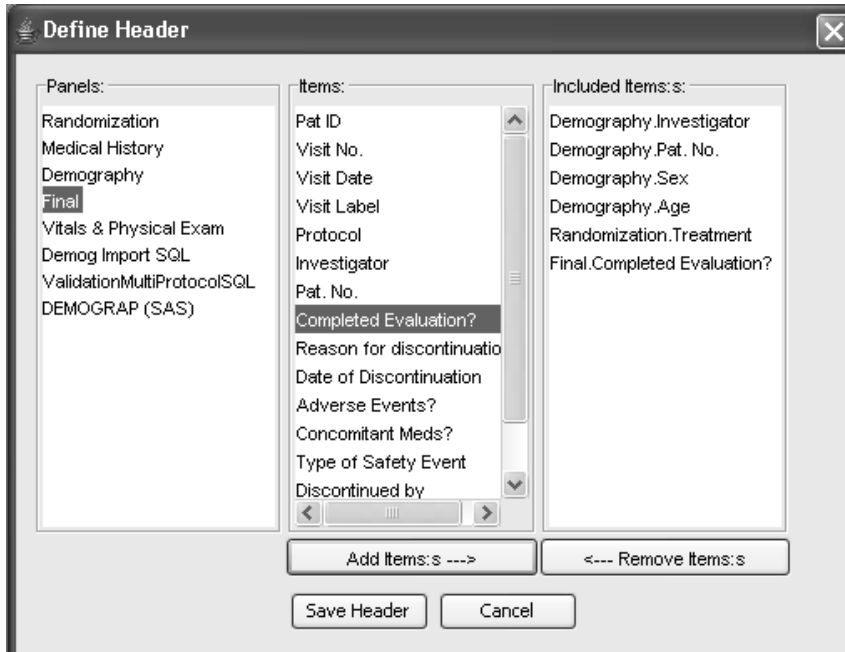
---

## Define Header

Click **Define Header** to open the Header Definition window which lists all the patient related panels types (not foreign or pivot) that are one observation per patient. You can select up to nine items from the listed panels by using the add item button and multiple items can be selected.

1. Click **Define Header** from the Patient Profiles Browser window.
2. Select a panel.
3. Select the items from the various panels to add as header information. Use the **Add Items** and **Remove Items** buttons to include or remove items from the header definition. As a short cut, you can double click on the individual items to add them or highlight multiple items to add or remove.

4. Use the drag and drop to change the order that the items are displayed.



5. Click **Save Header** and close window. The Patient Profiles Browser window will show the status of the button changed to '**Header is Defined**'.

6. Select a patient from the patient list and click **Create Profile**.

Once a patient profile is created and displayed, you can change the active patient selected and the patient profile will be updated.

However, if you choose to modify any of the display options while the patient profile display window is open the profile will not be updated.

**Patient Profile [1106:066]**

PT	1106	RACE	White	SEX	Male
TREATMENT	Active	COMPLETE	Yes		
AEAE					
STUDY	DOCNUM	INV	PT	CPEVENT	DCMDATE
KA201	D1523101	066	1106	BASELINE	19910822
KA201	D1523101	066	1106	BASELINE	19910822
STUDY	SESEVERE	SEACTION	SETRTMNT	SEONGO	SEENDD
KA201	Moderate	NoChange	None		19910908
KA201		NoChange	Med		19910920
STUDY	SECODE	SERIOUS	AETYPE	SEONSETD	
KA201	SKIN:Burning sensation skin		ADR	19910901	
KA201	BODY:Surgery		Other	19910920	

Adverse Events   
 Concomitant Medication   
 Demography   
 Dosage   
 Efficacy Evaluation

Final   
 Lab Chemistry   
 Lab Hematology   
 Lab Urinalysis   
 Medical History

Mycological Results   
 Previous Medication   
 Randomization   
 Vitals & Physical Exam

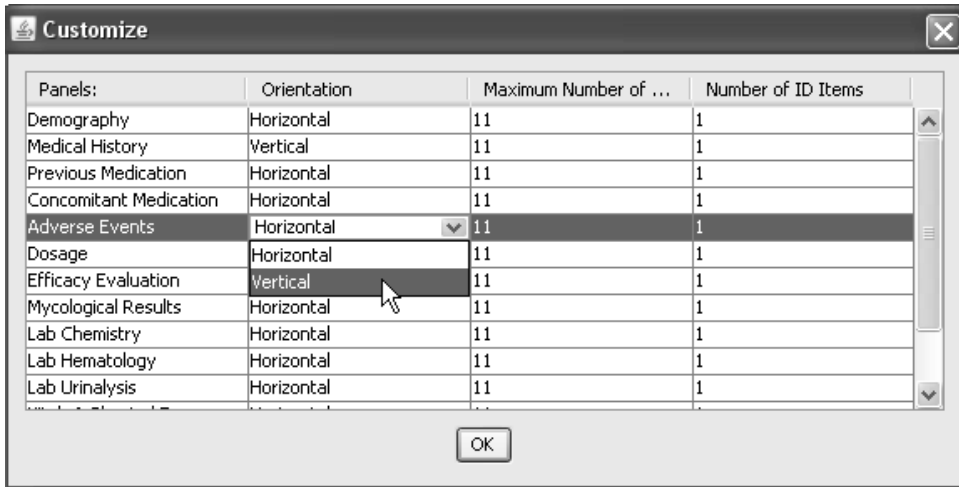


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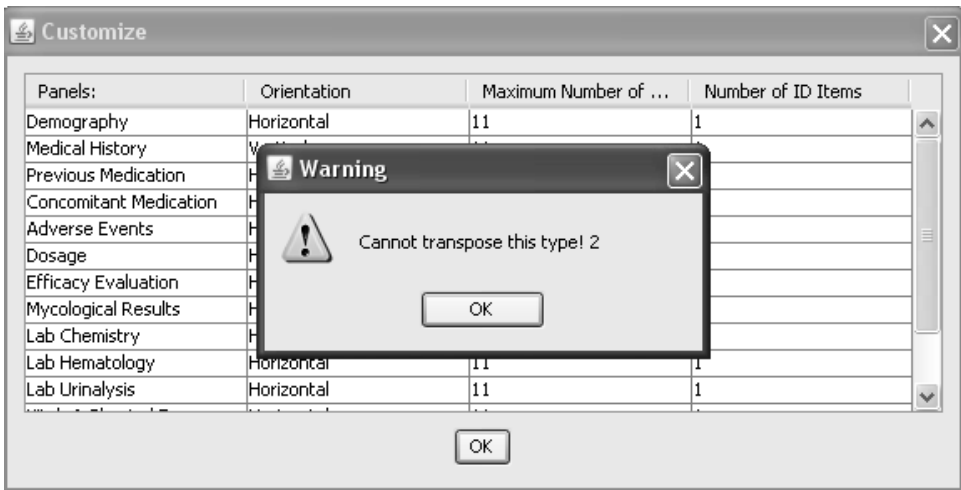
## Customize output

You can make changes on a individual panel basis to panel options regarding display orientation, maximum number of columns and number of ID items.

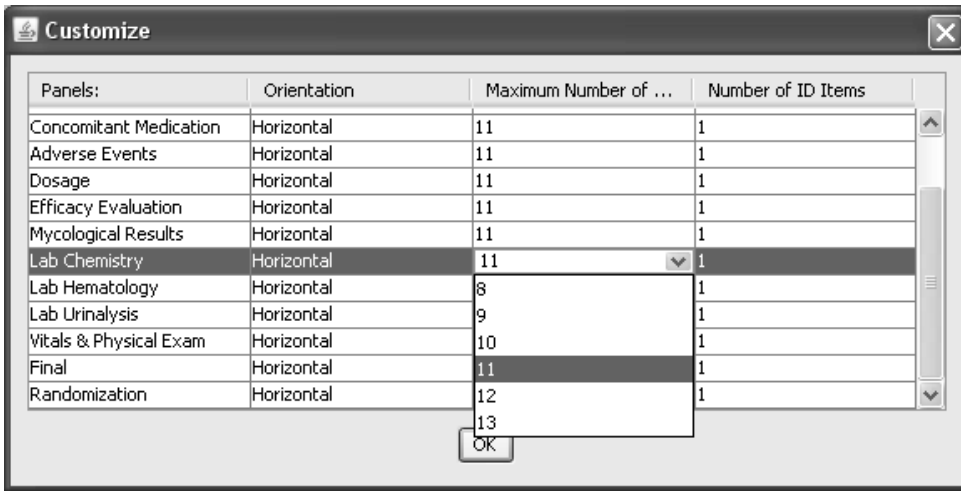
1. Click **Customize** to view the default settings.
2. Click on the panel cell for **Orientation** to access the drop down list to select horizontal or vertical.



If the panel orientation cannot be changed than the following message displays.



- Click on the panel cell for **Maximum Number of Columns** to access the drop down list. The maximum number of columns displayed per row can also be changed within the range for 8 through 13.



- Click on the panel cell for **Number of ID Items**. The option to display ID items as represented by the PatientNo and VisitNo are also selected from a drop down list for choices are 0, 1 and 2.

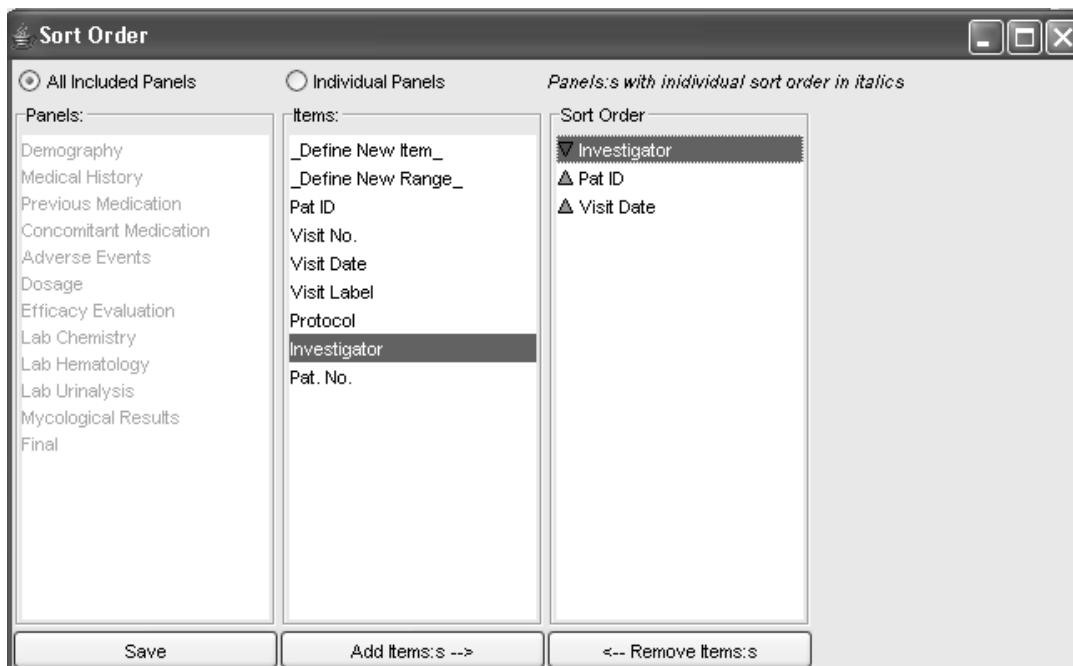
If a panel row wraps beyond the maximum number of columns defined, you can repeat the display of '1' or '2' ID items onto the next row. If you select '0' ID items then only the initial row contains ID items.

- Click **OK** to save changes.

---

## Sort Order

Click **Sort Order** to open the Profile Sort window. It is advised to define all areas of the profile prior to defining the sort. When you apply any sort options they are applied within the individual patient profile. Sort Order can be applied to **All Included Panels** or **Individual Panels**.



- The **All Included Panels** option allows you to define a sort order on those items present in all the included panels. This option will apply the sort order across all panels in the Patient Profile.

*Note: When a profile is organized by visit the user does not have the option to sort panels by any other items. The Sort Order button is shaded and disabled.*

- The **Individual Panels** option allows you to define a sort order based on specific panels and items. This option will apply the sort order across to specific panels.
- For each individual panel selected and a sort option entered, an asterisk displays next to the panel name flagging the panel has an active sort option.
- An item can be removed or added to the sort order with the **Add Item** and **Remove Item** buttons.
- When you select multiple items the sort order can be changed by using drag and drop.
- Double-click on an item to change ascending versus descending sort.

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# Filter Output

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## *Patient Profile Filter Output*

After you define the specifications of your patient profile, you can use the Filter Output as a data exploration tool by filtering data inclusion, then comparing filtered and unfiltered results.

Filter Output works in the Patient Profiles (both workbook and graphic) where only included panels (or panels behind included graphic categories) are viewable and selectable for filtering in the Filter Output window. So if you did not include any panels/categories in your graphic profile, even if they are defined in your template, you would see nothing in the Filter Output window.

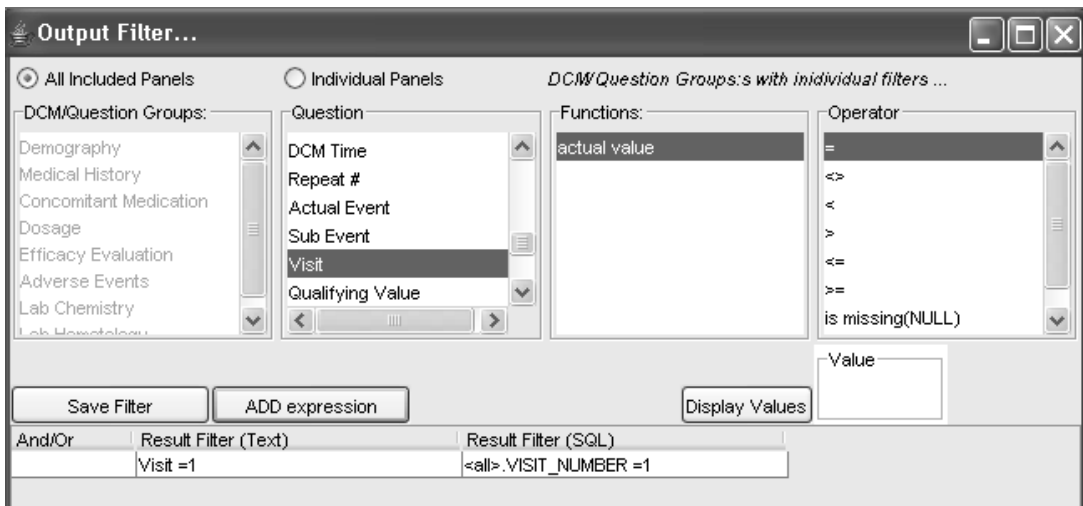
The reason behind this is that in a patient profile, each panel is displayed individually and is not joined with any other panel. Therefore, filtering criteria from any other panel would not apply to a panel used in profiles.

The only exception to this is in Graphic profiles when a category is defined by more than one panel (i.e. dosage and treatment). In this case, both these panels will appear in the Filter Output window and filtering criteria from one panel would affect the other panel.

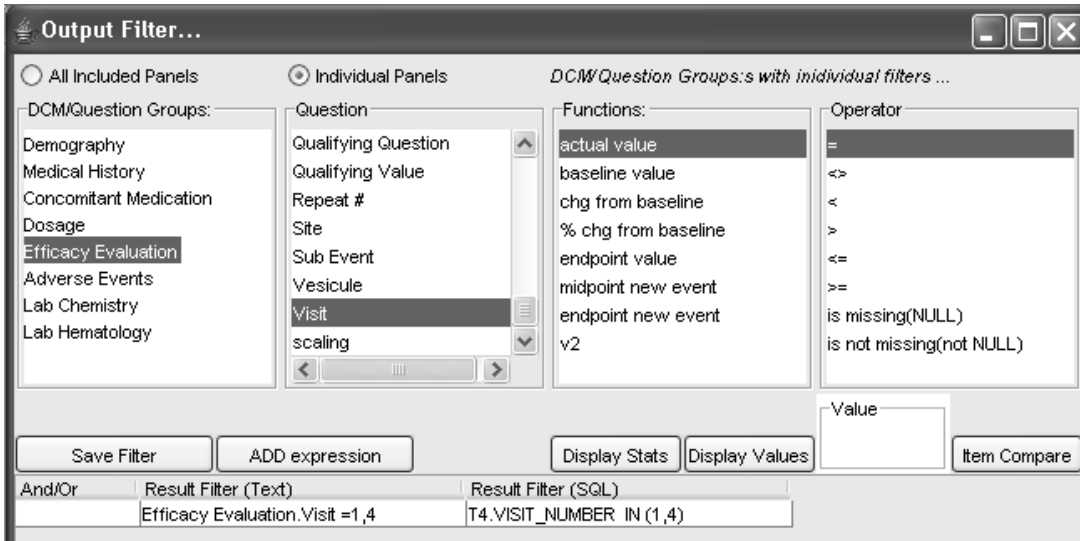
1. Click the **Filter Output** button in the Patient Profiles Browser window. The Output Filter window opens.



2. The **All Included Panels** option allows you to define an output filter based on those items present in all the included panels. This option will apply the output filter across all panels in the Patient Profile.



- The **Individual Panels** option allows you to define an output filter based on specific panels and items.



- Click **Save Filter**.

The **Filter Output** button in the Patient Profiles Browser window toggles to **Filter is ON**. The output filter is applied to the patient profile when you click **Create Profile**.



The panel names displays in italic, flagging the panel has an active output filter entered in the Filter Output window.

- To **Remove** the output filter, open the Output Filter window to clear and resave for All Included Panels option. When Individual Panels option then the panel name will display in italics, so you know which individual panels have an output filter applied.

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# Patient Profile Review Tracking Tool

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## *Patient Tracking functions*

The Patient Profile Review Tracking Tool is designed to meet the users requirement to track which patients were reviewed by userid, date/time stamp and the review status assigned by the user. Other users may view this detailed information for tracking and reporting purposes.

The entire function is enabled within the PATPROREVIEW option in the ReviewAdmin configuration and controls user access of the function. There are three privilege settings defined within the options:

1. **View Patient Tracking** – Allows access to view the patient review status in the patient profile browser as well as access to view the detailed Patient Log. It does not allow access to update the patient review status.
2. **Update Patient Tracking** – Allows access to update the patient review tracking and view the detailed Patient Log.
3. **Define Critical Panels and Items** - Allows the user to define panels and items with a critical status.

*Note: It is highly recommended to subset the patient population when using the Patient Profile Review Tracking functions. The status updating for individual patients and checking for new data may affect response time.*

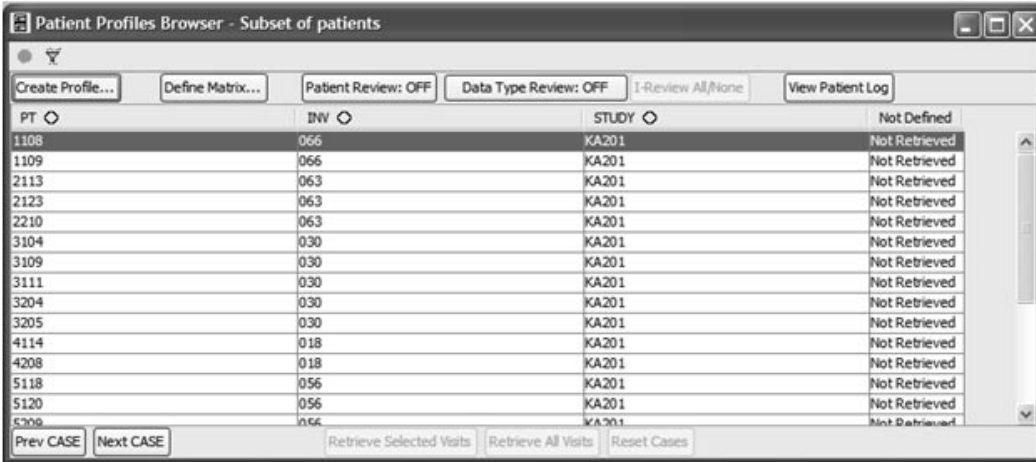
ReviewAdmin allows the site to configure the Patient Profile Review Tracking window for column content and sort order. The Review default settings are turned ON for “Review Level” and “Review Info” when the function is enabled.

The required column in the Patient Profile Review Tracking window is the “IReviewed” column. Additional columns are available when the Patient Review is turned ON. The configurations for this option are defined in ReviewAdmin where the administrator has the ability to set Yes or No, for the additional columns when Patient Review is turned ON.

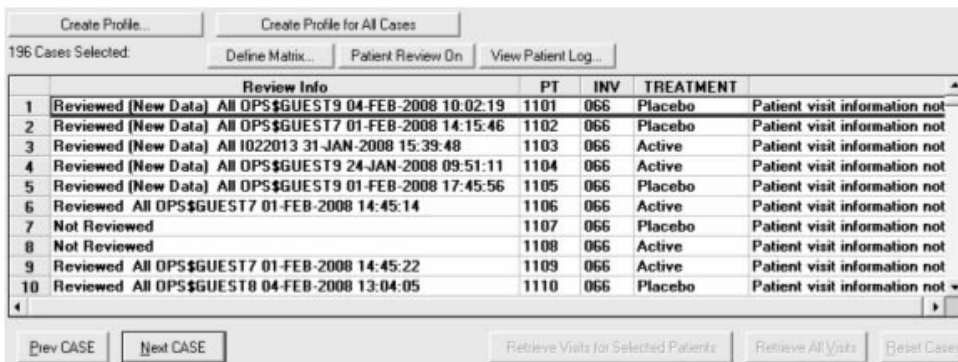
These other columns can be included or not – Review Level, Review Info, Color Coding, and Comment. The system has sort numbers defined for each column display option, so the column can be sorted.

If the user has access to either View Patient Tracking or Update Patient Tracking then the Patient Review and View Patient Log buttons are displayed on the patient profile browser window. The Patient Review button defaults to OFF.

Additionally, ReviewAdmin has the option to automatically default Patient Review to ON for users with access. It skips the step to click the Patient Review button each time the function is opened.



If the user does not have access to update the patient tracking status but is allowed to view the current patient review status; the Review Information column displays when the user clicks the Patient Review button ON.





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## Patient Review Levels

The **Review Information** column shows the current review status with review level, userid and date time stamp of last activity. The Review Levels are:

- **Not Reviewed** - The initial review status for patient data that has never been reviewed by a user.
- **Reviewed** - The user had checked the “I Reviewed” checkbox to update the patient review status and selected a Review Level for “All” or “Critical”. The userid with the data time stamp is displayed.
- **Reviewed (New Data)** - The patient data was previously reviewed however new data has been added or changed since the last review occurred.

When a user with access to update patient tracking status clicks the Patient Review button ON, the “I Reviewed” and “Review Level” columns display populated with the current patient review status.

The screenshot shows the 'Patient Profiles Browser' window with 24 cases selected. The interface includes buttons for 'Create Profile...', 'Define Matrix...', 'Patient Review: ON', 'Data Type Review: OFF', and 'I-Review All/None'. The main table displays the following columns: 'I Reviewed', 'Review ...', 'Review Info', 'PT', 'INV', 'STUDY', and 'Not Defined'. The 'I Reviewed' column contains checkboxes, and the 'Review ...' column contains dropdown menus with 'ALL' or 'EFFICACY' selected. The 'Review Info' column shows the current review status (e.g., 'Not Reviewed' or 'Reviewed EFFICACY OPS\$GUE...'). The 'PT' column shows patient IDs, 'INV' shows visit numbers, and 'STUDY' shows study identifiers like 'KA201'. The 'Not Defined' column contains truncated text like 'Patient visit ...'. At the bottom, there are buttons for 'Prev CASE', 'Next CASE', 'Retrieve Selected Visits', 'Retrieve All Visits', and 'Reset Cases'.

I Reviewed	Review ...	Review Info	PT	INV	STUDY	Not Defined
<input type="checkbox"/>	ALL	Not Reviewed	1108	066	KA201	Patient visit ...
<input type="checkbox"/>	ALL	Not Reviewed	1109	066	KA201	Patient visit ...
<input type="checkbox"/>	ALL	Not Reviewed	2113	063	KA201	Patient visit ...
<input type="checkbox"/>	EFFICACY	Reviewed EFFICACY OPS\$GUE...	2123	063	KA201	Patient visit ...
<input type="checkbox"/>	ALL	Not Reviewed	2210	063	KA201	Patient visit ...
<input type="checkbox"/>	ALL	Not Reviewed	3104	030	KA201	Patient visit ...
<input type="checkbox"/>	ALL	Not Reviewed	3109	030	KA201	Patient visit ...
<input type="checkbox"/>	ALL	Not Reviewed	3111	030	KA201	Patient visit ...
<input type="checkbox"/>	ALL	Not Reviewed	3204	030	KA201	Patient visit ...
<input type="checkbox"/>	ALL	Not Reviewed	3205	030	KA201	Patient visit ...
<input type="checkbox"/>	ALL	Not Reviewed	4114	018	KA201	Patient visit ...
<input type="checkbox"/>	ALL	Not Reviewed	4208	018	KA201	Patient visit ...
<input type="checkbox"/>	ALL	Not Reviewed	5118	056	KA201	Patient visit ...
<input type="checkbox"/>	ALL	Not Reviewed	5120	056	KA201	Patient visit ...
<input type="checkbox"/>	ALL	Not Reviewed	5206	066	KA201	Patient visit ...

---

## Sort columns

You may select and sort any column in the Patient Review Tracking window where the header contains the corresponding **column symbol** <> next to the description.



1. Click on the **column symbol** <> to change from descending, ascending or return to original display sort.
2. Click on the **column symbol** <> and the green up triangle changes the selected column sort to ascending order.
3. Click on the **column symbol** <> and the red down triangle changes the selected column sort to descending order.

---

## Define Critical

The user privilege to define specific panels or data items as critical enables access for high priority review and to automatically add critical panels/items to a patient profile. When critical panels and items are defined a table is created in ReviewAdmin marked as “Critical”.

The user privilege to define critical panels and items is set in ReviewAdmin allowing the user access to the **\_Define Critical\_** function in patient profiles. When critical panels and items are defined then all users have access to select them to create patient profiles. The Panels Included drop down list box contains None, All and all defined critical panels/items, for example:

- Critical: Study Level,
- Critical: StudyGroup Level,
- Critical: Project Level,
- Critical: Global Level.

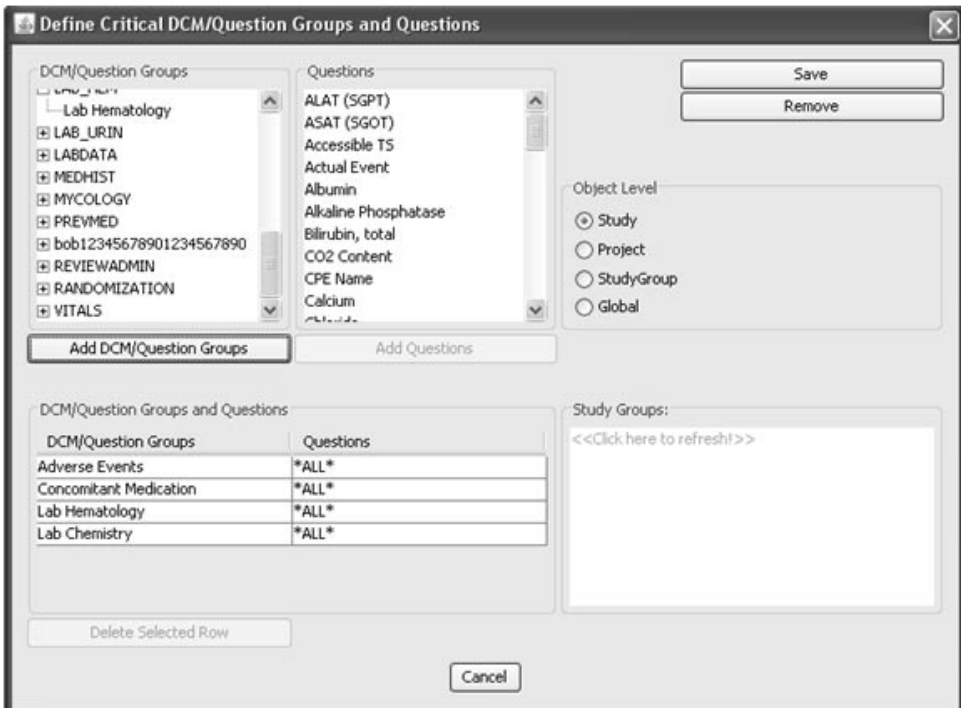
**Warning:** You may generate an error if you include user defined Foreign Panels, Pivot Panels or Import SQL in your patient profile. The highlighting feature relies on specific data fields in Oracle Clinical and Clintrial for date time stamp to determine if new data has occurred. If these fields are missing in the included panel then an error is generated.

If the PATPROEMPTY option in ReviewAdmin is set, then the drop down list displays as “None” and no panels are listed. When the patproempty option is not set, then the drop down list displays as “All” and all panels are included.

1. Click on **Define Critical** button. The Define Critical window opens.



2. Select a panel and click **Add DCM/Question Groups** or select individual items and click **Add Questions**. The panels are added in alphabetic order and in the same order on the Panels Included drop down list box. Users may change the order in the Include list.

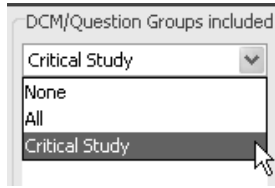


3. If you need to remove an added row, select the row and click **Delete Selected Row**.

Select the **Object Level** to save panels or question groups. The critical panels and items can be saved at the Study, StudyGroup, Project or Global object levels.

If you select StudyGroup as the object level you must also select a study group from the list box.

4. Click **Save**. The defined Critical Panels or Questions Groups are added to the Included drop down list box by the saved level.



5. Select the Critical Panel level for high priority review and to automatically add the panels/items to the patient profile.  
If you had selected "All" from the Panels Included list then all available panels and items are included in the patient profile.
6. Click **Create**. The Patient Profile Browser window displays the patient list for the selected patients.
7. Select a patient from the patient list, and click **Create Profile**. Only the Critical panels and items are displayed in the patient profile output.
8. Close the patient profile spreadsheet window. Next you can update the patient review tracking status.

---

## Update Patient Tracking Status

After you have completed your review of the patient data, you may update your review status for the selected patient. This patient review tracking feature is accessible across all the Patient Profile types.

The creation of a patient profile is not required or linked, to the Patient Profile Review Tracking function for entry of a patient review status. If the users within a department prefer to use a different output, such as a detail data listing for patient review; you may still select a patient from the patient list to update the patient review status, as an alternative tracking process.

The **required column** in the Patient Profile Review Tracking window is the **“IReviewed”** column, when the Patient Review is turned ON.

*Note: Always select the Review Level first before clicking the “I Reviewed” check box. This will avoid generating erroneous review level records, if you then go back and alter the review level.*

Additional columns are available and optional; Review Level, Review Info, Color Coding, and Comment. The system has sort numbers defined for each column display option, so the column can be ordered.

Patient Review Tracking retrieves all current state patient review tracking information from the PatientReview\_LatestDates Table.

---

### Select review level

9. In the row for the selected patient; click the **Review Level** drop down list box to select the review level as “All” or “Critical”.

The option to select “Critical” will only display if Critical Panels are defined.

Additional Review Level descriptions may be added through ReviewAdmin in PATPROVIEWLEVELS for “Safety” or “Efficacy”. Users would determine what panels and data they require for these review level descriptions.



10. Optionally add a comment when Patient Review is turned ON. Click in the comment to enter text and save the comment.

The configurations for the comments option is defined in ReviewAdmin. The comment field can be viewed in the *patientpostit table*.

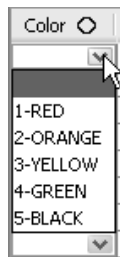
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### Color coding

The Color options configurations are defined in ReviewAdmin. There are 5 default colors available – Red, Orange, Yellow, Green and Black where sort numbers defined for each color to sort on this column. The color field can be viewed in the *patientpostit table*.

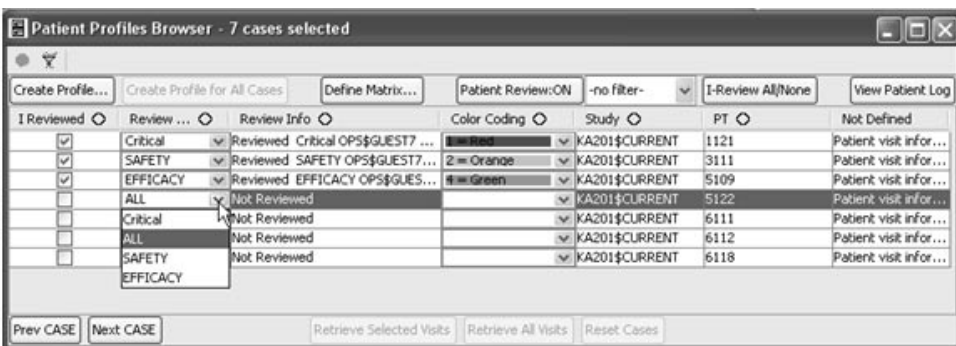
These color options can be defined by the site for review purposes. For example, Red may be associated with Hematology or Panic, Yellow for Renal or Warning and any other site preferred review labels.

11. In the row for the selected patient; click the **Color** drop down list box to select the color label.



12. Click the **“I Reviewed”** check box to log your userid, date time stamp and review level for the patient.

The patient review information is now tracked in the **Patient Log** as a detailed audit trail.



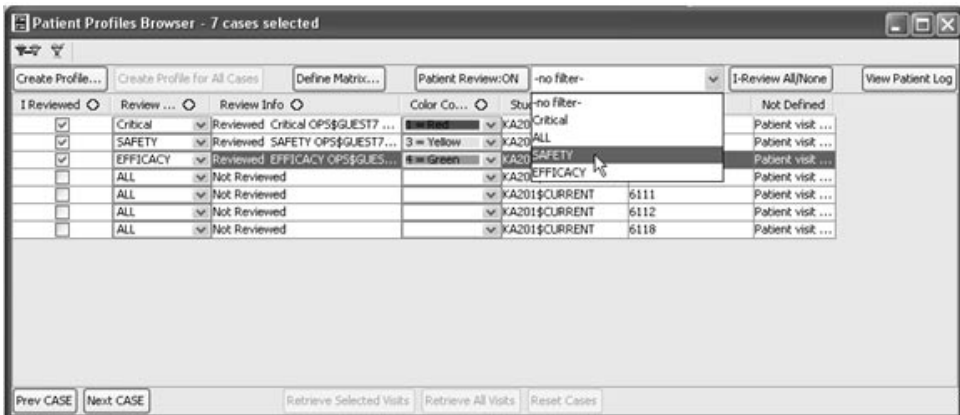
The “I Reviewed” checkbox and the Review Level only displays the current status if there is no new data and the user was the owner of the last patient “review” and it’s within the system defined time frame allowing the user to “uncheck” their review.

If the user unchecks the “I Reviewed” box for a particular patient review then a DELETE DATE record is generated with the data time stamp in the Patient Log. The default is 24 hours and the amount of time can be defined as an Review Admin config option in REVIEWSTATUSLIMIT=1 where the value can be 1 to 24 hours. Otherwise, the “I Reviewed” and “Review Level” returns to their default status, unchecked and ALL.

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*Filter review*

In the filter drop down list box, if one of the entries other than **-no filter-** is selected, then the Review Info patient list updates to only include patient review entries either matching the selected entry (All, Safety, Efficacy or Critical in that case) or ‘Not Reviewed’. The ‘No Filter’ condition goes back to the default condition, which displays the ‘latest review state’, regardless of the review type/level.

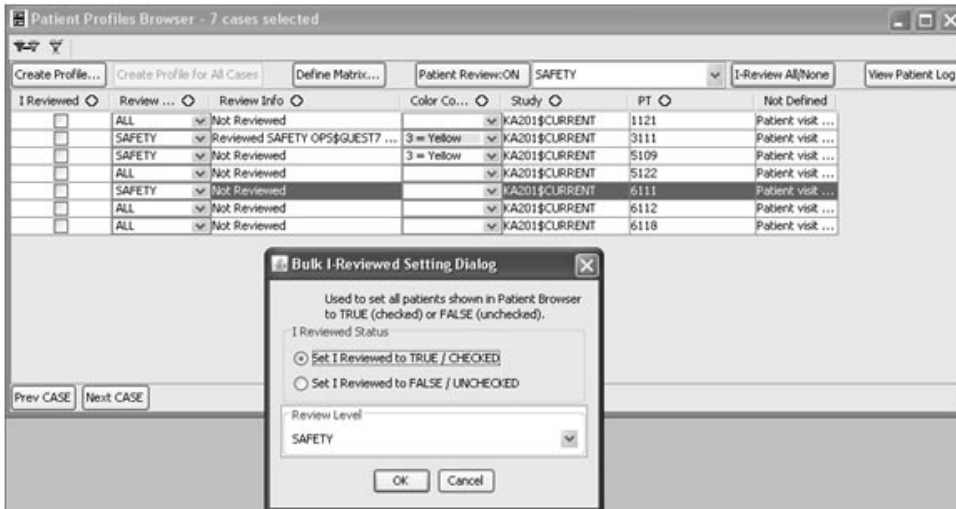




### Bulk review setting

Bulk updates the review status of listed patients displayed in the Patient Browser. Click the I-Review All/None button and the Bulk I-Reviewed Setting dialog displays.

Select option to set as “I Reviewed CHECKED ON” for true; or select option for “I Reviewed UNCHECKED” for false.





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## Track selection criteria

You may optionally capture and display the patient selection criteria text/description (SUBSET), when checking 'I Reviewed' patient during Patient Review Tracking. This option and other column options are enabled or disabled through the ReviewAdmin utility.

The display subset option will save the current patient selection, applied during the patient review status update. Different reviewers may use different patient subsets, for review purposes. By collecting the various subsets, users can later sort the patient list by the saved subset descriptions.

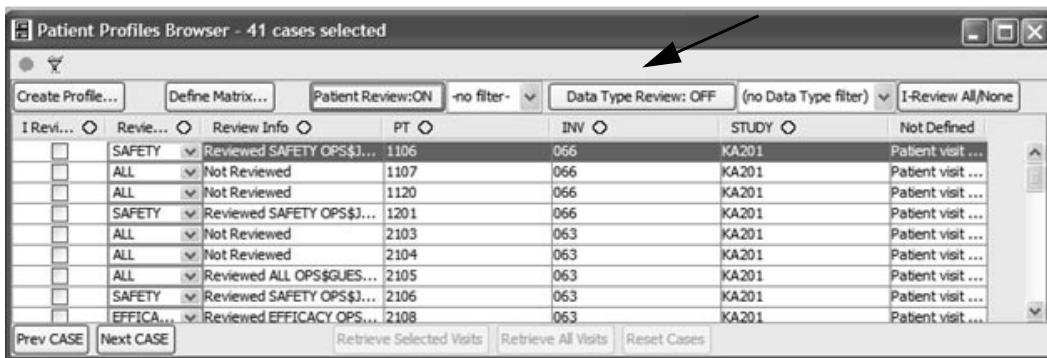
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## Data Type Review

The user can declare which DataTypes (Panel/Table) they're reviewing to track individual DataType (Panel/Table), if they do not review the entire patient. When the user checks the 'I-Review'd checkbox, JReview keeps track of which DataTypes were reviewed for the checked patient on that date/time.

Click on the '**PatientReview:OFF**' button to toggle **PatientReview:ON**.

If the user clicks the **DataType Review:OFF** button, a dialog displays letting the user select which types of data they're going to declare they've reviewed for each patient.



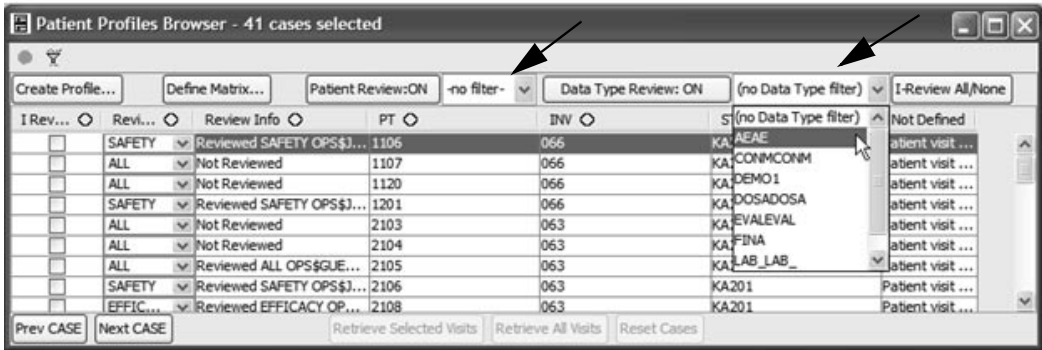
The **Select Data Type Review** window opens. Select the panels to include in review when the user checks the **I-Review'd** checkbox.

Under Review	Panels
<input checked="" type="checkbox"/>	AEAE
<input checked="" type="checkbox"/>	CONMCONM
<input type="checkbox"/>	DEMO 1
<input type="checkbox"/>	DOSADOSA
<input type="checkbox"/>	EVALEVAL
<input type="checkbox"/>	FINA
<input checked="" type="checkbox"/>	LAB_LAB_
<input checked="" type="checkbox"/>	LABHLABH
<input type="checkbox"/>	LABULABU
<input type="checkbox"/>	MEDH
<input type="checkbox"/>	MYCOMYCO
<input type="checkbox"/>	PREVPREV
<input type="checkbox"/>	RAND
<input type="checkbox"/>	VITAVITA
<input type="checkbox"/>	DEMOGRAP*SAS*
<input type="checkbox"/>	DOSAGE*SAS*
<input type="checkbox"/>	EVAL*SAS*
<input type="checkbox"/>	LAB_URIN*SAS*
<input type="checkbox"/>	MYCOLOGY*SAS*
<input type="checkbox"/>	RANDOMIZ*SAS*
<input type="checkbox"/>	VITALS*SAS*

Clear

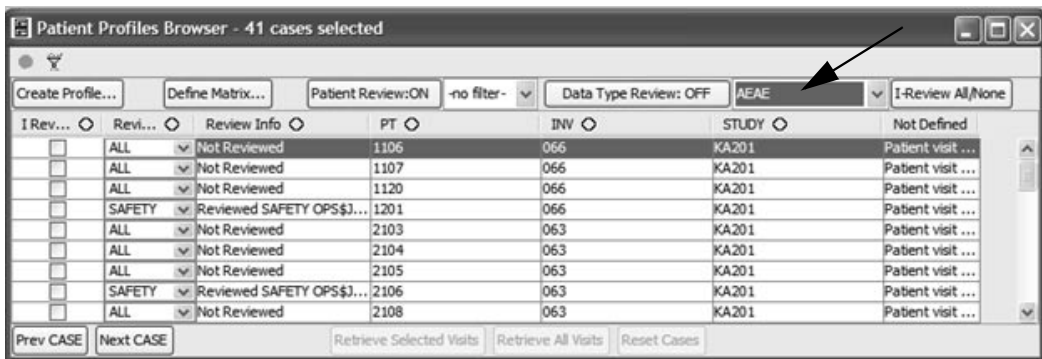
OK Cancel

Afterwards, the user can use either or both of the filtering combo listboxes, in the Review Level combo box (type of review that was declared) and/or the Data Type Filter combo listbox for DataTypes that have been reviewed. After selecting either or both of the filtering values, the list of patient's review status reflects those filter choices.



For example, if a user had previously selected 'AE' as the DataType under review, and checked a number of patients as being reviewed, then selects 'AE' as the DataType Filter value, they'll see the current state of review for only the AE data type. Also, any patients whose AE data has not been declared as reviewed will be listed as 'Not Reviewed'.

See the Patient Log to view details of the Data Type Review.

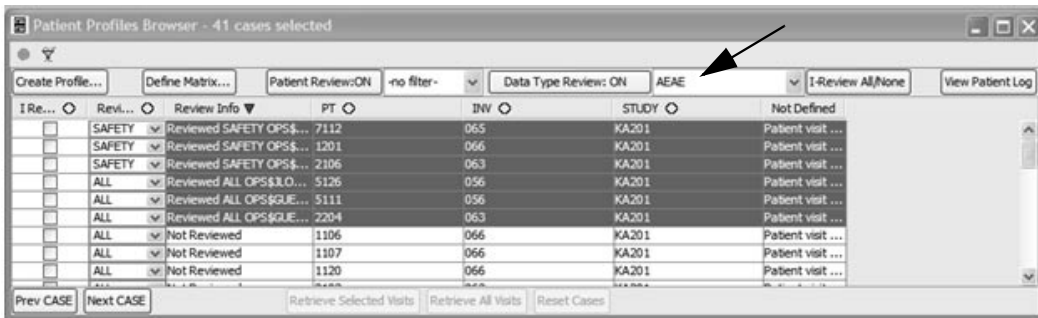


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## View Patient Log

You may view the detailed audit trail of a patient(s) review status by clicking the View Patient Log button.

Select a patient from the *patient column*, then click **View Patient Log** button. Multiple patients may be selected with the CTRL or SHIFT key and if no patient is selected the default displays the first patient in the list.



*Note: When highlighting to select multiple patients from the patient list avoid clicking in the first 2 columns which may inadvertently check and alter a current patient status. Always select patients from the patient column.*

The Patient Review Log window opens with a detailed audit trail for the selected patients. Any records removed are show by the Delete Date.

The screenshot shows the 'Patient Review Log' window with a table containing the following data:

Project	Study	Patient ID	Author	Status	Type	Data Type	Review Date	Delete Date	Date	Subset
KA201	2001	7112	OP\$GUEST9	Reviewed	SAFETY	AEAE	04-MAR-2013 1...		04-MAR-13	
KA201	2001	7112	OP\$GUEST9	Reviewed	SAFETY	AEAE	05-MAR-2013 0...		05-MAR-13	
KA201	2001	7112	OP\$3.LONG	Reviewed	SAFETY	AEAE	27-MAR-2013 1...		27-MAR-13	
KA201	2001	7112	OP\$3.LONG	Reviewed	SAFETY	AEAE	27-MAR-2013 1...		27-MAR-13	
KA201	2001	1201	OP\$3.LONG	Reviewed	SAFETY	AEAE	01-APR-2013 1...		01-APR-13	
KA201	2001	2106	OP\$3.LONG	Reviewed	SAFETY	AEAE	01-APR-2013 1...		01-APR-13	
KA201	2001	5126	OP\$FPALMERI	Reviewed	ALL	AEAE	05-MAR-2013 0...		05-MAR-13	
KA201	2001	5126	OP\$FPALMERI	Reviewed	ALL	AEAE	05-MAR-2013 0...		05-MAR-13	
KA201	2001	5126	OP\$3.LONG	Reviewed	ALL	AEAE	27-MAR-2013 1...		27-MAR-13	
KA201	2001	5111	OP\$GUEST9	Reviewed	ALL	AEAE	05-MAR-2013 0...		05-MAR-13	
KA201	2001	2204	OP\$GUEST9	Reviewed	ALL	AEAE	04-MAR-2013 1...		04-MAR-13	

You can print the Patient Review Log window by clicking the **Printer icon**.

To export the Patient Review Log, open the File menu and click **Export** to export your Patient Review Log in Excel files, HTML format or Tabbed Txt files.

Close the Patient Review Log window.

---

## Highlight new data

There are two ways to highlight new patient data, either at the patient level or data type level (panel type). The 'Patient Level' patient review tracking for 'New Data' highlighting will highlight in purple.

New data can be highlighted for patients in ReviewAdmin with configuration settings. Patients who have been reviewed show a status as "Reviewed" in the Review Information column. When a patient has new data added or changed since the last review date time stamp the patient review status is updated to "Reviewed (New Data)". These patients display highlighted in purple. This is to distinguish these patients who were previously reviewed from those patients never reviewed with a status of "Not Reviewed". The highlighting of new data is available in Workbook Profile and Formatted Profile, but is not available in the Graphic Patient Profile.

The Patient Review button needs to be clicked ON in order for patient profiles to run with the highlighting feature on "Reviewed (New Data)". Highlighting of data at the observation level only occurs if the patient had already been reviewed with a previous status of "Reviewed".

In Reviewed Mode (Patient Tracking Mode), when viewing Workbook Patient Profiles, select a patient and click Create Profile. When the Patient Profile displays click the checkbox to "Show New Data Only".

Patient Profile [KA201:2010184110]					
<input type="checkbox"/> Show New Data Only					
<b>Concomitant Medication</b>					
Dosage Unit	Dose	Drug Code	Drug Name	Frequency	Ongoing?
					1
Dosage Unit	Visit Label	Visit No.			
	BASELINE	1			
<b>Demography</b>					
Age	Childbearing Potential	Date of Birth	Evaluability at Baseline	Protocol	Race
24	2	20-JAN-1967	5	201	White
<b>Dosage</b>					
Dose	Dose Change - Reason	Dose Units	Protocol	Start Date	Stop Date
2		2	201	30-JUL-1991	08-AUG-199
<b>Efficacy Evaluation</b>					
Burning	Edema	Erythema	Exudation	Fissures	Hyperkarato

All the panel heading rows are displayed to show they've been checked for new data AND new data rows are displayed highlighted in purple. New Data Columns behave similarly.

Select a patient with a status "Reviewed (New Data)" and create a patient profile. Only the new data is highlighted in the patient profile at the observation level to expedite quick location and review.

The green highlighting only appears if the user is in 'Data Type' review mode. The 'Data Type' review mode compares LastReviewDate, at the DataType (Panel Type) level compared to the last update for that specific type of data. It highlights 'new data' in this mode as green.

The 'Reviewed (New Data) ... ' designation for any patient when this filter condition is enabled – tells us that the patient has new or updated AE data since the last AE data was reviewed.

'**Data Highlighting**' is supported if your database/environment is set up for 'last change date' processing, and some or all patients have been previously been marked as being reviewed (in the patient profile – patient review tracking area), then that 'last review date' information is compared to the 'last change date' for each patient's data rows.

In that mode, each time the user checks the **I-Review'd** checkbox for a patient, a record is added to the PatientReview internal tables, for each of the types of data the user has declared as being under review, with the current date/time. Then when new or updated data comes in for any of those types of data, the last change date is compared to the last review date for that data type rather than the patient level last review date, and the data is highlighted in green.

A Workbook Patient Profile with 'green' DataType level highlighting example.

Patient Profile [056:5111]								
Show New Data Only								
<b>Adverse Events</b>								
Visit No.	Visit Date	Visit Label	Protocol	Onset Date	Onset Time	Intensity	Change in Inv Med	Therapy for AE
1		BASELINE	201	02-NOV-1991	01-JUL-1995	Mild	NoChange	Med
2		BASELINE	201	01-NOV-1991	01-JUL-1995	Mild	NoChange	Med
Visit No.	End Time	Related to Inv Med?	Outcome	Outcome being treated?	AE Text	AE Coded	Serious?	AE Type (description)
1	01-JUL-1995	Not Related	Recovered		COUGH	RES :Cough increased		Intercurrent Illness
2	01-JUL-1995	Not Related	Recovered		HEADACHE	NER : Headache		Intercurrent Illness
<b>Concomitant Medication</b>								
Visit No.	Visit Date	Visit Label	Protocol	Start Date	Stop Date	Ongoing?	Drug Name	Drug Code
1	02-NOV-1991	DAY 22	201	02-NOV-1991	03-NOV-1991		BENLIN COUGH SYRUP	BENADRYL EXPECTORANS
1	01-NOV-1991	DAY 22	201	01-NOV-1991	02-NOV-1991		TYLENOL TABLETS	ACETAMINOPHEN
<b>Concomitant Medication</b>								
Visit No.	Frequency	PRN						
1	012							
1	012							
<b>Efficacy Evaluation</b>								
Visit No.	Visit 1	Visit 2	Visit 3	Visit 4	Visit 5	Visit 6		
1	1	2	3	4	5	6		
Visit No.	Visit Date	16-OCT-1991	23-OCT-1991	30-OCT-1991	06-NOV-1991	20-NOV-1991		
Visit Label	09-OCT-1991	BASELINE	DAY 8	DAY 15	DAY 22	DAY 29	DAY 43	
Protocol	201	201	201	201	201	201		
Erythema	1	1	1	0	0	0		
Pruritus	3	1	1	1	0	0		
Scaling	2	2	2	2	2	1		
Vesiculation	0	0	0	0	0	0		
Edema	0	0	0	0	0	0		
Exudation	0	0	0	0	0	0		
Maceration	0	0	0	0	0	0		
Papules	0	0	0	0	0	0		
Burning	0	0	0	0	0	0		
Pain	0	0	0	0	0	0		
Fissures	0	0	0	0	0	0		
Pustules	0	0	0	0	0	0		
Hyperkeratosis	0	0	0	0	0	0		

An example of a Formatted Patient Profile with New Data highlighted at the Data Type level.

Formatted Patient Profile [056:5111]

Formatted Patient Profile  
056-5111

Date: 02/25/2013  
Time: 11:41

Adverse Events

Visit No.	Visit Date	Visit Label	Protocol	Onset Date	Onset Time	Intensity	Change in Inv Med	Therapy for AE	Ongoing AE?	End Date
1		BASELINE	201	02-NOV-1991	01-JUL-1995	Mid	NoChange	Med		03-NOV-1991
2		BASELINE	201	01-NOV-1991	01-JUL-1995	Mid	NoChange	Med		02-NOV-1991

Visit No.	End Time	Related to Inv Med?	Outcome	Outcome being treated?	AE Text	AE Coded	Serious?	AE Type (description)
1	01-JUL-1995	Not Related	Recovered		COUGH	RES :Cough increased		Intermittent illness
2	01-JUL-1995	Not Related	Recovered		HEADACHE	NER :Headache		Intermittent illness

Efficacy Evaluation

	Visit 1	Visit 2	Visit 3	Visit 4	Visit 5	Visit 6
Visit No.	1	2	3	4	5	6
Visit Date	06-OCT-1991	16-OCT-1991	23-OCT-1991	30-OCT-1991	06-NOV-1991	20-NOV-1991
Visit Label	BASELINE	DAY 8	DAY 15	DAY 22	DAY 29	DAY 43
Protocol	201	201	201	201	201	201
Erythema	1	1	1	0	0	0
Pruritus	3	1	1	1	0	0
Scaling	2	2	2	2	2	1
Vesiculation	0	0	0	0	0	0
Edema	0	0	0	0	0	0
Exudation	0	0	0	0	0	0
Maceration	0	0	0	0	0	0
Papules	0	0	0	0	0	0
Burning	0	0	0	0	0	0
Pain	0	0	0	0	0	0
Fissures	0	0	0	0	0	0
Pustules	0	0	0	0	0	0
Hyperkeratosis	0	0	0	0	0	0

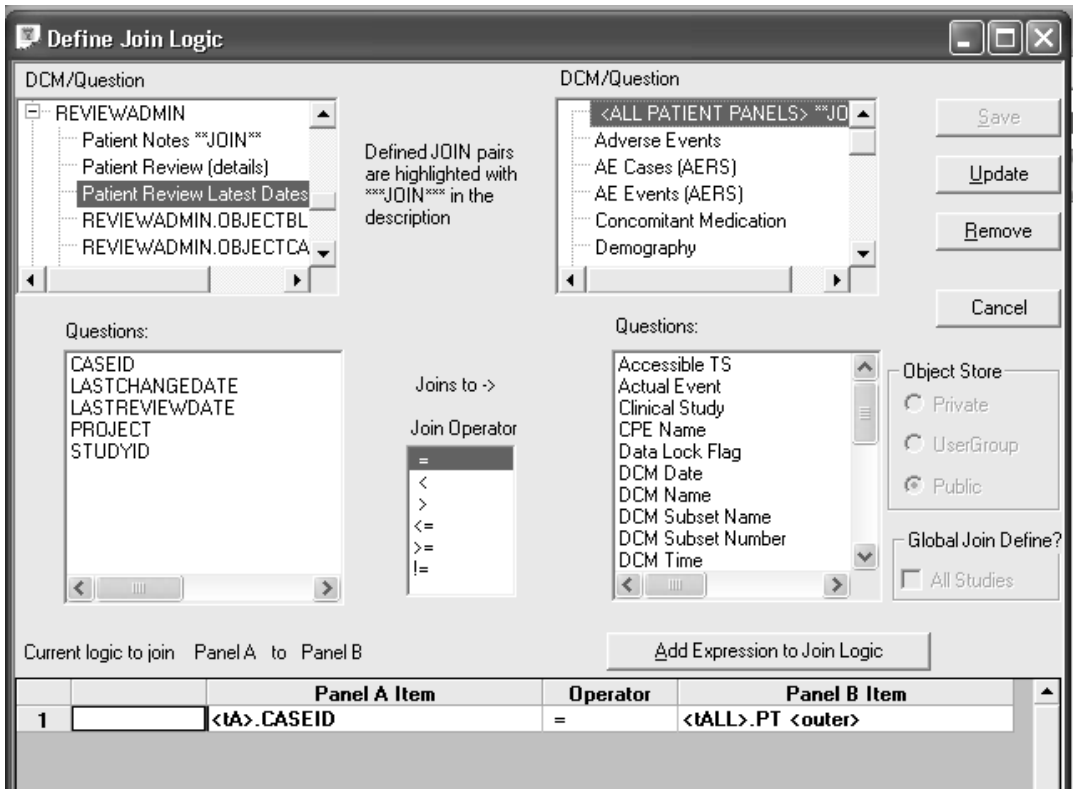
All Patients

Page 1 of 1

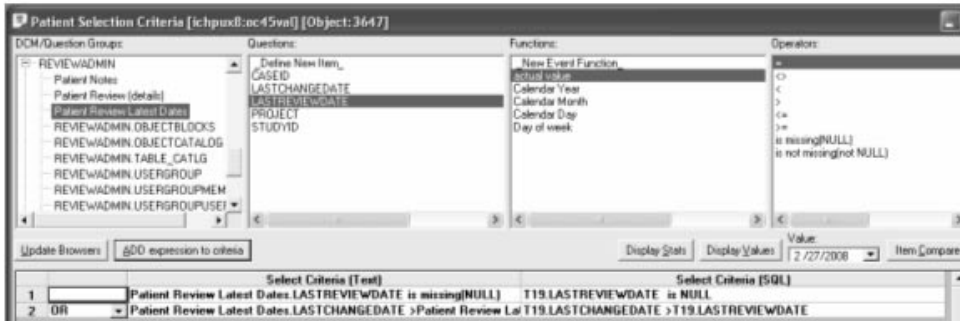


Supplemental reports may be defined using patient selection criteria and filtering against ReviewAdmin tables to support Patient Review Tracking. In some circumstances it may be necessary to register Foreign panels (Patient Review tables) from ReviewAdmin tables and then define Join Logic. (See Chapter 12: Advanced Topics - Define Join Logic)

After the Foreign panels are made available in IReview and the Join Logic is saved, then users may define and apply patient selection criteria, user defined reports and output filters to the data fields in the Patient Review tables.



This is an example of a patient selection criteria selecting all patients not yet reviewed or with a last date change after the last reviewed date.



---

## Study lock

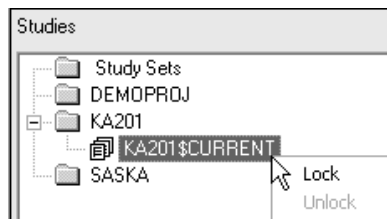
The privilege to lock or unlock a study is a high level manager function enabled in ReviewAdmin which allows the user to display a lock status on an individual study. If a study is not locked, then Review will check for data updates and new data for that study the first time the user turns ON the Patient Profile Review Tracking tool that day. This function is for user viewing purposes and does NOT physically block or prevent data updates from appearing in IReview.

In ReviewAdmin the REVIEWSTATUSLIMIT option is set to the hour reference (numeric value) setting the number of hours after the “I Reviewed” list box is checked, that it can be unchecked. Valid values are 1 to 24 hours where 24 is the default if the option is not set. The check for data updates are posted once daily at most. This means in study unlock mode when a user clicks the Patient Review ON button, Review checks for any new data transactions from the last date time stamp when a patient was reviewed against the date time stamp of the data management posted updates.

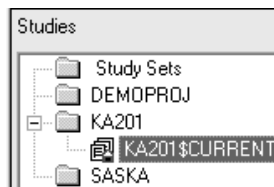
When a selected study is set to Lock mode the following conditions occur in the Patient Profile Review Tracking tool.

- The daily process to check if new data is available is turned OFF.
- The patient list in the Patient Profile Browser window will NOT display the status for “Reviewed (New Data)”.
- The highlighting of new data is turned OFF when a patient profile is created and viewed.

Select a study and right mouse click to display the floating menu.



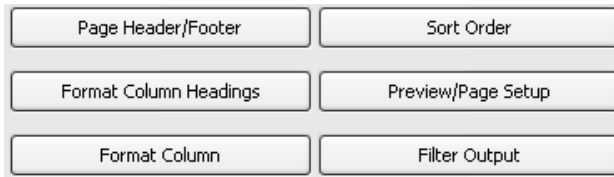
A red lock icon displays for the selected study to identify Lock status.



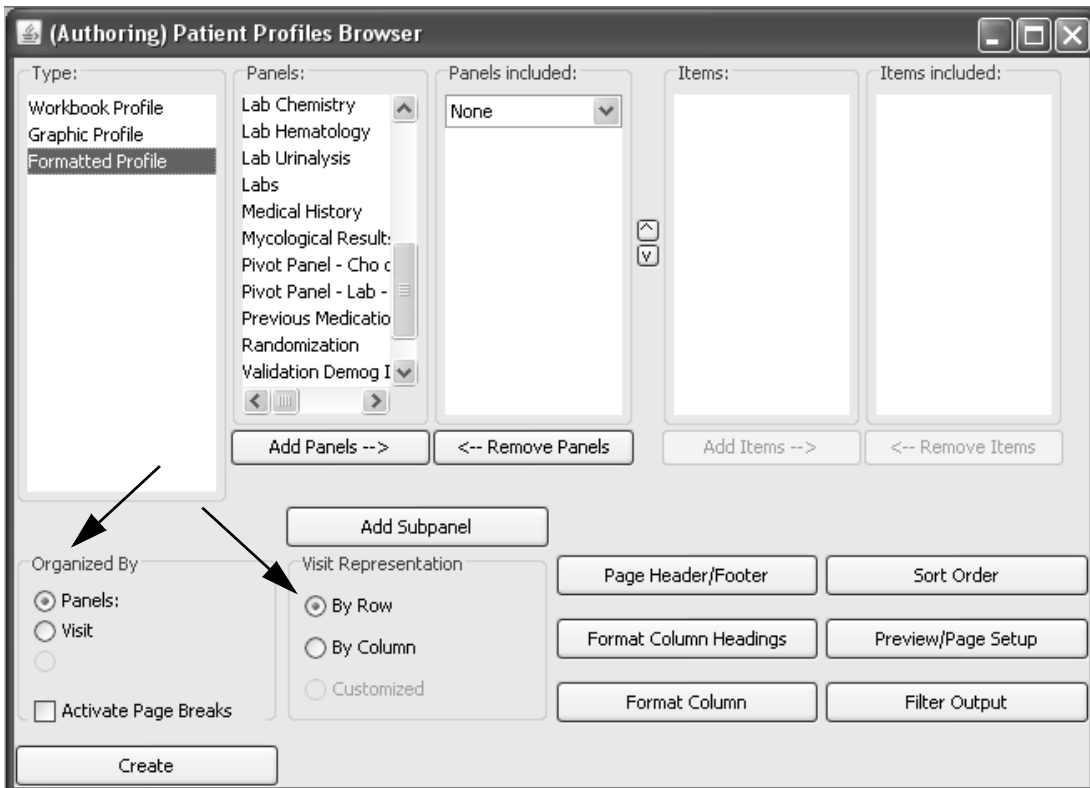
# Formatted Patient Profile

## Select formatted profile

When you select the **Formatted Profile** type the format options menu displays for you to apply setting changes.



A configuration setting controls whether No panels (None), All panels, or Critical Study defined panels are included in the profile by default. Initially if you click create profile the default settings are organized by *panel* and visit representation as *by row*.



## Activate Page Break

This is a partial view of a formatted profile with default settings.

Formatted Patient Profile [1106:066]

Formatted Patient Profile  
1106-066

Date: 12/15/2011  
Time: 10:00

DEMO1

ACTEVENT	AGE	CBSTAT	CPEVENT	DCMDATE	DCMTIME	DOB	DOCNUM	INV	LAB	PT
1	28		BASELINE	19910822		19521129	D1548701	066		1106

ACTEVENT

ACTEVENT	PTSTAT	RACE	REPEATSN	SEX	STUDY	SUBSETSN	VISIT_NUMBER
1	Efficacy Analyzable	White	1	Male	KA201	1	1

MEDH

ACTEVENT	ALLERGY	CARDIAC	CPEVENT	DCMDATE	DCMTIME	DIABETES	DOCNUM	DRUGSENS	EENT	EPILEPSY
1	Yes	No	BASELINE	19910822		No	D1061101	No	No	No

ACTEVENT

ACTEVENT	GASTRO	GENITO	HYPERTEN	INV	LAB	MUSCSKEL	NEUROPSY	OTHER	PT	PULMONRY
1	No	No	No	066		No	No	No	1106	No

ACTEVENT

ACTEVENT	RENAL	REPEATSN	SKIN	STUDY	SUBSETSN	THYROID	VISIT_NUMBER
1	No	1	Yes	KA201	1	No	1

AEAE

ACTEVENT	AETYPE	CPEVENT	DCMDATE	DCMTIME	DOCNUM	INV	LAB	PT	REPEATSN	SECTION
1	ADR	BASELINE	19910822		D1523101	066		1106	1	NoChange
1	Other	BASELINE	19910822		D1523101	066		1106	2	NoChange

ACTEVENT

ACTEVENT	SECODE	SEENDD	SEENDT	SEONGO	SEONSETD	SEONSETT	SEOUTCME	SEOUTTRT	SERELATD	SERIOUS
1	SKIN:Burning sensation skin	19910908			19910901		Recovered		Highly Probable	
1	BODY:Surgery	19910920			19910920		Recovered		Not Related	

The activate page break default is set to OFF. However, you can turn ON page breaks for **Organized By Panel** or **Visit**.

Activate Page Breaks

- At the top upper left corner, the first yellow icon is the Add Notes for patient.



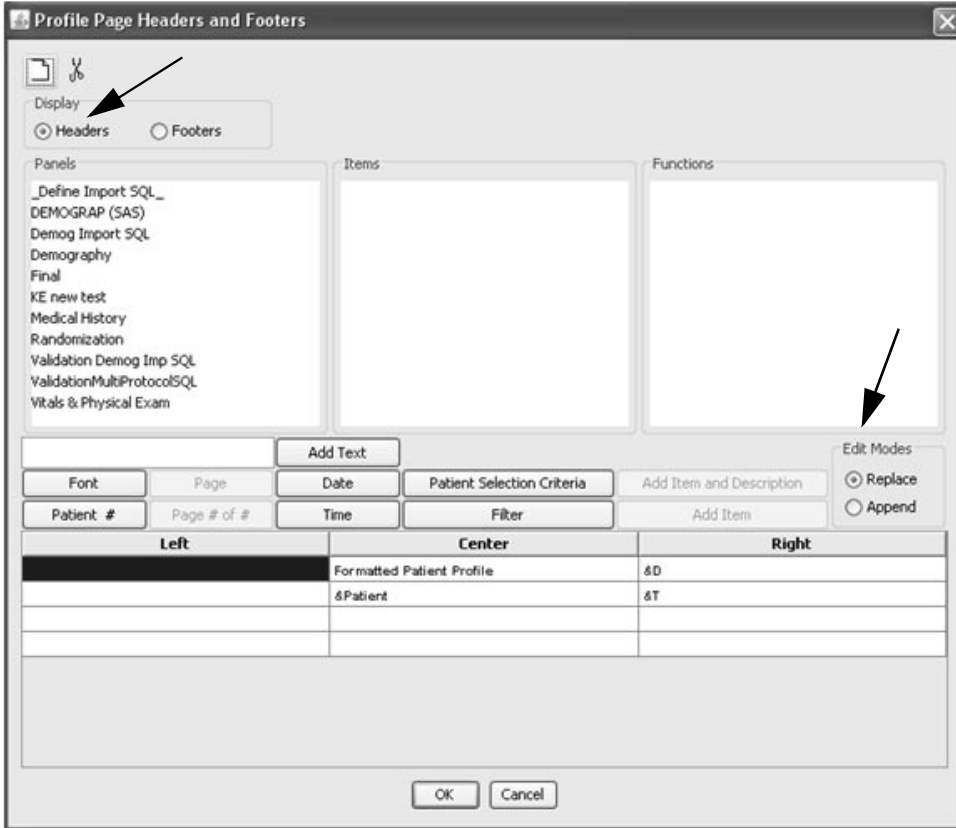
- Use the plus and minus icons to go to the next or previous patient.
- Use the arrows in the main menu bar to move between pages within a single patient profile with a sliding scroll bar on the right.
- The plus and minus buttons are to zoom in/out of the view.
- The printer icon is next in the menu bar.

---

Apply Page Header and Footer

To enter descriptive information to the Header and Footer area:

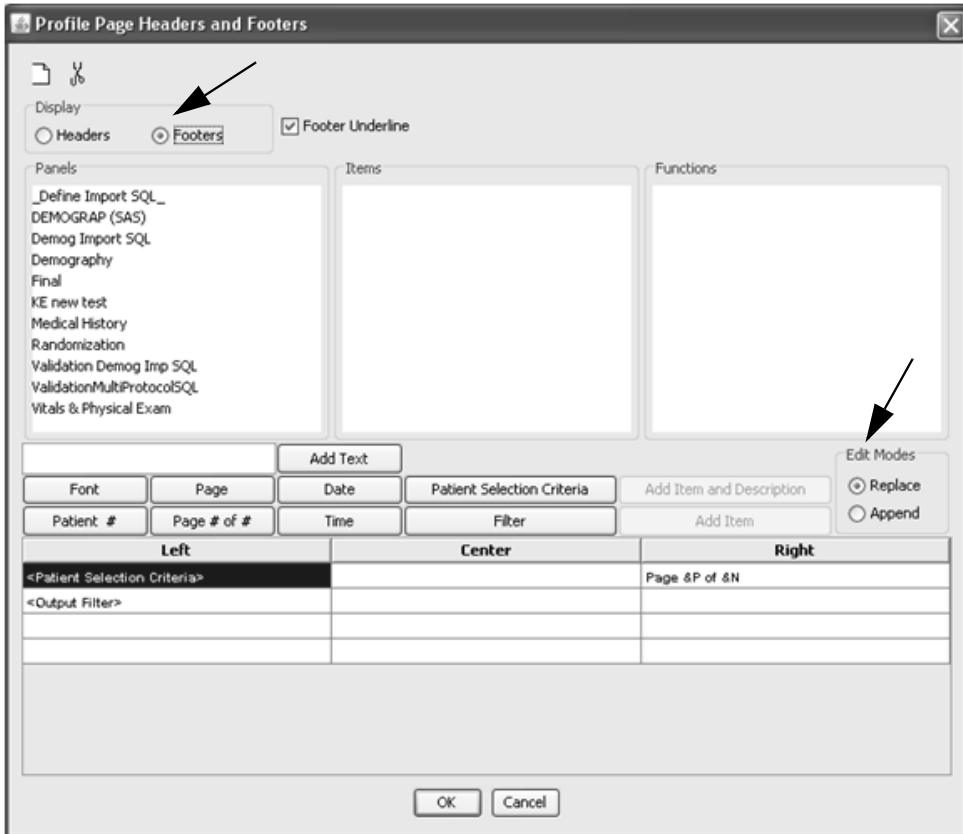
1. Click on the **Page Header/Footer** button to open Profile Page Headers and Footers window.



The default settings for Headers are:

- a. Default title is the profile type displayed in the center cell as Formatted Profile with PatientID below.
  - b. Date and Time on the right.
  - c. Font is **BOLD 10**.
2. Click a particular column/row cell within the template for your item or text entry location. Each cell can contain up to two items.
  3. Use the **Edit Modes** to Replace or Append changes.
  4. Use the various item button selections to add Header information and the **Add Text** button to enter free text descriptions.

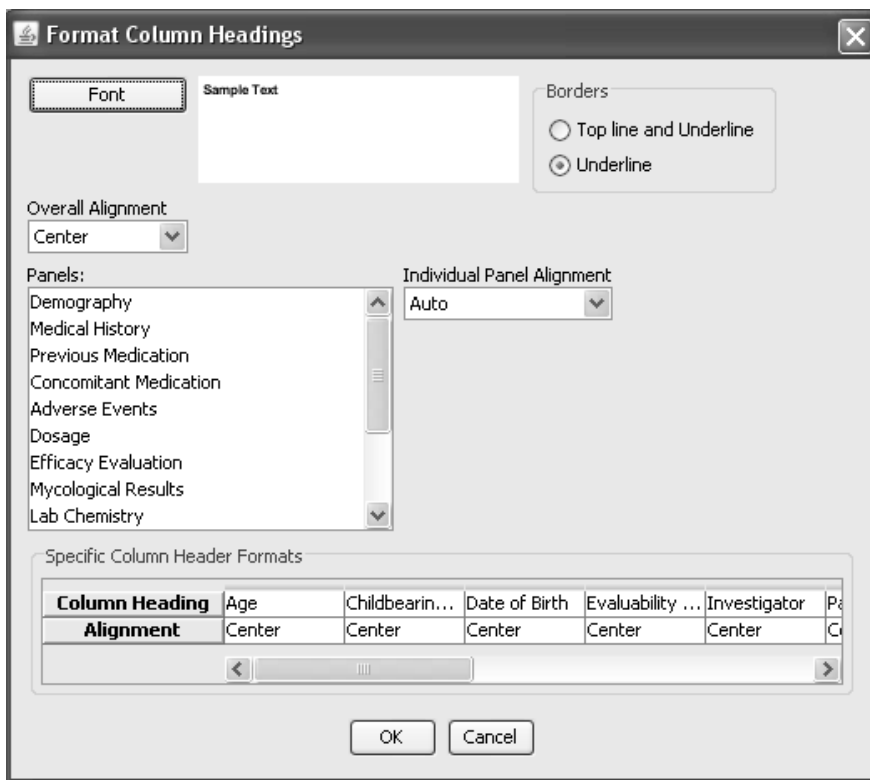
5. Click on a cell and use the **Scissors icon** to delete the selected cell contents or click the **New icon** to clear all cell contents.
6. Click the Font button to change font, style and size.
7. Click Display Footers.



8. Follow the same steps to enter and make changes to the footer. The default settings for footers are:
  - a. Patient Selection Criteria and Output Filter on the Left.
  - b. Page number on the right.
  - c. Underline above the footer.
  - d. Font is **BOLD 10**.
9. Turn the Footer Underline ON or OFF.
10. Click **OK** to apply format changes.

To apply Overall Column Header Formats:

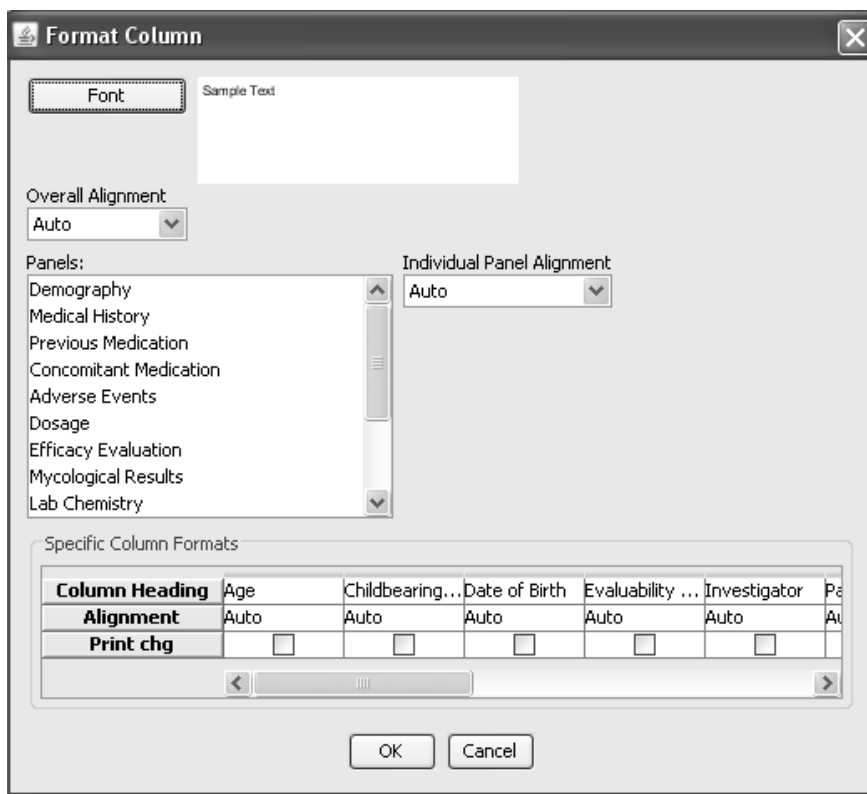
1. Click on the **Format Column Headings** button. The Format Column Headings window opens. The default settings for all column headings are:
  - a. Font is **BOLD 8**.
  - b. Overall Alignment - Center.
  - c. Individual Panel Alignment - Center.
  - d. Borders set to Underline is ON.
2. Click the Font button to change font, style and size.
3. Change the borders.
4. Apply a Specific Column Header Format by clicking the drop down list for alignment. Change from default center to auto, left, or right.
5. Change Overall Alignment or Individual Panel Alignment.
6. Optionally, modify column headings to be more descriptive.
7. Click **OK** to apply format changes.





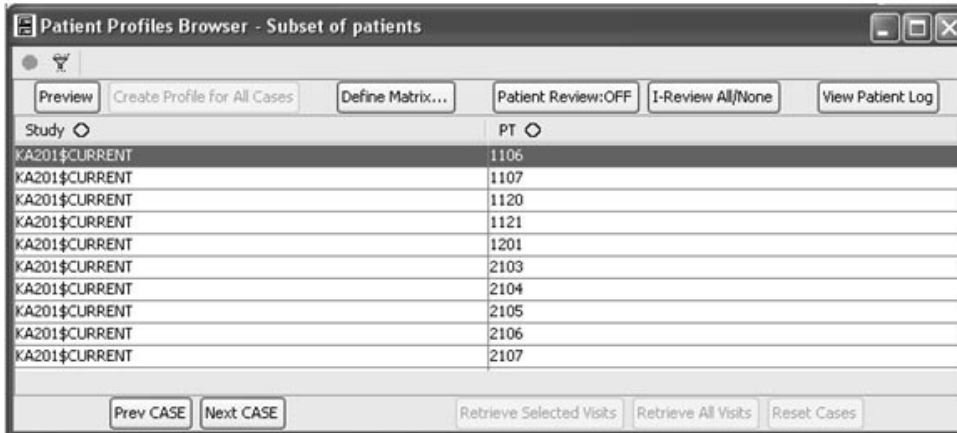
To apply overall formats to font, style and size:

1. Click on the **Format Column** button to open the **Format Column** window. The default settings for all columns are:
  - a. Font is Regular 8.
  - b. Overall Alignment - Auto.
  - c. Individual Panel Alignment - Auto.
2. Change Overall Alignment or Individual Panel Alignment from auto to left, center or right.
3. Click the Individual Panel Alignment drop down list to align the item display for auto, left, center, or right.
4. Click Row Results to apply Print Change for a particular column.
5. Click **OK** to apply format changes.



Click **Preview/Page Setup** to view the Preview window of the formatted profile.

Select a patient from the list and click **Preview**.



You may access the Patient Review Tracking tool by clicking the Patient Review button to ON.

It is recommended to apply any settings in the following sequence since sizing of the individual columns on the grid in design mode will change the column widths. It is advised to set **Page Setup** before the setting of the column widths since changing the page orientation, left margin size or right margin size will set the column widths back to their default settings.

1. Start with **Page Setup**.
2. Apply **Number of ID Items**.
3. Apply **Individual Panel Orientation** for horizontal versus vertical.
4. Column width can be set in one of three ways: **Shrink to fit columns**, **Autosize** or adjust **individual columns**.

5. Click **Refresh** to view changes.

Formatted Patient Profile [KA201:2010184208]

All Included Panels     Individual Panels

**Panels**  
 Medical History  
 Adverse Events  
 Concomitant Medication  
 Dosage  
 Efficacy Evaluation

Number of ID Items:  
 None     First Item     First 2 Items

Individual Panels Orientation:  
 Horizontal     Vertical

Maximum Visits Displayed in Row: 5

Shrink to fit columns  
 Autosize  
 Page Setup...  
 Refresh

**Black**  
**Female**  
**Age:47**

Adverse Events Patient Profile  
 KA201-2010184208

Date: 03/14/2010  
 Time: 22:17

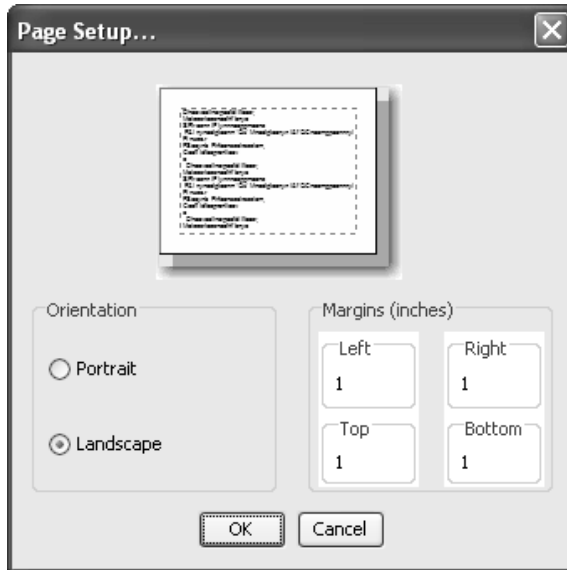
**Medical History**

Pat ID	Visit No.	Visit Date	Visit Label	Protocol	Investigator	Drug Sensitivity	Allergy	Eyes, Ears, Nose, Throat Dis.	Thyroid Disease	Diabetes
2010184208	1	07-OCT-1991	BASELINE	201	018	Yes	Yes	Yes	No	No

Pat ID	Cardiovascular Disease	Hypertension	Epilepsy	Renal-Hepatic Disease	Pulmonary Disease	Gastrointestinal Disease	Genitourinary Disease	Musculoskeletal Disease	Neuropsychiatric Disease	Other Skin Disease
2010184208	No	Yes	No	No	No	Yes	No	No	No	No

**Pat ID**    **Other**  
 2010184208    No

The default display is landscape and the settings are maximum column width of one inch. The width is set to fit all columns on a page depending upon the number of columns in the profile. The default number of columns is '11' of all equal widths.



The option to display Number of ID items as represented by the PatientID and VisitNo has selections for 'None', 'First Item' or 'First 2 Items'. If a panel row wraps beyond the maximum number of columns defined, you can repeat the display of 'First Item' or 'First 2 Items' onto the next row. If you select 'None' then only the initial row contains ID items. The selection can be made from All Included Panels or Individual Panels.

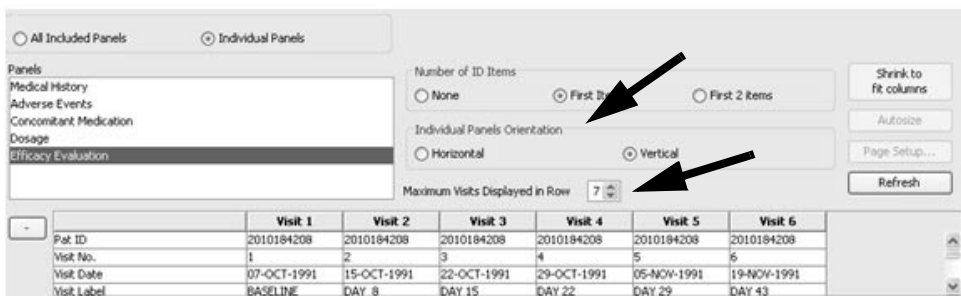
The default setting is for 'First Item' where the first row of all panels always displays the PatientID and VisitNo with any wrapped row displaying the PatientID.

---

## Panel Orientation

Changing the individual panel orientation is restricted to visit oriented data collection where one record is collected once for each visit. For example, vital signs or laboratory results may be collected once for each patient at a visit. Data collected only once or multiple times for each patient and not related to a particular visit is restricted to horizontal display, i.e., Concomitant Medication, Medical History, etc.

1. To change an individual panel orientation, select **Individual Panels**.
2. Select the panel. The default setting is horizontal.
3. Select the Individual Panel Orientation for horizontal or vertical orientation.
4. Select vertical orientation and change the **Maximum Visits Displayed in Row** selecting from the drop down list. The choices are 5 to 9.



The screenshot shows a software interface for configuring panel orientation. At the top, there are two radio buttons: "All Included Panels" (unselected) and "Individual Panels" (selected). Below this is a list of panels: "Medical History", "Adverse Events", "Concomitant Medication", "Dosage", and "Efficacy Evaluation". To the right, there are settings for "Number of ID Items" (radio buttons for "None", "First ID" (selected), and "First 2 Items"), "Individual Panels Orientation" (radio buttons for "Horizontal" and "Vertical" (selected)), and "Maximum Visits Displayed in Row" (a dropdown menu set to "7"). There are also buttons for "Shrink to fit columns", "Autosize", "Page Setup...", and "Refresh". At the bottom, a table displays patient data for six visits.

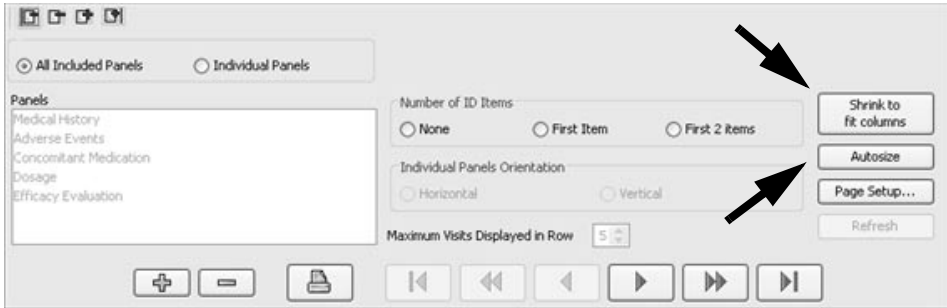
	Visit 1	Visit 2	Visit 3	Visit 4	Visit 5	Visit 6
Pat ID	2010184208	2010184208	2010184208	2010184208	2010184208	2010184208
Visit No.	1	2	3	4	5	6
Visit Date	07-OCT-1991	15-OCT-1991	22-OCT-1991	29-OCT-1991	05-NOV-1991	19-NOV-1991
Visit Label	BASELINE	DAY 8	DAY 15	DAY 22	DAY 29	DAY 43

5. Click **Refresh** to view panel orientation change.

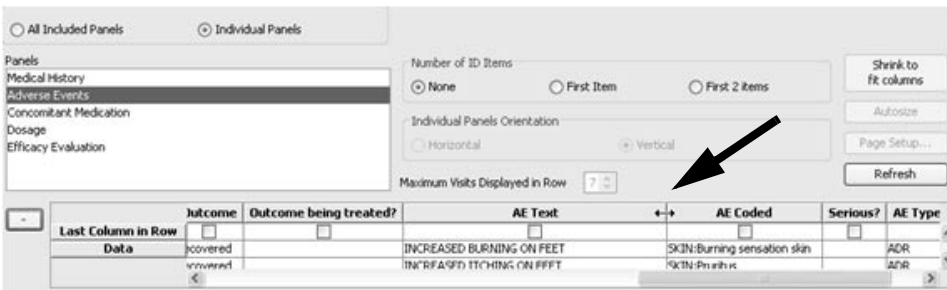
*Note: The grid in design mode only displays when you select Individual Panels.*

Column width

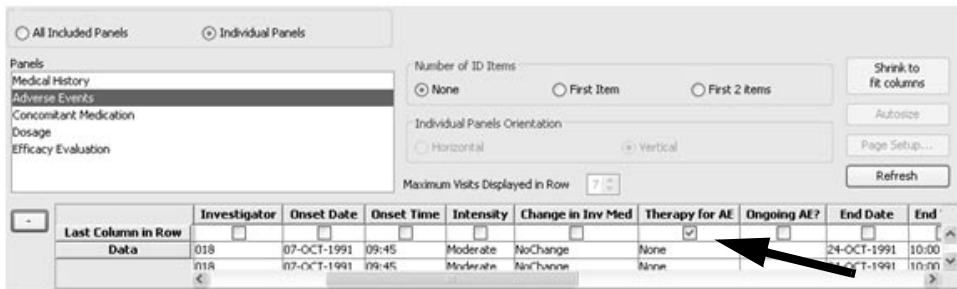
- Click the **Shrink to Fit Columns** and **Refresh** to view all columns to fit on the page. All columns are of equal width with horizontal default set to 11 columns.
- Click the **Autosize Columns** and **Refresh** to expand each column to it's maximum width. The individual data column width is adjusted for heading and data.



- Click **Individual Panels** to display the design grid. Select a panel and resize individual columns within the selected panel. Click and drag the cursor on the line between the column heading tabs to the desired width. Click **Refresh**.



- When you select **Individual Panels** and select a panel, you can apply a row break at a particular item by clicking the check box for **Last Column in Row**. Click **Refresh** to view your changes.



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## Print and Export Patient Profiles

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### *Print patient profile*

To print the patient profile of the selected patient:

1. Click on the title bar of the Patient Profile window to make it the active window.

2. Click , or from the **File** menu, select **Print**.

You can access the printer icon from the tool bar within the formatted patient profile output window to display the Print dialog box.

3. Click **OK**. A signature line with the date is printed at the bottom of the worksheet.



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### *Patient Profile Browser Scheduler*

This is an optional module requiring additional license to work with Integrated Review and JReview. This optional module provides end users the ability to schedule many patient profiles to be generated in a batch, so they do not need to wait for processing of each patient profile individually. It provides end user scheduling of formatted patient profiles for batch execution (later one-time or repetitive scheduling).

The user can request batch scheduling of either all patients in a study, or those selected based on the current Patient Selection Criteria, or just selected patients. After the scheduled job completes, the formatted patient profiles are available for review directly through the I-Review or JReview user interface, or can also be accessed directly as PDFs on the middle tier Windows server where they're created.

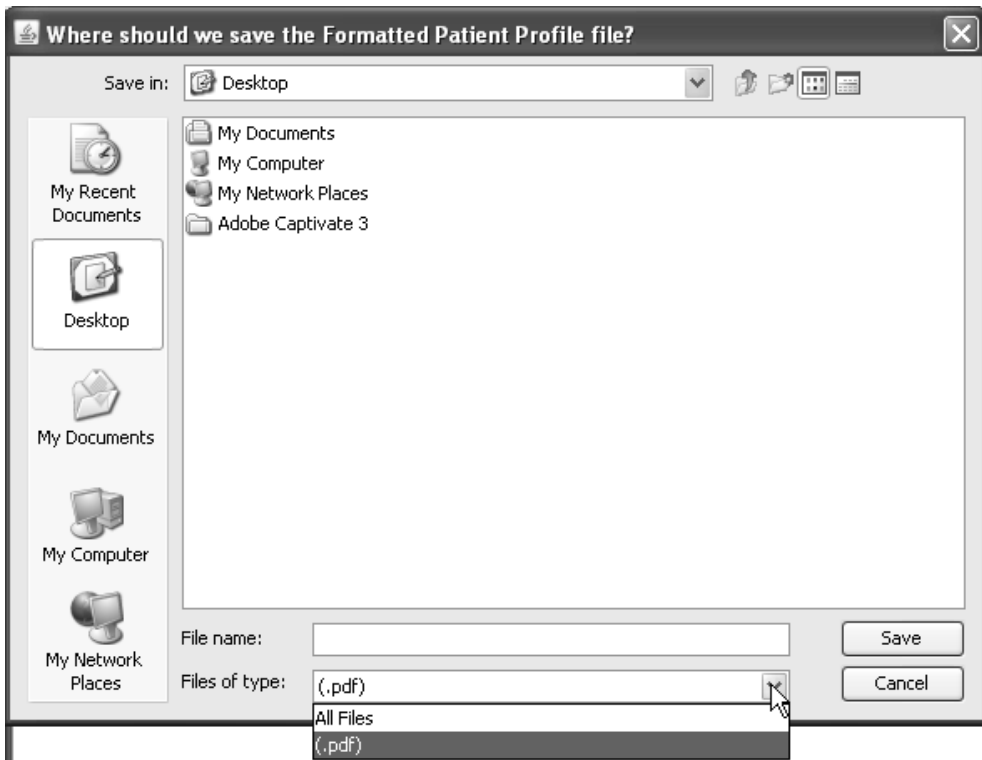
*Note: Scheduling Formatted Patient Profiles requires optional printer server module.*

You can use the Export function to export your results. The file options are dependent upon the result type, and display the appropriate export file options available.

To export your **Workbook Profile** in Excel files, HTML format or Tabbed Txt files:

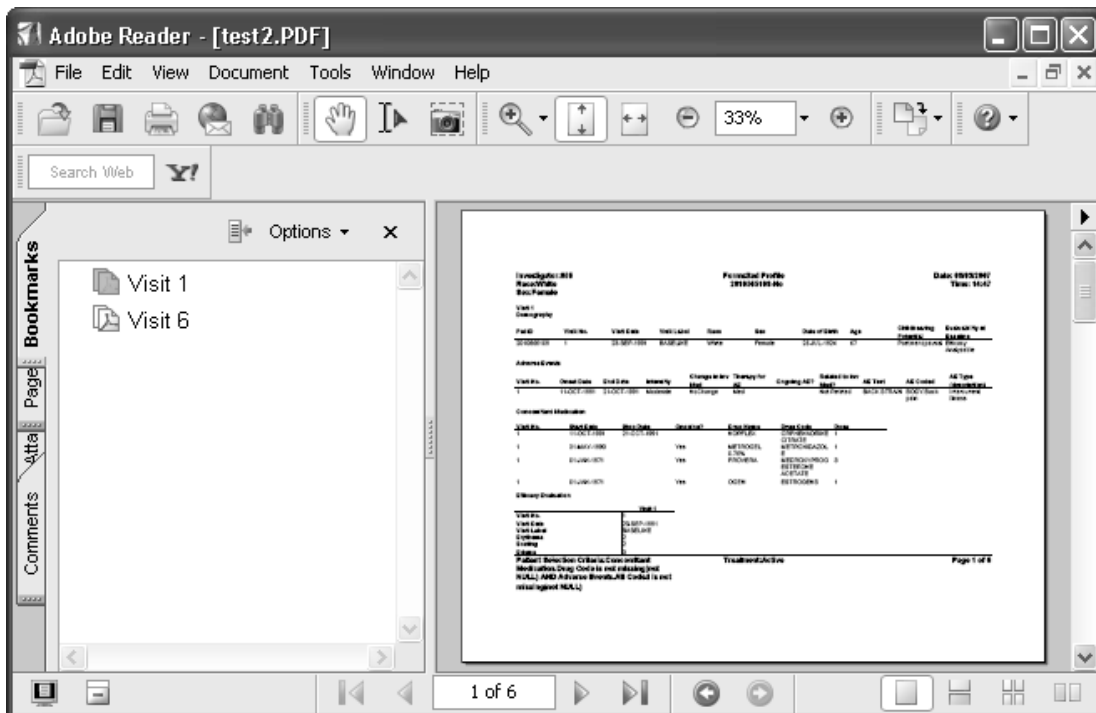
1. Select the object to export, it must be the active window.
2. Select the **File** menu and click **Export**. JReview displays the **Save File** window.
3. Select the **storage location**.
4. Enter the **File Name**, and select the **storage type**.
5. Click **Save**. Your patient profile is exported to the currently selected directory.

Formatted Patient Profiles can only be exported as PDF files.





After the formatted patient profile is exported, it displays with bookmarks of the Panel/Question Group or Visit dependent on how the formatted patient profile was organized. (Requires an Active X Control to generate the bookmarks after the file is exported.).



### Export formatted profiles

Users may export all formatted patient profiles in a given batch to be copied to the users indicated directory location.

In the Review Output List, right click on the formatted patient profile output folder for the job to view menu, and select 'Export All' .

---

## Object Storage

For detailed instructions on how to save, retrieve and remove object specifications (reports, graphs, crosstabs, etc) *See Chapter 11: Saving Objects, plus Alerts Browser.*

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## Close Patient Profiles Browser

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### *Closing the Patient Profiles windows*

If you are finished with all Patient Profiles, and do not want to define any other Patient Profiles: double-click on the close box of the Patient Profiles Browser window.

Review closes all Patient Profiles windows currently opened.

# 5 *Graphic Patient Profiles*

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# Graphic Patient Profile

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## *Access Graphic Patient Profile*

Users with access to the Patient Profiles have the option to access Graphic Patient Profiles where the data is viewed in intuitive, graphic format. You can create, execute and save graphic patient profile objects at the global, project, studygroup and study levels and in either private, usergroup or public object locations.

The graphic patient profile specifications are created within the limits set by the currently defined graphic patient profile templates defined in either JReview or IReview.

- Graphic Patient Profiles display a single patient's data graphically over time.
- It is **required** to map the "panels" from the Clinical Data Management System to the "categories" in Review accomplished through Graphic Patient Profile Templates.
- The activity of creating and editing Graphic Patient Profile Templates is typically done *infrequently*.

***Note: The Review Administrator application must be updated to allow the granting of these privileges to specific users or groups.***

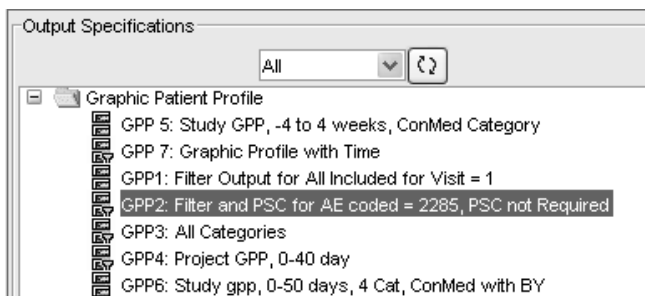
The patient data is displayed from multiple data domains and plotted against a common time axis. The display style for each domain depends upon the kind of data, for example, duration events such as Adverse Events are plotted as horizontal bars showing the duration of the event, from onset date to end date.

Graphic patient profiles are very complex, due to the different types of data can best be represented by different types of graphs. The individual graphs are aligned along a similar time axis, however, each graph may consist of a different plot type based upon the type of data "event" that is depicted. Each graph may be based on data from multiple tables in the underlying database.

---

## Show Graphic Patient Profile

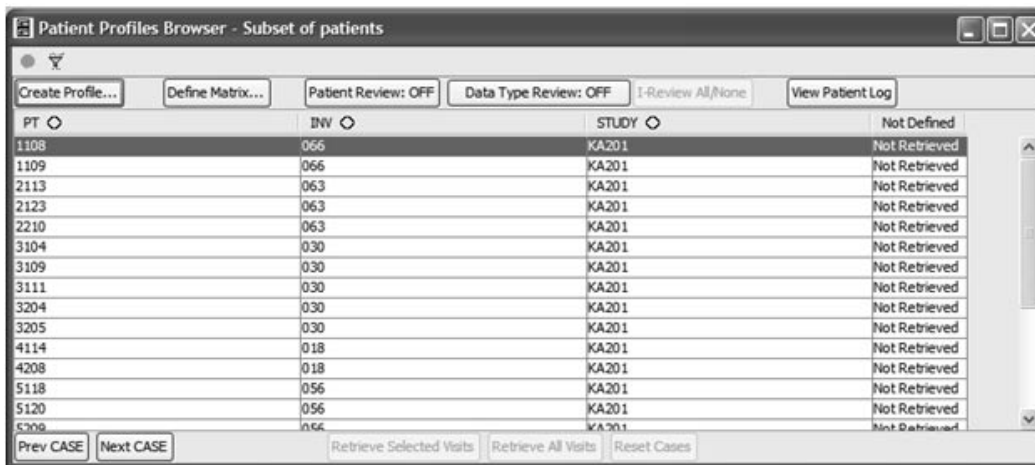
Previously saved graphic patient profiles can be selected and executed from the Object Explorer window.



JReview opens the Patient Profile Browser which displays a list of patients who meet the patient selection criteria, or all available patients if no selection criteria was defined. The first patient listed is the default selection, or select a patient and click **Create Profile**.

There is a ReviewAdmin option to automatically create/open the first patient GPP in the list. The System Administrator would set this default feature as ON/OFF per the user site preference.

Another ReviewAdmin option will display a "Subset" column in place of the Study column, to indicate if the patient belongs to a saved patient subset.

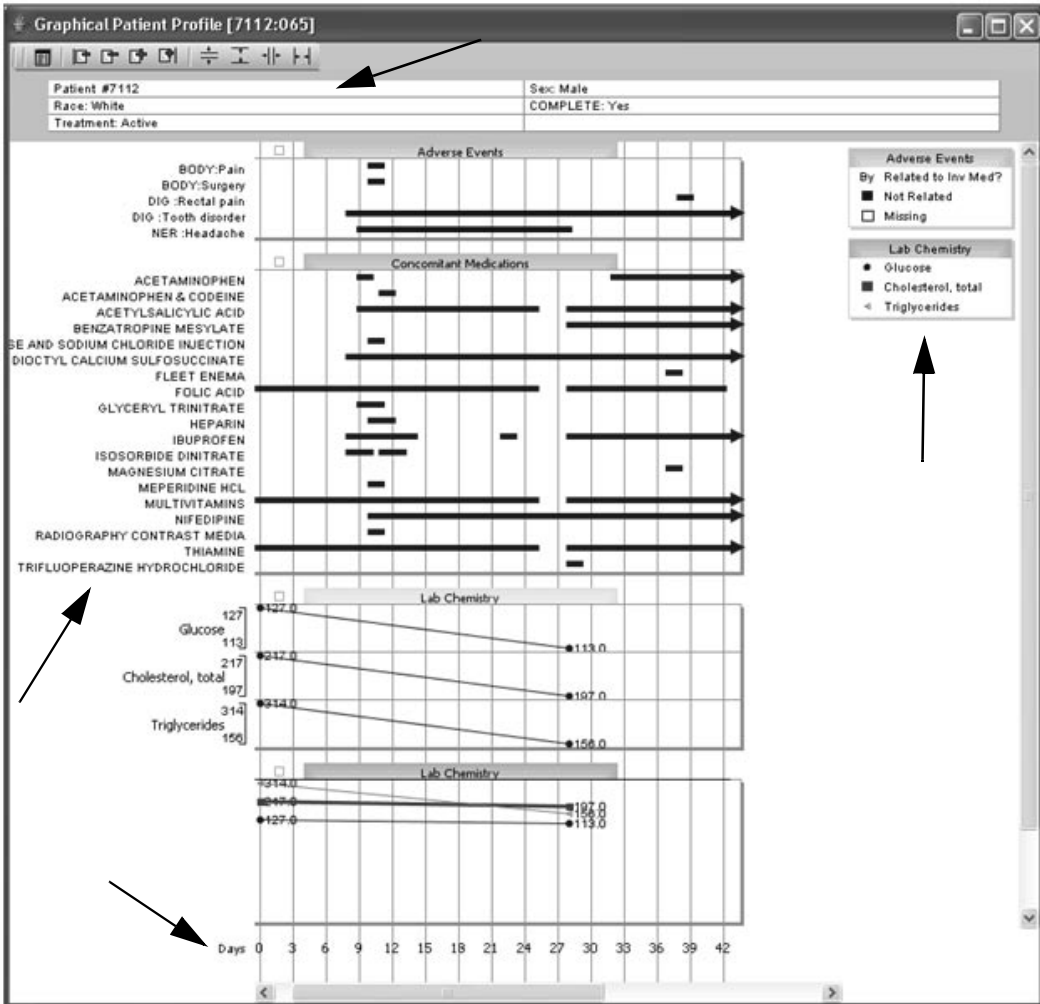


The patient data is displayed from multiple data categories and plotted against a common time axis. The display style for each domain depends upon the kind of data, for example, duration events such as Adverse Events are plotted as horizontal bars showing the duration of the event, from onset date to end date.

There is fixed/frozen viewing behavior applied to the graphic patient profiles, so the user always sees the following information:

- If the Header area was defined for the graphic patient profile, it always displays for example: treatment, completion status, etc.
- Left side axis text to always view Adverse Event, Conmed, or other text.
- Right side axis text for the Legend Box details/text to see the appropriate legend for a particular part of the GPP.
- Day/Visit Axis is always in view to avoid additional scrolling.

So essentially the body of the graph 'scrolls' within these 4 frozen areas, always keeping its anchor to the corresponding information.

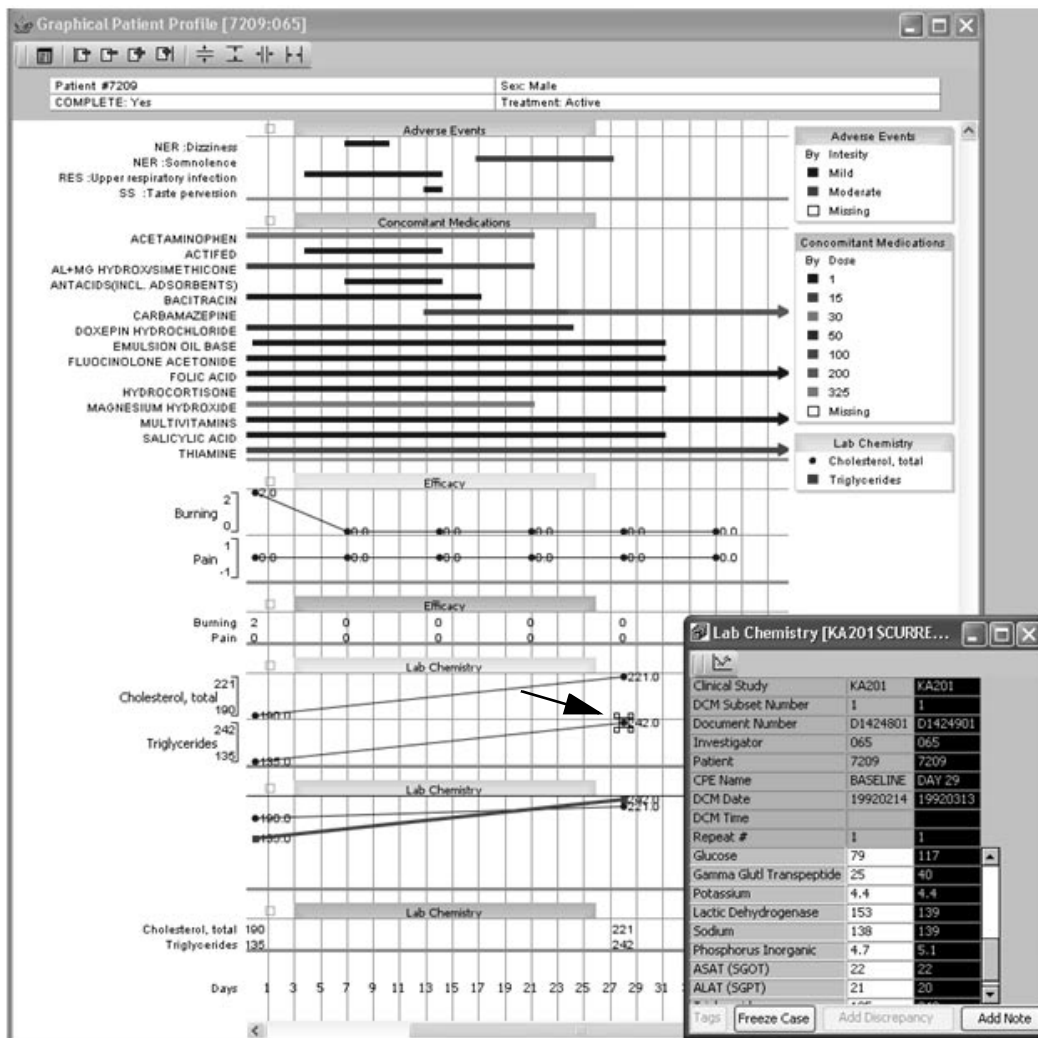




## Basic graphic user interface

Once the graphic patient profile displays, the following functions are available to assist you in further examining each graphic data display.

- Use the scroll bar to move through the multiple graphic plots within the patient.
- Select a data point on a graph display and left mouse click to select and invoke drill down with the Data Browser.



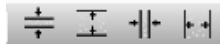
- On the Control bar (located at the left side of categories) with the box icon; use the left mouse to minimize and maximize the category.

		Efficacy	
Burning	0	0	1
Edema	0	0	0
Erythema	2	2	2
Pain	0	0	1

- The first button in the toolbar is to apply **Patient Notes**. (See Chapter 3 *Data Browser: section for Patient Notes*)
- The second button in the toolbar is for **Show Settings**. (See section for *Graph Setting*)



- To move between patients, use the icons in the toolbar with the appearance of little pages with - and + signs. The first page button always takes you to the first patient. The second page button moves you one patient back. The third page button moves you one patient forward. The last page button always takes you to the last patient.
- Use the last scale icons to adjust the scale to decrease or increase the plot for compressing or expanding the rows.



Super Users are able to save templates at the object storage level for global, project, study group and study levels as only one per level. The templates are saved at the object storage location for public only.

Once a graphic patient profile is saved the template information is saved with the profile. Therefore, a saved profile uses the original template information that existed at the time it was created to avoid conflicts with updated or newly created templates.




The last multi-color icon is to show (default) or hide category colored labels in the GPP output display.

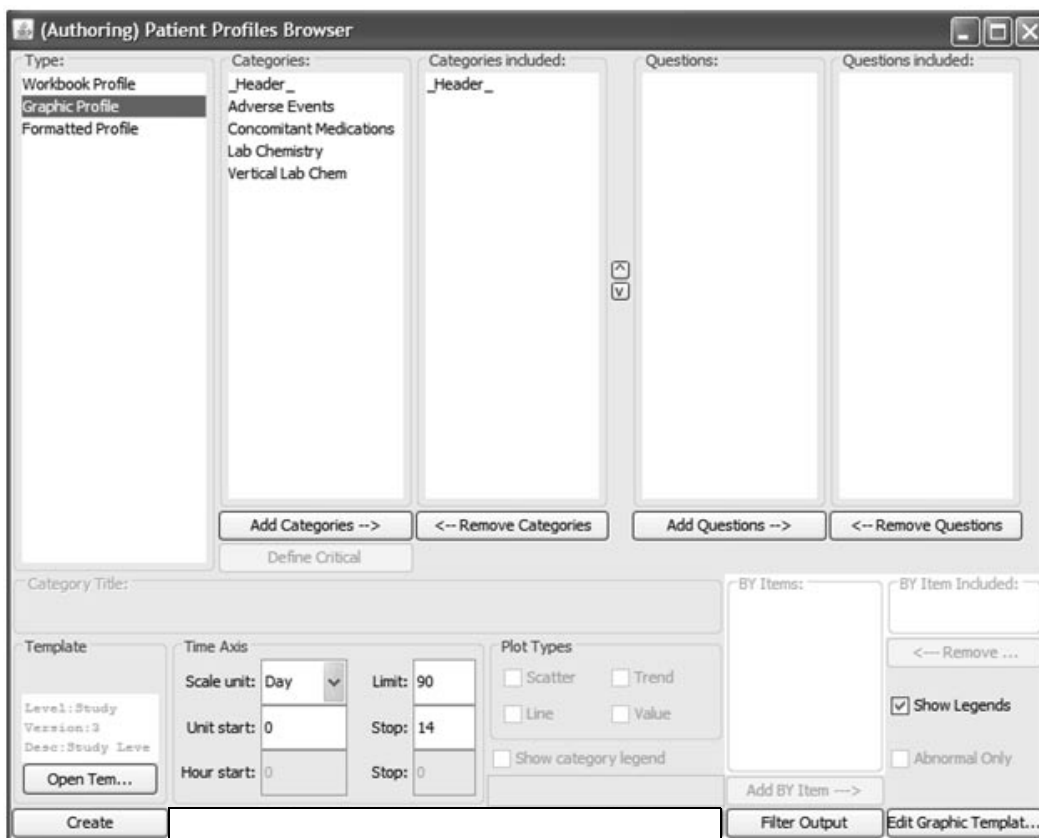
# Define Graphic Profile Template

## *Open Patient Profiles Browser*

Prior to defining a graphic patient profile for time, select categories and plot types a graphic patient profile template is **required** to access those included categories and define the study start.

Click  on the toolbar or from the **Browse** menu, select **Patient Profiles**.

JReview opens the Patient Profiles Browser window to the default profile type for **Workbook Profile**. Click on the **Graphic Profile** type.



---

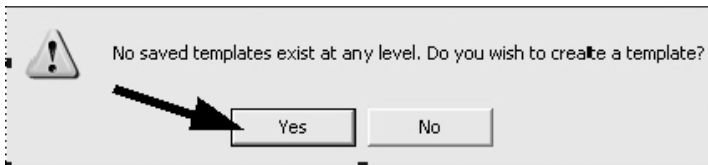
## Open Graphic Profile Template

A Graphic Patient Profile template must be defined first before users can create graphic patient profile specifications.

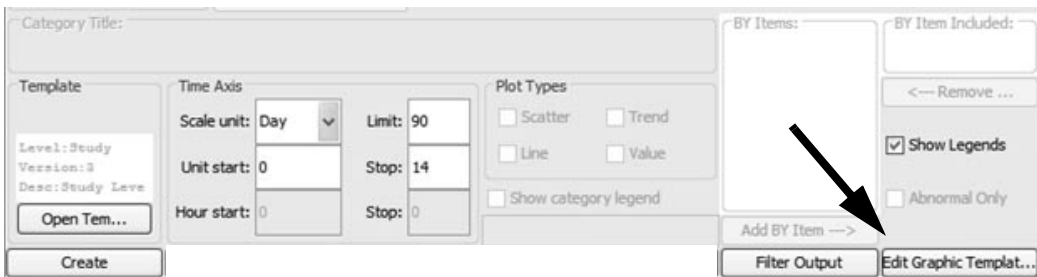
SuperUsers with the privilege to “Create Graphic Patient Profile Templates” access the Graphic Patient Profile template feature from the Patient Profiles Browser window within the Graphic Profile option.

If none exists, a message displays and the user is exited from the graphic patient profile option. If you have authoring privileges to define a graphic template; a message box displays asking if you wish to create a template now.

Click **Yes** and the Graphic Patient Profile Template window opens.



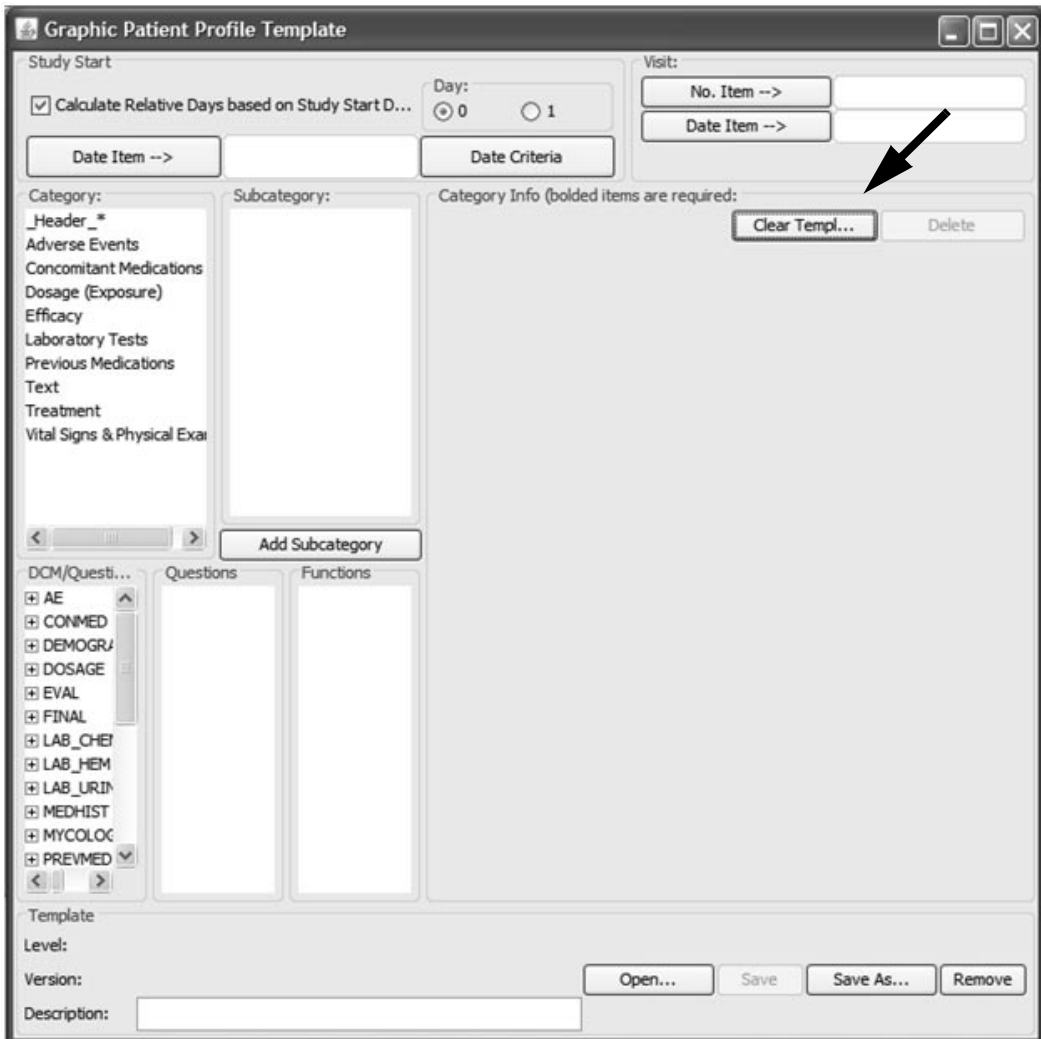
If there are previous graphic templates already saved, click on the **Edit Graphic Template** button to open the Graphic Patient Profile Template window.



The current graphic template will be displayed. Click the **Clear Template** button to define a *new* graphic patient profile template.

The Graphic Patient Profile Template is where the “Categories” used by the end user within the Graphic Patient Profiles are matched to the “panels” and “items” from the database. For some categories, such as labs, select as many possible items. Then during creation of the Graphic Patient Profile, the user has more selection options similar to a menu.

The Graphic Patient Profile Template dialogs are dependent upon the category. The type of information collected will vary to generate text, duration bar or numeric plots.



---

## Define study start date

Entry of the Study Start Date is **required** unless the database utilizes an item for day calculations.

The Study Start check box is defaulted ON for “Calculate Relative days based on Study Start Item (and possibly Date Criteria)?”. When checked, you must define an item that contains a unique single value for each patient’s study start date as Day 1 or Day 0.

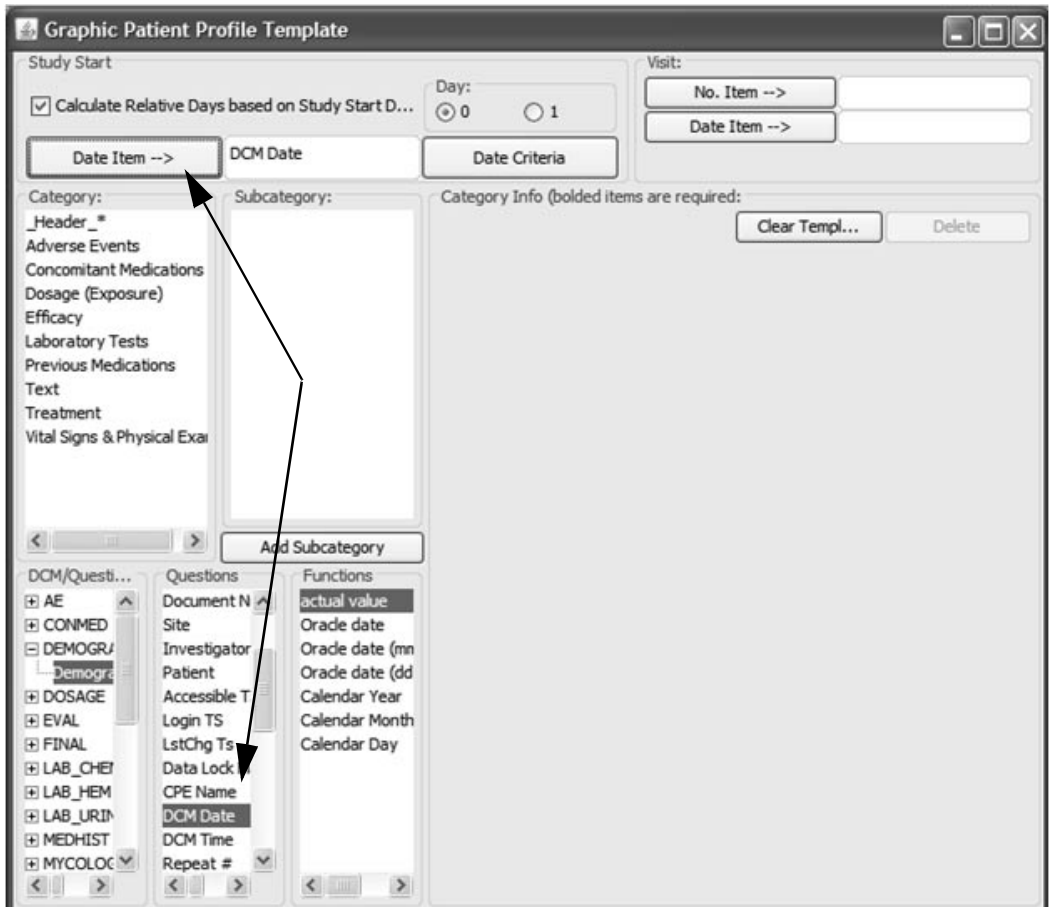
For example, a date item located on a single record per patient such as the Demography data panel. If a multiple record data panel is chosen, then the selected date item **requires** the Date Criteria be applied to filter down to a unique patient study start date such as visit label is baseline, visit number is 1, etc.

The Study Start Date is **required** to create a Graphic Patient Profile. Therefore, if you forget to enter a study start date you would be **unable** to save the template.

If your database contains a calculated Day item, then you can uncheck the Study Start box and all other items in the Study Start box are disabled. The buttons previously labeled as “Date” then display as “Day” when you enter details for the various categories.

Enter the precalculated Day item created in your database (not JReview). You are required to select at least one item per defined category that contains numeric values denoting *relative days from study start* (i.e., for a single event category such as “Laboratory Test” you would enter an item containing values of the relative day the lab test was performed). The relative day item would be another item located in the same panel. For duration events such as “Adverse Events” you would enter the item containing the values of the relative day each Adverse Event started and a second item containing the relative day each Adverse Event ended.

1. To enter the Study Start Date Item, select a panel and date item. Click **Date Item**.
2. Enter the date item as **Day 0** or **Day 1**.



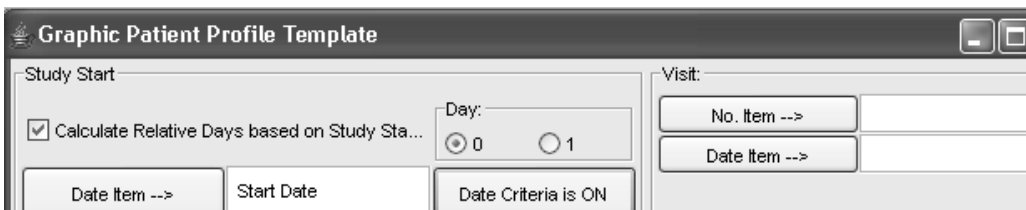
If you had entered a study start date from a multiple record panel then you need to further specify the date by clicking **Date Criteria**. For example, if you had selected the Start Date item from the Dosage Panel, the Date Criteria is **required** for this multiple record panel.

The Study Start Date Criteria window opens for you to specify details such as a visit label or visit number for your selected date.



3. Click **Save Filter** and close the window.

The **Date Criteria** button status changes to 'Date Criteria ON'.

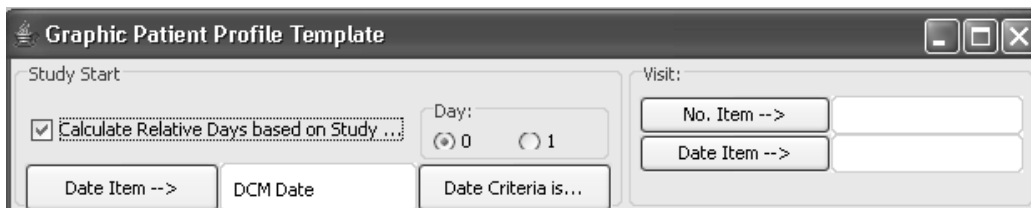




You can optionally calculate relative “Days on Drug” to plot the graphic display with multiple Visit information. Study Start Date and Visit information are independent functions from each other and can utilize dates from different panel sources.

Information entered in the Visit function for “No. Item” and “Date Item” are **required** to come from the same panel source as the entries for Visit Number and Visit Date. The resulting calculation for relative “Days on Drug” is displayed and plotted against the visit number along the X Axis on the graphic profile.

For example, if Demography Visit Date is entered as the Study Start Date and you need the graphic display plotted against the relative days calculated from the multiple visit Efficacy panel. By entering Efficacy Visit No item and Visit Date for the Visit information calculates the relative days between the two date items and is plotted on the graphic profile.

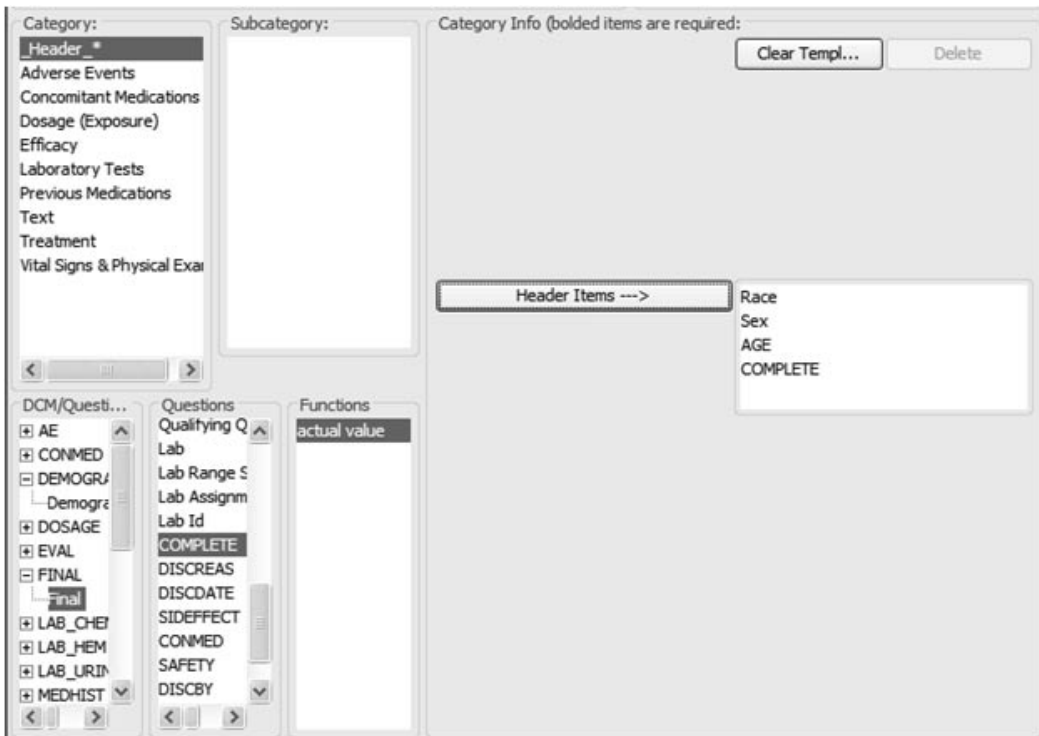


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Define header items

Adding a header is optional. The PatientID defaults if left blank.

4. Click **Header** from the Category list.
5. Go to the Panels list and Items list to select and add header items to display in the graphic patient profile.
6. Click **Header Items** button to add items. Highlight and click scissors in the tool bar to remove items.



---

## Category types

Different types of data can be best represented by different types of graphs. Data with start and stop dates (i.e., duration events) are graphed as horizontal bar charts over time. Data collected on a given date(s) as time point events (i.e., labs, vitals) are graphed as scatter plot graphs. Data with no date associated are displayed as text.

Different information about data panels/tables and items/fields are needed in order to create each type of graph (bar, line or scatter). This database information may come from multiple database panels/tables and are organized into a data category. The data category “bucket” contains the type of data (or event) to be graphed; the type of graphs to be plotted for this type of data (or event); and additional necessary information on panels/tables and items/fields to get the correct data from the database to generate the desired graphs (i.e., lab normals).

- A data category contains specifications about the data for a specific type of data “event”.
- Allows for these specifications to be based on multiple database tables restricting that only one-to-one or one-to-many table relationships be allowed.
- Associates the type of data event to be graphed with the appropriate types of plots.

The following table lists the data categories.

<b>Category Type</b>	<b>Definition</b>	<b>Plot Type(s)</b>
Duration	Data collection event that has a start and stop time point.	Horizontal Bar
Time Plot	Data collection event that occurred at a specific point in time.	Data Value Line Plot
Lab	Lab test data collection event that can be compared to normal range values if they are defined in the data.	Scatter Plot Line Plot Trend Plot Data Value
Dosage	Dosage data collection event that has a standardized dose value and start and stop time points.	Vertical Bar
Non-Time Aligned or Text	Data not associated with a specific point in time (i.e., gender, sex)	Free form text

---

---

## Define Category Information

The SuperUser specifies the category information from a pre-defined categories list and can further select or **Add Subcategory** to create user defined subcategories for Adverse Events, Laboratory Tests, Text, etc.

1. Select a **Category** to display the corresponding template for entering category information.
2. Optionally, if the category collects time data, click the **Include time items** box to activate the time items to display with the date items.
3. Select the **Panel(s)** and **Items** to define the category information. Select the item function as actual value or decoded value.
4. Repeat the steps to add or select a subcategory. Click the **Clear** button to remove current items and reselect items. Or, click **Delete** to remove a user defined subcategory.
5. Click the **Add Subcategory** button to add a new subcategory.

When a category is added an asterisk displays next to the category in the category list noting it has been defined.

The screenshot shows the 'Define Category Information' interface. It features a 'Category:' list on the left with 'Adverse Events \*' selected. The 'Subcategory:' field contains 'SAE'. The 'Category Info' section on the right includes a 'Clear Templ...' button, a 'Delete' button, and a checked 'Include time items (as well as date)?' checkbox. Below these are several rows of item selection buttons and input fields: 'Add Item --->' (AE coded), 'Start Date Item --->' (Onset Date), 'Stop Date Item --->' (End Date), 'Begin Item --->', 'Ongoing Item --->' (Ongoing AE), 'BY Variables --->' (Intesity), 'Start Time Item -->' (Onset Time), and 'Stop Time Item -->' (End Time). At the bottom left, there are three panels: 'DCM/Questi...', 'Questions' (with 'Onset Time', 'Intesity', 'Change in Ir', 'Therapy for', 'Ongoing AE', 'End Date', 'End Time', 'Related to I', 'Outcome', 'Outcome be', 'AE Text', 'AE coded'), and 'Functions' (with 'actual value'). An 'Add Subcategory' button is located between the 'Subcategory:' and 'DCM/Questi...' panels.

---

### Missing data

Missing data is displayed for line plots and scatter plots as blank. Duration plots will display as an empty box for a missing BY variable value.

Only Adverse Event and Concmed data for duration plots are handled with the 'B' and 'E' display. This condition only applies to these two categories. If an Adverse Event or Concmed have a missing Start date, and only have an End Date, then display a 'E' for End at the stop day. If an Adverse Event or Concmed have a missing Stop date, and only have a start date, then display a 'B' for begin at the start day.

Ongoing would have a start date/day, and no stop date, but the ongoing flag would be set. In this situation, the duration bar continues as drawn/displayed all the way to the right, with a right arrow at the very end.

These display details are driven by the "Ongoing" template entry if present or blank, and how it is defined in the graphic profile for "Limit" setting.

---

### Ongoing Item

**Table 1: Ongoing status is not collected during the study, and the 'Ongoing Item' set to blank in the Template.**

Start Date	Stop Date	Date Status	Graph Display
Present	Present	Both Start and Stop Dates were entered.	Duration Bar
Present	Blank	Missing Stop Date.	Letter 'B' in Start Date
Blank	Present	Missing Start Date.	Letter 'E' in Stop Date
Blank	Blank	Both dates missing.	Blank

**Table 2: Ongoing status is collected during study, and the ‘Ongoing Item’ is entered in the Template.**

<b>Start Date</b>	<b>Stop Date</b>	<b>Date Status</b>	<b>Ongoing Status</b>	<b>Graph Display</b>
Present	Present	Both Start and Stop Dates were entered.	Blank	Duration Bar
Present	Present	Both Start and Stop Dates were entered.	Present	Ongoing Bar
Present	Blank	Missing Stop Date.	Present	Ongoing Bar
Blank	Present	Missing Start Date.	Blank	Letter ‘E’ in Stop Date
Blank	Blank	Both dates missing.	Blank	Blank

If you include time data items in any category definition by clicking the 'Include time items' checkbox, then Start and Stop Time Items will display for entry. In addition, the Time Axis scale in the graphic patient profile will include hours and minutes. The default displays the date items and 'Include time items' as unchecked for displaying time items.

Include time items (as well as date)?

The following conditions are true with time items present:

- Existing templates and objects without the option for time are still processed from a prior release.
- Time is stored as days.hours in saved graphic patient profile objects so prior versions of the Review client will retrieve correctly in days.
- New templates will include the time option but you cannot go back and edit an existing template from a prior release.
- Time items of type character, numeric or time will process.
- Hours and Minutes are included in the Time Axis scale if the time item was included in the opened template and graphic patient profile object.
- Hours and Minutes are not included in the Time Axis scale if no time items were included in the opened template and graphic patient profile object.
- If a new graphic patient profile object is opened with hours as the scale with an older Review client, then the scale will present in days and the data will display accurately.
- Negative days and hours are handled.

---

## Duration Category Type

Duration type categories include Adverse Events, Concomitant Medications, Previous Medications and Treatment require the following item information to be entered:

- **Add Item** is the field to be graphed.
- **Ongoing Item** and **BY Variables** are optional. The **BY Variables** display details as a legend option.

The screenshot shows a software configuration window for a 'Duration Category Type'. It is organized into several panels:

- Category:** A list of categories including '\_Header\_\*', 'Adverse Events\*', 'Concomitant Medications' (highlighted), 'Dosage (Exposure)', 'Efficacy', 'Laboratory Tests', 'Previous Medications', 'Text', 'Treatment', and 'Vital Signs & Physical Exam'. Below this list is an 'Add Subcategory' button.
- Subcategory:** A dropdown menu with 'All' selected.
- Category Info (bolded items are required:)** A table with buttons on the left and input fields on the right. The table is as follows:

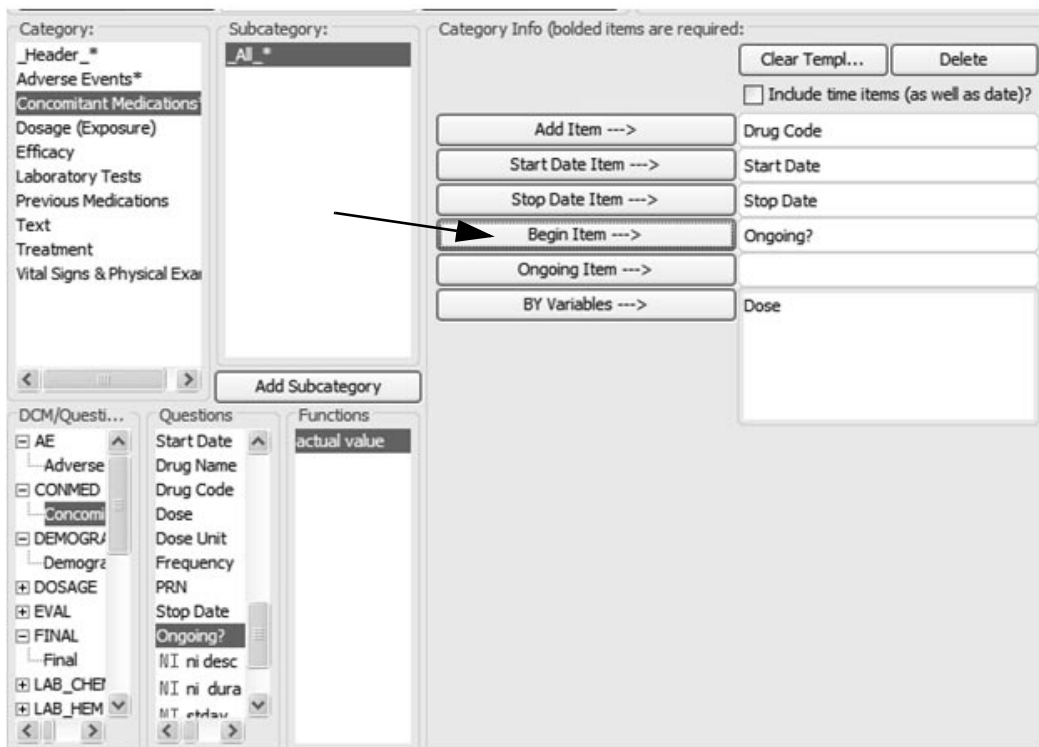
Button	Field
Clear Templ...	
Delete	
<input type="checkbox"/> Include time items (as well as date)?	
Add Item --->	Drug Code
Start Date Item --->	Start Date
Stop Date Item --->	Stop Date
Begin Item --->	
Ongoing Item --->	Ongoing?
BY Variables --->	Dose
- DCM/Questi...:** A tree view of categories including AE, Adverse, CONMED, Concomi, DEMOGR, Demogr, DOSAGE, EVAL, FINAL, Final, LAB\_CHEI, and LAB\_HEM.
- Questions:** A list of questions including Start Date, Drug Name, Drug Code, Dose (highlighted), Dose Unit, Frequency, PRN, Stop Date, Ongoing?, NI ni desc, NI ni dura, and MT etdau.
- Functions:** A list of functions including 'actual value' (highlighted) and 'chg from previo'.



In the GPP template, you may specify a variable for end continued as “Ongoing”, but also for begin continued. For example, in some clinical trials the medication was started a long time before trial start. Therefore, it is sufficient to specify "begin continued" instead of a real start date. The ‘**Begin Item**’ allows you to specify the begin continued variable directly in the GPP template.

The **Begin Continued Item** is located above the Ongoing Item in individual category definitions. This item only applies to categories with a Start Date item such as Adverse Events, Conmeds (duration types), or Dosage. The selected field works the same as the Ongoing field. If value is empty or has a first character beginning with “N”, it will be assumed to not signify a begin date before the study start. Otherwise, it will be treated as such and will be displayed as an arrow from the left side of the display through to the end date of the display line.

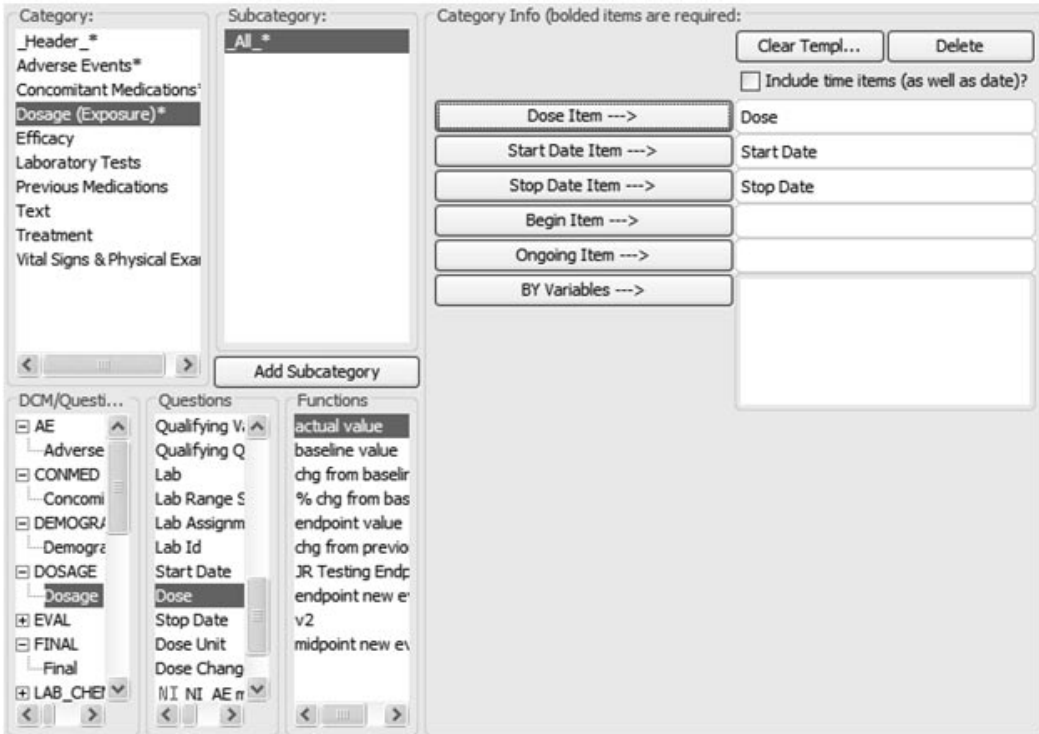
Internally if Begin Continue item is not empty for a category, then the value would be checked to see if the start date should be set to Jan 1, 1990.



---

*Dosage Category Type*

The dosage category is a special case of duration **requiring a numeric** field representing dosage values for the item to graph. The dosage category supports multiple dosing regimens when you add subcategories.



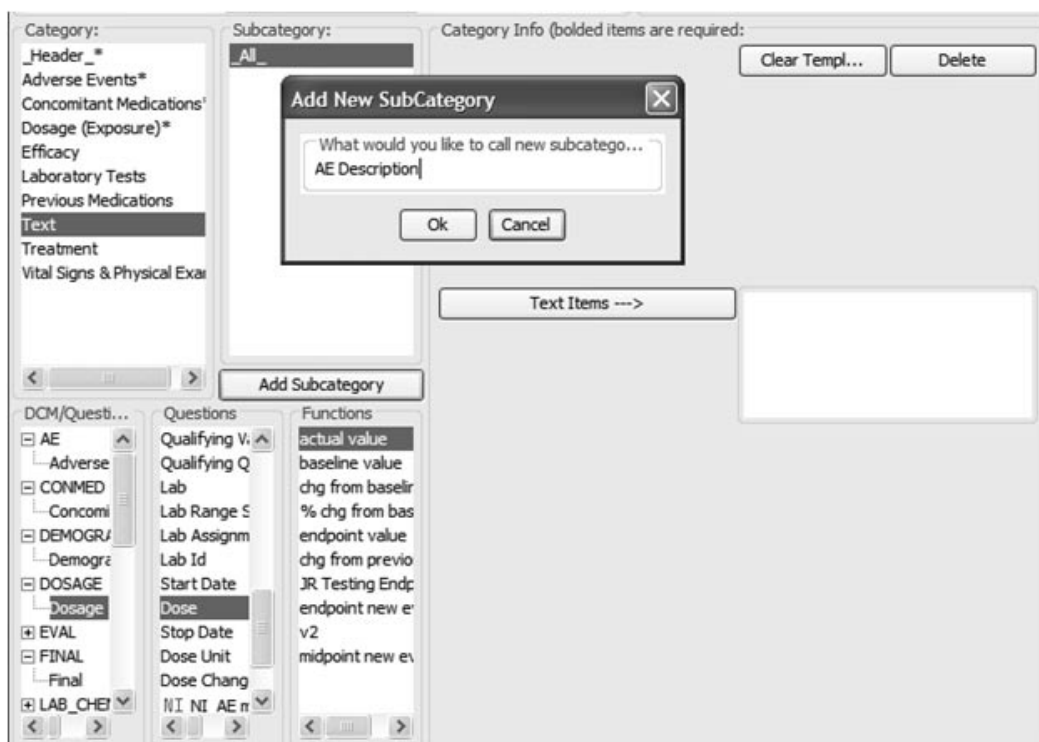
---

## Text Category Type

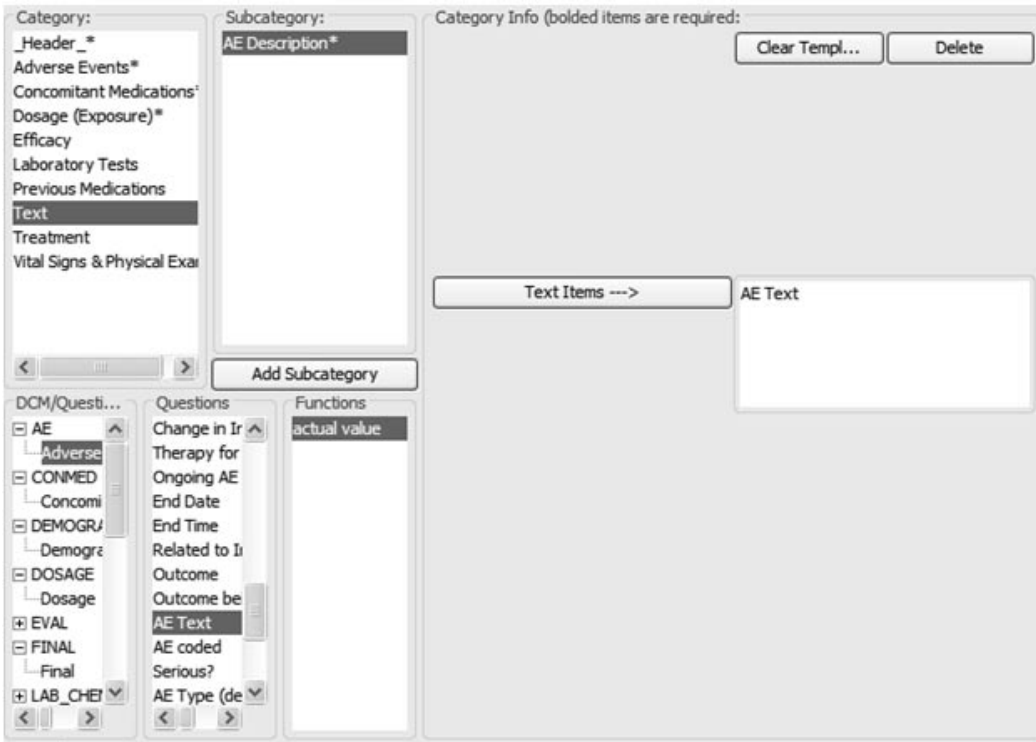
The text category is a text type which initially contains no subcategories. The SuperUser defines subcategories and assigns specific database items/fields from the panels/tables to either categorize itself or a subcategory. The items are displayed as non-time aligned data.

To add a Text Category:

1. Select **Text** in the **Category** list and click **Add Subcategory** button.
2. The **Add New Subcategory** window opens for you to enter the subcategory.
3. Click **OK**.



4. Select the Panel(s) and item(s).
5. Click the **Text Items** button to add.



6. The Text subcategory is added. Click the **Delete** button to remove.

---

## Laboratory Category Type

The laboratory category is special due to the fact that lab data can be structured in either a *horizontal* (a separate field for each lab test) or *vertical* (one field for the lab test name and a second field for the lab result value for all labs) format. In addition, vertical lab data has each lab test associated with a lab normal range and units which may or may not be in another table.

Horizontal panel structure requires:

- Date Item - the field containing the date of the event.
- Item(s) - the fields which the user may select for graphing.

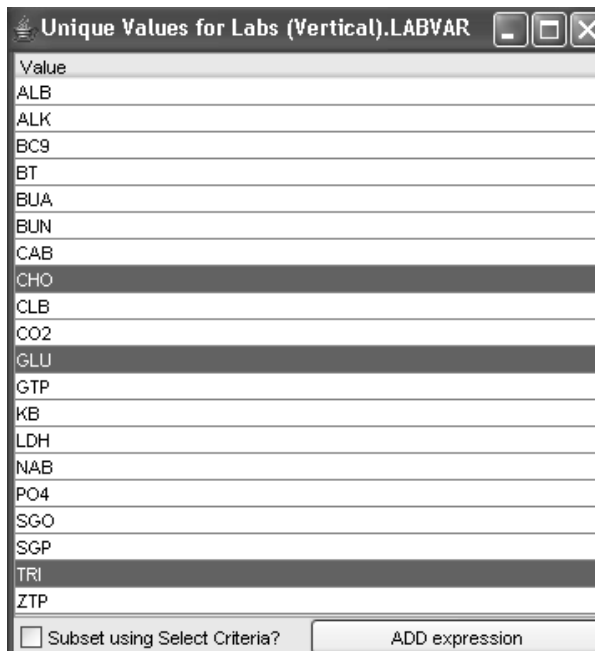
The screenshot shows a software configuration window for a Laboratory Category Type. It is divided into several sections:

- Category:** A list of categories including Adverse Events\*, Concomitant Medications\*, Dosage (Exposure)\*, Efficacy, **Laboratory Tests**, Previous Medications, Text\*, Treatment, and Vital Signs & Physical Exam.
- Subcategory:** A list of subcategories including **All**, Lab Chemistry, Lab Hematology, and Lab Urinalysis.
- Category Info (bolded items are required):**
  - Panel Structure:** Radio buttons for **Horizontal** (selected) and Vertical.
  - Include time items (as well as date)?** An unchecked checkbox.
  - Date Item --->** A field containing "DCM Date".
  - Lab Test Items --->** A list box containing: Albumin, Alkaline Phosphatase, Creatinine, Bilirubin, total, and Uric Acid.
- DCM/Questi...:** A tree view showing a hierarchy of categories, with **LAB\_CHE** selected.
- Questions:** A list of lab tests including CO2 Content, Glucose, Gamma Glutamyl Transaminase, Potassium, Lactic Dehydrogenase, Sodium, Phosphorus, ASAT (SGOT), ALAT (SGPT), Triglycerides, and NI I NI Glob.
- Functions:** An empty list box.

Vertical panel structure requires:

- Date Item - the field containing the date of the event.
- Lab Test Name Item - the field containing the lab test name.
- Lab Result Name Item - the field containing the lab test result or value.
- Lab Test(s) - the list of lab tests which the user may select for graphing. The overall list of lab test names is derived from the lab test name data item.

To select multiple contiguous values, click on a value and drag over the other values. To select multiple non-contiguous values, click on a value and hold down the **Ctrl** key when clicking the other values.



The screenshot shows a software interface for defining a graphic profile template. It is organized into several panels:

- Category:** A list of categories including Adverse Events\*, Concomitant Medications\*, Dosage (Exposure)\*, Efficacy, Laboratory Tests\* (highlighted), Previous Medications, Text\*, Treatment, and Vital Signs & Physical Exam.
- Subcategory:** A list of subcategories including Lab Chemistry, Lab Hematology, Lab Urinalysis, and Vertical Labs\* (highlighted).
- Category Info (bolded items are required):**
  - Panel Structure:** Radio buttons for Horizontal and Vertical (selected).
  - Date Item --->** VISIT\_DATE
  - Lab Test Name Item --->** LABVAR
  - Lab Result Value Item --->** LABVAL
  - Lab Tests --->** A list box containing ALK, BT, BUA, BUN, and CHO.
  - Unit Item -->** (Empty field)
  - Normal Ranges?
  - Normal High Item -->** NORM\_HIGH
  - Normal Low Item -->** NORM\_LOW
- Questions:** A list of questions including VISIT, VISIT\_DATE, OBS, PAGENO, PAGEREPE, RID, VISIT\_LABEL, LABVAR, LABVAL, NORM\_LOW, NORM\_HIGH (highlighted), and ABNORMAL.
- Functions:** A list of functions including actual value, baseline value, chg from baselr, % chg from bas, endpoint value, chg from previo, JR Testing Endp, endpoint new e, v2, and midpoint new ev.

- **Unit Item** - are the units associated with the lab tests.
- **Normal Ranges** - are the normal ranges for the lab tests. Click this box to enter the Normal High Item and Normal Low Item.

*Note: This assumes that a join criteria has been previously defined between the lab and normal range panels.*

- **Normal High Item** - the field containing the lab normal high value.
- **Normal Low Item** - the field containing the lab normal low value.

---

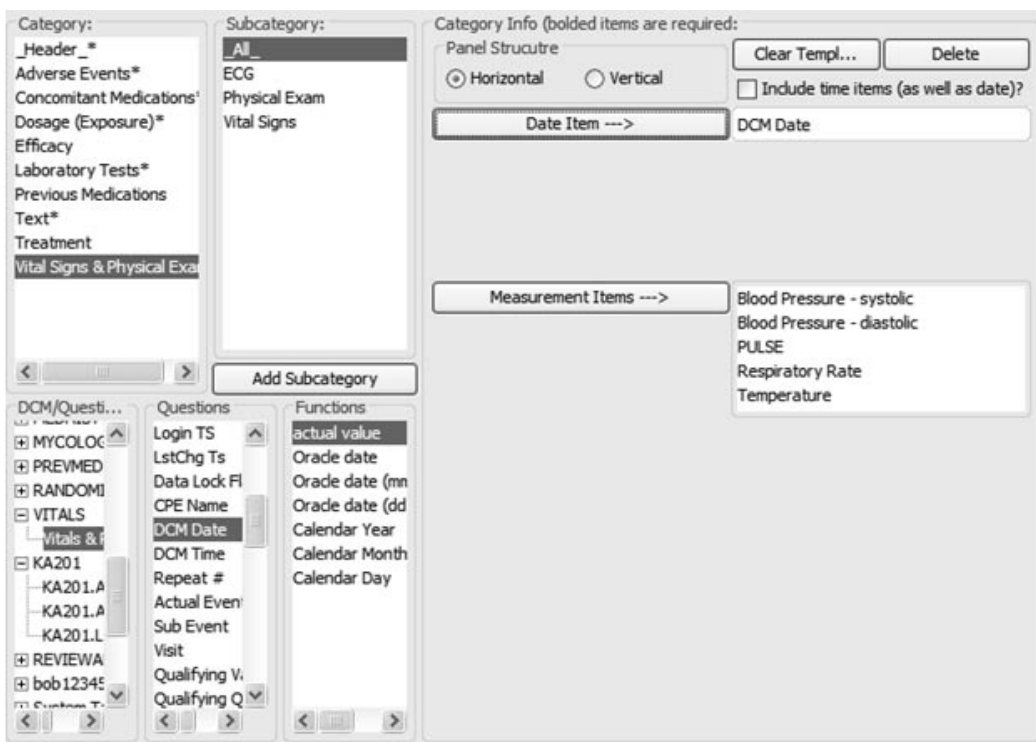
Time Point Type category

Time point type categories also includes Vitals and Efficacy panels and may be either horizontal or vertical.

Panel Structure:  Horizontal  Vertical

Horizontal panel structure requires:

- Date Item - the field containing the date of the event.
- Item(s) - the fields which the user may select for graphing.





Vertical panel structure requires:

- Date Item - the field containing the date of the event.
- Measurement Name Item - the field containing the measurement name.
- Measurement Value Item - the field containing the measurement value.
- Measurements - the list of measurements which the user may select for graphing. The overall list of measurement names is derived from the measurement name field.

In the example, the 'Mycological Results' category was added as a subcategory and panel structure selected for vertical format.

Category:
 

- \_Header\_\*
- Adverse Events\*
- Concomitant Medications\*
- Dosage (Exposure)\*
- Efficacy\***
- Laboratory Tests\*
- Previous Medications
- Text\*
- Treatment
- Vital Signs & Physical Ex..

Subcategory:
 

- All
- Mycology Results\***

Category Info (bolded items are required):

Panel Structure:
 

- Horizontal
- Vertical

Buttons: Clear Templ..., Delete

Include time items (as well as date)?

Date Item ---> Date Sent to Central Lab

Measurement Name Item ---> Culture ID

Measurement Value Item ---> Final Culture Result

Measurements ---> [Empty List]

Unit Item --> [Empty List]

DCM/Questi...
 

- MYCOLOC
  - Mycolog
- PREVMED
- RANDOMI
- VITALS
  - Vitals & F
- KA201
  - KA201.A
  - KA201.A
  - KA201.L
- REVIEWA
  - lab1724E

Questions
 

- Lab
- Lab Range S
- Lab Assignm
- Lab Id
- KOH Exam (
- Culture (Inv
- Date Culture
- Date Sent to
- Final Culture
- Culture ID**
- Exception?
- NI NI\_Glob

Functions
 

- actual value
- baseline value
- endpoint value
- JR Testing Endp
- endpoint new e
- v2
- midpoint new ev

decoded value	Code
Missing	6
Negative	1
NonDermatophyte	5
NctDone	9
Positive	2

Subsel using Select Criteria?      ADD expression

---

## Save new template

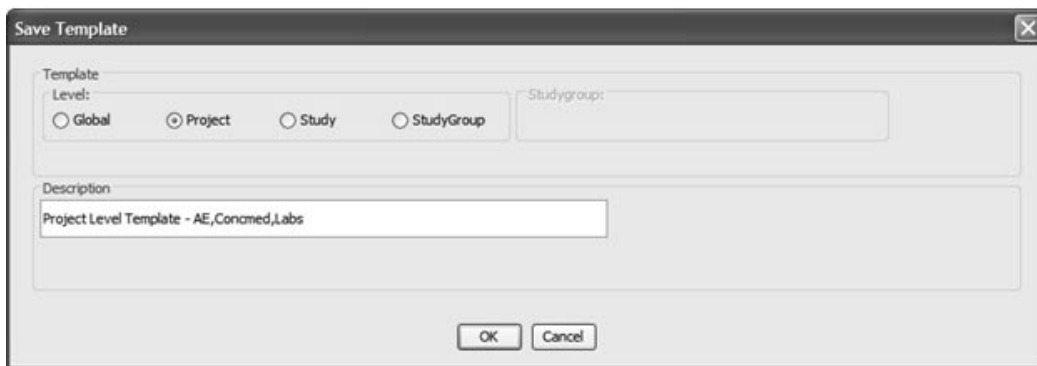
When you have added all categories and subcategories to the template, click **Save As**.



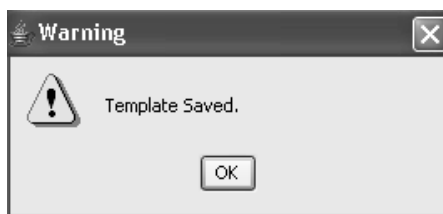
The **Save Template** window opens to save the new 'Template Definition'. The Graph Patient Profile Template definition allows the builder to save multiple named templates at each object storage level, as well as retrieving previous versions of each.

Super Users are able to save templates at the object storage level for global, project and study levels. If the study selected belongs to a Study Group previously defined in ReviewAdmin, then the Study Group option is also available. The templates are saved at the object storage location for public only.

Select the **Template Level** to save and enter the template **Description**. Click OK.



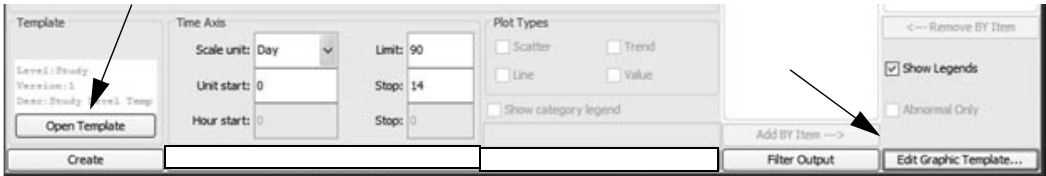
The message window displays the template has been saved.



---

## Edit graphic template

The **Edit Graphic Template** button is available if the user has permission to save or **edit** an existing template. Also, use the **Edit Graphic Template** button to add a new template not previously defined. Click on the **Open Template** button, to edit a previously saved graphic template.



The **Open Template** window displays a list of previously saved graphic templates. Multiple graphic templates may be saved at each object level, as well as multiple versions of a particular graphic template. The same graphic template saved multiple times with changes will be saved with the same **Object Index** number. A new /different template description will be saved with a new object - new Object Index number to distinguish each saved graphic template. The **Versions** are listed to show the most recent updates for each graphic **Template Description**.

Select the graphic template from the list and click OK. The **Graphic Patient Profile Template** window opens for the selected graphic template to edit.



When defining or updating a Graphic Patient Profile definition, the user can choose to either continue to use the internally stored, referenced graphic template, or to update the definition to reference a different template definition. Rather than just saving a template at one of the available Object Storage Levels, the builder can use the similar actions used for Save/SaveAs dialog options at the bottom of the GPP Template window.



Another way to select a graphic template to edit is to click on the **Edit Graphic Template** button. Initially the **Graphic Patient Profile Template** window opens to whatever graphic template is currently active. Click **Open** at the bottom of the window and use the previous steps.

---

### *Update graphic template*

After you have applied changes to the selected graphic template:

- Click **Save** to save your updates to the current selected graphic template **Description** and **Object Index number**. This save will generate a *new version* for the selected graphic template.
- Click **Save As** to save as a *new* graphic template with a different graphic template **Description** and **Object Index number**.

You may also use the **Save As** to copy a graphic template. Select and modify a previously saved graphic template, then you could save at a new object storage level, with new description and Object Index number.

---


### *Remove graphic template*

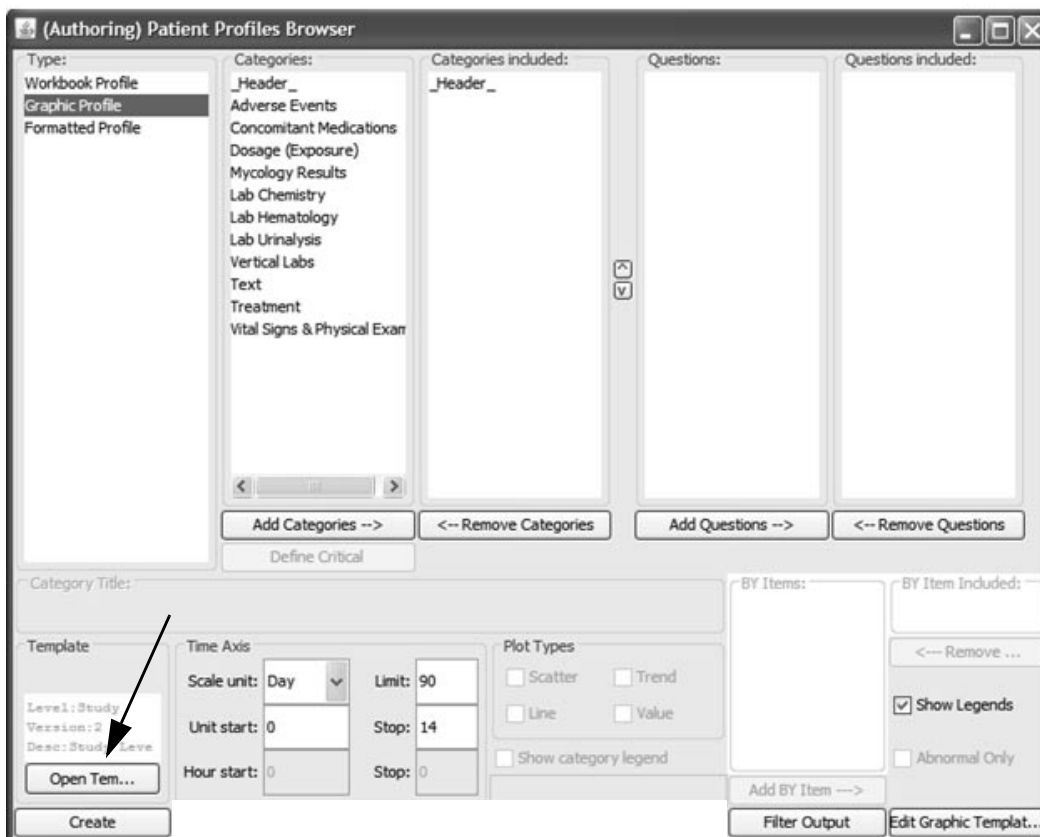
Select the graphic template and click **Remove**. All versions for the selected graphic template Description associated with the Object Index number are removed.

# Define Graphic Profile

## Select graphic profile

After graphic patient profile templates have been defined and saved then users with access in authoring mode can create, execute and save graphic patient profile objects at the global, project, study group and study levels and in either local, usergroup or public object locations.

1. Click , or from the **Browse** menu, select **Patient Profiles**.
2. The Patient Profile Browser window opens, select **Graphic Profile** as the type.



---

*Select defined template*

Next, you must select a graphic template before defining a graphic patient profile. Graphic templates are saved at various object storage levels and may include multiple versions.

3. Click on the **Open Template** button. The **Open Template** window displays a list of saved graphic templates.
4. Select the **Template Level Description** and preferred version, then click OK. The selected template level is loaded to define the graphic profile.

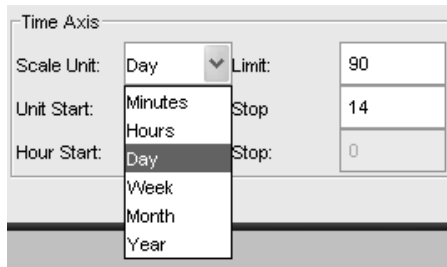


---

## Change Time Axis

You can define the Time Axis before or after you select your categories and items. When you enter the Time Axis once for any category, it will default across all the selected categories as the common time axis. If time items are included in any of the defined categories then the Time Axis will include the options to select **Hours** or **Minutes**.

5. You can change the **Time Axis** defaults for the graph plots by selecting from the dropdown **Scale** list and entering the **Start** and **Stop** range.



The screenshot shows a dialog box titled "Time Axis" with the following fields and options:

Scale Unit:	Day	Limit:	90
Unit Start:	Minutes	Stop:	14
Hour Start:	Day	Stop:	0

The "Scale Unit" dropdown menu is open, showing the following options: Minutes, Hours, Day (highlighted), Week, Month, and Year.

Simply enter the Start and Stop value for the selected time scale. The Start and Stop values are strictly for the purpose to define the desired 'view port' of number of days (or weeks, etc.) to display when the GPP initially opens.

For example, the Start and Stop settings represent the 'View Port' days. If a patient has data from Day -14 to Day 180, and the Start Stop are set to 0 and 45; the initial display should start at Day 0 and end at Day 45 to represent the full extent of the visible area in the GPP. However, since the patient had 180 days worth of data, then the graph image would be horizontally scrollable all the way out to Day 180.

---

## Change Limit value

The **Limit** value denotes how much of a duration event to show before and after the first and last time point event. The limit feature “limits” how far out the time axis will go past “time point events” such as a lab test, or vitals or efficacy measurements. For example, if you have a long running Concomitant Medication with a stop date past your defined stop range, you can limit how much you want to see.

The default is 240 for hours, 90 for days, 12 for weeks and 1 for years. You may change it to any positive number to show more of the duration events that occurred before and after the first and last time point event. Choosing a limit of zero will show the shortest time axis possible (only from the first to last time event). Entering a negative number, (-1 for example) will show the entire time axis from the beginning to the end of the first and last duration.

So, the Limit value is not related with the Start and Stop. The limit value is added to the very last discrete date and subtracted from the very first discrete date, creating a window around those discrete dates which allow for continuous items to displayed as ongoing within.

The limit tells the system how far to continue to draw to the left or to the right for continuing AEs or Conmeds, meaning to either side of ‘hard data’ day results (suchs as Labs visits, Vitals, Soage, efficacy, etc).

---

## Display Time items

If a template category was defined to display time items you may set the scale to **Hours** or **Minutes**. The Start and Stop Hours scale displays with a dropdown list to select within a 23 hour range before changing to the next day.

Control	Value
Scale Unit	Hours
Unit Start	Minutes
Hour Start	Day
Limit	240
Stop	4
Stop:	0

*Note: When selecting the Hours Scale it is best to apply to a minimal day range duration of not more than 4 days for meaningful results. If you select the Minutes Scale keep the range within 6 hours in order to view the 15 minute intervals with clarity.*



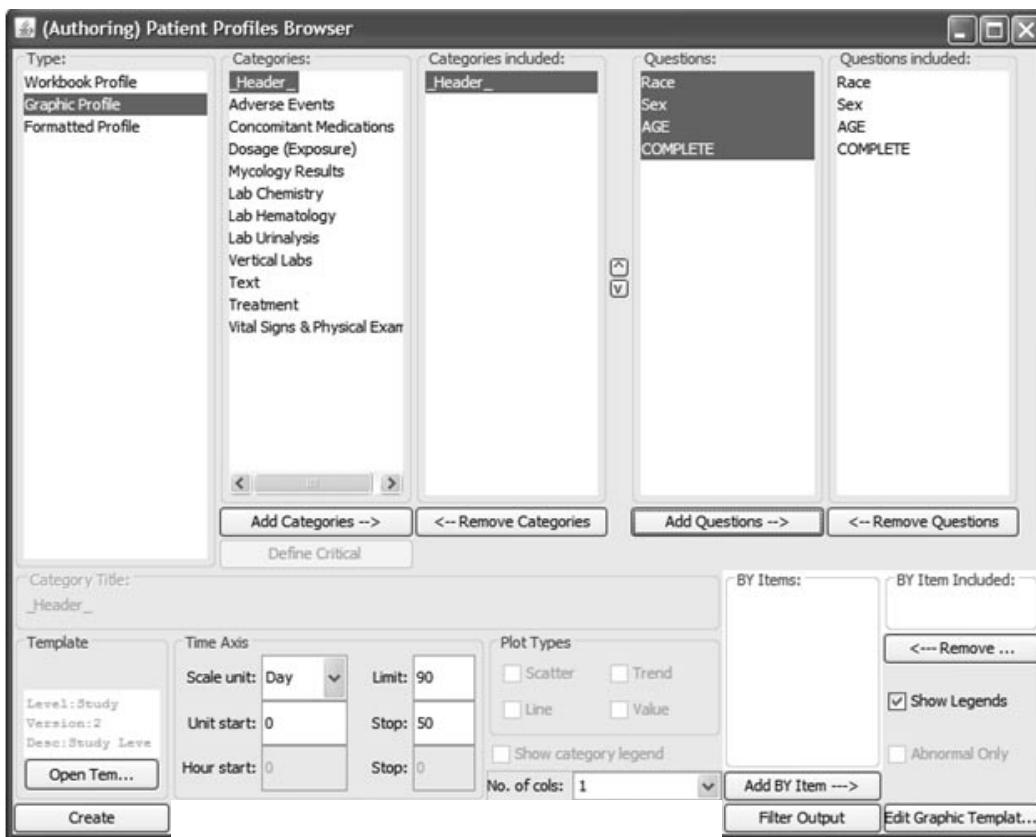
---

Select categories for display

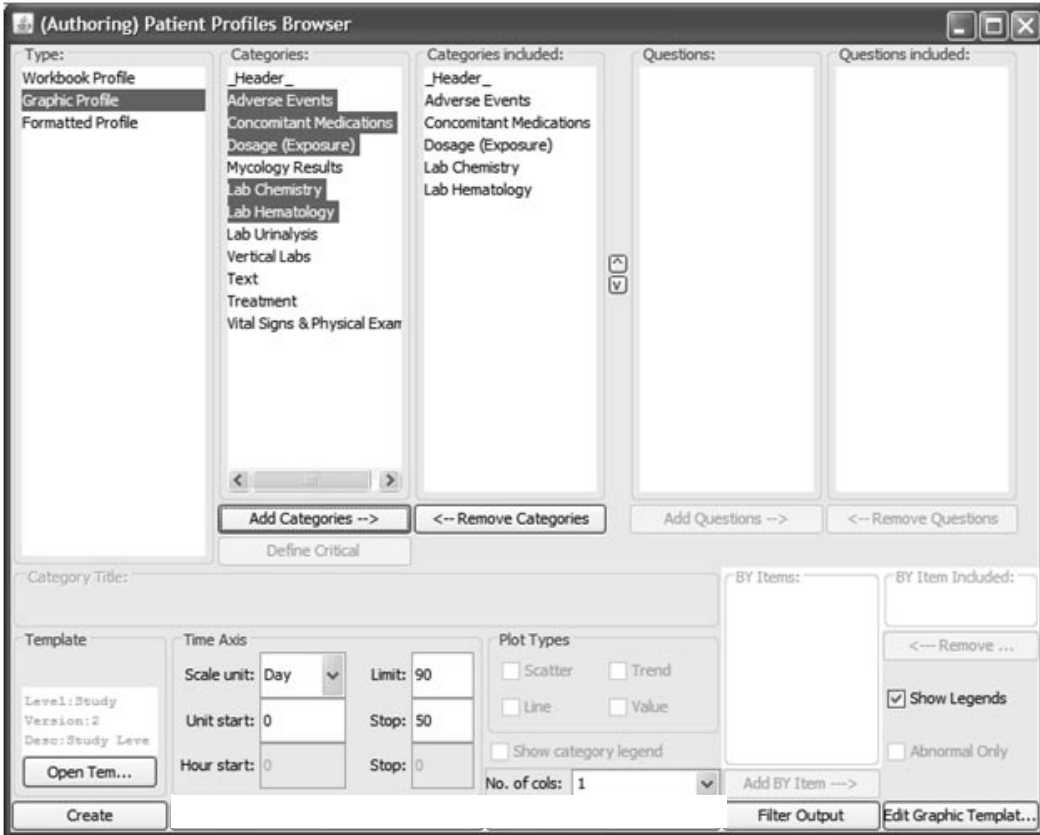
Graphic patient profiles are very complex due to the different types of data can best be represented by different types of graphs. The individual graphs are aligned along a similar time axis, however, each graph may consist of a different plot type based upon the type of data “event” that is depicted. Each graph may be based on data from multiple tables in the underlying database.

After you select a preferred template you are able to select those available categories to be included in the graphic patient profile. Optional **Header** information if available may have been defined for the selected template.

6. Select the Header category and click the **Add Categories** button.
7. Select individual items or use the CTRL or SHIFT key to multi-select item. Click **Add Questions** button to move items to the included column.



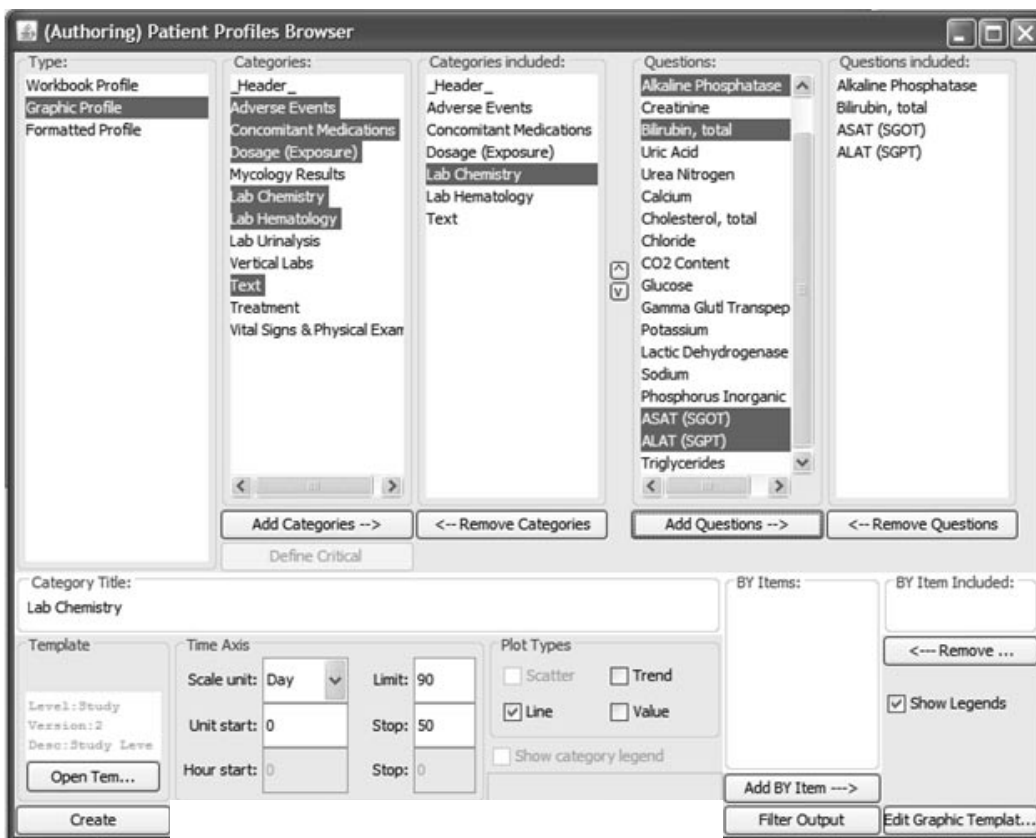
8. Highlight the categories to be included in the graphic profile and click **Add Categories**. Highlight and move single or multiple categories with the **SHIFT** or **CTRL** key for multiple selections.  
Use the **Remove Categories** button to remove a selected category.
9. Reorder the **Categories Included** with the **up** and **down** arrows.



---

Select items for display

10. Select each **included category** and view the list of **Items** and **By Items** (where applicable) for the graph plots.
11. Highlight the item(s) and click **Add Items** button to select from available items to be included in the graphic profile. Use the **Remove Items** button to remove selected items.
12. Use drag and drop to reorder how the added items are displayed in the **Included Items** list box.



You must go through the entire list of **Categories Included** and select each category (and the items) you want included in the graphic profile. Otherwise, a message displays alerting you of an included category without items or BY items included.



13. Select the **BY Item** (if applicable) for the selected category and click the **Add BY Item** button.

The BY Item becomes available for display in the Legend when you click "yes". If a BY Item is not added for the category then the information is not available for display in the Legend.

The selected item is moved to the BY Item Included list box. Only one BY Item may be selected per category.

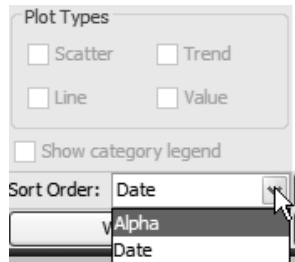
The **Show category legend** only applies when a BY item is included. Where as **Show Legends** applies to all included categories.



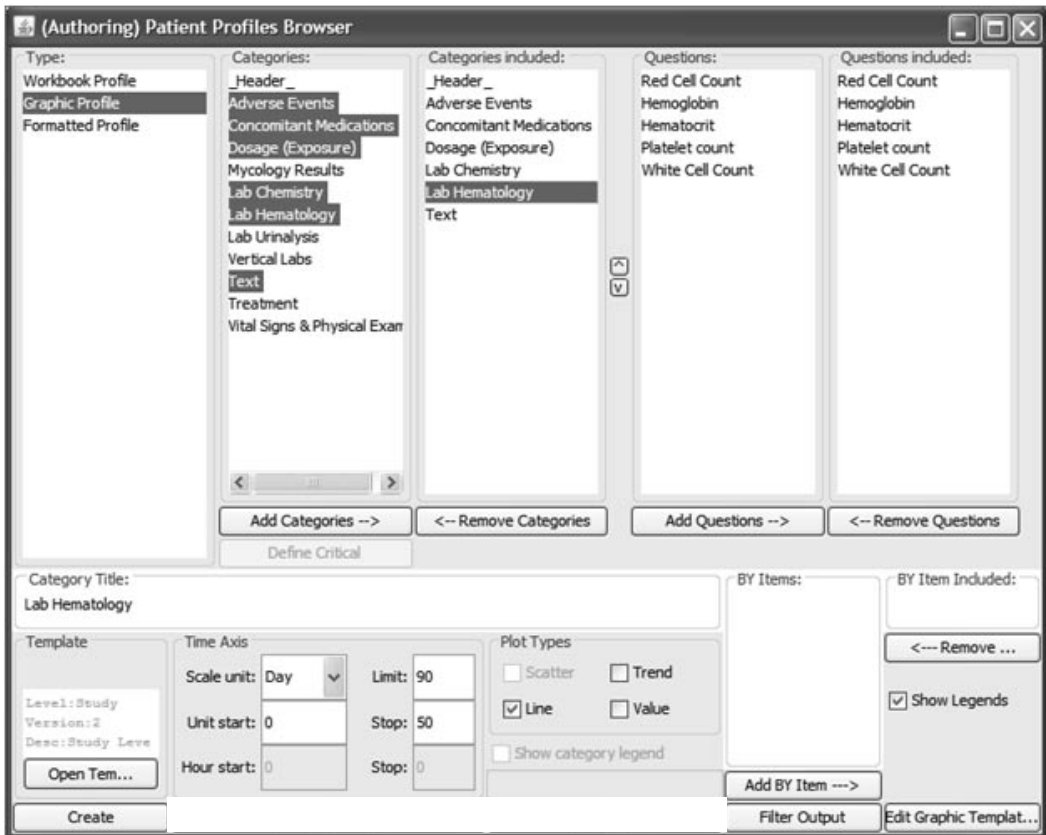
14. You can change the **Category Title** of any included category (except for the header which will always display the PatientID).



15. The **Sort Option** is dependent upon the selected category is only available if the data item selected is alpha. For example, adverse events or concomitant medications. The data items are associated with dates, so there is the option to sort by alpha or date in the graphic profile.



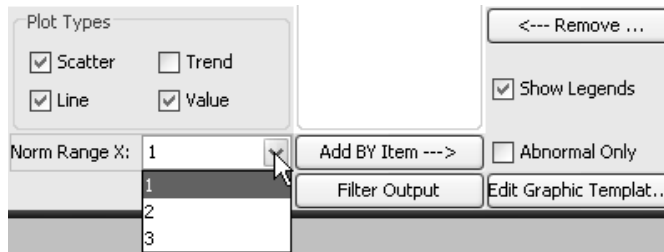
16. Add or change the default **Plot Types**. The available plot types are dependent on the category type defined.



---

## Normal range multiplier

The Multiplier feature for 'Normal Range' and display 'Abnormal Only' values applies to Vertical Labs only where Lab Normals may be entered.



The Show Legends option applies for all categories to display 'BY variables' in the Legend box when checked Yes; or to the right of each 'duration bar' on the right side of the graphics region when checked No.

The 'Abnormal Only' labs option in Lab graphic displays scans all included Lab tests in the graphic profile and only includes each lab test if at least one lab test value is abnormal for that patient. Otherwise, the lab test is dropped from the graphic display.

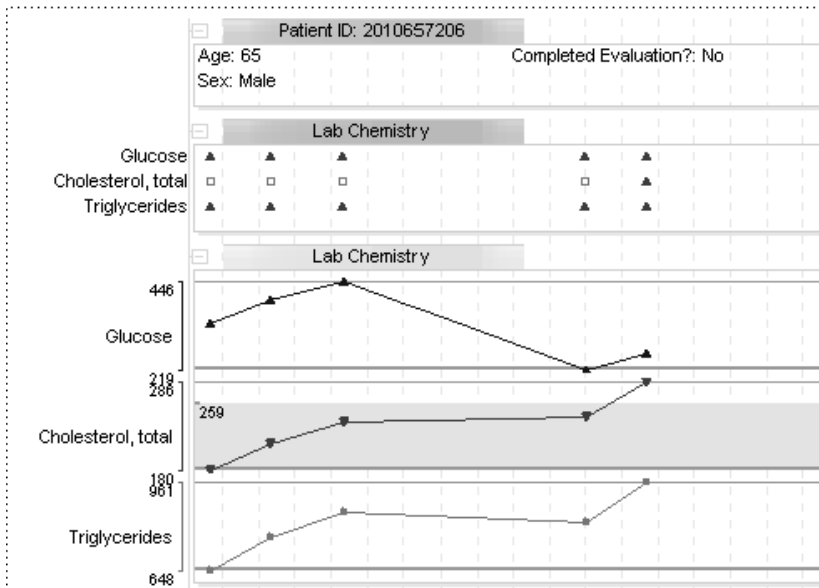
A normal range 'multiplier' option for labs allows you to specify if you only want to 'flag' or mark as low or high, those labs that are outside N times the normal range values. It is implemented as normal high times N versus normal low divided by N.

17. You can only select 1, 2 or 3 for the normal range multipliers with the default set to 1.

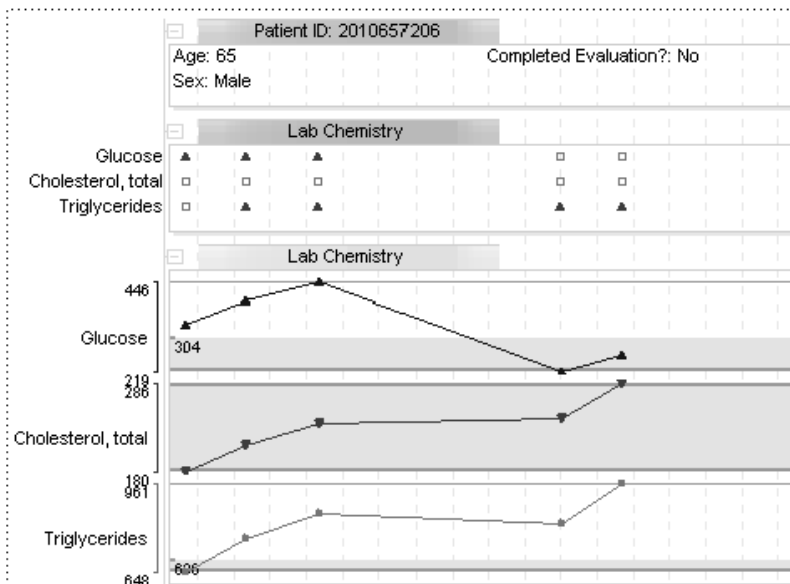
For comparison, first view out of range labs for Normal Range multiplier set to 1 and then change the normal range multiplier to 2. Select Plot Type of "Scatter" for labs and notice some points that were out of range previously changed to in-range from the up/down triangle to box plot point. If you selected Plot Type of "Line" you will notice the normal range "band" within the line graph has expanded for the normal range.

The Lab values display as color coded based on the normal range where red for high, blue for low and green for normal.

Normal Range set to 1. The scatter plot shows data indicating the values outside the normal range. Also, the Line Plot type for glucose and triglycerides shows values above the colored band for normal range.



Normal Range set to 2. The scatter plot shows boxes indicating the values inside the normal range multiplier of 2. Also, the Line Plot type for glucose now shows values within the colored band for normal range.



Guidelines if normal range values are missing:

- Scatter Plots -  
Display an N instead of missing.
- Line Plots - No gray background if missing normal ranges.  
Separate into different bars if normal range changes between points.  
Place missing normal ranges on separate bar if changes between points.  
If a normal range changes it will create a second plot where the new range starts and for missing, it won't plot the high/low lines.

---

### *Create Graphic Patient Profile*

After you have defined all included categories and items included:

1. Click **Create**.

The Patient Profile Browser window opens to display the list of patients who meet the patient selection criteria or view a list for all patients if no selection criteria was defined. The study and PID (patient id) are listed for identification in the patient list.

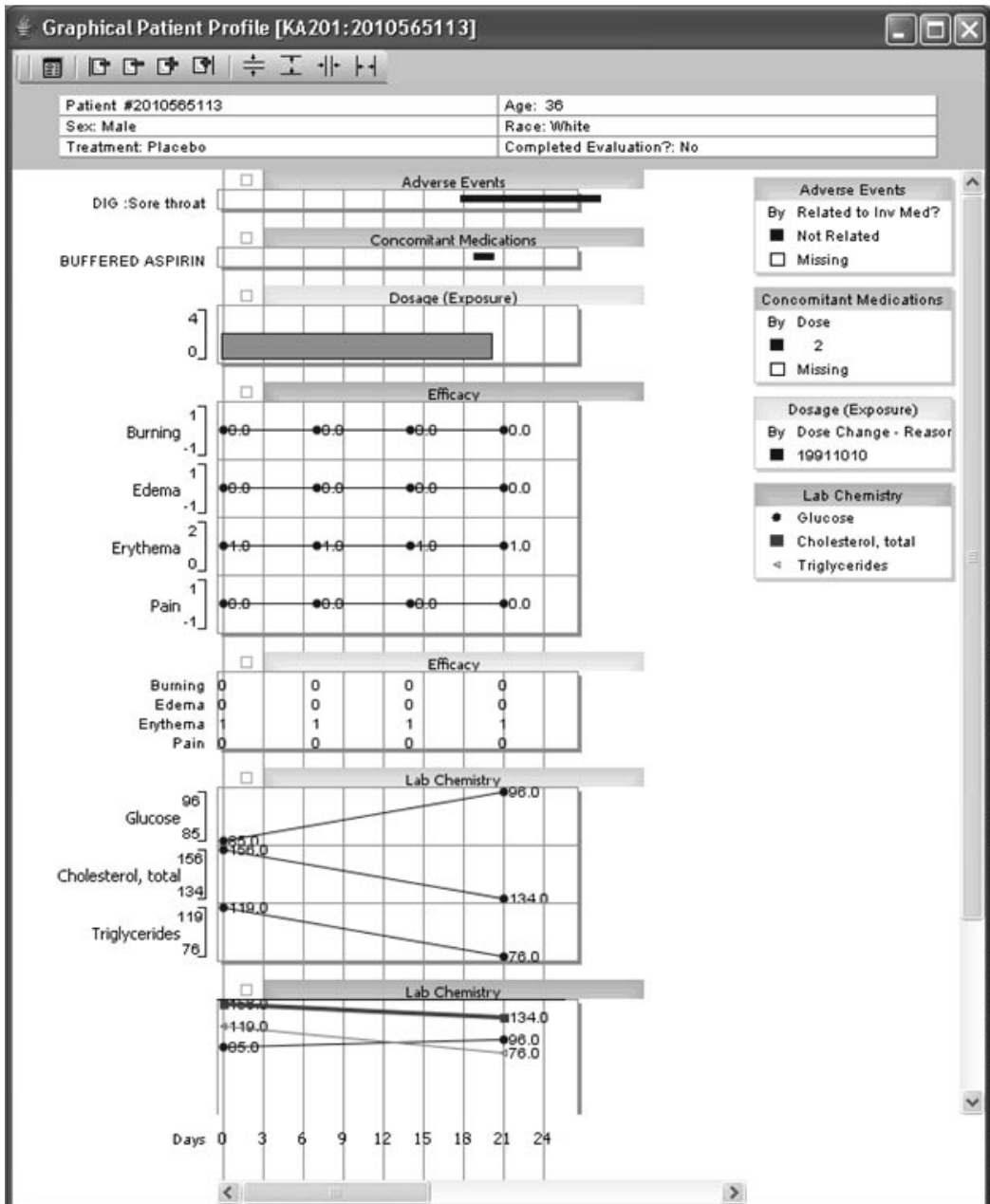
2. Select a patient and click **Create Profile**.

The Graphic Patient Profile window opens and displays all labels on the left and legends on the right side of the graph plots.

Use the scroll bar in the right margin to display additional graph information.

3. To save to the object specification for your Graphic Patient Profile, *See Chapter 11: Saving Objects, plus Alerts Browser.*





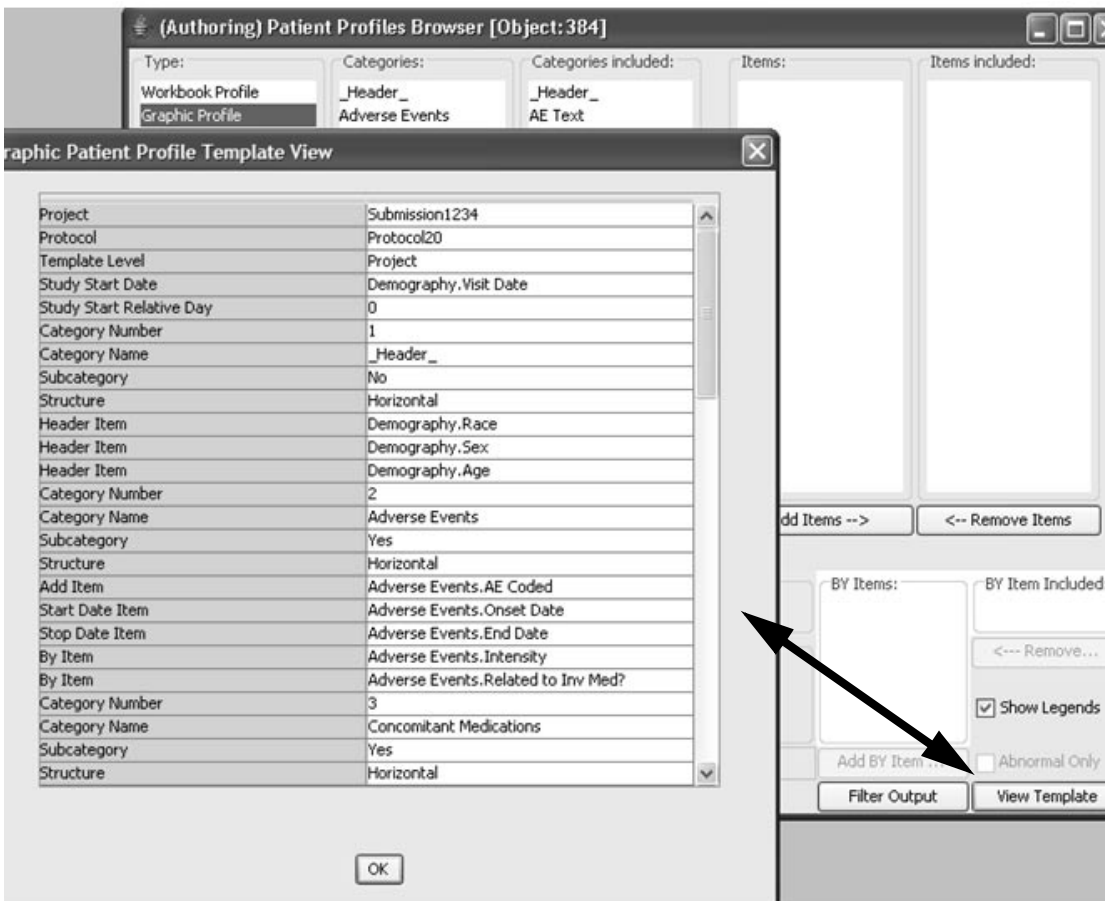
---

## View Graphic Template

Once a graphic patient profile is saved, the specific template information is saved along with the patient profile.

Therefore, a saved patient profile uses the original template information that existed at the time it was created. This avoids conflicts with updated, or newly created templates.

Users may view the Graphic Template saved with a Graphic Patient Profile, by opening the 'Object Properties'. The 'Edit Graphic Template' button displays as 'View Graphic Template' button.



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## Select Alternate Template

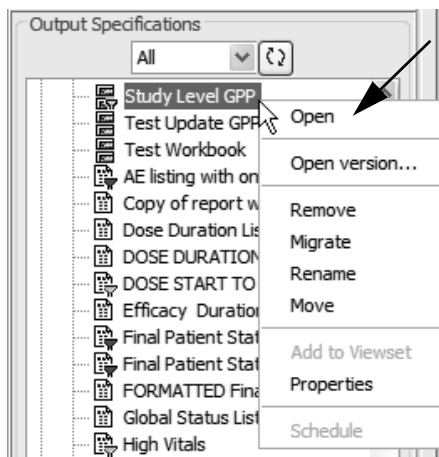
Once a graphic patient profile is saved the template information is saved along with the profile. Therefore, a saved profile uses the original template information that existed at the time it was created to avoid conflicts with updated or newly created templates.

Graph Patient Profiles have the capability to reference an updated GPP template category definitions into a previously saved GPP object definition.

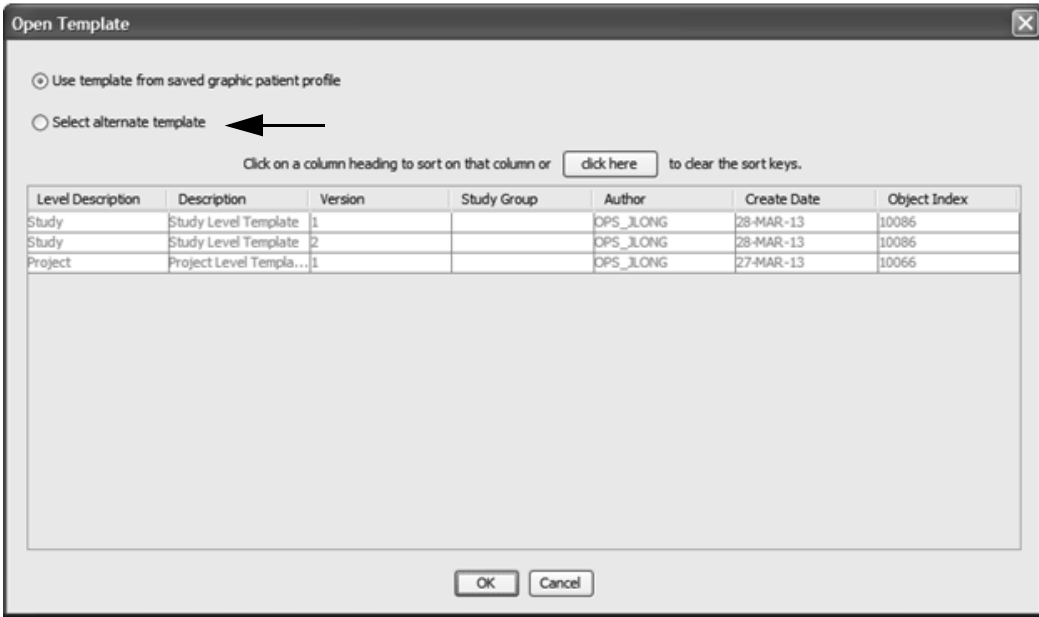
Previously, saved GPP objects could only reference a snapshot of the GPP template that was available at the time of the object save. Now the user can choose to either continue to reference the 'snapshot' version of the template category definitions, or to reference and include category definitions from an updated template.

The GPPs will only store "included" categories and GPP specific global information such as start date definition and the level of the template that was used to store it.

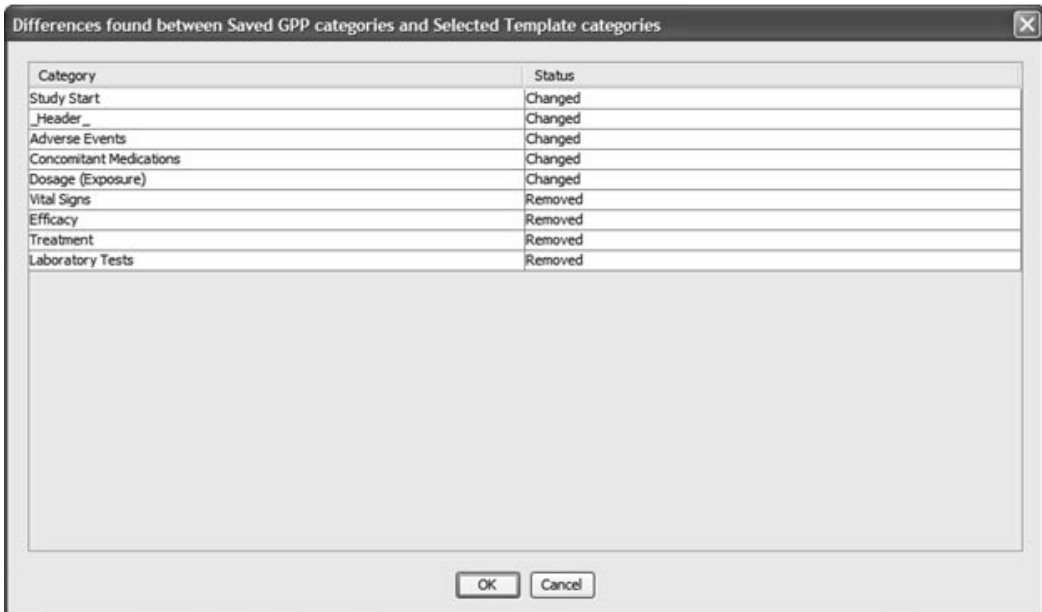
When a GPP object is opened, it will default to the current template at the level stored it was stored at. Only included categories from the GPP object itself will be validated against the current study thus speeding up the opening of the object. The list of included categories will come from the saved GPP object as well as category level filters and global GPP template information. The list of categories to choose from will come from the current template. When an opened GPP object is executed it will include user information from the current template to calculate study start date, visit information, etc.



If the GPP author chooses they may modify the saved GPP object to include added or changed categories in the current updated GPP template.



**Select alternate template** shows the differences between the Saved GPP categories and the Selected Template categories.



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# Graph settings

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## Select settings

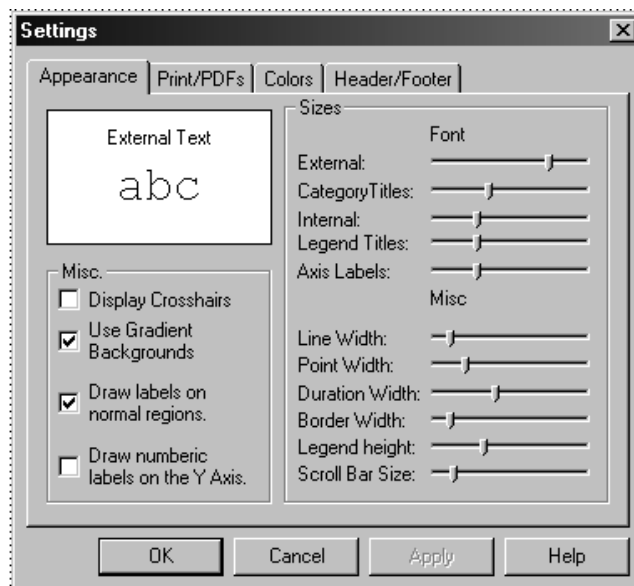
On the Toolbar, click the first button to display **Show Settings** options.



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## Appearance options

The settings window opens to the first tab for Appearance options. Each of the sliders, when moved with the mouse, will change the contents of the white box to help you visualize the setting. For example, when you click and move the 'External' slider under 'Fonts'.



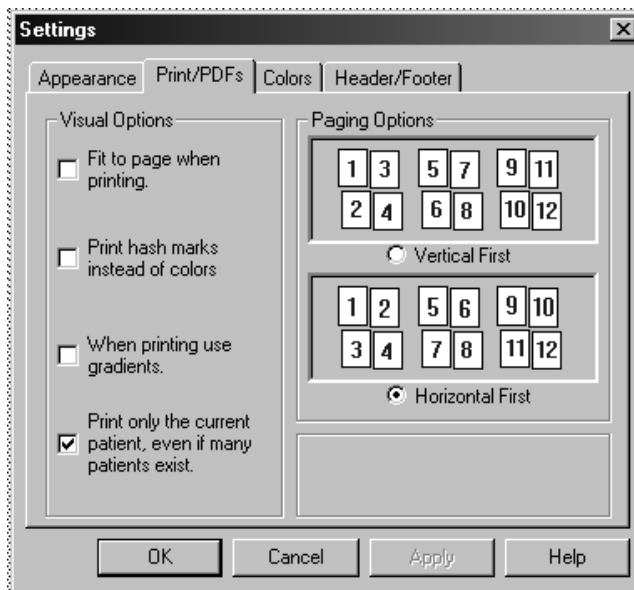
The size of the text "abc" will be the actual size of the text on the graph. The same occurs for the 'Misc.' size settings, except the white box will contain a line of the appropriate width.

The 'Display Crosshairs' checkbox toggles a cross hair following the mouse. This is good for visualizing alignments. 'Use gradients', when checked, will display gradient backgrounds to almost all rectangles drawn on the display. 'Draw labels on normal region' toggles the little markers that display the value of the normal range border. 'Draw numeric labels on y axis' label each row.

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*Printing and PDF output settings*

There are many options that allow you to customize how the Graphical Patient Profile prints. The printing options are found on the 'Print/PDFs' tab in the settings window.



The most important of these options is the first, 'Fit to page when printing'. This option has precedence over all other printing options. If it is selected, then a page will be printed on one page regardless of the view range or the height per row. The default for "fitting" is true. Ideally, it is easiest to visualize the data when it is contained on one page. When this is not possible, the other paging options come in to play. The paging options are used to change the order in which the pages print. Basically it allows you to choose between moving horizontal or vertical first. The picture on the dialog is pretty self explanatory, across many patients.

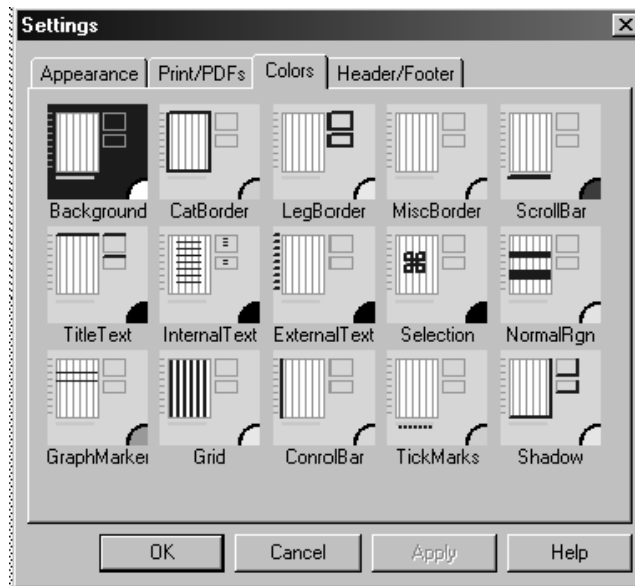
You can chose to print the current patient only, or all pages. A print job of multiple patients, each of which is multiple pages, can get extremely large very quickly. These options like this have been added to help the you have control.

Finally, if color printers are unavailable, there is the print hash marks option. This makes it easy for the user to distinguish between the different by-variables and categories without the use of color.

---

### Color settings

There are 15 icons on top, each of which controls a certain aspect of the screen. Each button contains a little image, which highlights the part it refers to. So for example, the background button (top left) has a highlighted blue background, while the rest of the graph remains unchanged.



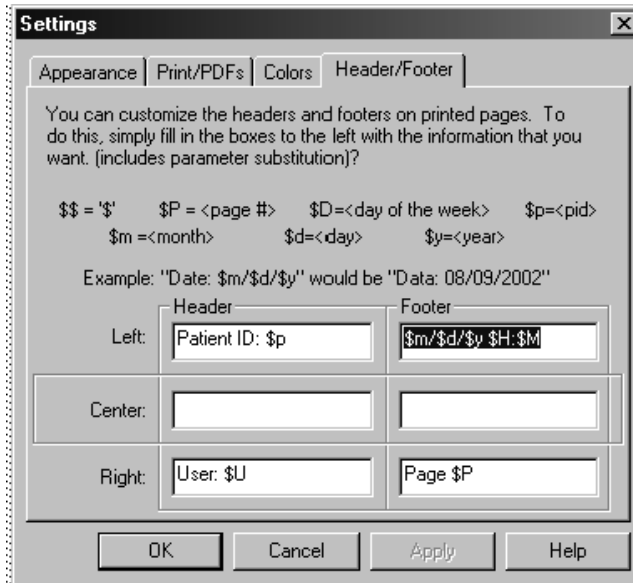
The color of the background is not blue however. The actual color of the background is white, which is shown by the little circle in the bottom right corner. This method of conveying the color clearly distinguishes each part of the graph while at the same time gives you a sense of color. So to change a color, simply click on the button.

The Category Colors at the bottom of the tab is used to modify the order of the category colors. These colors work from left to right (so light blue is the color of the first category). To change the color, simply use the left mouse button over the appropriate button.

---

### Headers and footers

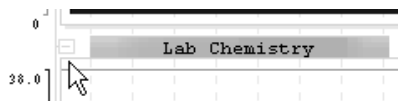
You can control the information that is printed on the top and bottom of the graphic display. There are seven entries which allow you to insert 'special strings'. For example, if you type "p\$P" into one of the edit boxes, it will appear as p1 on a printout (where 1 is the number of the page. This allows you to control both static and dynamic strings.




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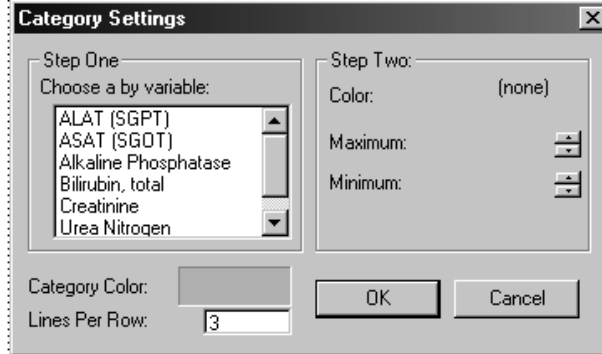
### Category settings

Each category has its own category settings dialog box. In the Graphic Patient Profile window use the right mouse button on the control bar next to the category title.

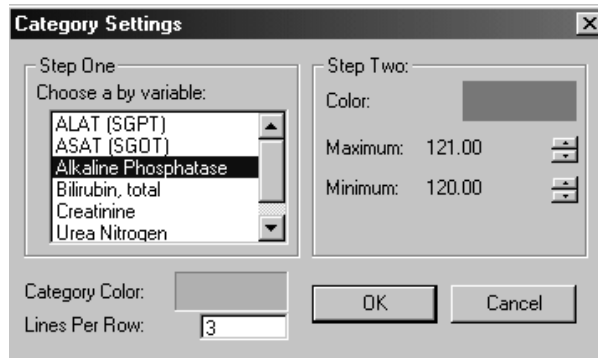




Each graph's dialog has unique characteristics. Every category contains a category color box, on the bottom left of the dialog box.



Line, trend, and block graphs also contain the 'lines per row option' which is used to modify how many graph lines each display will use. The list box under 'Step One' contains a list of the BY variables for the current panel. When the user clicks on one, the variables on the right side will be populated.



You can change the color of the particular BY variable by clicking on the color with the left mouse button. You also have the ability to modify the maximum and minimum. There are no limits on the minimum and maximum except that the min must be less than the max. The range on 'lines per row' is 1 to 10.


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## Printing and Exporting Patient Profiles

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### *Print Preview*

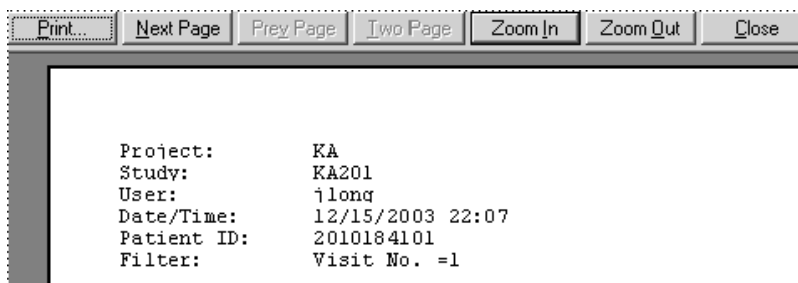
To display a print preview of a patient profile in the Patient Profile output window:

1. Click on the title bar of the Patient Profile window to make it the active window.
2. Click  or from the **File** menu, select **Print Preview**.

JReview displays a screen shot of the selected active screen. The Print Preview function is applicable to all browsers with output results.

Formatted patient profiles display in print preview mode.

Print Preview for a graphic patient profile displays a detailed cover page before the graphic profile pages. The following information displays along with the Filter Output definition if applicable.




3. Click either **Print** or **Close**.

---

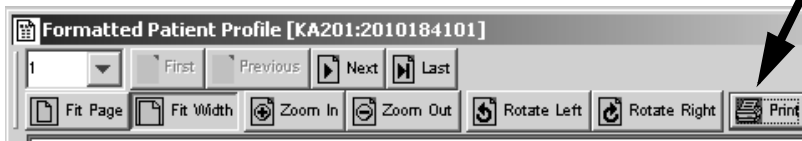
### *Print patient profile*

To print the patient profile of the selected patient:

1. Click on the title bar of the Patient Profile window to make it the active window.
2. Click , or from the **File** menu, select **Print**.

You can access the printer icon from the tool bar within the formatted patient profile output window to display the Print dialog box.

3. Click **OK**.

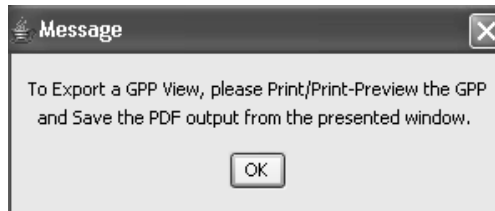


*Note: When you select Print Preview or Print for the selected Patient Profile, a signature line with the date is printed at the bottom of the worksheet.*

---

### Export graphic profile

Graphic patient profiles require to print/print preview the GPP in the Patient Profile output window.



1. To select an graphic profile to export, it must be the active window.
2. Click on the printer icon in the toolbar to generate the print preview to export.
3. In the File Menu, select Export.
4. Enter the storage location.
5. Enter the File name.
6. Click **Save**. The result is exported to the selected directory.

---

*Edit menu Copy*

1. Click on the result window to make it the active window.
2. Select Edit in the menu bar.
3. Select the Copy function, to copy the currently displayed output window to clipboard for pasting into Word, etc.

---

## **Object Storage**

For detailed instructions on how to save, retrieve and remove object specifications (reports, graphs, crosstabs, etc.) *See Chapter 11: Saving Objects, plus Alerts Browser.*

*Note: Patient Profiles cannot be scheduled.*

---

## **Close Patient Profiles Browser**

---

*Closing the Patient Profiles windows*

If you are finished with all Patient Profiles, and do not want to define any other Patient Profiles: double-click on the close box of the Patient Profiles Browser window.

Review closes all Patient Profiles windows currently opened.

# 6

## *Report Browser*

---

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---

## Execute report

---

### *Selection set*

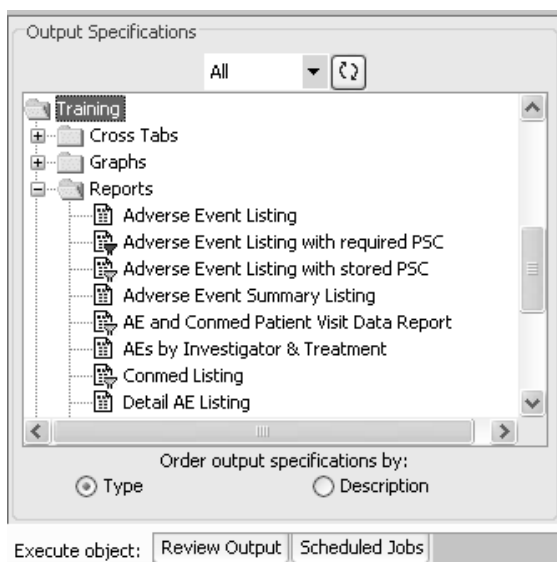
In JReview, you can select a previously saved Patient Subset or define your own selection criteria for use in the Report Browser. After launching the saved patient subset or building your own patient selection criteria, you can explore stored customized reports of items for each of the patients who meet the selection criteria.

---

### *Quick execute*

JReview displays a list of categorical folders for stored patient subsets and output specifications at the selected storage location.

1. Select one of the storage locations to display its specific folders and contents.
2. Double click on the object description to launch in a single step. The stored output specification will be launched.



Icons are displayed along with the stored object to identify the source as report, graph, registered SAS program, etc. When a patient selection criteria is saved with the stored object; the filter icon displays with the specific browser icon. JReview aids users to quickly locate and launch these stored objects.



Stored object specifications saved with an included patient selection criteria in the definition will display a filter icon next to the object icon and description. If the patient selection criteria was saved as “required”, the filter will appear in the color “red” to indicate the selection criteria cannot be changed. If a filter icon is present but is not colored red, then you can alter and update the selection criteria for the opened output specification.

---

## Report types and features

---

### *Type of report*


The Report Browser facilitates customized groupings of item values for patients currently included in the patient selection criteria. JReview provides point and click report creation, without panel join limitations.

There are five report types available in JReview for defining report specifications which are available to launch in JReview.

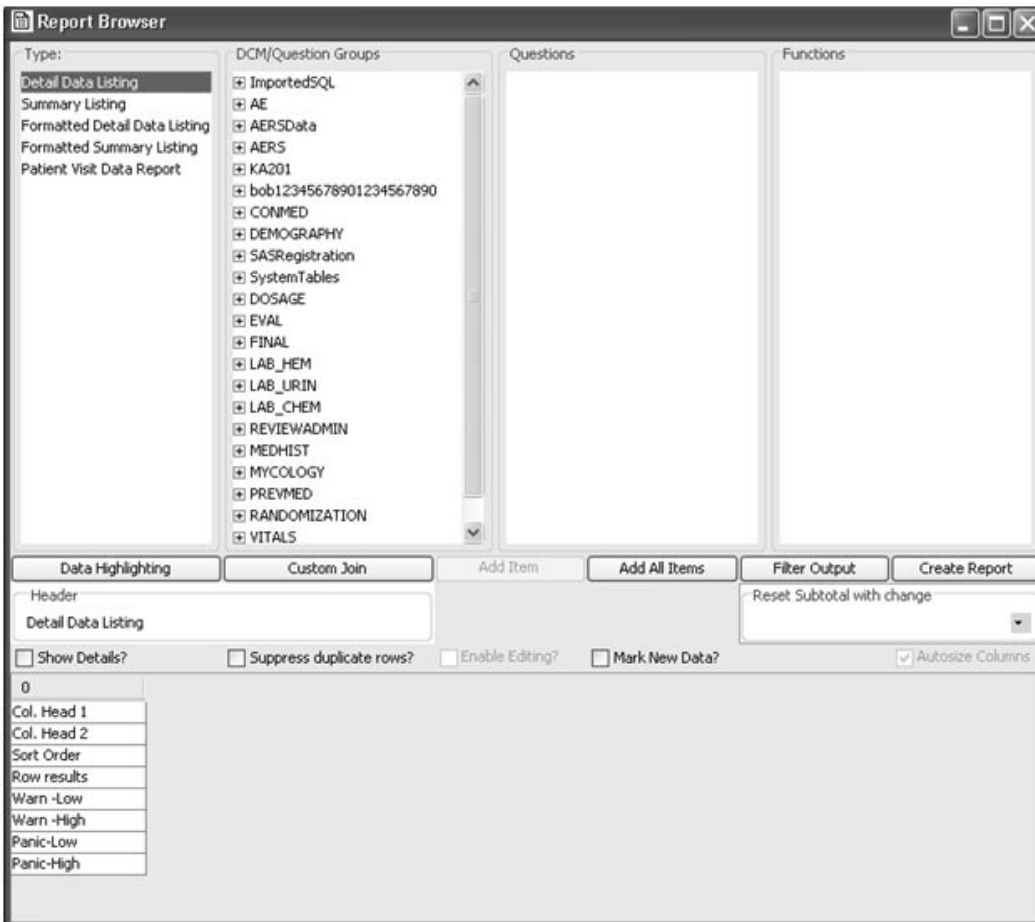
- Detail Data Listing generate one report line for each patient observation.
- Summary Listing generate one report line containing summary information such as summary category, counts, mean, and so on.
- Formatted Detail Data Listing and Formatted Summary Listing provide the same basic functions as Detail Data Listing and Summary Listing with extensive formatting features.
- Patient Visit Data Report contains patient results organized by patientid and visit where multiple visit panels are easily joined and displayed per row.

# Defining Report Specifications

## Selecting a panel, item, and function

To open the Report Browser, from the **Browse** menu, select **Reports** or click  on the toolbar. You define the contents of a report using the same method that you used to build the patient selection criteria:

1. Select a panel.
2. Select each item of interest.
3. For each item, select an appropriate function or use the default function type for the type of item selected.



---

## Adding items

Select individual items and click **ADD Item** to add the selected item to the report content spreadsheet. Or double click on the individual items to add each item to the report content spreadsheet.

A short cut for adding non-contiguous items within the same panel:

1. Select the items you want while holding the **Ctrl** key.
2. Click **ADD Item** to add the item to the report content spreadsheet in the order they appear in the panel.

OR

3. Click **Add All Items** to add all items in the selected panel to the current report. You can select and combine items from all panels.
4. To remove the item; select the added item column and click the scissors icon in the tool bar.

---

## User-defined functions

In JReview you can view user-defined functions defined for the browsers. Users can select predefined functions from a function value list. Users can utilize these functions to create new user-defined functions such as new item, new events and new ranges that are fully supported in the various browsers. (See *Chapter 12: Advanced Topics: Derived Items and New Range Variables*)

The predefined functions 'Baseline', 'Endpoint', 'Chg from Baseline' which calculates the change from the last measure and all other default functions are pre-configured in the Review Administrative Configuration Tables. (See *Review Configuration Guide*)

---

## Access to SAS datasets

SAS datasets are listed with the panels generated from Oracle tables. Items from SAS datasets can be used like other items for building reports.

*Note: The current restriction is you cannot mix items from SAS datasets and Oracle table generated panels within the same report.*

---

## Column autosizing

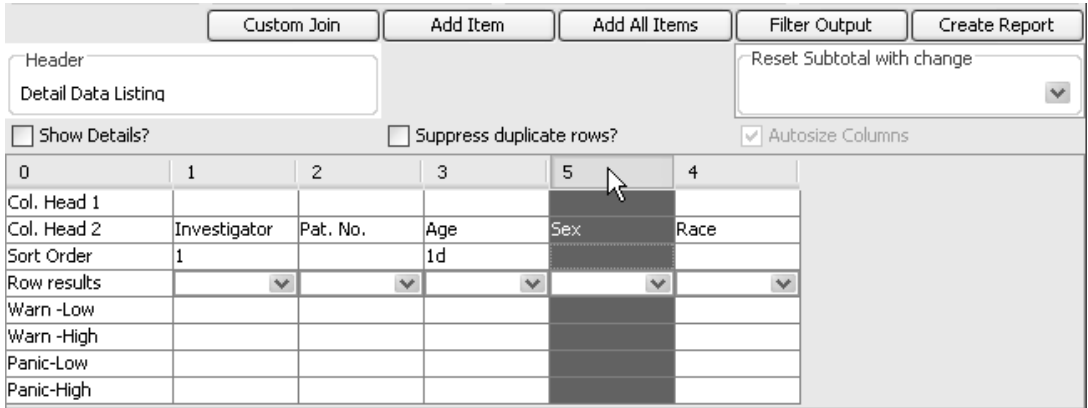
JReview automatically autosizes the report column widths as shown by **AutoSize Columns on**.



---

### Change column order

Click on the column you want to move and drag the column to the desired location.





---

### Changing the report specifications

To change the report specification that you have defined:

1. Click anywhere in the report layout (heading, sort order, column headings, row results, delete or add panel item function values, or define (or re-define) join logic.

For example, in a column that you want to delete (and perhaps replace later).

- a. Click  or from the **Edit** menu, select **Cut**. This deletes the column from the report specification.
  - b. To place the column in a new order location, click on a column and from the **Edit** menu, select **Insert**. The cut column is inserted to the left of the highlighted column. Or, highlight the column(s), and use the directional arrows to reposition the columns highlighted.
2. To clear the entire report specification, click .

---

### *Edit column heading*

You can edit the column headings for Col. Head 1 and Col. Head 2, by clicking within the text cell, edit the text and press **Enter**.

---

### *Print Change*

Print Change means print the value, only if it has changed from the previous line of output.

Col. Head 1		
Col. Head 2	Investigator	Pat. No.
Sort Order	1	2
Row results	Print chq <input type="checkbox"/>	<input type="checkbox"/>

---

### *Defining a report title*

Edit the report heading to easily identify the report window and printouts. You can enter a title for your report that will be displayed as the caption in the report window, as well as, in any printouts. By default, the Report Browser assigns the report type as the heading of the report. Enter the title text in the 'Heading' field.



Heading  
Lab Chemistry Listing

The report heading displays either 'All Patients' or 'Subset' if a patient selection criteria was entered. If you modify the report heading the patient population status of either 'All Patients' or 'Subset' still displays.

---

### *Show Details*

The 'Show Details?' feature can be used after you have added items to your report specification. Show Details is helpful after you define and save a report definition and look back to view it's source contents.

The Show Details doesn't change the report content or definition but instead displays some additional rows of information at the bottom of the report template. The extra rows display the source of the items selected in the report columns. Most of the report types show Items and Panels. In addition, the Patient Visit Data Report when accessing vertical data shows two additional rows for Pivot Item and Pivot Value.

*Note: The Items and Panels names are displayed from the Data Dictionary and not the Items and Panels Description.*

Create report

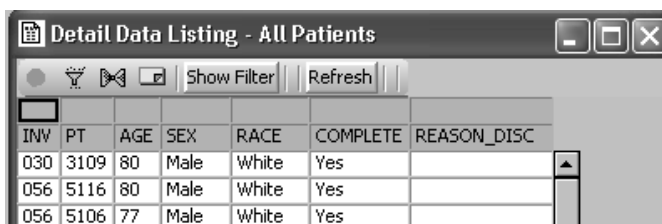
When all report specifications have been entered click **Create Report**. The report is displayed in a Report Browser window containing a spreadsheet of your report. The **'Print Change'** feature is turned on for Investigator to only print if the Investigator value changes.

Investigator	Pat. No.	Age	Race	Sex	Completed Evaluation?	Reason for discontinuation
018	14208	47	Black	Female	Yes	
	24208	47	Black	Female	Yes	
030	13111	66	White	Female	No	Safety
	13112	27	White	Male	No	Lack of Efficacy
	13205	72	White	Male	Yes	Intercur Med Problems
	13206	35	White	Male	Yes	
	23111	66	White	Female	No	Safety
	23112	27	White	Male	No	Lack of Efficacy
	23205	72	White	Male	Yes	
	23206	35	White	Male	Yes	
056	15102	20	White	Female	Yes	
	15109	67	White	Female	No	Lack of Efficacy
	15111	32	White	Male	Yes	
	15112	50	White	Male	Yes	
	15113	36	White	Male	No	Lack of Efficacy
	15120	68	White	Male	No	Lack of Efficacy
	15122	51	White	Male	No	Protocol violator
	15126	28	White	Male	Yes	
	15128	33	White	Male	Yes	
	15204	44	White	Female	Yes	
	15205	50	White	Male	Yes	
	15207	69	White	Male	Yes	Intercur Med Problems
	25102	20	White	Female	Yes	
	25109	67	White	Female	No	Lack of Efficacy
	25111	32	White	Male	Yes	
	25112	50	White	Male	Yes	
	25113	36	White	Male	No	Lack of Efficacy
	25120	68	White	Male	No	Other
25122	51	White	Male	No	Protocol violator	
063	12103	42	White	Male	Yes	
	12104	42	White	Male	Yes	
	12105	35	White	Female	Yes	
	12106	65	White	Male	Yes	
	12107	23	White	Male	No	Lack of Efficacy
	12108	36	White	Male	Yes	

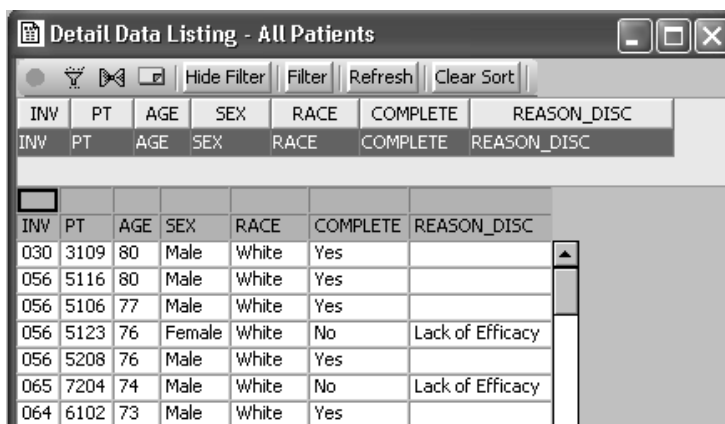
The Show Filter function allows the user to apply interactive column filters while viewing the output window. This feature only applies to the Detail Data Listing report type. When a detail data listing is created two additional icons display in the report toolbar for 'Show Filter' and 'Clear Filter'.

*Note: Avoid applying Print Change, Sum, and Mean to the data listing definition which interfere with some applied column filters.*

1. Click on the **Show Filter** icon to enable the individual column filters.

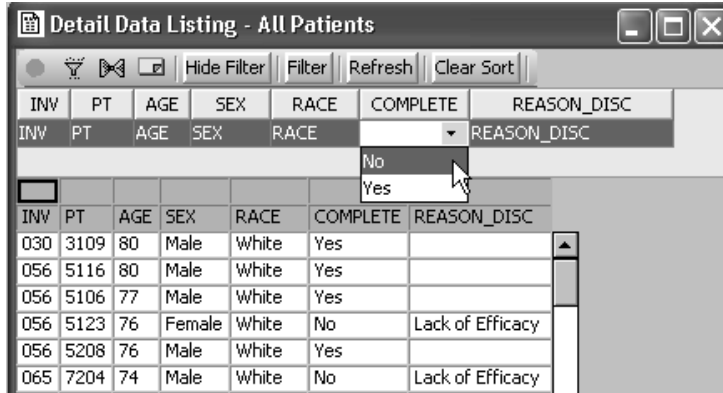


The report tool bar displays the column filters as a filter bar between the report header and tool bar.

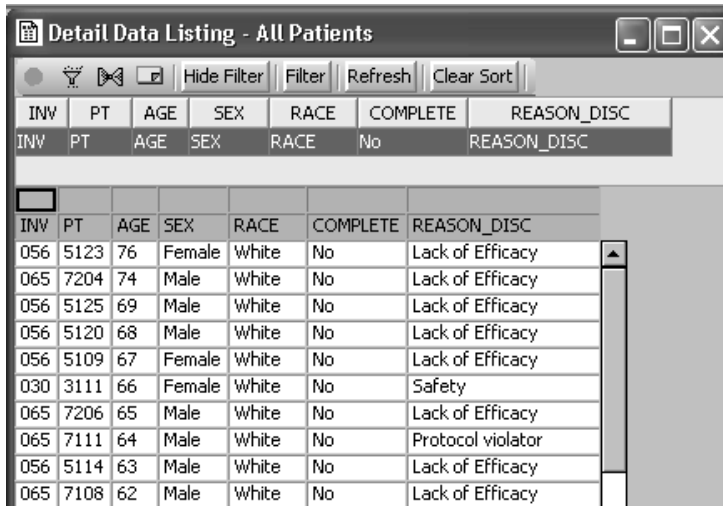




- Click on a column filter to display the combo box for a value selection. Select a value to filter on.



After selecting the filter value you must click on the **Filter** icon. The column filter is applied for the selected value. You may select across different column filters to select values to filter on.



- Click on **Refresh** to clear applied column filters and restore to the initial report display. This step is necessary to reselect a different filter value for the same data column. The results output window returns back to the original results.

- Optionally, you may sort on a select column for alpha or numeric sort order. Click on the column header to select preferred ascending or descending sort order. Click the **Clear Sort** to clear applied column sort.

INV	PT	AGE	SEX	RACE	COMPLETE	REASON_DISC
018	4103	35	Female	Black	Yes	
018	4104	32	Male	Black	Yes	
018	4108	31	Male	Black	No	Protocol violator
018	4111	33	Female	Black	Yes	
018	4202	33	Male	Black	No	Subject Requested DC
018	4206	39	Male	Black	Yes	
018	4207	30	Male	Black	Yes	
018	4208	47	Female	Black	Yes	
063	2109	43	Male	Black	Yes	
063	2111	52	Male	Black	Yes	
063	2112	30	Male	Black	Yes	
063	2203	36	Female	Black	Yes	
063	2205	48	Male	Black	Yes	
063	2210	43	Male	Black	Yes	

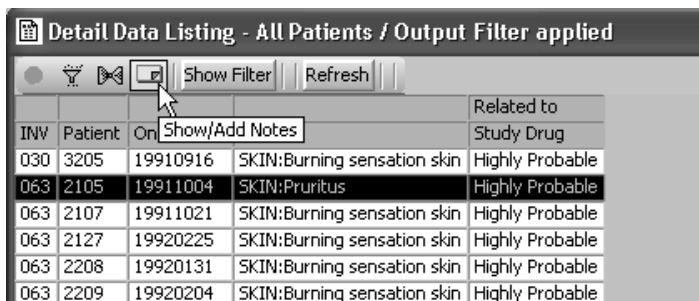
- Click the **Hide Filter** button to hide the column filter bar and return to the initial tool bar status.

*Note: The column SORT option is NOT available in detail data listing when data highlighting is applied.*

---

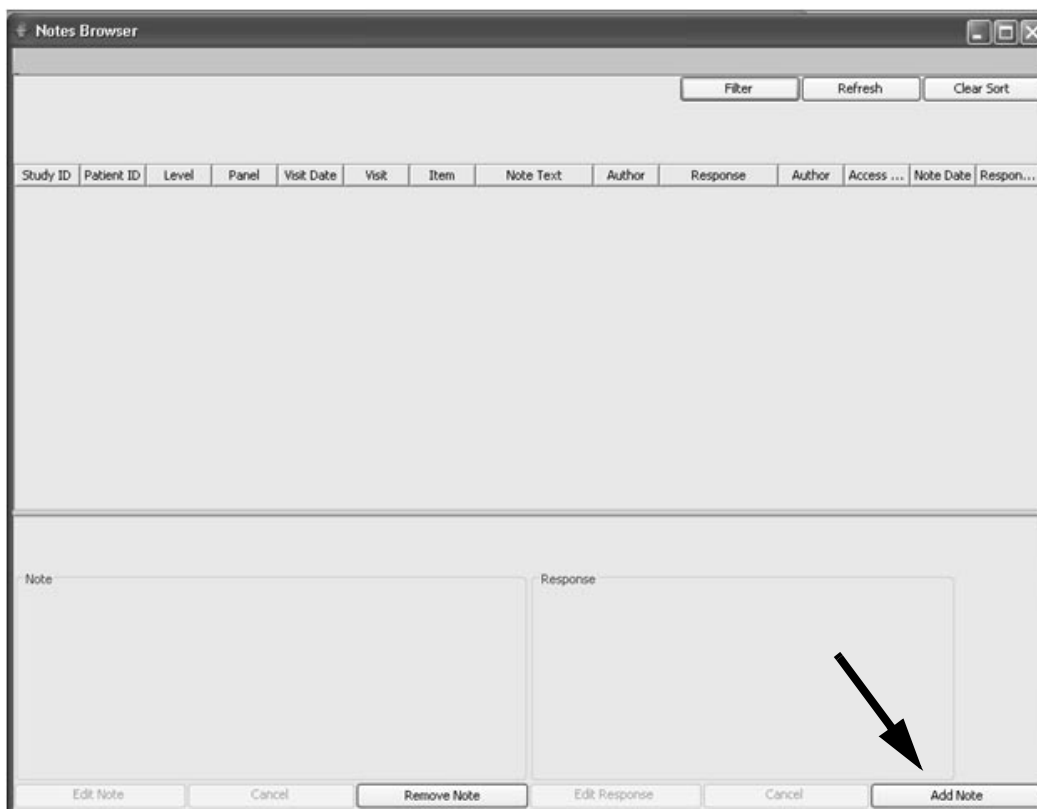
## Add patient note

Detail Data Listings and Patient Visit Data Reports support 'Add Notes' when you select an individual patient. Click on a patient row to highlight the patient, then click on the **Add Note** icon in the report tool bar.



INV	Patient	On	Show/Add Notes	Related to
030	3205	19910916	SKIN:Burning sensation skin	Highly Probable
063	2105	19911004	SKIN:Pruritus	Highly Probable
063	2107	19911021	SKIN:Burning sensation skin	Highly Probable
063	2127	19920225	SKIN:Burning sensation skin	Highly Probable
063	2208	19920131	SKIN:Burning sensation skin	Highly Probable
063	2209	19920204	SKIN:Burning sensation skin	Highly Probable

The **Notes Browser** window opens to view existing notes for the selected patient. Click on **Add Note** to add a new note. (See *Chapter 3: Review Patient Data*, see section on *Notes Browser*)



Study ID	Patient ID	Level	Panel	Visit Date	Visit	Item	Note Text	Author	Response	Author	Access ...	Note Date	Respon...
----------	------------	-------	-------	------------	-------	------	-----------	--------	----------	--------	------------	-----------	-----------

Note

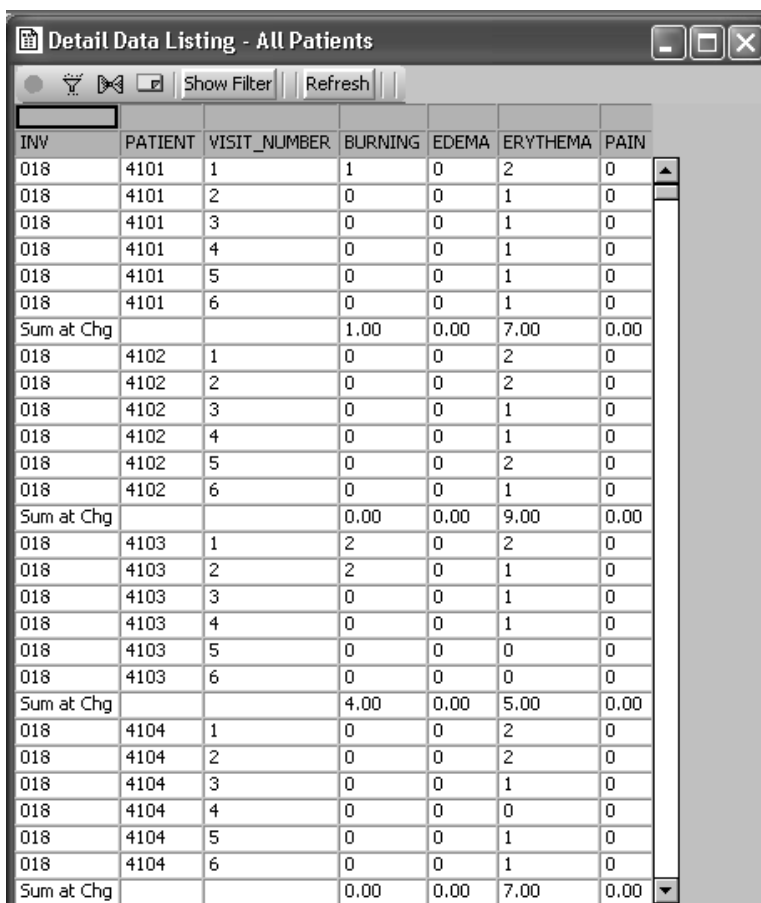
Response

Edit Note Cancel Remove Note Edit Response Cancel Add Note

## Detail Data Listing features

### Defining row results

A numeric data type provides clinically pertinent options, such as mean or sum. Numeric row results generate report summations (for example, Selecting Sum or Mean), or break point summations that the report will generate in summation or at break points for example, change in PID, Sum at Change and Mean at Change. The Row Results drop down list below is for non-formatted report types.



INV	PATIENT	VISIT_NUMBER	BURNING	EDEMA	ERYTHEMA	PAIN
018	4101	1	1	0	2	0
018	4101	2	0	0	1	0
018	4101	3	0	0	1	0
018	4101	4	0	0	1	0
018	4101	5	0	0	1	0
018	4101	6	0	0	1	0
Sum at Chg			1.00	0.00	7.00	0.00
018	4102	1	0	0	2	0
018	4102	2	0	0	2	0
018	4102	3	0	0	1	0
018	4102	4	0	0	1	0
018	4102	5	0	0	2	0
018	4102	6	0	0	1	0
Sum at Chg			0.00	0.00	9.00	0.00
018	4103	1	2	0	2	0
018	4103	2	2	0	1	0
018	4103	3	0	0	1	0
018	4103	4	0	0	1	0
018	4103	5	0	0	0	0
018	4103	6	0	0	0	0
Sum at Chg			4.00	0.00	5.00	0.00
018	4104	1	0	0	2	0
018	4104	2	0	0	2	0
018	4104	3	0	0	1	0
018	4104	4	0	0	0	0
018	4104	5	0	0	1	0
018	4104	6	0	0	1	0
Sum at Chg			0.00	0.00	7.00	0.00

*Note: Mathematical row results options are different between non-formatted and formatted report types.*

The formatted reports have more mathematical options. In addition, formatted reports support Sum at Change, Mean at Change, Mean at Change and Mean, and Sum at Change and Sum.

The Formatted Report options also apply formats to modify the headers, footer, page breaks, column headings and more.

**Detail Data Listing - Subset of patients**

28-Apr-09 4:25:46 PM

**Discontinued Patients with Adverse Events**  
Study: KA201

Demographics				Discontinue Reason	Adverse Events		
Investigator	Patient	Sex	Age		AE coded	Onset Date	Related to live Med?
018	4106	Male	18	Protocol violator			
018	4108	Male	31	Protocol violator			
018	4110	Female	24	Protocol violator			
018	4114	Male	57	Lack of Efficacy			
018	4202	Male	33	Subject Requested DC			
030	3111	Female	66	Safety	DIG Duodenal ulcer	19910904	Not Related
030	3112	Male	27	Lack of Efficacy	SKIN Burning sensation skin	19911108	Possible
056	5107	Female	58	Protocol violator			
056	5108	Male	43	Lack of Efficacy			
056	5109	Female	67	Lack of Efficacy	BODY Back pain	19911011	Not Related
056	5113	Male	36	Lack of Efficacy	DIG Sore throat	19911028	Not Related
056	5114	Male	63	Lack of Efficacy			
056	5117	Male	53	Protocol violator			
056	5120	Male	68	Lack of Efficacy	BODY Surgery	19911115	Not Related
056	5122	Male	51	Protocol violator	DIG Urinary tract infection	19911129	Not Related
056	5123	Female	76	Lack of Efficacy			
056	5125	Male	69	Lack of Efficacy			
056	5129	Male	21	Subject unreliable			
056	5130	Female	42	Lack of Efficacy			
056	5210	Female	39	Protocol violator			
063	2107	Male	23	Lack of Efficacy	SKIN Burning sensation skin	19911021	Highly Probable
063	2126	Male	31	Protocol violator			

Patient Selection Criteria: TS.COMPLETE  
w/No'

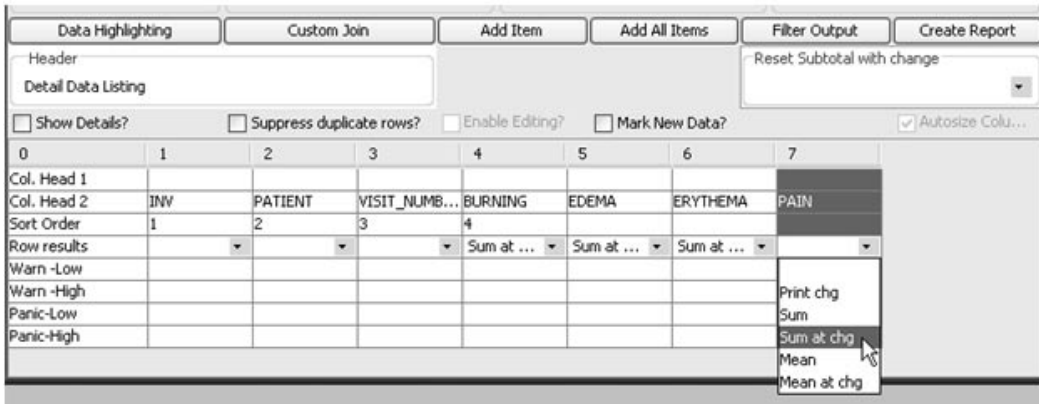
Page 1 of 3

Page 1/3

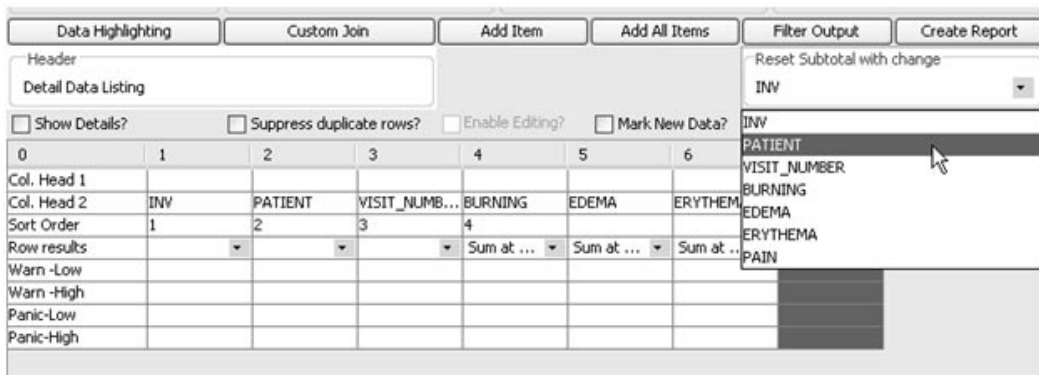
---

*Reset subtotal in row results*

The mathematical row results options are available in the Detail Data Listing and Summary Listing.



You must select the item to 'break on' when utilizing the mathematical row results. This required selection is enforced when you have selected a mathematical row result 'Sum at change' or 'Mean at change' or 'Mean at Change and Mean'. The possible break items are listed in the 'Reset Subtotal with Change' drop-down list.



The mathematical break point is applied to the Pat No. with 'Sum at change' row result selected for Efficacy Evaluation items.

INV	PATIENT	VISIT_NUMBER	BURNING	EDEMA	ERYTHEMA	PAIN
018	4101	1	1	0	2	0
018	4101	2	0	0	1	0
018	4101	3	0	0	1	0
018	4101	4	0	0	1	0
018	4101	5	0	0	1	0
018	4101	6	0	0	1	0
Sum at Chg			1.00	0.00	7.00	0.00
018	4102	1	0	0	2	0
018	4102	2	0	0	2	0
018	4102	3	0	0	1	0
018	4102	4	0	0	1	0
018	4102	5	0	0	2	0
018	4102	6	0	0	1	0
Sum at Chg			0.00	0.00	9.00	0.00
018	4103	1	2	0	2	0
018	4103	2	2	0	1	0
018	4103	3	0	0	1	0
018	4103	4	0	0	1	0
018	4103	5	0	0	0	0
018	4103	6	0	0	0	0
Sum at Chg			4.00	0.00	5.00	0.00
018	4104	1	0	0	2	0
018	4104	2	0	0	2	0
018	4104	3	0	0	1	0
018	4104	4	0	0	0	0
018	4104	5	0	0	1	0
018	4104	6	0	0	1	0
Sum at Chg			0.00	0.00	7.00	0.00

---

## Highlighting data check ranges

When you define a detail data listing which includes numeric parameters such as laboratory data, vital signs or scores, you can enter warning and panic ranges that will be used to color highlight the data in the report display. If the report specifications are saved, these data check ranges are also stored within the report.

Simply enter your data check ranges within the spreadsheet cells labeled “Warn-Low”, “Warn-High”, “Panic-Low” and “Panic-High”.

The screenshot shows a configuration window for a report titled "Lab Chemistry Detail Data Listing". It includes several control buttons at the top: "Data Highlighting", "Custom Join", "Add Item", "Add All Items", "Filter Output", and "Create Report". Below these are input fields for "Header" (containing "Lab Chemistry Detail Data Listing") and "Reset Subtotal with change". A row of checkboxes includes "Show Details?", "Suppress duplicate rows?", "Enable Editing?", "Mark New Data?", and "Autosize Columns" (checked). The main area is a spreadsheet with 7 columns (0-6) and 10 rows. The first two rows are headers for "Col. Head 1" and "Col. Head 2". The next three rows are for "Sort Order", "Row results", and "Warn -Low". The final four rows are for "Warn +High", "Panic-Low", and "Panic-High".

0	1	2	3	4	5	6
Col. Head 1						
Col. Head 2	INV	Patient	Visit	Glucose	Cholesterol	Triglycerides
Sort Order	1	2	3	4		
Row results						
Warn -Low				50	75	75
Warn +High				150	250	250
Panic-Low				60	50	50
Panic-High				300	350	350

Variable values outside the ranges you define display as yellow and red.

The screenshot shows a report viewer window titled "Lab Chemistry Detail Data Listing - All Patients". It has a toolbar with "Show Filter" and "Refresh" buttons. The data is presented in a table with 7 columns: INV, Patient, Visit, Glucose, Cholesterol, and Triglycerides. The data rows are numbered 018. The "Triglycerides" column shows values for each row. The value 373 is highlighted in red, and the value 513 is highlighted in yellow.

INV	Patient	Visit	Glucose	Cholesterol	Triglycerides
018	4113	1	91	209	198
018	4113	5	91	185	177
018	4114	1	82	305	373
018	4114	5	83	306	285
018	4201	1	104	212	82
018	4201	5	95	224	105
018	4202	1	86	163	76
018	4203	1	91	172	255
018	4203	5	86	182	154
018	4204	1	80	273	285
018	4204	5	89	260	259
018	4205	1	104	183	513
018	4205	5	92	186	169
018	4206	1	88	178	99
018	4206	5	112	167	95
018	4207	1	88	196	120
018	4207	5	92	214	56

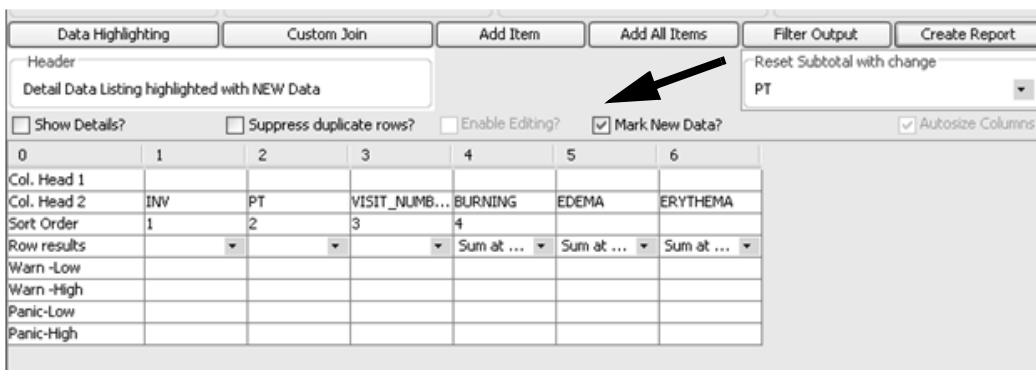


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## Mark New Data

When you define a detail data listing, you may optionally highlight “Updated data” meaning new or updated data. Last Change Date must be set in ReviewAdmin for this feature to be available. It can be set at the individual study level or across the project level.

After you define your report specification, click the check box for “**Mark New Data?**”.



The screenshot shows a configuration window for a report. At the top, there are several tabs: "Data Highlighting", "Custom Join", "Add Item", "Add All Items", "Filter Output", and "Create Report". Below the tabs, there is a "Header" section with a text box containing "Detail Data Listing highlighted with NEW Data". To the right of this, there is a dropdown menu for "Reset Subtotal with change" set to "PT". Below the header, there are several checkboxes: "Show Details?", "Suppress duplicate rows?", "Enable Editing?", "Mark New Data?" (which is checked), and "Autosize Columns". Below the checkboxes is a table with 7 columns (0-6) and several rows including "Col. Head 1", "Col. Head 2", "Sort Order", "Row results", and warning/panic levels.

Any new or updated data for the included patients are highlighted in the report.



The screenshot shows a report window titled "Detail Data Listing highlighted with NEW Data - All Patients". It has a toolbar with "Show Filter" and "Refresh" buttons. The data is presented in a table with columns: INV, PT, VISIT\_NUMBER, BURNING, EDEMA, and ERYTHEMA. The rows are shaded in an alternating pattern, indicating that new or updated data is highlighted. The data includes patient 018 with visits 1-6, patient 4102 with visits 1-6, and patient 4103 with visits 1-3. Summary rows "Sum at Chg" are also present.

INV	PT	VISIT_NUMBER	BURNING	EDEMA	ERYTHEMA
018	4101	1	1	0	2
018	4101	2	0	0	1
018	4101	3	0	0	1
018	4101	4	0	0	1
018	4101	5	0	0	1
018	4101	6	0	0	1
Sum at Chg			1.00	0.00	7.00
018	4102	1	0	0	2
018	4102	2	0	0	2
018	4102	3	0	0	1
018	4102	4	0	0	1
018	4102	5	0	0	2
018	4102	6	0	0	1
Sum at Chg			0.00	0.00	9.00
018	4103	1	2	0	2
018	4103	2	2	0	1
018	4103	3	0	0	1

---

## Suppress duplicate rows

If you want to display only unique rows (unique based on all items being displayed), click on the checkbox for ‘Suppress duplicate rows?’. When you turn this feature on, it includes “DISTINCT” in the select statement generated which has the effect of only displaying unique rows.

Suppress duplicate rows?

The examples show the difference between this report when the suppress duplicate rows is turned off versus on. For example, see PatNo 2125.

INV	PT	SECODE
063	2103	BODY:Surgery
063	2103	BODY:Unevaluable reaction
063	2104	MS :Arthritis
063	2105	SKIN:Pruritus
063	2106	NER :Headache
063	2107	SKIN:Burning sensation skin
063	2108	DIG :Tooth disorder
063	2108	DIG :Tooth disorder
063	2113	SKIN:Burning sensation skin
063	2123	NER :Headache
063	2125	RES :Sinusitis
063	2125	RES :Sinusitis
063	2125	RES :Sinusitis
063	2127	SKIN:Burning sensation skin
063	2201	NER :Headache
063	2201	NER :Headache
063	2204	NER :Headache
063	2204	RES :Upper respiratory infection
063	2207	RES :Sinusitis
063	2207	RES :Upper respiratory infection
063	2208	MAN :Peripheral edema
063	2208	SKIN:Burning sensation skin
063	2209	SKIN:Burning sensation skin

INV	PT	SECODE
063	2103	BODY:Surgery
063	2103	BODY:Unevaluable reaction
063	2104	MS :Arthritis
063	2105	SKIN:Pruritus
063	2106	NER :Headache
063	2107	SKIN:Burning sensation skin
063	2108	DIG :Tooth disorder
063	2113	SKIN:Burning sensation skin
063	2123	NER :Headache
063	2125	RES :Sinusitis
063	2127	SKIN:Burning sensation skin
063	2201	NER :Headache
063	2204	NER :Headache
063	2204	RES :Upper respiratory infection
063	2207	RES :Sinusitis
063	2207	RES :Upper respiratory infection
063	2208	MAN :Peripheral edema
063	2208	SKIN:Burning sensation skin
063	2209	SKIN:Burning sensation skin

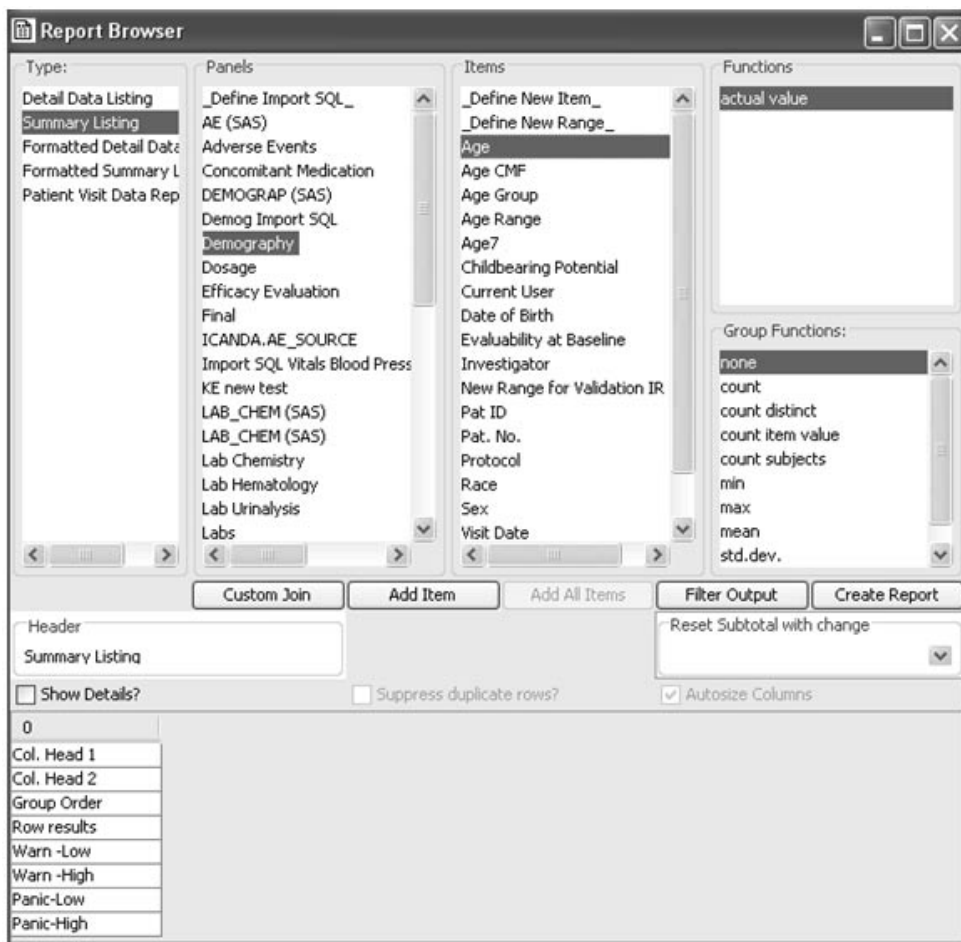
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# Summary Listing features

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## Group functions

The Summary Listing have different Group functions available dependent upon the item selected:



When building a Summary Listing it is typical to first select an item with a group function of 'none' and then follow it by the item with a group function applied. This method displays the item first as a row label followed by the items with group functions applied.

Custom Join   Add Item   Add All Items   Filter Output   Create Report

Header  
Age Summary Listing   Reset Subtotal with change

Show Details?    Suppress duplicate rows?    Autosize Columns

0	1	2	3	4	5	6	7
Col. Head 1			count subjects	min	max	mean	std.dev.
Col. Head 2	Investigator	Sex	Sex	Age	Age	Age	Age
Group Order	1	2					
Row results	▼	▼	▼	▼	▼	▼	▼
Warn -Low							
Warn -High							
Panic-Low							
Panic-High							

Age Summary Listing - All Patients

Investigator	Sex	Sex	count subjects	min	max	mean	std.dev.
018	Male	14	18	64	35.93	13.15	
018	Female	8	20	60	36	13.79	
030	Male	15	19	80	47.8	18.88	
030	Female	5	22	66	43.6	16.83	
056	Male	29	17	80	47.62	19.26	
056	Female	11	20	76	51.55	15.81	
063	Male	25	20	72	43.24	13.61	
063	Female	4	35	49	38.75	6.85	
064	Male	31	25	73	45.84	14.51	
064	Female	4	33	53	42	9.59	
065	Male	22	29	74	54.55	12.23	
065	Female	3	18	70	48	26.91	
066	Male	25	18	70	32.96	13.45	

The item 'AE Coded' is entered first with a group function of 'none' followed by the group functions 'count' and 'count subjects'.

Custom Join   Add Item   Add All Items   Filter Output   Create Report

Header  
AE Summary Listing

Reset Subtotal with change

Show Details?    Suppress duplicate rows?    Autosize Columns

0	1	2	3	4
Col. Head 1			count	count subjects
Col. Head 2	Investigator	AE Coded	AE Coded	AE Coded
Group Order	1	2		
Row results	▼	▼	▼	▼
Warn -Low				
Warn -High				
Panic-Low				
Panic-High				

AE Summary Listing - All Patients

Investigator	AE Coded	count	count subjects
018	SKIN:Burning sensation skin	1	1
018	SKIN:Pruritus	1	1
030	DIG :Diarrhea	1	1
030	SKIN:Burning sensation skin	2	2
030	DIG :Duodenal ulcer	1	1
030	DIG :Vomiting	1	1
056	DIG :Periodontal abscess	1	1
056	BODY:Allergic reaction	1	1
056	BODY:Body odor	1	1
056	RES :Cough increased	1	1
056	NER :Headache	2	2
056	UG :Urinary tract infection	3	3
056	BODY:Back pain	1	1
056	DIG :Sore throat	1	1
056	RES :Sinusitis	1	1
056	BODY:Surgery	2	2
063	M5 :Arthritis	1	1
063	MAN :Peripheral edema	1	1
063	NER :Headache	5	4
063	RES :Upper respiratory infection	2	2
063	SKIN:Burning sensation skin	5	5
063	SKIN:Pruritus	1	1

The group function for 'count distinct' is the same as the count subjects, except the value being counted are the unique values of the item specified. For example, if you selected Adverse Event text and specified 'count distinct', you would only display the number of unique adverse event text values. The select item phrase generated: count (distinct <item>).

0	1	2	3
Col. Head 1		count	count distinct
Col. Head 2	AE Text	AE Text	AE Text
Group Order	1		
Row results	<input type="text"/>	<input type="text"/>	<input type="text"/>
Warn -Low			
Warn -High			
Panic-Low			
Panic-High			

The screenshot shows a window titled "Summary Listing - All Patients" with a toolbar containing a funnel icon and a refresh icon. The table below displays the results of a query, with columns for "AE Text", "count", and "count distinct".

AE Text	count	count distinct
ANGIOPLASTY	1	1
BACK STRAIN	1	1
BLADDER INFECTION	3	1
BURNING ON APPLICATION	2	1
BURNING UPON APPLICATION	2	1
BURNING UPON APPLICATION (FISSURED AREAS	1	1
BURNING WITH APPLICATION OF DRUG	1	1
BURNING WITH APPLICATION OF STUDY DRUG	1	1
BURNING WITH APPLICATION OF STUDY MEDICI	1	1
CHEST CONGESTION	1	1
COLD	1	1
COLD SYMPTOMS	2	1
COLD SYMPTOMS/SINUS PAIN	1	1
COLONOSCOPY ((POLYPECTOMY))	1	1
COUGH	3	1
CRYOTHERAPY	1	1
DENTAL IMPLANT LOWER JAW	1	1

---

### *Count item value*

The group function for 'count item value' counts the number of entries of a particular item, which has a particular value. This feature is especially useful for reports counting patients having different categories. It enables you to select items from 'Unique Values' as a column to count the item.

1. Select a panel.
2. Select each item with group function for 'count item value'. Click ADD Item and the 'Unique Values' window opens.
3. Select the individual value for a column where you want to count item value and click Select value.
4. Repeat the same steps to continue to add columns to your report with ADD Item and the Display Values window. These values will be counted as different categories.

---

### *New item with aggregate functions*

There is the ability to create a new item in the Summary Listing window for aggregate functions. *See Chapter 12: Advanced Topics - Define New Item.*

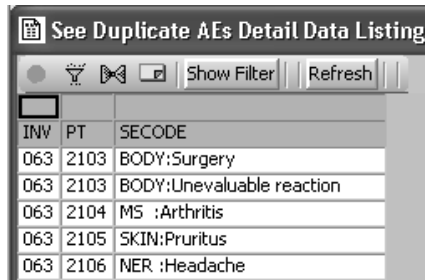
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## Object toolbar

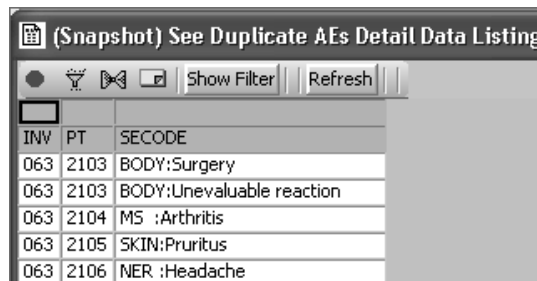
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### *Snapshot output*

When the object window opens a toolbar displays in the upper left corner for you to reference the active patient selection criteria, output filters or to snapshot the output window (freeze the results image).

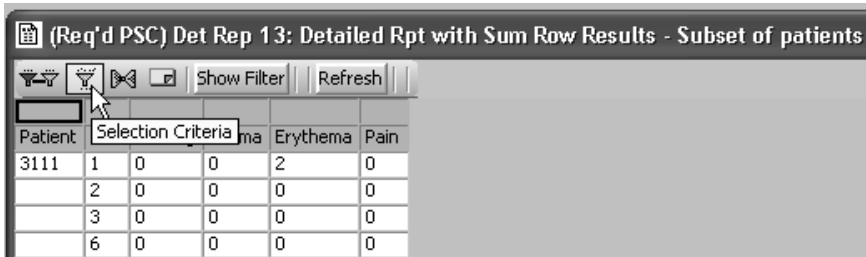


If you click on Snapshot the green button changes to red to indicate the window is frozen and the heading changes to Snapshot' mode. This results window is now blocked to any updates from the patient selection criteria.

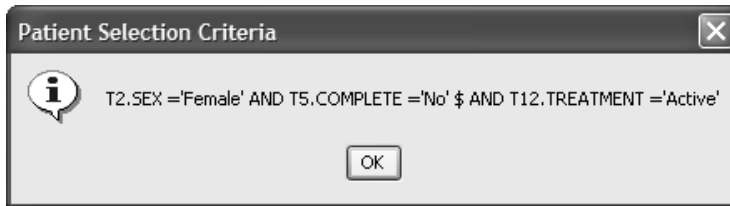




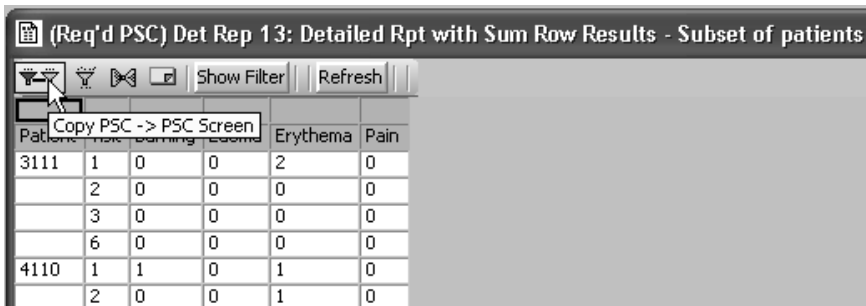
When you click the Selection Criteria icon a message window opens to identify any patient selection criteria active on the output window.



Click OK to close the window.



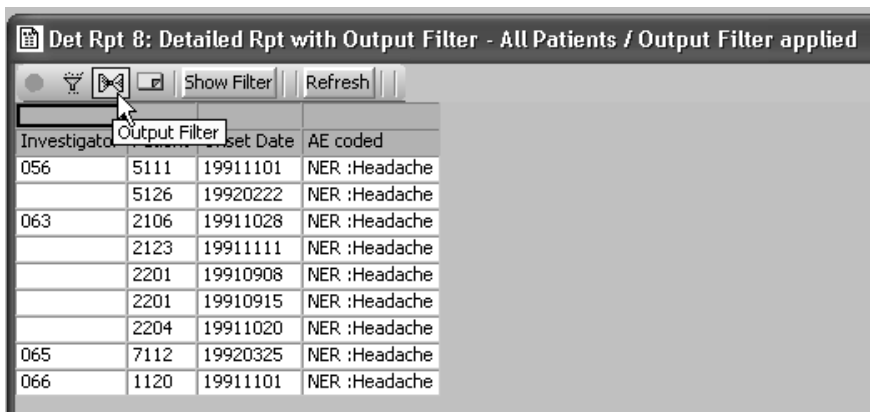
Output objects saved with a required patient selection criteria display with a red filter.



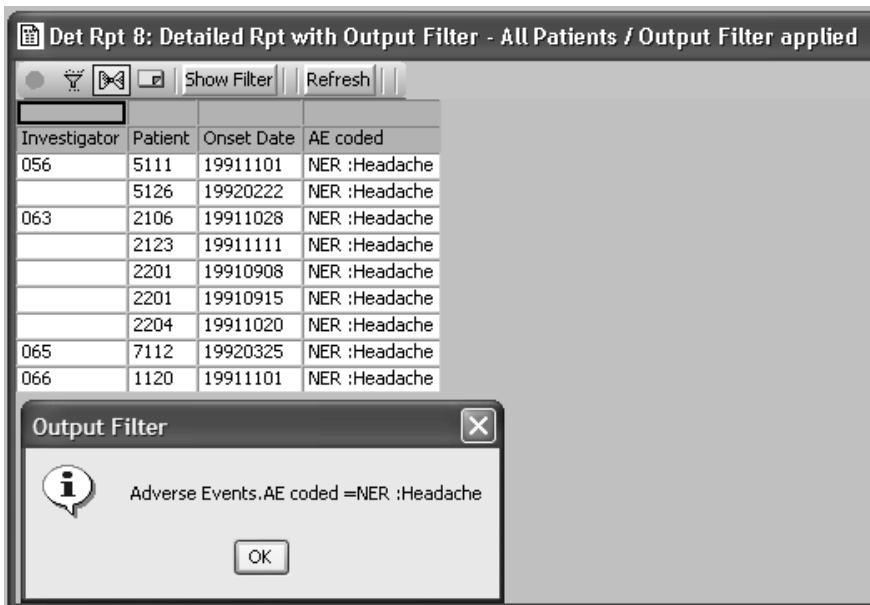
---

*Output filter icon*

When you click the Output Filter icon a message window opens to identify any active Output Filters on the output window.



Click **OK** to close the window.

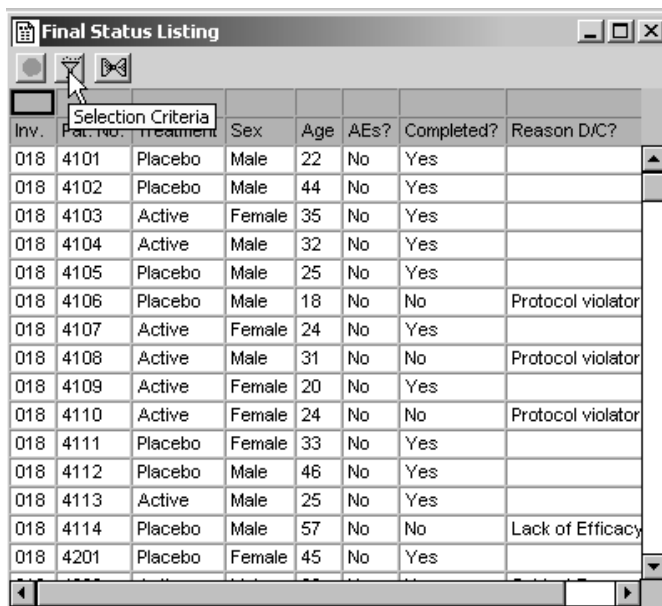


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## Multiple population mode

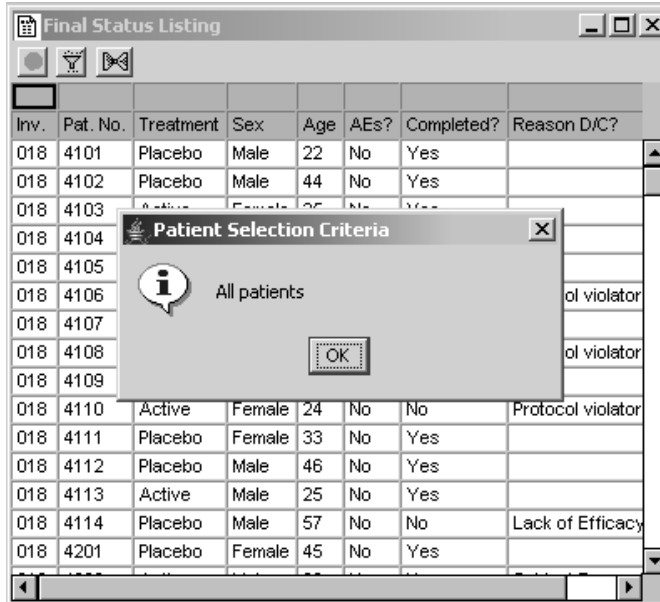
JReview has an optional multiple-population mode available within the individual browsers output window. When the results are executed and displayed from the browser output window, three icons are displayed for “Snapshot”, “Selection Criteria?” and “Output Filter”. The Snapshot output allows you to freeze the current output window and then change the patient selection criteria and view the different output within the browser at the same time.

*Note: If the stored object definition has a required patient selection criteria defined, you will not be allowed to change it.*

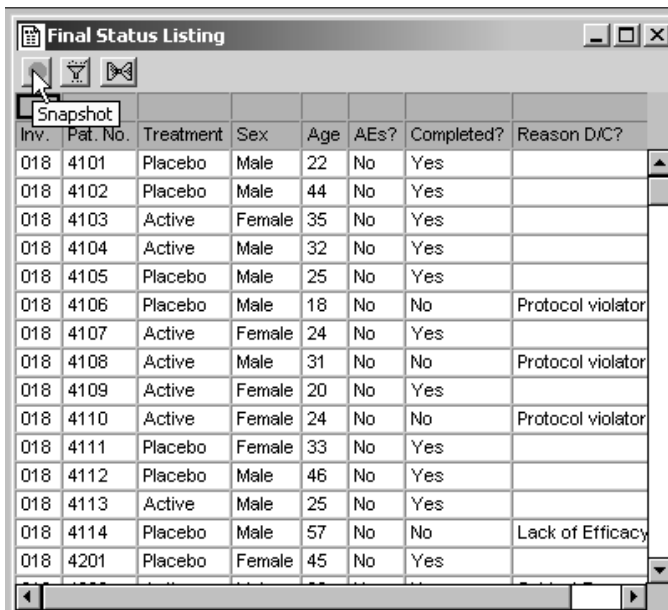


Inv.	Pat. No.	Treatment	Sex	Age	AEs?	Completed?	Reason D/C?
018	4101	Placebo	Male	22	No	Yes	
018	4102	Placebo	Male	44	No	Yes	
018	4103	Active	Female	35	No	Yes	
018	4104	Active	Male	32	No	Yes	
018	4105	Placebo	Male	25	No	Yes	
018	4106	Placebo	Male	18	No	No	Protocol violator
018	4107	Active	Female	24	No	Yes	
018	4108	Active	Male	31	No	No	Protocol violator
018	4109	Active	Female	20	No	Yes	
018	4110	Active	Female	24	No	No	Protocol violator
018	4111	Placebo	Female	33	No	Yes	
018	4112	Placebo	Male	46	No	Yes	
018	4113	Active	Male	25	No	Yes	
018	4114	Placebo	Male	57	No	No	Lack of Efficacy
018	4201	Placebo	Female	45	No	Yes	

The output example shows a stored report object with no patient selection criteria. A snapshot was taken of the current output.



Clicking on Snapshot locks the output window.



A different patient selection criteria can be applied and with the same report object re-executed to display the two output results together for comparison. The selection criteria message box shows the revised selection criteria definition.

The image shows two overlapping windows from a software application. The top window, titled "(SnapShot) Final Patient Status Listing", contains a table with the following data:

Inv.	Pat. No.	Sex	Age	Completed?	AEs?	Reason for D/C?
018	4101	Male	22	Yes	No	
018	4102	Male	44	Yes	No	
018	4103	Female	35	Yes	No	
018	4104	Male	32	Yes	No	
018	4105	Male	25	Yes	No	
018	4106	Male	18	No	No	Protocol violator
018	4107	Female	24	Yes	No	
018	4108	Male	31	No	No	Protocol violator
018	4109	Female	20	Yes	No	
018	4110	Female	24	No	No	Protocol violator
018	4111	Female	33	Yes	No	
018	4112	Male	46	Yes	No	

The bottom window, titled "Final Patient Status Listing - Active patients", shows a similar table with the following data:

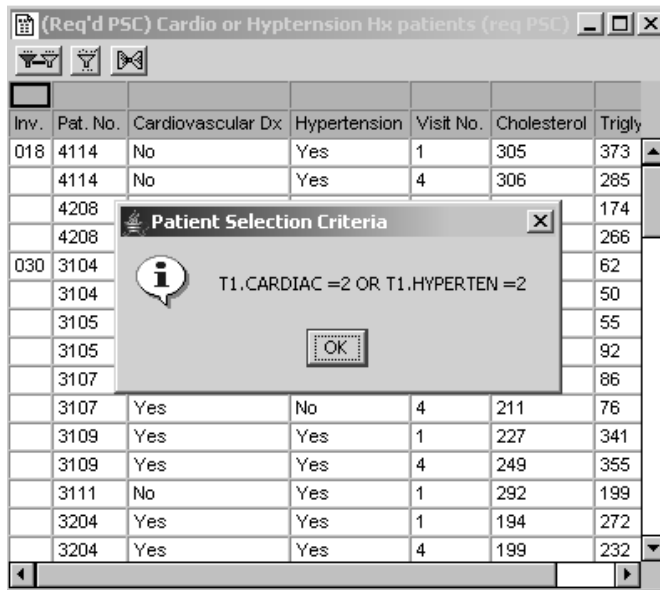
Inv.	Pat. No.	Sex	Age	Completed?	AEs?	Reason for D/C?
018	4103	Female	35	Yes	No	
018	4104	Male				
018	4107	Female				
018	4108	Male				
018	4109	Female				
018	4110	Female				
018	4113	Male				
018	4202	Male				
018	4203	Male	64	Yes	No	
018	4205	Male	37	Yes	No	
018	4208	Female	47	Yes	Yes	
030	3101	Male	67	Yes	No	
030	3104	Male	62	Yes	No	
030	3107	Female	47	Yes	No	
030	3108	Female	33	Yes	No	

A "Patient Selection Criteria" dialog box is overlaid on the bottom window, displaying the criteria "T0.TREATMENT =10" and an "OK" button.

---

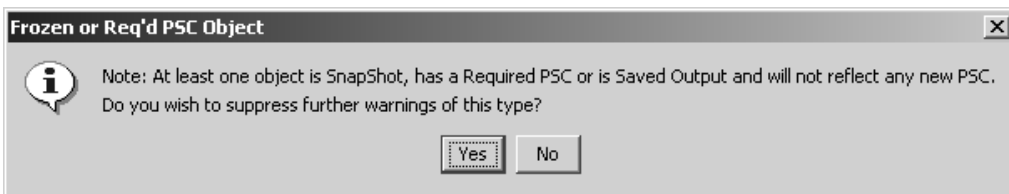
## Multiple output for required selection criteria

When a stored object definition has a required selection criteria, you are not allowed to modify the selection criteria. The output window displays a notation in the heading “Req’d PSC” with a double filter icon. You can open multiple objects with “Req’d PSC” and toggle between the required selection criteria to update your Data Browser display or other open objects where a selection criteria definition is not required.



Inv.	Pat. No.	Cardiovascular Dx	Hypertension	Visit No.	Cholesterol	Trigly
018	4114	No	Yes	1	305	373
	4114	No	Yes	4	306	285
	4208					174
	4208					266
030	3104					62
	3104					50
	3105					55
	3105					92
	3107					86
	3107	Yes	No	4	211	76
	3109	Yes	Yes	1	227	341
	3109	Yes	Yes	4	249	355
	3111	No	Yes	1	292	199
	3204	Yes	Yes	1	194	272
	3204	Yes	Yes	4	199	232

JReview gives a warning when opening a “Stored/Req’d PSC” subset object and allows the user to suppress the warning after the first time. A warning dialog will be presented when trying to update the patient selection criteria if a Snapshot/Frozen or “Req’d PSC” object is open. The warning informs the user that any open Snapshot/Frozen or “Req’d PSC” objects will not respect the new patient selection criteria (and the patient selection criteria update will proceed for other objects). The user has the option of suppressing future appearances of the warning.



The last launched object with a required selection criteria is loaded into the Patient Selection Criteria window and the patients are listed in the Data Browser window. The Data Browser always reflects the current patient selection criteria.

The screenshot displays a medical software interface with several windows and a dialog box. At the top left is the 'Patient Selection Criteria [ichpux3]' window, which includes a 'Panel' list (Randomization, Medical History, Previous Medication, Concomitant Medication, Dosage, Demography, Final) and an 'Item' list. Below this is a table with columns 'Pat ID', 'Race', 'Sex', 'Age', and 'AE Text'. The table contains several rows, with the first row highlighted: 2010303112, White, Male, 27, BURNING WITH APPLICATION OF DRUG. Below the table are buttons for 'Update Browsers' and 'Add Expression'.

In the center, a 'Patient Selection Criteria' dialog box is open, displaying the SQL criteria: 'T10.SETEXT is not NULL AND T5.SEX =1'. An 'OK' button is visible. Two double-headed arrows point from the dialog box to the 'Select Criteria (SQL)' column of the table below.

Below the dialog box is a table with columns 'And/Or', 'Select Criteria (Text)', and 'Select Criteria (SQL)'. The table contains two rows:
 

And/Or	Select Criteria (Text)	Select Criteria (SQL)
	Adverse Events.AE Text is not missin...	T10.SETEXT is not NULL
AND	Demography.Sex =Male	T5.SEX =1

At the bottom left is the '(Req'd PSC) Cardio or Hypertension Hx patients (req PSC)' window, which contains a table with columns 'Inv.', 'Pat. No.', 'Cardiovascular Dx', 'Hypertension', 'Visit No.', 'Cholesterol', and 'Triglyc'. The table contains 18 rows of patient data.

At the bottom right is the 'Data Browser - 46 cases selected.' window, which contains a table with columns 'KA201', 'Pat. No.', 'Sex', and 'Age'. The table contains 18 rows of patient data, including the first row: KA201, 2010303112, Male, 27. Below the table are buttons for 'Prev CASE', 'Next CASE', and 'Reset Cases'.

To load the previous object's selection criteria, click on the double filter icon "Copy PSC -> PSC Screen". The selection criteria is copied into the Patient Selection Criteria window. Click **Update Browsers** to update the Data Browser display.

The screenshot shows the 'Patient Selection Criteria' window with a list of criteria on the left and a table of patient data on the right. The 'Data Browser' window shows a table of 41 cases selected. Arrows indicate the flow of data from the criteria window to the data browser.

**Patient Selection Criteria [ichpux3]**

Panel: Randomization, Medical History, Previous Medication, Concomitant Medication, Dosage, Demography, Final, Lab Chemistry

Item:

Update Browsers | Add Expression

**(Req'd PSC) AR2: Adverse Events for Males (Se...)**

Pat ID	Race	Sex	Age	AE Text
2010303112	White	Male	27	BURNING WITH APPLICATION OF D
2010303205	White	Male	72	HEAT REACTION UPON APPLICATIO
2010303206	White	Male	35	INTESTINAL UPSET (DIARRHEA)
	White	Male	35	INTESTINAL UPSET (VOMITING)
2010565111	White	Male	32	COUGH
	White	Male	32	HEADACHE
2010565112	White	Male	50	ELECTRODESICCATION & CURETTA
2010565113	White	Male	36	SORE THROAT

And/Or | Select Criteria (Text) | Select Criteria (SQL)

OR | Medical History.Cardiovascular Disea... | T1.CARDIAC =2

OR | Medical History.Hypertension =2 | T1.HYPERTEN =2

**(Req'd PSC) Cardio or Hypternsion Hx patients (req PSC)**

Copy PSC -> PSC Screen

Inv.	Pat. No.	Cardiovascular Dx	Hypertension	Visit No.	Cholesterol	Trigly
018	4114	No	Yes	1	305	373
	4114	No	Yes	4	306	285
	4208	No	Yes	1	125	174
	4208	No	Yes	4	133	266
030	3104	Yes	No	1	258	62
	3104	Yes	No	4	199	50
	3105	No	Yes	1	159	55
	3105	No	Yes	4	148	92
	3107	Yes	No	1	203	86
	3107	Yes	No	4	211	76
	3109	Yes	Yes	1	227	341
	3109	Yes	Yes	4	249	355
	3111	No	Yes	1	292	199

**Data Browser - 41 cases selected.**

KA201	2010184114	Male	57
KA201	2010184208	Female	47
KA201	2010303104	Male	62
KA201	2010303105	Male	43
KA201	2010303107	Female	47
KA201	2010303109	Male	80
KA201	2010303111	Female	66
KA201	2010303204	Male	63
KA201	2010303205	Male	72
KA201	2010565118	Male	39
KA201	2010565120	Male	68
KA201	2010565123	Female	76
KA201	2010565207	Male	69
KA201	2010565209	Female	67
KA201	2010632109	Male	43
KA201	2010632110	Male	52
KA201	2010632113	Male	72

If you open another stored object which doesn't include a selection criteria, the output will display with the previously launched required selection criteria.

*Note: Stored objects with required selection criteria will take precedence over object definitions without required selection criteria when you toggle back.*



# Output filter

## Subset data

The reviewing strategy of an Output Filter is to provide a tool that instantly highlights and subsets a group of patients with a particular observation (such as Adverse Event: Gastrointestinal) and/or visit measures (such as Visit Label with a particular data Item value.) The output filter is designed to focus in on particular observations and visits; it is not designed to be used for the patient selection criteria.

For example, if you want to see all the patients who had Adverse Events with an intensity of 'Serious', you need to decide whether to define the data subset at the patient level or observation/visit level. If you define the data selection with a patient selection criteria and apply it to a detail data listing, all the patients who have a serious adverse event are selected and in addition their other adverse events are displayed. This subsetting option provides for a complete clinical profile of the patient when you apply a patient selection criteria to the patient population. However, to view only 'Serious' adverse events and not display other adverse events you would define an Output Filter. So when selecting from multiple observation/visit data you need to determine which subset function to apply for viewing at patient level or visit level.

The examples show a glucose data listing with a patient selection criteria applied for values  $\geq 300$ ". The glucose selection was defined instead as an output filter.

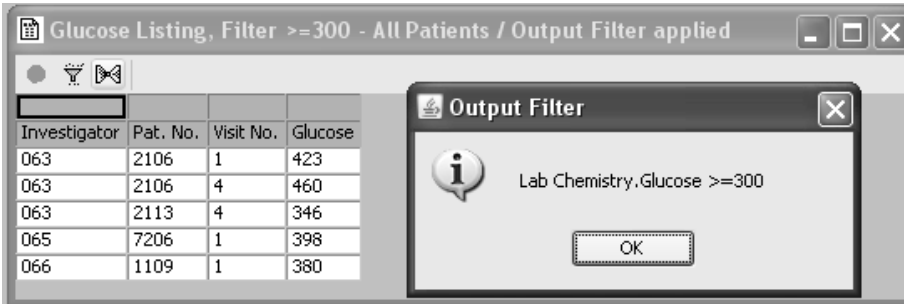
The screenshot shows a software window titled "(Snapshot) Glucose Listing, PSC  $\geq 300$  - Subset of patients". The window contains a table with the following data:

Investigator	Pat. No.	Visit No.	Glucose
063	2106	1	423
063	2106	4	460
063	2113	1	276
063	2113	4	346
065	7206	1	398
065	7206	4	219
066	1109	1	380

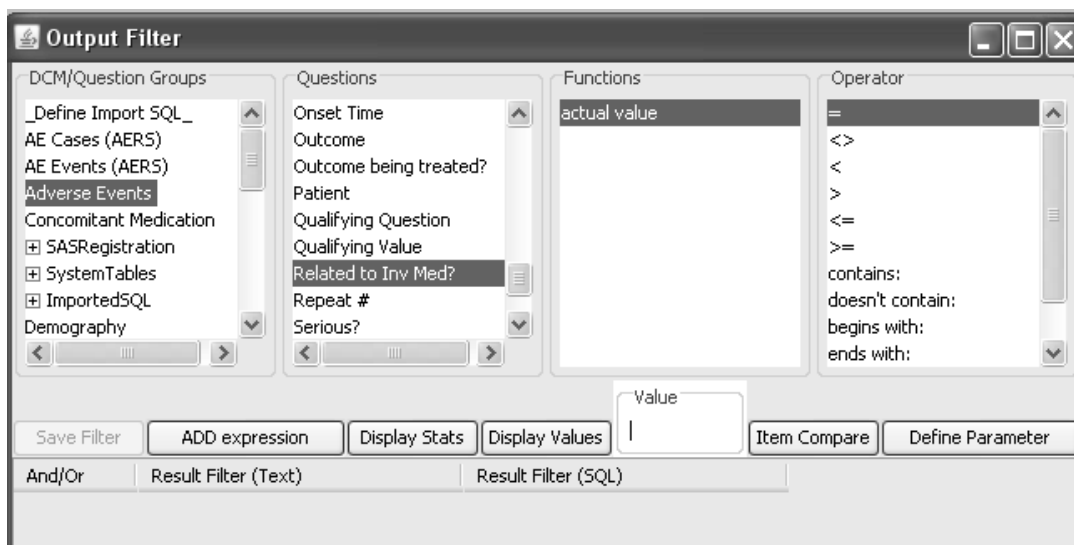
Overlaid on the bottom right of the window is a "Patient Selection Criteria" dialog box. It features an information icon (i) and the text "T7.GLU  $\geq 300$ ". Below the text is an "OK" button.

Next the output filter was applied and the previous patient selection criteria was removed. The exact same patients are selected. However, the difference is the patient selection criteria displays all the visits for selected patients, while the output filter selects only those visits with the elevated values as defined.

You may apply both patient selection criteria and output filters to an object specification and both would be saved in the object specification.



Click **Filter Output** before you click **Create Report**. The Report Output Filter window opens.



- The output filter looks and operates similar to the patient selection criteria window.
- You select the panel item and value or range value to create a row filtering criteria.
- The selection of the values or range values are supported by **Display Stats** and **Display Values**.

As in the patient selection criteria, **Display Stats** instantly provides the basic descriptive statistics for the highlighted item, function, and value, and **Display Values** provides a listing of all values possible for the selected item, function, and value. Both **Display Stats** and **Display Values** present their respective listings for the whole protocol('s) population, unless you check Subset by Patient Selection Criteria. With Subset by Patient Selection Criteria checked, the respective information in these windows is limited to the patient subset created by the current patient selection criteria. (See *Chapter 2: Selecting Patients: Display Values and Display Stats*)

---

## Comparing items

Click **Item Compare** if you want to create a criteria expression that is based on the relationship of two item values. (See *Chapter 2: Selecting Patients: Compare Items*)

---

## Adding expressions

Click **ADD Expression** once a row filtering criteria has been created. The expression is immediately entered in the Result Filter (Text) and Result Filter (SQL) columns.

Add as many row filter criteria as needed to limit the rows of observations and visits included in the report analysis. Each result filter expression is automatically joined by the AND operator. However, just as in the patient selection criteria, the operator OR is also available for non-dependent filter expressions. AND Select is not an option in the output filter.

The screenshot shows the 'Output Filter' dialog box with the following components:

- Panels:** A list of data sources including '\_Define Import SQL\_', 'AE (SAS)', 'Adverse Events', 'Concomitant Medication', 'DEMOGRAP (SAS)', 'Demog Import SQL', 'Demography', 'Dosage', and 'Efficacy Evaluation'.
- Items:** A list of variables including 'Onset Time', 'Outcome', 'Outcome being treated?', 'Pat ID', 'Pat. No.', 'Protocol', 'Related to Inv Med?', 'Serious?', 'Therapy for AE', and 'Visit Date'.
- Functions:** A list containing 'decoded value'.
- Operator:** A list of operators including '=', '<>', '^', 'v', '<=', '>=', 'contains:', 'doesn't contain:', 'begins with:', and 'ends with:'.

Below the lists are several buttons: 'Save Filter', 'ADD expression', 'Display Stats', 'Display Values', 'Item Compare', and 'Define Parameter'. There is also a 'Value' input field.

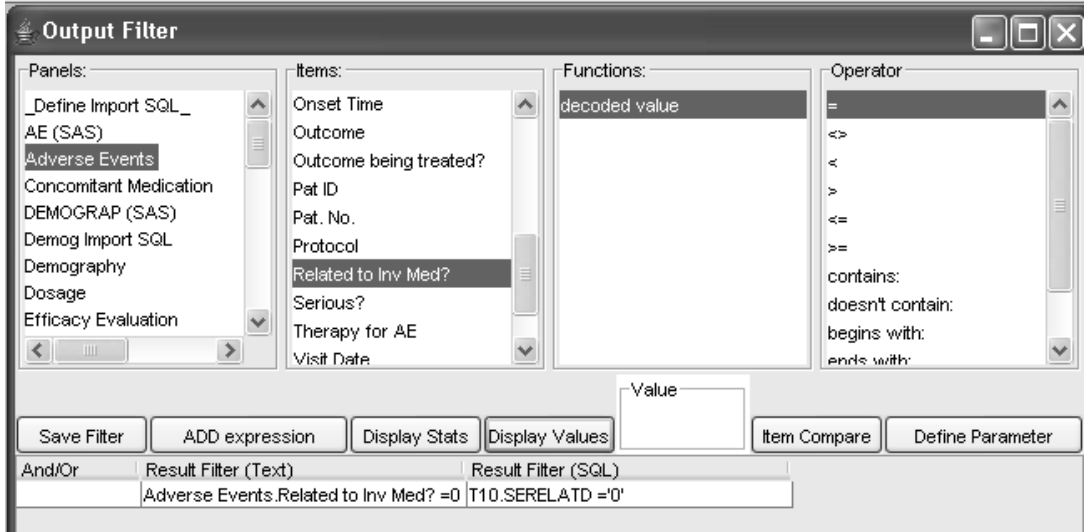
At the bottom, there are fields for 'And/Or', 'Result Filter (Text)', and 'Result Filter (SQL)'.

An overlaid dialog box titled 'Unique Values for Adverse Events.Related to Inv...' contains the following table:

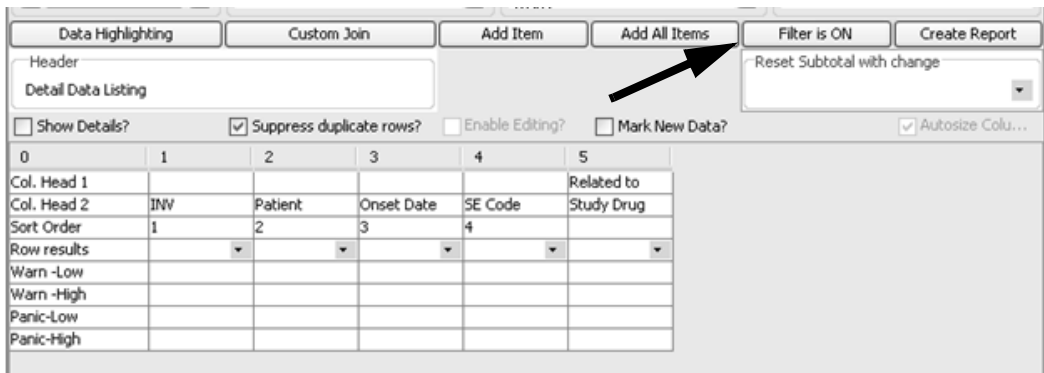
decoded value	Code
Highly Probable	0
Not Related	4
Possible	2
Probable	1

At the bottom of this dialog box, there is a checkbox labeled 'Subset using Select Criteria?' and an 'ADD expression' button.

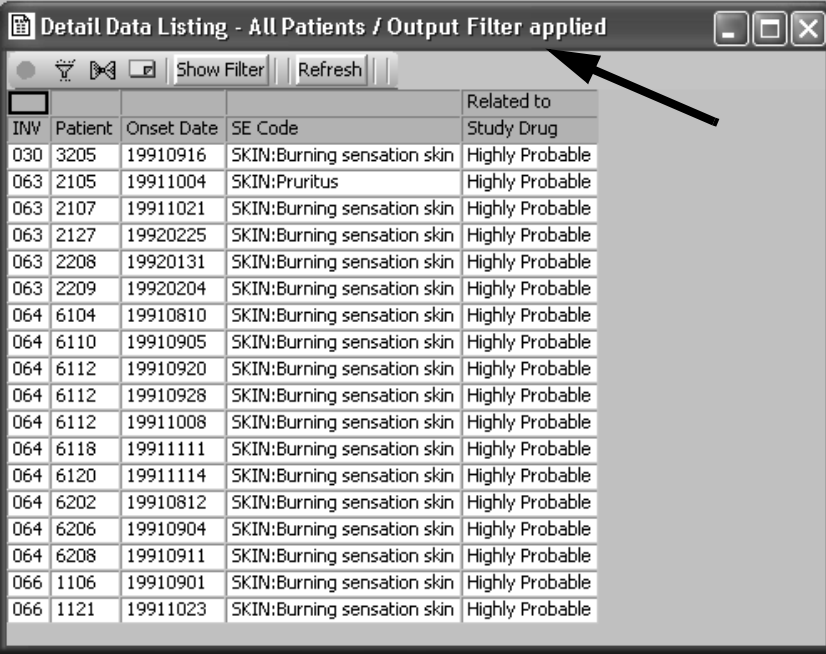
When the output filter is entered, click **Save Filter** to apply to the next generated report.



The Report Browser **Filter Output** button status updates to **Filter is ON**.



Now you can click **Create Report**. The report displays only those observations defined by the filter output criteria(s). The report heading indicates the output filter status as applied.



INV	Patient	Onset Date	SE Code	Related to Study Drug
030	3205	19910916	SKIN:Burning sensation skin	Highly Probable
063	2105	19911004	SKIN:Pruritus	Highly Probable
063	2107	19911021	SKIN:Burning sensation skin	Highly Probable
063	2127	19920225	SKIN:Burning sensation skin	Highly Probable
063	2208	19920131	SKIN:Burning sensation skin	Highly Probable
063	2209	19920204	SKIN:Burning sensation skin	Highly Probable
064	6104	19910810	SKIN:Burning sensation skin	Highly Probable
064	6110	19910905	SKIN:Burning sensation skin	Highly Probable
064	6112	19910920	SKIN:Burning sensation skin	Highly Probable
064	6112	19910928	SKIN:Burning sensation skin	Highly Probable
064	6112	19911008	SKIN:Burning sensation skin	Highly Probable
064	6118	19911111	SKIN:Burning sensation skin	Highly Probable
064	6120	19911114	SKIN:Burning sensation skin	Highly Probable
064	6202	19910812	SKIN:Burning sensation skin	Highly Probable
064	6206	19910904	SKIN:Burning sensation skin	Highly Probable
064	6208	19910911	SKIN:Burning sensation skin	Highly Probable
066	1106	19910901	SKIN:Burning sensation skin	Highly Probable
066	1121	19911023	SKIN:Burning sensation skin	Highly Probable

You can save the report specification for later use and results validation. All saved reports with an output filter ON are saved with the filter specification, and the filter will be active when relaunched.

To turn the Filter Output off:

1. Click **Filter is ON** and the CrossTab Output Filter window opens.
2. Click **New**.
3. Click **Save Filter** to save the cleared filter status before closing the Output Filter window.
4. The Report Browser window updates the button to **Filter Output** indicating NO Output Filter is defined.

---

## Define Runtime filters

---

### *Runtime parameter*

Defining runtime parameters is another way to select Output Filters to subset your patients and data observations. The object specification (reports, graphs, crosstabs) are first saved with the defined parameters. When the object specifications is executed the Output Filter View Choices window with the defined parameters displays for selection to the user.

The same basic steps used to define an output filter are used to select the panel, item and operator before you click **Define Parameter**.

Initially when you define the parameters you can specify the parameter type as free text, between two values, choose from a specified list, or choose from all possible values (Display Values).

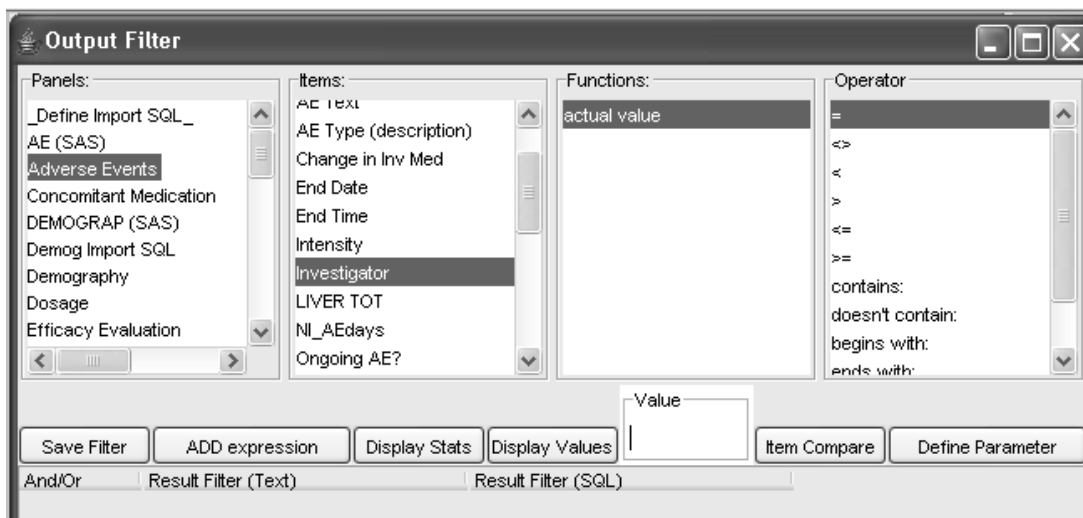
The defaulted parameter text can be edited to an end-user prompt or question.

Also, you can specify with a checkbox if filtering is required for the parameter. Otherwise, when the object is executed the user can click the 'Disable Filtering' checkbox prior to creating the output to not include filtering on a particular parameter.

This feature provides flexibility for the user to select various combinations of parameters to generate output containing different patients or data values.

The Define Parameter function is accessed within the Filter Output window in the various browsers (reports, graphs, crosstabs). You may combine standard output filter definitions along with defining parameters when you click Save Filter. The operating features of **Define Parameter** are similar to selecting a panel and item for an output filter. You have access to all panels and underlying data items when creating a parameter.

1. From the browser window, click the **Filter Output** button to open the Output Filter window.
2. Select a panel.
3. Select an item.
4. Select the operator.
5. Click **Define Parameter**.





The 'Runtime Filter Definition' window opens. You may replace the default text in the End User Prompt for field value(s) by typing over the description.

6. Select one of the **Parameter Value Choices**.

When selecting which parameter value choice to apply to your data you must consider the data type. For example, whether the data is date, numeric, free text or references a data dictionary file.

The free value entry can be used for free text data such as Adverse Event Text or Concomitant Medication Text.

The option to select a value between two value entries can be applied for date ranges or numeric laboratory and vital signs data.

Coded data referencing a data dictionary file is best defined by allowing the user to select from any values (Display Values) as the entry required is the coded value.

Large tables can be accessed for selecting values from an SQL statement.

**Runtime Filter Definition**

End User Prompt for field value(s):  
Adverse Events.Investigator <parm>

Parameter Value Choices

Free value entry

Value BETWEEN two value entries

List of value choices (comma separated) Select Values

List of value choices (comma separated)

Allow user to select from any values (Display Values)

Select any values (from a SQL statement) Check SQL

SQL details

Is filtering required for item?

ADD expression

7. Check if filtering is required for item? (optional)
8. Click **ADD expression**.
9. Repeat the steps to add another parameter.

The image shows a dialog box titled "Runtime Filter Definition" with standard window controls (minimize, maximize, close) in the top right corner. The dialog is divided into several sections:

- End User Prompt for field value(s):** A text input field containing "Enter Onset Date values BETWEEN|<parm>".
- Parameter Value Choices:** A section containing three radio button options:
  - Free value entry
  - Value BETWEEN two value entries
  - List of value choices (comma separated)A "Select Values" button is positioned to the right of the third option. Below the radio buttons is a text input field for "List of value choices (comma separated)".
- Allow user to select from any values (Display Values)
- Select any values (from a SQL statement)
A "Check SQL" button is positioned to the right of the second option.- SQL details:** A text input field for entering SQL details.
- Is filtering required for item?

At the bottom center of the dialog is a button labeled "ADD expression".

If you select the parameter option for '**Select any values (from a SQL statement)**', enter the SQL statement.

Click the **Check SQL** button which goes to the database and checks the SQL syntax then returns an Oracle error if present. Click **OK** to close the message window.

**Runtime Filter Definition**

End User Prompt for field value(s):  
Select Lab Test <parm>

Parameter Value Choices

Free value entry

Value BETWEEN two value entries

List of value choices (comma separated)

List of value choices (comma separated)

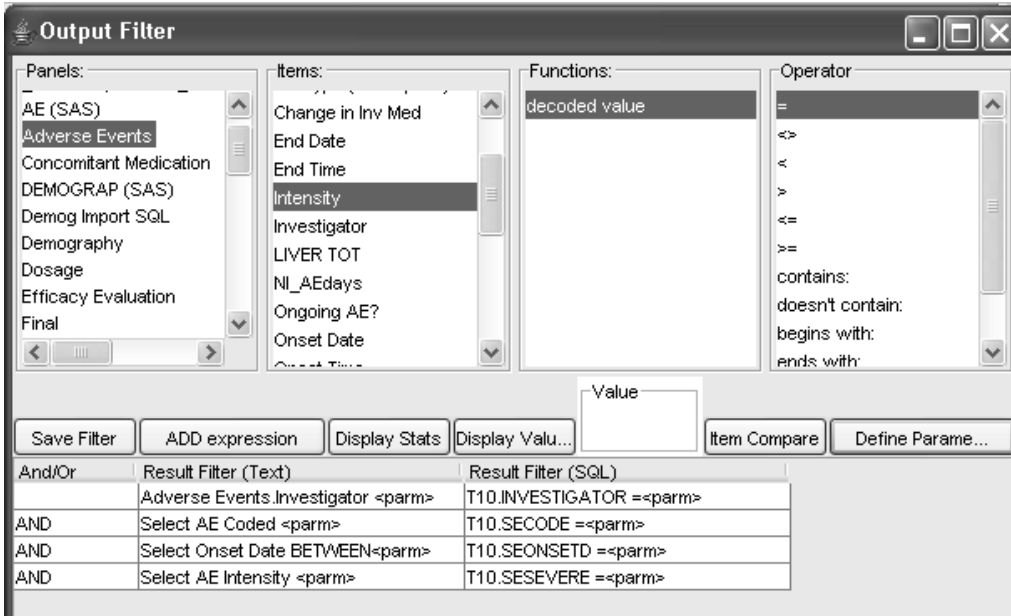
Allow user to select from any values (Display Values)

Select any values (from a SQL statement)

SQL details  
Select distinct T16.LABVAR from KA201.LABS\_Data T16

Is filtering required for item?

- Change the Boolean Operators in the Output Filter window if needed then click **Save Filter**.



### Enter runtime parameter

When the user executes a report, graph or crosstab object with runtime parameter prompts define, first they see the **Output Filter Parameters** window prompting for all parameters.

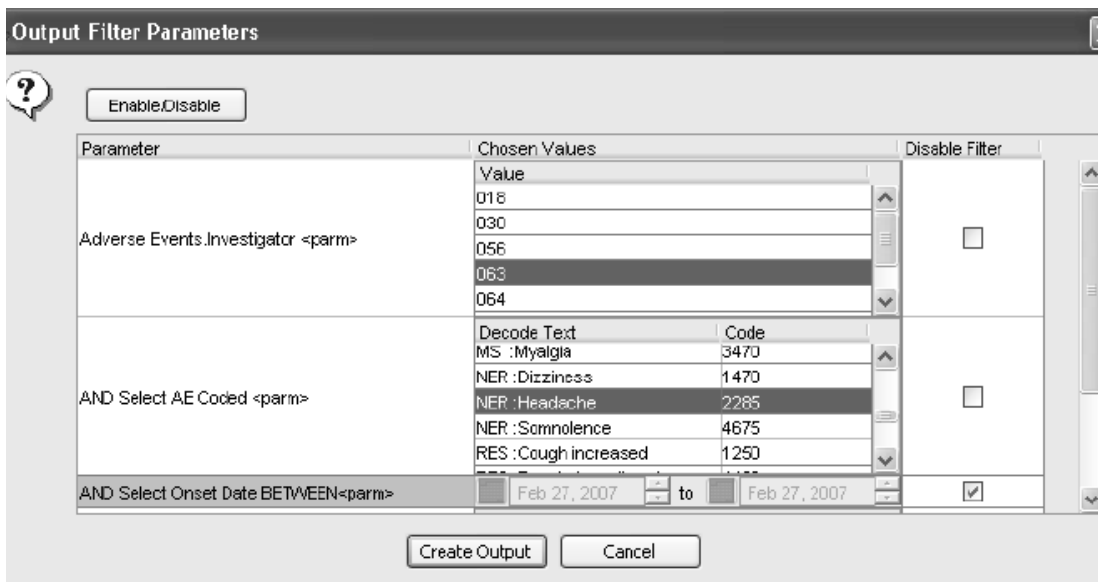
Use the scroll bar to the right to view multiple parameters within the window.

The user may select multiple parameters with the CTRL or SHIFT key in the Display Values option.

The 'Disable Filter' checkbox allows the user the flexibility to 'turn off' filtering for a particular item. If the 'Disable Filter' checkbox is grayed out then you cannot disable the runtime filter parameter as it was defined as required by the author in the output specification.

Click the 'Enable/Disable' button to enable or disable all the filters.

*Note: If the Parameter description appears truncated you can stretch the column width by dragging the header border.*

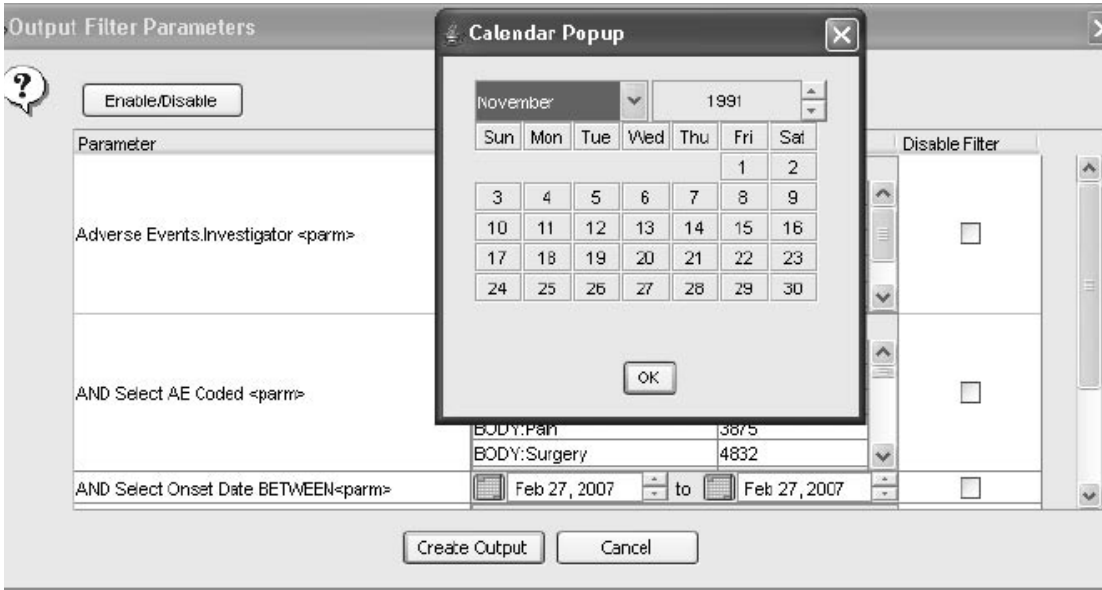


After making parameter selections, click **Create Output** to generate the results.

**AE list with runtime parameters**

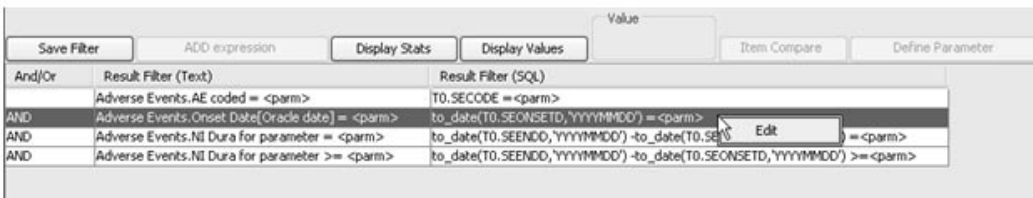
Investigator	Pat. No.	Onset Date	AE Coded	Intensity	Related to Inv Med?
063	2106	28-OCT-1991	NER : Headache	Mild	Not Related
063	2123	11-NOV-1991	NER : Headache	Mild	Not Related
063	2201	08-SEP-1991	NER : Headache	Mild	Not Related
063	2201	15-SEP-1991	NER : Headache	Mild	Not Related
063	2204	20-OCT-1991	NER : Headache	Mild	Not Related

If the parameter defines a date the scroll bar next to the date field may be used to select the month, day, and year or display a calendar for selection. Use the month and year scrolls selecting the day, click OK closes the calendar window. The selected date is displayed date field.



### Edit runtime filter

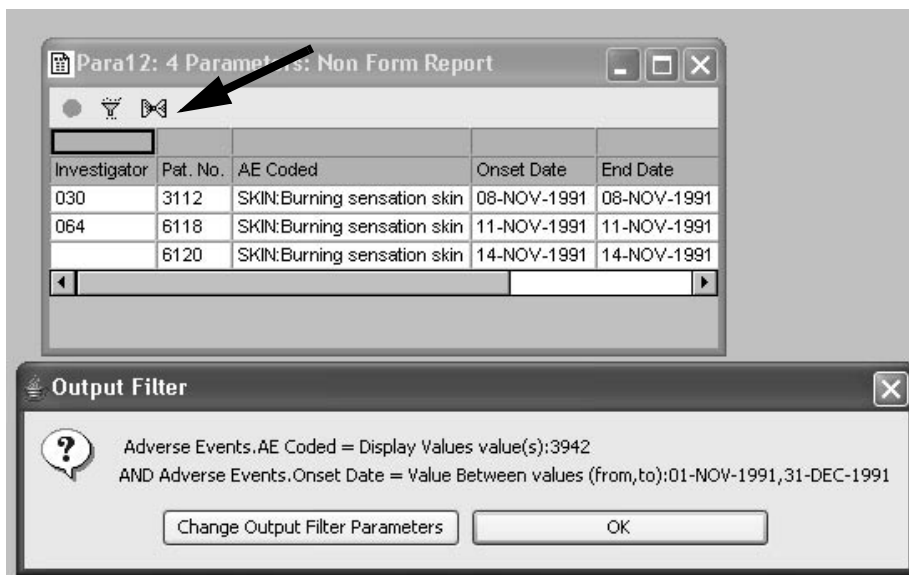
You may edit parameterized filter definitions for reports, graphs, and crosstabs. After opening the saved output specification, click on the **FILTER ON** button to display the Output Filter window. Right mouse click on the parameter line to be edited. A floating **EDIT** button displays to access the Parameter Definition window to apply edits.



---

## Reset filter parameters

After you have created your output to view the results, you have the option to change the parameter filters from a particular result view. Click the Output Filter icon in the output window to open the Output Filter window.



The Output Filter window opens to display the selected parameter details with the option to **Change Output Filter Parameters**.

1. Click **Change Output Filter Parameters** to return to the Output Filters Parameters window.
2. Enter different parameter values.
3. Click **Create Output** and the current output window is refreshed with the new output filter parameters.
4. If you simply want to view the Output Filter details, click **OK** and close the window.

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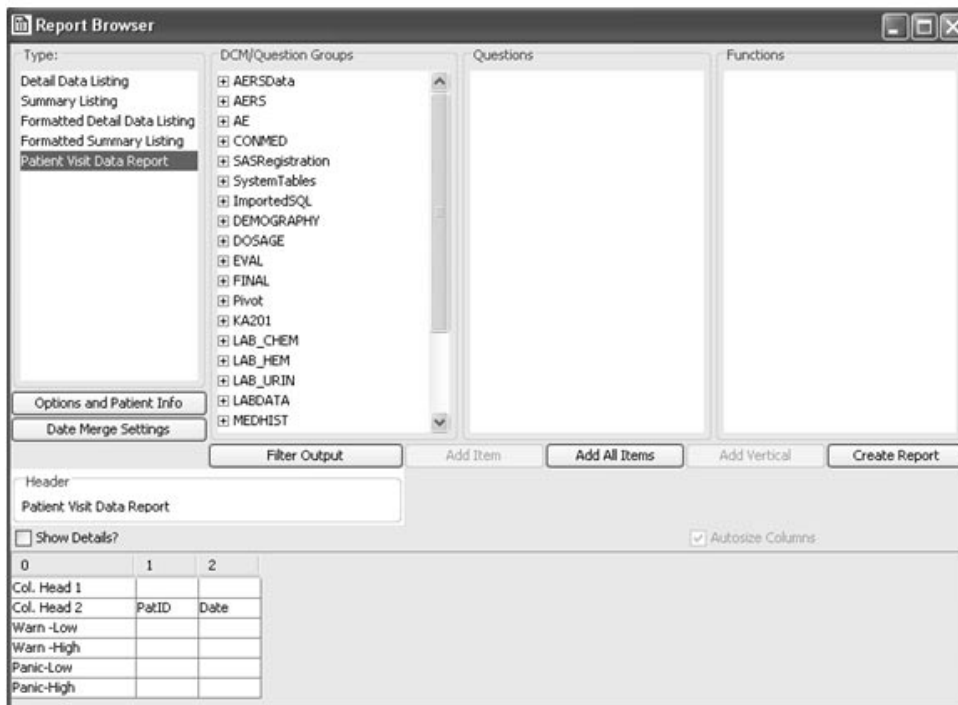
# Patient Visit Data Report

---

Select panel visit data report

The patient visit data report supports joining multiple visit data into a single report without the usual problems encountered with multiple joins. You can select data from different panels containing multiple visit data and the records are linked by the Visit Date.

If a record contains several date fields you have the option to select which date for reference in your report specification. Initially when you select this report type the PatientID and Visit Date are hard coded into the report and are required.



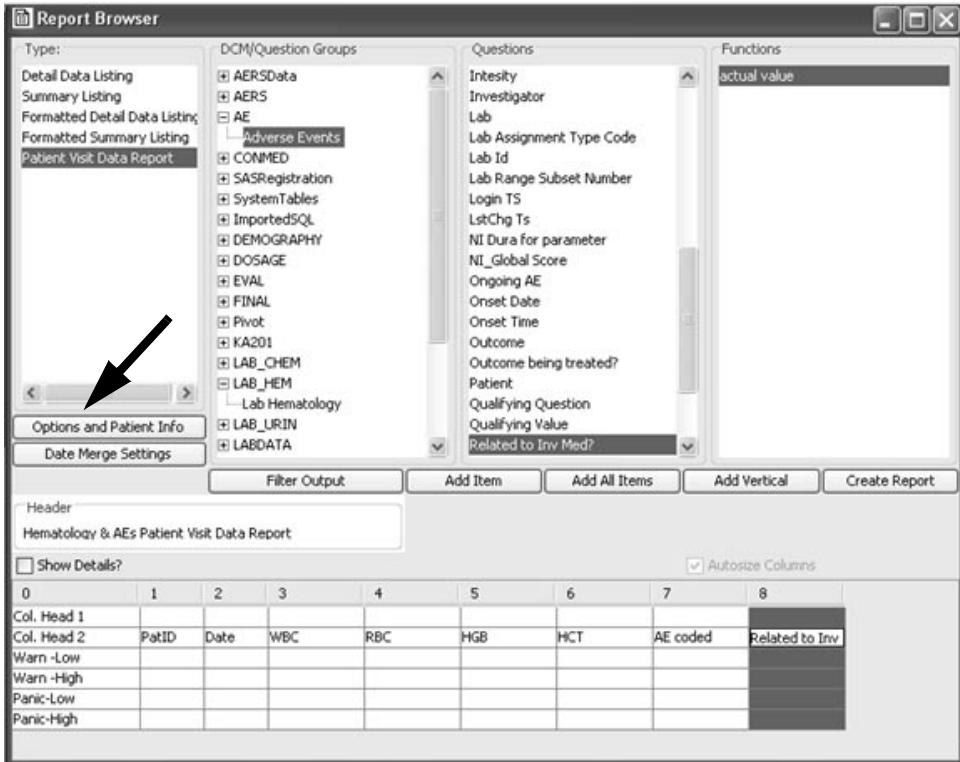


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## Define patient visit data report

You define the contents of a patient visit data report using the same method that you used to build the detail data listing:

1. Select a panel.
2. Select each item of interest.
3. For each item, select an appropriate function or use the default function type for the type of item selected.

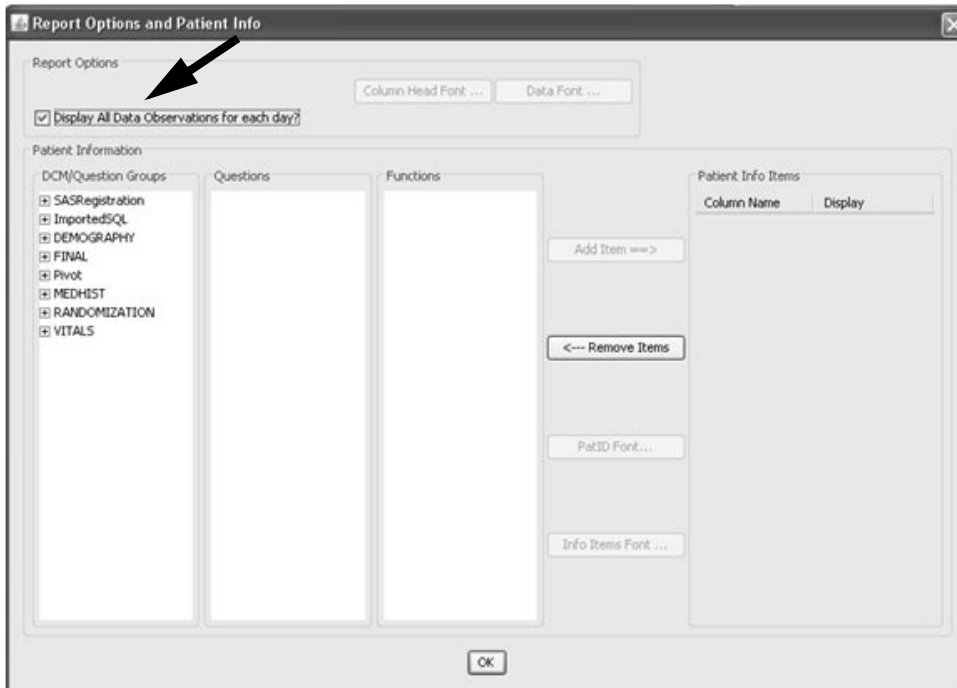


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## Report options

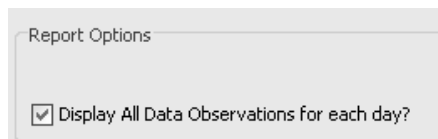
After adding all your items to the report template you can apply additional report options, patient information, formats and date merge settings.

4. Click **Options and Patient Info**. The Report Options and Patient Information window opens.



5. **Report Options** supports multiple observations with the default set to ON for '**Display All Data Observations for each day?**'. For example, if there are multiple Adverse Events with the same Onset Date, they'll be listed on separate report rows as floating for that patient. The first Adverse Event row listed displays the Onset Date details, the next Adverse Event displays on the next row with the date field blank implying that it's from the same Onset Date.

If you uncheck '**Display All Data Observations for each day?**' it only displays one value on the specified date, typically the last one for that date based upon the time/observation item setting.



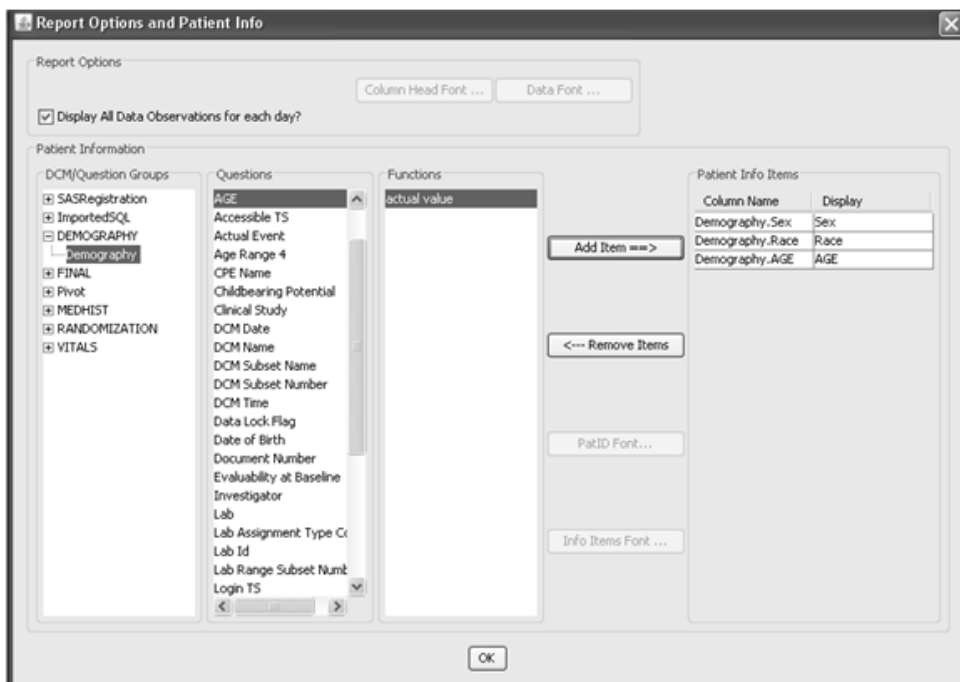
6. Optionally, click **Column Head Font** and **Data Font** to change fonts for Column Headers and Report Data. (*Future enhancement*)

---

## Add Patient Info Items

You can add patient information items to display as a column under the PatientID. For example, demographic or medical history information.

7. Select the panel and item.
8. Click **Add Item** and **Remove Item** to add or remove items from the Patient Info Items list.



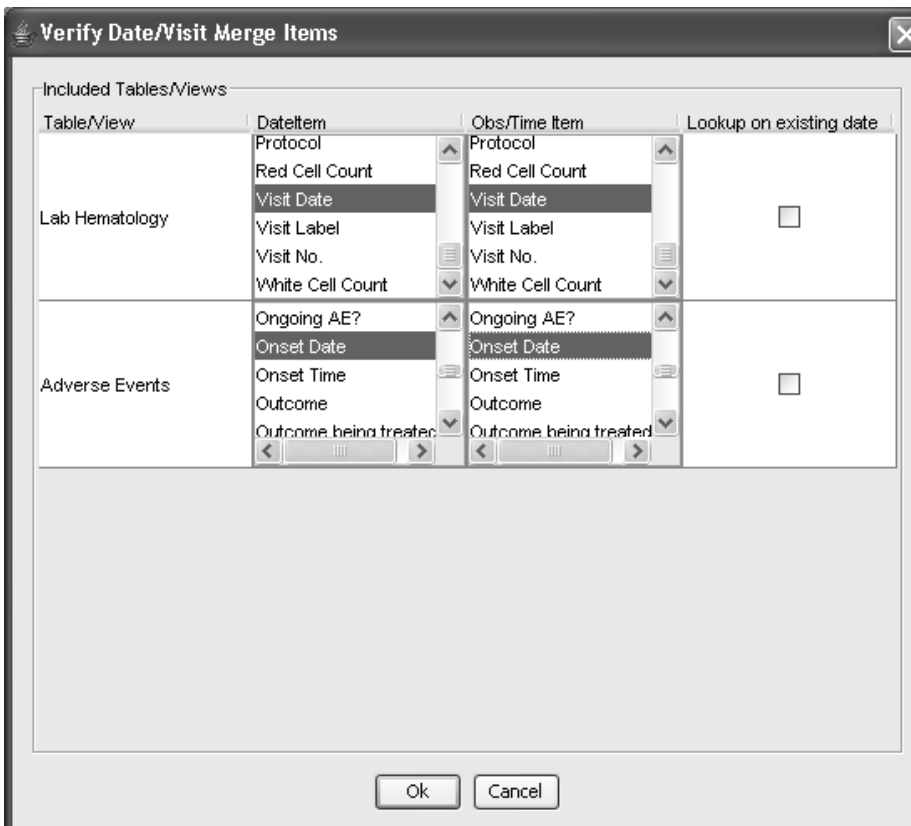
9. Optionally, click **PatID Font** and **Info Item Font** to apply fonts for PatID and Info Items. (*Future enhancement*)
10. Click **OK**.

---

## Define Date Merge Settings

When you add items to your report specification the Visit Date is defaulted for all selected panels. If a panel contains multiple date fields you have the option to specify a more appropriate date. For example, if Onset Date is preferred in the Adverse Events panel instead of the default Visit Date. A message displays requiring you to select a specific date item if you included panels containing multiple dates.

11. Click **Date Merge Settings**. The Verify Date/Visit Merge Items window opens.



12. Select the preferred Date Item and Obs/Time Item for each table/View.
13. Click **OK**.
14. Enter a report Heading.
15. Click **Create Report**.

Create Patient Visit Data Report

Observe the Adverse Events where the Onset Date is different from the Visit Date and displays on a new row. This distinguishes the Adverse Event data from the scheduled visit data for the Hematology results.

If a time/observation item were applicable it only orders items within it's own panel or table, so joined panels are independent of each other regarding sort.

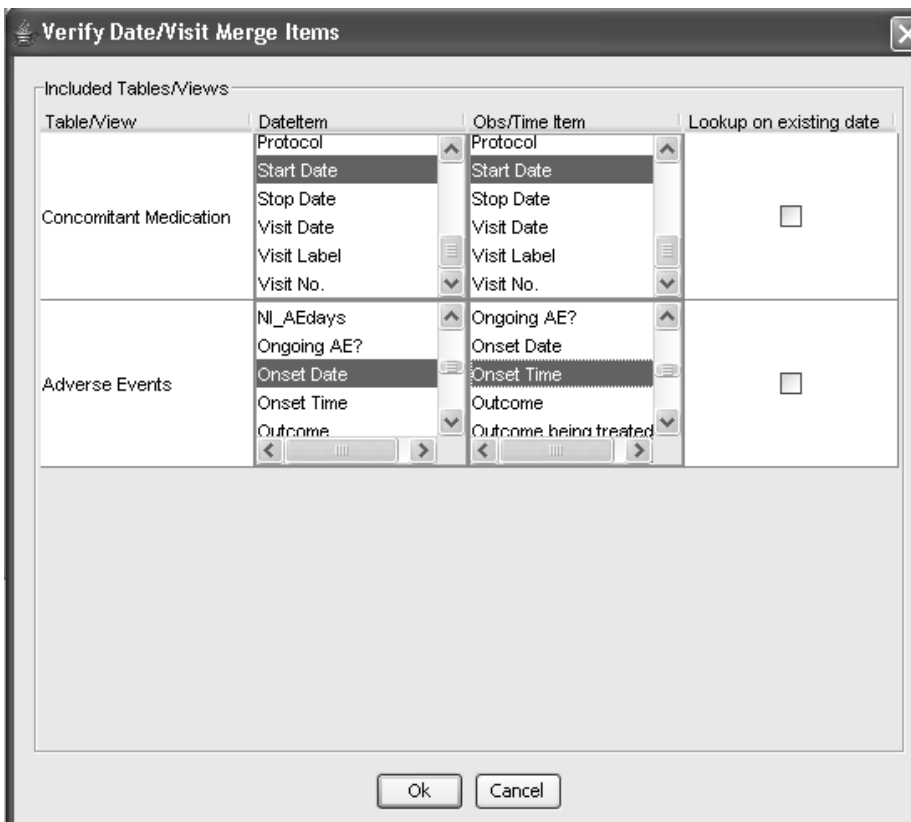
Hematology & AEs Patient Visit Data Report - Subset of patients								
PatID	Date	WBC	RBC	HGB	HCT	AE Onset Date	AE Coded	AE related to Inv Med?
2010184208	10-07-1991	4.7	4.7	13.3	40.2	07-OCT-1991	SKIN:Burning sensation skin	Possible
						07-OCT-1991	SKIN:Pruritus	Possible
	11-05-1991	4.2	4.6	13.1	39.5			
2010303111	08-16-1991	8.3	5.2	13.8	41.4			
	09-04-1991					04-SEP-1991	DIG :Duodenal ulcer	Not Related
2010303112	10-25-1991	6.5	5.2	15.6	47.5			
	11-08-1991					08-NOV-1991	SKIN:Burning sensation skin	Possible
	11-22-1991	6.8	5.4	16.8	50.4			
2010303205	09-09-1991	7.1	4.7	13.7	41.7			
	09-16-1991					16-SEP-1991	SKIN:Burning sensation skin	Highly Probable
	10-08-1991	7.9	4.8	14.5	43.2			
2010303206	09-10-1991	5.4	5.1	15.3	45.8			
	10-08-1991					08-OCT-1991	DIG :Vomiting	Not Related
						08-OCT-1991	DIG :Diarrhea	Not Related
	10-09-1991	5.3	5.1	15	44.7			
2010565102	07-09-1991	6.9	4.5	13.6	42			
	07-23-1991					23-JUL-1991	UG :Urinary tract infection	Not Related
	08-06-1991	10.7	4.4	13.6	40			
2010565109	09-23-1991	7.8	4.2	12.7	38.6			
	10-11-1991					11-OCT-1991	BODY:Back pain	Not Related
	10-14-1991	6.9	4.5	13.6	40.9			
2010565111	10-09-1991	7.4	5.1	15	45			
	11-01-1991					01-NOV-1991	NER :Headache	Not Related
	11-02-1991					02-NOV-1991	RES :Cough increased	Not Related
	11-06-1991	7.1	5	14.8	43.9			

*Lookup on existing date*

A 'Lookup' question within the DateMerge dialog allows you to control which data contributes dates or to only lookup on existing dates. In the following patient visit data report example, data was specified for Conmeds and Adverse Events.

Header							
Concmed & AE Patient Visit Data Report							
<input type="checkbox"/> Show Details?						<input checked="" type="checkbox"/> Autosize Columns	
0	1	2	3	4	5	6	7
Col. Head 1	1						
Col. Head 2	PatID	Date	Drug Code	Dose	Onset Date	AE Coded	Intensity
Warn -Low							
Warn -High							
Panic-Low							
Panic-High							

The first listing shows the DateMerge lookup questions with the default settings for 'NO'.



A patient selection criteria was applied to select only the patients for Investigator 063. The listing shows all records are displayed if present for Conmeds and Adverse Events.

Concmed & AE Patient Visit Data Report , INV 063 - Subset of patients						
PatID	Date	Drug Code	Dose	Onset Date	AE Coded	Intensity
2010184208	01-01-1974	ESTROGENS CONJUGATED	25			
	01-01-1990	CIMETIDINE	400			
		VERAPAMIL HYDROCHLORIDE	180			
	10-07-1991			07-OCT-1991	SKIN:Burning sensation skin	Moderate
				07-OCT-1991	SKIN:Pruritus	Moderate
2010303111	09-01-1976	ESTRADIOL	1			
	09-04-1991			04-SEP-1991	DIG :Duodenal ulcer	Severe
	09-05-1991	RANITIDINE	150			
2010303112	(missing)					
	11-08-1991			08-NOV-1991	SKIN:Burning sensation skin	Mild
2010303205	01-01-1981	DILTIAZEM HYDROCHLORIDE	90			
		CIMETIDINE	300			
		METOPROLOL TARTRATE	50			
	09-16-1991			16-SEP-1991	SKIN:Burning sensation skin	Mild
2010303206	(missing)					
	10-08-1991			08-OCT-1991	DIG :Vomiting	Mild
				08-OCT-1991	DIG :Diarrhea	Mild
2010565102	07-23-1991	NITROFURANTOIN	50	23-JUL-1991	UG :Urinary tract infection	Moderate
2010565109	01-01-1971	ESTROGENS	1			
		MEDROXYPROGESTERONE ACETATE	3			
	05-31-1990	METRONIDAZOLE	1			
	10-11-1991	ORPHENADRINE CITRATE	1	11-OCT-1991	BODY:Back pain	Moderate
2010565111	11-01-1991	ACETAMINOPHEN	1	01-NOV-1991	NER :Headache	Mild
	11-02-1991	BENADRYL EXPECTORANS	2	02-NOV-1991	RES :Cough increased	Mild
2010565112	10-23-1991	LIDOCAINE HYDROCHLORIDE	2	23-OCT-1991	BODY:Surgery	
2010565113	10-28-1991			28-OCT-1991	DIG :Sore throat	Mild
	10-29-1991	BUFFERED ASPIRIN	2			

The next report output shows the Conmed lookup on existing date question is checked ON. Now the listing displays only those Conmed records with the same date as the Adverse Event records. Conmed records with a different date than the Adverse Event records are dropped from the report.

Conmed = YES, AE=NO						
	A	B	C	D	E	F
1	PatID	Date	Drug Code	Onset Date	AE Coded	Intensity
2	2010632113	05-04-1992		05/04/1992	SKIN: Burning sensation skin	Mild
3						
4	2010632123	11-11-1991		11/11/1991	NER :Headache	Mild
5						
6	2010632125	01-19-1992	TERFENADINE	01/19/1992	RES :Sinusitis	Mild
7		02-02-1992	TERFENADINE	02/02/1992	RES :Sinusitis	Mild
8		02-09-1992	TERFENADINE	02/09/1992	RES :Sinusitis	Mild
9						
10	2010632127	02-25-1992		02/25/1992	SKIN: Burning sensation skin	Mild
11						
12	2010632201	09-08-1991	IBUPROFEN	09/08/1991	NER :Headache	Mild
13		09-15-1991	IBUPROFEN	09/15/1991	NER :Headache	Mild
14						
15	2010632204	10-13-1991	ALKA SELTZER PLUS	10/13/1991	RES :Upper respiratory infection	Mild
16		10-20-1991	IBUPROFEN	10/20/1991	NER :Headache	Mild
17						
18	2010632207	02-03-1992	COMMON COLD DRUGS, SYMPTOMATIC	02/03/1992	RES :Upper respiratory infection	Mild
19		02-12-1992	ACETAMINOPHEN	02/12/1992	RES :Sinusitis	Mild
20						

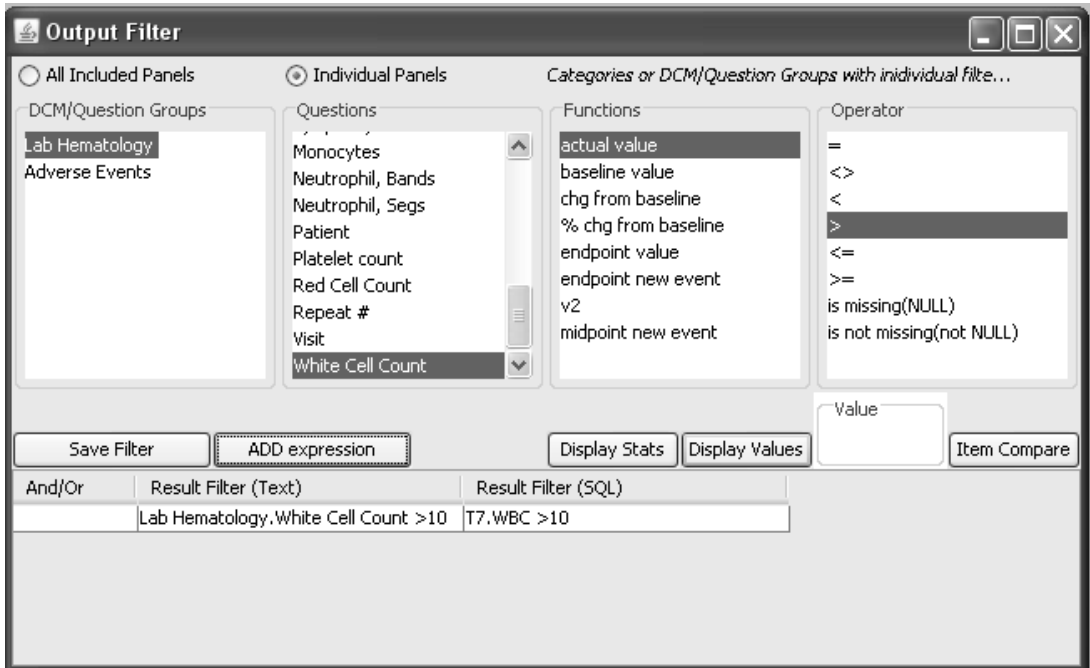
### Apply output filter

After you define the specifications of your patient visit data report, you can use the Filter Output to filter data for inclusion comparing filtered and unfiltered results.

1. Click the **Filter Output** button in the Report Browser window. The Output Filter window opens.
2. The **All Included Panels** option allows you to define an output filter based on those items present in all the included panels. This option will apply the output filter across all panels included in the patient visit data report.
3. The **Individual Panels** option allows you to define an output filter based on specific panels and items. This option will apply the output filter across to specific panels.



- The output filter looks and operates similar to the patient selection criteria window. Select the panel item and value or range value to create a row filtering criteria. The selection of the values or range values are supported by **Display Stats** and **Display Values**.



- Click **Save Filter**.

The **Filter Output** button in the Report Browser window toggles to **Filter is ON**. The output filter is applied to the report output when you click **Create Report**.

---

## Add vertical lab

For a vertical lab panel it is necessary to select the 'Lab Value' and pivot the individual selected lab data items. Select a vertical lab panel and access a 'Lab Value' item (data items representing the lab result) then click the 'Add Vertical' button which functions to pivot the item. A list displays for all the lab variable names where you select the lab items to add to your report template. The lab item displays a column for the selected lab test to the report while the data is being pulled dynamically from the vertical lab table. Repeat each step to add more lab data items to the report display.

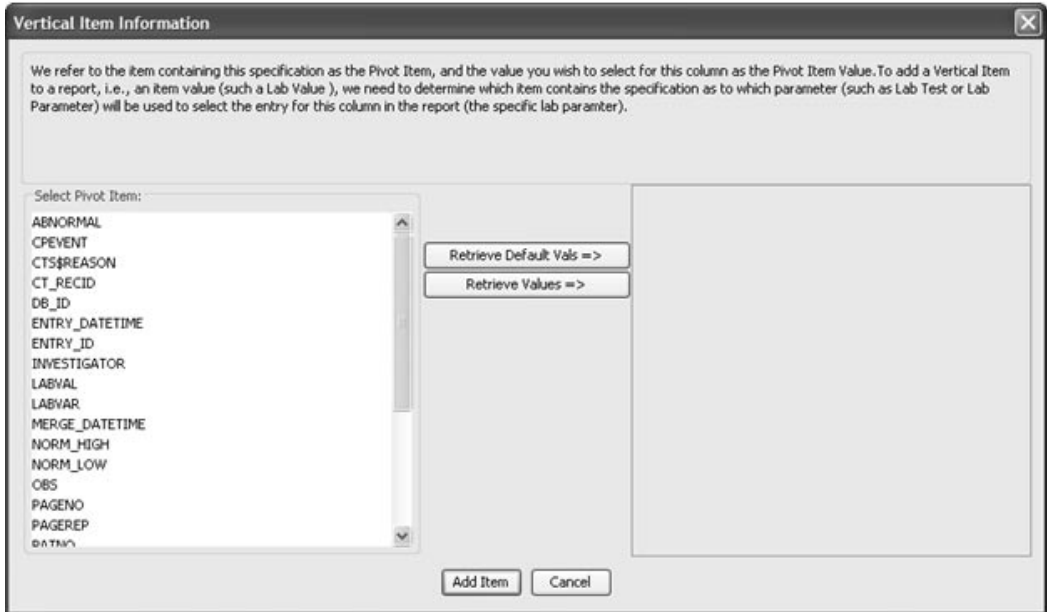
1. Select a vertical lab panel.
2. Select the 'Lab Value' and click **ADD Vertical**.

The screenshot shows the 'Report Browser' application window. The 'Panels' list on the left has 'Labs' selected. The 'Items' list in the center has 'LABVAL' selected. The 'Functions' list on the right has 'actual value' selected. At the bottom, the 'Add Vertical' button is highlighted. Below the buttons, the 'Header' field contains 'Patient Visit Data Report'. The 'Show Details?' checkbox is unchecked, and the 'Autosize Columns' checkbox is checked. A table is displayed at the bottom of the window.

0	1	2
Col. Head 1	1	
Col. Head 2	PatID	Date
Warn -Low		
Warn -High		
Panic-Low		
Panic-High		

The **Vertical Item Information** window opens. The instructions explain how to select the data item which represents the individual lab tests.

3. Select the Pivot Item Value, i.e., the item which contains the test name or description.
4. Click **Retrieve Values**.

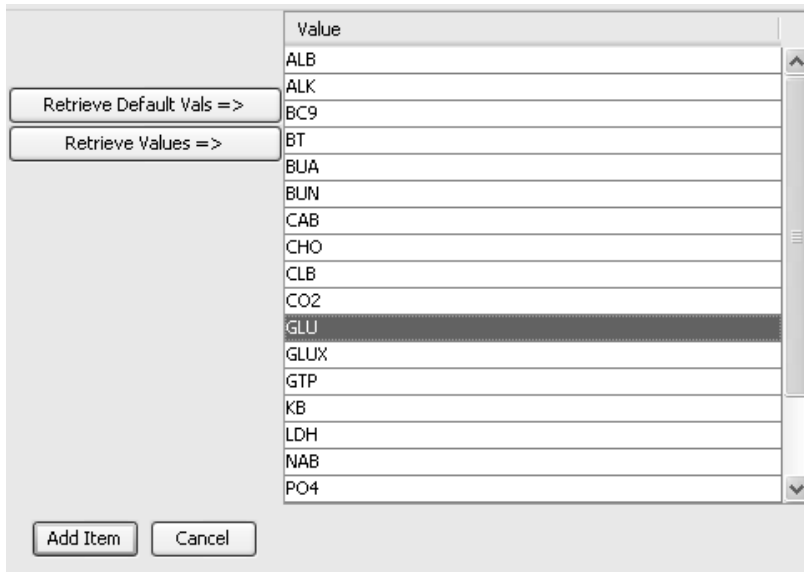


The "**Retrieve Default Vals**" button is only enabled for Oracle Clinical database and calls a JRServer command to gather the list contents on right of dialog.

The difference between the two buttons is the **Retrieve Values** button returns a list of unique values (similar to the Display Values), by accessing the actual data table and returning the unique occurrences in the data. This may be a slow process for large tables such as Labs.

The **Retrieve Default Vals** button instead accesses a list of values from a table available in Oracle Clinical which essentially has a list of possible values. This will impact for faster performance. JReview supports this feature automatically as the user is accessing their Oracle Clinical database, and they're accessing a field that has the table information behind it to support this access. Not all columns have that information in Oracle Clinical.

5. Select the **Pivot Item Value** and click **ADD Item**.



6. Repeat the steps to add additional lab parameters to the report.

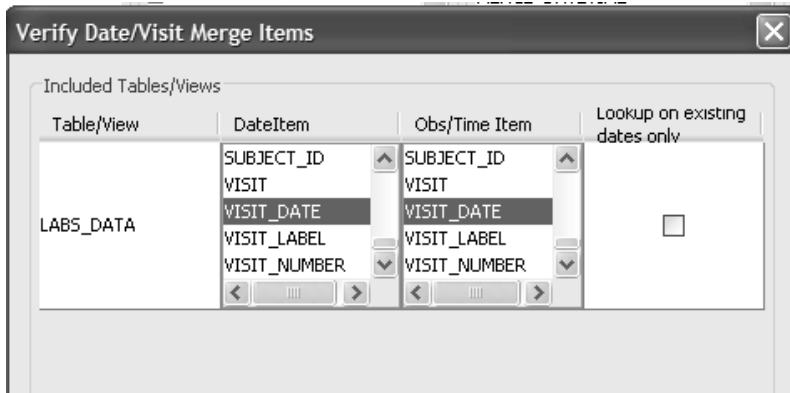
Header  
Vertical Labs Patient Visit Data Report

Show Details?  Autosize Columns

0	1	2	3	4	5	6
Col. Head 1	1					
Col. Head 2	PatID	Date	VISIT	GLU	CHO	TRI
Warn -Low						
Warn -High						
Panic-Low						
Panic-High						

7. Add report options for patient information and apply formats (*optional*).

8. Enter Date Merge Settings (required).



9. Enter a report Heading.

10. Click **Create Report**.

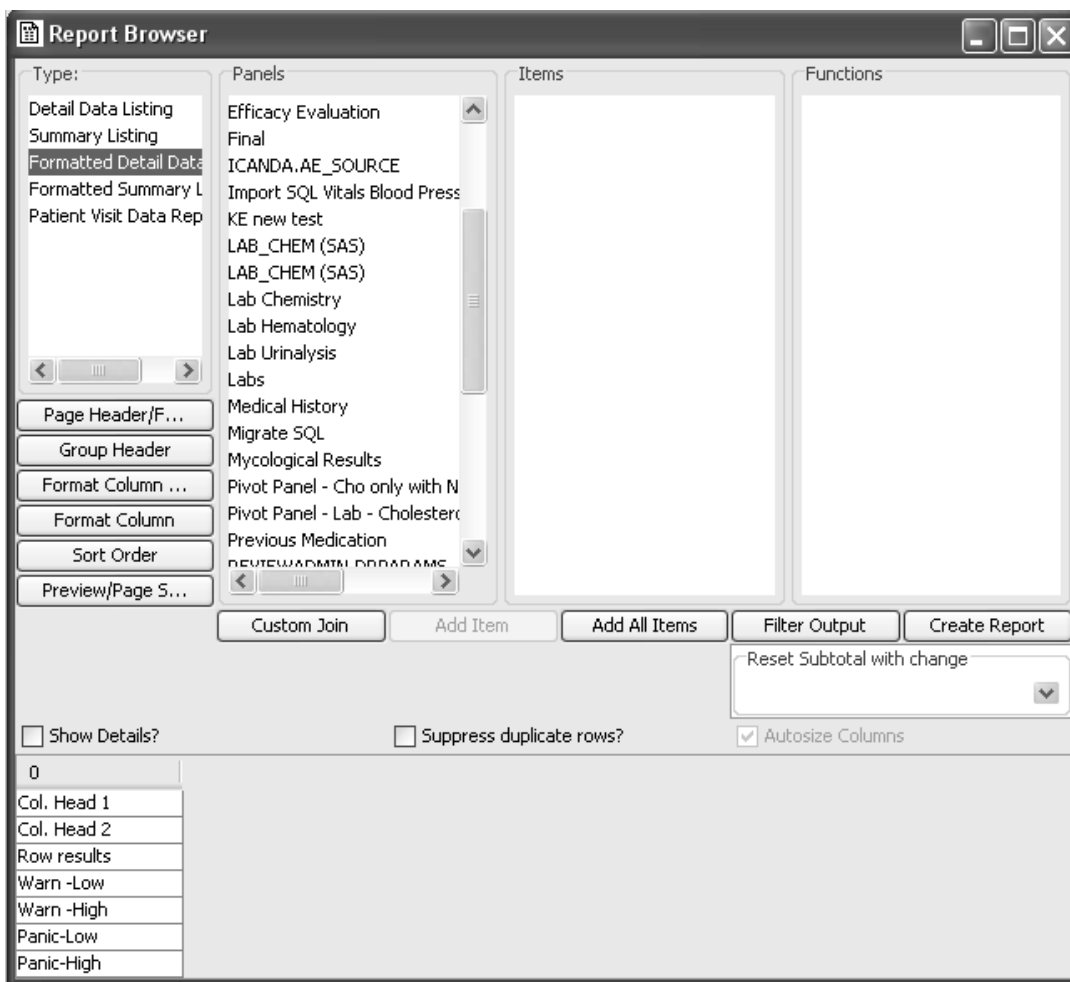
PatID	Date	GLU	CHO	TRI
1101	08-12-1991	71.4	171.7	56.1
	08-17-1991	84	202	66
	08-23-1991	94.08	226.24	73.92
1102	08-14-1991	82.45	244.8	473.45
	08-19-1991	97	288	557
	08-25-1991	108.64	322.56	623.84
	09-11-1991	107	238	310
	09-16-1991	126.26	280.84	365.8
1103	08-15-1991	72.25	209.95	87.55
	08-20-1991	85	247	103
	08-26-1991	95.2	276.64	115.36
	09-12-1991	91	241	91
	09-17-1991	107.38	284.38	107.38
1104	08-19-1991	81.6	130.9	68
	08-24-1991	96	154	80
	08-30-1991	107.52	172.48	89.6
	09-18-1991	79	136	125
	09-23-1991	93.22	160.48	147.5
1105	08-22-1991	82.45	215.9	201.45
	08-27-1991	97	254	237
	09-02-1991	108.64	284.48	265.44
	09-19-1991	110	255	289
	09-24-1991	129.8	300.9	341.02

# Formatted reports

## Select formatted listing type

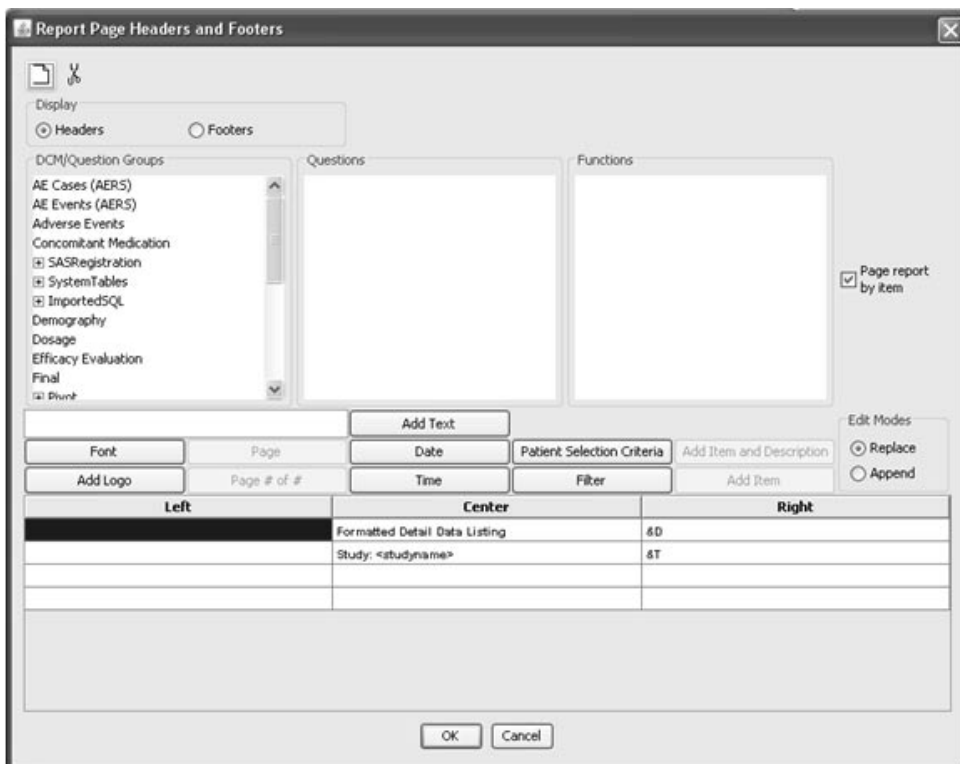
When you select the report type for Formatted Detail Data Listing or Formatted Summary Listing the associated function buttons are displayed. JReview provides default formats to assist in the report setup. Overall report default settings are:

- Font is Arial.
- Page Setup for landscape with one inch margins.



To enter descriptive information to the Header and Footer area:

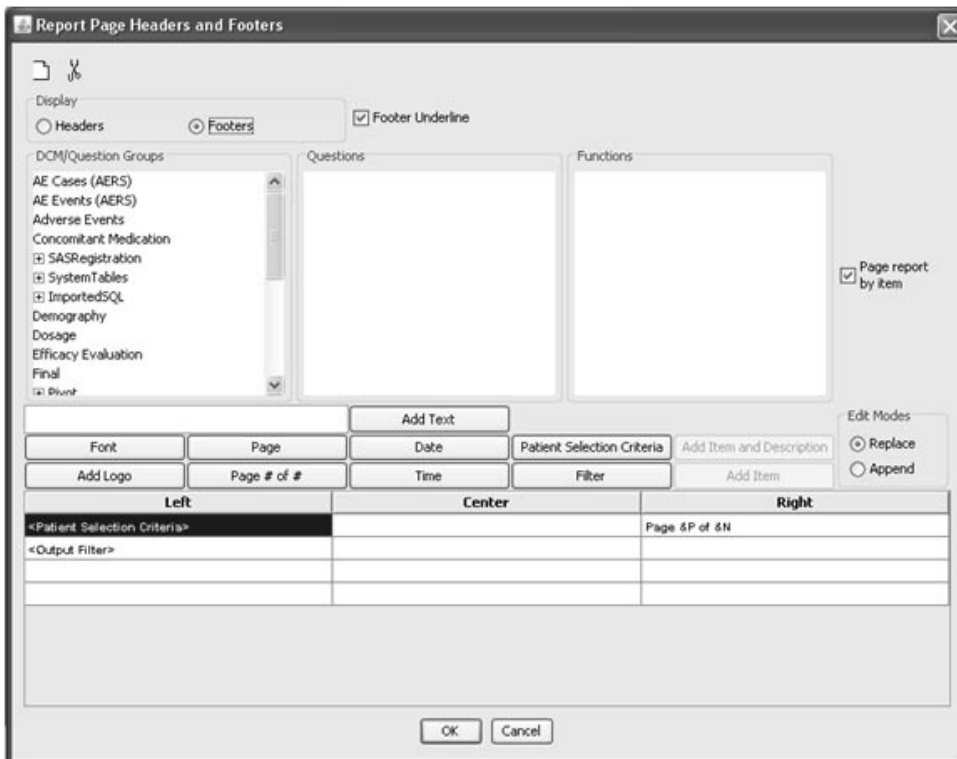
1. Click on the Page Header/Footer button to open Report Page Headers and Footers window. The default settings for headers are:
  - a. Default title is the report type displayed in the center cell as Formatted Detail Data Listing or Formatted Summary Listing.
  - b. Date and Time on the right.
  - c. Font is BOLD 10.
  - d. Page Report By Item.



2. Click a particular column/row cell within the template for your item or text entry location. Each cell can contain up to two items.
3. Use the Edit Modes to Replace or Append changes.
4. Use the various item button selections to add Header information and the Add Text button to enter free text descriptions. You may click on a cell and use the scissors icon to delete the contents.
5. Select an item to generate a page break in your report for a specified item with **Page Report By Item**.

*Note: It is not required to have an item be defined as a page by item, and more than one item can be defined.*

6. Click the Font button to change font, style and size.
7. Optionally, **Add Logo** to either Header or Footer definition. The display contents of 'logo.gif' file is located in the JR Server directory.
8. Click Display Footers. Follow the same steps to enter and make changes to the footer. The default settings for footers are:
  - a. Patient Selection Criteria and Output Filter on the Left.
  - b. Page number on the right.
  - c. Underline above the footer.
  - d. Font is BOLD 10.
9. Turn the Footer Underline ON or OFF.
10. Click **OK** to save Header and Footer.

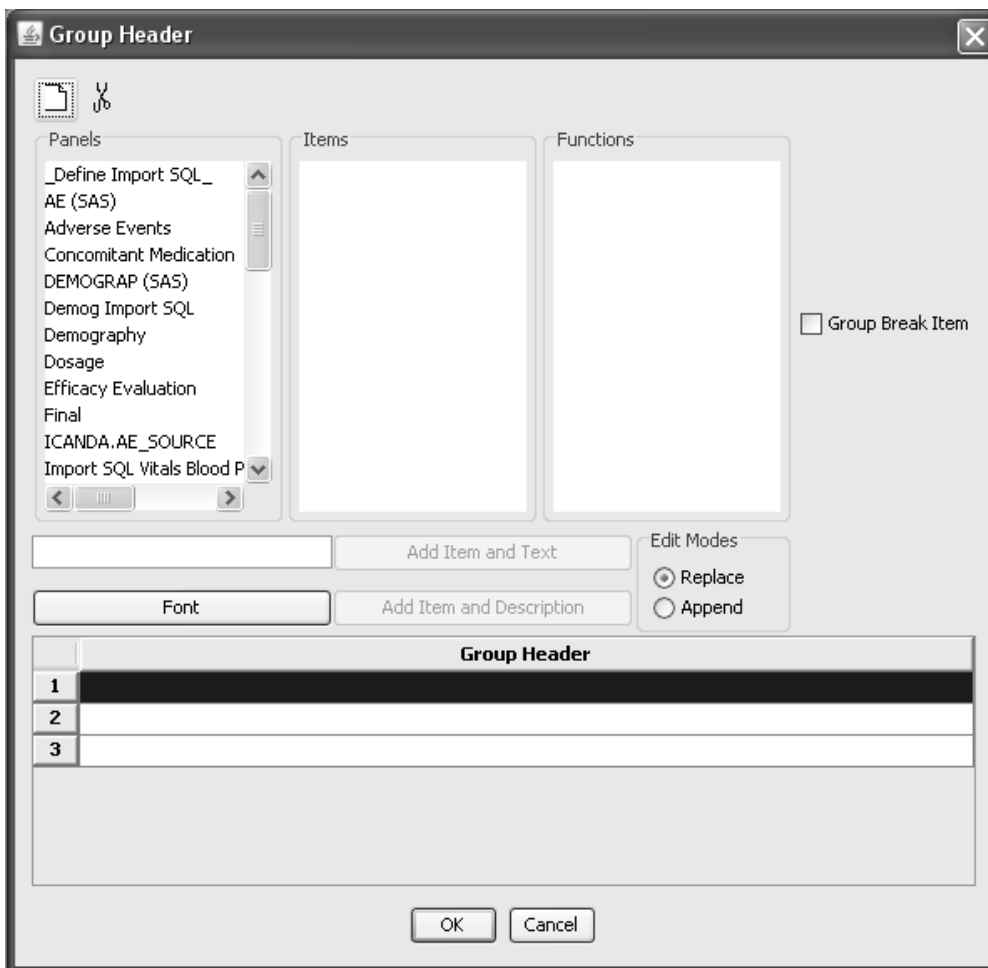




---

*Enter a Group Header*

1. Click on the Group Header button to open the Report Group Header window.



2. Enter panel and item selection to the Group Header with the Edit Mode buttons to Replace or Append changes.

Only one item can be defined as the Group Break item.

There is a maximum of 4 group headers consisting of 3 rows each.

3. Click the Font button to change font, style and size.

The default setting for font is BOLD 10.

4. Use the Add Item and Text button to enter items.

If you do not enter a free text description, the item will be added alone without text or description.

Text cannot be added alone without an item.

5. Click on a row and use the scissors icon to delete the contents.

6. Click **OK**, to save Group Header.

---

## Format Column Headings

To open the Report Column Headings Formatting window click on the Format Column Headings button. The default settings for all column headings are:

- Font is BOLD 8.
- Alignment - Center.
- Borders set to Underline and Underline Group Heading is ON.

**Format Column Headings**

Column Group Headings

Font  Borders  
 Top line and Underline  
 Underline

Alignment  
Center

Specific Column Header Formats

	A	B	C	D	E
Col. Head 1					
Col. Head 2	Investigator	Pat. No.	Visit No.	BUN	Bilirubin
Alignment	Center	Center	Center	Center	Center

Column Group Headings

Columns  
Investigator  
Pat. No.  
Visit No.  
BUN  
Bilirubin  
Glucose  
Sodium  
Potassium  
Chloride  
CO2

Column Group Heading

Column Group Headings

Add Group Heading -->  
<-- Remove Group Heading  
 Underline Group Heading

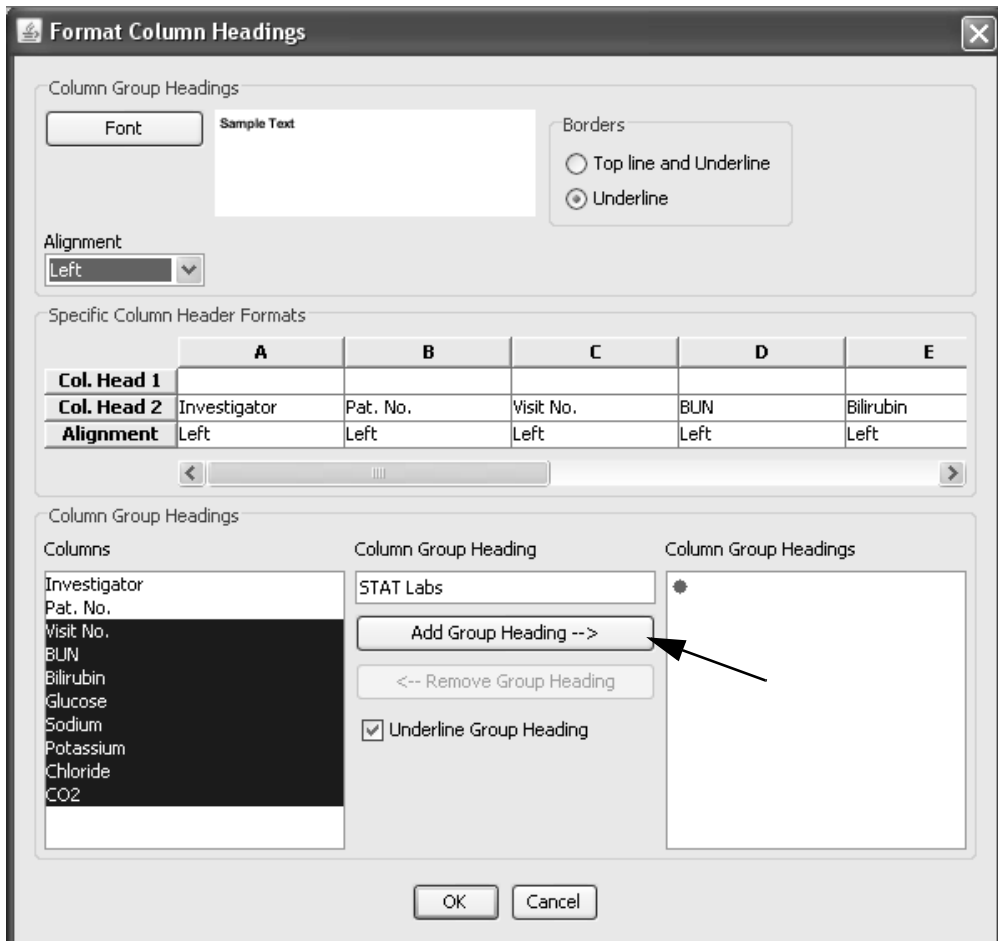
OK Cancel

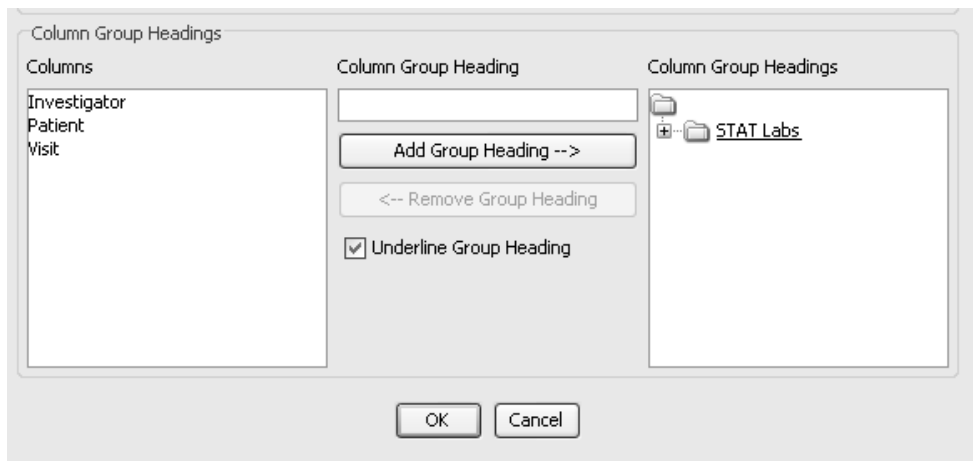
**To apply Overall Column Header Formats:**

1. Click the Font button to change font, style and size.
2. Change the borders.
3. Apply a Specific Column Header Format by clicking the drop down list for alignment. Change from default center to auto, left, or right.  
Edit the column headings for Col. Head 1 and Col. Head 2 from the Report Browser window. See edit column heading.

**To apply Column Group Headings:**

4. Highlight the items you want included in the group.
5. Enter a Column Group Heading.
6. Click Add Group Heading.





7. Use **Remove Group Heading** to make changes. If a Column Group Heading is removed the items are added back to the list columns in the original order.
8. Click box to **Underline the Group Heading**.
9. Click **OK**, to save Format Column Headings.

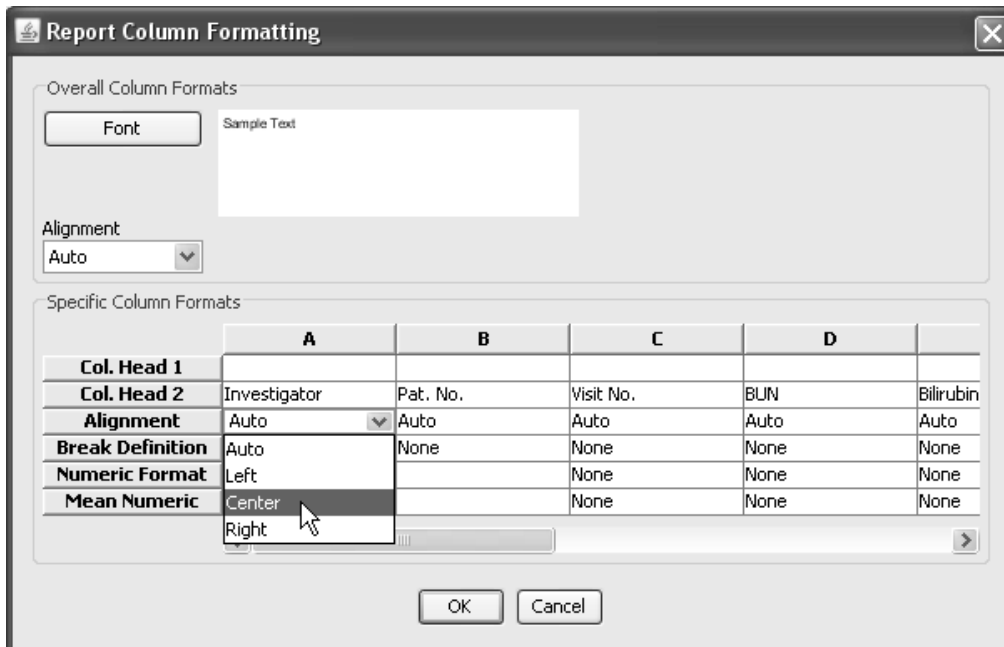
1. To open the Report Column Formatting window, click on the **Format Column** button.

The default setting alignment is automatic based on the data type.  
Break definition is set to none and font is regular 8.

2. Click **Overall Column Formats** to apply overall formats to font, style and size. The overall Alignment is Auto.

Or, you can apply individual Specific Column Formats.

3. Click the **Alignment** drop down list to align the item display for auto, left, center, or right.
4. Click the **Break Definition** drop down list for None, Skip line, Underline, Page.



- Click the **Numeric Format** drop down list for any numeric item included as a column in the report.

The best way to use the Percent Numeric format option is to apply it to a calculated field that is a percentage which has not been multiplied by 100. For example, if the calculated field is 0.67 percent and you apply the % format to display as 67%.

The Boolean numeric format would be used on a calculated field where '0=False' and all other numeric values will display as 'True'.

Specific Column Formats

	A	B	C	D	E	F
<b>Col.Head 1</b>						
<b>Col.Head 2</b>	Investigator	Pat. No.	Visit No.	Glucose	BUN	Na
<b>Alignment</b>	Auto	Auto	Auto	Auto	Auto	Auto
<b>Break Definition</b>	None	None	None	None	None	None
<b>Numeric Format</b>			None	None	None	None
<b>Mean Numeric Format</b>			None	None	None	None

Dropdown menu for Numeric Format: #.#, #.##, #.###, #.####, #.#####

Specific Column Formats

	A	B	C	D	E	F
<b>Col.Head 1</b>						
<b>Col.Head 2</b>	Investigator	Pat. No.	Visit No.	Glucose	BUN	Na
<b>Alignment</b>	Auto	Auto	Auto	Auto	Auto	Auto
<b>Break Definition</b>	None	None	None	None	None	None
<b>Numeric Format</b>			None	None	None	None
<b>Mean Numeric Format</b>			None	####	None	None

Dropdown menu for Mean Numeric Format: #.####, #.#####, Percent, Currency, Boolean

The numeric formatting is also available for Change from Baseline and %Change from Baseline items.

- Click the **Mean Numeric Format** drop down list for any row result defined as Mean, Mean at Change or Mean at Change and Mean.

Specific Column Formats

	A	B	C	D	E	F
<b>Col.Head 1</b>						
<b>Col.Head 2</b>	Investigator	Pat. No.	Visit No.	Glucose	BUN	Na
<b>Alignment</b>	Auto	Auto	Auto	Auto	Auto	Auto
<b>Break Definition</b>	None	None	None	None	None	None
<b>Numeric Format</b>			None	None	None	None
<b>Mean Numeric Format</b>			None	None	None	None

				### #### ##### ##### Percent Currency		
--	--	--	--	--	--	--

- Click **OK**, to save Report Column Formatting.



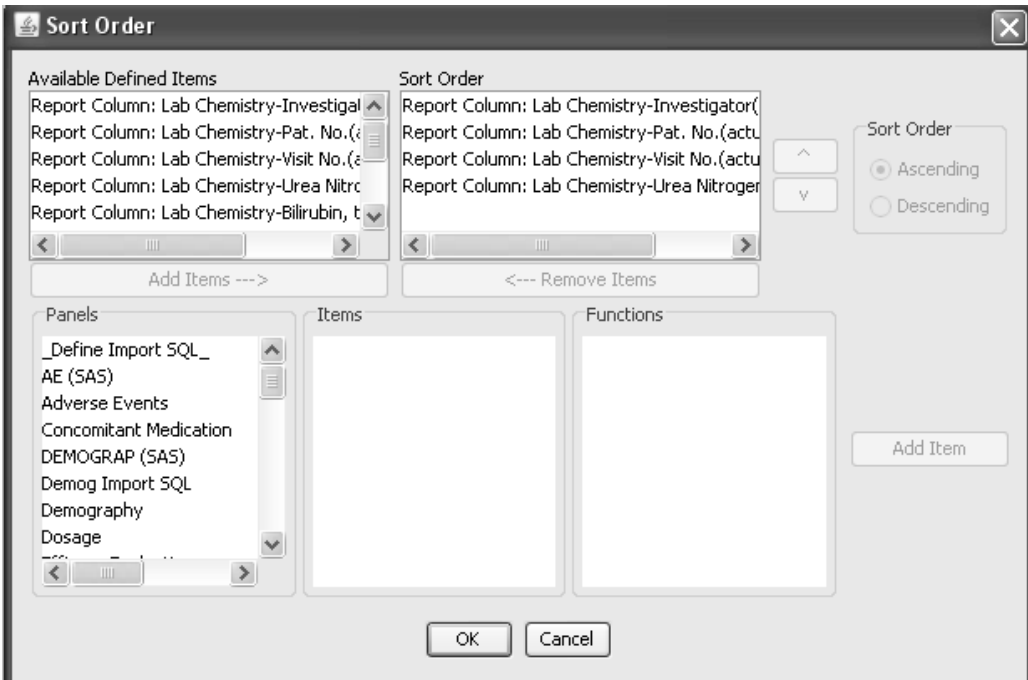
---

## Sort Order

The default order of data items:

1. Headers
2. Footers
3. Group Headers
4. First 4 columns added to the report.
5. Items are defaulted in ascending order.

*Note: It is advised to define all areas of the report prior to defining the sort.*

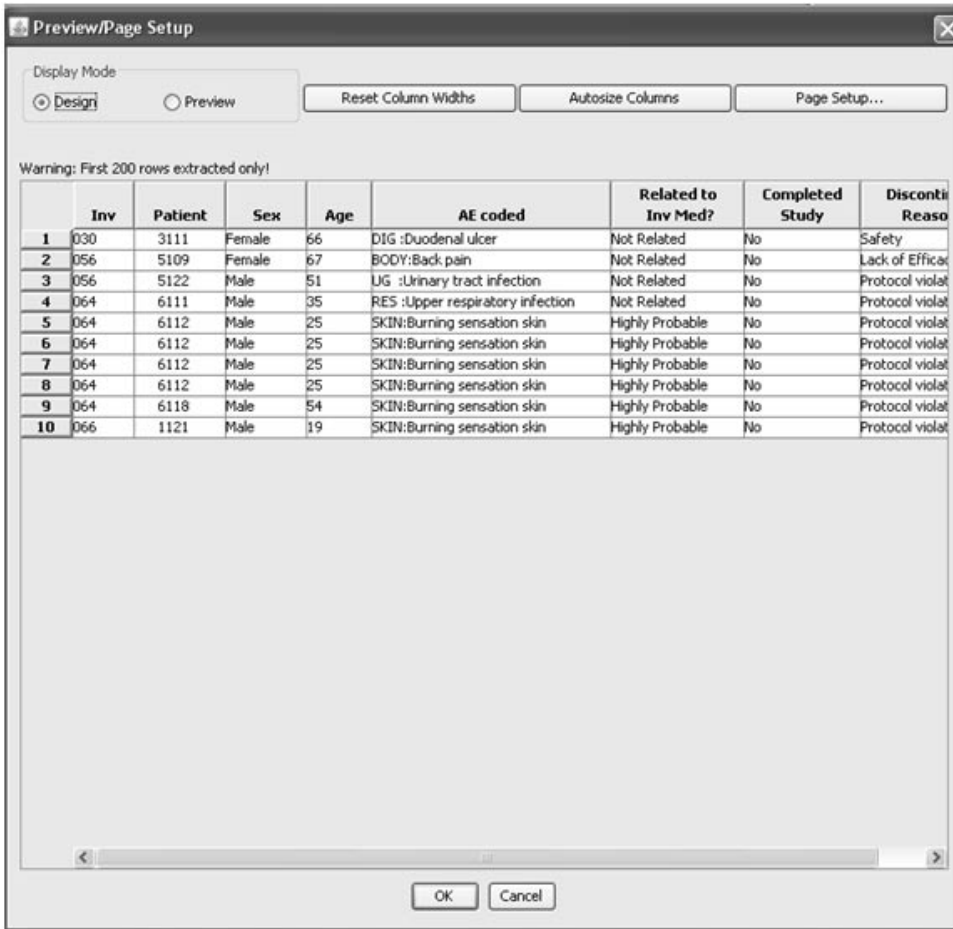


- All items added to the report in the header, footer, group header or as columns will display as Available Defined Items.
- The sort order can be changed by clicking on the item and using the arrow buttons.
- Any item in the sort order can be identified as ascending or descending by clicking the item and the Sort Options.
- An item can be removed or added to the sort order with the Add Item and Remove Item buttons.
- An Item not displayed in the report can be added for sorting purposes only by selecting the item from the Panels column.

Preview/Page Setup

1. Click Preview/Page Setup to view the Design window or to Preview the report. Both the Design and Preview functions allow you to view the first 200 records only from the database to determine column widths and page setup for orientation and margins. This function is specific to formatted reports only.

The Preview/Page Setup opens in Display Mode for 'Design'.



Note: See Print Preview function from the File menu for non-formatted reports.

The default display is landscape and the settings are maximum column width of one inch. The width is set to fit all columns on a page depending upon the number of columns in the report.

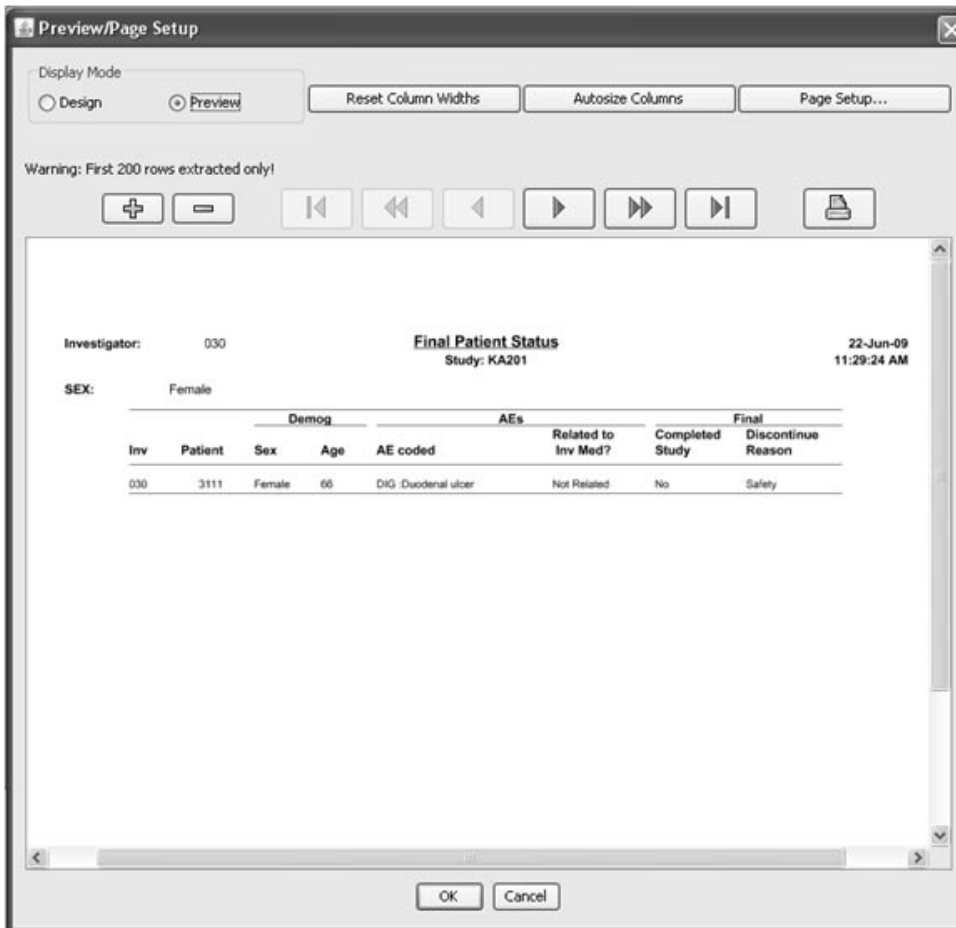
2. The following options are available in Design mode:

- Click the Reset Columns Widths to view all columns to fit on the page.
- Click the Autosize Columns to expand each column to it's maximum width.
- Click Page Setup window to enter paper size, changing the page orientation for portrait versus landscape and setting the margins in inches for top, bottom, right and left.

Sizing of the individual columns on the grid in design mode will change the column widths. It is advised to set page setup before the setting of the column widths since changing the page orientation, left margin size or right margin size will set the column widths back to their default settings. Use Preview for sizing the columns as well.

*Note: You must use the Create Report to print the entire records contained in your report. The Preview function is used to determine report layout dimensions and specifications only.*

### 3. Select Display Mode for 'Preview'.



The page you are currently viewing and the total number of pages for the first 200 records in the report are displayed with arrows to move through the listing. Use the magnify button to enlarge the report preview display. You may use the Printer icon to print a sample of the first 200 records of the report from the Preview window.

A **Watermark** text capability is available based on Review Admin StatusCode for Watermark/Text field contents for object's status.

Formatted Reports and Formatted Patient Profiles are supported for configurable watermark color, to allow customer specified color and darkness for watermark by adding CONFIG.OPTIONS string parameter: WATERMARKRGB=15,15,15; where the RGB values (15,15,15 in this case) are the RGB color levels.

---

## Create formatted report

You must create the report to view and print the entire records contained in the report.

1. Click **OK** in the Preview window and return to the Report Browser window.
2. Click **Create Report**.
3. Use the tool bar buttons to scroll through the pages or change the image scale with the plus and minus signs.
4. Use the printer icon to print the output results.

Investigator: 030      **Final Patient Status**      22-Jun-09  
Study: KA201      11:36:54 AM

SEX: Female

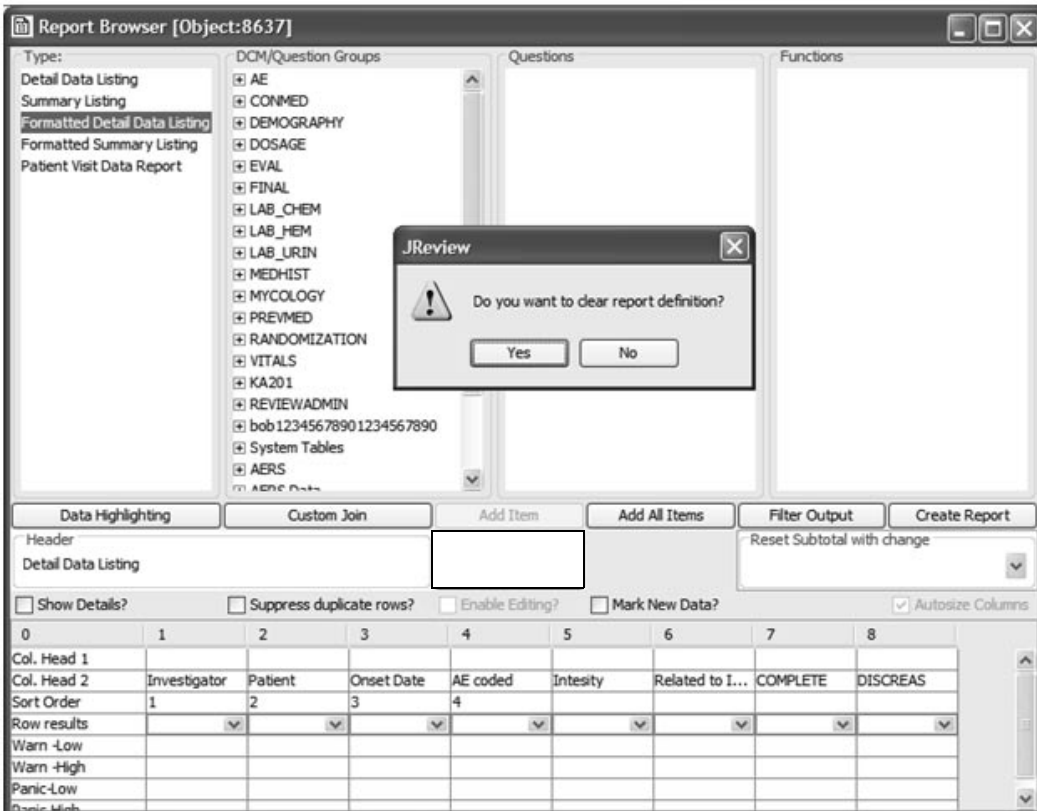
Inv	Patient	Demog		AEs		Completed Study	Final Discontinue Reason
		Sex	Age	AE coded	Related to Inv Med?		
030	3111	Female	66	DUG Duodenal ulcer	Not Related	No	Safety

Patient Selection Criteria: T12.TREATMENT = 'Active' AND T5.COMPLETE = 'No' AND T5.SIDEEFFCT = 'Yes'

Page 1 of 4

If the user designs a detail data listing or summary listing (spreadsheet reports), then clicks on the respective 'Formatted' versions of each, JReview prompts the user if they want to clear the definition. Responding No – copies the definition into the formatted version of the report, so the user doesn't need to redefine the report definition.

In this example, we opened a previously saved detail data listing and selected the report type for Formatted Detail Data Listing. Observe the Object ID number is displayed in the report header.



Click No, the report definition is copied into the formatted detail data listing to allow the user to apply report formats without redefining the spreadsheet content. Notice the Object ID number is gone as this report definition is a new report object.

The screenshot shows the 'Report Browser' application. The 'Type:' list on the left includes 'Formatted Detail Data Listing'. The 'DCM/Question Groups' list includes items like 'AE', 'CONMED', 'DEMOGRAPHY', 'DOSAGE', 'EVAL', 'FINAL', 'LAB\_CHEM', 'LAB\_HEM', 'LAB\_URIN', 'MEDHIST', 'MYCOLOGY', 'PREVIMED', 'RANDOMIZATION', 'VITALS', 'KA201', 'REVIEWADMIN', 'bob12345678901234567890', 'System Tables', 'AERS', and 'AERS D-11'. The bottom toolbar has buttons for 'Data Highlighting', 'Custom Join', 'Add Item', 'Add All Items', 'Filter Output', and 'Create Report'. Below the toolbar are checkboxes for 'Show Details?', 'Suppress duplicate rows?', and 'Mark New Data?'. The table at the bottom has 8 columns and rows for 'Col. Head 1', 'Col. Head 2', 'Row results', 'Warn -Low', 'Warn +High', 'Panic-Low', and 'Panic-High'.

0	1	2	3	4	5	6	7	8
Col. Head 1								
Col. Head 2	Investigator	Patient	Onset Date	AE coded	Intesity	Related to I...	COMPLETE	DISCREAS
Row results								
Warn -Low								
Warn +High								
Panic-Low								
Panic-High								

# Conditional Data Highlighting

## Define data highlighting

The Data Highlighting feature allows you to create conditional highlighting in reports similar to entering the warning and panic row values. In addition, it allows the data highlight definition to select two items for comparison to each other. This is useful when designing reports to reference normal ranges included in tables such as laboratory data. The data highlights can be applied to both regular reports (Detail Data Listing and Summary Listing) and formatted reports. The following example is a detail data listing for the vertical lab data table (Labs panel) with lab reference ranges included to compare to the actual lab values.

The screenshot shows the 'Report Browser' window with the following configuration:

- Type:** Detail Data Listing
- DCM/Question Groups:** Labs (Vertical)
- Questions:** NORM\_LOW, NORM\_HIGH
- Functions:** actual value

Buttons: Data Highlighting, Custom Join, Add Item, Add All Items, Filter Output, Create Report

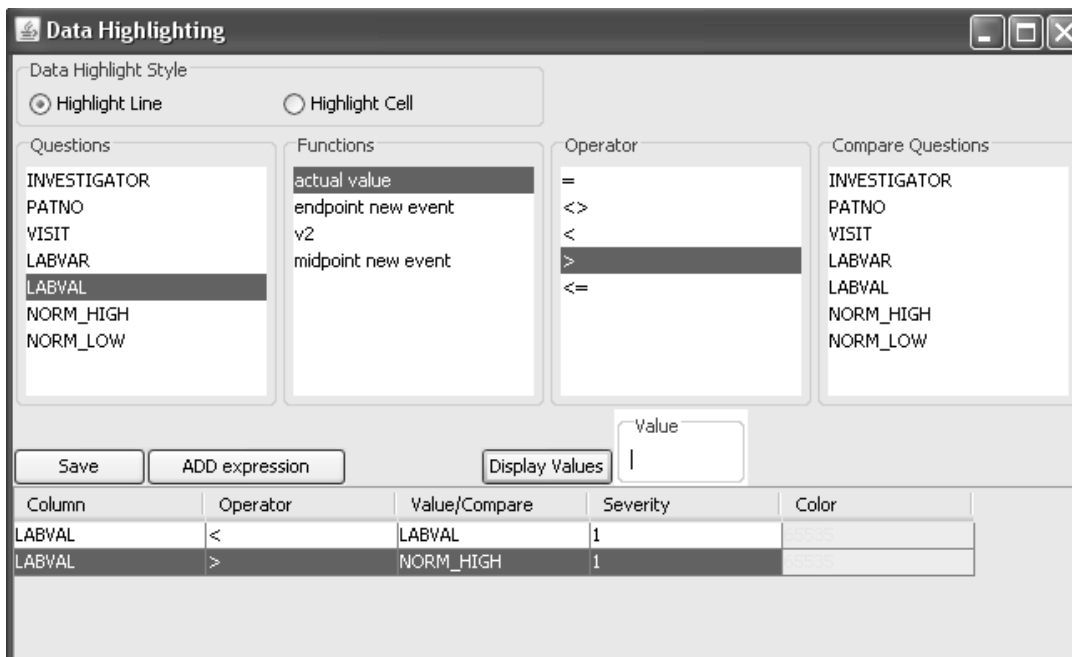
Header: Detail Data Listing

Options:  Show Details?,  Suppress duplicate rows?,  Autosize Columns

0	1	2	3	4	5	6	7
Col. Head 1							
Col. Head 2	INVESTIGAT...	PATNO	VISIT	LABVAR	LABVAL	NORM_HIGH	NORM_LOW
Sort Order	1	2	3	4			
Row results							
Warn -Low							
Warn -High							
Panic-Low							



1. After adding items to the report specification, click the **Data Highlighting** button to open the Data Highlighting window which looks and operates similar to the output filter window.



2. Select an item from the 'Columns' list and an operator.  
If the item type is numeric, the operator display options are: =, <>, >, <, >=, <= for code and decode values.
3. Select another item in the 'Compare Columns' list and click the **ADD expression** button, or enter a value in the 'Value' box and click the **ADD expression** button. If you use the **Display Values** list only single selections are allowed.
4. Click on the Severity cell to display a drop down list of numeric values 1 to 10 with lower values to represent less severe.  
The Severity value is required and a message displays if left blank.
5. Click on a color cell for a particular row variable to display a color table for selection.
6. Select to 'Highlight Line' or 'Highlight Cell'. The default is 'Highlight Line'.

If Highlight Line is selected, the entire row is highlighted in the report if the data meets the highlighting criteria. The last highlighted item in the row determines the line (row) color displayed. Or select Highlight Cell to highlight only the particular item in the row.

- Click the **Save** button and close the Data Highlighting window.

The Data Highlighting button on the Report Browser changes status to show 'Data Highlighting ON'.

Data Highlighting ON

- Click the **Create Report** button in the Report Browser.

This report displays with the option set to Highlight Line.

Detail Data Listing								
	A	B	C	D	E	F	G	H
1								
2	INVESTIGATOR	PATNO	VISIT	VISIT_DATE	LABVAR	LABVAL	NORM_LOW	NORM_HIGH
3	018	4101	1	15-JUL-1991	ALB	3.83	3	5
4		4101	1	15-JUL-1991	ALK	97.75	67	135
5		4101	1	15-JUL-1991	BT	.34	.3	1
6		4101	1	15-JUL-1991	BUN	13.6	10	18
7		4101	1	15-JUL-1991	CHO	141.1	157	259
8		4101	1	15-JUL-1991	CO2	23.8	24	32
9		4101	1	15-JUL-1991	GTP	23.8	3	62
10		4101	1	15-JUL-1991	LDH	107.1	119	194
11		4101	1	15-JUL-1991	PO4	2.64	3	4
12		4101	1	15-JUL-1991	ZTP	5.87	6	8
13		4101	1	15-JUL-1991	SGP	21.25	8	57
14		4101	1	15-JUL-1991	SGO	20.4	16	37
15		4101	1	15-JUL-1991	NAB	122.4	128	161

This is the same report displayed with the option set to Highlight Cell.

Detail Data Listing								
	A	B	C	D	E	F	G	H
1								
2	INVESTIGATOR	PATNO	VISIT	VISIT_DATE	LABVAR	LABVAL	NORM_LOW	NORM_HIGH
3	018	4101	1	15-JUL-1991	ALB	3.83	3	5
4		4101	1	15-JUL-1991	ALK	97.75	67	135
5		4101	1	15-JUL-1991	BT	.34	.3	1
6		4101	1	15-JUL-1991	BUN	13.6	10	18
7		4101	1	15-JUL-1991	CHO	141.1	157	259
8		4101	1	15-JUL-1991	CO2	23.8	24	32
9		4101	1	15-JUL-1991	GTP	23.8	3	62
10		4101	1	15-JUL-1991	LDH	107.1	119	194
11		4101	1	15-JUL-1991	PO4	2.64	3	4
12		4101	1	15-JUL-1991	ZTP	5.87	6	8
13		4101	1	15-JUL-1991	SGP	21.25	8	57
14		4101	1	15-JUL-1991	SGO	20.4	16	37
15		4101	1	15-JUL-1991	NAB	122.4	128	161

*Note: Data Highlighting is not applicable in the Patient Data Visit Report.*

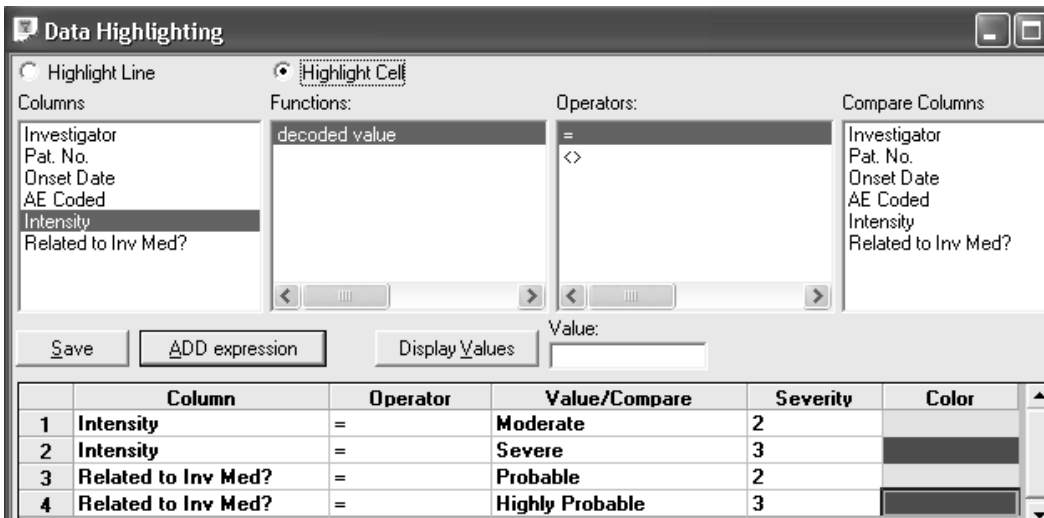
The following example is a formatted detail data listing of Adverse Events highlighting character data from a decode file.

The screenshot shows the 'Report Browser' window with the following configuration:

- Type:** Formatted Detail Data
- DCM/Question Groups:** Adverse Events
- Questions:** Related to Inv Med?
- Functions:** actual value
- Buttons:** Data Highlighting, Custom Join, Add Item, Add All Items, Filter Output, Create Report
- Options:**
  - Show Details?
  - Suppress duplicate rows?
  - Autosize Columns

0	1	2	3	4	5	6
Col. Head 1						
Col. Head 2	Investigator	Patient	Onset Date	AE coded	Intensity	Related to I...
Row results	▼	▼	▼	▼	▼	▼
Warn -Low						
Warn -High						
Panic-Low						
Panic-High						

Data highlighting was applied to character decode values for 'Intensity' and 'Related to Inv Med?'. Severity levels and color were entered and data highlighting set to 'Highlight Cell'.



Selecting multiple items from the Unique Values list is not allowed. Each item must be an individual selection to assign a Severity and Color.



Individual data items are highlighted for 'Intensity' and 'Related to Inv Med?' based on the saved data highlighting criteria.

Formatted Detail Data Listing

1/4

Adverse Events Listing with Highlights  
Study: KAGU

13-Feb-06 10:25:52 AM

Investigator	TM. No.	Crash Date	Ab. Code	Intensity	Related to Inv Med?
013	4203	01-OCT-1991	SKIN Burning sensation skin	Moderate	Reasonable
013	4203	01-OCT-1991	SKIN Rash/lesion	Moderate	Reasonable
000	5111	04-SEP-1991	DIG. Duodenal ulcer	Severe	Not Related
000	5112	03-NOV-1991	SKIN Burning sensation skin	Mild	Reasonable
000	5025	15-SEP-1991	SKIN Burning sensation skin	Mild	Probably Related
000	5026	03-OCT-1991	DIG. Diarrhea	Mild	Not Related
000	5026	03-OCT-1991	DIG. Vomiting	Mild	Not Related
000	5102	25-JUL-1991	UG. Urinary tract infection	Moderate	Not Related
000	5105	11-OCT-1991	BODY Back pain	Moderate	Not Related
000	5111	01-NOV-1991	NERV. Headache	Mild	Not Related
000	5111	02-NOV-1991	RES. Cough increased	Mild	Not Related
000	5112	28-OCT-1991	BODY Sore throat	Mild	Not Related
000	5113	28-OCT-1991	DIG. Sore throat	Mild	Not Related
000	5120	15-NOV-1991	BODY Sore throat	Mild	Not Related
000	5122	28-NOV-1991	UG. Urinary tract infection	Moderate	Not Related
000	5126	03-FEB-1992	BODY Body ache	Mild	Reasonable
000	5126	23-FEB-1992	NERV. Headache	Mild	Not Related
000	5126	01-MAR-1992	BODY Allergic reaction	Mild	Not Related
000	5204	15-AUG-1991	UG. Urinary tract infection	Moderate	Not Related
000	5205	23-AUG-1991	RES. Sinusitis	Mild	Not Related
000	5207	03-OCT-1991	DIG. Pseudotumor cerebri	Moderate	Not Related

All Patients Page 7 of 9

# Highlighting patients

## Single patient mode

If you have created multiple patient-level displays of your data from all of the applicable browsers, you can click on any row in one of the report windows to highlight a patient of interest in a Detail Data Listing Report.

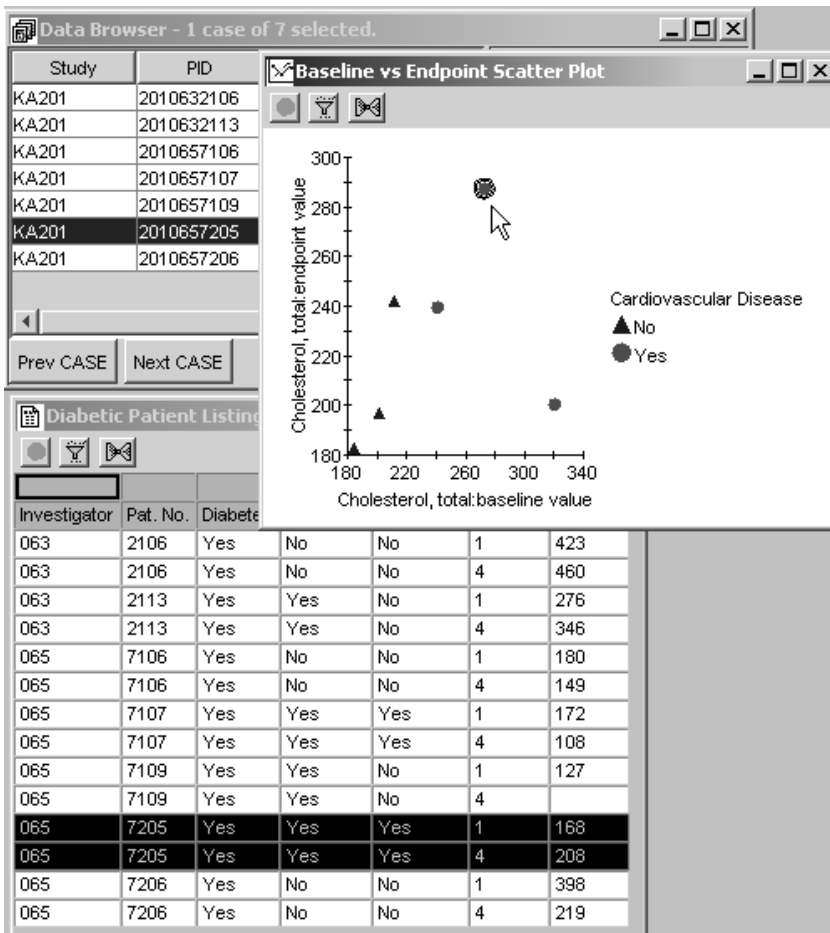
Click on one patient row instantly highlights the corresponding patient and data in any other active patient-level reports, patient listings, and Scatter Plot graphs. In an active scatter graph, the selected patient's data point is highlighted.

**Data Browser - 7 cases selected.**

Study	PID	SEX	AGE
KA.201	2010632106	Male	65
KA.201	2010632113	Male	72
KA.201	2010657106	Male	72
KA.201	2010657107	Male	58
KA.201	2010657109	Male	48
KA.201	2010657205	Male	65
KA.201	2010657206	Male	65

**Diabetic Patient Listing**

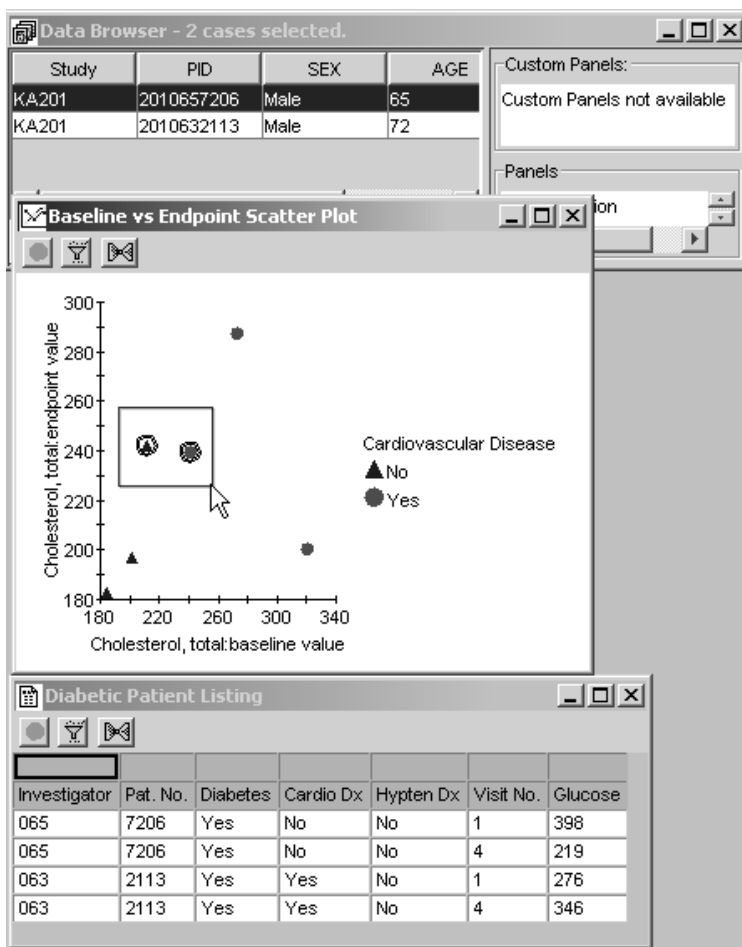
Investigator	Pat. No.	Diabetes	Cardio Dx	Hypten Dx	Visit No.	Glucose
063	2106	Yes	No	No	1	423
063	2106	Yes	No	No	4	460
063	2113	Yes	Yes	No	1	276
063	2113	Yes	Yes	No	4	346
065	7106	Yes	No	No	1	180
065	7106	Yes	No	No	4	149
065	7107	Yes	Yes	Yes	1	172
065	7107	Yes	Yes	Yes	4	108
065	7109	Yes	Yes	No	1	127
065	7109	Yes	Yes	No	4	
065	7205	Yes	Yes	Yes	1	168
065	7205	Yes	Yes	Yes	4	208
065	7206	Yes	No	No	1	398
065	7206	Yes	No	No	4	219



*Multi-Line Chart not yet supported by JReview.* In an active Multi-Line Chart Item Value vs. Category by Case graph, a highlighted line within the graph will update all patient-level displays of data to highlight the patient underlying the case data.



When multiple patients are highlighted and selected from any patient-level display of data, the Detail Data Listing Reports are updated to display only the patients that are highlighted and selected. (See *Chapter 6: Graph Browser - Multiple Patient Mode.*)



The CrossTab Browser results are categorical patient counts. A selected and highlighted count within a CrossTab or Shift Results Table activates all patient level displays to be in the multiple patient mode.

When a patient count is highlighted in the CrossTab results window, all Detail Data Listing Reports are instantly updated to display only the patients underlying the patient count highlighted from the CrossTab Browser results table.

Data Browser - 6 cases selected.

Study	PID	SEX	
KA.201	2010303110	Male	47
KA.201	2010632109	Male	43
KA.201	2010646106	Male	36
KA.201	2010646202	Male	52
KA.201	2010657102	Male	29
KA.201	2010661105	Male	38

Custom Panels:  
Custom Panels not available

Prev CASE    Next CASE

Shift Table

Baseline v End->	LOW	NORMAL	HIGH	
LOW	0	0	0	0
NORMAL	0	151	1	152
HIGH	0	6	2	8
Total	0	157	3	160

Final Status Listing

Completed						
Investigator	Pat. No.	Sex	Age	Study?	AEs?	Reason D/C?
030	3110	Male	47	Yes	No	
063	2109	Male	43	Yes	No	
064	6106	Male	36	Yes	No	
064	6202	Male	52	Yes	Yes	
065	7102	Male	29	No	No	Subject unreliable
066	1105	Male	38	Yes	No	


---

## Printing and Exporting Results

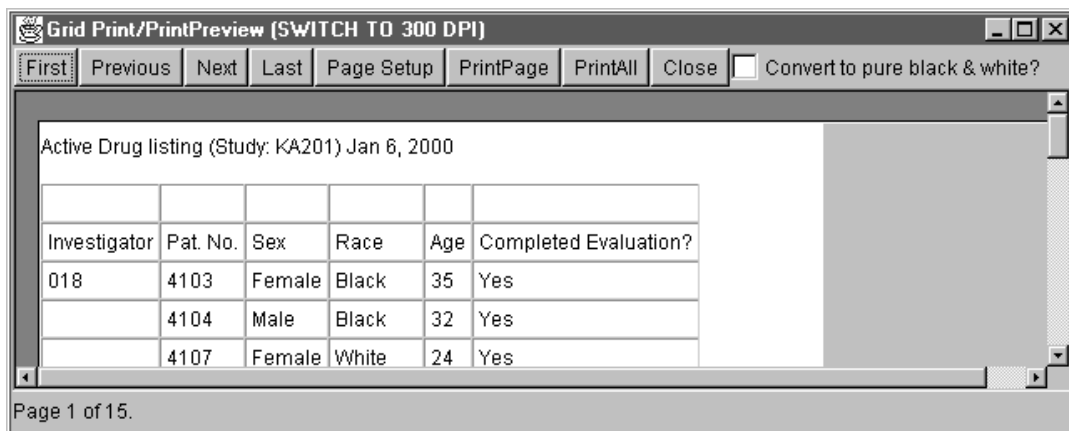
---

### *Printing the result*

The Print function is applicable to all browsers with output results. To get a printed copy of your output:

1. Click on the generated output window to make it the active window.
2. Click , or from the JReview **File** menu, select **Print**.

JReview displays a screen shot of the selected active screen. You can use the buttons to scroll through the pages of the output.



3. Click either **PrintPage**, **PrintAll** or **Close**. The PrintPage option will print only the first page of your output. The PrintAll option will print the entire output. The report prints on the currently selected printer.

*Note: Use the **Convert to pure black & white?** option is only applicable to graphs where multiple colors are displayed. If your printer is non-color click this feature for better black and white print resolution of graphs.*

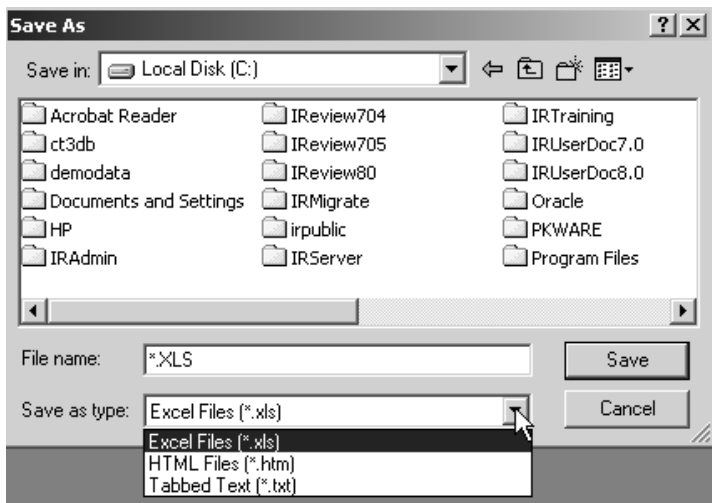
**Caution: Do not select the Internet Browser's FILE menu Print option. This will cause a system error.**

You can use the Export function to export your results. When you select this option an export window opens to select a file type and directory. The file options are dependent upon the result type and display the appropriate export file options available. For example, tabular data has export options for HTML, EXCEL, TXT, PDFs for formatted objects and GIF for graph images.

*Note: Only Formatted Report types can be exported to PDF files. Non-formatted reports can only be exported to HTML, Excel and TXT.*

1. To select an object to export, it must be the active window. Select the **File** menu and click **Export**.

JReview displays the **Save As** window.



2. Enter the storage location.
3. Enter the File name.
4. Select the file type.
5. Click **Save**. The result is exported to the selected directory.

To copy and paste results See *Chapter 1: Getting Started for General Instructions*.

---

## Object Storage

For detailed instructions on how to save, retrieve, schedule output and remove object specifications (reports, graphs, crosstabs, etc.), See *Chapter 11: Saving Objects, plus Alerts Browser*.

---

## Exploring data

---

### *Changing the patient selection criteria*

After you have executed a stored object, you can use the object(s) that are currently displayed as data exploration views by doing the following:

1. Change the patient selection criteria, redefining it by adding additional expressions, or removing existing expressions.
2. Click **Update Browsers** in the Patient Selection Criteria window to update all active browsers according to the new criteria.

All browser objects that are displayed will be updated according to your new criteria. Each object generated with a filter on will update with the same filter criteria with which it was created.

*Note: Restrictions apply if the stored object definition has a required patient selection criteria applied.*

---

### *Patient Identification*

Multiple patients can be selected from all patient-level displays of data results. Selecting more than one patient activates JReview's multiple-patient mode, which updates patient-level displays of data to highlight only the selected patient data. This facilitates patient identification and subsetting, for exploration of the selected patient data with the reviewing facilities of the Data Browser and all of JReview's browser tools.



# 7 *Graph Browser*

---

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---

## Patient selection criteria

---

### *Selection set*

In JReview, you can explore selected data items of the selected patients graphically by using the Graph Browser. After launching the saved patient subset or building your own patient selection criteria, you can explore a variety of stored graphs. Previously stored graph objects may be created in the Graph Browser from IReview or JReview.

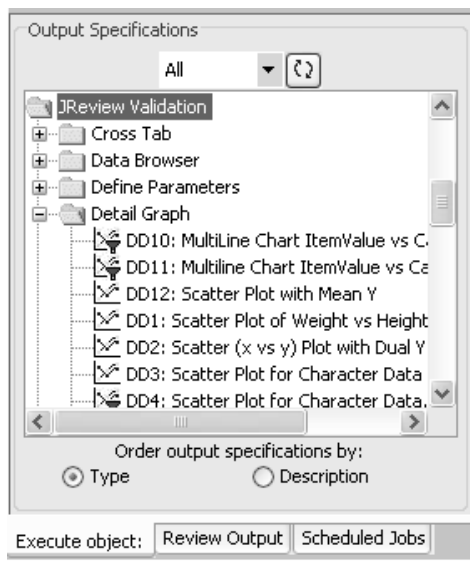
---

## Execute a graph

---

### *Quick execute*

Both IReview and JReview displays a list of categorical folders for stored patient subsets and output specifications at the selected storage location. Simply select one of the user access storage locations to display it's specific folders and contents. Icons identify the source as report, graph, crosstab, etc. and a filter icon displays when a patient selection criteria is saved with the stored object. (See *Chapter 5: Report Browser for Execute a Report*. The same instructions apply for the Graph Browser.)



---

# Graph types and features

---

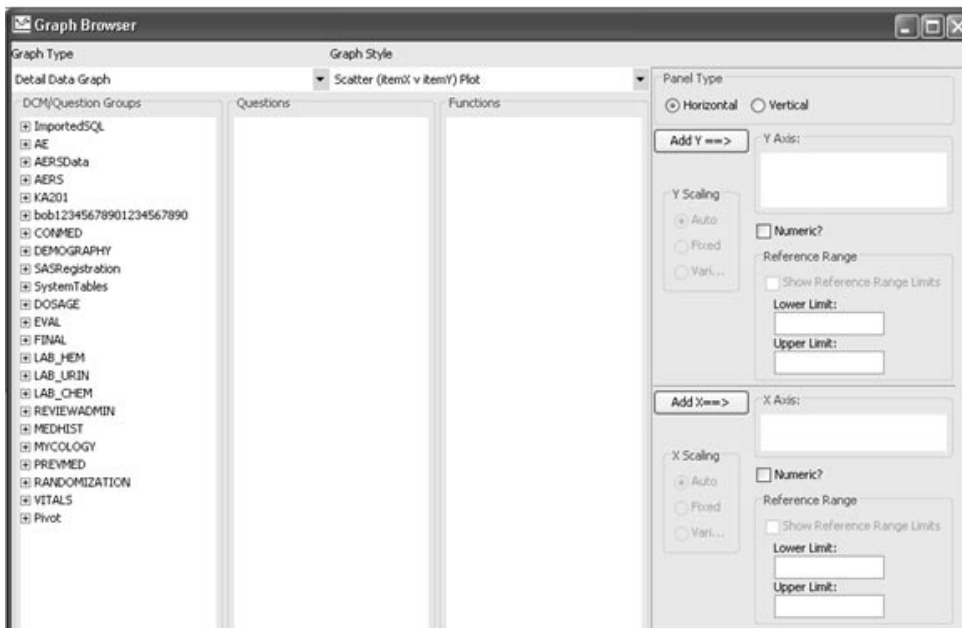
## Graph features

Graphs are pictorial representations of the relationships between two (or more) variables, and are an important part of descriptive statistics. They can be used any time one wants to visually summarize the relationships between variables, especially if the data set is large or unmanageable. Graphs are routinely used with reports to underscore a particular statement about a data set and to enhance readability.

---

## Graph Browser window

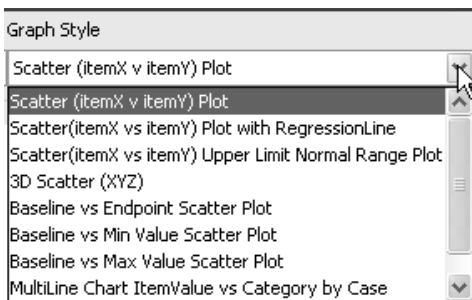
To open the Graph Browser window you can either select Graphs from the Browse menu, or click the Graph icon in the tool bar.



---

### Detail data graph

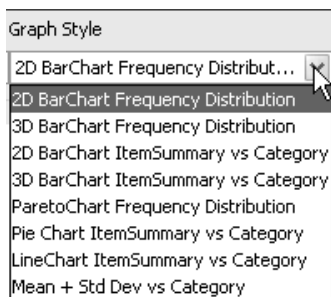
Detail Data Graphs display individual patient data points for each patient observation. In JReview you can create the following Detail Data Graphs:



---

### Summary data graph

Summary Data Graphs display summary information such as summary category, counts, means, and so on. In JReview you can create the following Summary Graphs:



**Note:** There are some additional graph types supported between JReview and IReview.

The **3-D** bar charts do NOT support the showing/hiding series for BY variable values. Therefore, the series filters panels are not shown for 3D bar charts. Also, Pie charts will not show a filter panel either.

---

### Bar styles

The following Bar Styles are available for 2D BarCharts only:

- Clustered bar (Vertical)
- Clustered bar (Horizontal)
- Stacked bar (Vertical)
- Stacked bar (Horizontal)

---

### Group functions

All general purpose graph types (2D Scatter and BarChart) allow all normal data function selections displayed in the Functions listbox. In addition, the following summary graphs support Group Functions dependent upon the item selected:

- 2D BarChart Item Summary vs. Category
- 3D BarChart Item Summary vs. Category
- Pie Chart Item Summary vs. Category
- Line Chart Item Summary vs. Category



---

# Graph display results

---

## 2D Graph Toolbar

When you click Create Graph the graph toolbar is displayed at the top of the results output window. The first and second buttons are the 'Snapshot' and 'Who?' buttons and are available for all output browsers. Only Scatter Plot graphs display the "Add Notes" icon in the scatter plot icon toolbar.



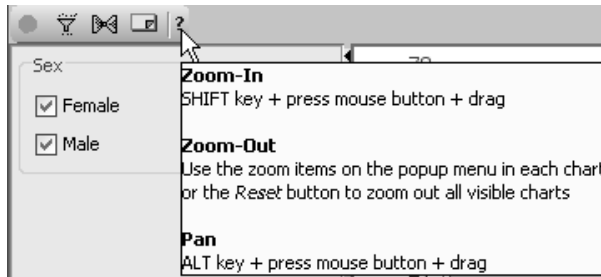
If you generate a graph without the multi-page option enabled the toolbar displays the buttons for 'Snapshot', 'Who?' and 'Output Filter'.

Initially the graph opens and displays in single mode. If a Page By item variable was defined, you can move within single mode between the individual pages with the up/down arrow keys.

The toolbar displayed in your graph results window is dependent upon the graph you specified. Select 2D graphs have optional multi-page graph display buttons enabled, when the Page By item variable is defined in the graph specification.

The next button applies to the multi-page graphing capability for select 2D graphs where multiple graphs can display on the same window. The Page By item variable is optional when you define the graph specification. Simply click a multi-page graph button to view several graphs displayed on the same window.

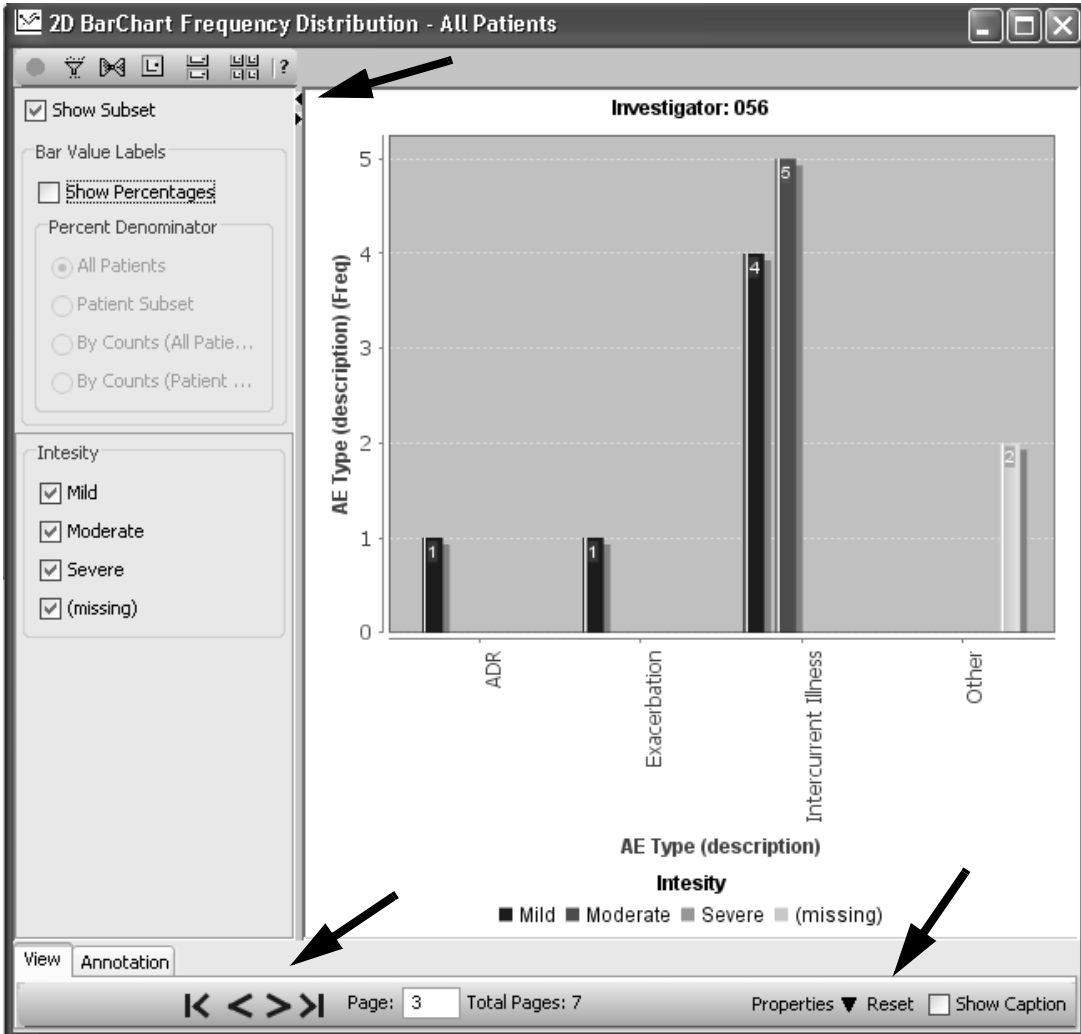
The "Question Mark" functions as a tooltip to display a graph manipulation key.



If you use the graph manipulations keys to zoom or pan the display, you can reset the graph to the original display image by clicking “Reset”, located in the graph footer.

In this example, the **Page By** item variable for “Investigator”, is displayed at the top of each graph. The page number is displayed at the bottom.

Use the top left black arrows to minimize, or display the legend Series.





---

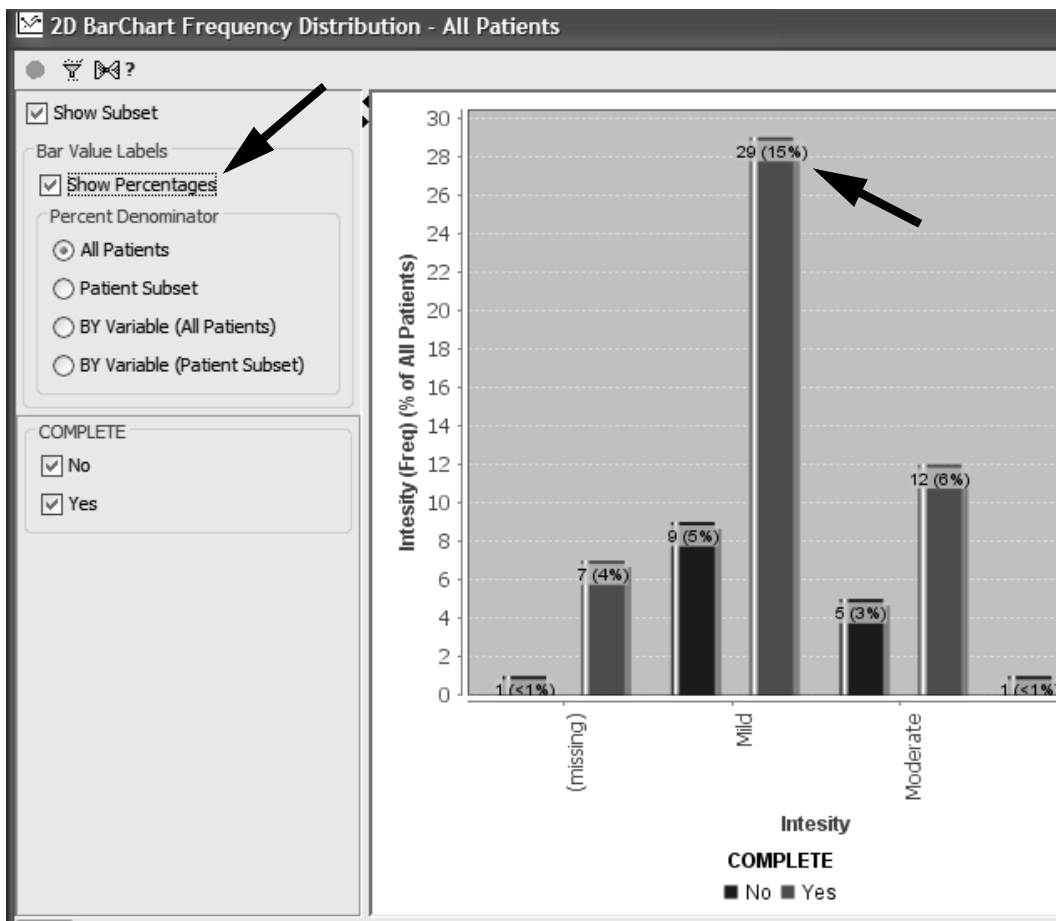
## Show Percentages

You may optionally show percentages for Frequency Bar Charts, Baseline with Reference Range graphs, and Hy's Law graphs. When you click the **Show Percentages checkbox** you enable the display for counts and percent annotations for bars.

If a patient selection criteria was applied, choose the preferred **Percent Denominator** option for All Patients versus Patient Subset.

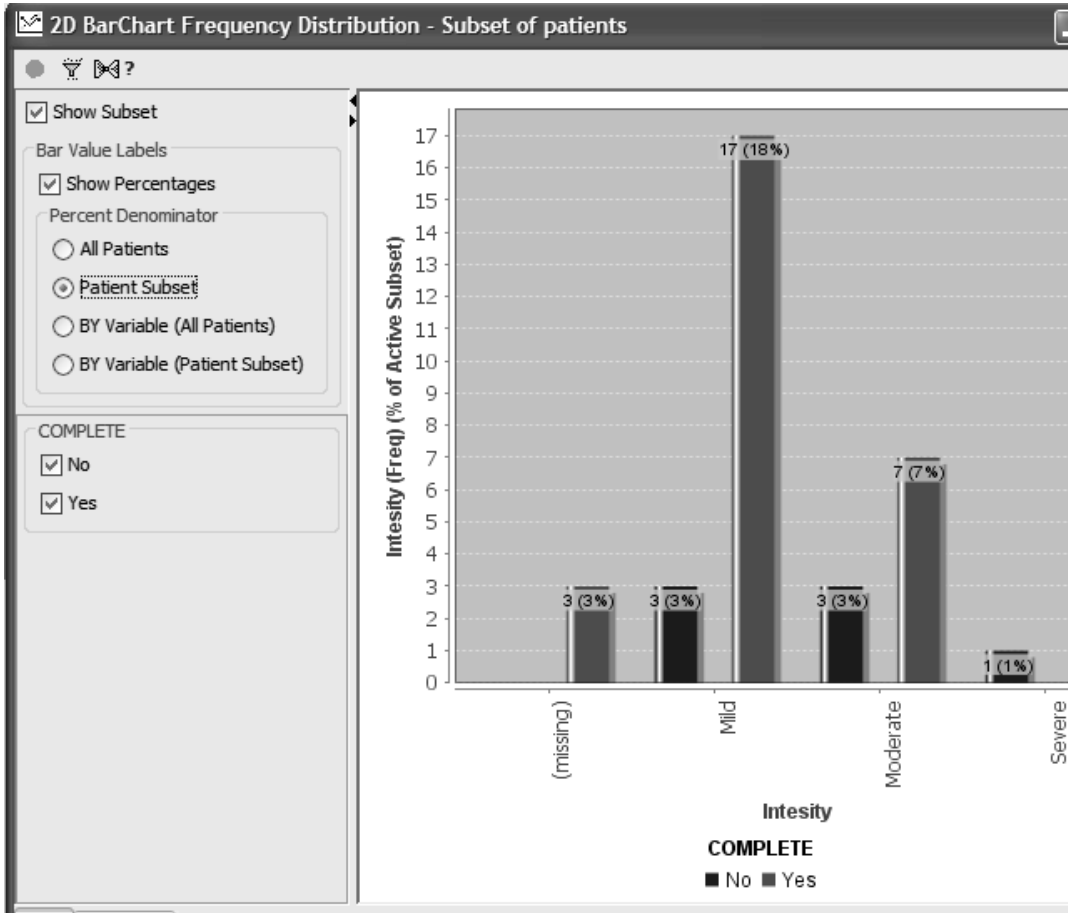
In our example, the **Show Percentages** has Percent Denominator set to **All Patients**. See patients with Mild AE Intensity who Completed Study (tallest red bar) when set to **All Patients**, calculates as:

$$(29 \text{ patients} / \text{total } 196 \text{ patients}) * 100\% = 15\%$$



Here is the same graph with a patient selection criteria applied for 'Active Treatment' to subset 97 patients on Active treatment out of 196 total patients. Now the Percent Denominator is selected for **Patient Subset**.

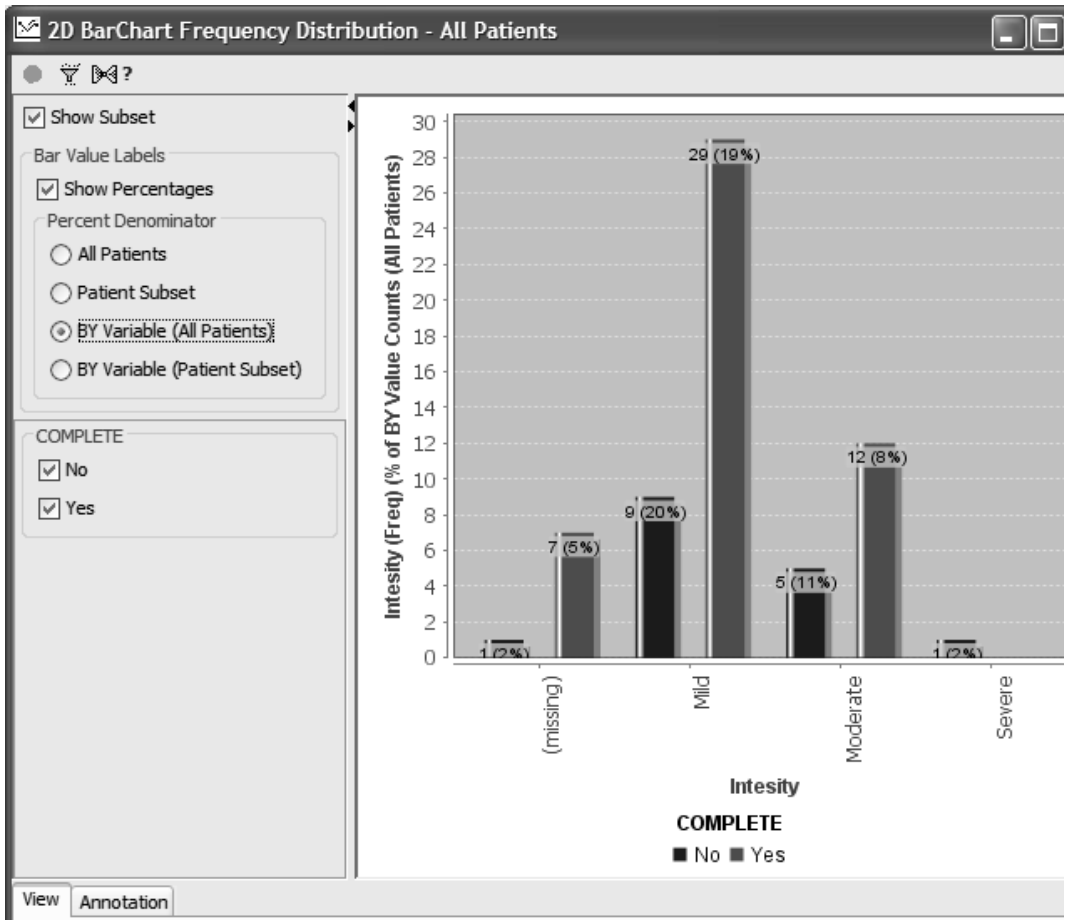
See **Show Percentages** for patients with Mild AE Intensity who Completed Study with Percent Denominator set to **Patient Subset** calculates as:  $(17 \text{ patients} / 97 \text{ subset}) * 100\% = 18\%$



In this graph example, the Percent Denominator is selected for **BY Variable (All Patients)**. Completed Study is the BY Variable for 150 patients who completed study and 46 patients who discontinued.

See patients with Mild AE Intensity who Completed Study (tallest red bar) calculate as:

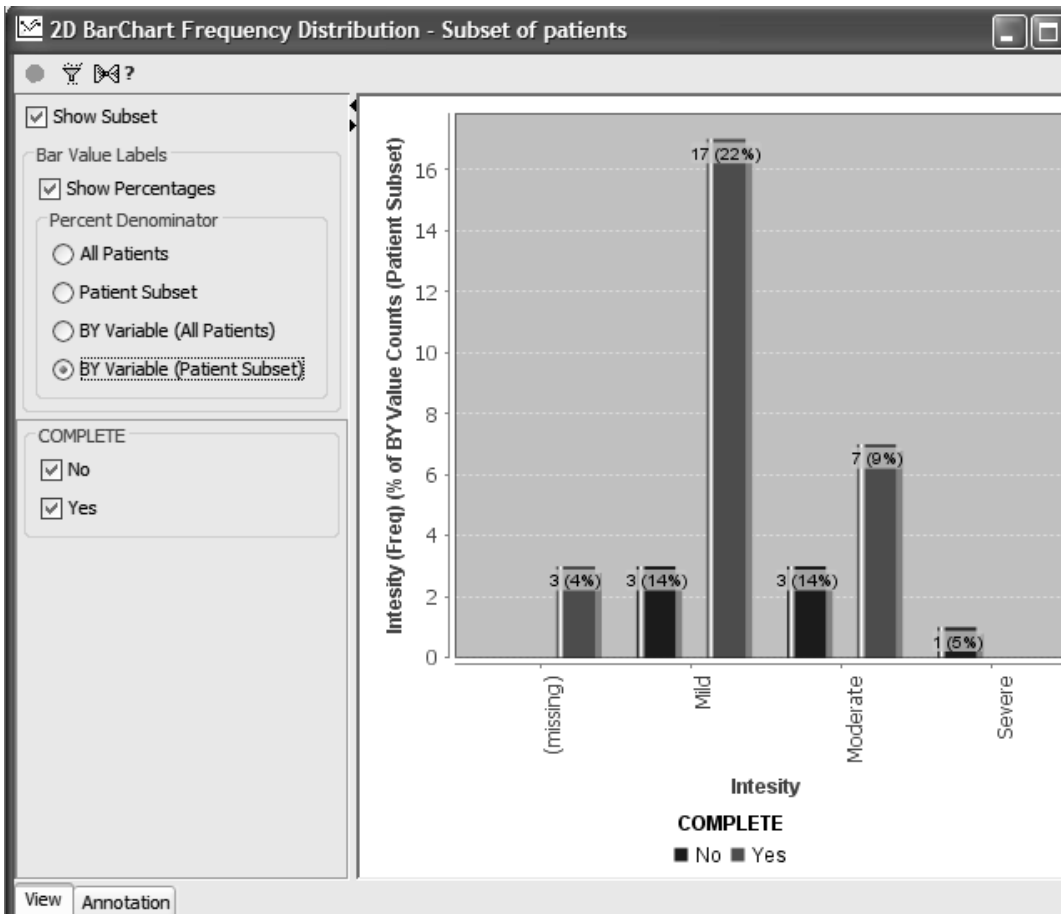
$$(29 \text{ patients} / 150 \text{ patients who Completed Study}) * 100\% = 19\%$$



Next we applied the patient selection criteria for 'Active Treatment' and get 97 patients on Active treatment out of 196 total patients. In this patient subset there are 76 patients who Completed Study.

The Percent Denominator is selected for **BY Variable (Patient Subset)**. Now see the patients with Mild AE Intensity who Completed study (tallest red bar) with calculated BY Variable as:

(17 patients / 76 patients on Active Treatment who Completed Study) \* 100% = 22%



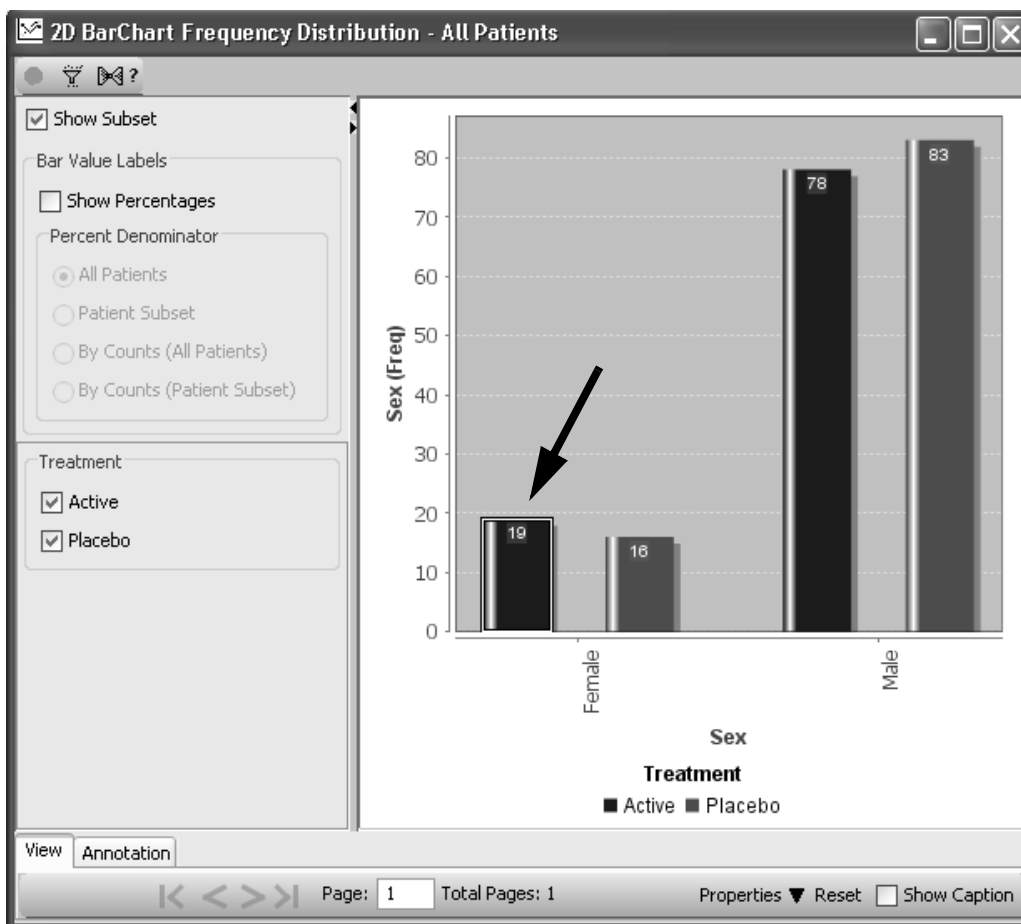
When the configuration is set in ReviewAdmin for a property in the JNLP file: "graphUserSelectableDenominator", then the Graph Bar Chart FREQ Distribution % options set the default BY Variable (Patient Subset). The radio buttons controlling the denominator choice for percent labels are applied in Freq Bar Graphs, Baseline-\* with Reference Range graphs, and Hy's Law graphs.

The denominator type choice is available to end-users on a per customer basis. In other words, depending on a configuration setting, the user may or may not be able to select the denominator type. In automatic mode, JReview selects the denominator type. If a PSC is active then the denominator type will be one of the two PSC choices; similarly, if there is a BY variable defined, then the denominator type will be one of the two BY variable choices. Thus, if there is both a BY variable and an active PSC, the choice is "BY Variable (Patient Subset)". The user cannot change this choice under this configuration, and the radio buttons representing the other alternatives are disabled. If the configuration setting is not "automatic" mode, then the user can freely choose among the denominator types and none of the radio buttons is disabled. (*Refer to Review Admin Manual for illustrations of these configuration modes.*)

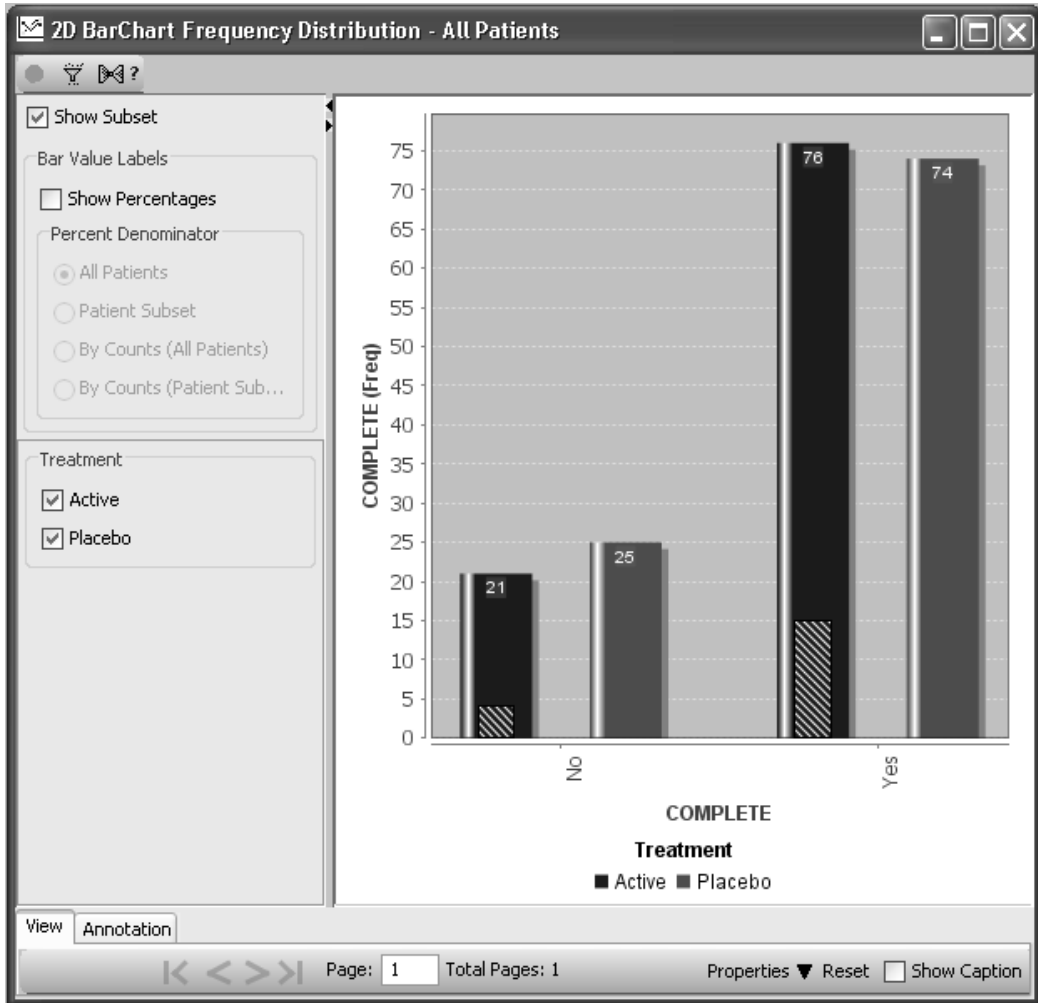
Bar Graphs are “summary” data charts and by definition do not display the individual PIDs of the retrieved drill-down data. However, a bar in a Bar Graph is selectable with the consequent activation of the “drill-down” mechanism. The PIDs used from the selected bar are propagated to the Data Browser and Scatter plot graphs.

The **Bar Selection Subset** feature allows Bar Graphs to be responsive to the selection of a bar in another bar-graph view. When a bar is selected in a Bar Graph, any other open Bar Graphs (in separate views) are subset.

In the example, the user has clicked on ‘Females Active Treatment’ in the upper Bar Graph.



As a result, the following bar graph displays the subset data. The diagonally striped bar drawn inside each bar represents the subset value. In this case, the frequency value displayed in the overlay for each age group counts only Females on Active Treatment. The subset data is then presented as an overlay on the bars. In effect, the selected bar defines an “output filter” for the receiving bar graphs.



Also, both the specification that defines the originating bar graph, including any of its output filters, and any parameters describing the selected bar are passed to each of the recipient bar graphs. Each of these recipient bar graphs may then “append” this passed data, to its own graph specification to retrieve the subset data.

The Bar Selection Subset feature is applicable to both Frequency bar graphs and Item-Summary versus Category bar graphs. However, there is a restriction for the Y-Axis of an Item-Summary versus Category bar graph: The Group Function must be a *count*; a “mean”, for example, is not allowed. No subset data will be retrieved for an “Item-Summary versus Category” graph that is defined with a Group Function that is not a count.

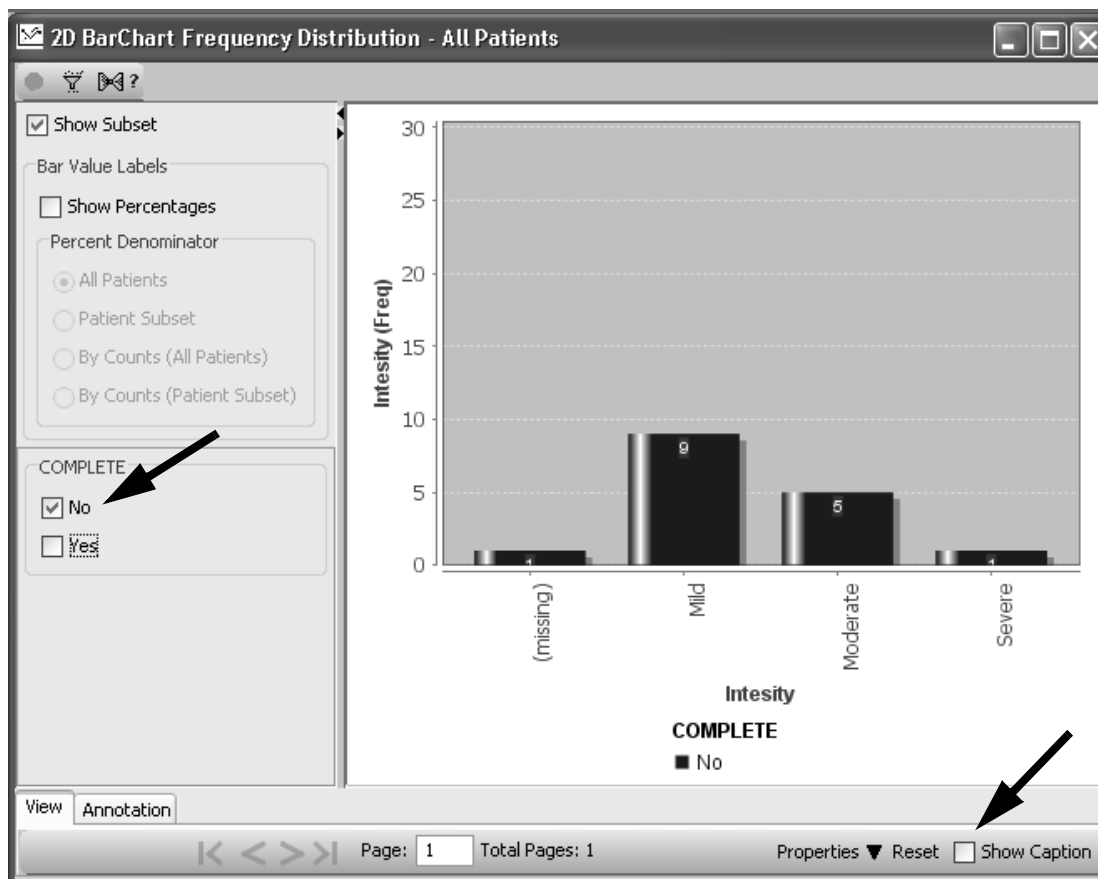
The users may show or hide the subset data using checkbox.



---

## Display BY variable

You may select which BY variable to display in the graph. In it ally the graph opens with all color coded BY variables displayed as checked ON. Click on a check box to turn off a BY variable from displaying in the graph. In this example, we turned off the patients who completed the study from displaying in the barchart (un-checked “Yes”).



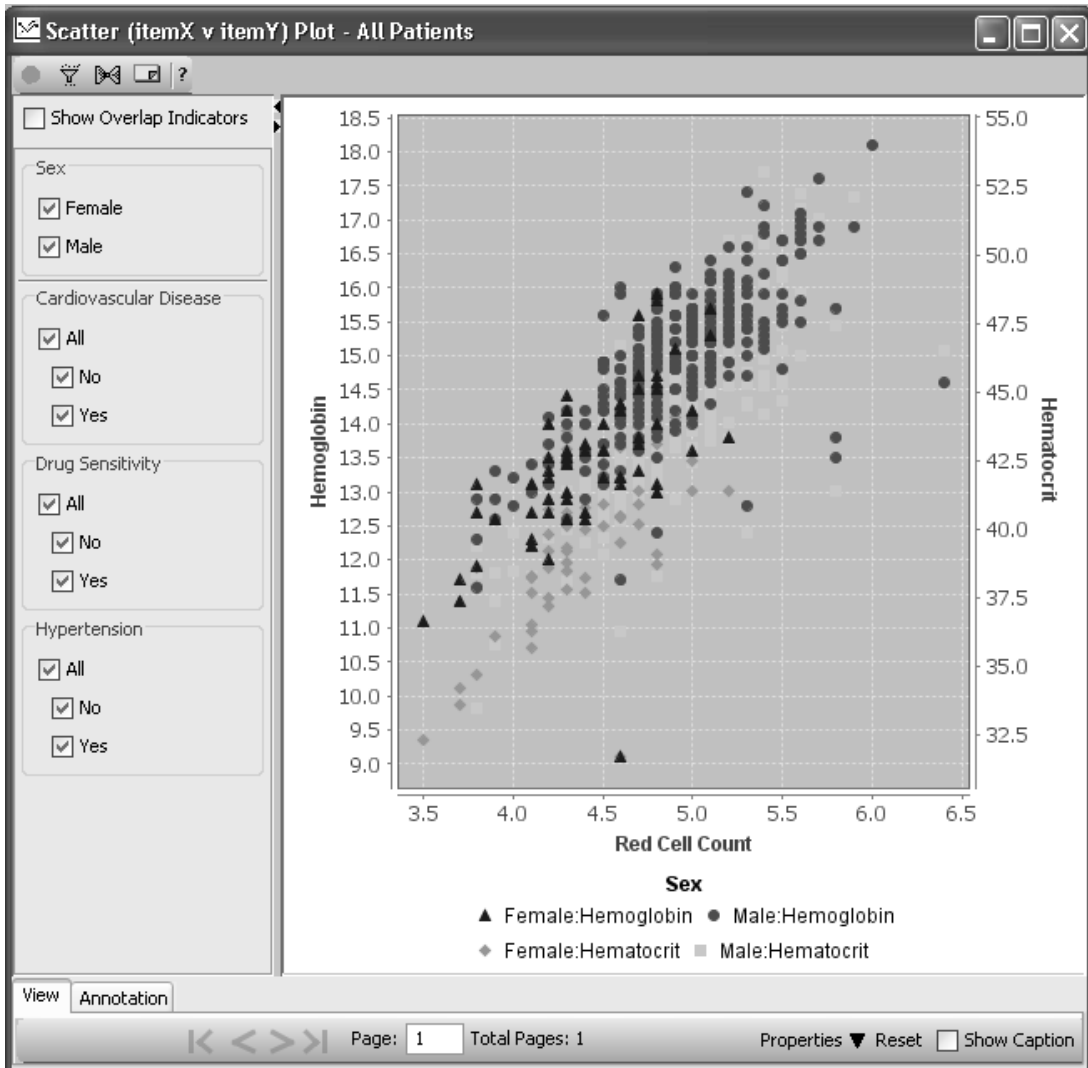
---

## Show Caption

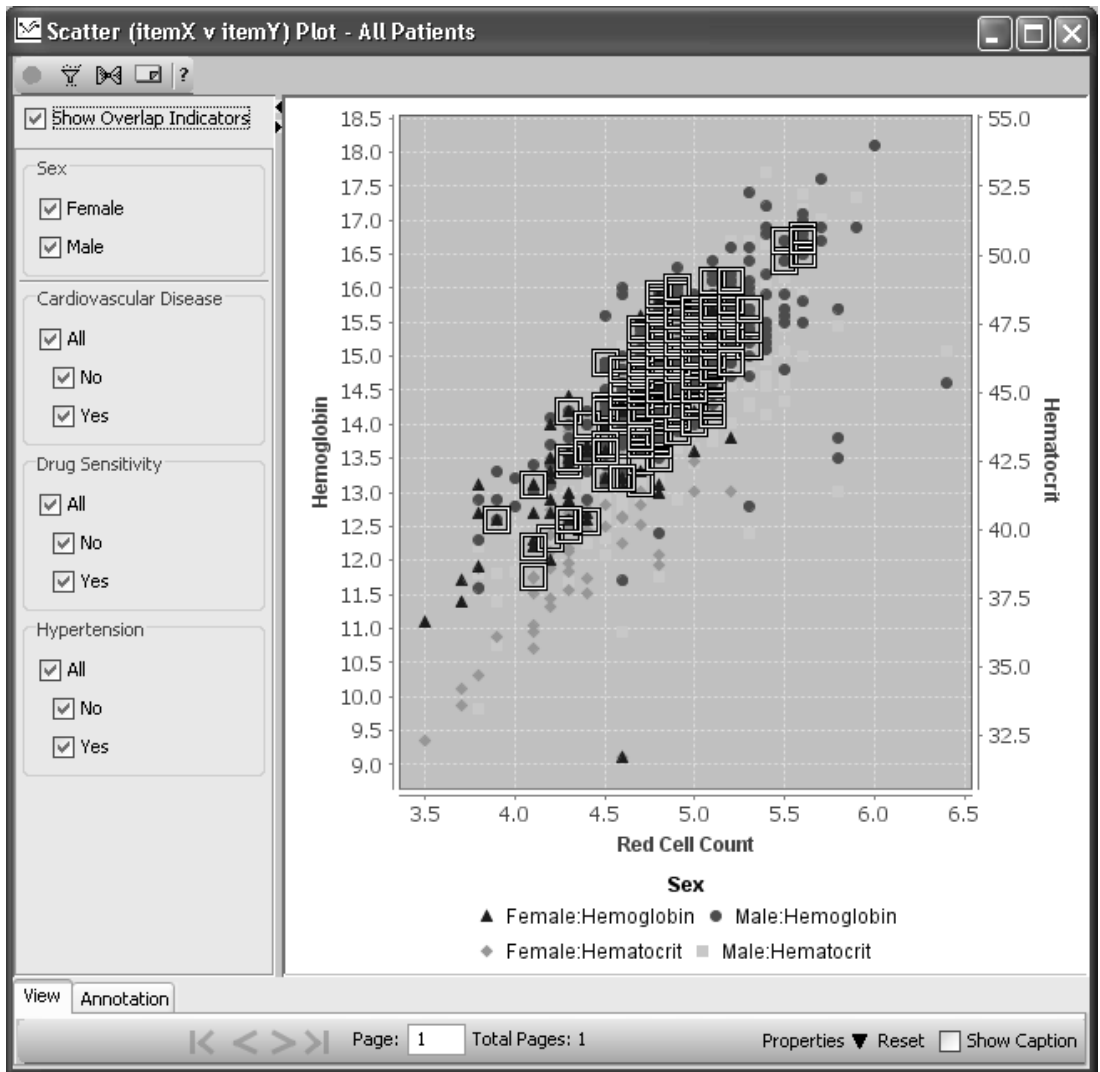
The Show Caption checkbox option displays on all generated graph display windows. Click on the checkbox to enter annotation text describing the graph. It is especially useful when applying the Filter Control checkbox to describe current filter conditions for the graph result.

## Show Overlap Indicators

This feature is available in Scatter Plots to allow the user to toggle from the display as on/off. The 'overlapping symbols' will display if multiple scatter points are plotted at the same location. Default off to not display overlap indicators.



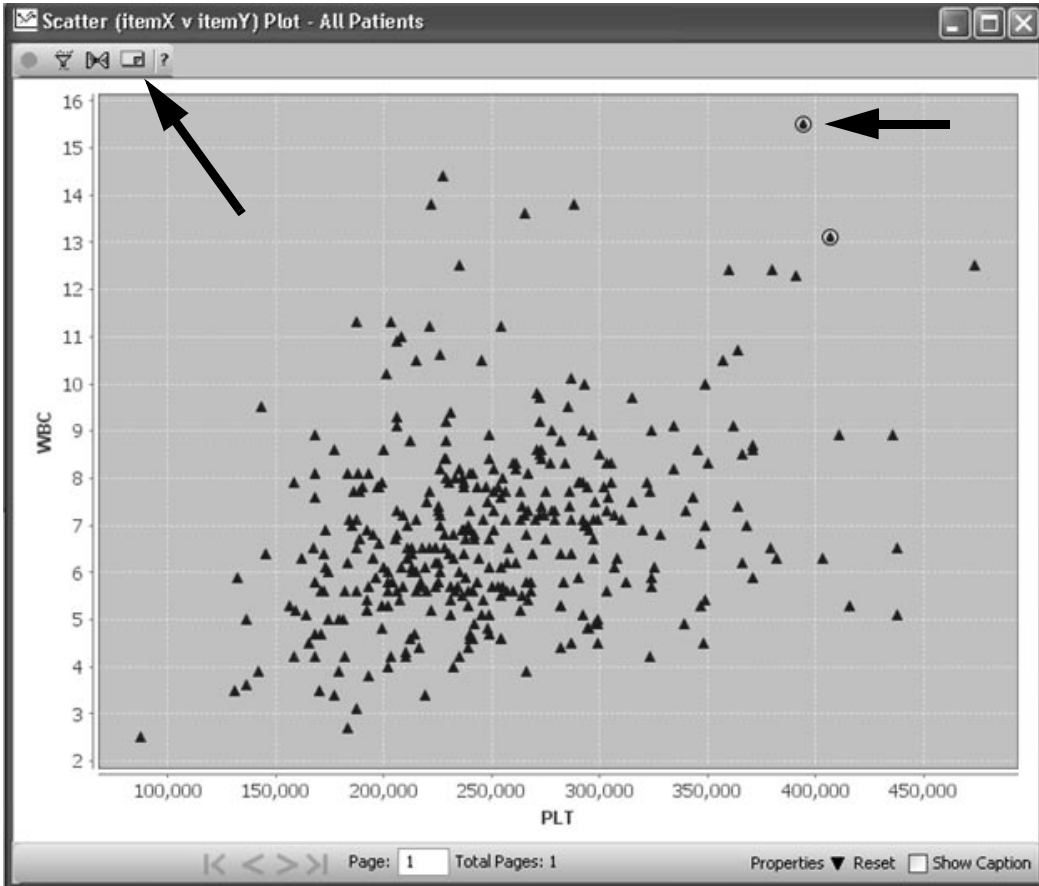
Show Overlap Indicators toggled ON.



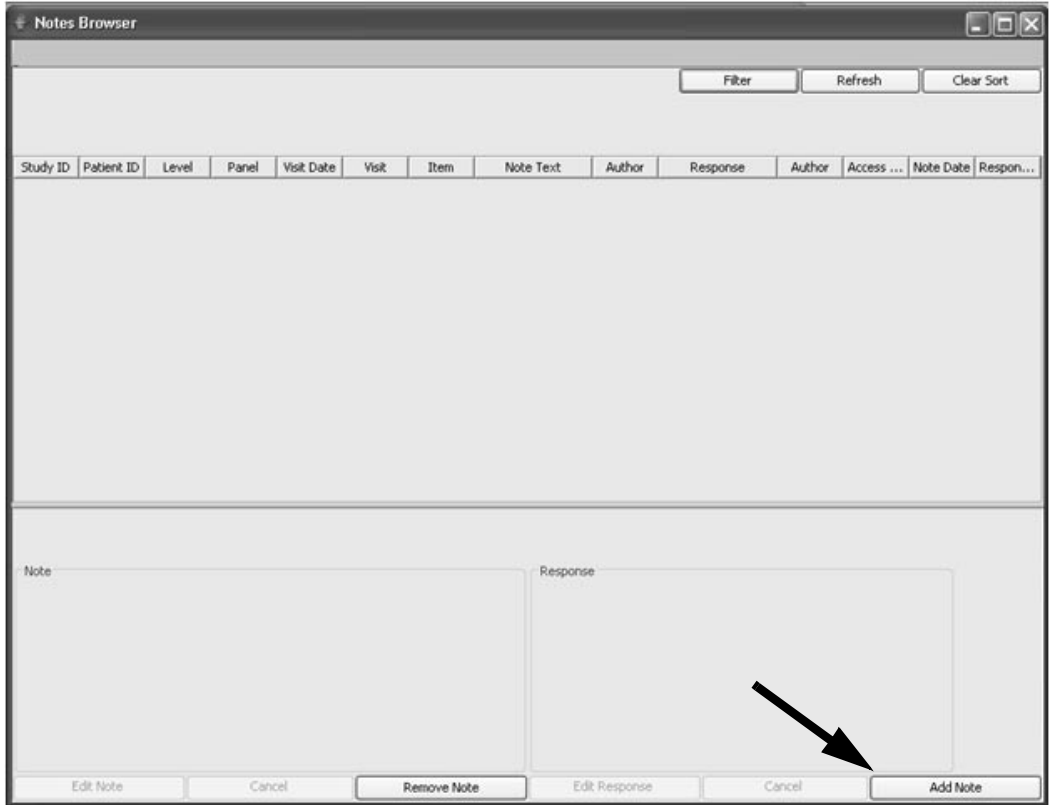
---

*Add patient note*

When you generate a Scatter Plot the 'Add Notes' icon is available in the plot toolbar. It supports adding a patient note when you click on a data point in the graph and then click on the Add Notes icon.

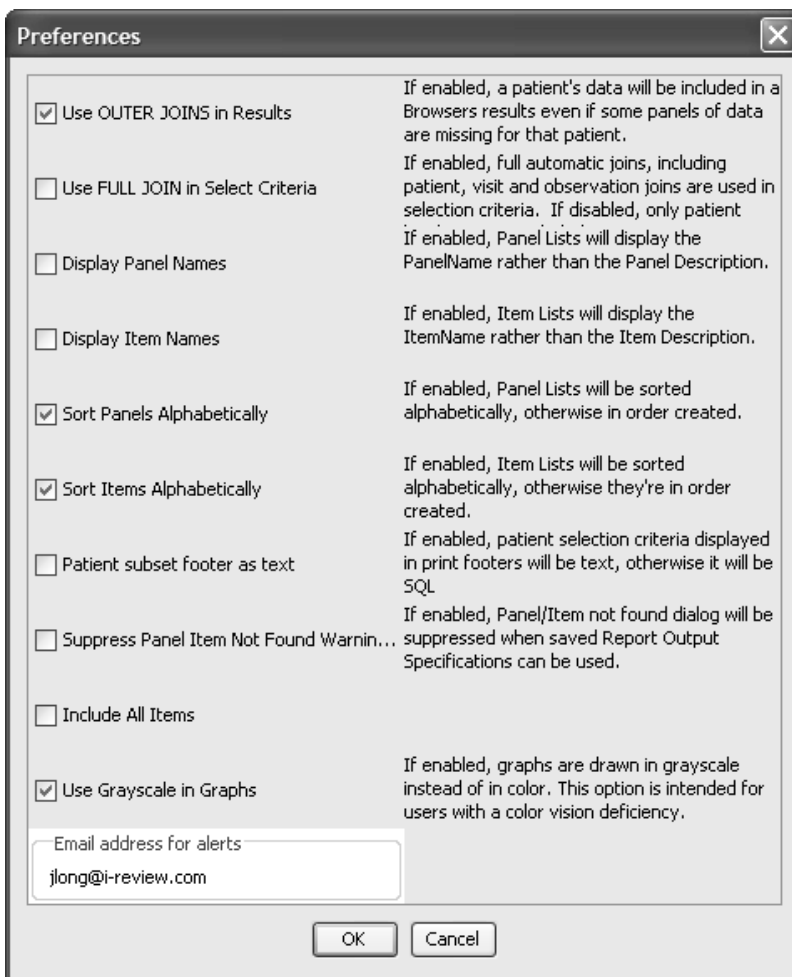


The **Notes Browser** window opens to view existing notes for the selected patient or you may click on **Add Note** to add a new note.

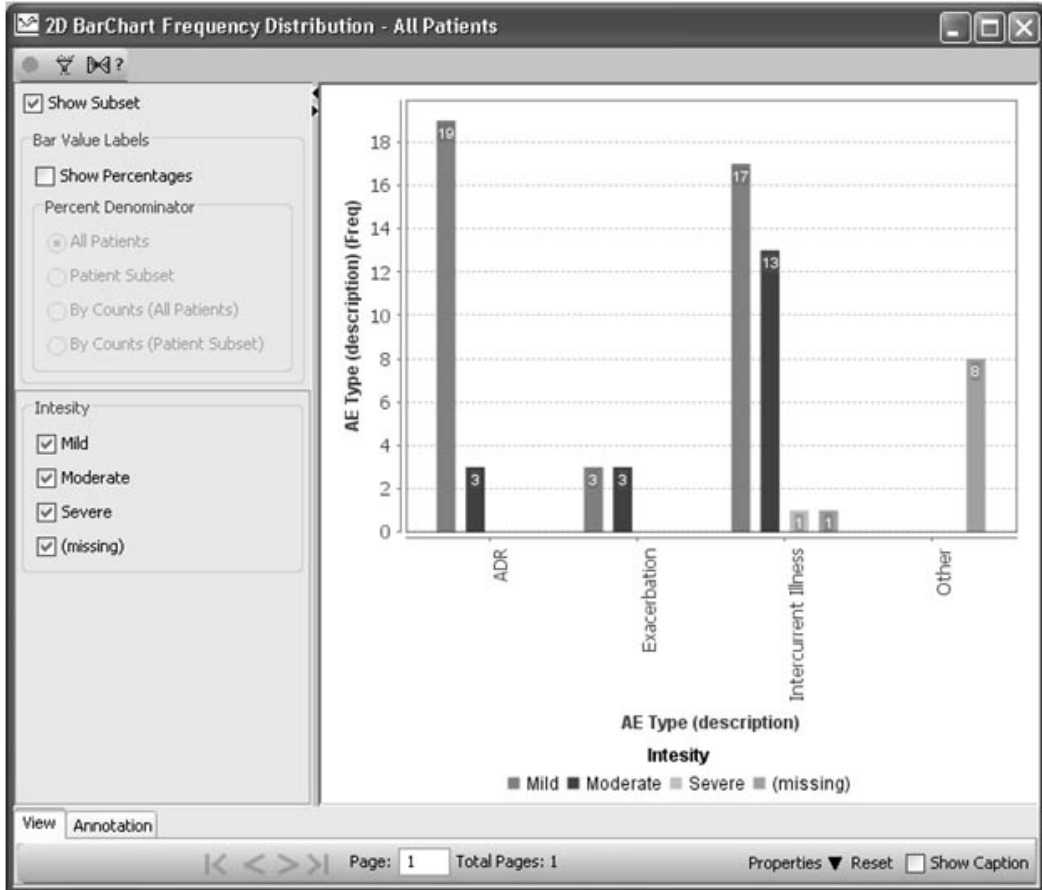


*See Chapter 3: Review Patient Data, see section on Notes Browser.*

Users with difficulty viewing color may optionally change their graphic displays to grayscale. In the Edit menu, select Preferences to check on option for 'Use Grayscale in Graphs'.



When the Preference option is checked then the graph output will display as grayscale instead of color.



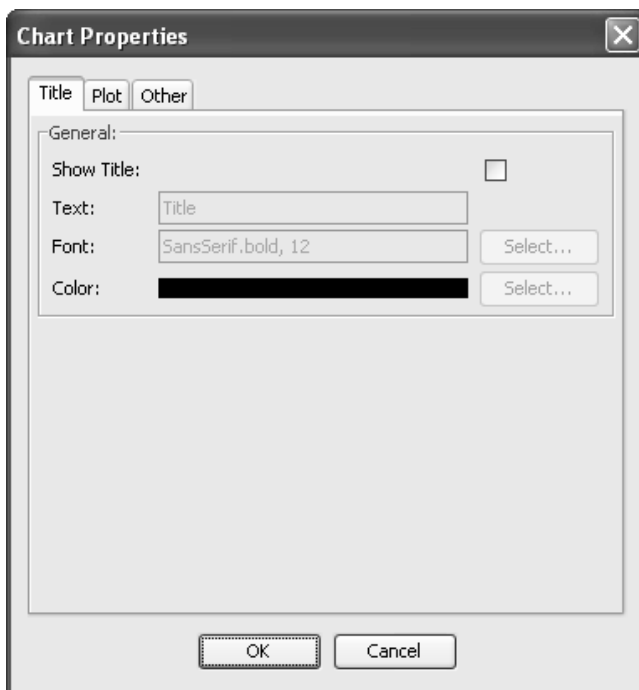
---

# Graph display keys

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## *Graph manipulation keys*

Click on “Properties” located in the graph footer, to display the Chart Properties window.

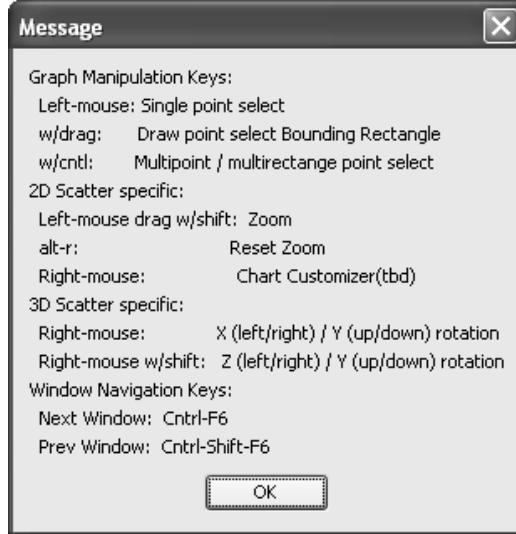


Click on the **HELP** menu in the tool bar and select **Graph & other keys**.





The message window displays outlining directions for the various graph manipulation keys.

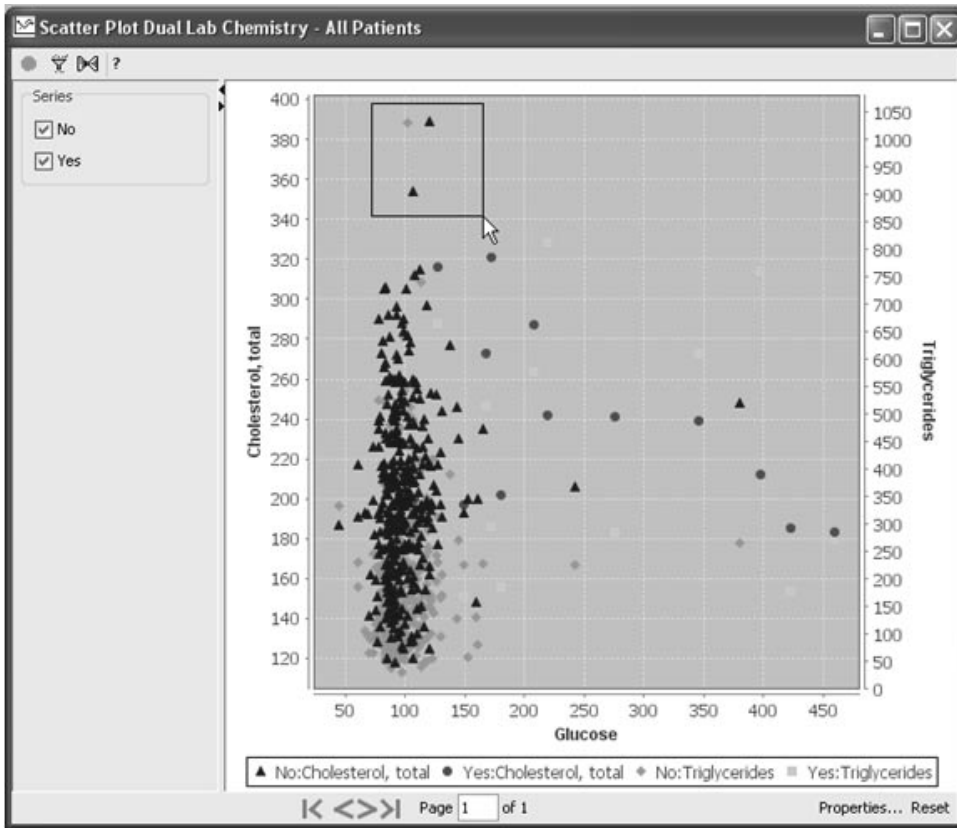


---

### *Data point select*

You can identify patients by selecting data points on a scatter plot with the Data Browser window open.

1. Single point select, click on the left mouse for a single point.
2. Multiple point select, click on the left mouse and drag to select a bounding rectangle.
3. Hold down the **CTRL** key, and left mouse click on random points.



The Data Browser updates to display the selected cases.

Data Browser - 3 cases selected

Study	PT	INV	SEX
KA201\$CUR...	1108	066	Male
KA201\$CUR...	7101	065	Male
KA201\$CUR...	7203	065	Male

Custom DCM/Question Groups:

Custom DCM/Question Groups n

DCM/Question Groups

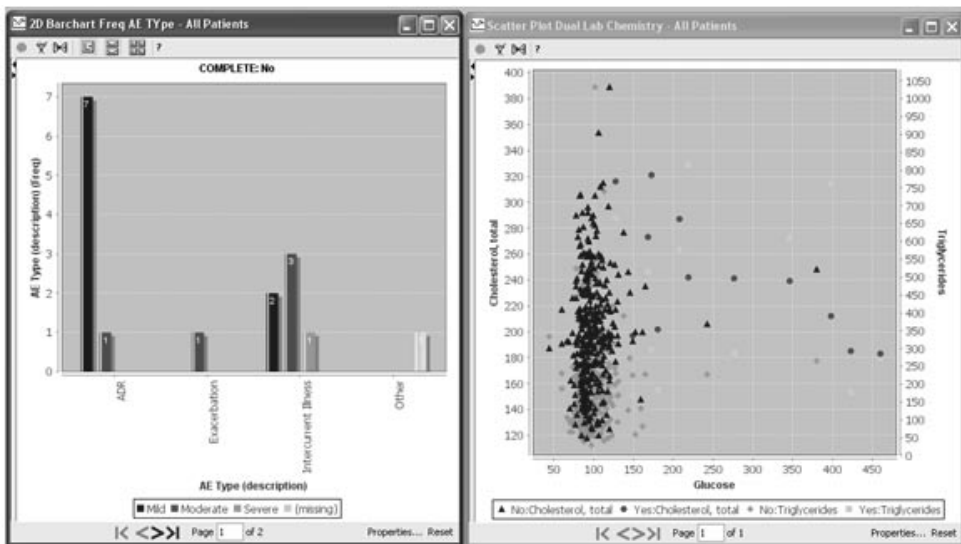
- AERSData
- AERS

Prev CASE Next CASE Reset Cases

---

*Multiple graphs*

You can have multiple graphs active at the same time by executing multiple graph objects.



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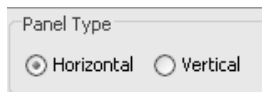
## Defining a graph specification

---

### *Creating a graph specification*

Specify the contents of a graph by applying the same method that you used to build the patient selection criteria.

1. Select a Graph Type.
2. Select a Graph Style.
3. Optionally, select Panel Type as Horizontal or Vertical data tables, applicable to all 2D Scatter Plot type.



4. Optionally, click on the Numeric checkbox below each axis choice; to allow control whether an item is to be understood as numeric, or character when plotting. This will affect sorting on the output display.
5. Select a panel and item with the appropriate function for the item.
6. Depending on the graph type and style selected, click the appropriate graph axis button to add the item to the graph specification.

For example, click to add the selected item to the Y-axis on the right side of the Graph Browser window.

7. Enter a Add BY variable to group the data (optional).
8. Enter a Page BY variable (optional).
9. Enter a Graph Heading or default the selected graph style.

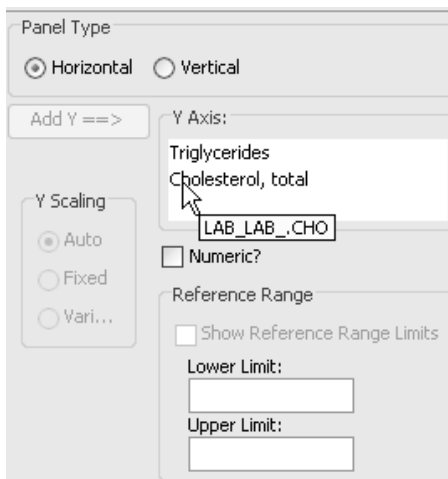
The graph heading displays either 'All Patients' or 'Subset' if a patient selection criteria was entered. If you modify the graph heading the patient population status of either 'All Patients' or 'Subset' still displays.

10. Click Create Graph.

---



## Show Details

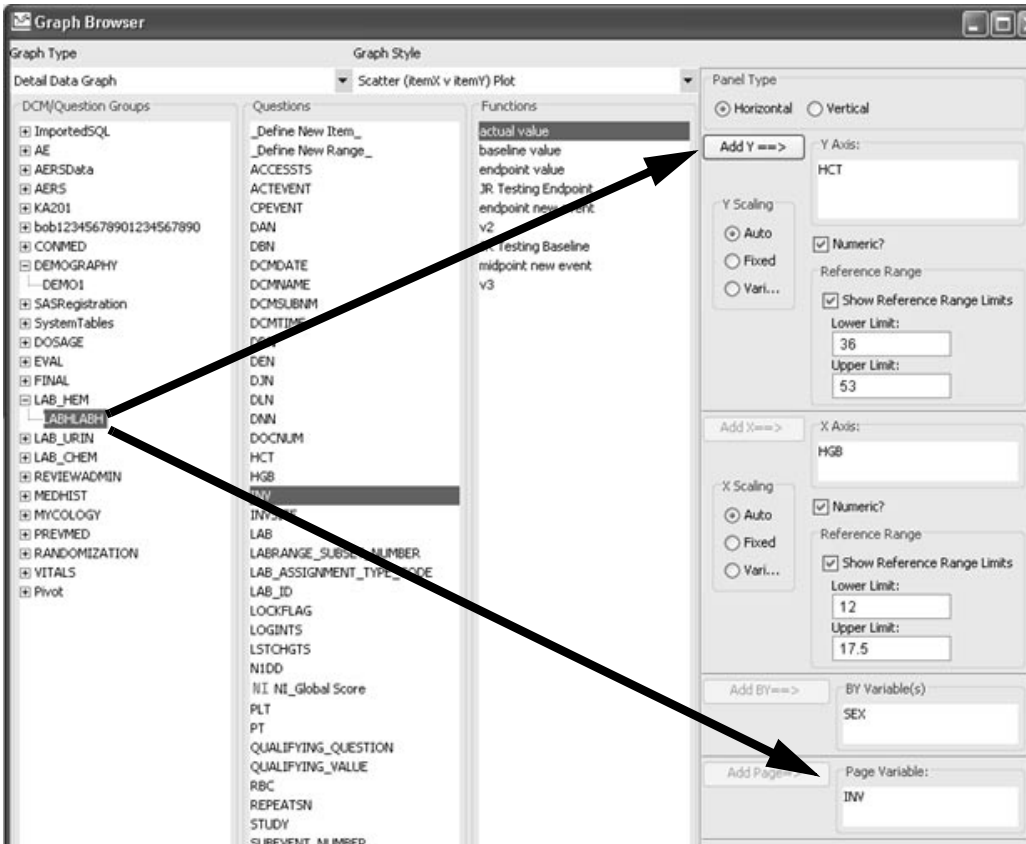
The **Show Details** feature can be used after you have added items to your graph specification. Simply hold the mouse over the item in the graph definition to view its source contents.



---

## Change graph specifications

1. To change the graph specifications you defined:
  - a. Click on the Y-axis or X-axis to be deleted.
  - b. Click  or from the **Edit** menu select **Cut**.
  - c. If you want to clear the graph specifications entirely, click .




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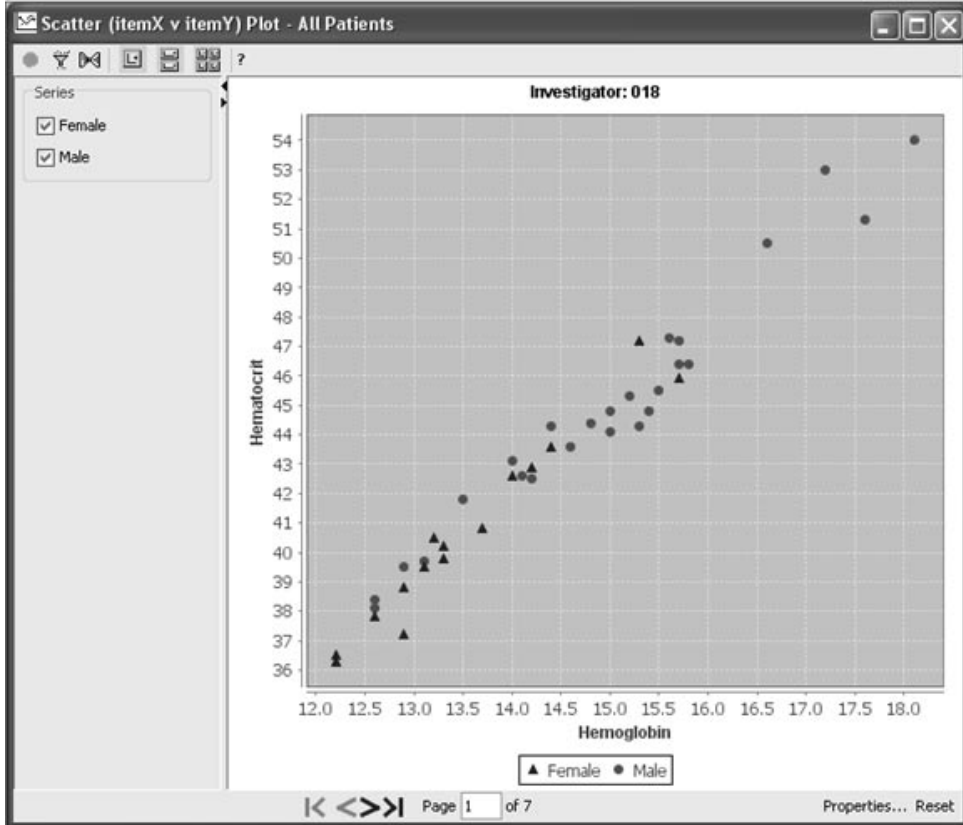
*Page BY variable*

When you apply a Page variable item such as investigator which may be common to most of your panels, select the investigator data item from the same panel as your axis items. In this example, the lab items and investigator panel were selected from the Lab Hematology panel.

This will avoid creating complex outer joins or possible discrepancies where the Page variable item may be missing in a particular panel.

**Note:** Select 2D graphs in Detail Data Graphs for Scatter Plots and Summary Graphs for 2D Barcharts support the Add Page variable.

The Page By item variable selected in this example for Investigator is displayed in the header and the page number in the footer.



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### *X and Y scaling*

The X-axis and Y-axis scaling on the graph browser screen only appears when line charts or 2D bars are the selected graph styles.

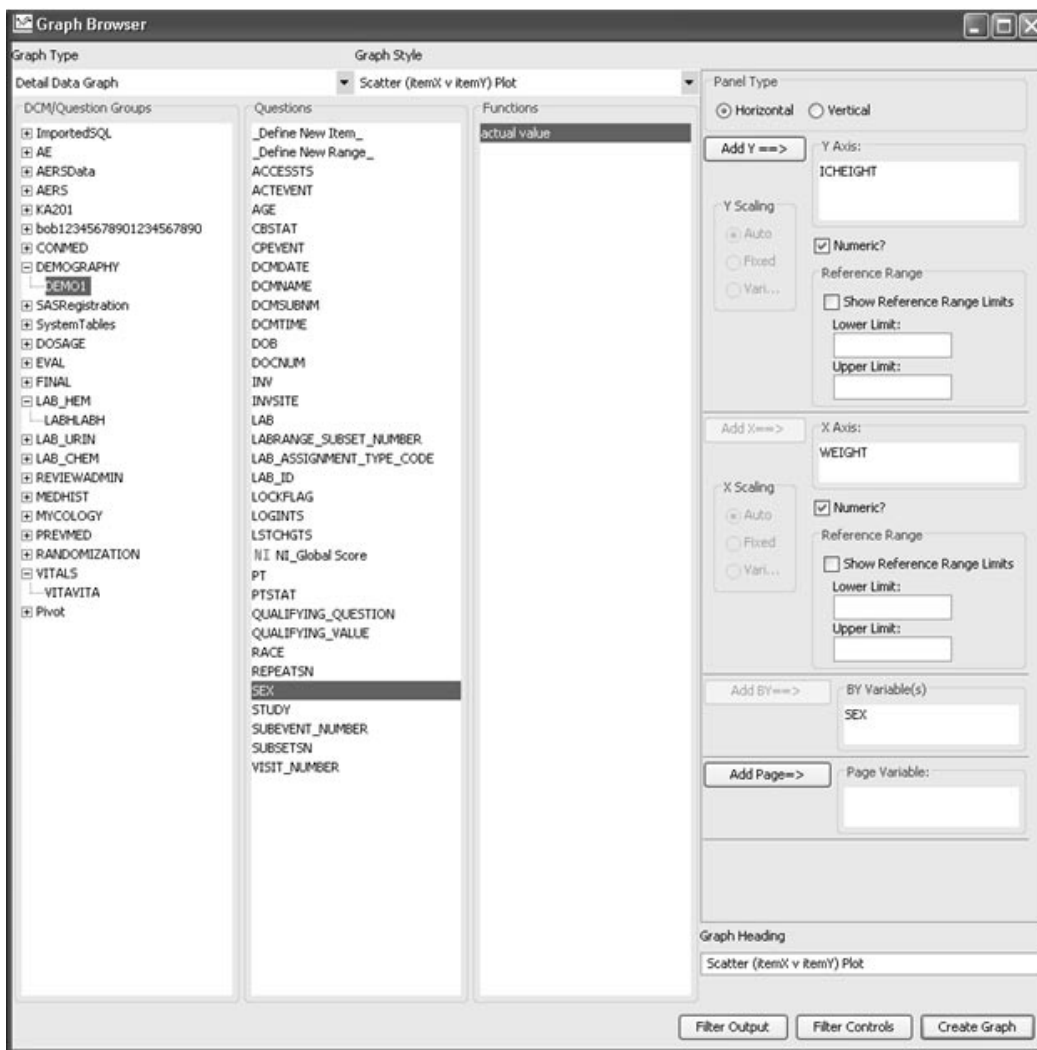
They are inactive and initially set to Auto until a page variable is selected. Then you may pick either Auto (0), Fixed (1), or Variable (2). When you save any graph, an X and Y scaling value will be saved. These values will be 0 unless you changed them on the screen. For old saved graphs, if no X and Y values exist, it will read as 0.

**Note:** You must use Add Page for the scaling features to be activated.

# Detail Data Graph Styles

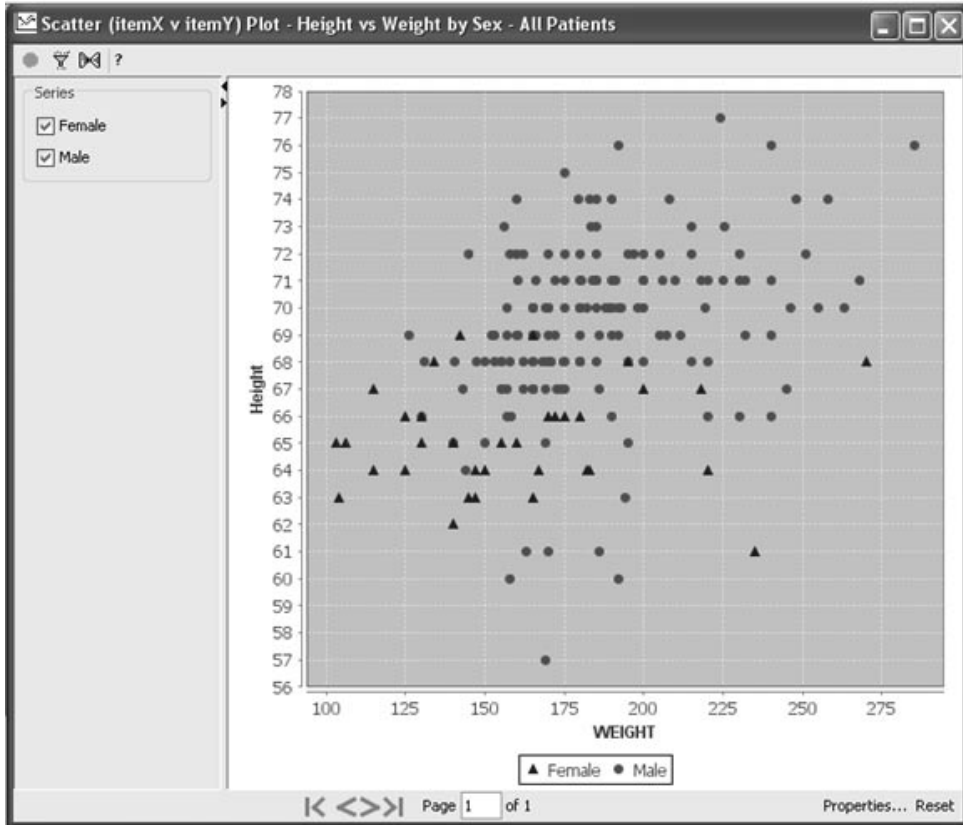
## Scatter (Item X vs. Item Y) Plot

In a Scatter (Item X vs. Item Y) Plot graph, each data point corresponds to each patient's observation for item X and item Y. Use the BY variable to subset graphic displays. Optionally, change the default graph style for the graph header.

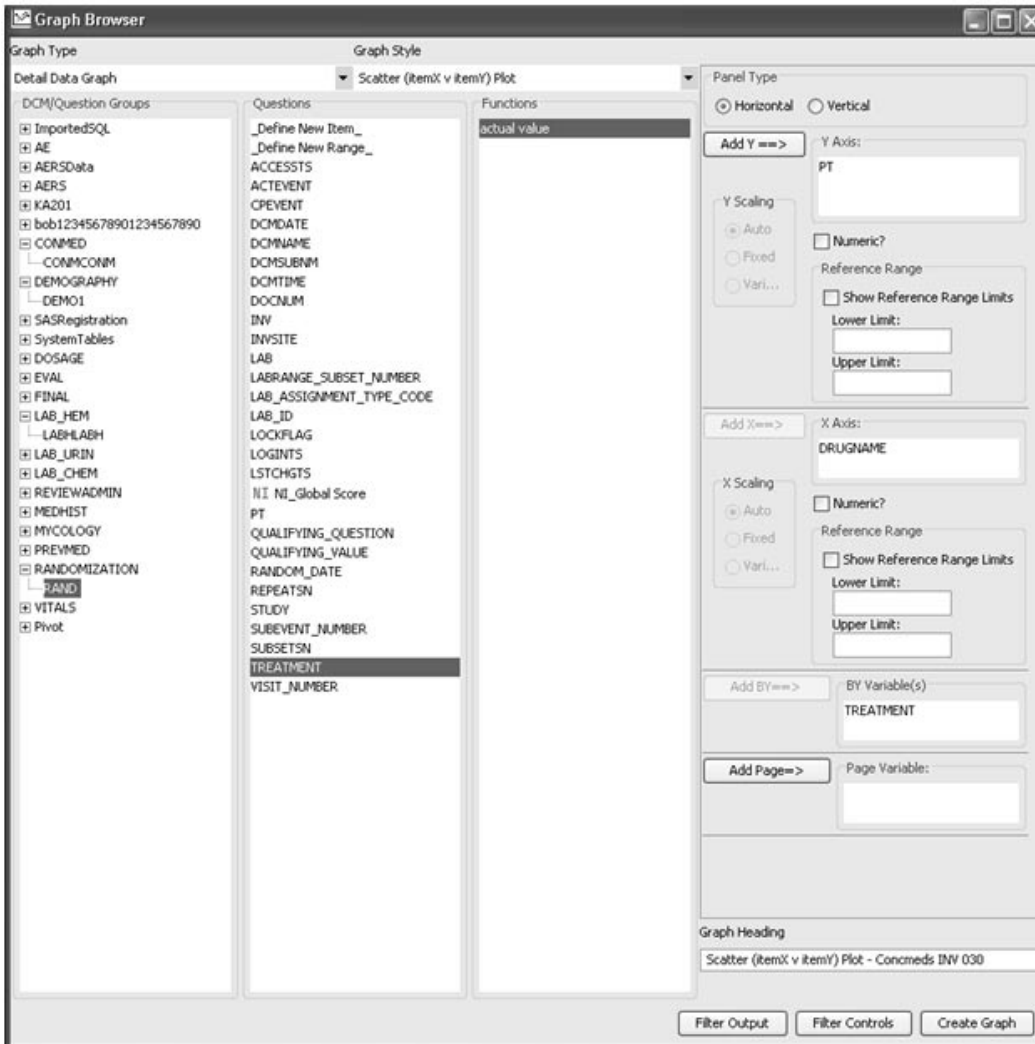




This scatter plot example displays numeric data. There is no restriction on the data type used.

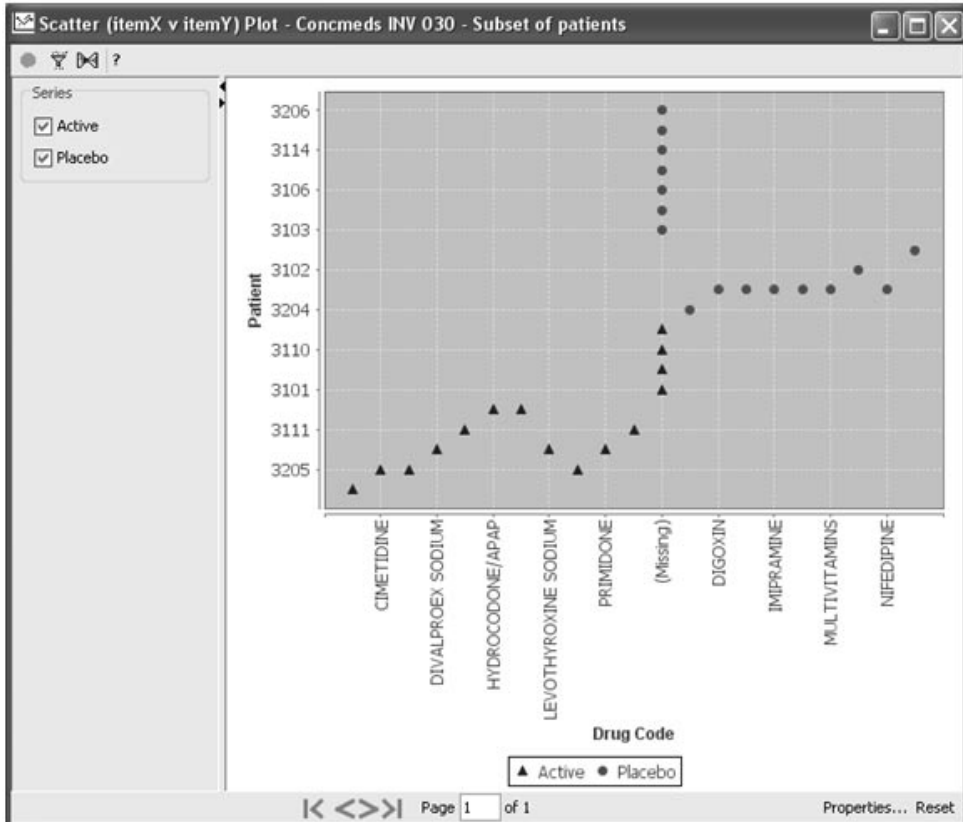


Character data is also supported. This example of the same graph type Scatter (Item X vs. Item Y) Plot with character data shows concomitant medications for individual patients.

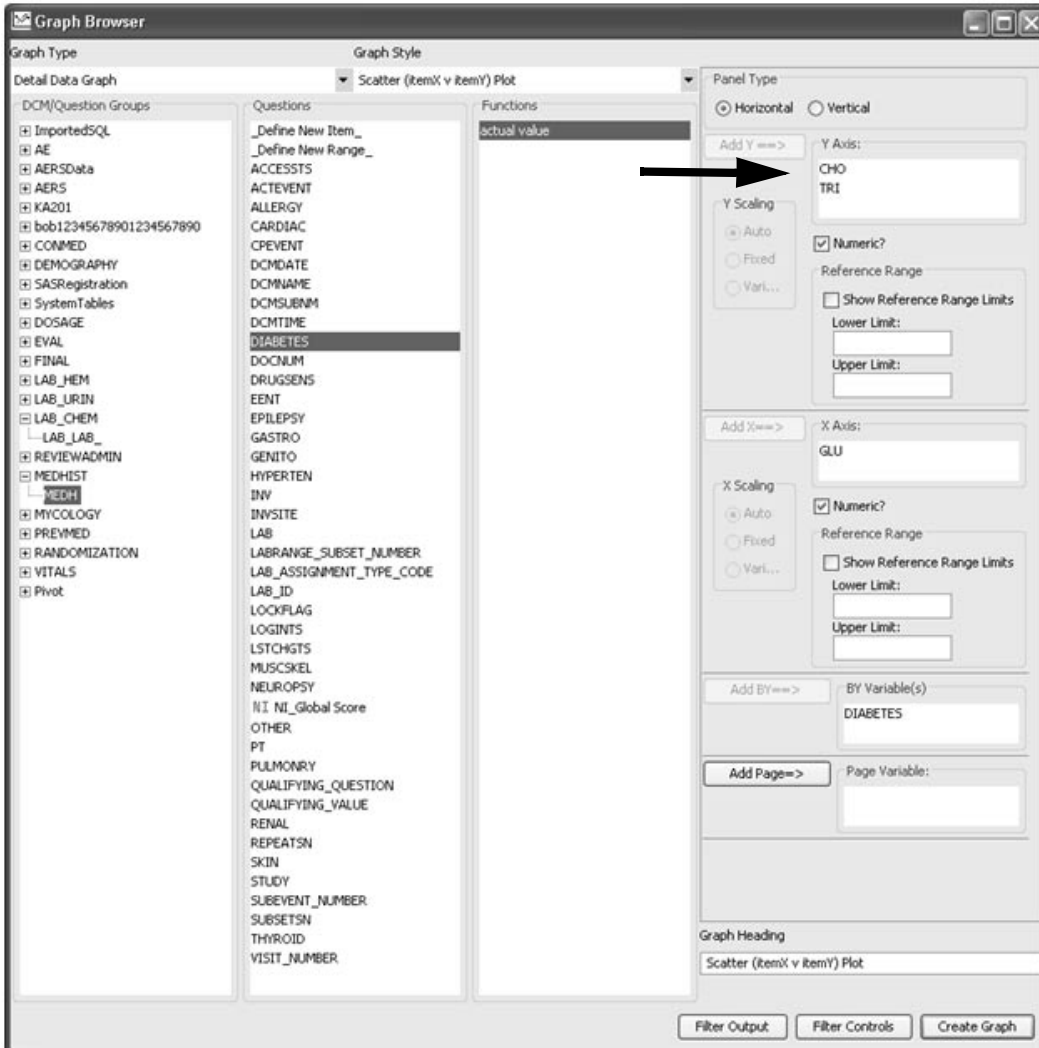


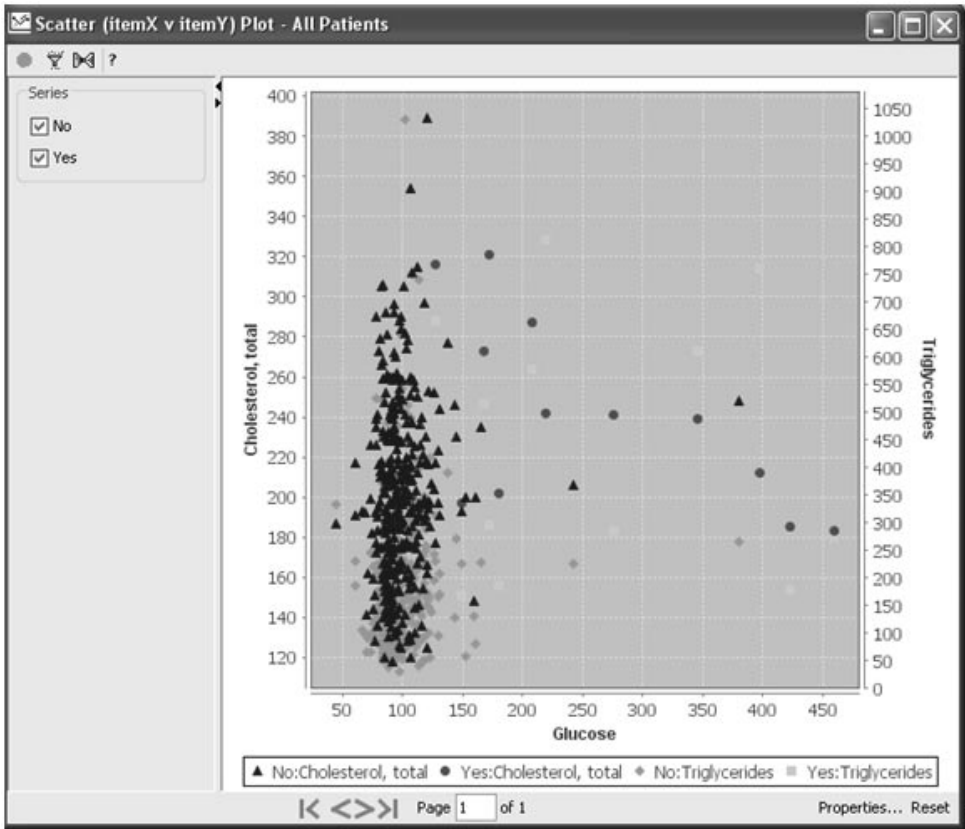
For this example, the data was subset for manageable size in viewing (approximately 20 values maximum on either the X-axis or Y-axis). A patient selection criteria was applied for investigator site 030.

*Note: You may need to limit the number of patients displayed.*



The Scatter (Item X vs. Item Y) Plot can also be plotted as two variables on the Y-axis (dual Y-axis mode).

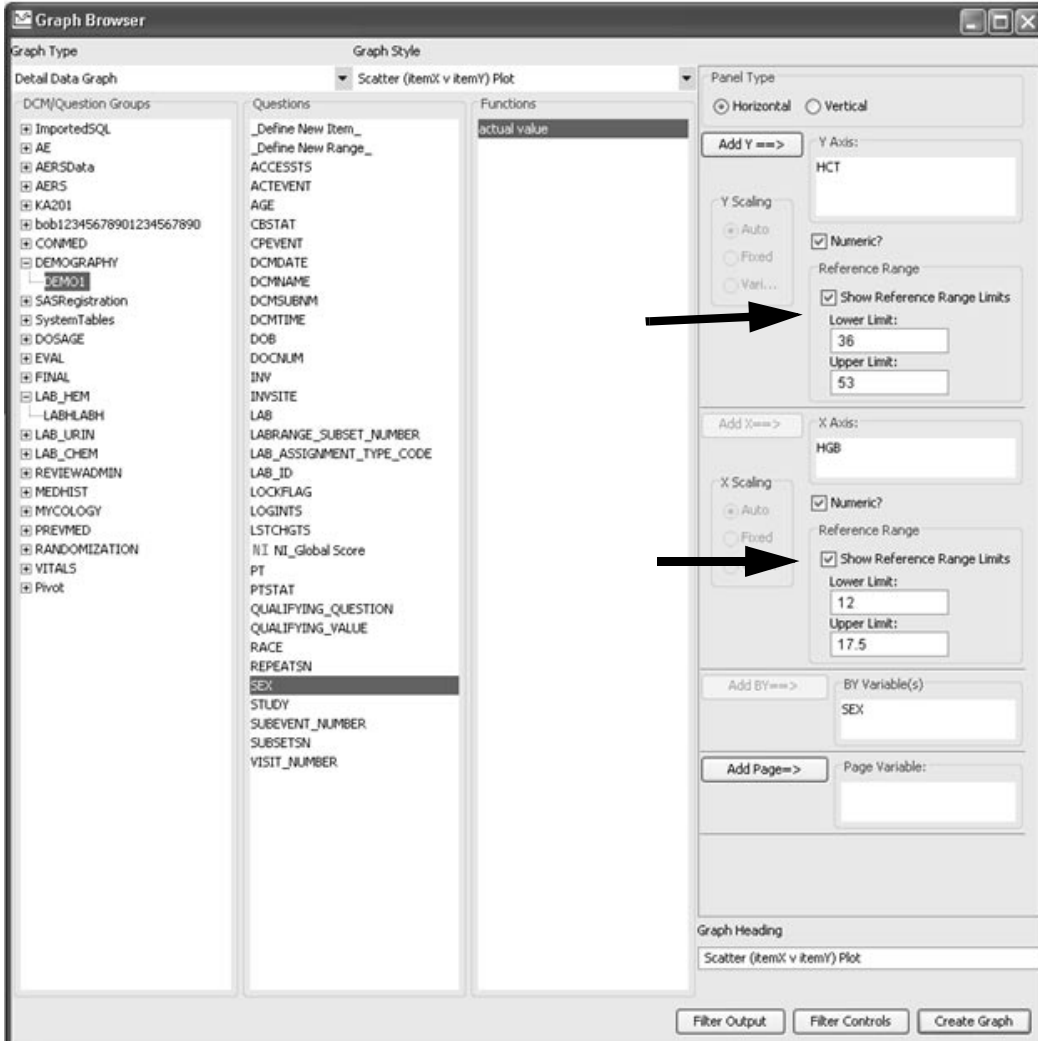




## Apply Reference Range

You may also apply a **Reference Range** to the Y-axis and X-axis for numeric data.

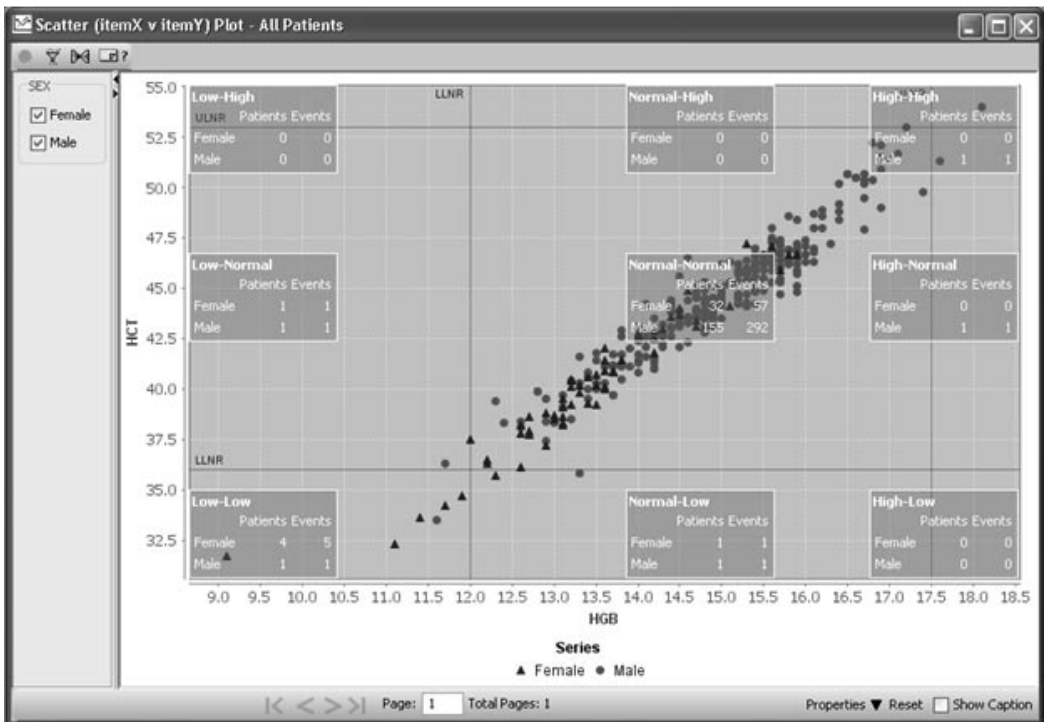
Click on the check box for **Show Reference Range Limits**. Enter the Lower and Upper Limits for Y-axis and X-axis.



The generated graph will display the reference range lines as vertical and horizontal lines.

The lower limit and upper limit reference range values can be specified separately for Y-axis and X-axis. The graph is segmented into nine labeled “range” plot sectors providing the patient count. The number of data points in each range plot sector are counted for each BY variable value. There can be multiple data points for a single patient, so the graph calculates how many distinct patients are contained in a plot sector as well as how many “Events”. Each range label displays the number of Patients and Events that fall into a range sector area. For example, the range sector “Low-Low” shows 4 Female patients with 5 Events, and 1 Male patient with 1 Event. The label textboxes can be dragged to other locations for ease of viewing.

*Note: You cannot apply Reference Range for dual Y-axis plots.*



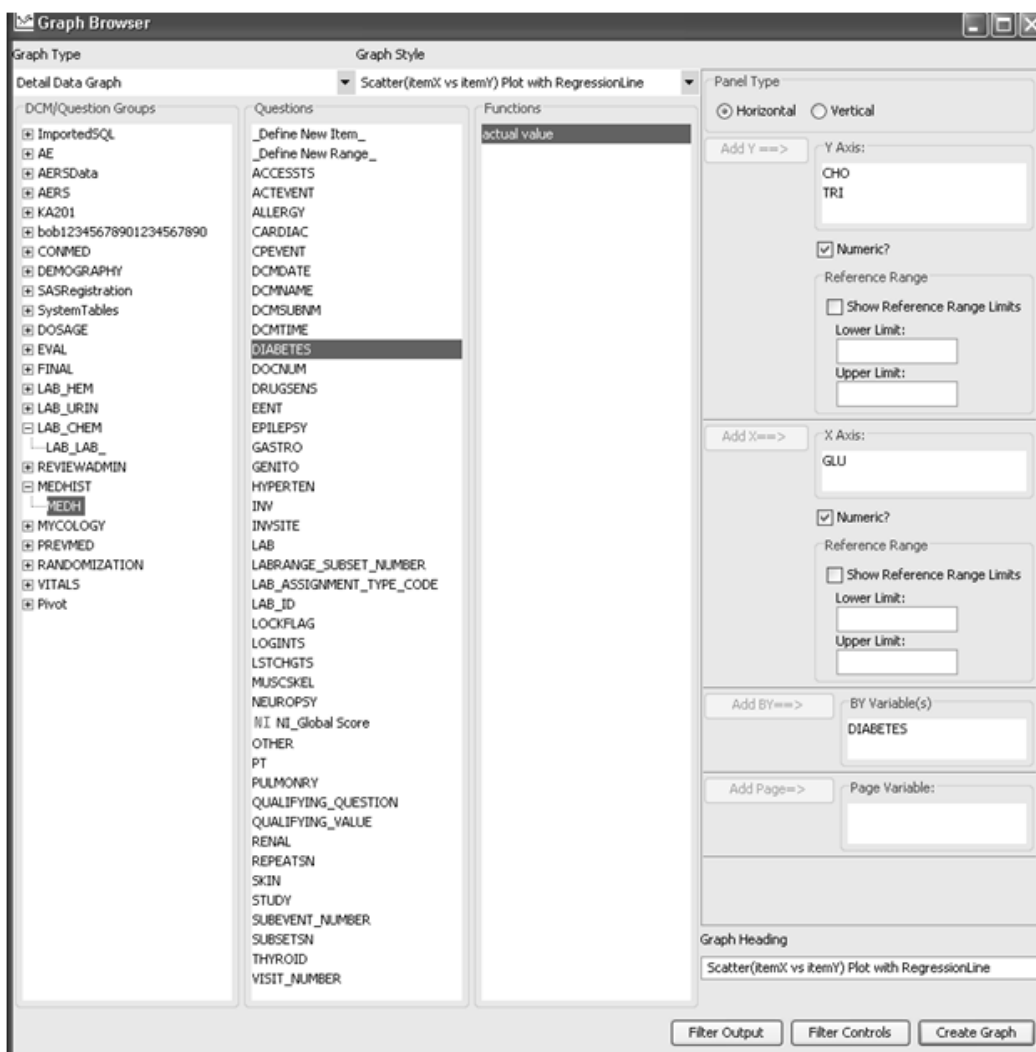
---

## Scatter Plot with Regression Line

In a Scatter (Item X vs. Item Y) Plot with Regression Line (least mean square algorithm), each data point corresponds to each patient's observation for item X and item Y. There is no restriction on the data type used.

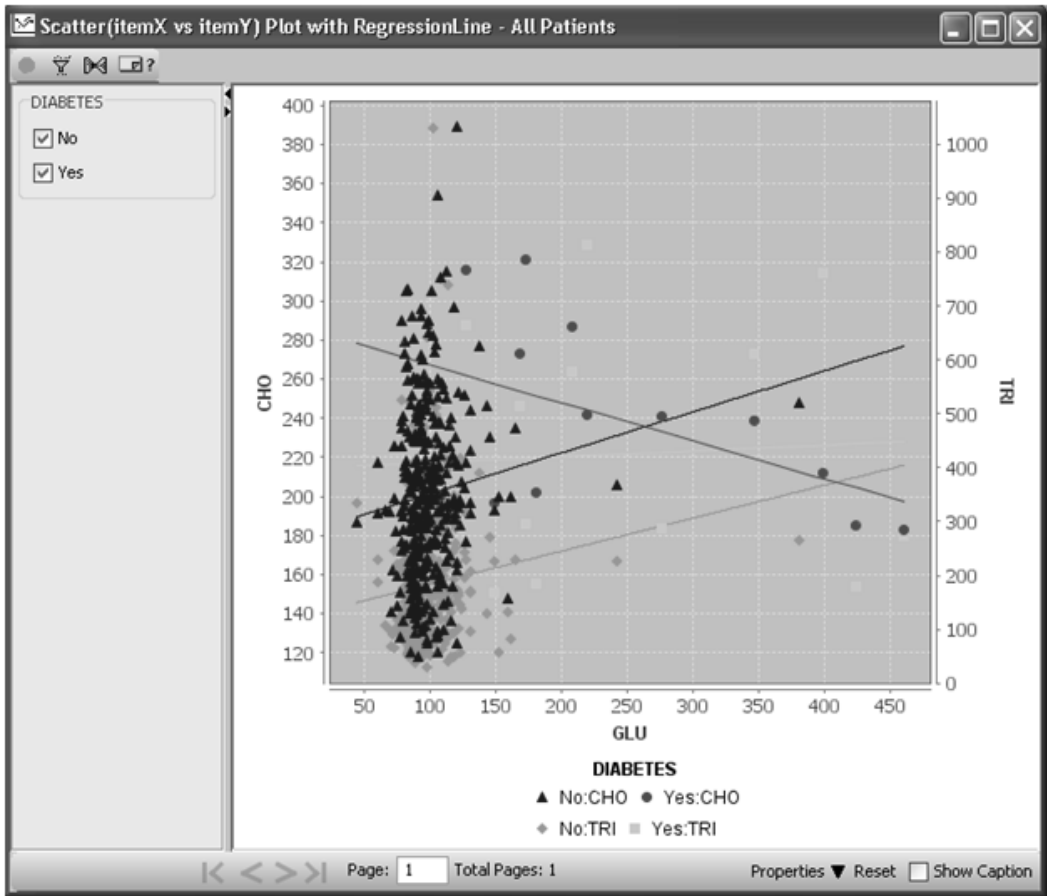
*Testing of Regression formula of Y on X: ( $y = a + b * x$ )*

The Scatter Plot with Regression Line can also be plotted as two variables on the Y axis (dual Y axis mode).





Optionally, you may apply Reference Range for the Y-axis and X-axis but *not* for dual Y-axis mode plots.



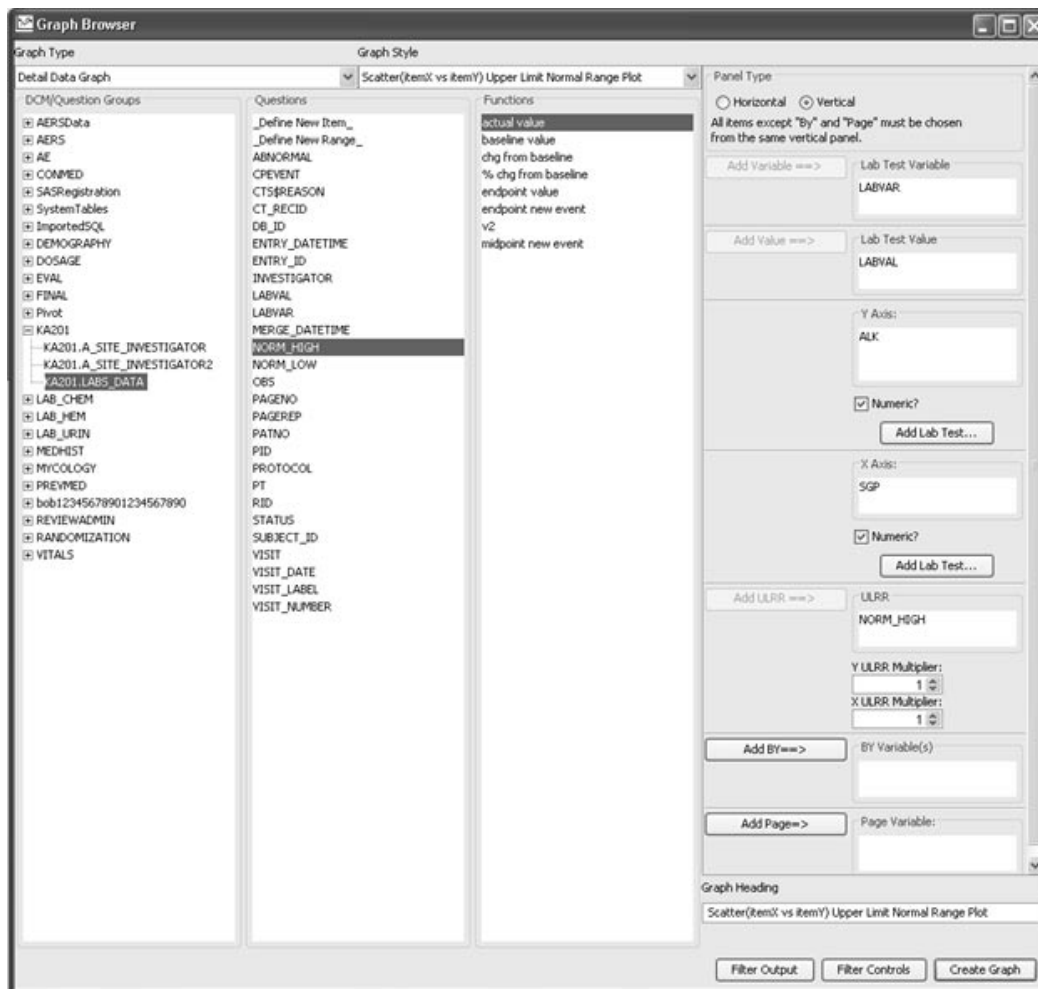
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## Scatter Upper Limit Normal Range Plot

The Hy's Law type plot is supported by the Scatter Plot for Upper Limit Normal Range Plot. It is typically used when evaluating Lab Chemistry data for Liver Enzymes for drug-induced liver injury (DILI) from experimental drugs.

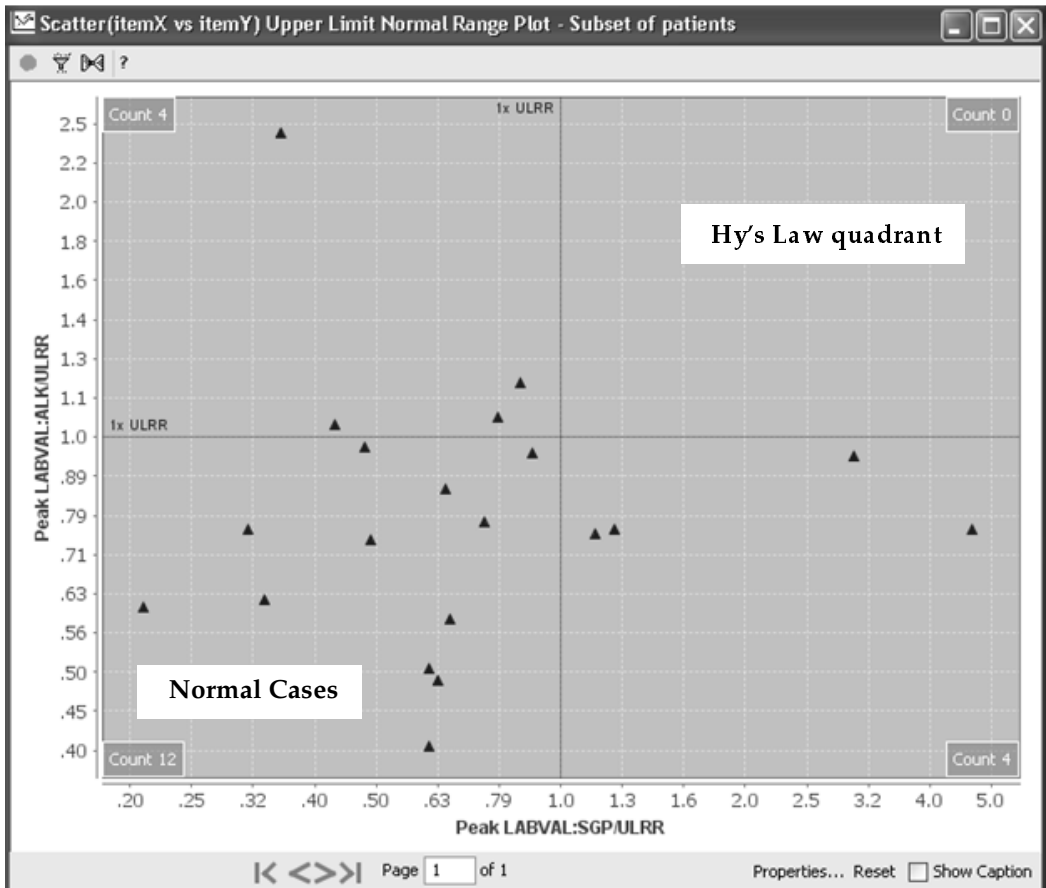
In the example, Vertical Panel Type is selected where all items except "BY" and "PAGE" must be chosen from the same vertical panel.

First, the items for Lab Test Variable and Lab Test Value are added. Then the individual lab tests are added as the X axis and Y axis variables. The Upper Limit Reference Range item is entered for "ULRR". Optionally, you may apply an X-axis and Y-axis ULRR multiplier.



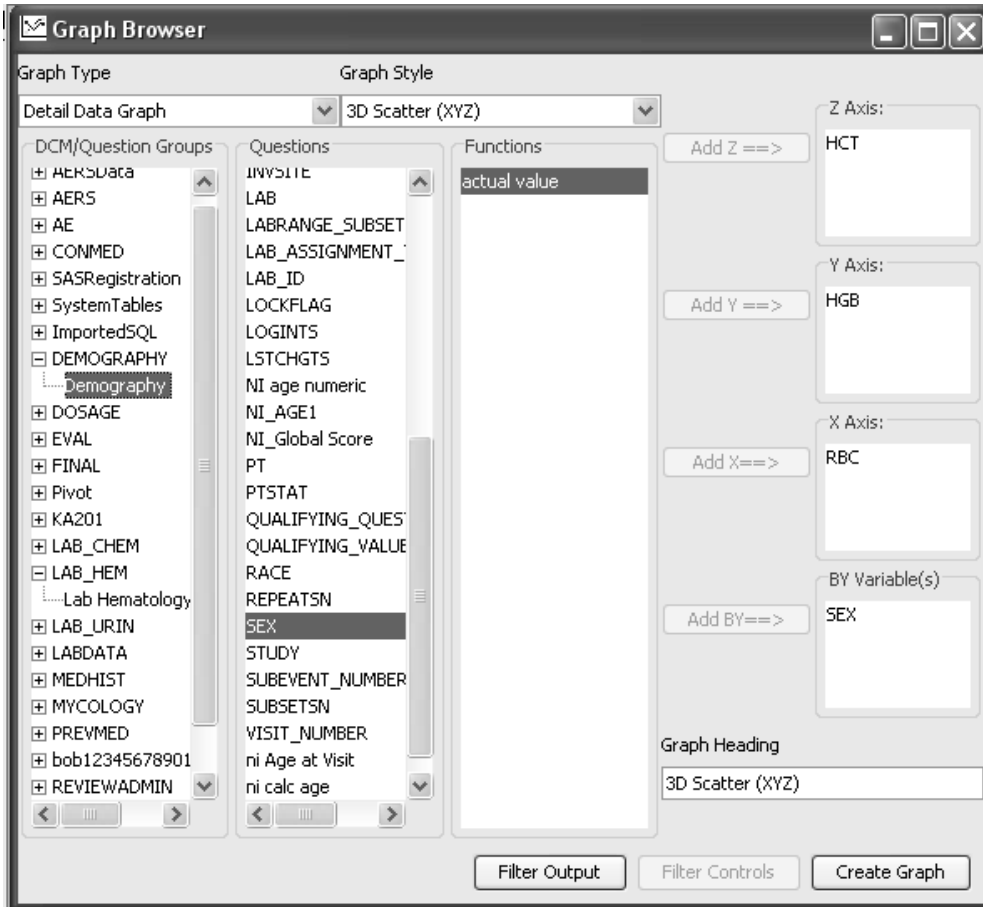
In the graph, for each subject, the peak ALK divided by the upper limit of the reference range (Y ULRR), is plotted against the peak SGP divided by the upper limit reference range (X ULRR), on log scale 10. Reference lines for Y ULRR and X ULRR multipliers are drawn to divide the plane into four quadrants. Normal cases are in the lower left quadrant. The upper right quadrant is referred as Hy's Law quadrant. Any subject that falls into this quadrant is subject to further special investigation for toxicity concerns.

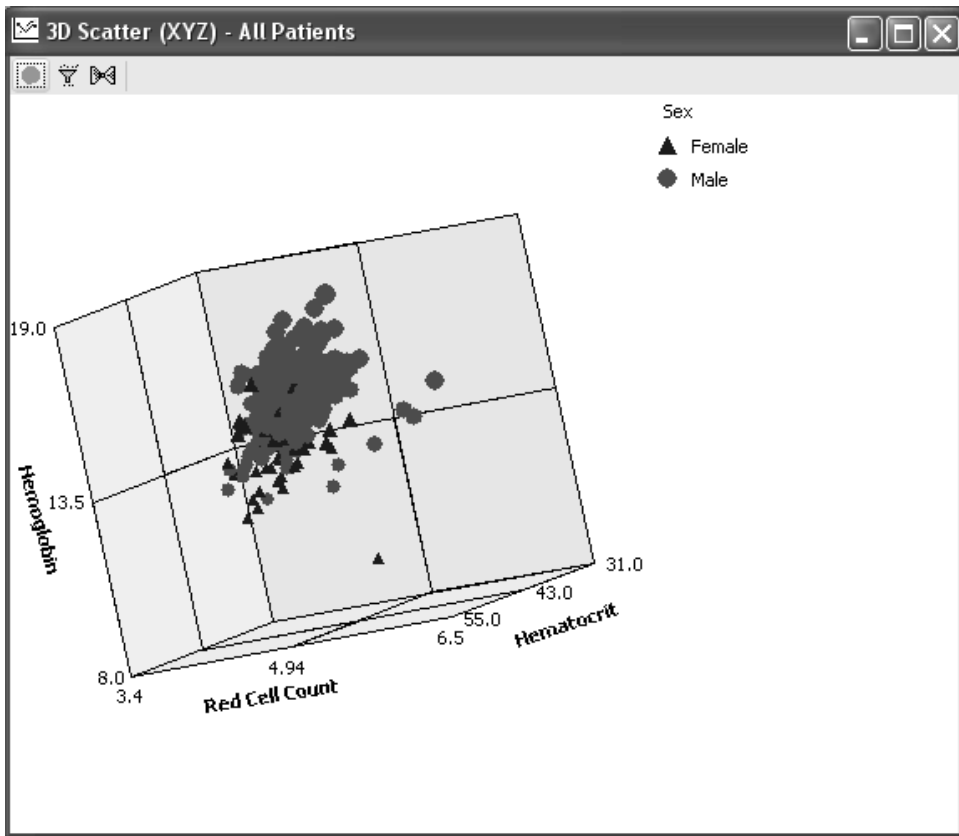
The corner cell counts represent patient counts for that quadrant.



The 3D Scatter (Item X vs. Item Y vs. Item Z) Plot displays three-dimensional data. Each patient's data points for X and Y coordinates are plotted against the Z elevation value.

Use the **BY variable** to subset graphic displays.



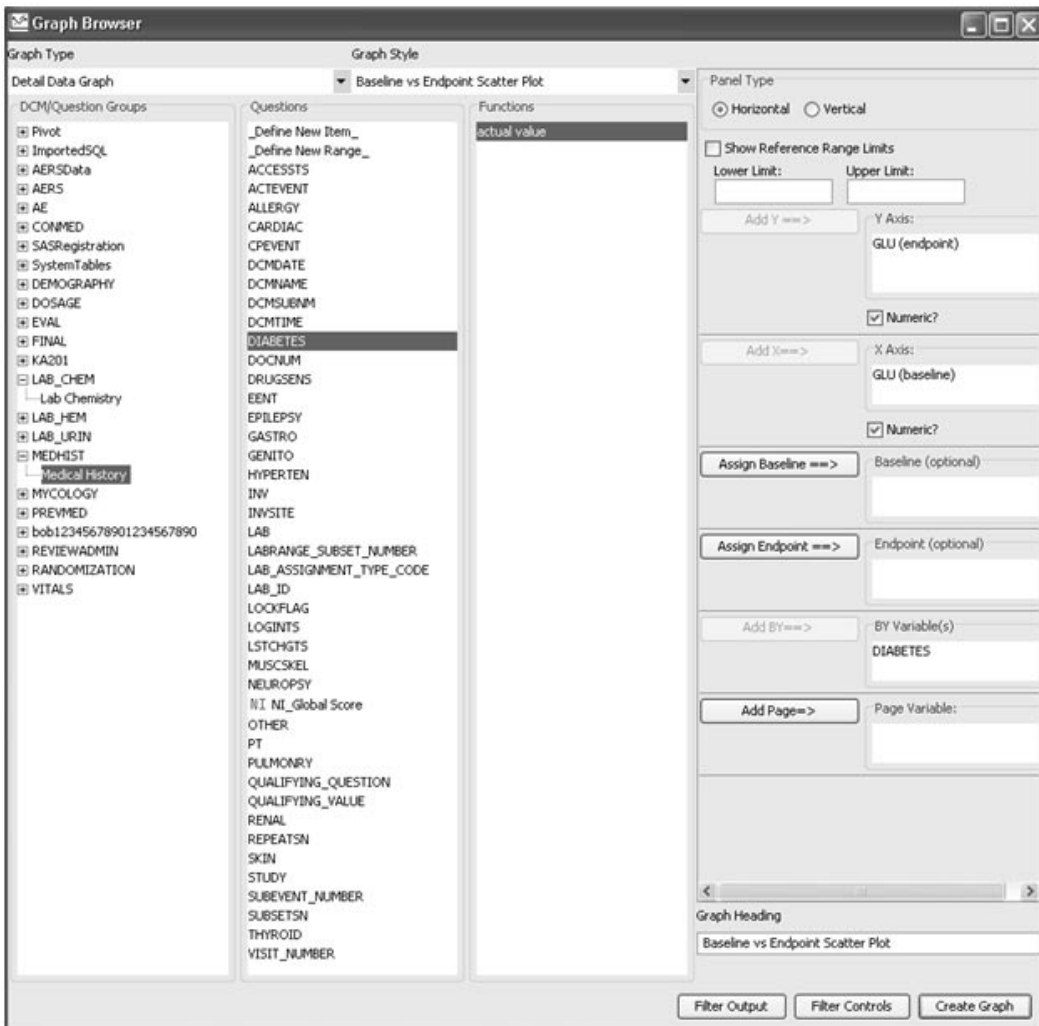


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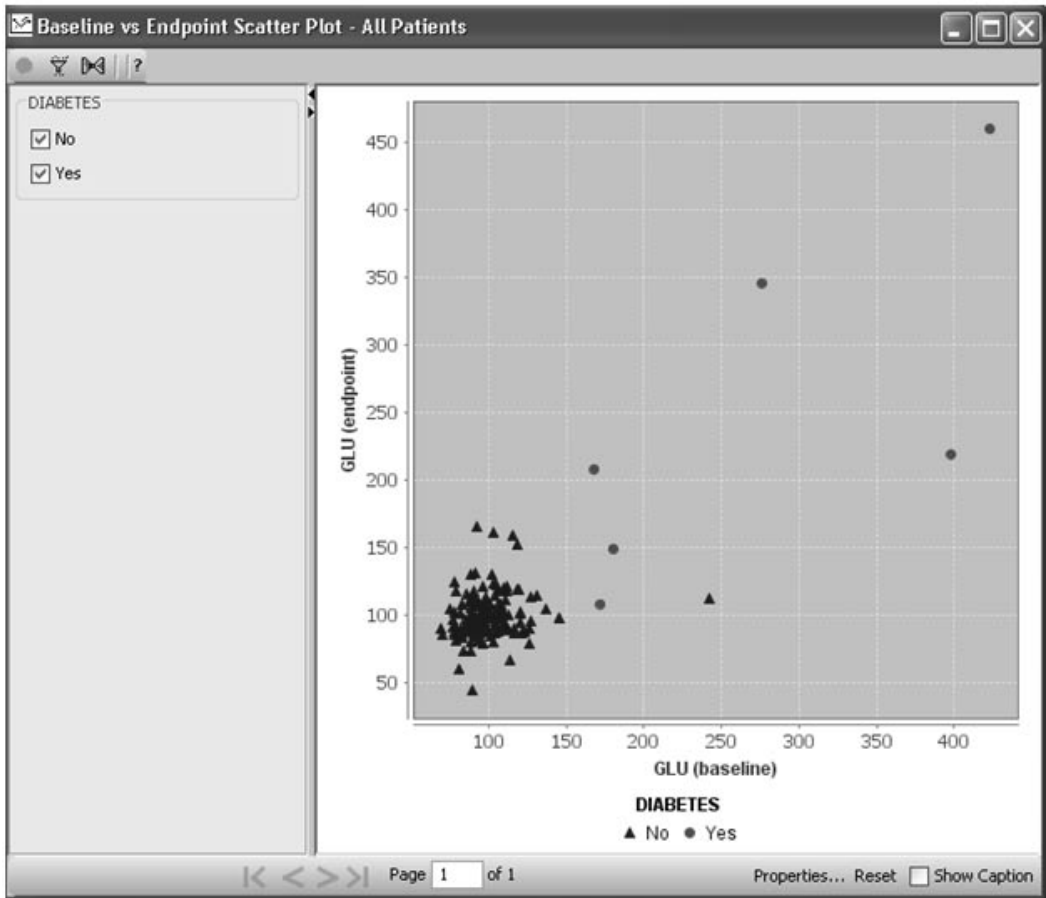
## Baseline vs. Endpoint Scatter Plot

In a Baseline vs. Endpoint scatter plot each data point represents a patient's baseline (X-axis) and endpoint (Y-axis) for the item. The system default for this particular scatter plot requires the 'Baseline value' and 'Endpoint value' study definitions to be entered in Review Admin.

The Baseline versus Endpoint scatter plot definition below is defined with minimal data for "GLU", added to the Y axis as the endpoint and GLU baseline was default to the X axis. Optionally you could use the **BY variable** to subset the graphic displays. Medical History for "Diabetes" was added as the BY Variable.



The Glucose scatter plot is created using the default baseline and endpoint entered in ReviewAdmin specific for this particular study. A BY Variable was applied for Diabetes from the Medical History.

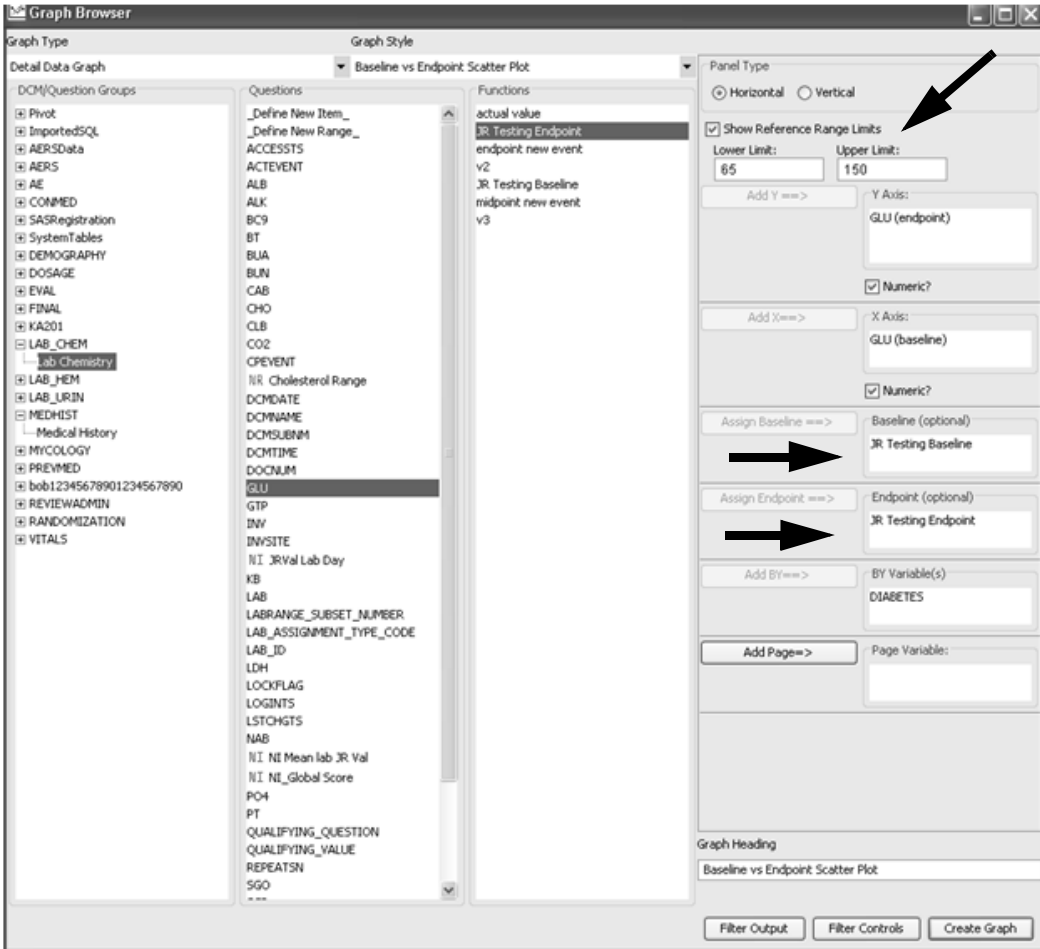


Optionally, you can *assign* Baseline and Endpoint values from the Functions list box. These values would be previously defined within JReview as **New Event** values and used in place of the study specific values entered, or not entered through ReviewAdmin. This feature is very similar to the Shift Table in the Cross Tab Browser. (See Chapter 8: *CrossTab Browser - see section for Create Shift Table*)

JReview also provides graphing formats for Baseline vs. Min. Value Scatter Plot, as well as Baseline vs. Max Value Scatter Plot of selected items.

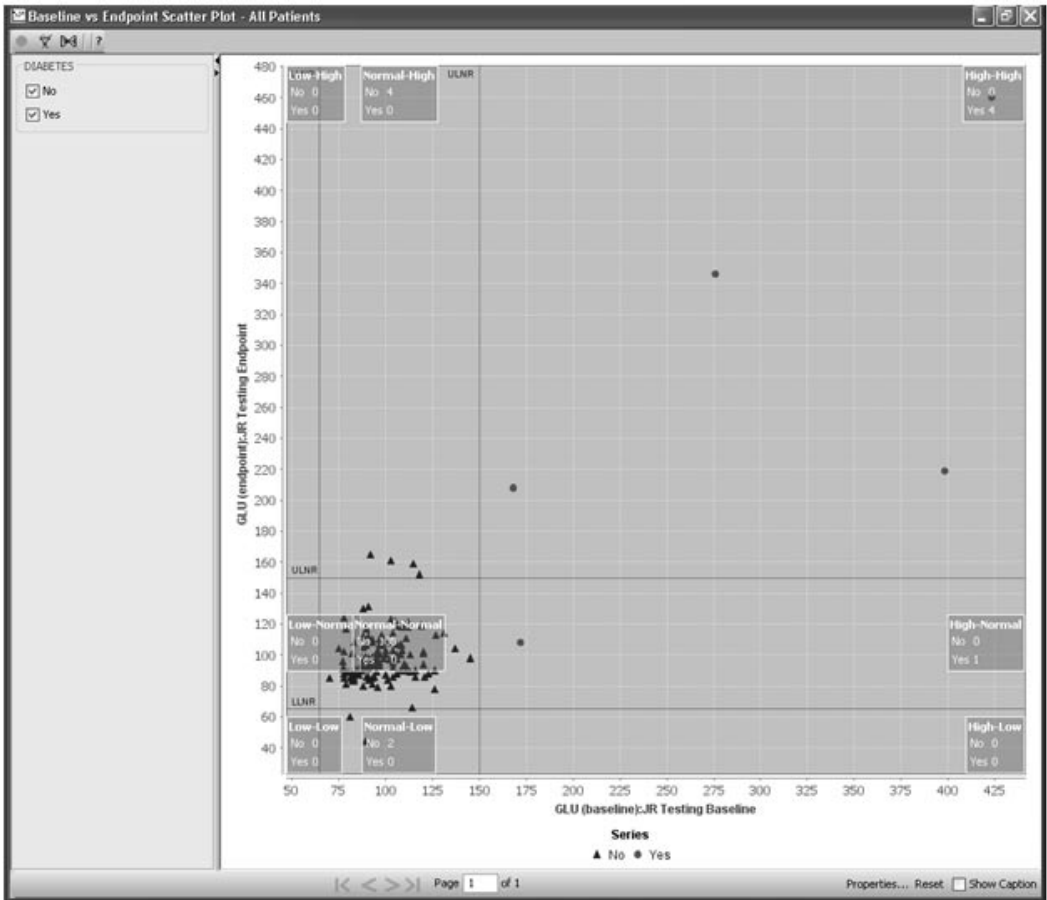
Previously, JReview automatically determined the Baseline and Endpoint values from ReviewAdmin entries. Users can now (optionally) specify the *functions* (e.g., "Visit 4") associated with a variable that select the Baseline and Endpoint. With Baseline/Min.-Value and Baseline/Max-Value versions of this chart type, the user can (optionally) specify a function for the Baseline, but not the Endpoint.

Also, you can enter **Show Reference Range Limits**.



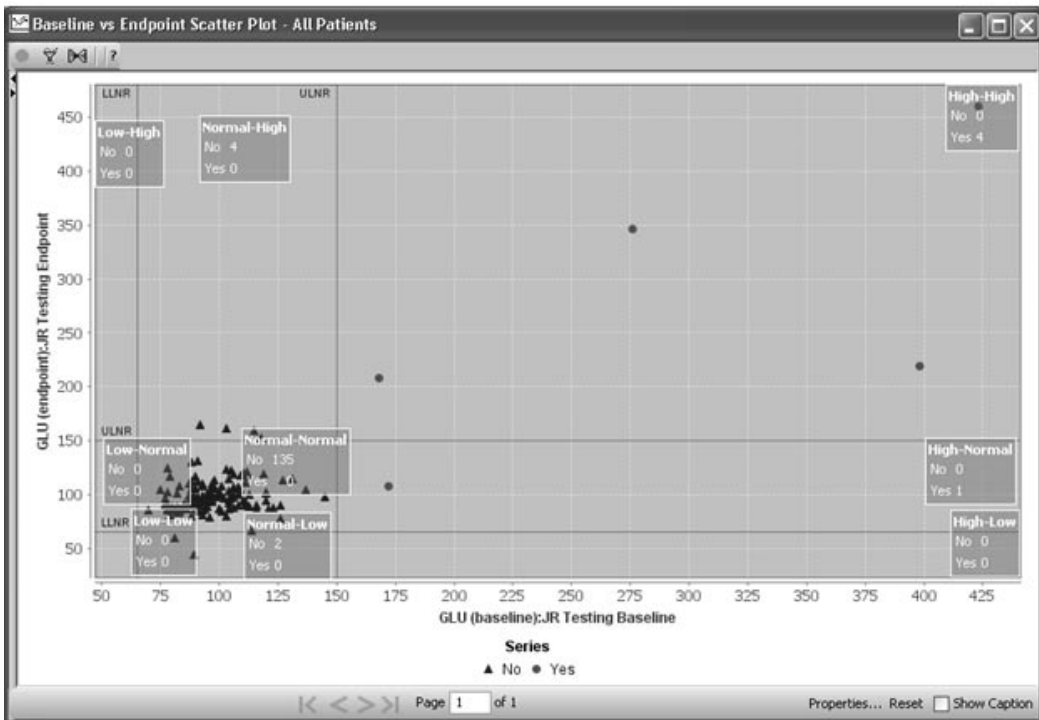


The enhanced features applied to the Baseline versus Endpoint Scatter plots allow them to serve as (rough) analogues to the **Shift Table** found in Crosstab. The Shift plot is created with the specified Baseline and Endpoint, plus defined referenced range low and high values.



The generated graph will display vertical and horizontal lines indicating the normal low and high values. The graph is segmented into nine labeled “ranges.” Each label displays the number of observations that fall into a category. For example, “Normal-High” means that the patient was in the “normal” range at the baseline measurement, but fell into the “high” range at the endpoint. The labels can be dragged to other locations for ease of viewing.

A popup menu accessed through a RIGHT-MOUSE click contains options to hide/show the labels. Click **Reset** for the labels to return to the default positions.



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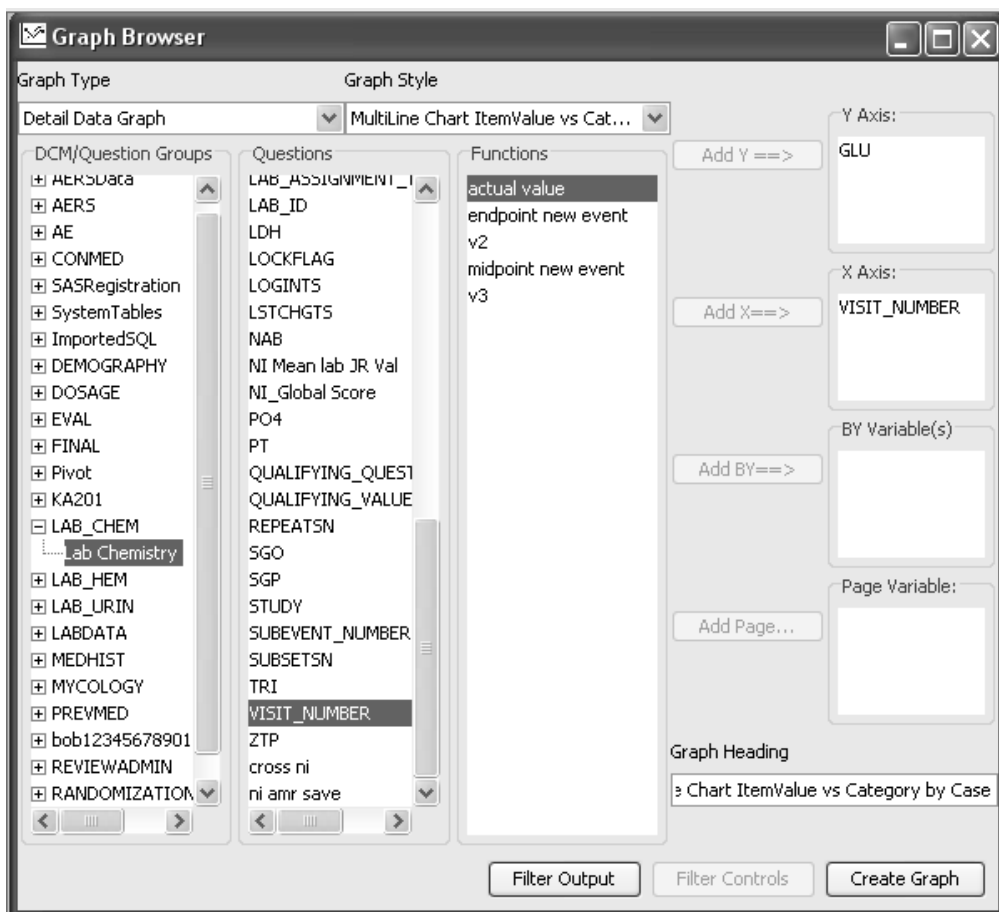
## MultiLine Chart Item Value vs. Category by Case

In a MultiLine Chart Item Value vs. Category by Case graph, each patient is represented by a line.

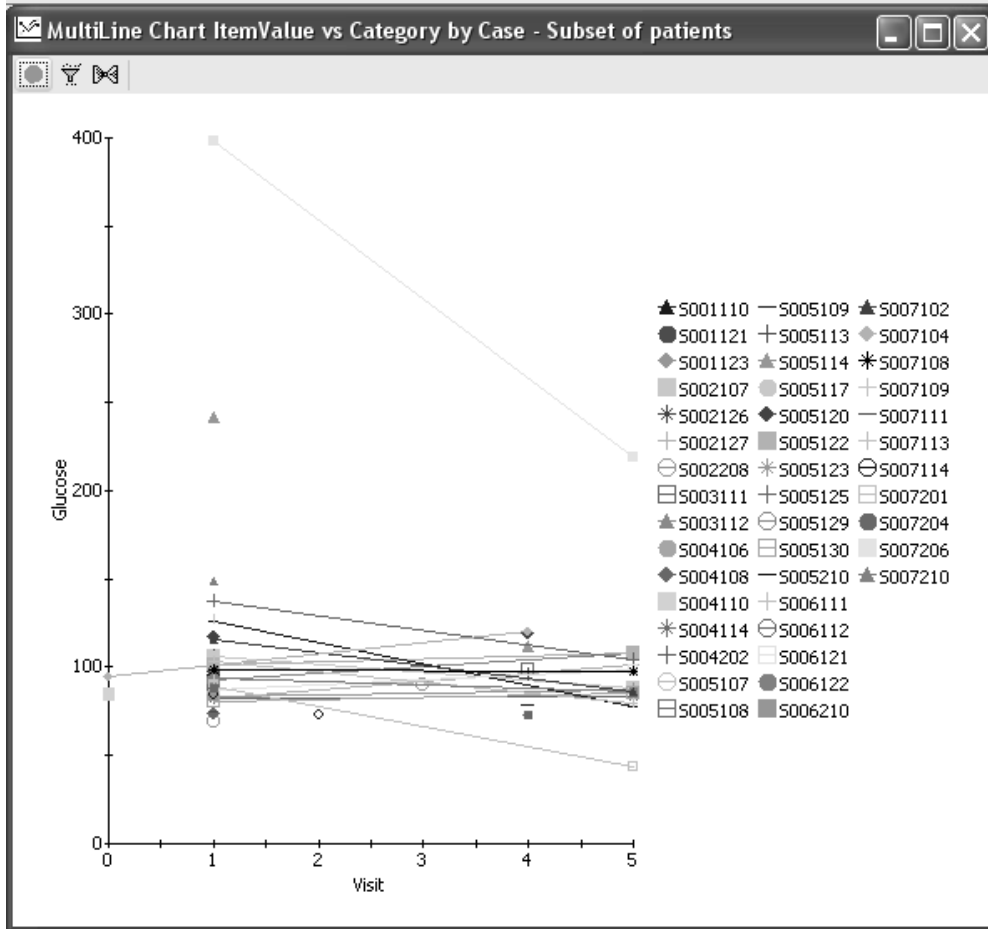
PID is defaulted for the patient identification. The Page variable is not allowed.

Click on a line and the underlying patient will be highlighted in all patient-level displays of data.

*Hint: You may need to limit the number of patients displayed.*



In this example, a Patient selection criteria was applied for discontinued patients.



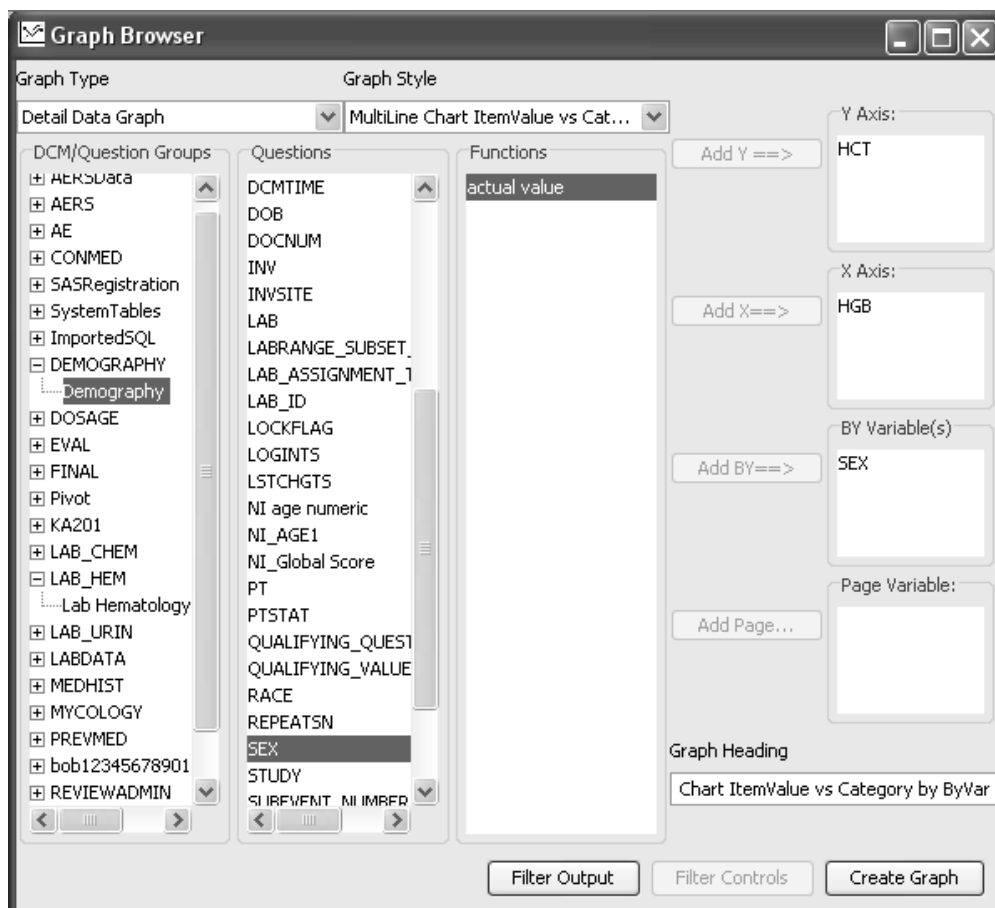
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## MultiLine Chart Item Value vs. Category by ByVar

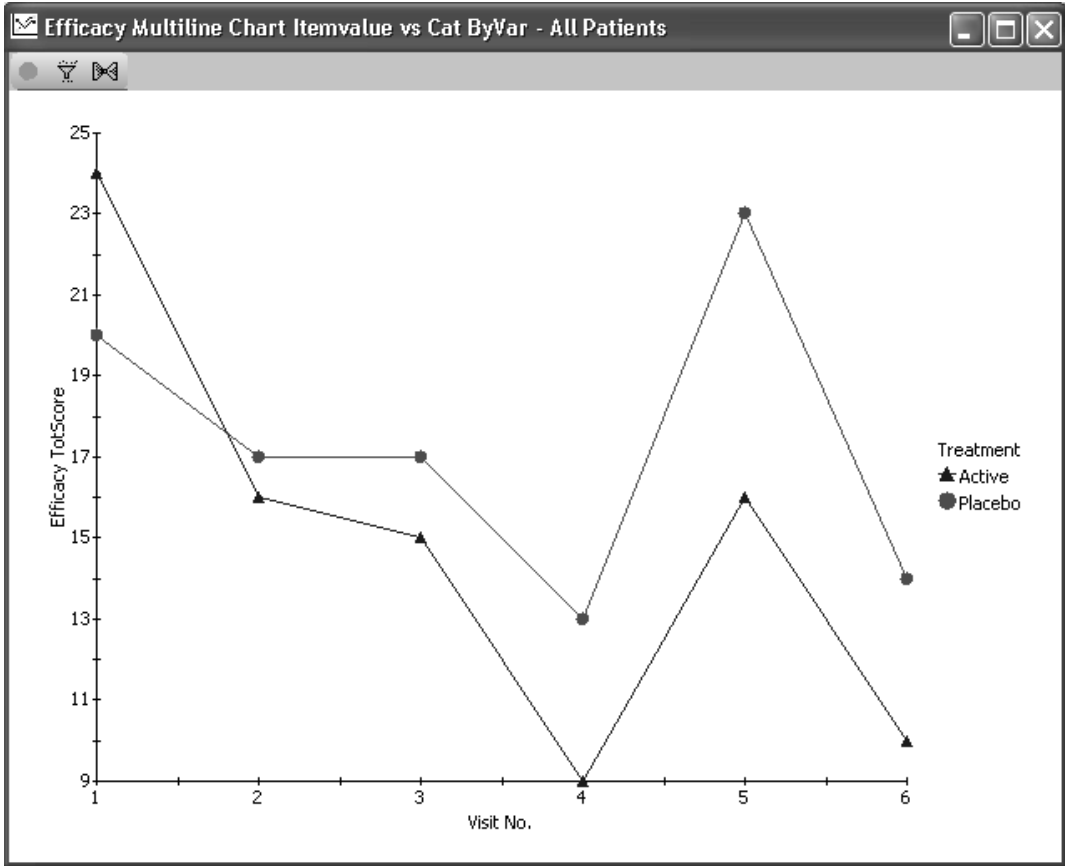
The MultiLine Chart Item Value vs. Category by ByVar graph, provides the same functionality as the MultiLine Chart item Value vs. Category by Case graph. However, you select the patient identification item.

Each patient is represented by a line. Click on a line and the underlying patient will be highlighted in all patient-level displays of data.

*Hint: You may need to limit the number of patients displayed.*



In this example, a Patient selection criteria was applied for discontinued patients.



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### *Benefit Risk Graph*

The **Benefit Risk Graph** is a visualization analysis designed by:

**Jonathan D. Norton, PhD - A Longitudinal Model and Graphic for Benefit-Risk Analysis, with Case Study. Drug Information Journal, Vol. 45, pp. 741-747, 2011 • 0092-8615/2011**

The Benefit Risk graph simultaneously presents risk (e.g., adverse events (AE)) and benefit over time. The underlying model represents a patient's benefit-risk at a given time as one of five discrete clinical states, one being premature study withdrawal.

The user can see how a treatment affects groups of patients and further examine how individuals are affected. It is possible to tell whether the beneficial and harmful outcomes are correlated. The graph uses colors to represent each patient's changing state during the clinical trial.

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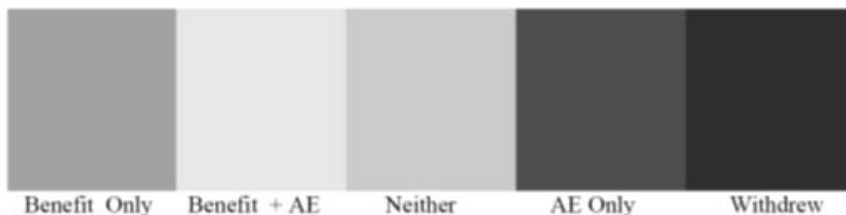
### Analyze Benefit Risk results

The Benefit Risk graph uses a color coding scheme to represent five discrete outcome categories:

1. Green: Benefit without AE
2. Yellow: Benefit with AE
3. Gray: Neither benefit nor AE
4. Red: AE without Benefit
5. Black: Withdrew

*Note: Benefit Risk Graph modified 'gray scale' behavior to add 'light purple/dark purple' in addition to gray scale for better differentiation.*

Benefit Risk analysis shows the comparison of the risk of a situation to its related benefits. It is used to assess patient data from a benefit versus risk point of view. The Benefit Risk graph is designed to meet these needs based on the Chuang-Stein model; where each patient's outcome is in one of the following categories:

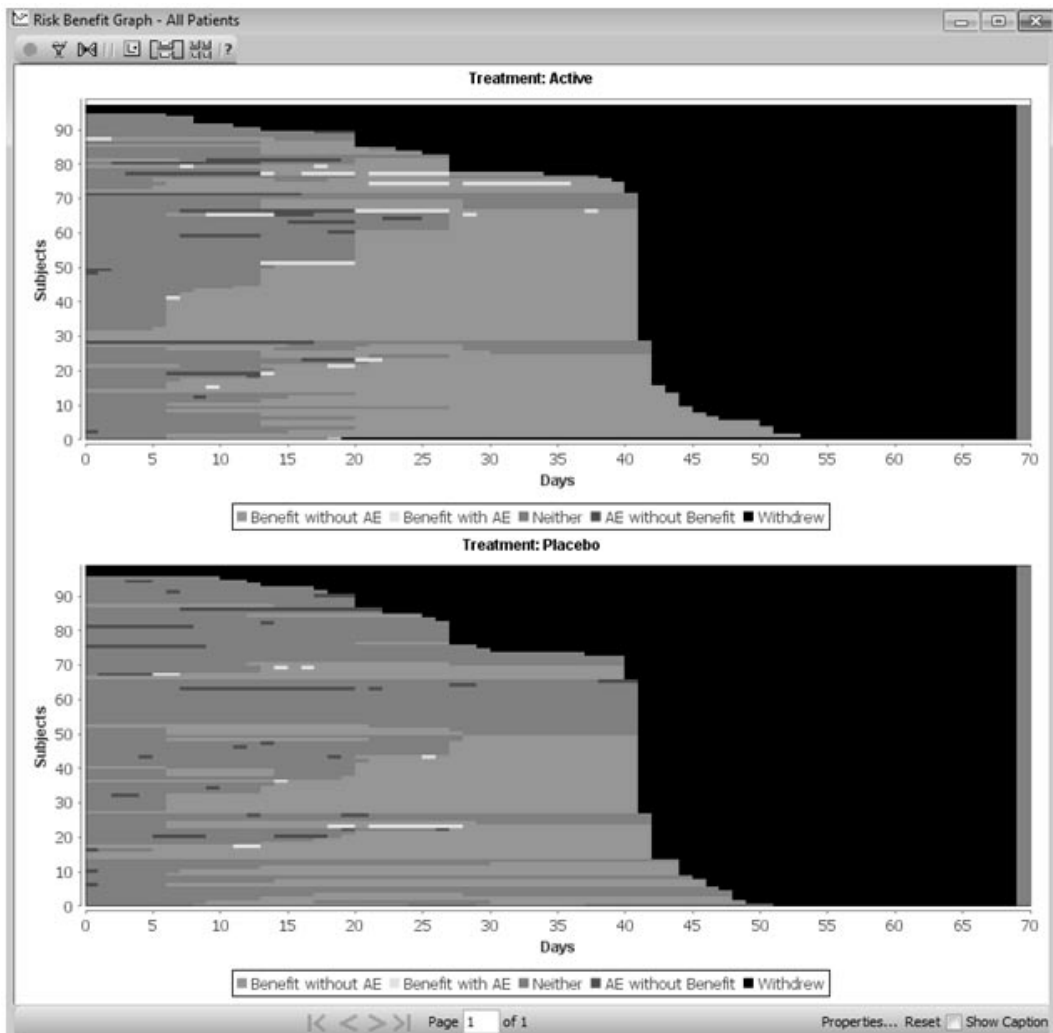


The graph would have one row per patient along the Y axis and time along the X axis. Specific colors are used to distinguish the different categories. The purpose of the graph plots of individual patients to display the overall outcome pattern formed by the color clusters.

The Time intervals (e.g., days on drug – or some reference date) are plotted along the X-Axis.

Each patient is represented by an individual “row” in the graph.

The Y-Axis tick labels represent the patient counts.



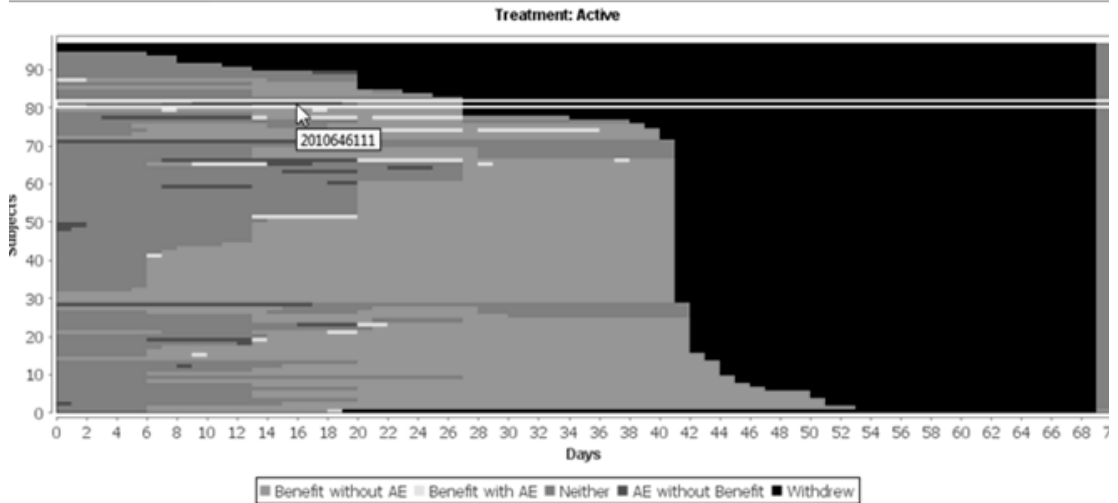


When the mouse is moved over a row, the individual subject row is highlighted by a drawing white box around it and a tool tip presenting the patient identifier appears. The user can select a row by clicking on it with the mouse. Multiple patients may be selected using drag select and/or pressing the control-key when selecting patients. The selected patients are marked at the right margin of the charts, and has the same drill-down side-effect as other details graphs. View the selected patients by opening the Data Browser to access patient details.

Users may zoom-in to enlarge the height of the rows. Right mouse click to display floating menu to zoom.

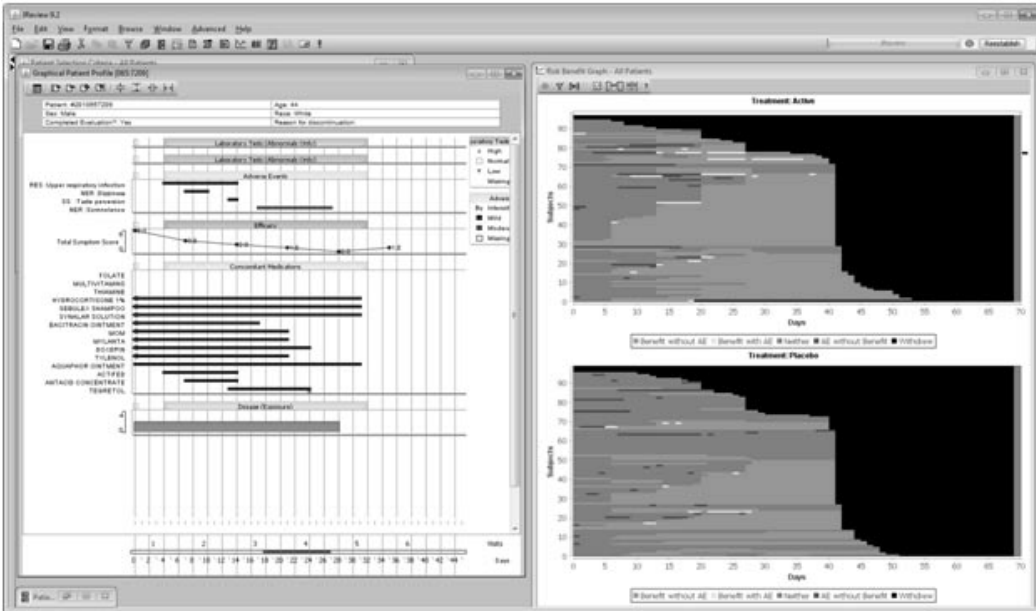


A category value for each color cell is calculated: each cell is a value for an individual patient at a specific time interval. If a 'page by' variable has been defined, for example, for treatment, the Benefit Risk graph will be displayed for each value of the page by variable.



While individual patients are plotted in the graph, displaying the overall outcome pattern formed by the color clusters is a purpose of the graph. To serve this purpose, the patients are sorted based on their category scores at each time interval. By default, patients are sorted on category scores with scores at later time periods given precedence – “green” at later time periods will cluster at the bottom right of the graph.

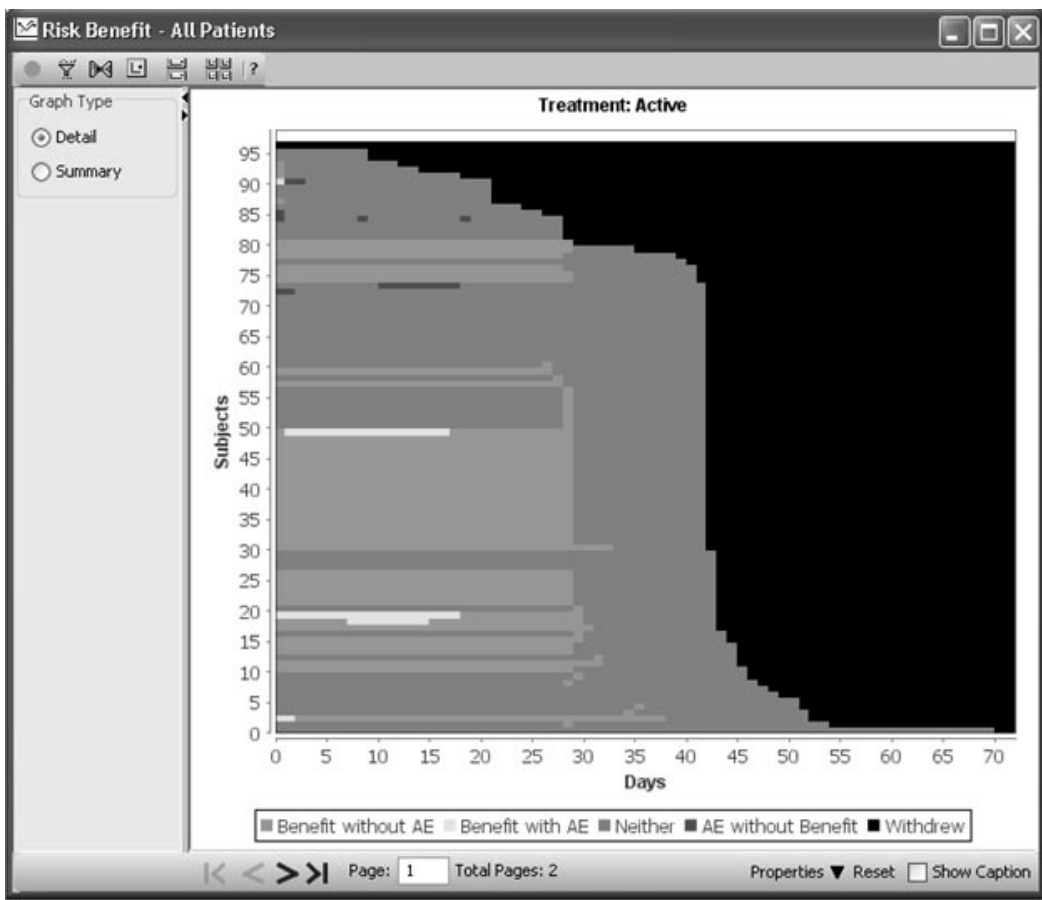
An interesting example of use of the Benefit Risk Graph is with ‘drill down’, to the selected patient’s Graph Patient Profile.



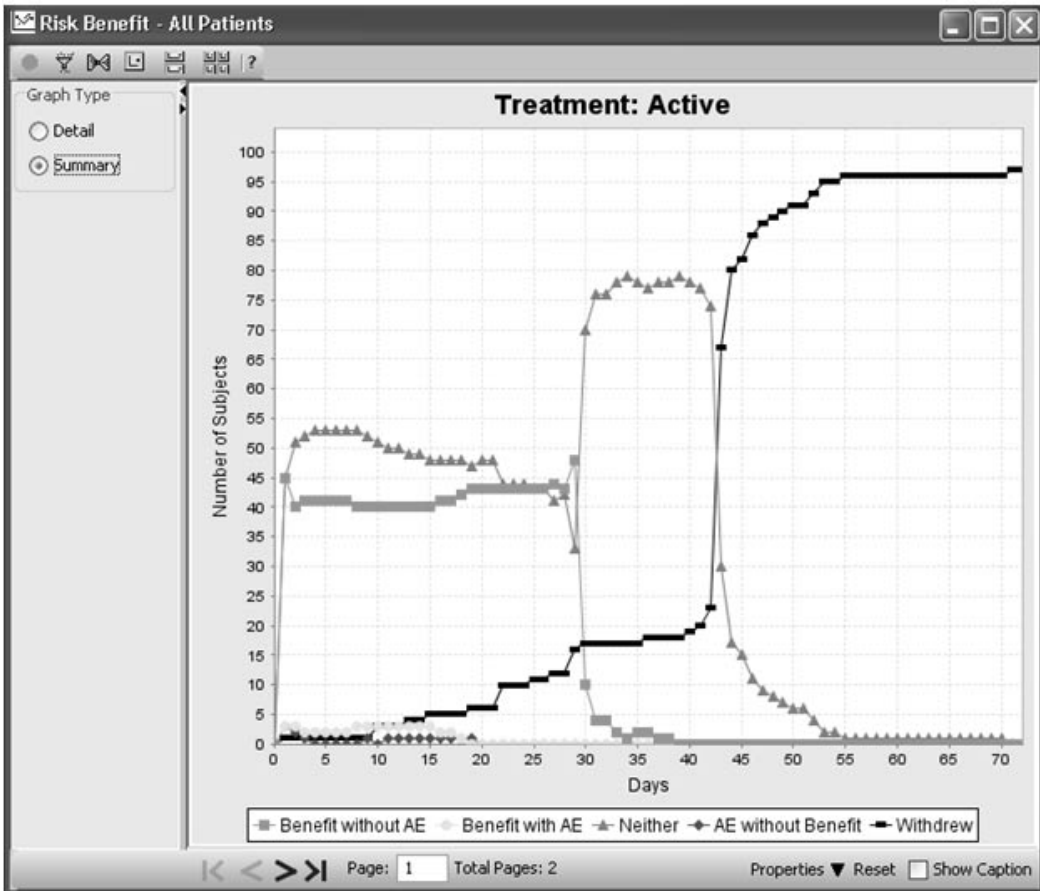
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Summary Benefit Risk

Initially the Benefit Risk result window opens in Detail mode.



Click on the Graph Type for Summary option to view Summary Benefit Risk display.



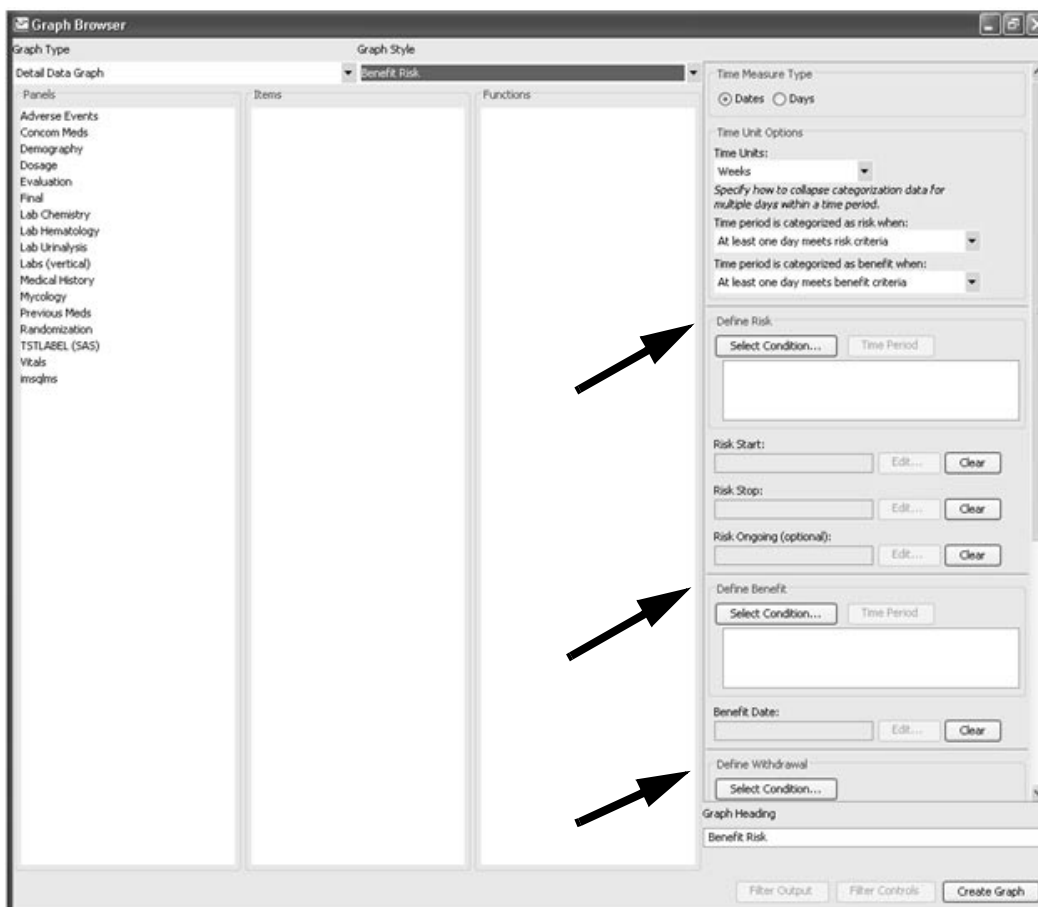
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## Define Benefit Risk analysis

The Benefit Risk Graph is a detail graph type specified in the Graph Browser, however, the specification differs from other graphs.

The specifications for define Risk, Benefit, and Withdrawal are *each* separately defined as output filters. Users define each of the filters by opening an output filter dialog associated with Risk, Benefit, or Withdrawal. The filter dialog is launched by clicking on the “**Select Condition...**” button. The saved filter expressions are shown in separate view-only text fields.

1. To start, select Detail Data Graph for Graph Style as Benefit Risk.



2. Select the **Time Measure Type**, by choosing the time variable based on *Dates* or *Days* (in the clinical trial). Choose the *Days* option, if days have already been calculated and stored in the data. Otherwise, select *Dates* so JReview can do the day calculations for you.

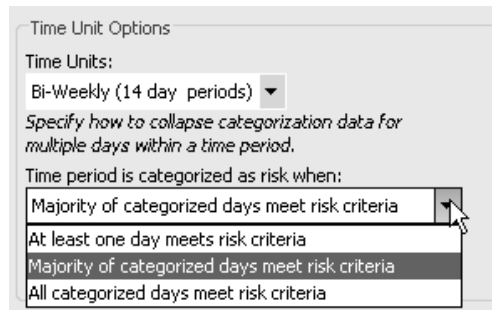
The screenshot shows a configuration panel with two main sections. The top section, titled "Time Measure Type", contains two radio buttons: "Dates" (which is selected) and "Days". The bottom section, titled "Time Unit Options", contains a "Time Units:" dropdown menu currently set to "Weeks". Below this is a descriptive text: "Specify how to collapse categorization data for multiple days within a time period." There are two more dropdown menus: "Time period is categorized as risk when:" set to "At least one day meets risk criteria", and "Time period is categorized as benefit when:" set to "At least one day meets benefit criteria".

The Risk, Benefit, and Withdrawal condition filters require a date (or days) variable to be associated with them. The Time Measurement variables are needed so that JReview can compute the time intervals for risk, benefit or withdrawal occurrences.

3. Select **Time Units** under **Time Unit Options** for how to display study data over longer time periods. It supports easier viewing of benefit and risk trends within the reported adverse events.

This screenshot is similar to the previous one but shows the "Time Units:" dropdown menu open. The menu lists five options: "Weeks", "Days", "Weeks" (highlighted), "Bi-Weekly (14 day periods)", and "Months (30 day periods)". A mouse cursor is pointing at the "Weeks" option. The rest of the panel, including the "Time Measure Type" section and the "Time period is categorized as risk/benefit when:" dropdowns, remains visible in the background.

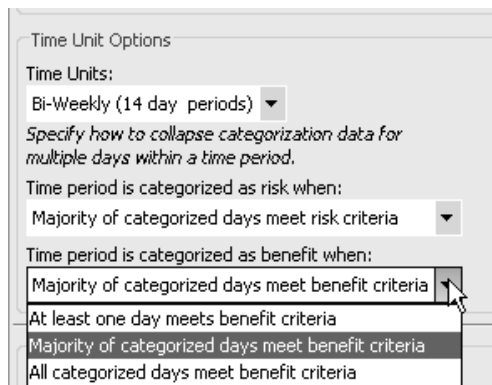
4. Select for how the **Time period** is categorized as risk when:



There are three options for how to categorize risk when:

- **At least one day meets risk criteria.** This is the least restrictive option, where one day with risk criteria within a time period shows risk.
- **Majority of the categorized days meet the risk criteria.** This is the middle level for restriction.
- **All categorized days meet the risk criteria** is the most restrictive option.

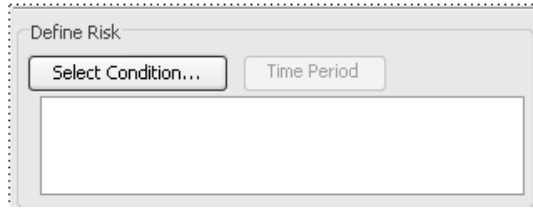
5. Next, select how the **Time period** is categorized as benefit when:



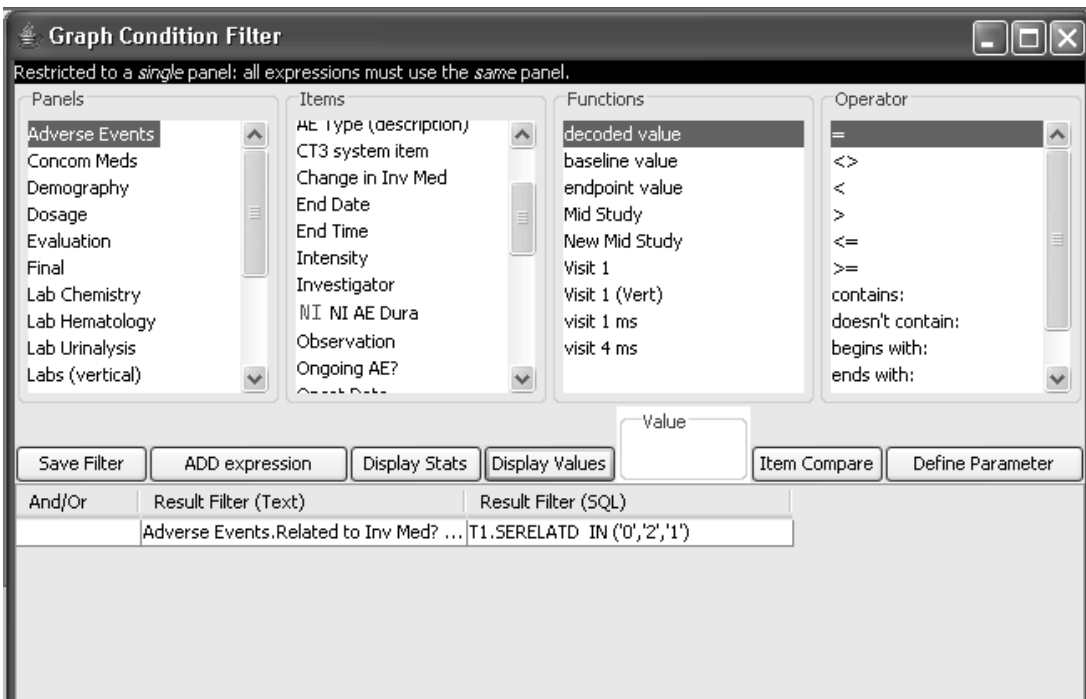
There are three options for how to categorize benefit when:

- **At least one day meets benefit criteria.** This is the least restrictive option, where one day with benefit criteria within a time period shows benefit.
- **Majority of the categorized days meet the benefit criteria.** This is the middle level for restriction.
- **All categorized days meet the benefit criteria** is the most restrictive option.

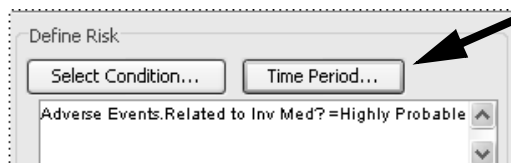
6. Click **Select Condition** button for **Define Risk**.



The Graph Condition Filter window opens. It is restricted to a single panel where all expressions must use the same panel. The choice of filter expressions is validated when the user clicks the save button in the filter dialog. Otherwise, an error message will display if the filter expressions do not comply with the restrictions.



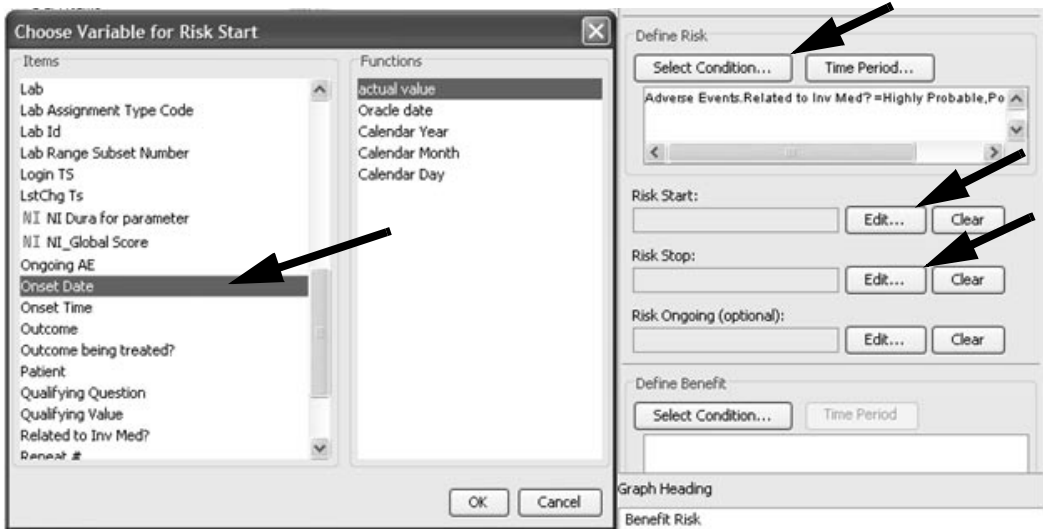
Optionally, you may enter a **Time Period** as a filter feature to restrict the defined risk criteria to specific visits, visit labels, etc.





7. Select Risk dates (days) for **Risk Start** and where a **Risk Stop** is required, and optionally a **Risk Ongoing** variable may be chosen. If the patient discontinued, then the study date (day) of discontinued will over ride all other dates.
  - Each of these time-based variables can only be chosen *after* the corresponding filter expressions are saved.
  - The panels selected in the corresponding filter expressions determine the available items for the time-based variables.
  - The controls are enabled or disabled appropriately to enforce these conditions.

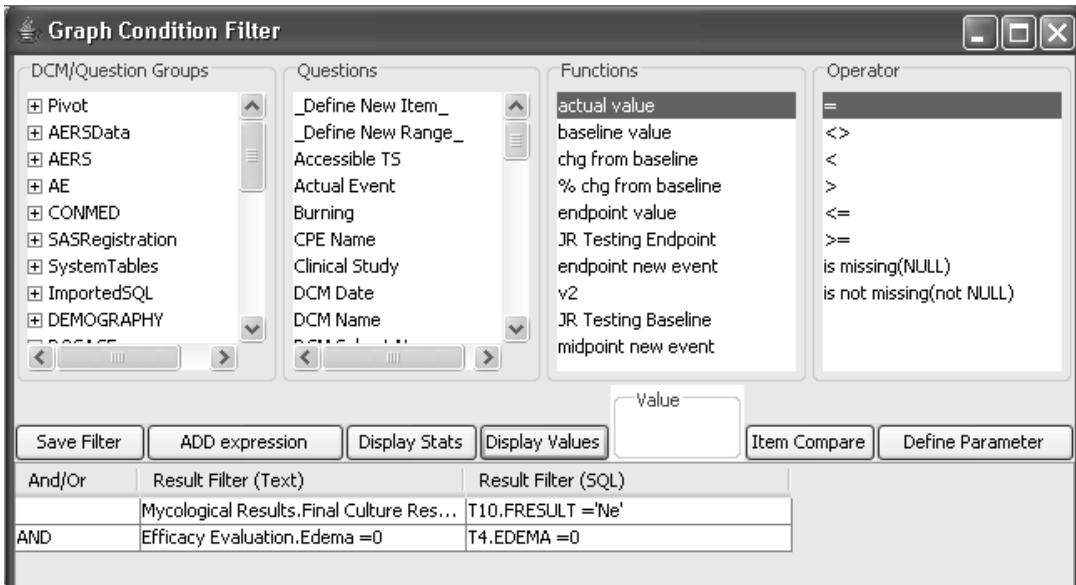
To enter a Risk Start, Stop, and Ongoing time-based variable, click on the corresponding **Edit** button. The **Choose Variable** dialog displays for the associated panel from the Select Condition. Use the **Clear** button to remove an entry.



8. Click on **Select Condition** for **Define Benefit**.

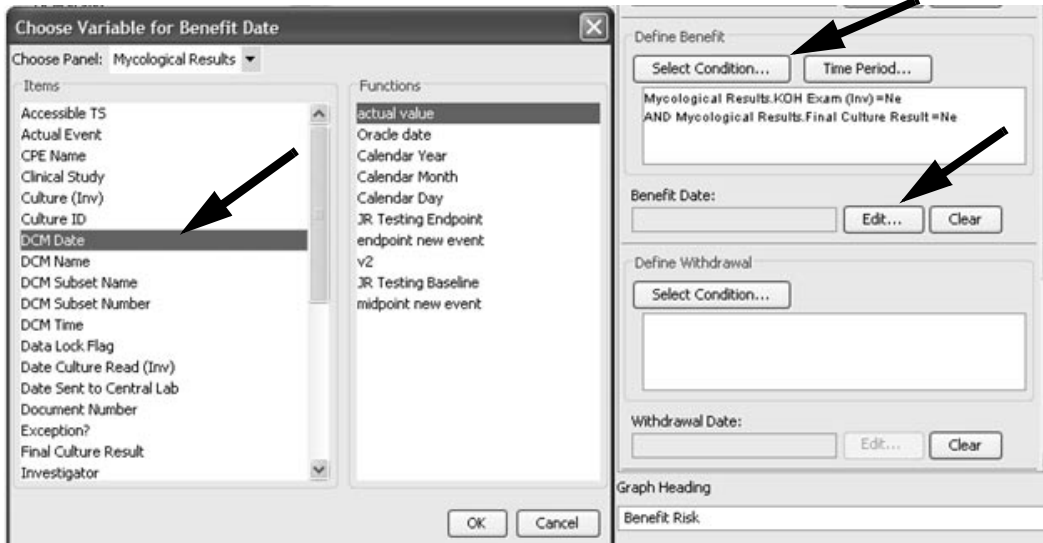
The Graph Condition Filter window opens *without* the panel restrictions applicable to Define Risk.

The Define Benefit allows the filter expressions to reference multiple panels.

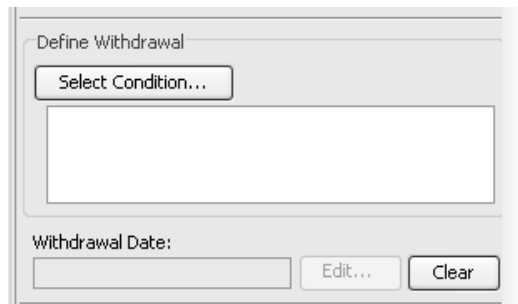


9. Enter a **Benefit Date**. The date (day) item is selected from one of the panels in the Benefits filter expressions.

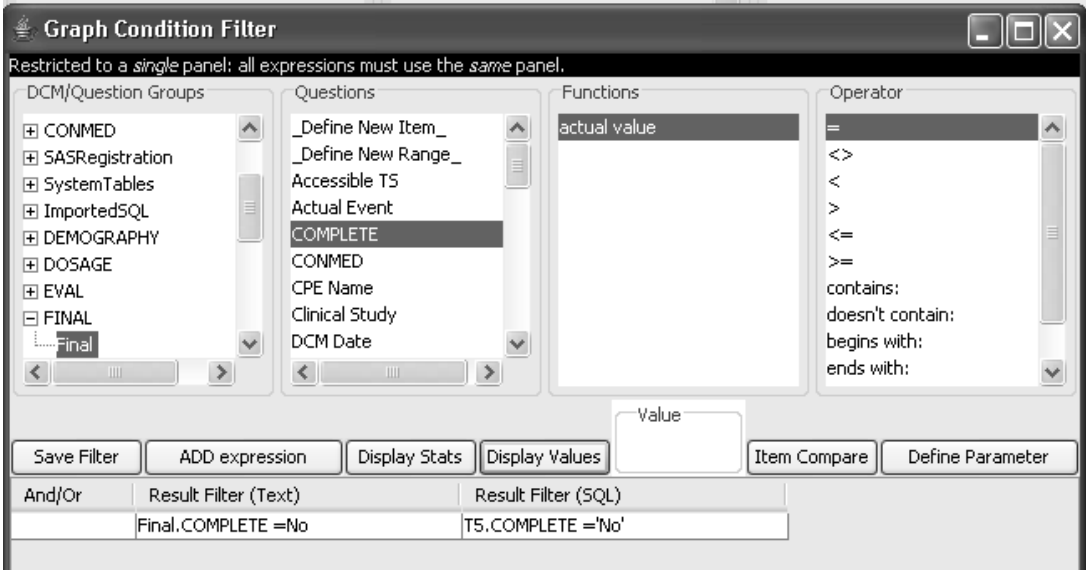
The Output Filter dialog for choosing the associated date/day item contains a Combo Box listing those panels contained in the Benefit filter expressions. The user can only select one date/day item by choosing a panel, select item and function.



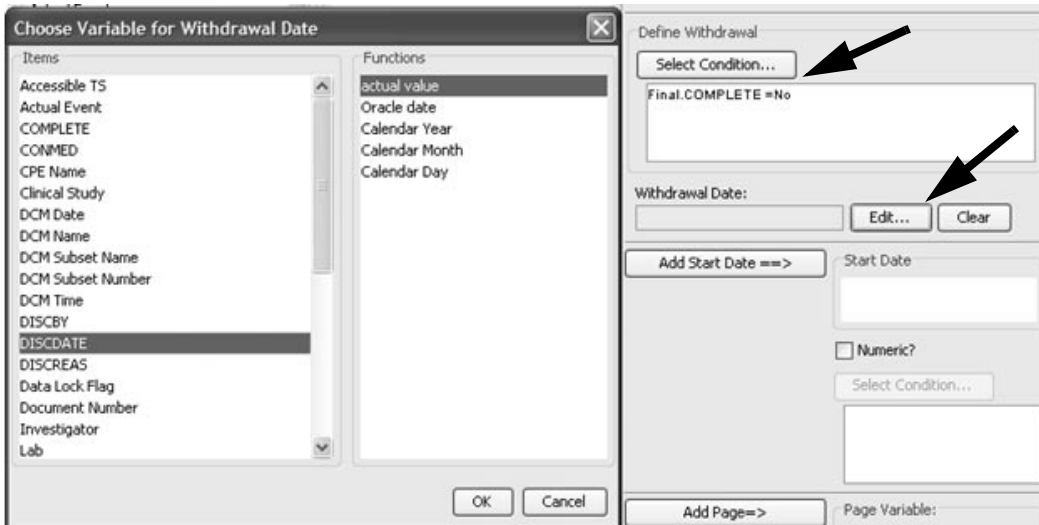
10. Click on **Select Condition** button to **Define Withdrawal**.



The Graph Condition Filter window opens. It is restricted to a single panel where all expressions must use the same panel.



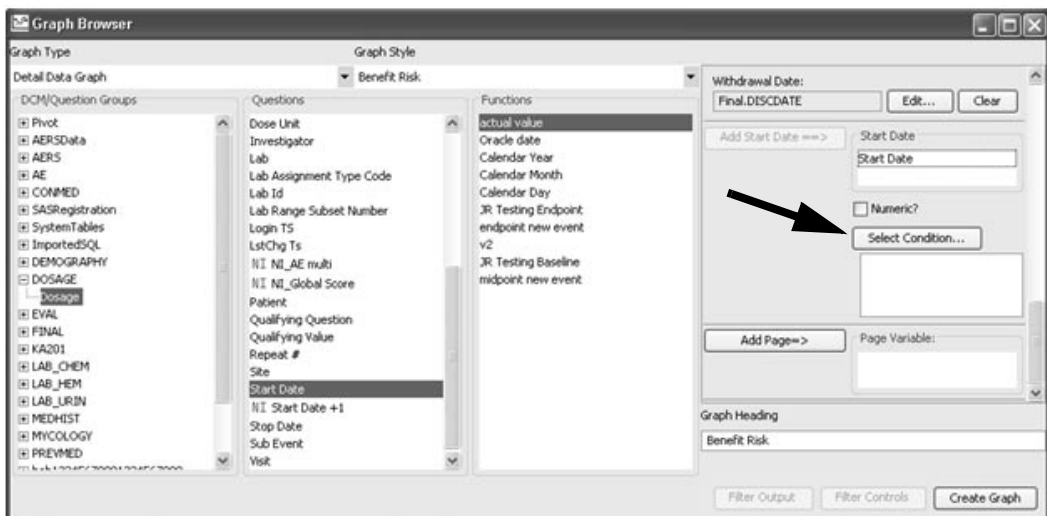
11. Enter a **Withdrawal Date** which will be selected from the same panel that defined the Withdrawal filter condition.



12. Next, you must enter a **Study Start Date** when the **Time Measure Type** is set for *Dates*. If you entered the **Time Measure Type** for *Days*, then the **Add Start Date** button is shaded and disabled.

In this step, select a panel from the Panels list and the date item from the Items list. The study day calculation are determined as Risk Start and Risk End dates minus Randomization date, Visit date minus Randomization date, etc.

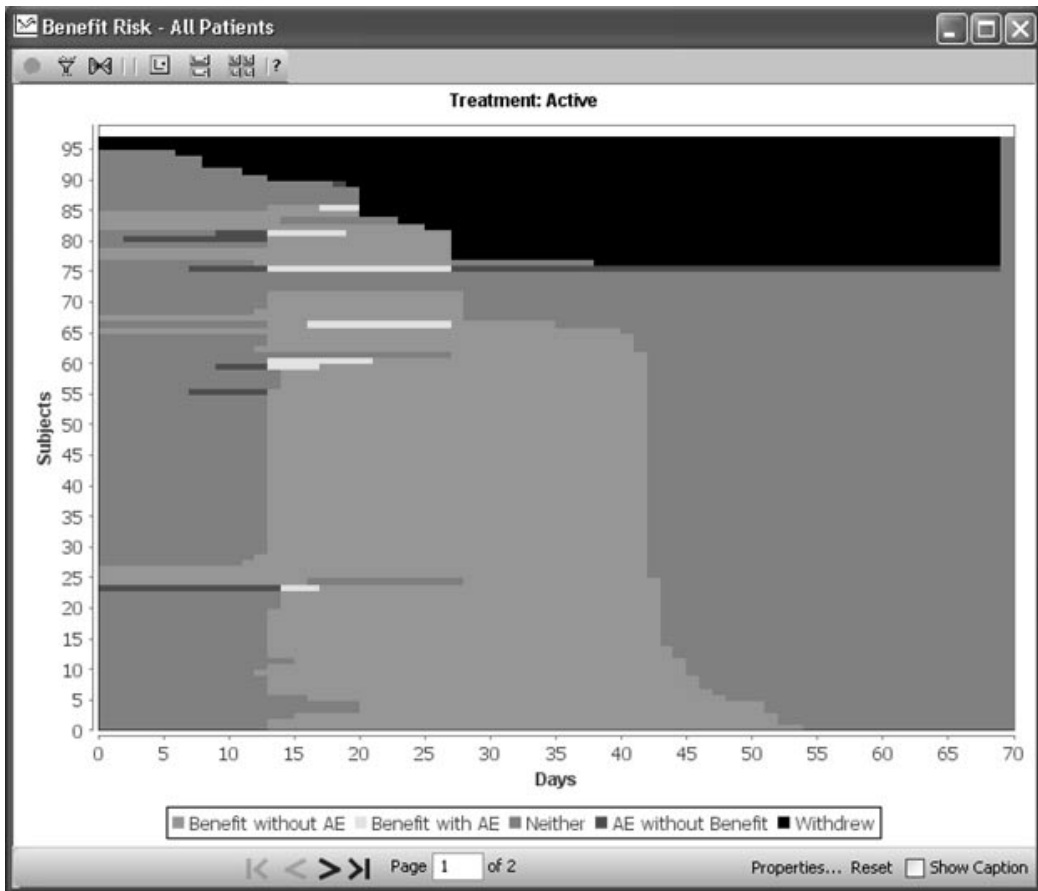
If you choose a 'Start Date' from a table/dataset with multiple visits per patient i.e., Dosage; you must also click on the 'Select Condition' button to define the filter condition to select which record should be chosen for each patient.



13. Optionally, add **Page Variable** for the further categorization of data (i.e. per investigator, site, treatment, etc.).

**Note:** The overall output filter for a graph is **NOT** allowed for **Benefit Risk** graph, and the output filter button is disabled.

## 14. Click Create Graph.

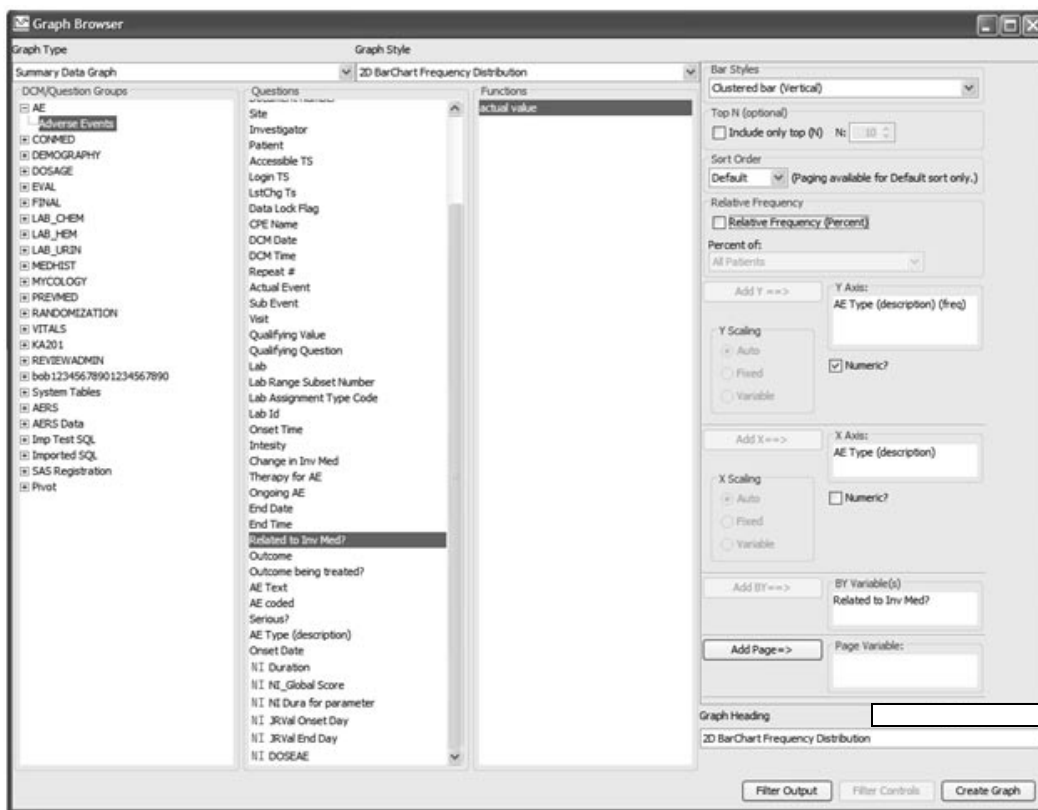


# Summary Graph Styles

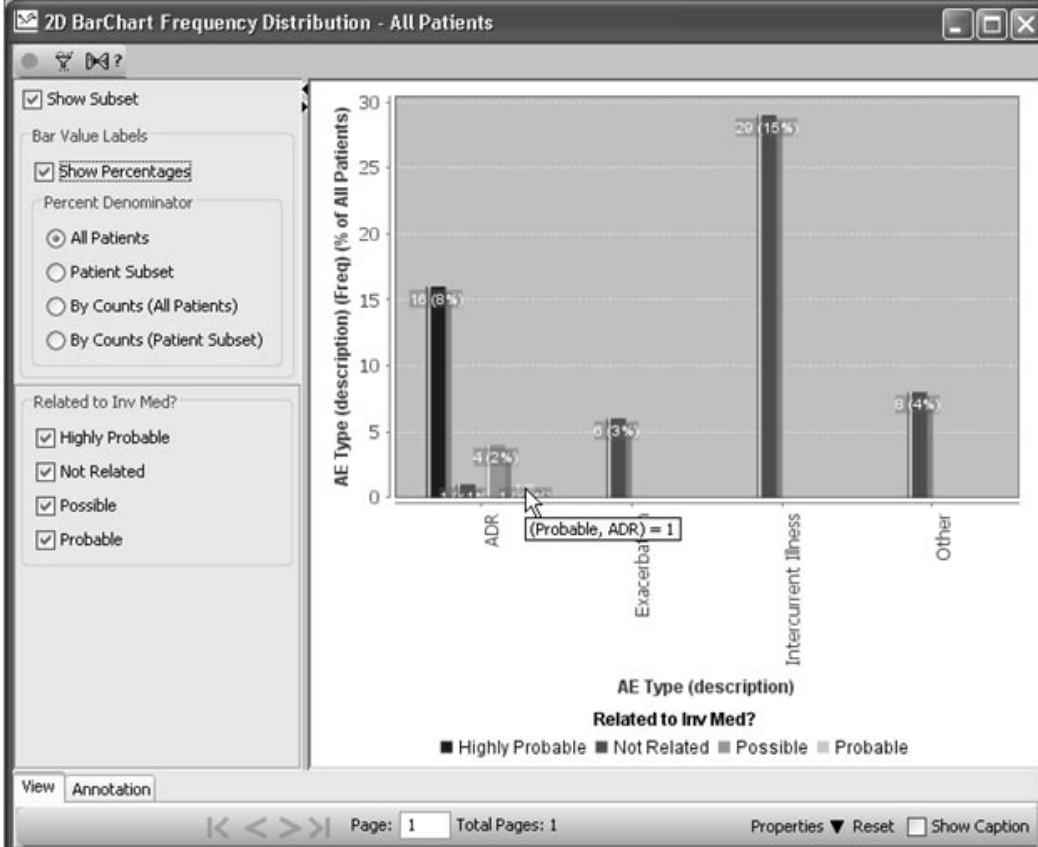
## 2-D Bar Chart Frequency Distribution

In the 2D BarChart Frequency Distribution graph, each bar represents the category value of the item with the Y-axis representing the frequency.

Bar style options are clustered bar versus stacked bar in vertical or horizontal orientation.



The 2D BarChart Frequency Distribution supports the Show Subset feature. Optionally, show percentages.

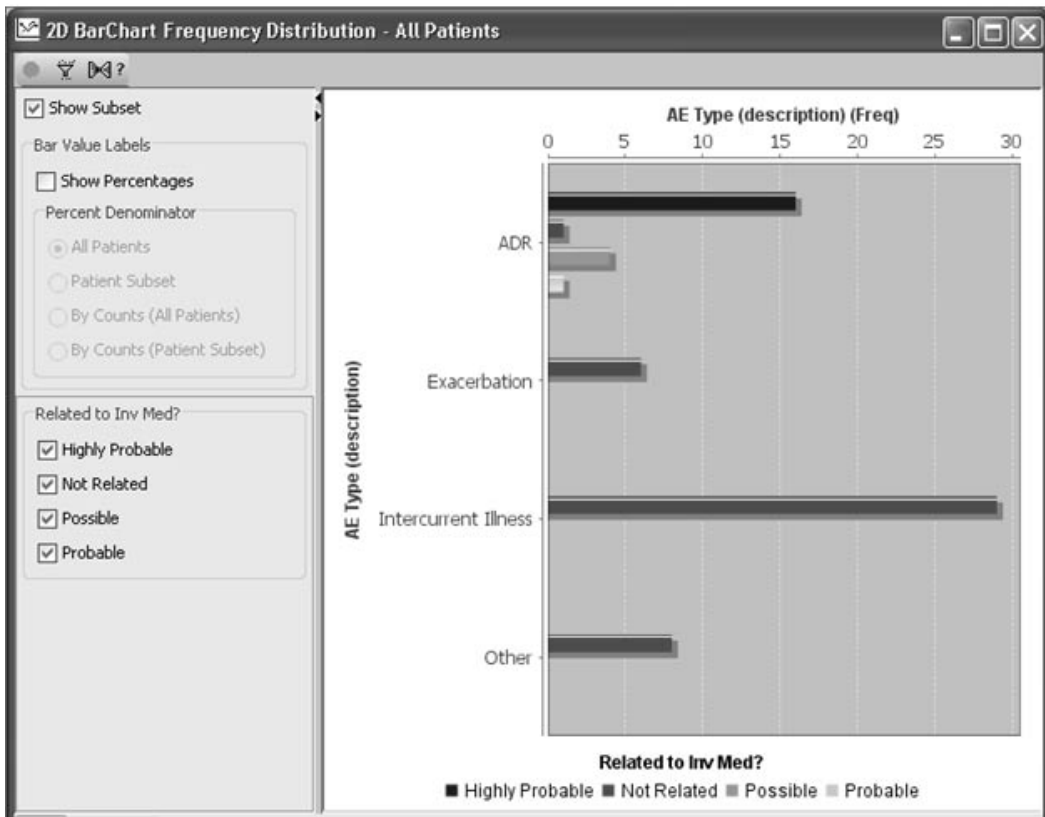




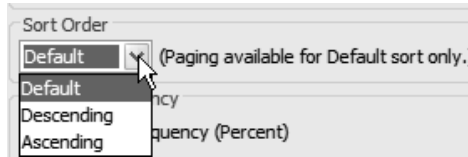
The frequency bar counts represent patients as compared to a Summary Listing showing patient counts versus item counts.

AE Type (description)	Intensity	count subjects	count
Exacerbation	Mild	3	5
Exacerbation	Moderate	3	3
Intercurrent Illness	Mild	17	24
Intercurrent Illness	Moderate	13	14
Intercurrent Illness	Severe	1	1
Intercurrent Illness		1	1
ADR	Mild	19	21
ADR	Moderate	3	4
Other		8	8

This example shows the same graph type and style, but with a different Bar style option.

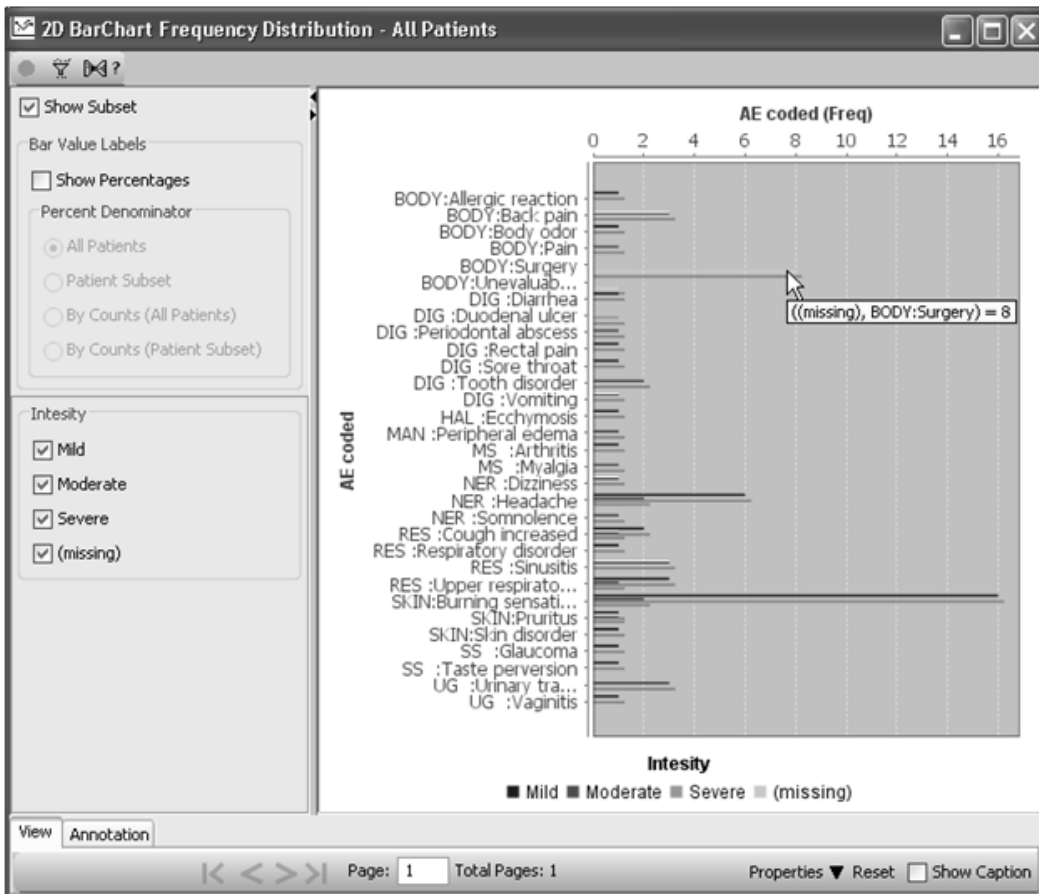


There is a **Sort Order** option for Descending or Ascending with Default display by alpha order of label descriptions. Use the **BY** variable to subset graphic displays.



This example of a 2D Barchart Frequency Distribution plots Adverse Event data. The counts represent patient counts and not the individual adverse events. Some patients may have reported the same Adverse Event multiple times.

*Hint: Place mouse over bar to view description and count.*

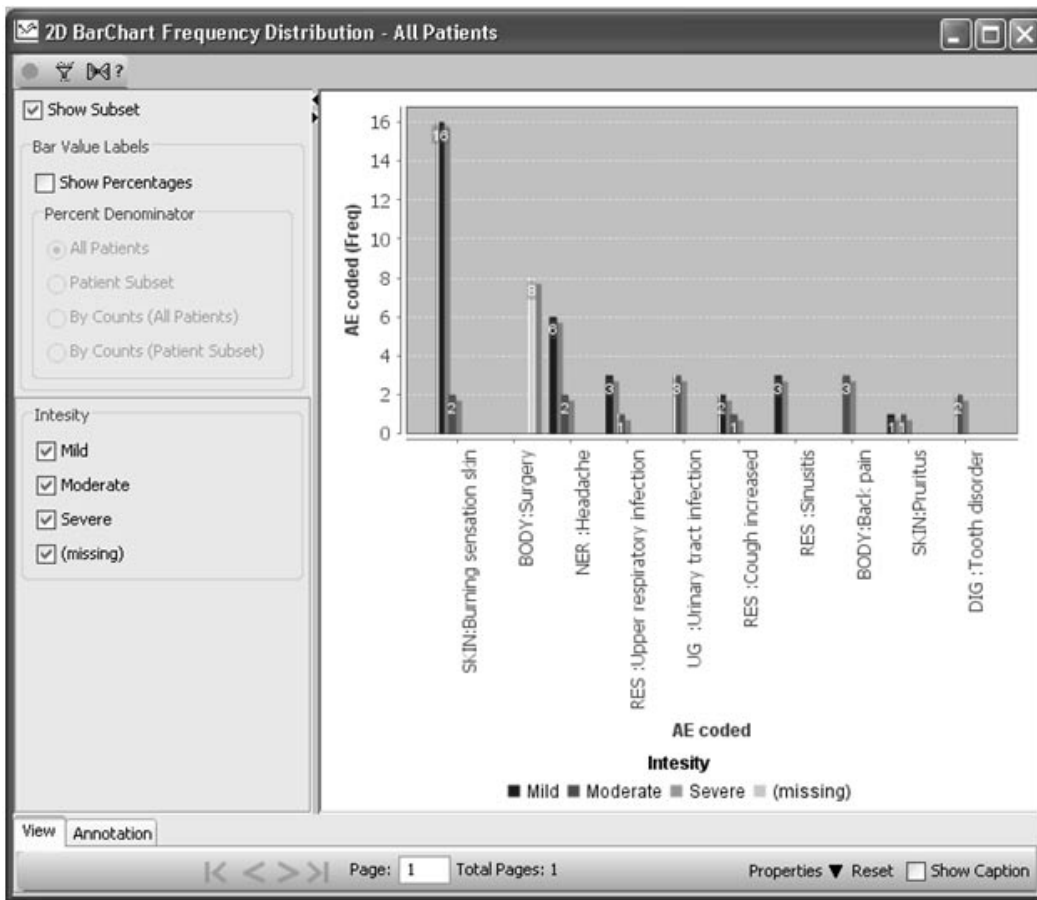


Optionally, display the 'Top N' option when you click the checkbox On, and enter a preferred N value.

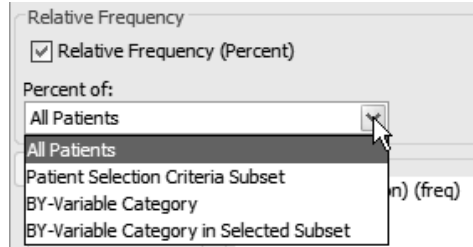
Top N (optional)

Include only top (N) N:

Include only the Top N, where N = 10.



This is the **Relative Frequency (Percent)** option available in 2-D Frequency Bar Graphs.

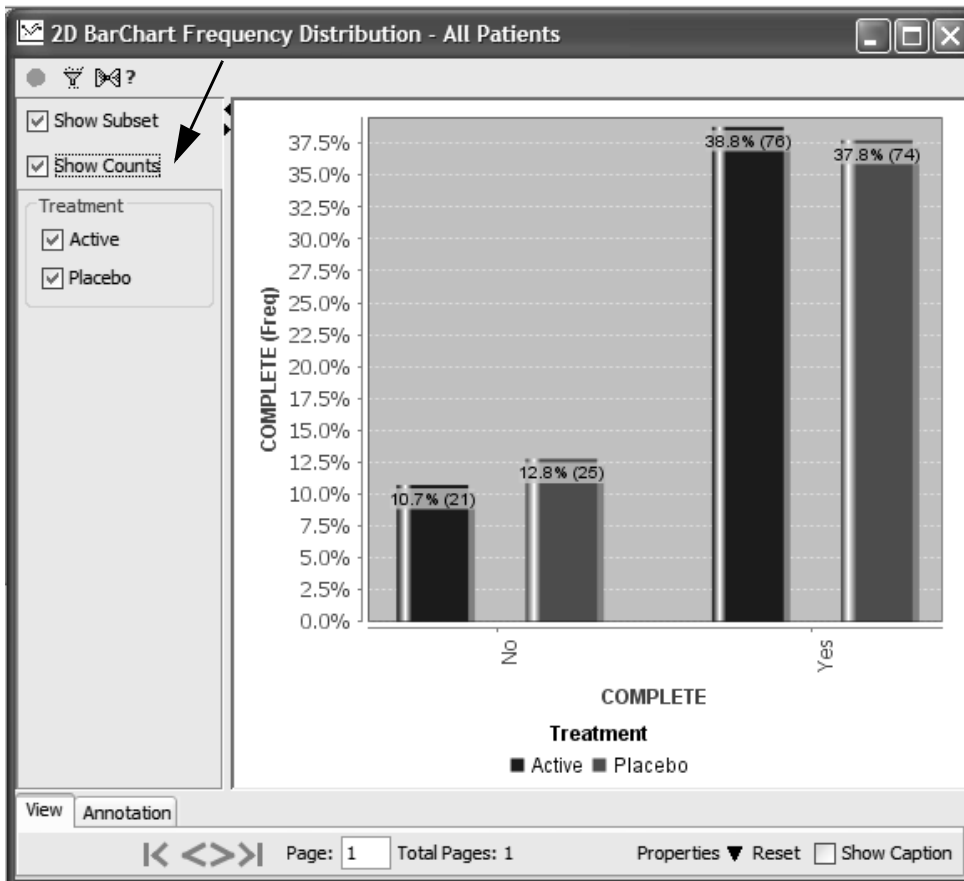


When the “graphUserSelectableDenominator” setting in ReviewAdmin is set to FALSE, the combo box for choosing the denominator type is not shown, and the denominator type is automatically chosen by JReview. The chosen denominator type depends on whether a BY-Variable is specified and whether a PSC is active.

The **Relative Frequency (Percent)** checkbox allows the user to choose the Relative Frequencies (Percent) option. When this option is chosen, the combo box containing the denominator types becomes enabled. If the user chooses one of the BY-Variable denominator types but has not specified a BY-Variable, an error message is presented when the user attempts to create or save the graph specification, and the operation is not completed.

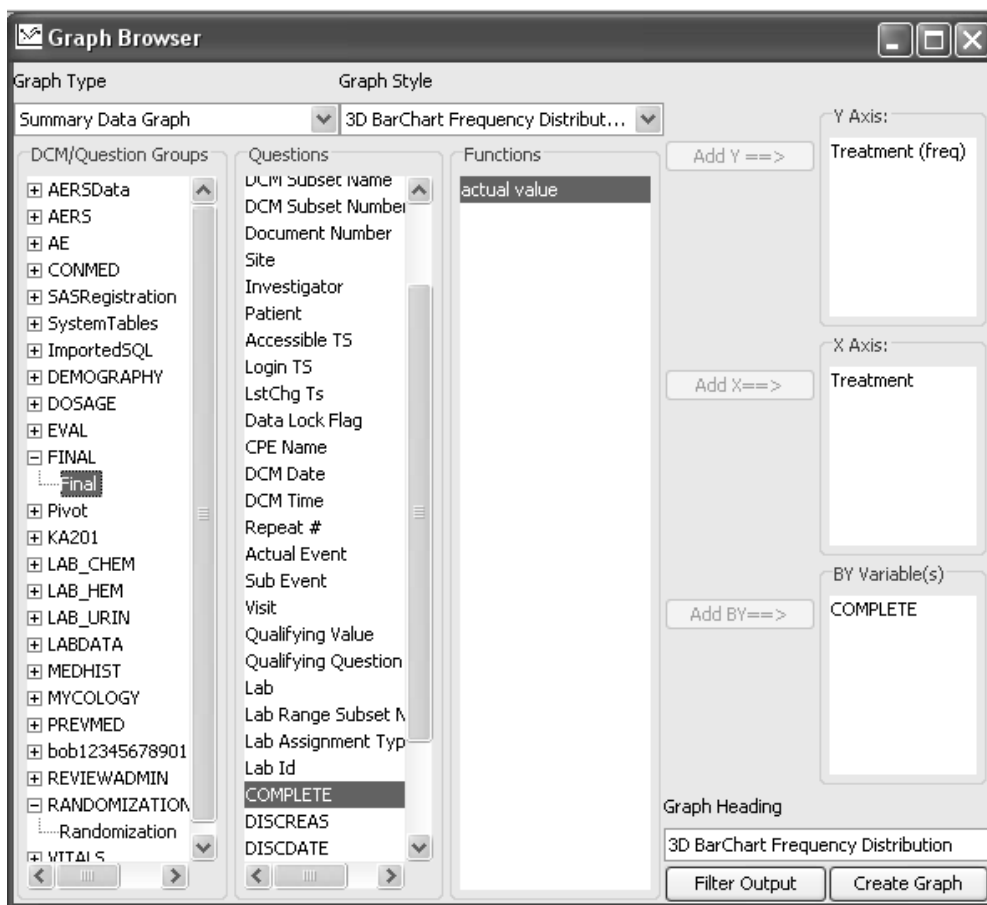
This option allows users to have the Y-Axis computed as *Relative Frequency (Percent)* values rather than as patient counts. The denominator options for the percent values are: All Patients; Patient Selection Criteria Subset; BY-Variable Category; BY-Variable Category in Selected Subset.

The percent values for the bars are computed and there is a label option in the Graph View to **Show Counts** for the patient count for each bar. It allows the user to specify to calculate the Y-axis as Percent values.

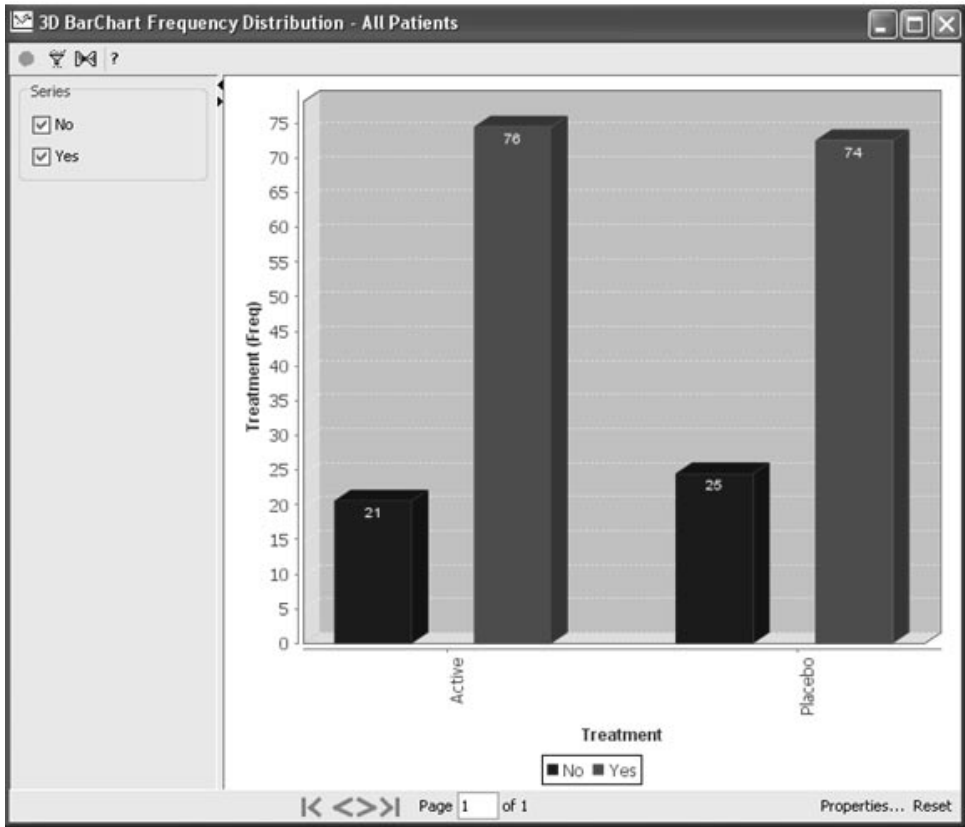


### 3D BarChart Frequency Distribution

In a 3D BarChart Frequency Distribution graph, each bar represents the category value of the item with the Y-axis representing the frequency.



Use the BY variable to subset graphic displays.



*Note: This not a true 3D bar chart; it is a 3D style that makes the bars look solid rather than flat. JReview currently does not have a true 3D bar chart.*

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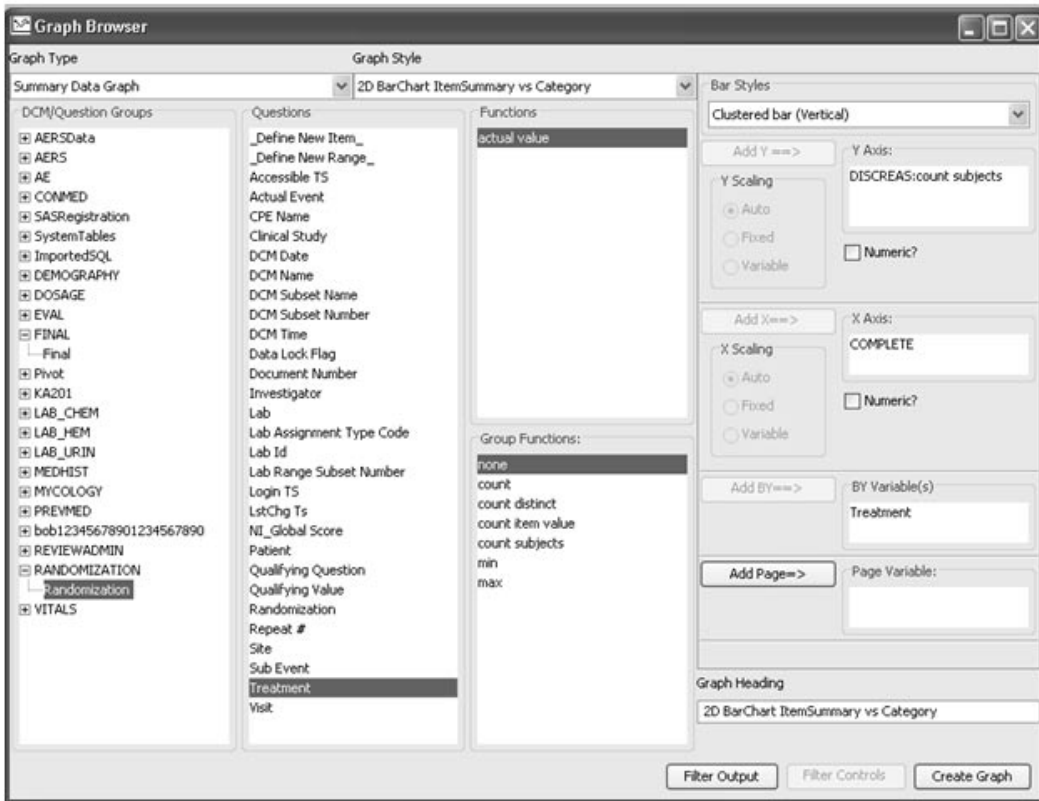
## 2-D Bar Chart Item Summary vs. Category

In a 2D BarChart item Summary vs. Category, each bar represents a category value X-axis versus a summary statistic (mean, count, sum) Y-axis.

The Graph Browser window provides a separate group functions for the Y-axis; dependent upon the graph style selected.

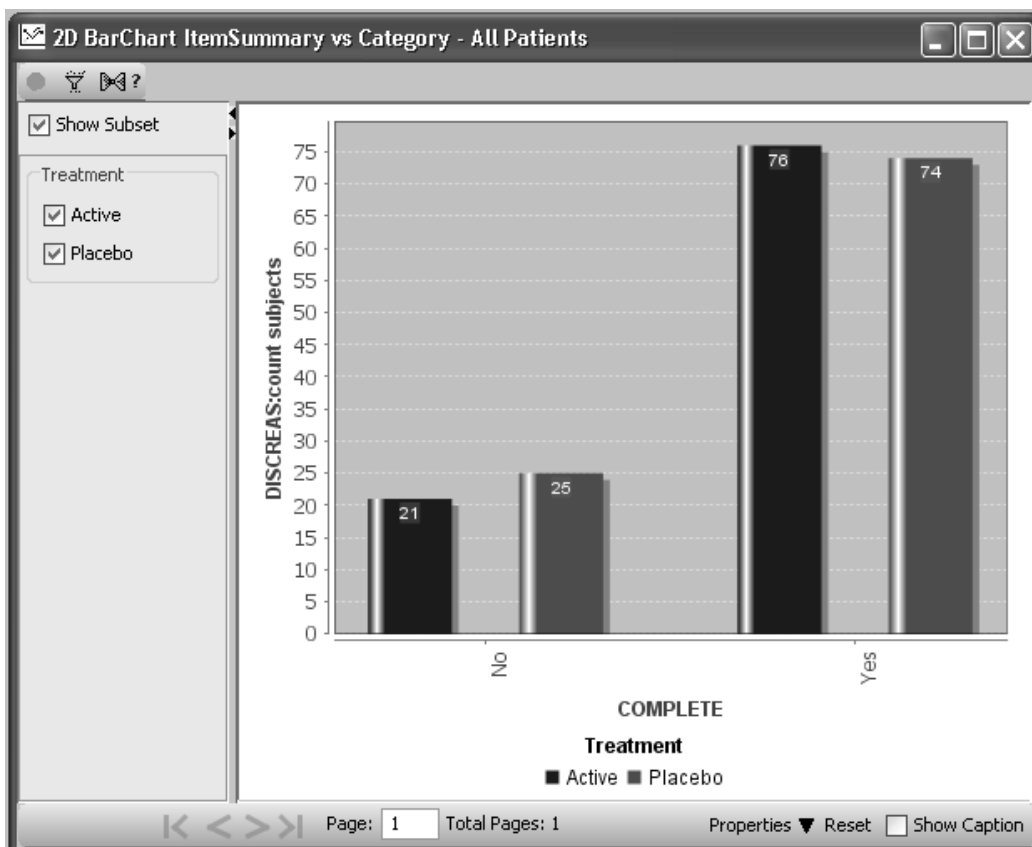
Use the **BY variable** to subset graphic displays.

In this example, the Y-axis was added with Group Function for count subjects as “Reason Discontinued: Count Subjects”.





The 2D BarChart Item Summary versus Category supports the Show Subset feature.



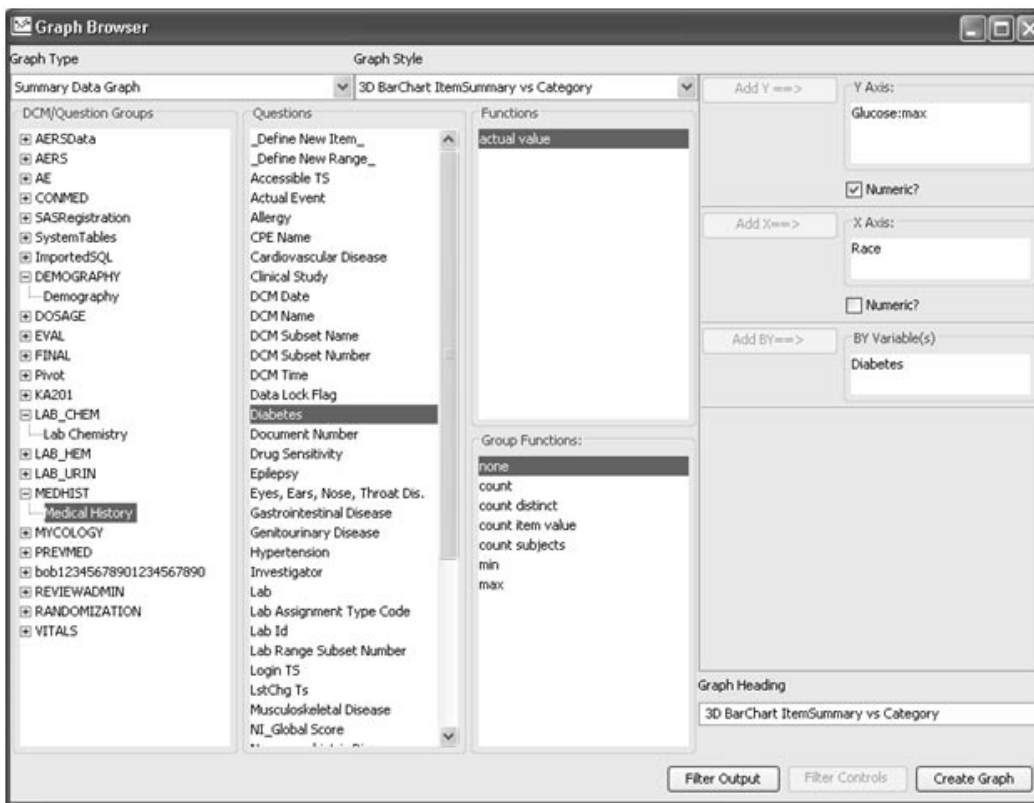
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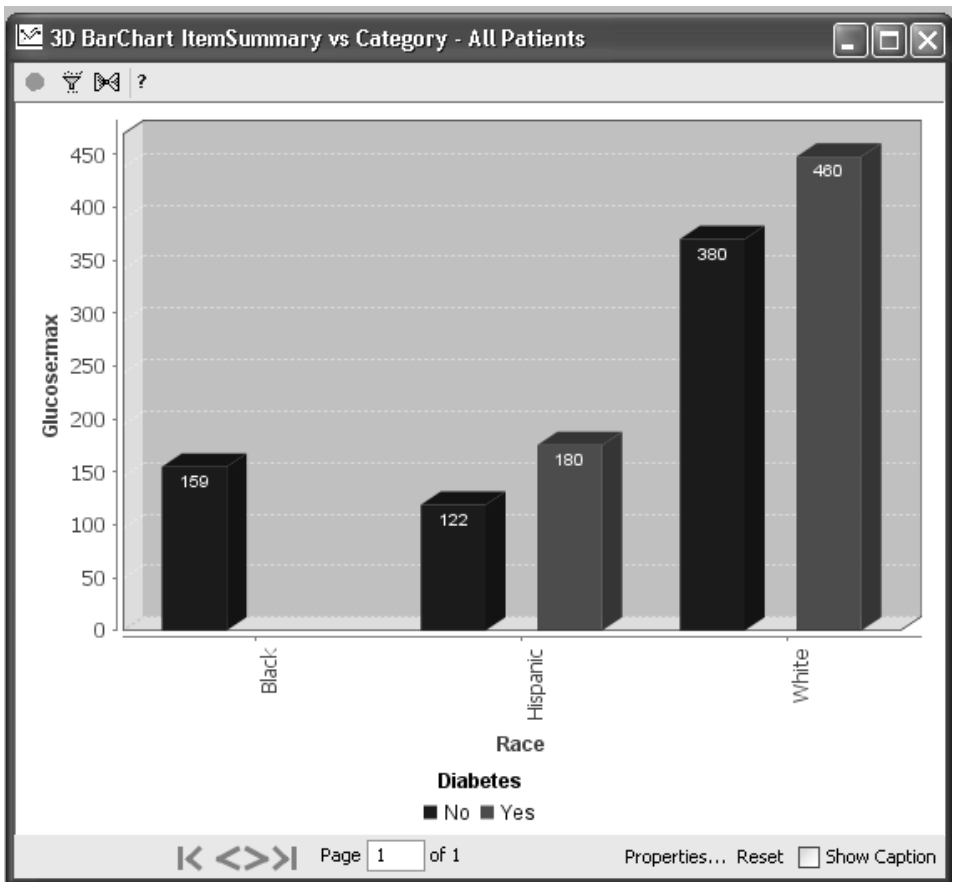
### 3D BarChart Item Summary vs. Category

In a 3D BarChart Item Summary vs. Category, each bar represents a category value X-axis versus a summary statistic (mean, count, sum) Y-axis.

The Graph Browser window provides a separate list of group functions for the Y-axis. Use the **BY variable** to subset graphic displays.

In this example, the Y-axis was added with Group Function for 'max' as "Glucose: Max".



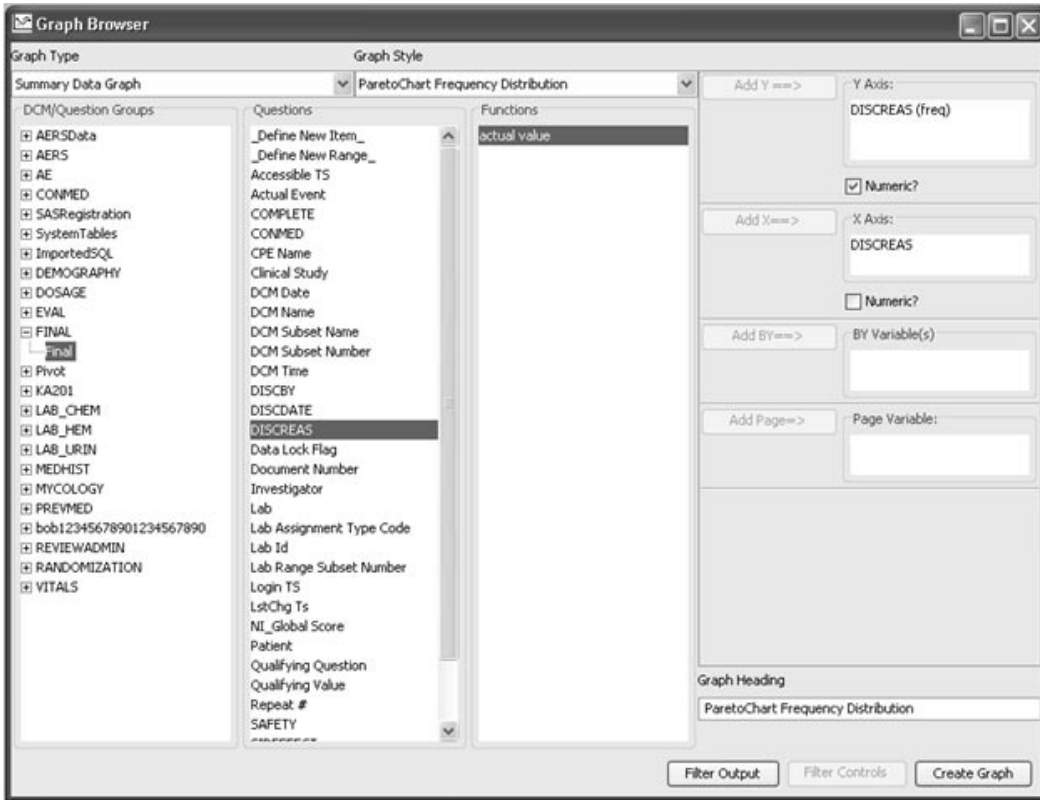


*Note: This not a true 3D bar chart; it is a 3D style that makes the bars look solid rather than flat. JReview currently does not have a true 3D bar chart.*

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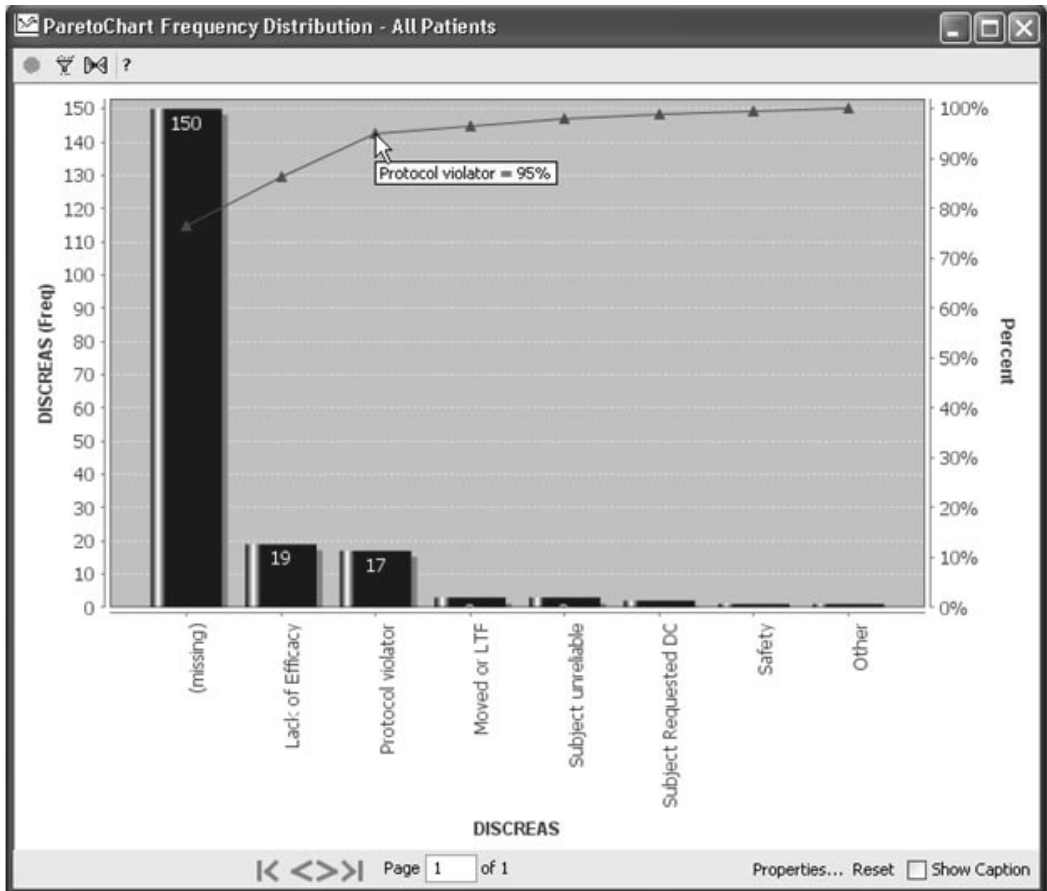
## Pareto Chart Frequency Distribution

In a Pareto chart frequency Distribution, each bar represents a category value that corresponds to the plotted Y-axis.

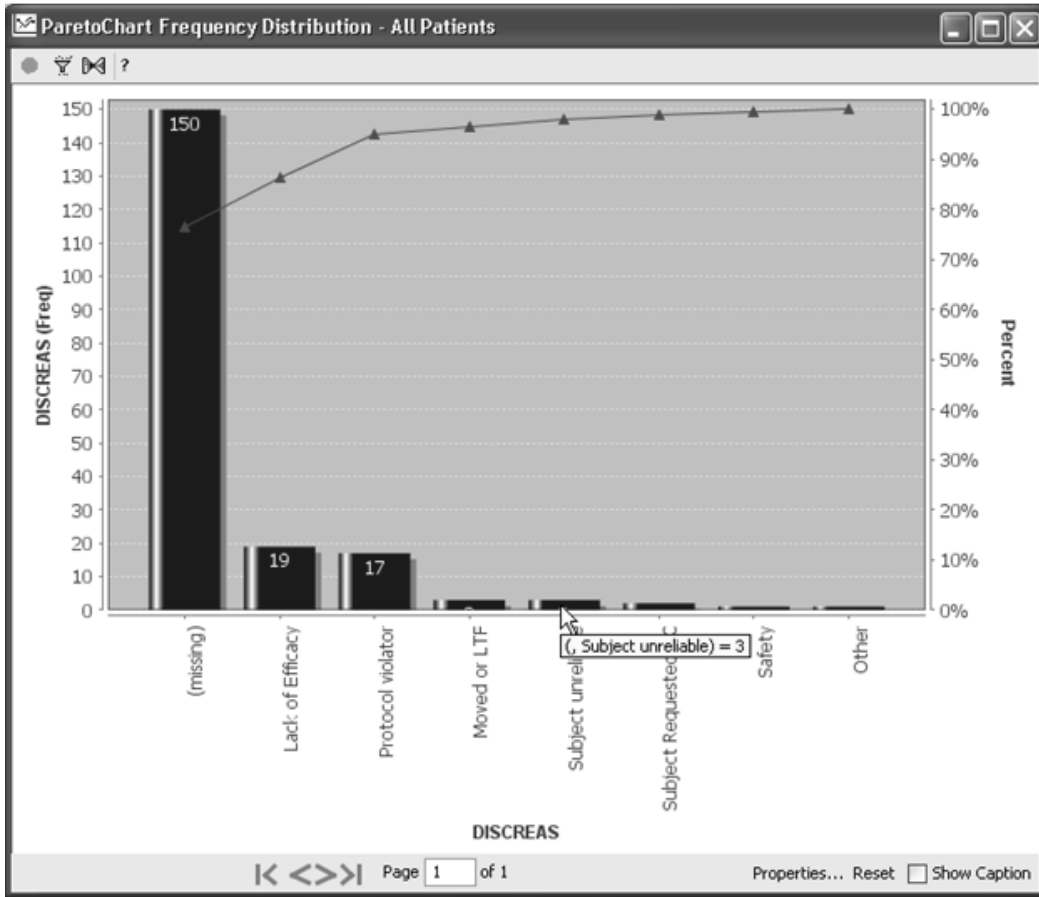


The line above the bars shows the cumulative percentage.

Pareto charts display the Y-axis bars in descending order of frequency.



Hint: Place the mouse over a bar to view description and count.



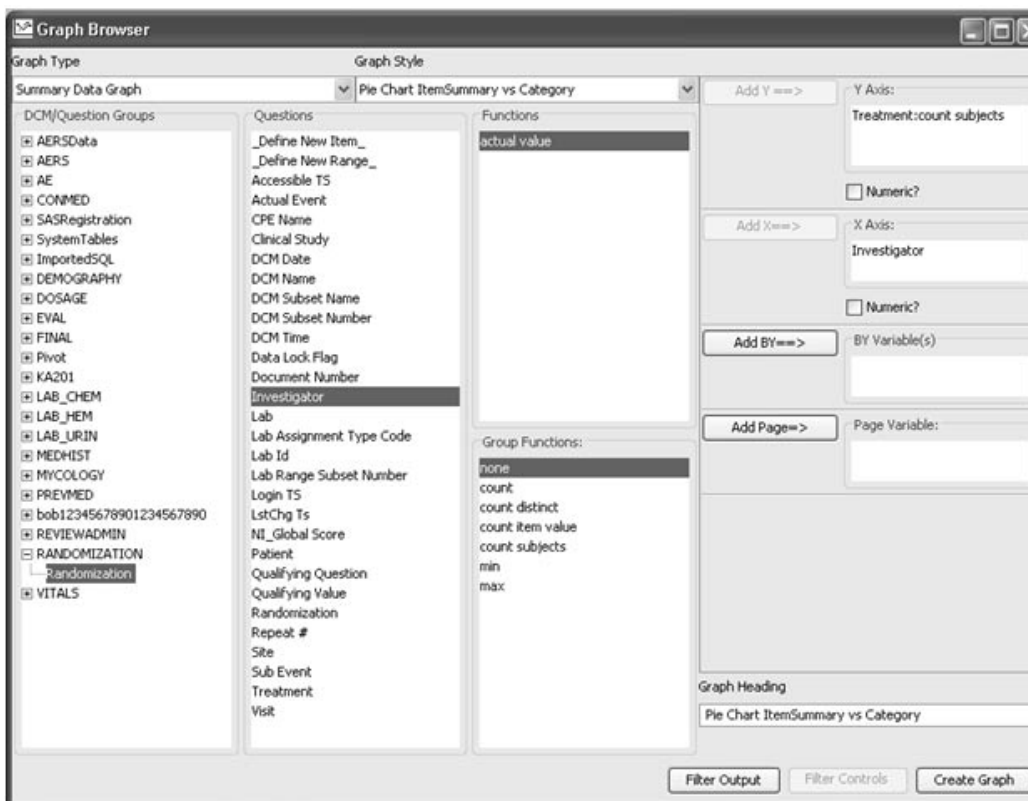
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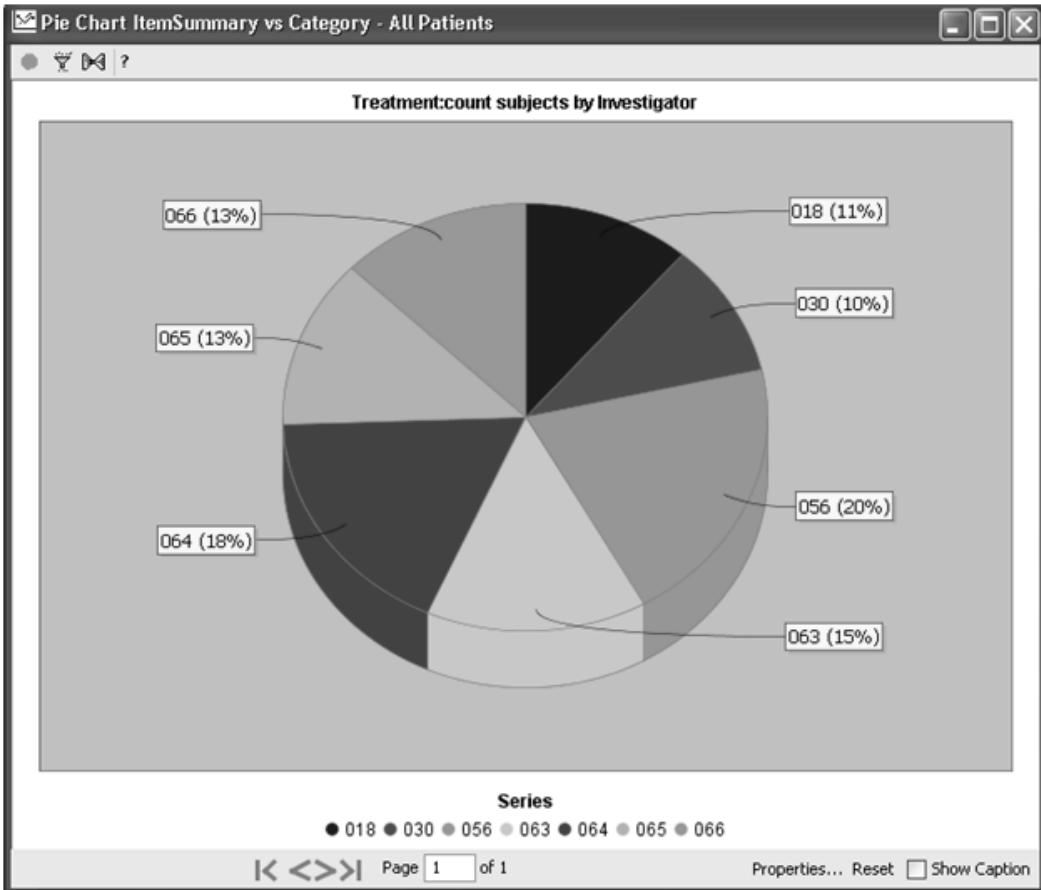
## Pie Chart Item Summary vs. Category

The Pie Chart Item Summary vs. Category, draws each slice to represent a category value X-axis versus a Y-axis summary statistic (mean, count, sum).

The Graph Browser window provides a separate list of group functions for the Y-axis. Use the **BY variable** to display multiple pie charts of grouped data.

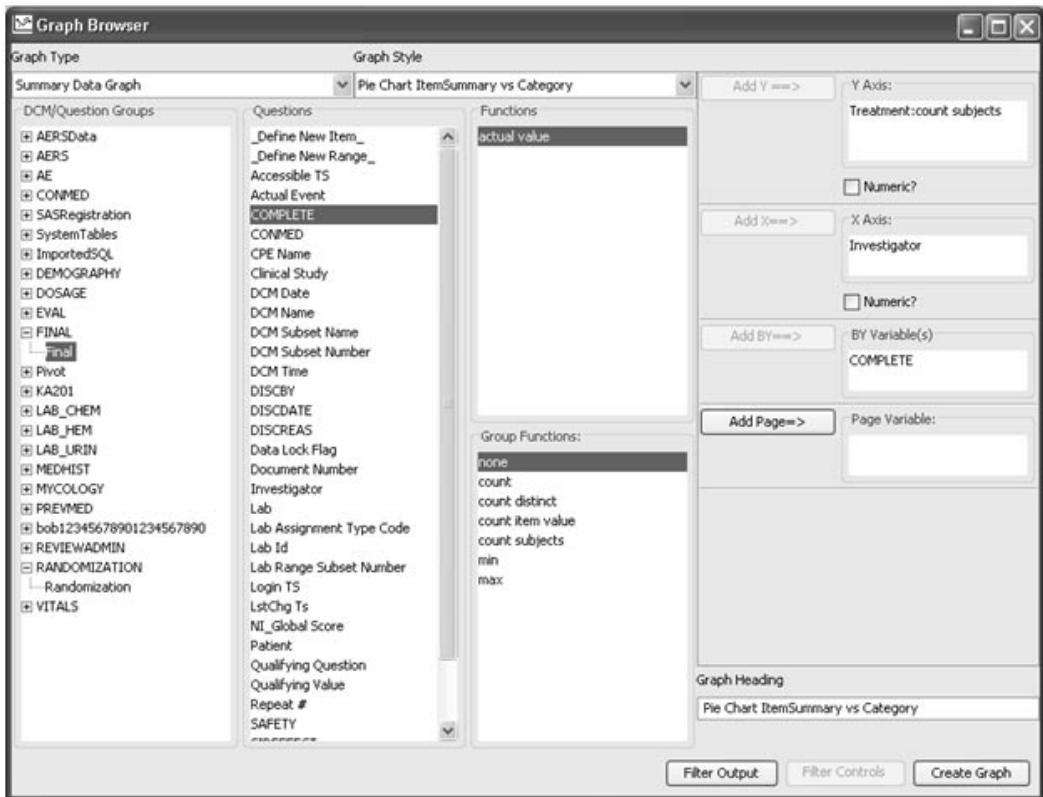
For this example, the Y-axis Group Function was selected for count subjects as “Treatment: count subjects”.



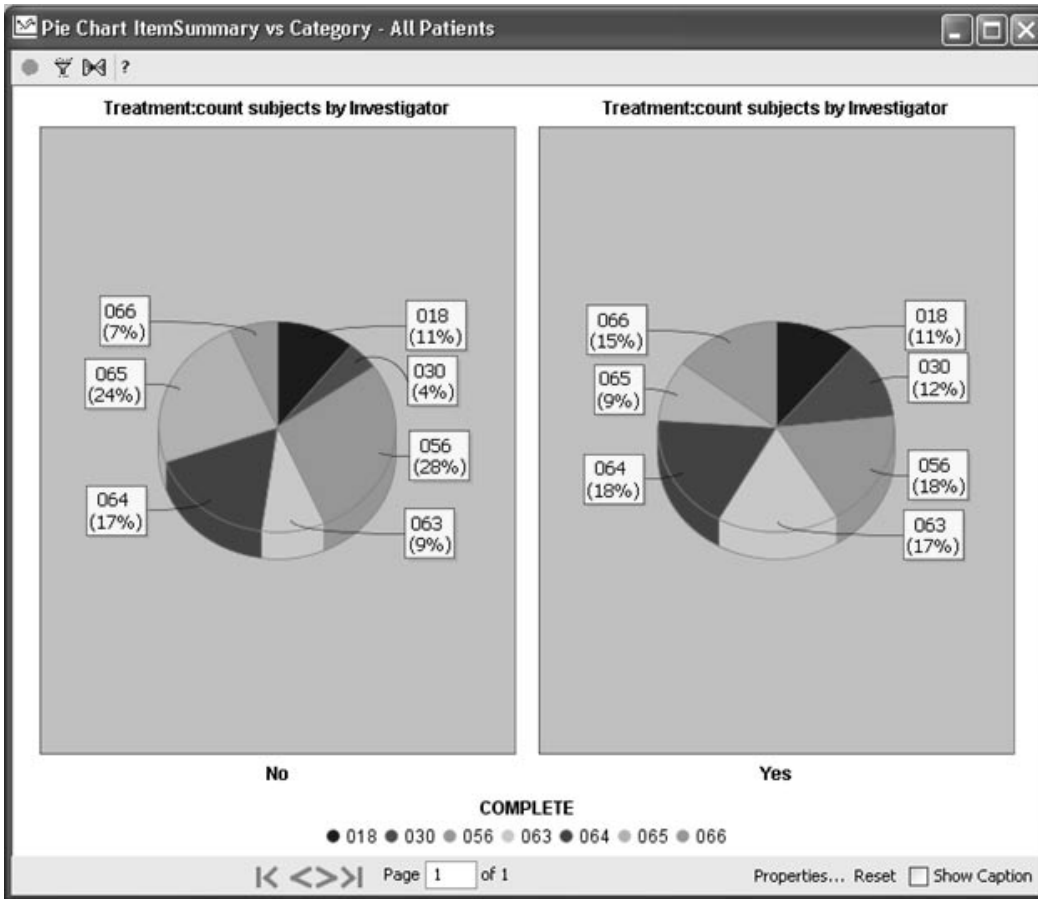




Here is the same Pie chart with **BY variable** added for completed study.



The **BY** variable displays multiple pie charts of grouped data.



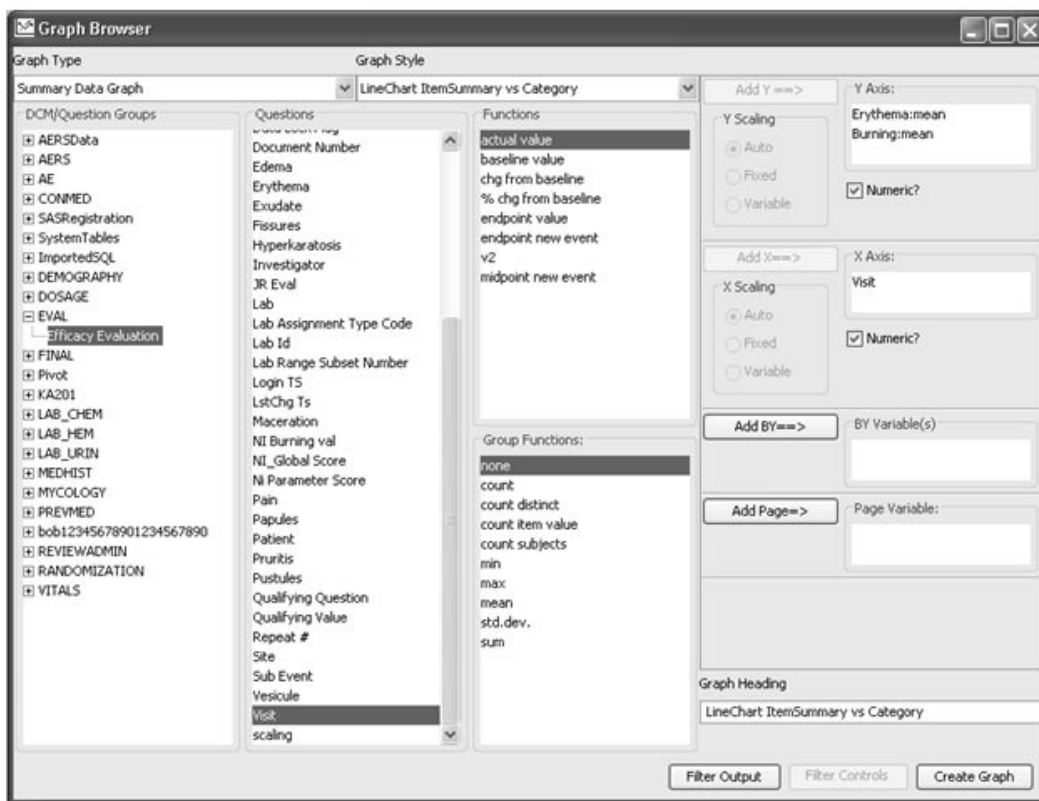
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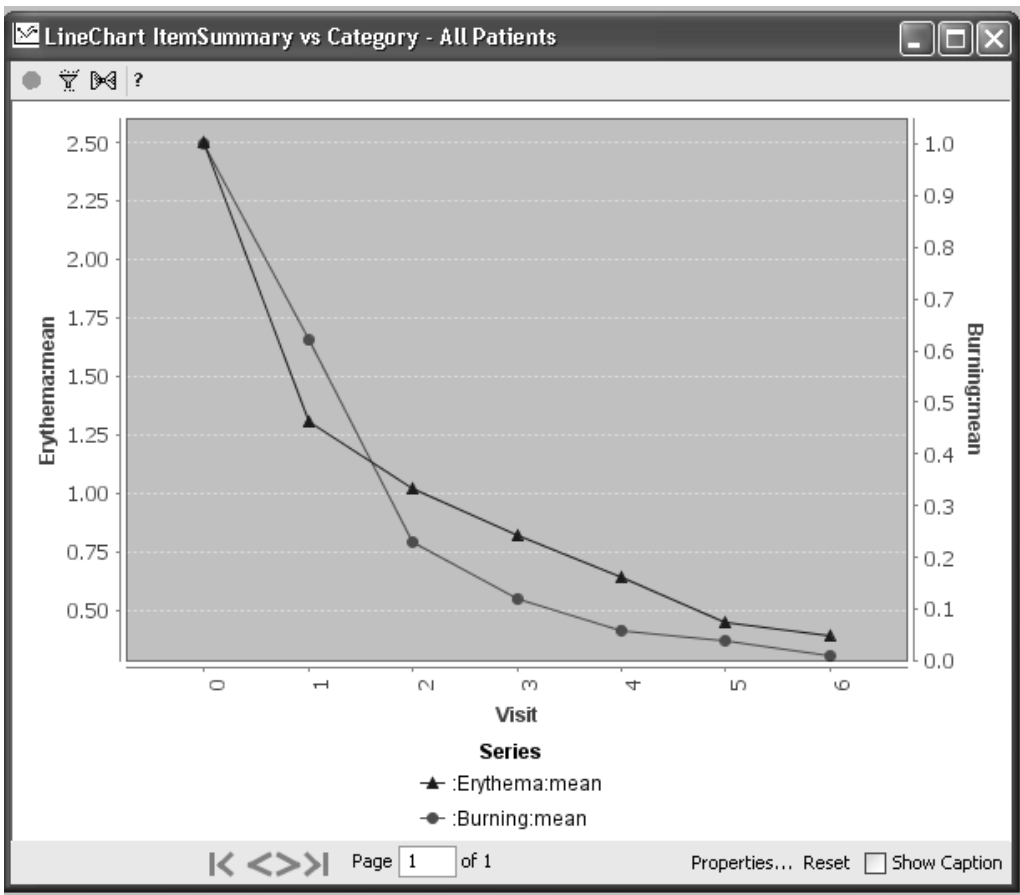
## Line Chart-item vs. Category

In a Line Chart-item Summary vs. Category, trends over time or other categorical items can be presented. With the use of a categorical BY variable, two or more populations can be represented, and comparatively viewed.

The Graph Browser window provides a separate list of group functions for the Y-axis.

For this example, both Erythema and Burning were added to the Y-axis as Group Function for “Mean”.



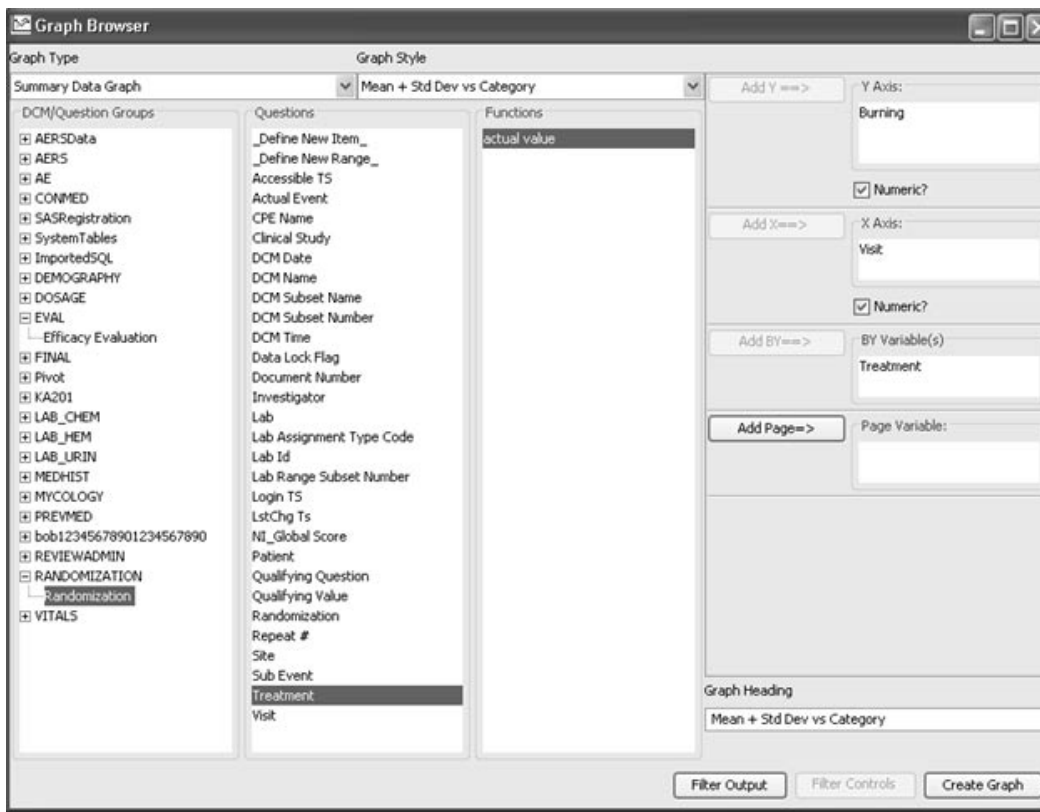


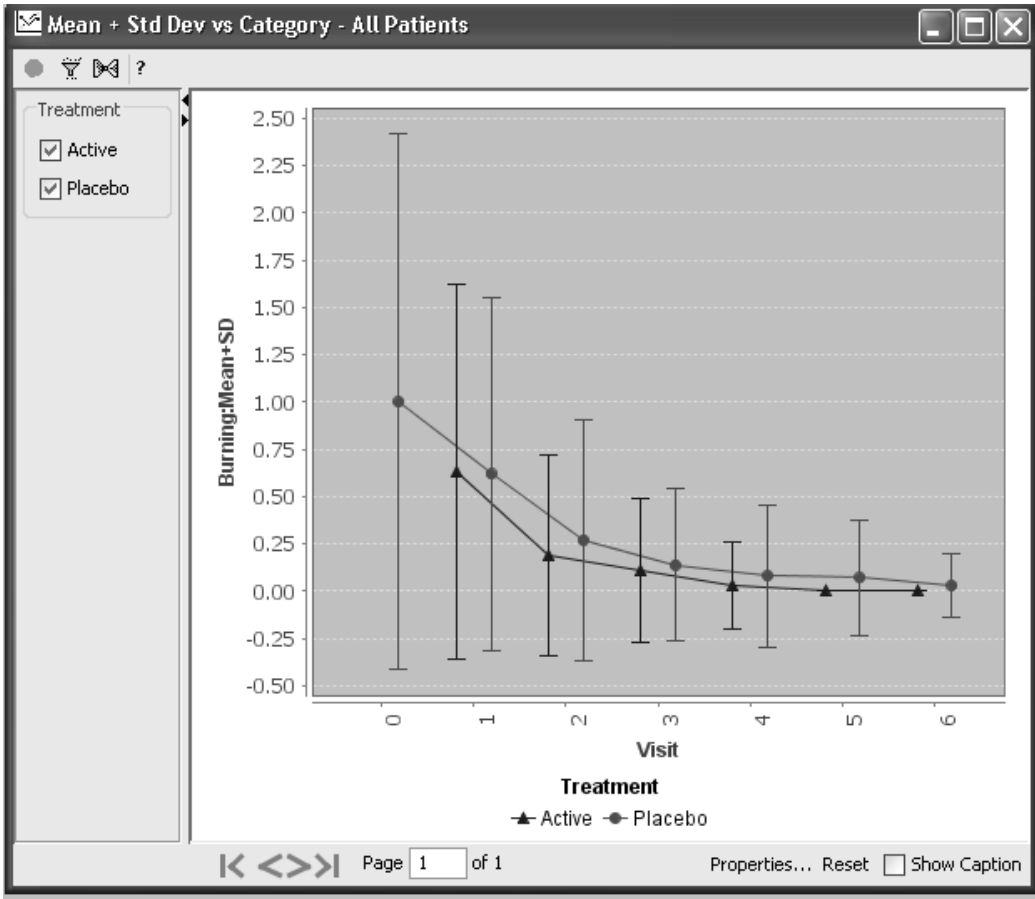
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## Item Mean and Standard Deviation vs. Category

In a Item Mean and Standard Deviation vs. Category graph, the standard deviation is represented by range bars at each categorical data point. Available functions supported are baseline, change from baseline, etc.

In this example, the Y-axis was added as “Burning Mean + SD”.



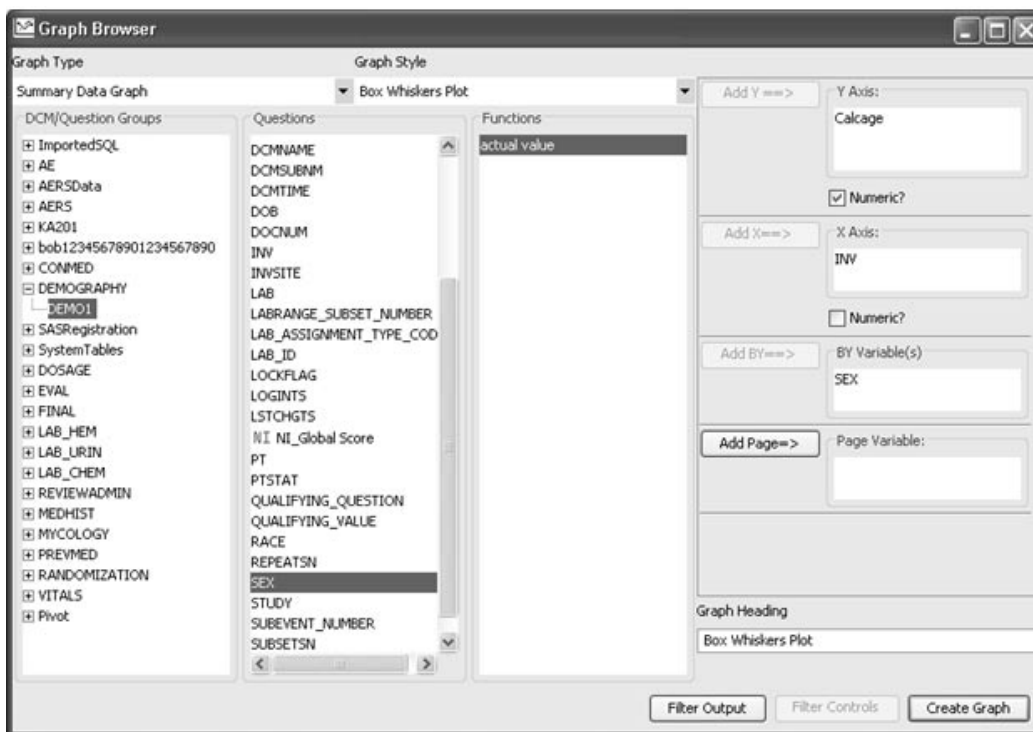


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## Box Whiskers Plot

The Box Whiskers plot is used to display a set of data so that you can easily see where most of the values are distributed. It is based on the medians. Therefore, discrete data is used where the quartiles (25% percentile, median (50% percentile) and 75% percentile) should return values from the list of existing data, i.e., no interpolated values (like those with decimal points).

***The Box Whiskers plots only works if going against an Oracle 9 database.***

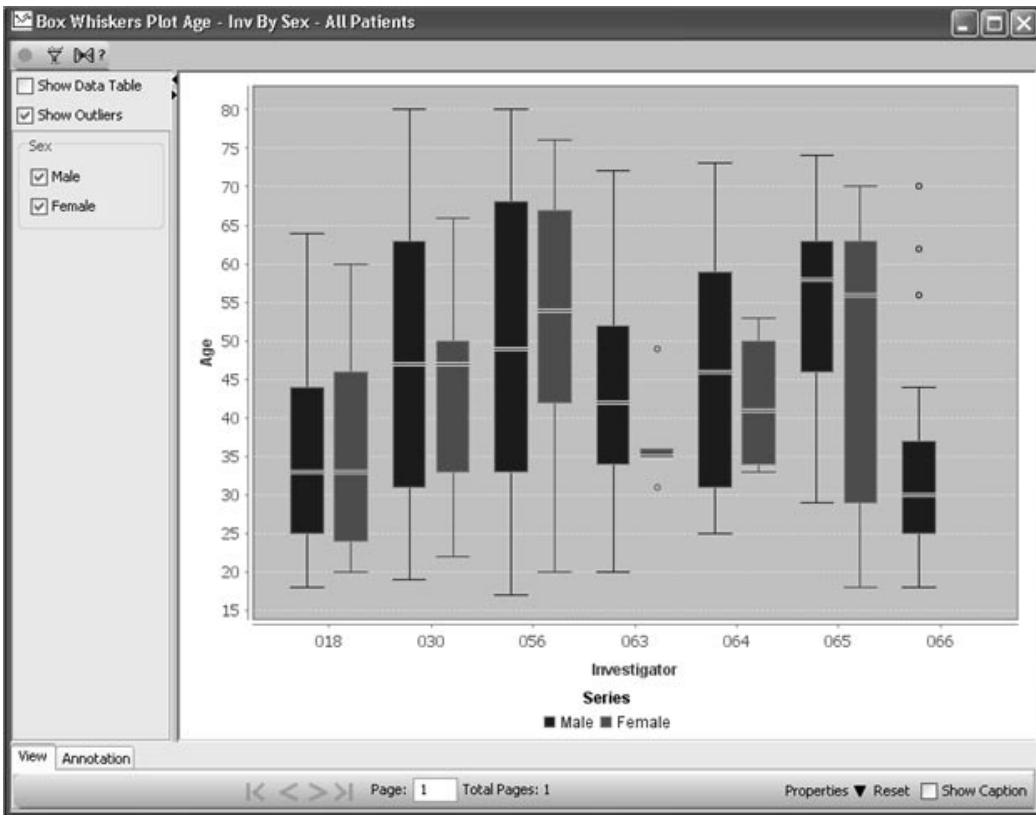


The Box Whiskers plot is used to display a set of data, so that you can easily see where most of the data values are distributed. It divides the range of Y values into sub-ranges. It is based on medians where the horizontal line in the box is the median.

Next, the lower median is identified as the middle of the lower values and the upper median as the middle of the upper values. The lower and upper median values are endpoints for the box boundaries.

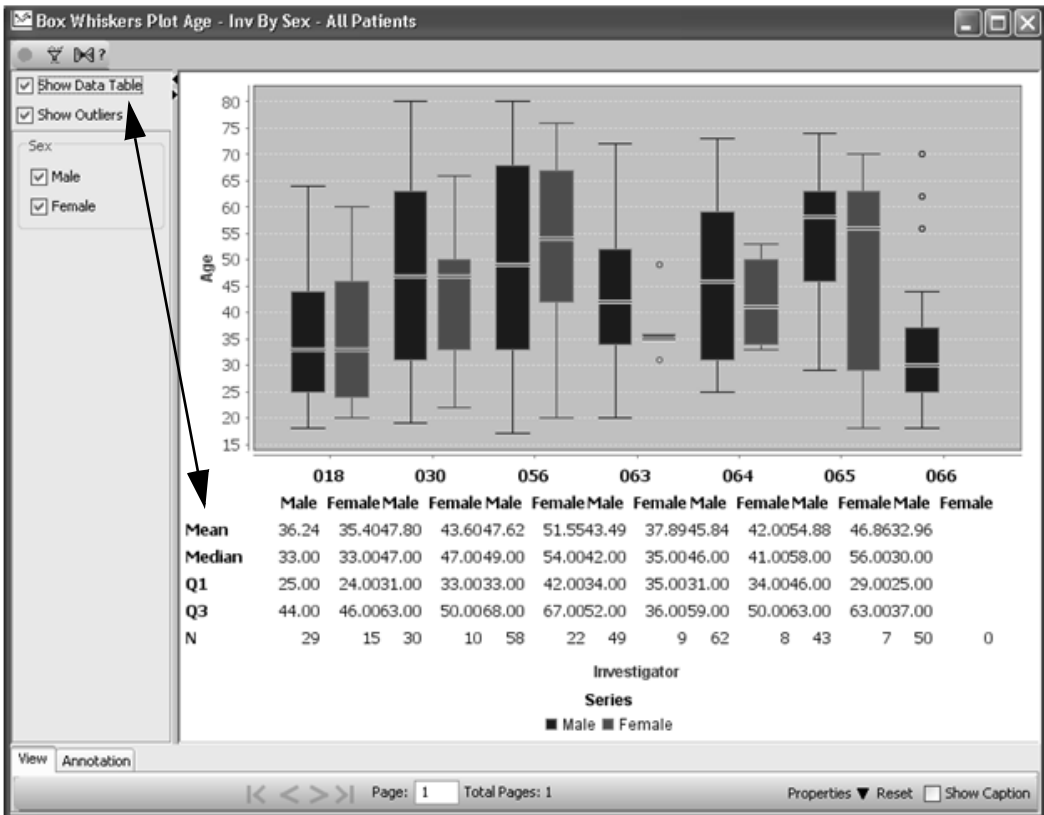
The bottom of the box represents the first quartile (Q1), and the top box represents the third quartile (Q3).

The whiskers extend out to the data's lowest and highest values. The data values are ordered in the graph from low to high and the median (middle value) of all the values identified.





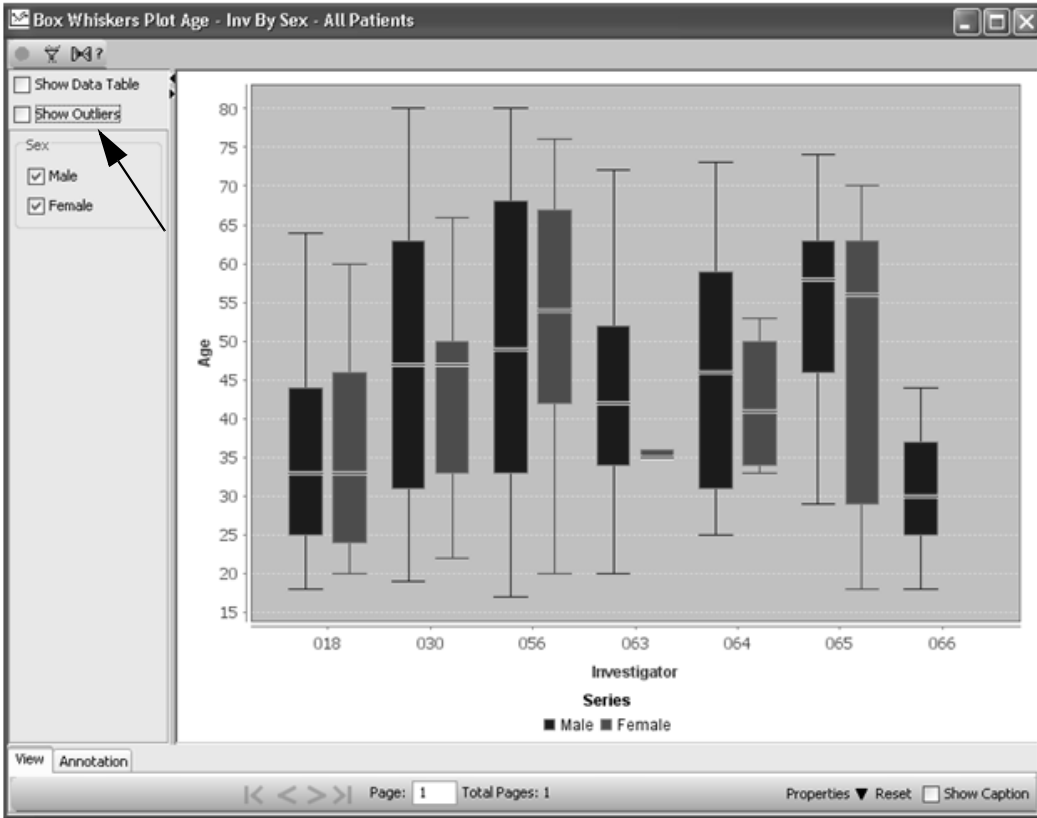
Click **Show Data Tables** to view details for table of counts and stats: mean, median, 1st quartile, 3rd quartile, count.



The stems (lines) extending vertically from the top and bottom of the box define the range of "regular" values. These bounds are calculated by multiplying the inter-quartile range (i.e.,  $Q3 - Q1$ ) by a coefficient, which is, by convention, 1.5. In other words, the top line extends up to  $Q3 + 1.5 * (Q3 - Q1)$ , and the bottom line extends down to  $Q1 - 1.5 * (Q3 - Q1)$ .

These calculations define the limits of regular values; the drawn lines themselves bound the actual regular values. Any value above or below the range of "regular" values is considered an "outlier." The outliers are drawn as circles.

Optionally hide or show (default) outlier data point display.



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## *Kaplan Meier analysis*

The Kaplan-Meier Analysis is a “time-to-event” analysis, also used as a survival function. It shows the time-dependence of events as fractions of subjects with event-free survival over time. It takes into account the subjects who withdraw and/or are lost to follow-up.

Kaplan-Meier plots are used for survival analysis to show “survival probabilities” and “non-survival probabilities” over time. The purpose is to estimate a population survival curve where in most studies there are patients lost to follow-up, drop out, etc., who cannot be followed until death. A Kaplan-Meier analysis allows estimation over time, even when patients drop out and are studied for different lengths of time.

Kaplan-Meier Analysis is used when *time* matters in:

- Progression-free survival in Oncology trials.
- Time to progression in Chronic diseases.
- Event-free survival in Cardiovascular studies (time to stroke, MI, hospitalization, death).
- Time to healing resolution.
- Safety analyses where “Time to event” = “Event-free Survival”.

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## *Kaplan-Meier requirements*

The Kaplan -Meier analysis are calculated off three pieces of information required for all patients. It determines how patients are censored or not in the analysis.

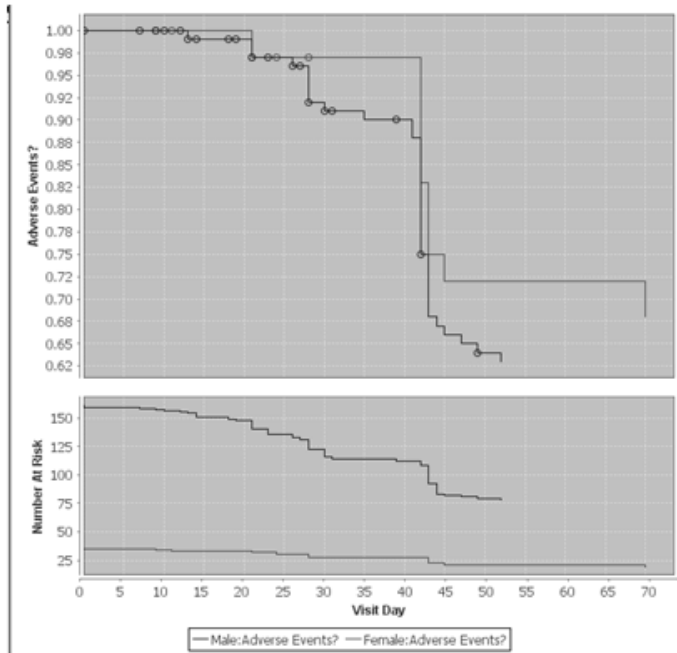
1. ***Did the subject experience an event?*** If an event occurred, the subject is not censored. If no event, the subject is censored.
2. ***When did the event occur, and if no event, when was their last follow-up?*** Time is a number (days, weeks, months, years).
3. ***What is the treatment group?***

In clinical trials, the time until patients in a study present a specific event or endpoint is tracked. The patients are followed beginning at a certain starting-point, and the time is recorded and needed for the event if it occurs. The end of the study is usually reached before all the patients have presented this event, and the outcome of the remaining patients is unknown. Outcome is also unknown for patients who withdrawal from the study and their time of follow-up is recorded as “censored data”.

The plots are summary in nature and require drill down. This is basically a line plot over time on the X axis. The Y axis shows probability of survival (or non-survival) for the selected patient group.

The survival curves are shown as a step function.

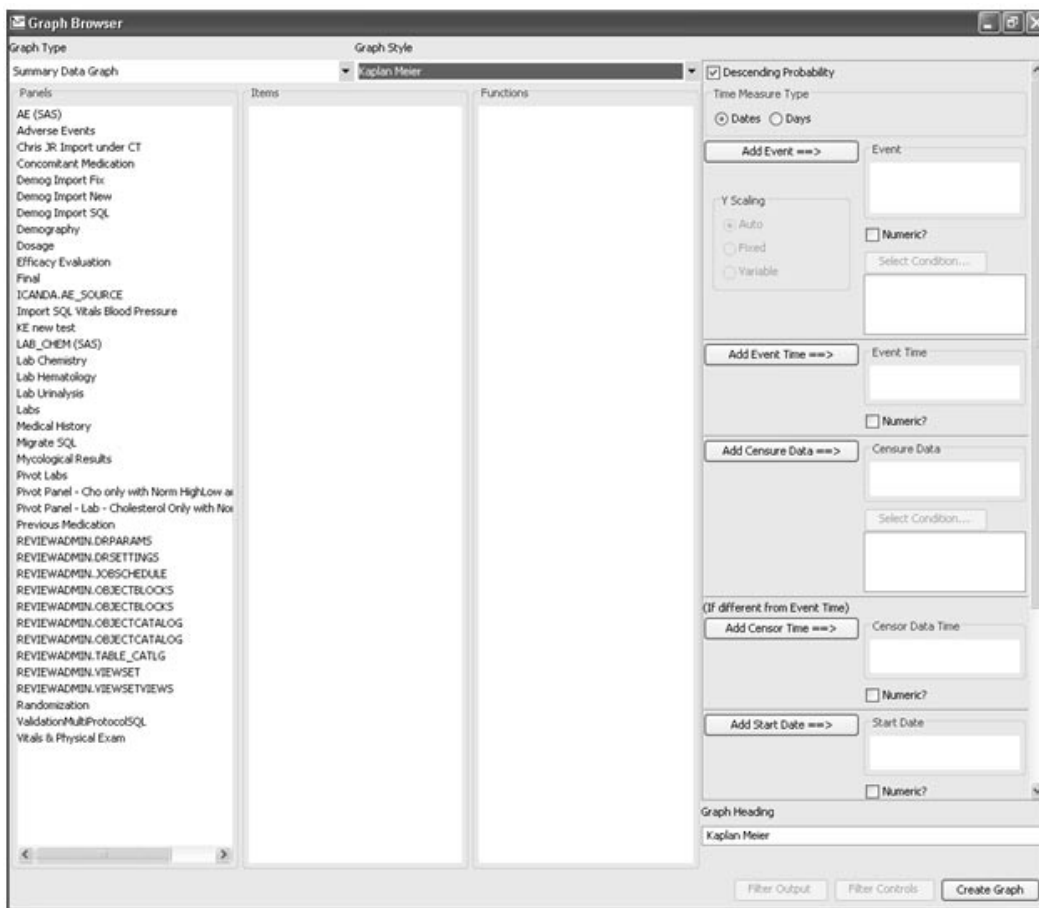
Below is an example of a Kaplan Meier and Survival Plot:



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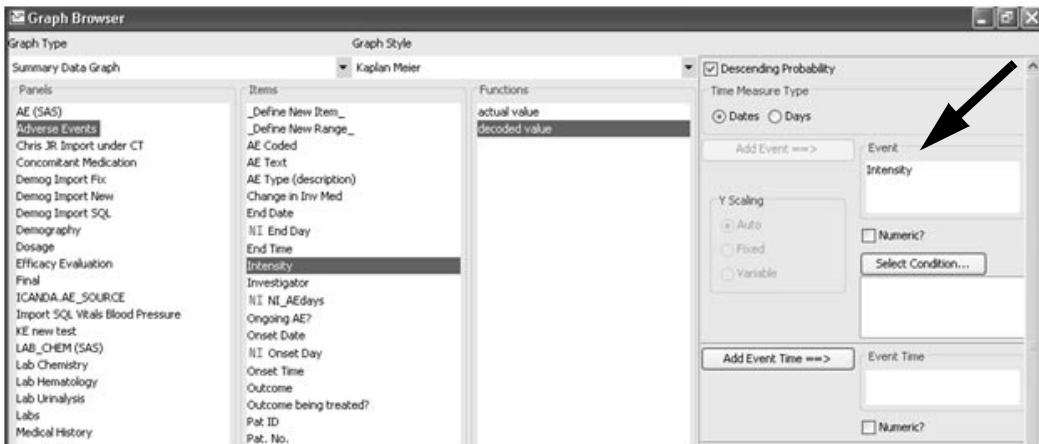
## Define Kaplan Meier plot

To start, select the Graph Type for Summary Data Graph for Kaplan-Meier. The graphic definition window displays:

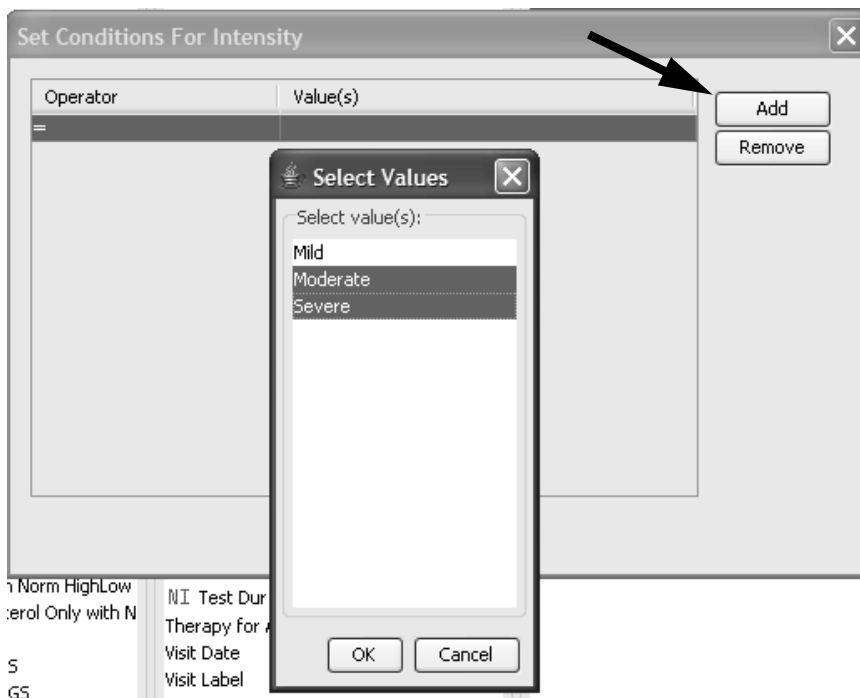


1. Select the direction of the plot for **Descending Probability** versus Ascending Probability of Y axis, where Probability of Survival versus Probability of Death.
2. Select a **Time Measure Type** to specify whether the variables associated with the "time" of event and censor occurrences are *dates* or *time durations* (e.g., "how many *days* to the event occurrence"). The Event and Censure condition filters require a date (or days) variable to be associated with them. Choose *Days* if days have already been calculated and stored in the data, otherwise, select *Dates* so JReview can do the day calculations for you.

3. Select the Y axis scaling variable for **Add Event**, by selecting a panel in the Panels list, and select item from the Items List. The **Select Condition** filter control button is enabled.



4. Click on the Event “**Select Condition...**” button. The Set Conditions dialog opens which contains a table with two columns. You *must* click on the **Add** button to activate this window to load the default operator and values.



The left column allows the user to select an **Operator** such as "=", ">", "<=", etc. Optionally, change the default operator by double-click in the **Operator** column for a drop down list. Each row can have only one operator selected.

The second column contains values that can either be directly typed into the table cell field, or selected from a popup dialog. Double-click in the **Values** column to display the **Select Values** list box. Select value(s) and click **OK** to save.

5. For Event and Censor Data, users must select a variable that specifies where to find the time of these occurrences. If the Event and Censor Data time variables are the same, then only the Event Time variable needs to be specified by the user.

Select an Event Time from the Panels and Item lists, then click **Add Event Time** button. This field represents a Date/Time for the event. Typically the Event and Event Time are selected from the same panel.

The screenshot shows a software interface with two main sections. The top section is titled "Add Event ==>" and contains a "Y Scaling" panel with three radio buttons: "Auto" (selected), "Fixed", and "Variable". To the right of this panel is a larger panel labeled "Event" containing a text field with "Intensity", a checkbox for "Numeric?", and a "Select Condition..." button. Below the button is a text field containing "= Moderate|Severe". The bottom section is titled "Add Event Time ==>" and contains a panel labeled "Event Time" with a text field containing "Onset Date" and a checkbox for "Numeric?".

- Next, select the Censure Data for **Add Censure Data** by selecting a panel in the Panels list, and select item from the Items List. The **Select Condition** button is now enabled to filter on the selected Censure Data item.

Click on the Censure Data **Select Condition** button. You must click on the **Add** button, to activate this window to load the default operator.

Optionally, double-click in the **Operator** column for a drop down list to change the default operator. Double click in the **Values** column to display the **Select Values** list box. Click **OK** to save.

Add Censor Time if different from the Event Time. Select a **Censor Data Time** from the Panels and Item lists, then click on **Add Censor Time** button.

The image shows a software interface with two main sections. The top section is titled "Add Censure Data ==>" and contains a "Censure Data" panel with the text "Adverse Events?". Below this is a "Select Condition..." button and a text box containing "= No". The bottom section is titled "(If different from Event Time) Add Censor Time ==>" and contains a "Censor Data Time" panel with the text "Visit Date" and a checkbox labeled "Numeric?". Two black arrows point to the "Select Condition..." button and the "Add Censor Time ==>" button respectively.



7. The **Start Date** variable is required only when the Event/Censor Data are *Date* types. It is disabled if the Time Measurement Type is Days. Select a panel from the Panels list and the date item from the Items list.

The screenshot shows a configuration window for graph styles. It is divided into three main sections. The top section is titled 'Start Date' and contains a text input field with 'Date of Randomization' entered. Below this is a checkbox labeled 'Numeric?' which is unchecked, and a button labeled 'Select Condition...'. The middle section is titled 'BY Variable(s)' and contains a text input field with 'Treatment' entered. The bottom section is titled 'Page Variable:' and contains an empty text input field. To the left of these sections are three buttons: 'Add Start Date ==>', 'Add BY==>', and 'Add Page=>'. A black arrow points from the 'Add Start Date ==>' button to the 'Date of Randomization' field. At the bottom of the window, there is a 'Graph Heading' section with the text 'Kaplan Meier'.

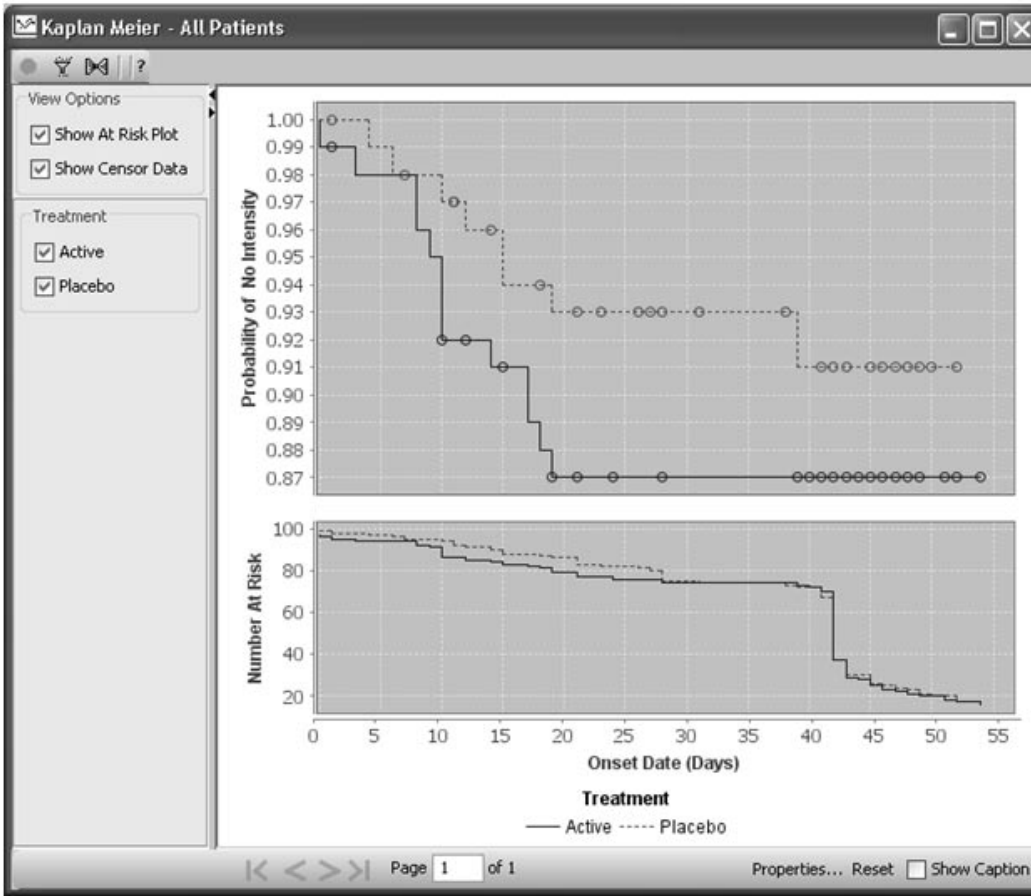
In this step, select a panel from the Panels list and the date item from the Items list. The study day calculation are determined as Risk Start and Risk End dates minus Randomization date, Visit date minus Randomization date, etc.

If you choose a 'Start Date' from a table/dataset with multiple visits per patient i.e., Dosage; you must also click on the '**Select Condition**' button to define the filter condition to select which record should be chosen for each patient.

8. Optionally, enter a **BY Variable** (i.e., treatment).
9. Optionally, add **Page Variable** for the further categorization of data (i.e. per investigator, site, treatment, etc.).
10. Click Create Graph.

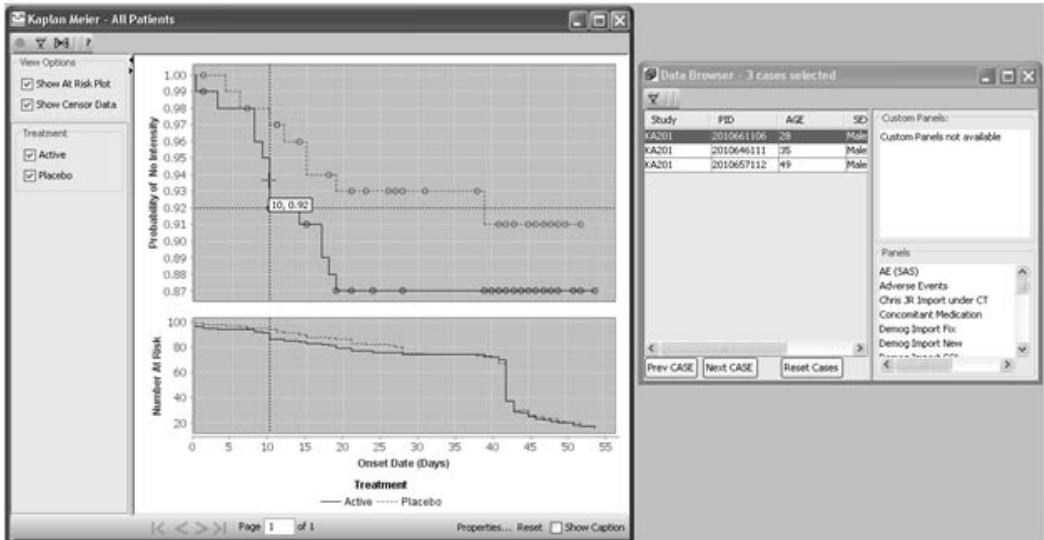
The Kaplan-Meier plot is contained in the top graph. The bottom graph, is not part of the Kaplan-Meier graph itself, but is a supporting plot that displays the number of patients at risk across time, i.e., the bottom graph shows the sample size for the time periods. This supporting graph shares the X axis with the Kaplan-Meier plot.

Optionally click on the View Options to only Show at Risk Plot, or Show Sensor Data.



You may select patient(s) to view represented on the vertical Y axis, by clicking on the vertical line with the open Data Browser to access patient details.

Click on a circle to view a select censored patient. When the mouse is moved over a vertical line, or censor point, the tool tip displays to present Onset Days and Probability.



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### *Kaplan-Meier calculations*

The Kaplan-Meier graph plots a probability, frequently a “probability of survival,” on the Y axis, and time (e.g., “Days in study”) on the X axis. The probability is calculated as a (cumulative) conditional probability. A specified *event* such as the death of a patient changes the value of the probability calculation for a specific time period (e.g., “day 2”). For example, if there are 100 patients in the study on day 2 and one patient dies on that day, the survival probability drops to .99 (99/100). If another patient dies on day 3, the survival probability is .98 ((99/100)\*(98/99)). These calculations are reflected in the plot as a line that descends in a step wise manner as time progresses from left to right on the X-Axis.

Observe that the graph is not limited to survival; for example, time to first serious adverse event might also be plotted. While the descending line plot is typical, the graph may also be plotted in an *ascending* direction (e.g. “probability of death”).

For some patients, data may be unavailable for the full-length of the study. For example, a patient may withdraw from the study, so patients for whom data is no longer available are called *censored*. The point at which a patient is considered censored is marked on the plot with a circle.

*Note: Sometimes the patient count in Kaplan-Meier graph shown censor tool tip, may be inconsistent with the number of patients shown in the Data Browser. This is due, under certain circumstances, to the inclusion of patients who have earlier exhibited an event.*

The occurrence of censor data affects the probability calculation by changing the number of patients in the sample at a given time. In our example, if a patient withdraws from the study on day 1 and a different patient dies on day 2, the survival probability on day 2 is .9899 (98/99).

The plot starts at 100% (0% in the non-survival case) and drops down (rises up in the non-survival case) at intervals, when a patient event such as death occurs. However, there are also points on the Y axis called “censor data” where patient drop outs not due to an event like death are counted. Also, there is a secondary plot along with the survival plot showing Number of patients at Risk, or the number of patients still in the study. These two plots are both shown against the same X axis.

The Kaplan-Meier curve works for each interval, where survival probability is calculated as the number of patients surviving by the number of patients at risk. Patient who have died, dropped out, or have not reached the time yet are not counted as “at risk”. The lost patients are “censored” and **not** counted in the denominator.

The probability of surviving to any point is estimated from cumulative probability of surviving each of the preceding time intervals (calculated as the product of the preceding probabilities). The probability calculated at any given interval isn’t very accurate due to the small number of events, however; the overall probability of surviving to each point is more accurate.

The vertical axis represents the estimated probability of survival for a hypothetical cohort, not the actual percentage surviving. The precision of the estimates depends on the number of observations, so estimates on the left side are more precise than at the right side (due to small number of deaths and dropouts).

These are the base calculations that are necessary to plot a Kaplan Meier graph:

Sample data

Interval (Start-End)	# At Risk at Start of Interval	# Censored During Interval	# At Risk at End of Interval	# Who Died at End of Interval	Proportion Surviving This Interval	Cumulative Survival at End of Interval
0-1	7	0	7	1	$6/7 = 0.86$	<b>0.86</b>
1-4	6	2	4	1	$3/4 = 0.75$	$0.86 * 0.75 = \mathbf{0.64}$
4-10	3	1	2	1	$1/2 = 0.5$	$0.86 * 0.75 * 0.5 = \mathbf{0.31}$
10-12	1	0	1	0	$1/1 = 1.0$	$0.86 * 0.75 * 0.5 * 1.0 = \mathbf{0.31}$

Proportion Surviving This Interval = (# At Risk at Start of Interval – # Censored During Interval – # Who Died at End of Interval) / (# At Risk at Start of Interval – # Censored During Interval)

Cumulative Survival at End of Interval = Proportion Surviving all preceding intervals multiplied together.

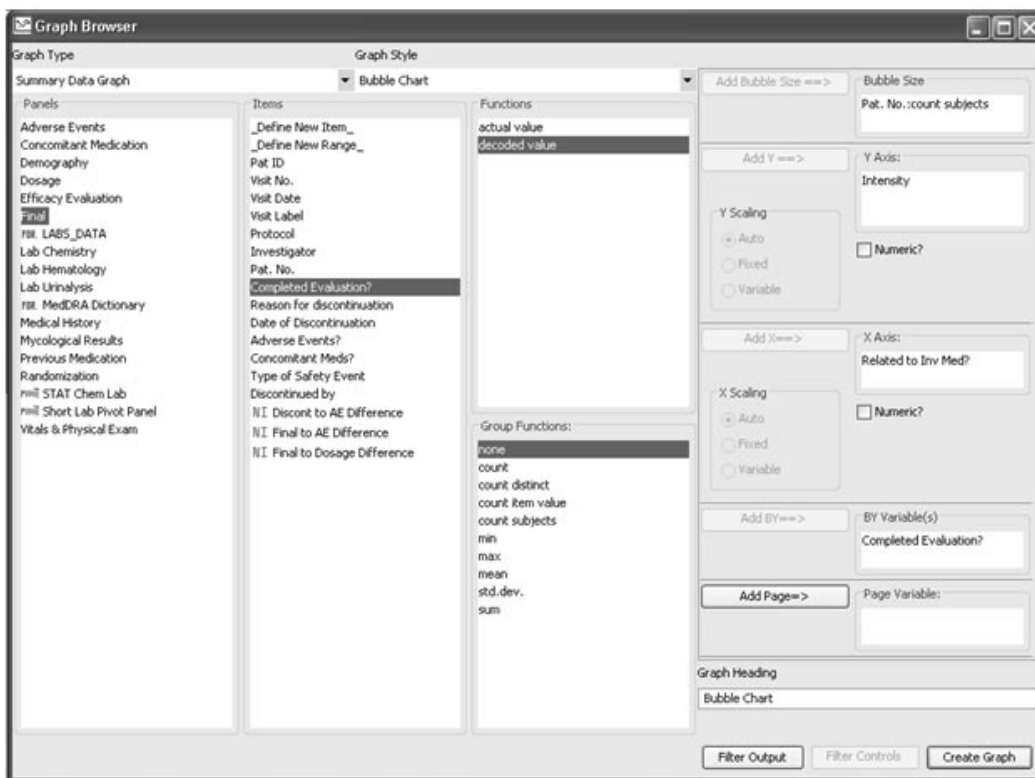
# At Risk at End of Interval = # At Risk at Start of Interval – # Censored During Interval.

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## Bubble Chart

A Bubble Chart is a type of Summary graph that displays three dimensions of data. In some ways, the Bubble Chart is similar to a Scatter plot, but instead of individual data points (e.g., a value for an individual patient), "bubbles" (i.e., circles are presented).

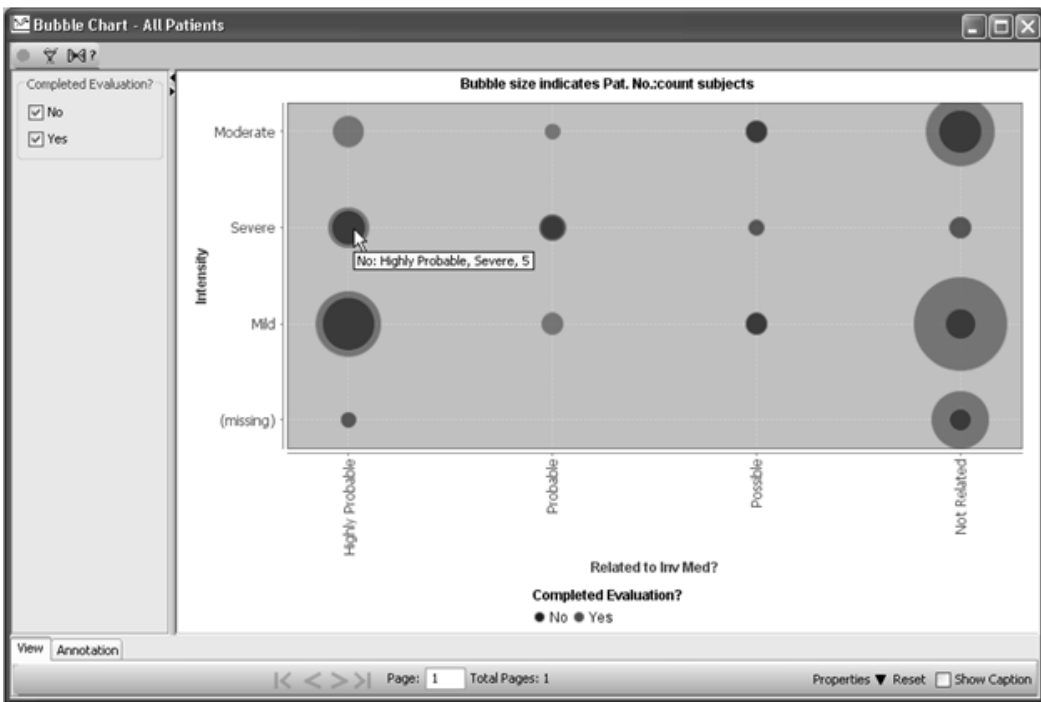
In JReview, the variable represented by the bubble has a user-specified Group function such as "mean" or "count" associated with it. The specified variables for X-Axis and Y-Axis may be numeric or character (i.e., category) type data.



The size of the bubble (i.e., the Bubble's radius) is proportional to the magnitude of the data value. When the values are negative, the bubble is drawn as an outline circle with an "X" within it. A zero value is drawn as a small filled square. The color of the Bubble is translucent to provide a cue when bubbles overlap.

This example used the Adverse Events panel as Bubble Size: PatientNo : count subjects, Y-Axis=Intensity, X-Axis=Related to Inv Med, with a BY variable Final panel for Completed Evaluation status.

A tooltip will appear when the user hovers over a bubble. Drill-down is supported in the Bubble Chart where the user may click on a bubble to initiate a drill-down with the Data Browser or Patient Profiles Browser.



## Output Filter

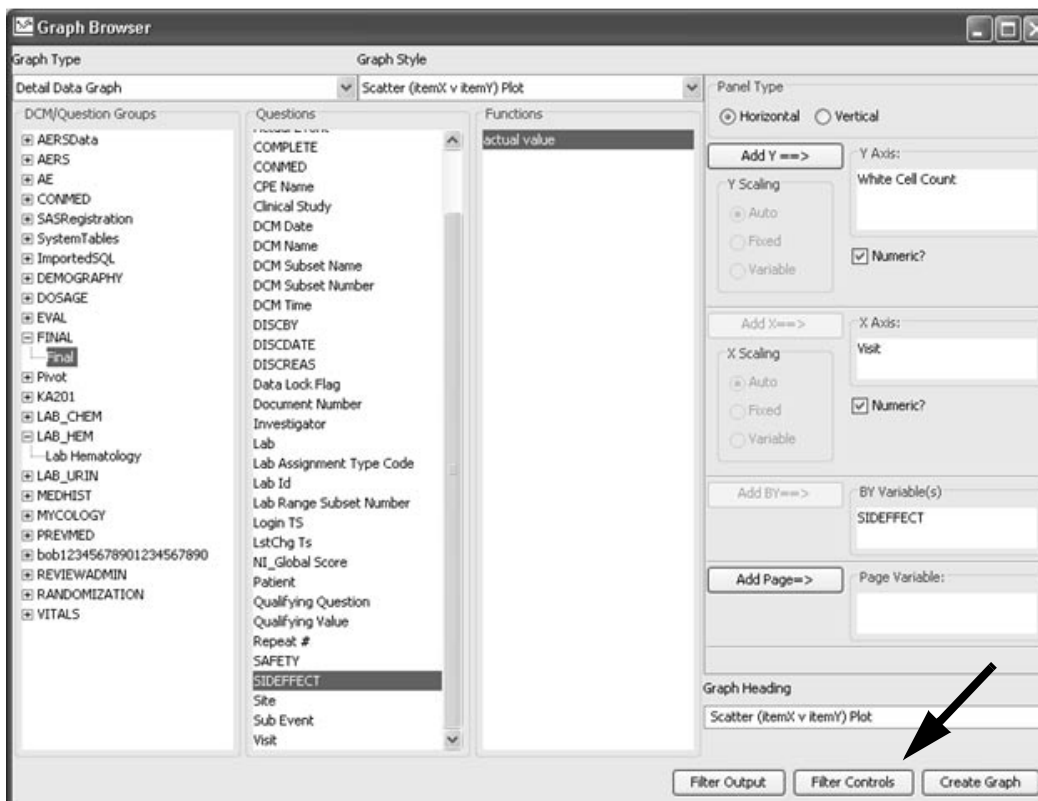
The output filter is designed to focus in on particular observations and visits; it is not designed to be used for the patient selection criteria. (See Chapter 6: Report Browser for Output Filter and Run Time Parameters. The same instructions apply for the Graph Browser.)

The **Filter Controls** feature allows users to define a ‘patient subgroup’ by selecting a set of variables to serve as “filters” in Scatter plots. This allows for interactive modification of generated scatter plots.

The filters are of two main types: check boxes for category type data, and sliders for numeric range type data. When the number of categories is large for a variable, the check boxes are presented as a scrolling list.

For example, for a Scatter plot with Y-Axis for “WBC”, and “VISIT” on the X-Axis, and Side Effects as the BY variable was defined. After defining the scatter plot, you may add filter controls to the graph.

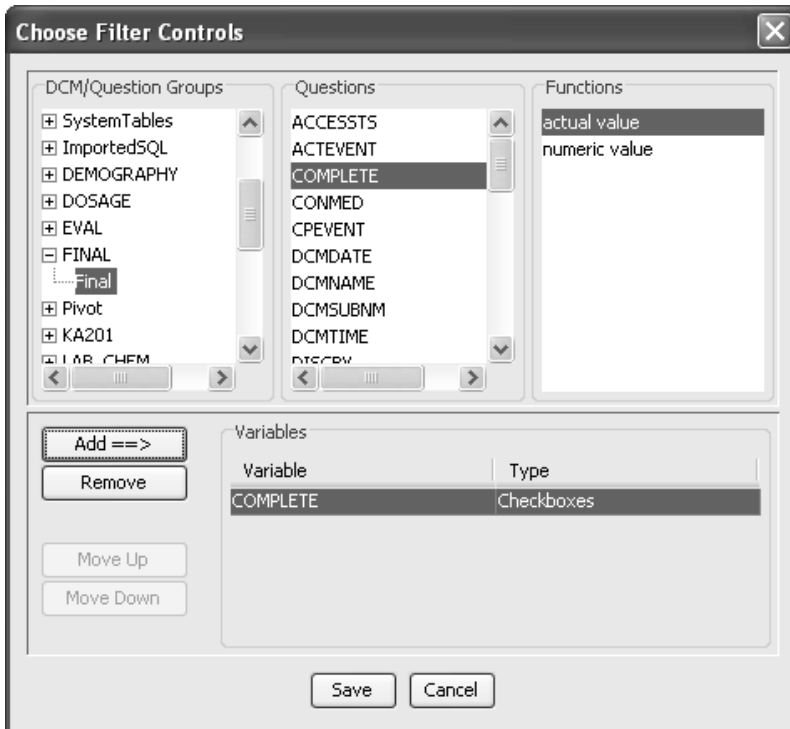
1. Click on the **Filters Control** button.





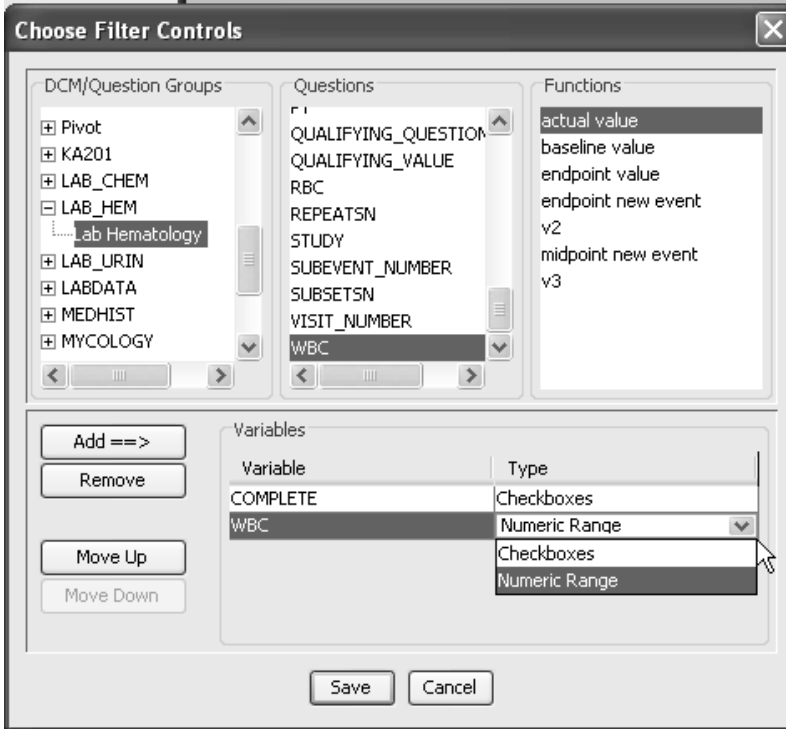
The **Choose Filter Controls** dialog displays to turn on/off the various included control filters. The user might select “completed study”, and “WBC” as control filters.

2. Select the DCM/Question Group (panel) and Question (item). Optionally select the function.
3. Click on **Add**. The filter control variable is added. Check boxes is the default type. If the variable is numeric, you have the option to select Numeric Range. A selected date item will display as checkboxes.



The variable for “Completed Study” is added as check boxes.

The numeric variable for “WBC” is added and Numeric Range is selected.



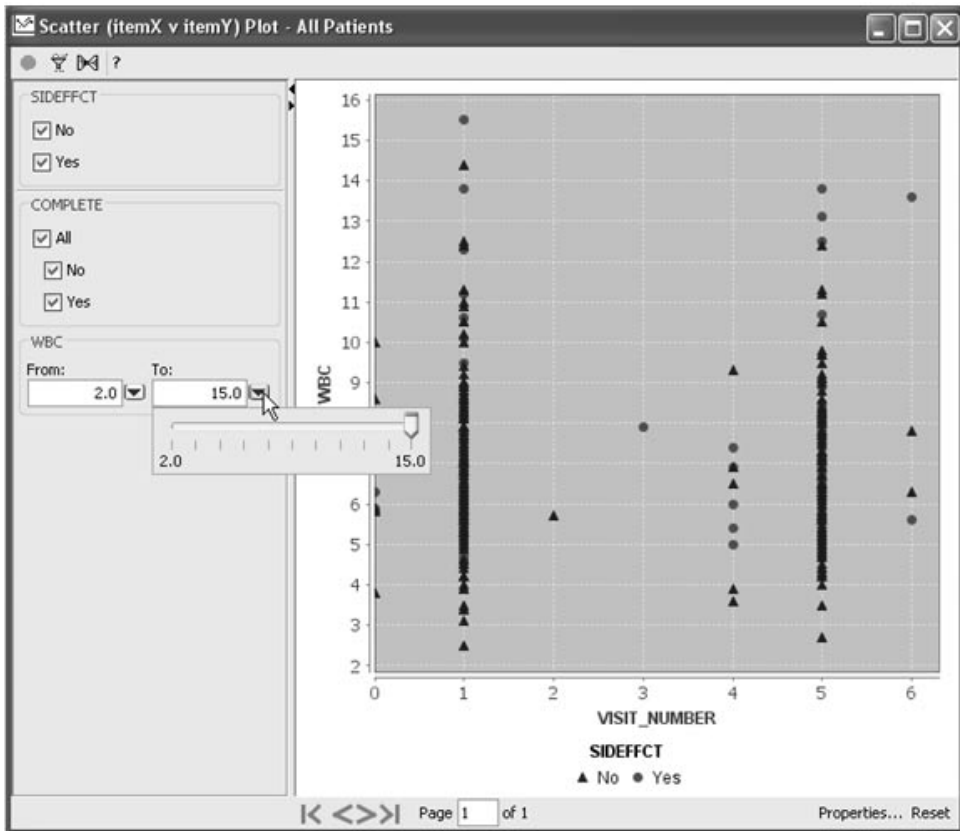
4. Click **Save**. The Filter Controls are saved. The button status changes to Filter Controls ON.
5. Click **Create Graph**.

The saved Filter Controls are listed with the BY variable if added. Initially the graph displays with all values.

6. Click on the check boxes to select which filter values to display and subset different patient sub-populations.
7. Change the values by directly typing an entry and click enter; or click the drop down arrow to access the range slide bar.

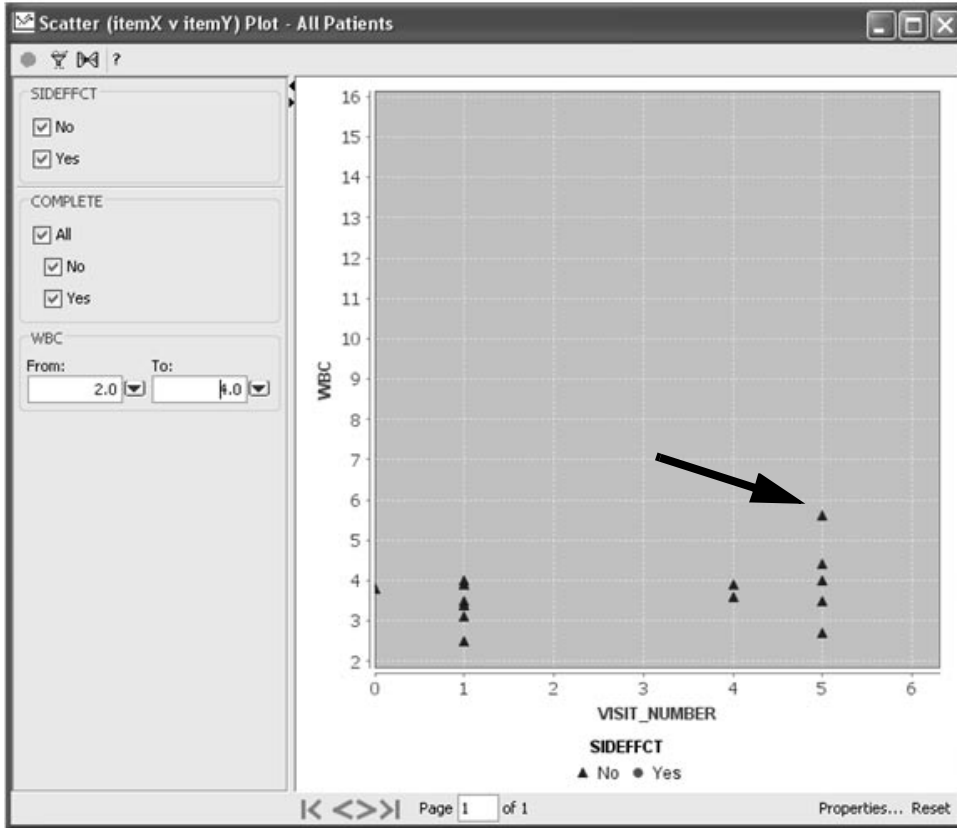
Numeric Ranges initially display the minimal and maximum values.

You must click **Enter**, to update the graph display.

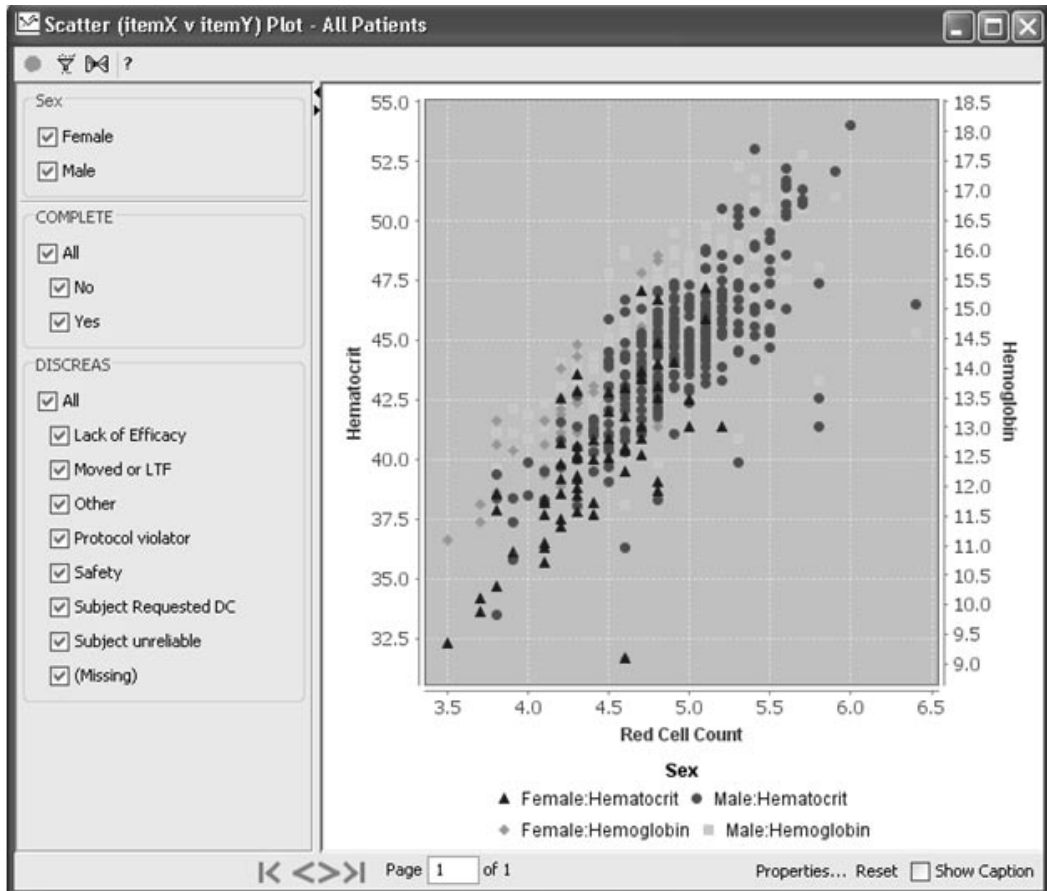


The WBC range was changed to a maximum value of "4.0". Observe some values may still display if higher than maximum value entered. This same patient had multiple visits with WBC values of "5.6" and "3.4".

With category filters, a patient is shown if they fall into any of the checked categories. Essentially, the categories for a variable have an "OR" relationship. In this case, the patient is shown because their WBC value at another visit is "3.4", and out of range.

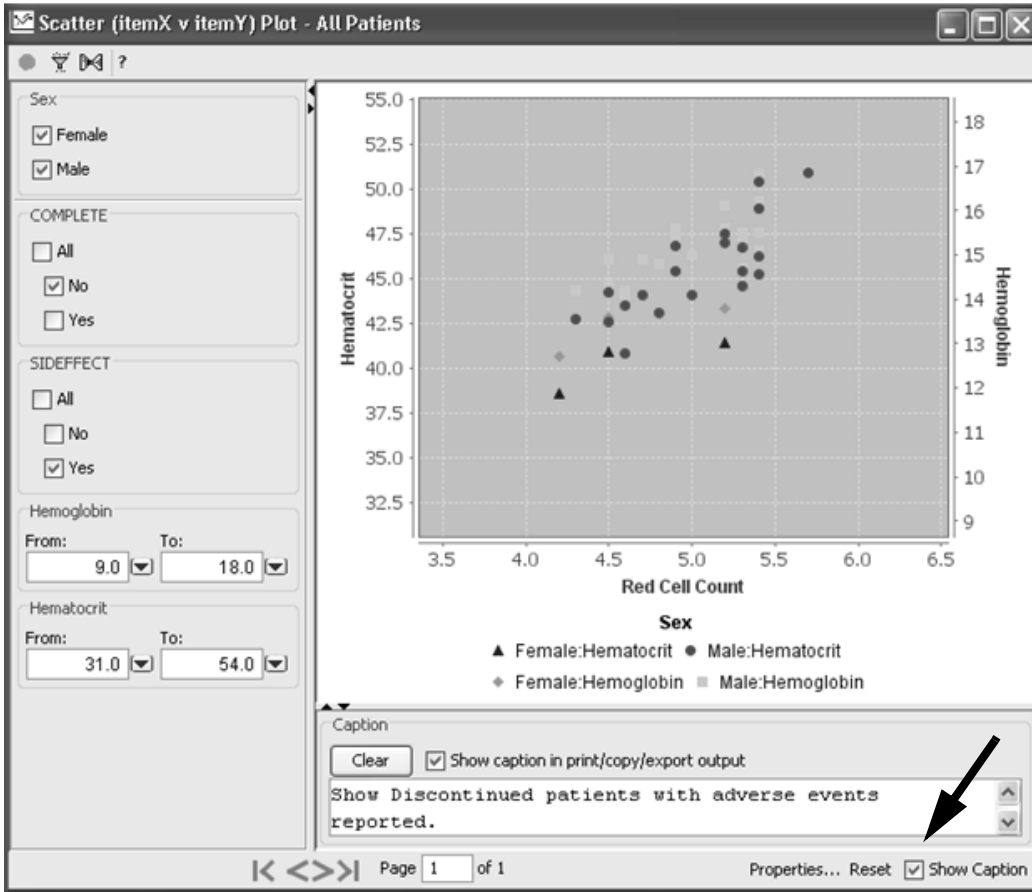


Here is another example of a dual axis scatter plot for laboratory data, with numerous Filter Controls were added. Initially all patients and their data values are displayed upon creating the graph.



Next, the Filter Controls were selected to show both males and females, only those patients who discontinued the study and reported side effects. The graph display updates to the new patient sub-population as shown.

The 'Show Caption' was checked On, and text describing the current filter conditions entered.



To edit or remove Filter Controls:

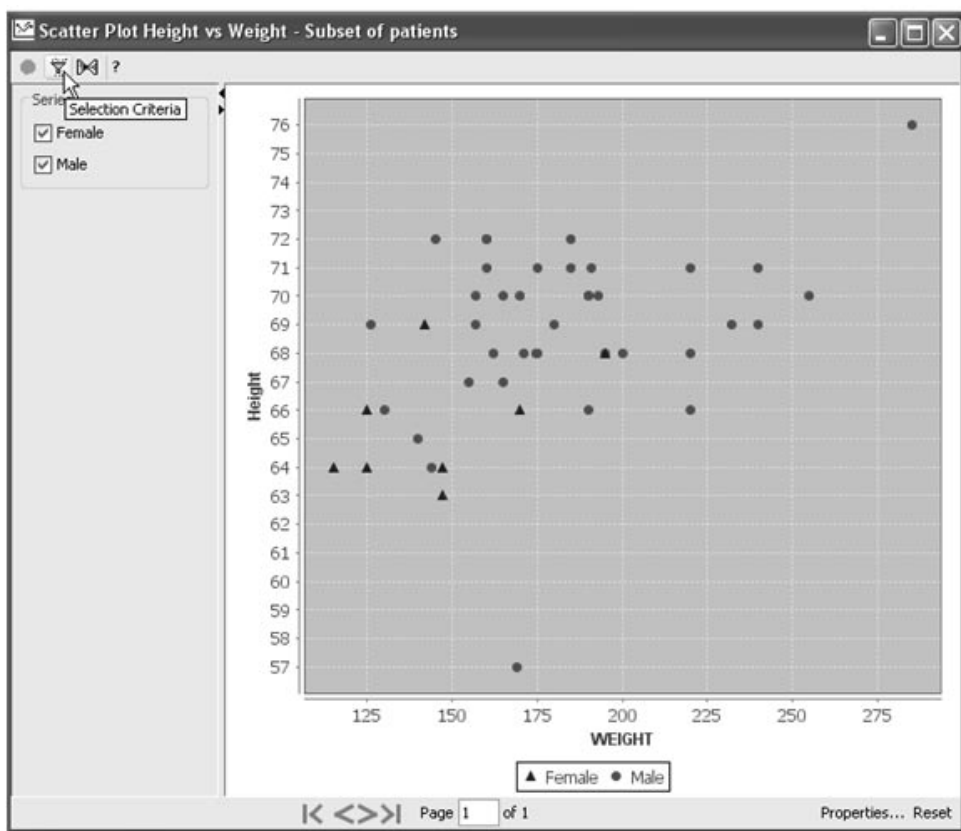
1. Click on the **Filters Control** button.
2. Select the Filter Control variable, then click on the **Remove** button.
3. You must remove each individual filter control variable, to turn off the entire function.
4. Click **Save**.

# Snapshot output

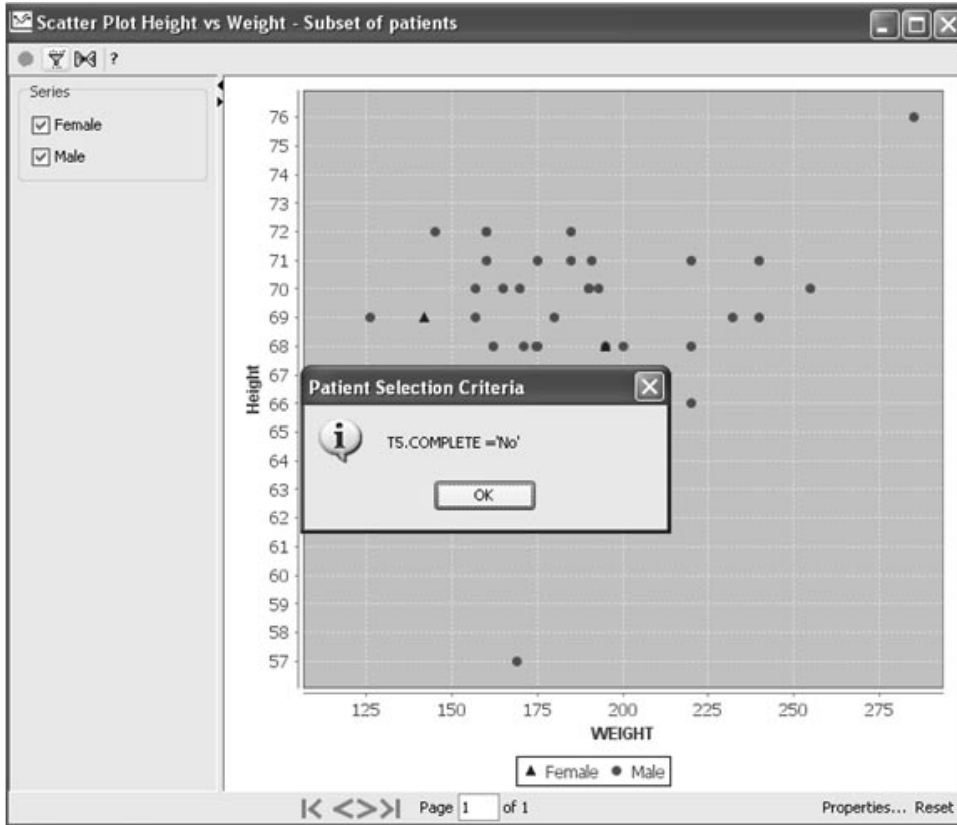
## Multiple population mode

JReview has an optional multiple-population mode available within the individual browsers output window. When the results are executed and displayed from the browser output window, two icons are displayed for “Snapshot” and “Selection Criteria?”.

The Selection Criteria button opens a message box to display the current patient selection criteria. The Snapshot output allows you to freeze the current output window; then change the patient selection criteria, and view the different output within the browser at the same time.

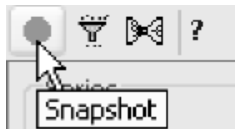


The output example shows a stored graph object with previous patient selection criteria defined.



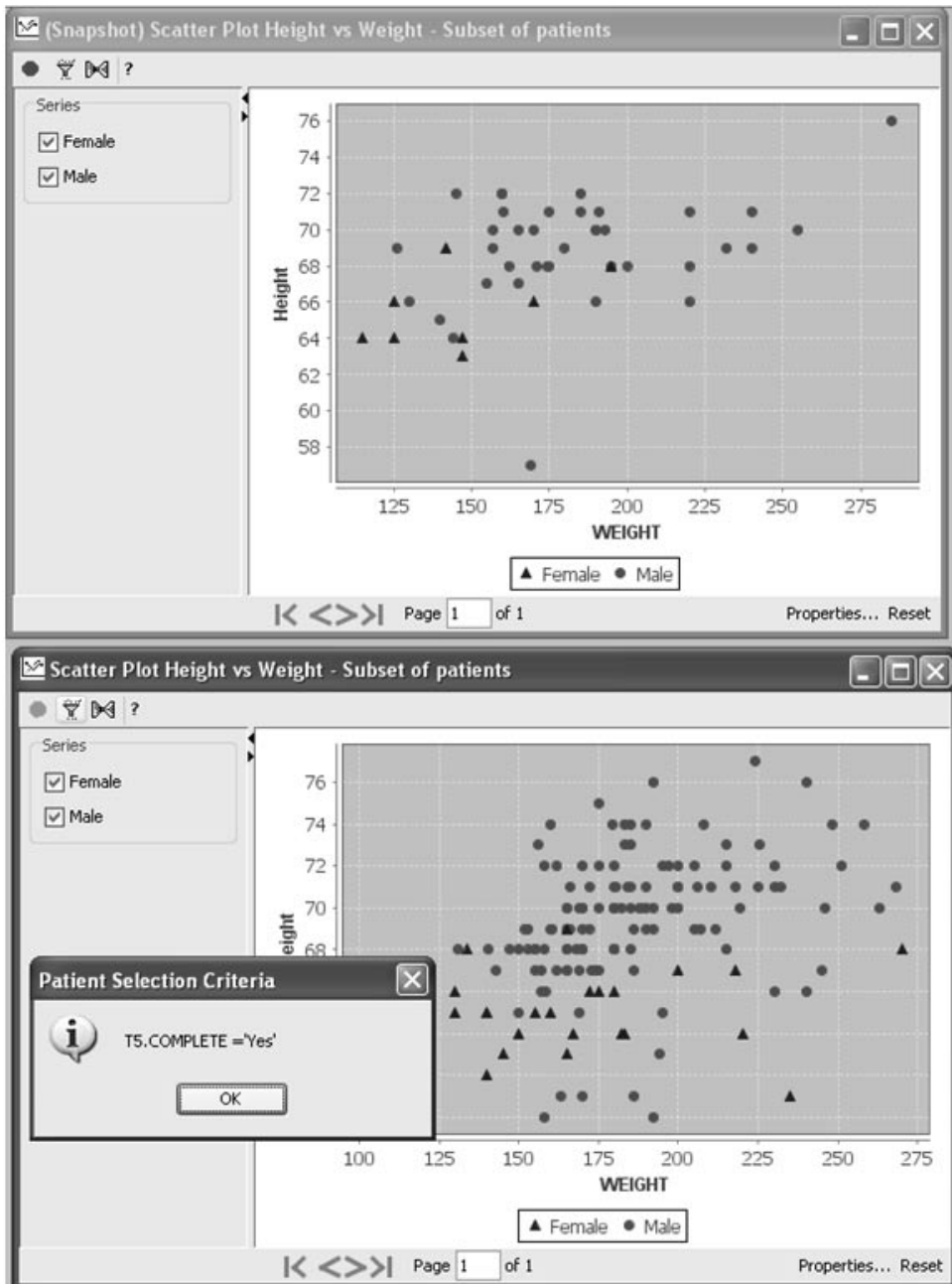
*Note: If the stored object definition already has a required patient selection criteria defined, you will not be allowed to change it.*

Simply click on the Snapshot button to take a snapshot of the current output.





A patient selection criteria was applied and then the same graph object re-executed to display the two output windows together for comparison. The selection criteria message box shows the new graph output window has a selection criteria for "Completed Study".

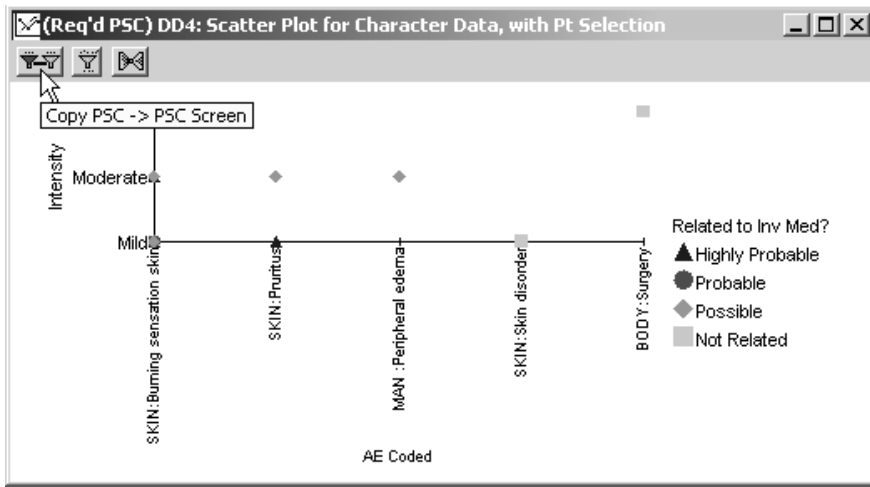


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## Multiple output for required selection criteria

When a stored object definition has a required selection criteria, you are not allowed to modify the selection criteria. The output window displays a notation in the heading “Req’d PSC” with a double filter icon.

You can open multiple objects with “Req’d PSC” and toggle between the required selection criteria to update your Data Browser display or other objects where a selection criteria definition isn’t required.



The last launched object with a required selection criteria is loaded into the Patient Selection Criteria window.

**Patient Selection Criteria [ichpux3]**

Panel: Randomization, Medical History, Previous Medication, Concomitant Medication, Dosage, Demography, Final, Lab Chemistry

Item:

Update Browsers | Add Expression

Prev CASE | Next CASE | Reset Cases

**Data Browser - 9 cases selected.**

KA201	2010184208	Female	47
KA201	2010303111	Female	66
KA201	2010565102	Female	20
KA201	2010565109	Female	67
KA201	2010565204	Female	44
KA201	2010632105	Female	35
KA201	2010632204	Female	49
KA201	2010646104	Female	33
KA201	2010657207	Female	70

Custom Panels: Custom Panels not available

Randomization, Medical History, Previous Medication, Concomitant Medication

And/Or	Select Criteria (Text)	Select Criteria (SQL)
	Demography.Sex =Female	T5.SEX =2
AND	Adverse Events.AE Text is not missin...	T10.SETEXT is not NULL

**(Req'd PSC) AE 2D Items Summary for ...**

AE Type (description)	Mild	Moderate	Severe	<missing>
Exacerbation	2	1	0	0
Intercurrent Illness	14	9	1	0
ADR	10	3	0	0
Other	0	0	0	3

**(Req'd PSC) AR 1: Adverse Events for Fe...**

Pat ID	Race	Sex	Age	Visit No.	AE Text
2010184208	Black	Female	47	1	INCREASED ITCHING
2010184208	Black	Female	47	1	INCREASED BURNING
2010303111	White	Female	66	1	DUODENAL ULCER
2010565102	White	Female	20	1	BLADDER INFECTION
2010565109	White	Female	67	1	BACK STRAIN
2010565204	White	Female	44	1	BLADDER INFECTION

**Patient Selection Criteria**

T5.SEX =2 AND T10.SETEXT is not NULL

OK

To load the previous object's selection criteria, click on its double filter icon "Copy PSC -> PSC Screen". The selection criteria is copied into the Patient Selection Criteria window. Click **Update Browsers** to update the Data Browser display.

The screenshot displays the 'Patient Selection Criteria [ichpux3]' window. On the left, a 'Panel' list includes 'Randomization', 'Medical History', 'Previous Medication', 'Concomitant Medication', 'Dosage', 'Demography', and 'Final'. The 'Item' field is empty. Below the panels are buttons for 'Update Browsers' and 'Add Expressions'. The 'Data Browser - 97 cases selected.' window shows a table of patient data:

Case ID	Pat ID	Sex
KA201	2010184103	Female
KA201	2010184104	Male
KA201	2010184107	Female
KA201	2010184108	Male
KA201	2010184109	Female
KA201	2010184110	Female
KA201	2010184113	Male
KA201	2010184202	Male
KA201	2010184203	Male
KA201	2010184205	Male

Below the Data Browser, the 'Select Criteria (Text)' field contains 'Randomization.Treatment =10' and the 'Select Criteria (SQL)' field contains 'TO.TREATMENT =10'. The 'Update Browsers' button is highlighted. In the bottom left, a bar chart titled '(Req'd PSC) AE 2D Items Summary for ...' shows the distribution of Adverse Events (AE) by intensity. The x-axis is 'AE Type (description)' and the y-axis is 'AE Type (description):count'. The legend indicates intensity levels: Mild (black), Moderate (dark grey), Severe (light grey), and <missing> (white). The chart shows a high count for 'Intercurrent illness' (Moderate intensity) and 'ADR' (Moderate intensity).

In the bottom right, a table titled '(Req'd PSC) AR 1: Adverse Events for Fe...' displays a list of adverse events with columns for Pat ID, Race, Sex, Age, Visit No., and AE Text.

Pat ID	Race	Sex	Age	Visit No.	AE Text
2010184208	Black	Female	47	1	INCREASED ITCHIN
	Black	Female	47	1	INCREASED BURNI
2010303111	White	Female	66	1	DUODENAL ULCER
2010565102	White	Female	20	1	BLADDER INFECTI
2010565109	White	Female	67	1	BACK STRAIN
2010565204	White	Female	44	1	BLADDER INFECTI
2010632105	White	Female	35	1	ITCHING ON APPLK
2010632204	White	Female	49	1	COLD SYMPTOMS
	White	Female	49	2	HEADACHE
2010646104	White	Female	33	1	TRANSIENT STINGI
2010657207	White	Female	70	2	VAGINITIS

If you open another stored object which doesn't include a selection criteria, the output will display with the previously launched required selection criteria.

*Note: Stored objects with required selection criteria will take precedence over object definitions without required selection criteria when you toggle back.*

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# Highlighting patients

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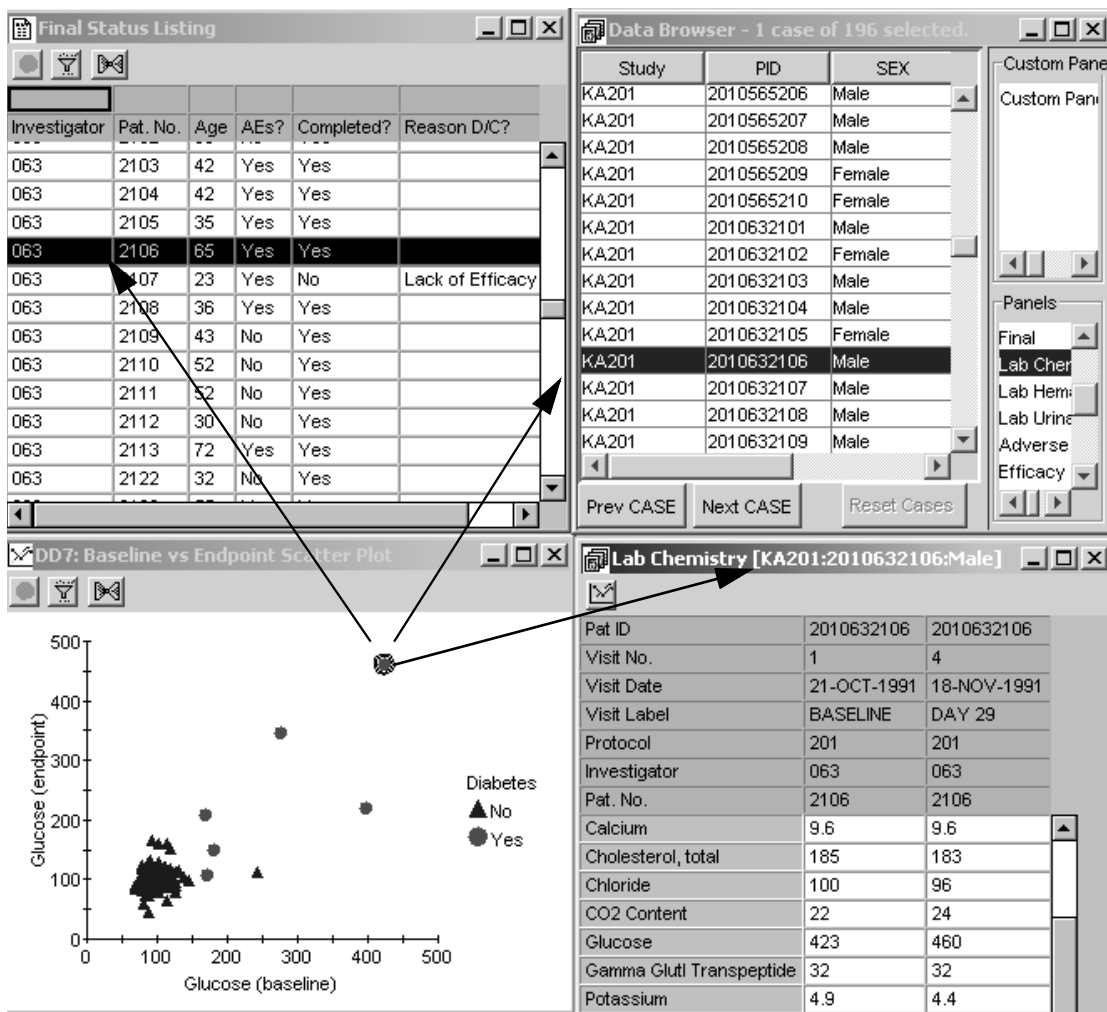
## *Single patient mode*

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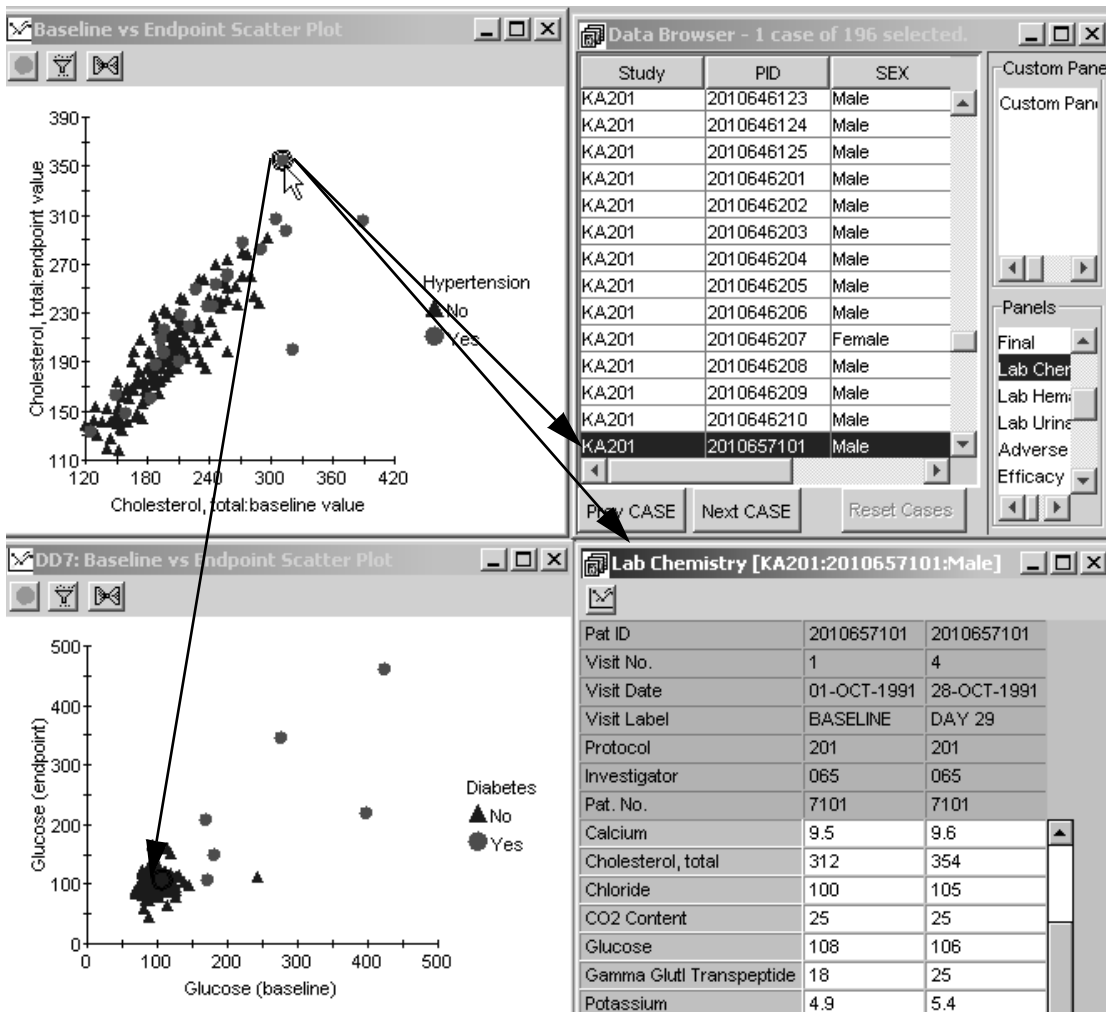
Scatter Plot graphs are patient-level graphs, and each data point represents an individual patient's data value for the respective variables.

A click on any data point facilitates identification of the underlying patient and access to all respective patient data in the single patient mode.

1. Activate the Data Browser to display a list of patients in the current patient selection, or activate the Report Browser to create and display any Detail Data Report (a list of patient data with customized data item groupings).
2. Click on any data point in the Scatter Plot graph. Review highlights the clinical data point clicked on within the graph.  
The selected patient is highlighted throughout any open Detail Data Listing Reports, open Scatter Plot graphs, and/or the Data Browser patient list and open data Panels.
3. If you click on a patient's row in a Detail Data Listing Report or Data Browser patient list, the selected patient's data point is highlighted in any scatter plot.



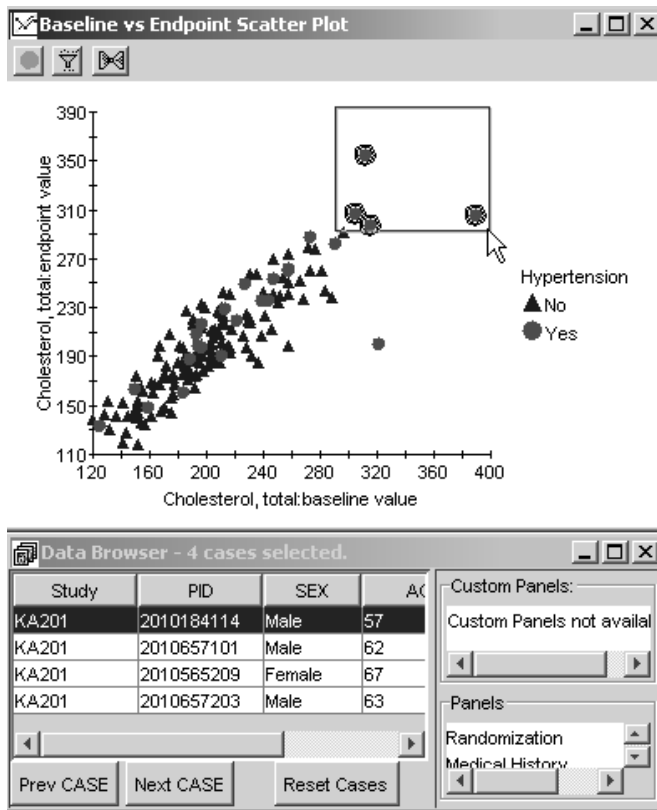
4. If there are multiple scatter plots or Baseline vs. Endpoint plots active, each plot highlights the selected patient's data point. Click on a patient's data point in one graph, to see where that patient's data point is displayed in other graphs.



# Multiple patient mode

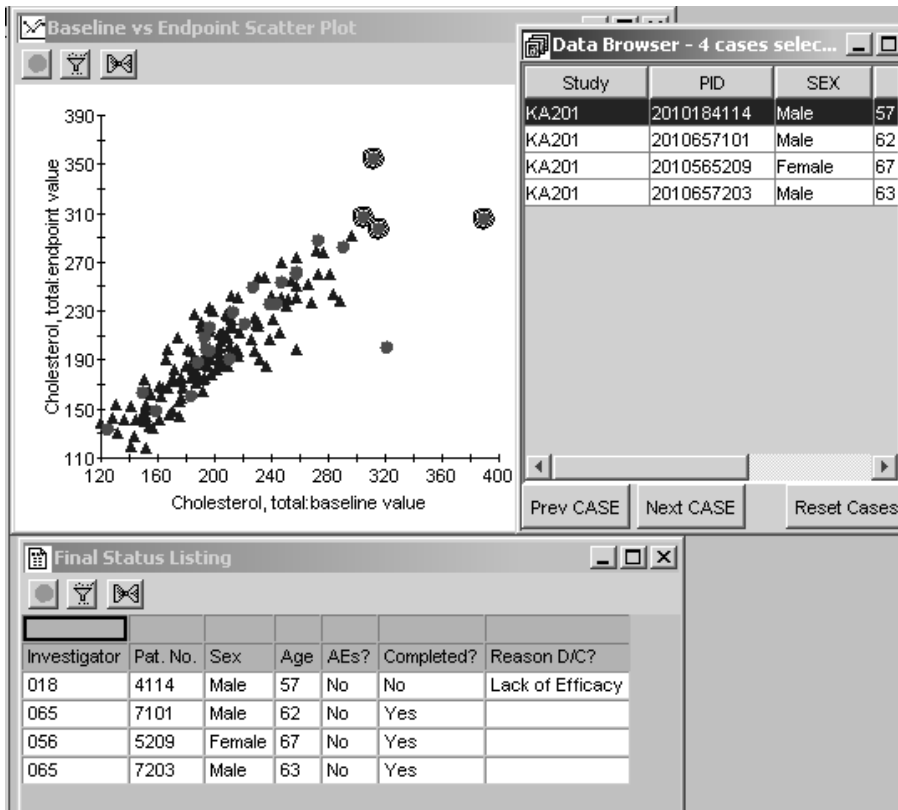
## Scatter plot graph

The Graph Browser Scatter Plot graphs provide a click and drag function to outline a region of a graph, thus selecting the patients within that region. Graphic regional patient selection sets Review in the multiple patient mode.



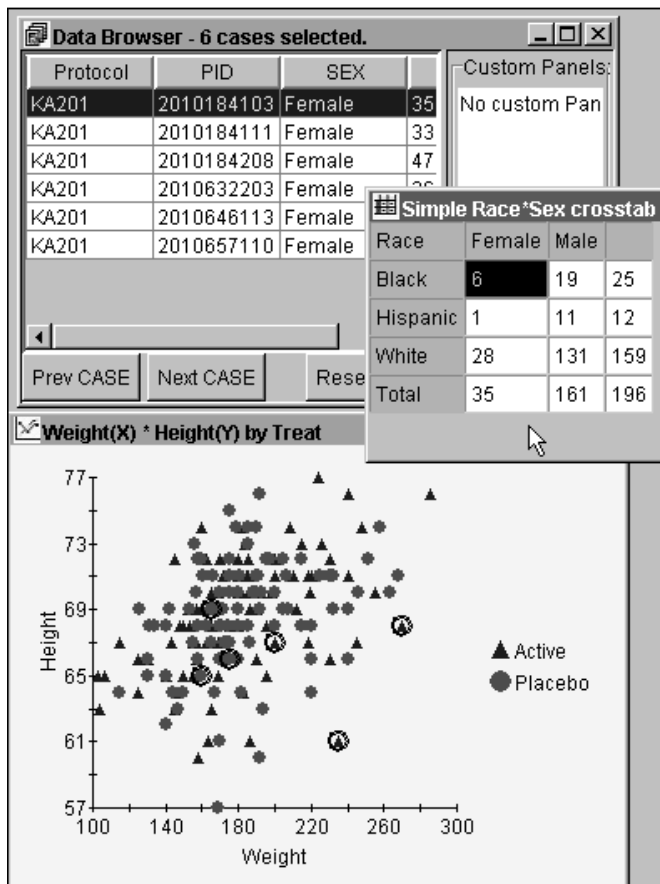


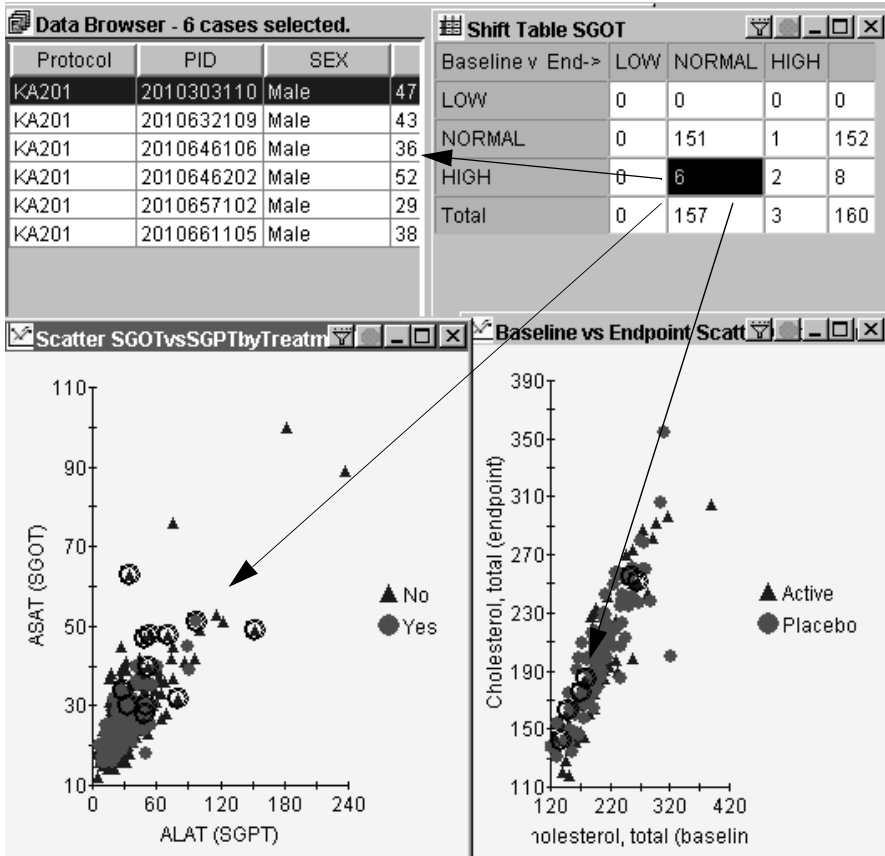
Detail Data Listing Reports, the Data Browser patient listing, and other Scatter Plot graphs are updated to display only the patients that are highlighted in a active Scatter Plot graph in multiple-patient mode.



The CrossTab Browser results tables are categorical patient counts; a highlighted count within a CrossTab or Shift Table activates all patient level displays to be in the multiple patient mode.

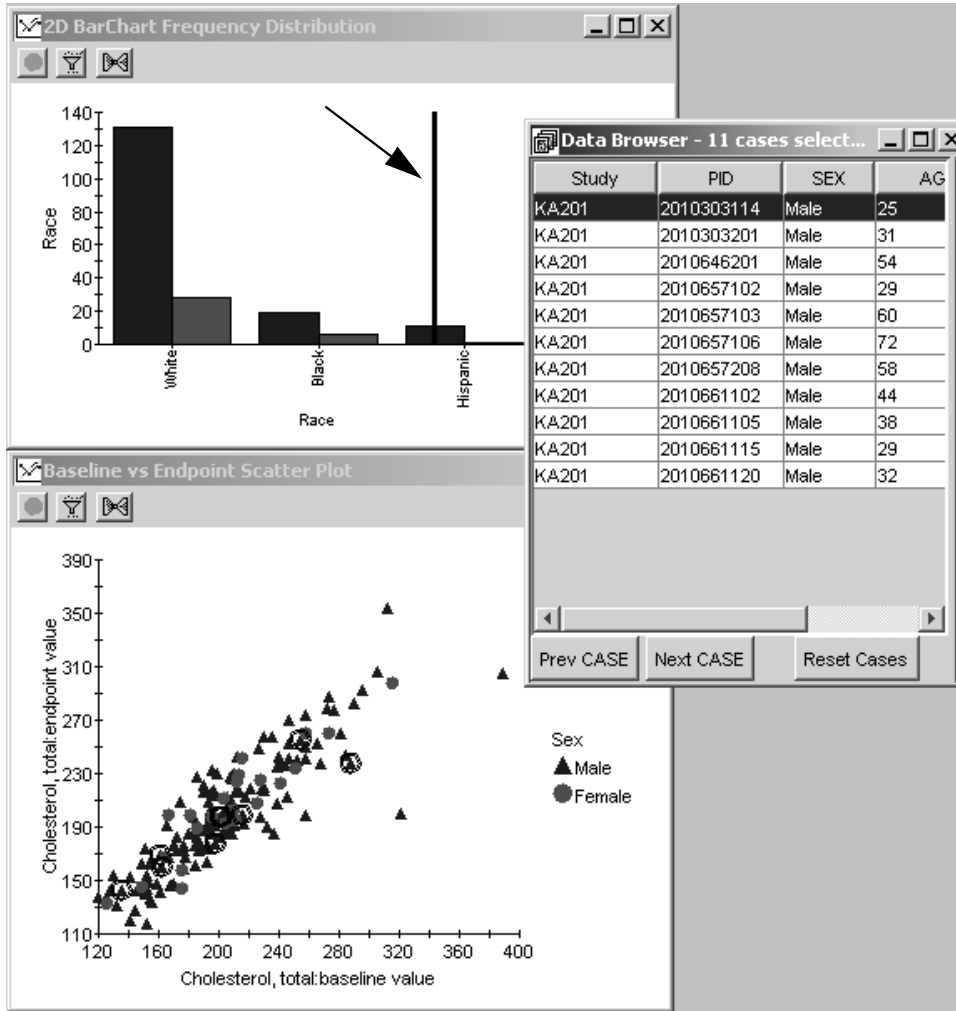
When a patient count is highlighted in the CrossTab results window, instantly all Detail Data Listings, Reports, Scatter Plot graphs, and the Data Browsers patient listing are updated with only the patients underlying the patient count highlighted from the CrossTab Browser results table.





## BarChart graph

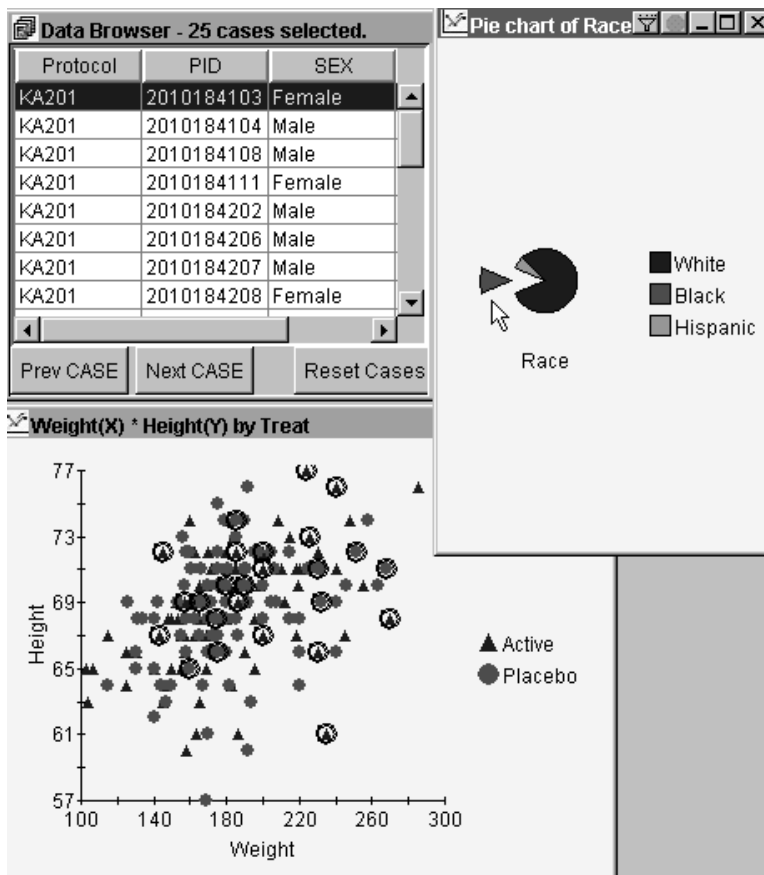
All bars depict a subset patient populations in the BarChart graphs. Click on a bar within a BarChart graph and all underlying patients will be subset in all open patient-level displays of data.



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## Pie Chart

All slices depict a subset patient populations in the Pie Chart. Click on a slice within a Pie Chart and all underlying patients will be subset in all open patient-level displays of data.



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# Graph Editing

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## Graph settings

Once you create your graph, you can right-mouse click anywhere on the graph to open the **JClass Chart Properties** window. You can apply a variety of graph format changes with the setting options available.



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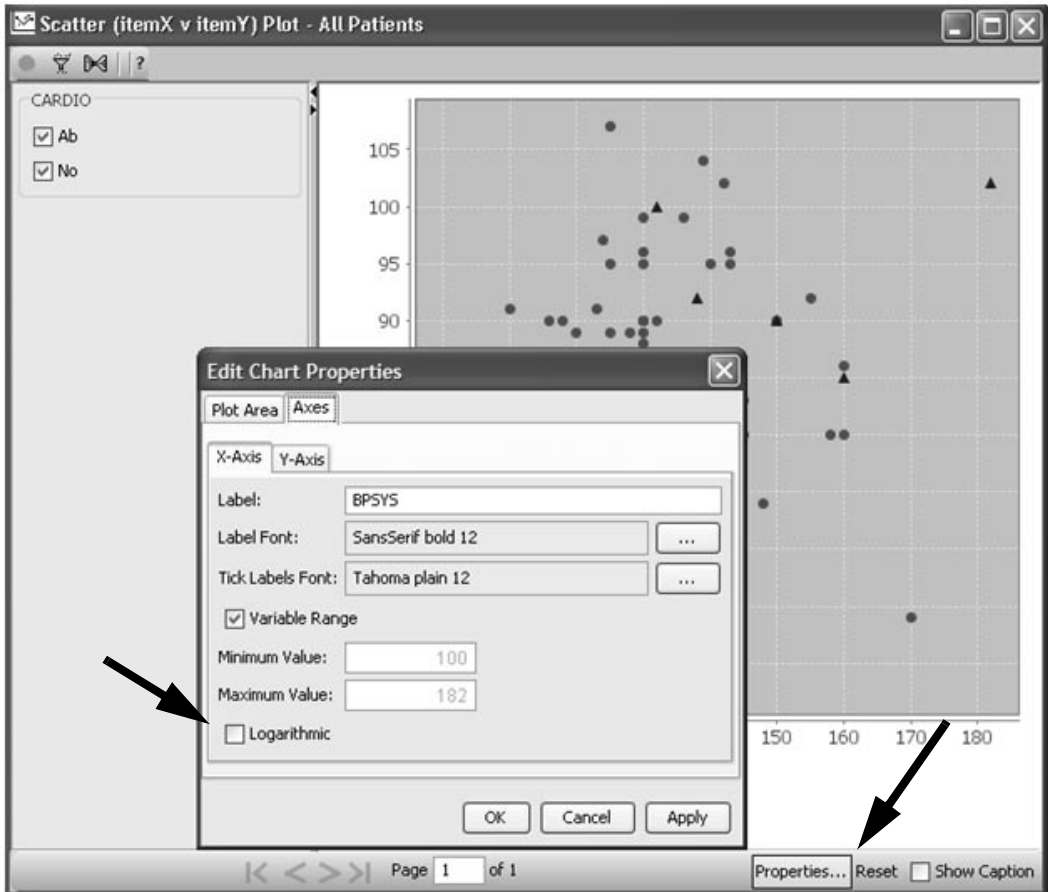
## Chart Properties

There is log axis feature that can be set in **Edit Chart Properties Dialog** and allows persistence. This feature is applicable to *Detail/2D-Scatter* (but not *Scatter-Upper Limit Normal Range* subtype, which is already logarithmic) and *Summary/Line Chart Item Summary vs. Category* charts. For *Summary/Line Chart Item Summary vs. Category*, the log property is only applicable to the y-axes.

Log values cannot be computed for original values that are less than or equal to zero. Any original values in the range less than or equal to zero are omitted from the plot when using a log axis. If such out-of-range values are found, a warning message is displayed at the top of the graph.

To use a logarithmic axis, the original values must be numeric. The tick labels on a log axis are the original values, not the logarithmic values. That is, the tick label and data positions are positioned according to the logarithmic values, but the tick label text is the corresponding “original value.”

After creating the graph output, click on **Properties** in the footer to apply logarithmic values.



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# Graph Annotation

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## *What is graph annotation?*

The Graph Annotation feature is applicable to all JReview graphs except Pie Charts and the two legacy graphs: 3D Scatter Plot and the Detail Multiline Chart Item Value graphs.

Graph Annotations is an overlay of user created graphical entities. There are 3 types of graphical entities:

- Text boxes
- Lines
- Lines with an arrowhead

The user creates and edits these entities using conventional interaction techniques such as drag-and-drop and setting attributes of selected graphics using menus. The User-Interface controls including checkboxes, menus, and toggle buttons are contained in a toolbar dedicated to annotation functionality.

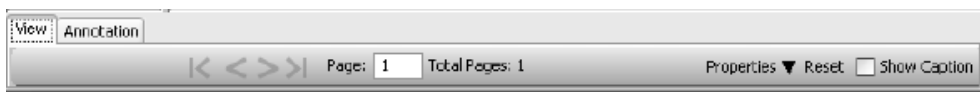
Annotations can be saved to the user's *local* file system. The saved annotations are saved in an XML format and is not meant to be readable or directly editable by end-users. The purpose of the XML file is to allow the user to save the annotation graphics, so that they can be used at a later time such as another JReview session or when the same graph is re-executed.

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## *Edit annotation*

For graphs supporting annotations, the controls at the bottom of the graph are grouped into two tabs. Each tab contains a toolbar.

The “**View**” tab is the default tab. It contains the toolbar for page navigation, changing the zoom level, and accessing graph preferences dialogs and controls.

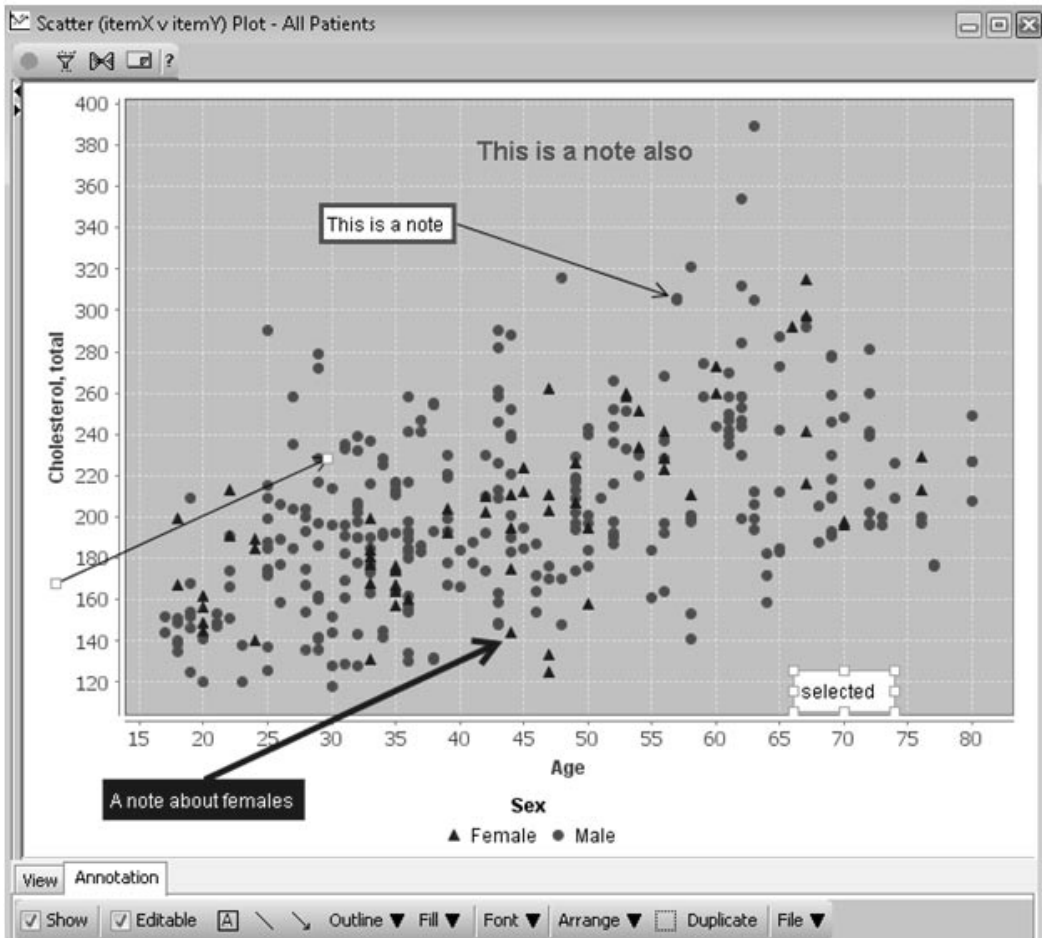




The “Annotations” tab contains a toolbar with a “Show” checkbox for showing/hiding any existing annotation graphics.



When the “Show” check box is selected, a second check box, i.e., “Editable”, becomes enabled. If the “Show” check box is deselected, the “Editable” check box is set to an unselected state and is disabled.



When the “**Editable**” check box is selected, the following occurs:

- Annotations become selectable
- Editing and other annotation-specific controls become visible
- Graph is set to single-page viewing mode; multipage controls are disabled
- Graph is set to its “normal” view where the graph cannot be zoomed or panned

When the user selects the “**View**” tab, the Editable check box is deselected and the Edit Mode is exited. Clicking the “**View**” tab does not affect the “**Show**” state.

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### *Annotation Creation mode*

The annotation creation mode is set by selecting one of the toggle buttons that set a creation mode; toggle buttons for creating a text box, a line, and a line with arrowhead are provided. Only one of these buttons can be selected at a time.

When in a creation mode, the user can initiate an annotation using a gesture with the mouse: dragging the mouse displays a rubber-banding outline of the object; the object is created when the mouse is released.

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### *Text Box Annotation*

The text box is a rectangular object that displays text. Multiline text is supported. The user creates and edits text by typing directly into a selected Text Box instance. A Text Box without any text will be automatically deleted when it loses focus (e.g., the text cursor is moved elsewhere).

The Text Box can be repositioned by dragging. The user should locate the mouse over the margin area when dragging.

The user can set the following attributes on a Text Box. Font attributes are applied to all of the text characters in a Text Box instance. (Applying attributes to a range of text is not supported).

- The user can set the color and line width of a Text Box's border (i.e., outline). There is also the option not to display a border for a Text Box.
- The user can set the background color of a Text Box, or can make the background transparent.
- The font attributes for a text box can be set: size, style (bold, italic, plain), font family, color.

The user can set the width of a Text Box when it is created using the drag gesture. A selected Text Box can also be resized by dragging a displayed drag-handle. The Text Box automatically adjusts to support text, font height, and line-wrapping.

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### *Line Annotation*

The Line Annotation is defined by the positions of its endpoints. It is created by a drag gesture. The entire line can be repositioned by dragging. A selected Line Annotation displays drag-handles at its endpoints. Dragging one of these drag-handles will reposition the line's endpoint.

The user can set the following attributes of a Line Annotation:

- Line Width
- Color

---

### *Line with Arrow Head Annotation*

A line can be displayed with an arrowhead. In all other ways, it is identical to a simple Line Annotation.

All annotations are selectable. Selection is generally done with a mouse-press action. If the control-key is pressed when performing a select action, the selection state of an annotation under the mouse location is toggled. Pressing the control key while selecting allows the user to add or remove an annotation from the selected set. Following the usual conventions, pressing the mouse over an area not occupied by an annotation, deselects all annotations.

If the user selects an unselected annotation and the control-key is not pressed, all other selected annotations are deselected. If the mouse is located over a selected annotation, the control-key is not pressed, and the user does not drag this annotation, other selected annotations are deselected when the mouse is released.

When a Text Box is selected, it is bounded by a rectangular outline with six drag-handles. These drag-handles allow the user to resize (the width) of a Text Box. (Note that dragging a corner drag-handle can, in effect, relocate the Text Box.)

A selected line annotation has drag-handles located at its endpoints.

When a drag-handle is dragged, a rubber-banding outline figure is drawn.

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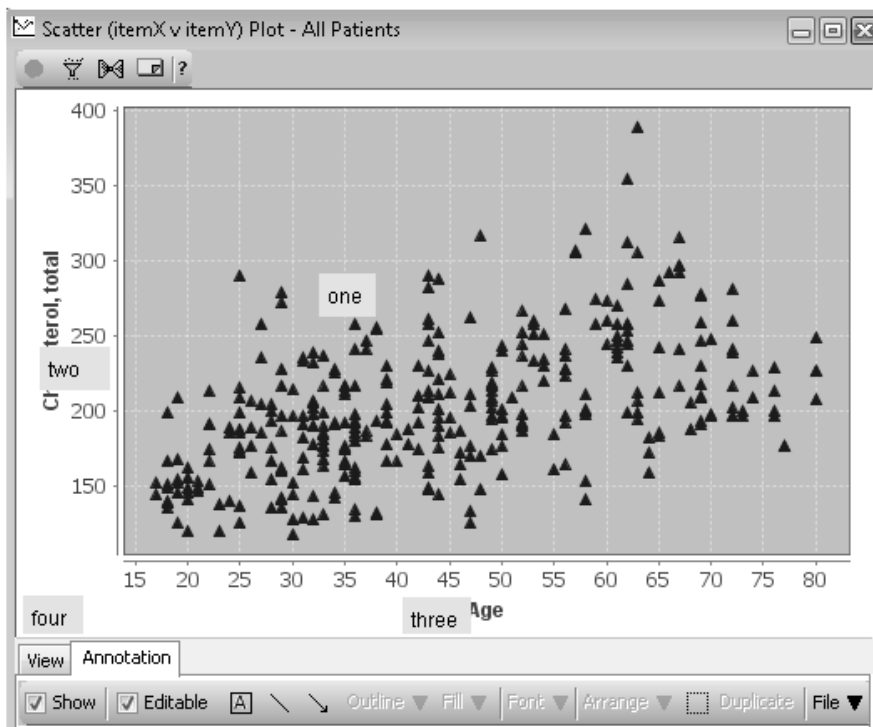
*Connect lines to text box*

Line Annotations can be connected to a Text Box at one of four attachment locations at the edge of the Text Box: mid-top, mid-bottom, mid-left, mid-right. A Line Annotation can be attached to a Text Box by dragging an endpoint to an attachment location and then dropping it at that location. When an endpoint is dragged over a Text Box, the attachment points for that Text Box are displayed. The Line Annotation can be detached by simply dragging the endpoint off the attachment location.

If a Text Box with attached Line Annotations is dragged, the attached endpoints of these Line Annotations are moved with the Text Box. As the Text Box is dragged to a new location, the Line Annotation outlines will “rubber-band.”

This feature is especially useful when a Text Box has an associated arrow that points to a particular graph location. The Text Box can be easily relocated without needing to readjust the arrow annotation.

The Text Box location is determined by the coordinate of the upper-left corner. The two endpoints of a Line Annotation determine its coordinates. (Figure 1)

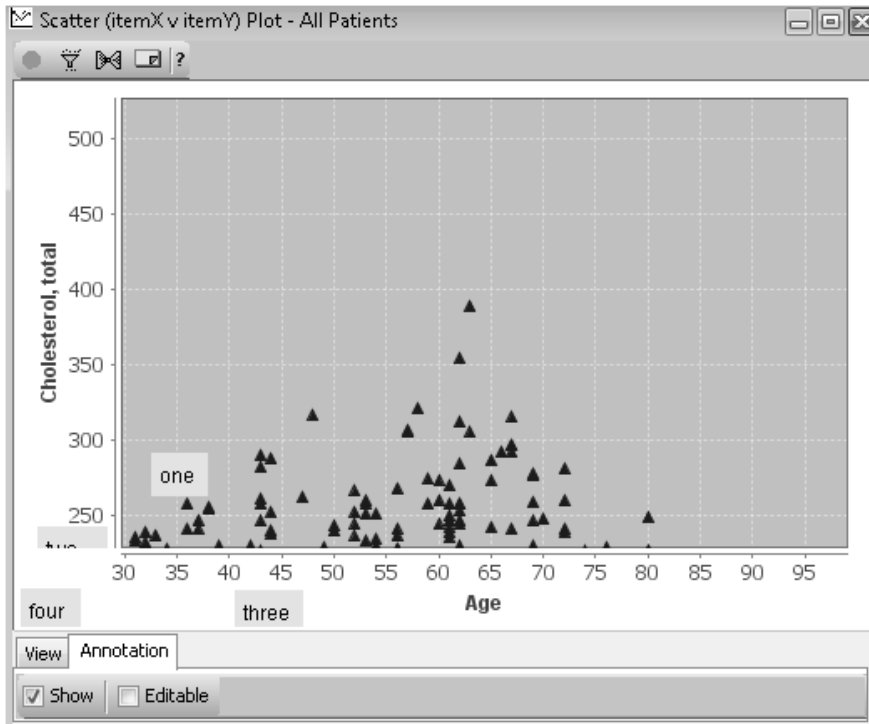


In general terms, if an annotation's location is positioned between the lower and upper ends of an axis, the location is calculated relative to the axis values. When the axis represents numeric values and a non-nominal scale, the value is based on the actual data space. For example, in the Scatter plot of Figure 1 where the X-Axis variable is Age and the Y-Axis is Cholesterol Level, the coordinate for an annotation location might be "x is 33 (age) and y is 285 (cholesterol-level)." A consequence of tying the annotations position to an axis value is that an annotation will maintain its position relative to the axis values when the plot is zoomed or panned, or the frame is resized.

It is possible for a user to position an annotation outside the physical bounds of an axis or both axes. In other words, the user may drag an annotation outside the plot area proper. For example, the user might locate annotation to the left of the lower end of the X-Axis or beneath the lower end of the Y-Axis (see Figure 1). In these cases, the X or Y value of a coordinate is a value that is calculated as a proportion of the distance between the edge of the plot area and the edge of the graph panel.

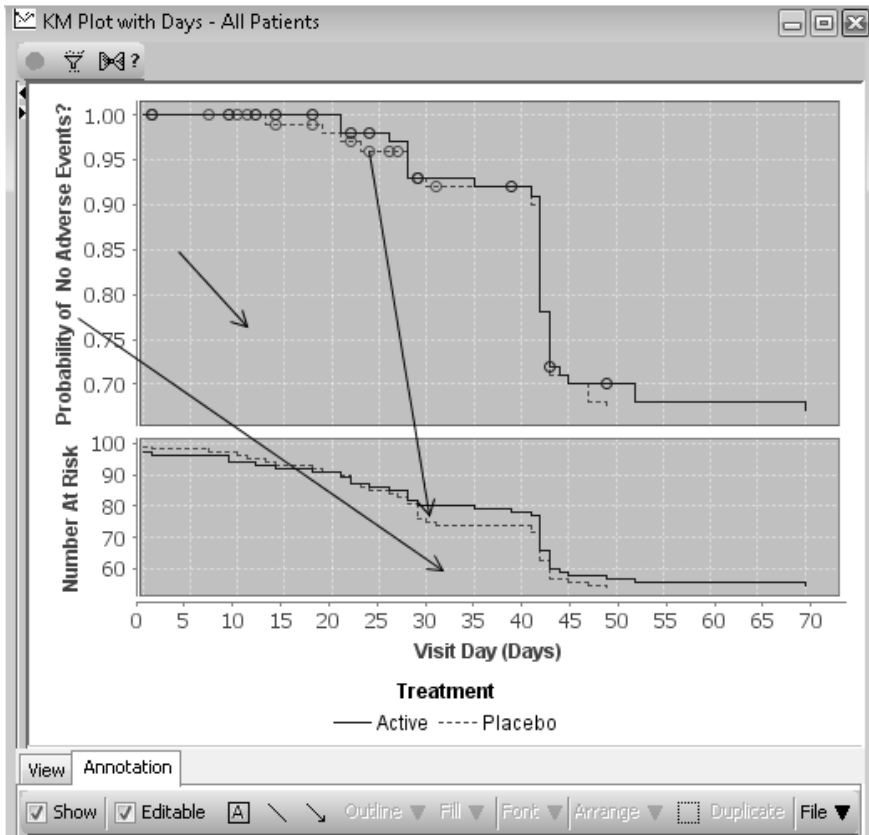
Figure 2 below illustrates a pan action that moves the plot down and to the left. (Note that only the plot area itself is panned, and that the entire graph area is not panned; legends and axis labels cannot be panned). The “two” Text Box moves down and is clipped by the bottom of the plot area; however, this Text Box maintains its horizontal location because its X-value is not tied to an axis value.

(Figure 2)



Summary Graphs typically have “nominal” data (i.e., categories) on one axis. The positioning with an axis having this type of data is done by calculating the position relative to the distance between the outer edges of the categories (that is, the bounds of the categories in terms of axis locations).

It is possible that a Line Annotation may have one endpoint in the space of one graph and the other endpoint in the space of a second graph. This is the case where multiple plots share a common axis. JReview’s Kaplan-Meier graph has two plots sharing a common X-Axis. (Figure 3)

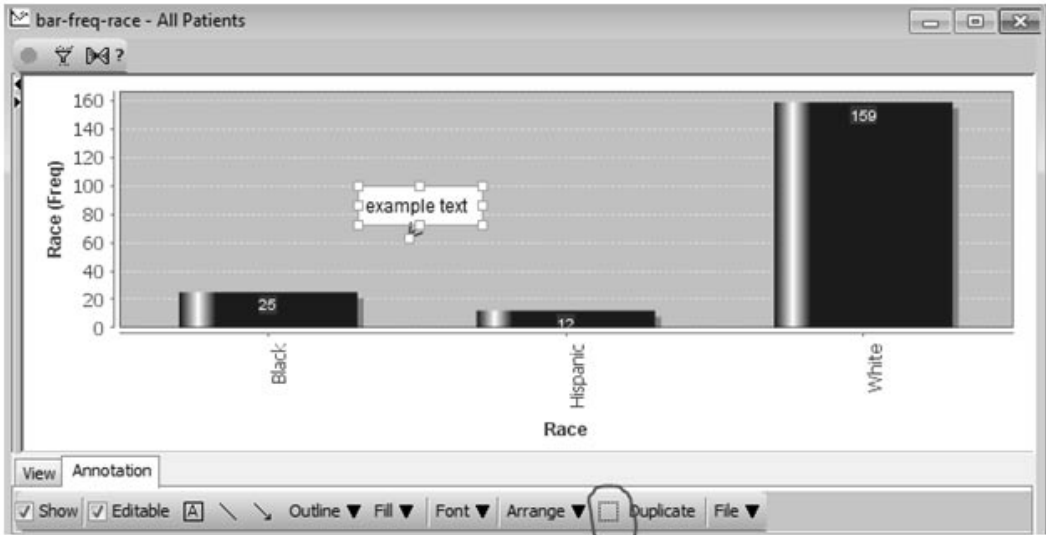


---

## Annotation toolbar

The tool bar contains the controls specific to the annotation functionality and the controls for setting the various modes (see previous section on modes).

The Select All control for selecting Annotation graphics (not Scatter plot data points) is circled in the figure below. There is a tooltip associated with it (“Select all annotations”).



---

## Choose annotation colors

There are two ways to specify colors for backgrounds, outlines, or fonts. The menu items labeled “Color...” instantiate the Java Swing Color Chooser dialog that supports multiple ways to select a color and provides a very flexible way to specify a color.

A second type of color-related menu items, labeled “Standard Colors...”, instantiates a secondary menu containing color “swatches” that match the colors used in the graphs (e.g., the color of the bars in a bar graph). A user might select from this menu, for example, if the intent was to match the background color of a Text Box with the color shown in the legend for a BY-Variable value (say, Females with a Sex By-Variable). The actual colors used in the menu reflect whether gray scale has been specified for the graphs. (The swatches color menu does not support keyboard traversal in this release.)



The Annotation toolbar has 2 checkboxes: “Show” and “Editable”. When “Show” is selected, the annotations are displayed; if “Show” is unselected, the annotations are hidden. If “Show” is selected, the annotations are shown no matter which of the two toolbar tabs (i.e., “View” or “Annotations”) is currently selected. In other words, the annotations can be displayed when the “View” tab is selected.

The Editable mode is different: it can only be active when the Annotations toolbar is visible, i.e., the Annotations tab is the current toolbar tab. So, if the user is in the Edit mode, but clicks on the “View” tab, the annotations remain visible, but the Edit Mode is terminated, and the annotations cannot be selected or edited.

The controls on the toolbar that are dependent on the prior selection of annotations are enabled only if annotations are selected. The Font Menu is enabled only if a Text Box is selected.

Menus are used instead of individual controls like Combo Boxes in order to save screen space.

- **Outline Menu** - sets attributes for Text Box borders and Line Annotation lines. Attributes include Color, Standard Color, and Line Weight (width). The None menu item is applicable to Text Boxes only; it has no effect on Line Annotations. Setting the outline to None indicates that no border should be drawn.
- **Fill Menu** - contains items for setting the background of Text Boxes. It is not applicable to Line Annotations. Both the Color and Standard Color items are provided. The None item sets the background to *transparent*.
- **Font Menu** - contains items for font attributes for selected Text Boxes.
  - **Style Checkboxes** for Bold and Italic font styles are available. If both checkboxes are unselected, the font style is plain. Users can select one or both of the checkboxes.
  - **Font Family (Type)** - Selecting this item opens a *scrollable* submenu with a list of font family names.
  - **Font Size** - Selecting this item opens a submenu containing a list of font sizes.
  - **Color** - Selecting this item opens the standard Java Swing Color Chooser dialog (see discussion above).

- **Standard Colors** - Selecting this item opens the Color Swatch submenu (see discussion above).
- **File Menu** - contains items for saving an annotation and opening (and loading) a saved annotation. It also contains a New item that is described below. Saving of annotations is different from saving an object such as a graph specification.

---

### *Annotation button functions*

- **Duplicate** - Clicking this button causes the selected annotations to be duplicated. (A more general copy/ paste utility is not supported.)
- **Select All** - Clicking this button selects all annotations.
- **Cut** - delete items on JReview’s Edit Menu and JReview’s tool bar are used to delete annotations.
- **PSC Change** - If the data is change due to a PSC update, the annotations are deleted.

---

### *Apply annotations*

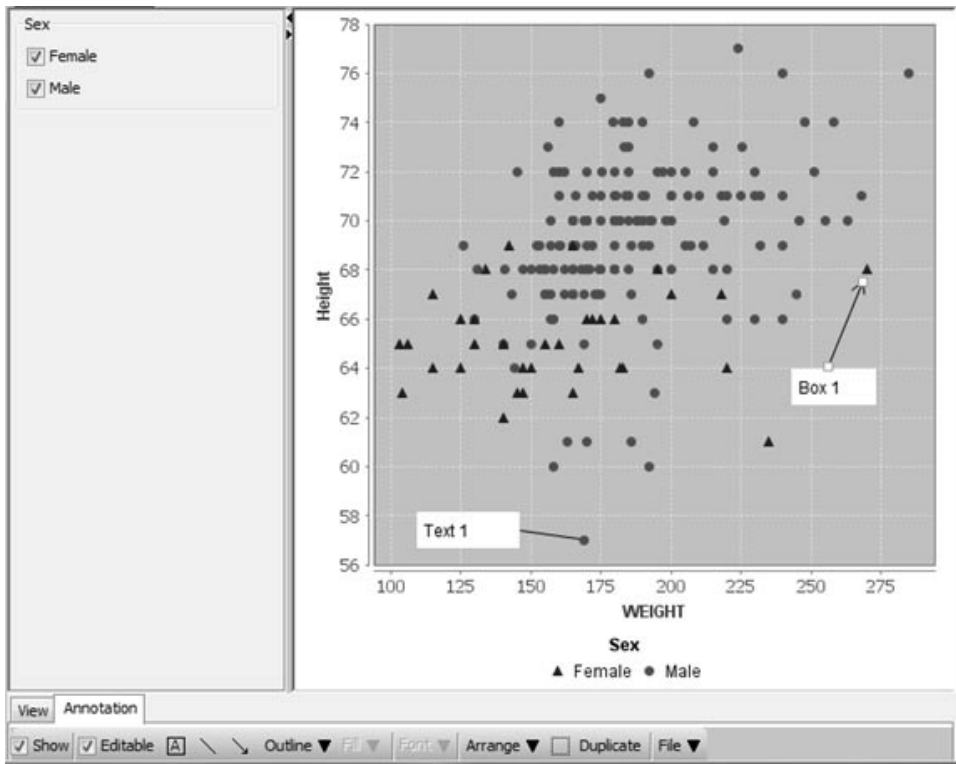
The following steps are used to apply graph annotations after creating graph output:

1. Click the **Annotations tab** at the bottom of the graph window. The Show Box becomes active and the Editable box becomes available.
2. Click the **Show** box. The Editable box becomes active.
3. Click the **Editable** box. The annotation options becomes available.



4. Click the **text box** and add a text box on the graph output.
5. Click the **line option** and draw a line on the graph. Use the usual JReview “cut” toolbar item to delete the annotations.
6. Click the text box and add another text box with text on the graph output.

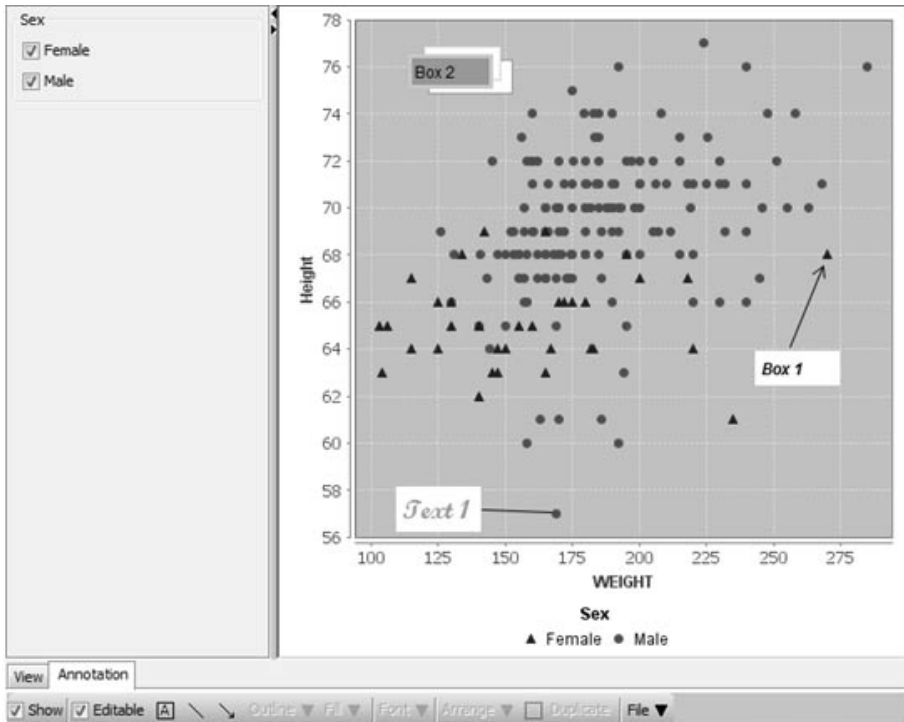
7. Click the **line-arrow option** and draw a line-arrow on the graph.



8. With that box active, click the **Duplicate button**. An additional box is added to the graph.
9. Select text box, select the **Outline option**, click the Color option. Click OK. The outline color is changed.
10. Click the **Arrange option** and select Move Backward. The box is moved backwards one spot and the Box 3 becomes active.
11. Select text box, click the Arrange option and select Move to Back. The box is moved to the back.
12. Select text box, select **Fill option**, click Color option. Click OK. The fill color is changed. Select Fill option, and click None and the fill color is removed.
13. Select text box, select **Font** and select option. The font type is changed. Select Font, select **Font Size** and select option. The font size is changed.
14. Click on the Printer icon and Print Page. Close Print Preview window.

The Save (and Save As) in the file menu on the Annotation toolbar allow the user to save an XML description of the annotations. This is a textual specification and not an image.

1. Create a graph (e.g., scatter plot).
2. Create some annotations (e.g. a text box).
3. Save the annotations to a file on your local computer using the “Save” item on the Annotation toolbar’s File menu. The Save window opens.
4. Name the Graph Annotation file, and click Save.
5. Create previous Graph output. Use the Open item on the Annotation file menu to load the previously saved annotations back onto the graph. Select the File option, and select Open.



The user can save and reload an annotation for a graph. If the graph definition changes since the annotation was saved, then a reload might fail or give unexpected results – some error handling for this occurrence is built into the annotation software.

When saving, the annotations are serialized into an XML format; the XML is written to a user selected file on the local file system. If a graph has multiple pages, the annotations for all pages (where annotations exist) are saved. The graph type and number of pages are stored with annotations. When an annotation file is opened, the annotation software checks whether the current graph matches the stored graph type parameter and the stored page count parameter. The software does NOT guarantee that the data and the data-specification of the current graph is the same as that associated with the graph when the annotations were stored.

One reason for placing the save/open in a File Menu on the annotation tool bar is that the meaning of save is very different from that of the File Menu on JReview's menu bar.

JReview uses features asking the user whether an existing file can be overwritten. The application manages the Save/Open operations, remembers the last accessed file for the graph, and uses it as the default choice for Save As and Open operations. When no annotation file has been saved or opened for the graph instance, selecting "Save" is functionally the same as selecting "Save As...", that is, the user must specify where to save the annotations. If there is a "current" annotations file, selecting "Save" will silently save the annotations.

- **New** - operates in an analogous way to the New item on JReview's main File Menu. This item deletes existing annotations on all pages. If annotations exist, the user is asked whether these annotations should be saved before being deleted. Users may also cancel the operation.
- **Open** - This item opens a saved annotation file. This operation may fail due to graph incompatibility. The software is constructed to trap thrown errors in this regard.
- **Save As** - This item presents the file chooser dialog and allows the user to select (or create) a file in which to save the annotations.
- **Save** - This item saves the annotations. If the annotations for the current graph instance have already been saved or they were constructed from an opened file, this operation proceeds silently; otherwise, the file chooser dialog is presented.

There are various ways of communicating the annotations to other users, for presentation or reporting purposes, and are not limited to personal use by a single user. Annotations can be:

- Included on printed copies of the graph
- Exported as images of the graph
- Direct copy-paste of the graph from the JReview Graph Viewer into a Word document, or PowerPoint slides

Multiple JReview users, perhaps at different stages of the work flow, can share the Graph Annotation through file copying. For example, one user could provide another user with the annotation file in the case where both users are looking at the same graph. A graph defined in a saved object where the underlying data is unchanged. However, JReview itself offers no formal mechanism for sharing the Graph Annotation files. The files can be located in any local directory (having the necessary read/write permissions) that the JReview client can access.

***Note: End-users should avoid loading annotations from a file into graph that has different data or a different data specification than the graph that was used to create the annotation file.***


---

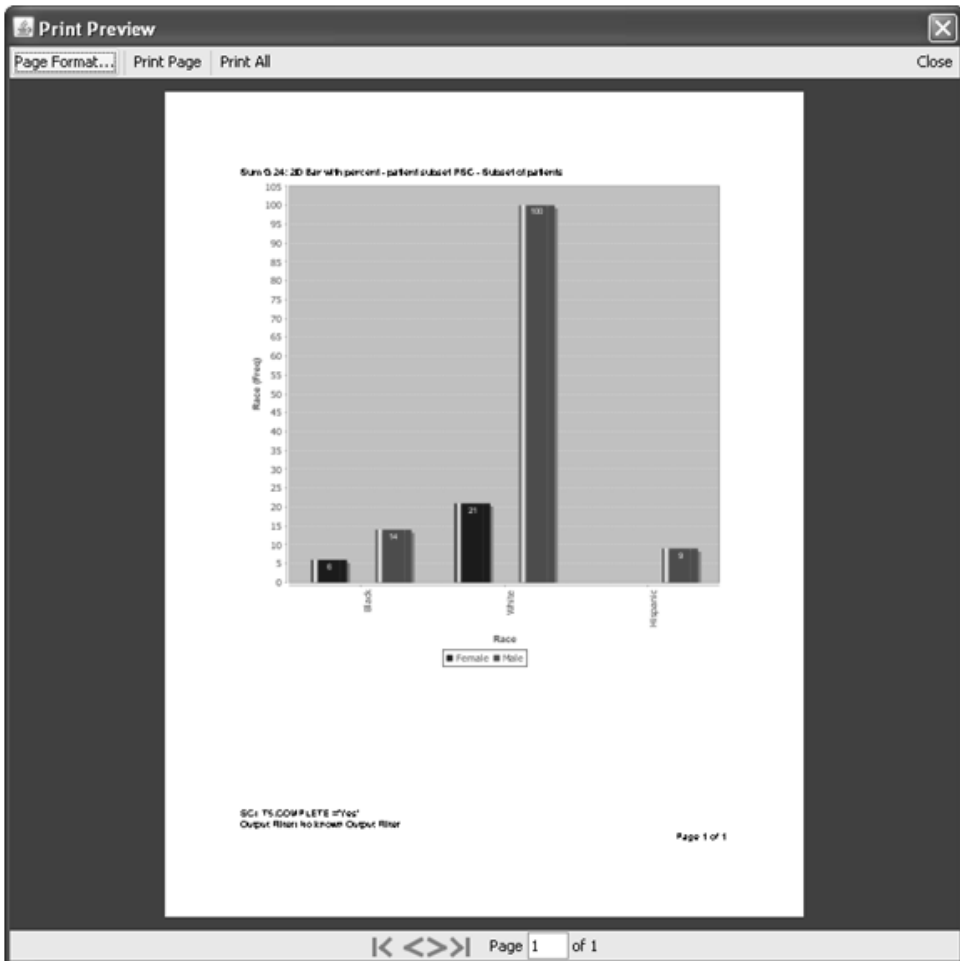
# Printing and Exporting Graphs

---

## Printing the graph

To get a printed copy of your graph you must access a **Print Preview window** and menu bar.

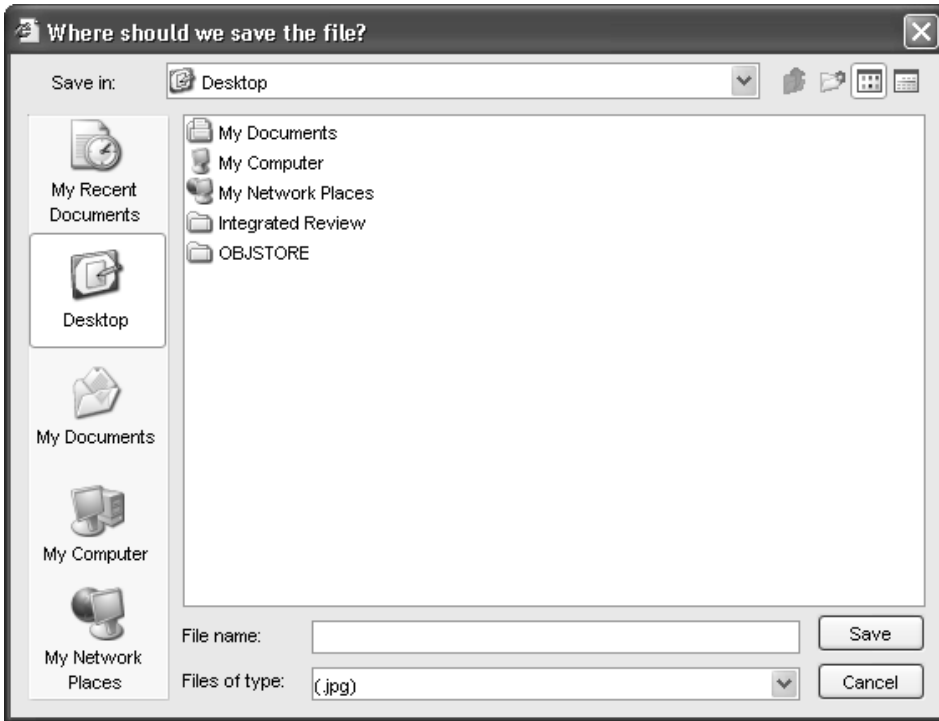
1. Click on the result window to make it the active window.
2. Click  , or from the **Browser File** menu, select **Print**.
3. Click either **PrintPage**, **PrintAll** or **Close**. The PrintPage option will print only the first page of your output. The PrintAll option will print the entire output. The result prints on the currently selected printer.



---

### Exporting the graph

1. From the menu bar in the **Print Plot window**, click **Export to JPG**. The save dialog window opens.
2. Select a folder location and enter a **File Name**.
3. Click **Save** to export the graph results.



---

### Edit menu Copy

1. Click on the result window to make it the active window.
2. Select Edit in the menu bar.
3. Select the Copy function, to copy the currently displayed output window to clipboard for pasting into Word, etc.



---

## Object Storage

Any changes applied to the graph properties are saved, if you click on **Save** with the graph output window open. The **Save** window opens and you can save the changed properties with the graph.

For detailed instructions on how to save, retrieve, schedule output and remove object specifications (reports, graphs, crosstabs, etc.), *See Chapter 11: Saving Objects, plus Alerts Browser.*

---

## Exploring data

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### *Changing the patient selection criteria*

After you have executed a stored object, you can use the object(s) that are currently displayed as data exploration views by doing the following:

1. Change the patient selection criteria, redefining it by adding additional expressions, or removing existing expressions.
2. Click **Update Browsers** in the Patient Selection Criteria window to update all active browsers according to the new criteria.

All browser objects that are displayed will be updated according to your new criteria. Each object generated with a filter on will update with the same filter criteria with which it was created.

*Note: Restrictions apply if the stored object definition has a required patient selection criteria applied.*

---

### *Patient Identification*

Multiple patients can be selected from all patient-level displays of data results. Selecting more than one patient activates Review's multiple-patient mode, which updates patient-level displays of data to highlight only the selected patient data. This facilitates patient identification and subsetting, for exploration of the selected patient data with the reviewing facilities of the Data Browser and all of Review's browser tools.

---

## Closing graphs and the Graph Browser

---

### *Closing a graph window*

If you are finished reviewing a graph, and do not need to use the Graph to review any other patient populations: double-click the window's close box.

---

### *Closing the Graph Browser*

If you are finished with all graphs, and do not need to define any other graphs, double-click the close box of the Graph Browser window.

# 8

## *Crosstab Browser*

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## Patient selection criteria

---

### *Selection set*

In JReview, you can select a previously saved Patient Subset or define your own selection criteria for use in the CrossTab Browser. After launching the saved patient subset or building your own patient selection criteria, you can explore CrossTab objects created in the CrossTab Browser.

---

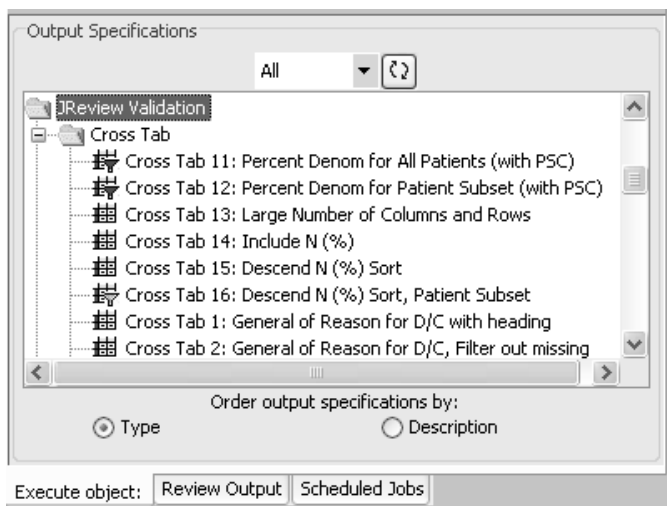
## Execute CrossTab

---

### *Quick execute*

JReview displays a list of categorical folders for stored patient subsets and output specifications at the selected storage location. Simply select one of the storage locations to display its specific folders and contents.

Icons are displayed along with the stored object to identify the source as report, crosstab, registered SAS program, etc. When a patient selection criteria is saved with the stored object; the filter icon displays with the specific browser icon. JReview aids users to quickly locate and launch these stored objects.



---

## CrossTab Browser types of analysis

---

### *Select type of crosstab analysis*

In the CrossTab Browser you can select from four types in the Type List.

- CrossTab: Clinical patient categorization and counts.
- CrossTab Side by Side Columns: Individual column categories are displayed as counts side by side to one row variable.
- CrossTab - Combination Explorer: Subject based calculations which displays all permutations of selected data and the number of patients and percentages.
- Shift Table: Clinical patient categorization by defined threshold values segmented over time.

The CrossTab Browser output represents patient counts and not individual record counts. This function facilitates patient identification to all underlying patient data from categorical patient counts, regional graphic selection, and row selections in patient and detail data listings.

Either CrossTab type facilitates browsing patient listings underlying any of the patient counts within the table results. When you click on any of the categorized patient counts, the results table updates the Data Browser and Detail Data Listing Reports to display a listing of patients underlying the table count. Scatter plot graphs highlight the patients underlying the CrossTab Browser table patient count clicked on.

*Note: The CrossTab Browser allows Multiple study mode in CrossTabs. However, Shift Tables requires the specific study baseline and endpoint definitions be entered in ReviewAdmin and does not allow multiple protocol selection.*

The individual patient counts within the CrossTab and Shift Tables are fully interactive with all patient-level displays of data. If you open the Data Browser and then highlight the patient subset cell count within the CrossTab Browser, those patients are identified. Likewise, a Detail Data Listing or Scatter Plot graph will reflect the patient data for the selected patient subset.

The screenshot displays three main windows:

- Discontinued Patients CrossTab:** A table with columns A (Reason for discontinuation), B (Active), C (Placebo), and D (Total). Row 6, column C (5) is highlighted.
- Demog listing:** A table with columns A-F (Inv. Pat. No., Sex, Age, Sensitivity, Skin Dx). Rows 8, 94, 135, 159, and 196 are visible.
- Data Browser:** A table with columns Study, PID, SEX, AGE, RACE. Five cases are selected, corresponding to the highlighted cell in the CrossTab.
- Scatter Plot:** A plot of Height vs. Weight. The plot title is "Scatter (itemX vs itemY) Plot Study: KA201 All patients". The legend indicates Male (triangles) and Female (squares).

Arrows indicate the following interactions:


- An arrow points from the highlighted cell in the CrossTab to the Demog listing table.
- An arrow points from the highlighted cell in the CrossTab to the Data Browser table.
- An arrow points from the highlighted cell in the CrossTab to the Scatter Plot.

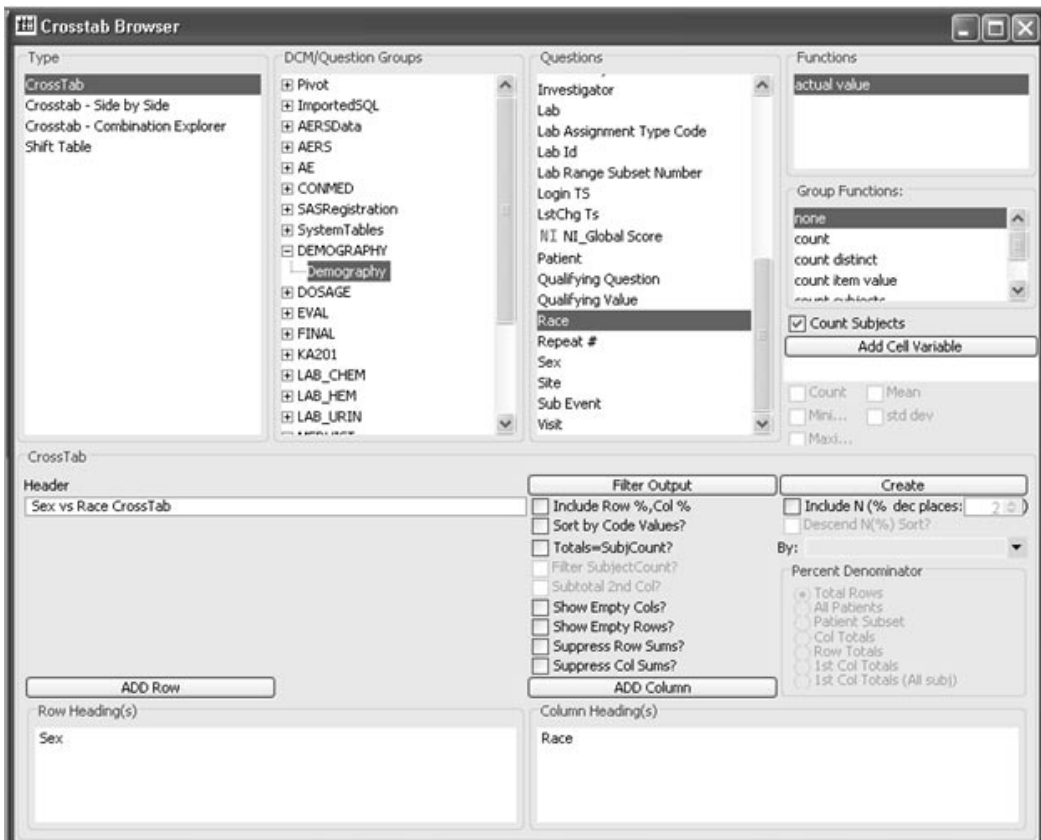


# Defining a CrossTab table

## Selecting a panel, item, and function

You can define the contents of a CrossTab table by applying the same method that you used to build other browser specifications. Clinical groupings of patients who meet the current patient selection criteria can be examined by using the CrossTab Browser.

1. Click the  icon from the toolbar, or from the **Browse** menu select **CrossTabs**. Review displays the CrossTab Browser window where you specify the type and contents of your multi-dimensional analysis.



2. Select a panel, an item and the appropriate function or use the default function.
3. Click **ADD Row** or **ADD Column** to add the selected item to the CrossTab content spreadsheet at the bottom of the CrossTab window. Multiple rows and/or columns may be added.
4. Edit the default Cross Tab Heading by clicking in the heading box.
5. Click **Create**.

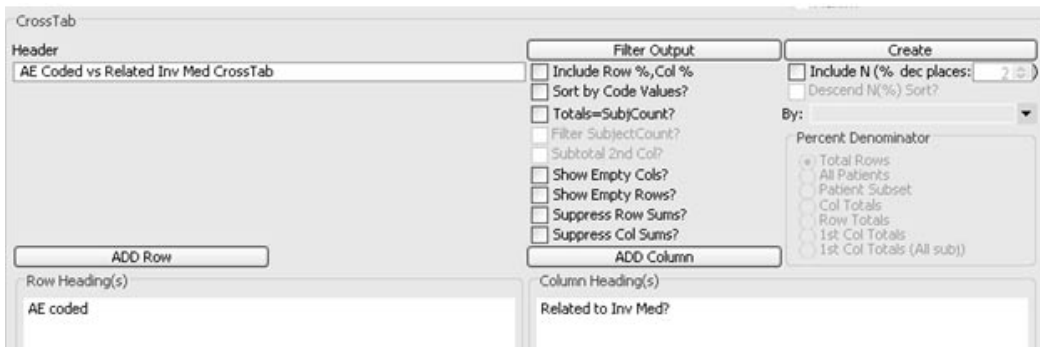
The CrossTab construct is created and displays results in the CrossTab output window containing a spreadsheet of the multi-dimensional analysis you designed.

The crosstab heading displays either 'All Patients' or 'Subset' if a patient selection criteria was entered. If you modify the crosstab heading the patient population status of either 'All Patients' or 'Subset' still displays.

The individual Column Sum and Row Sum results are calculated with an over all total sum displayed. The CrossTab output represents patient counts and not individual record counts.

Sex	Black	Hispanic	White	Row Sum
Female	6	1	28	35.00
Male	19	11	131	161.00
Col Sum	25.00	12.00	159.00	196.00

In this CrossTab example for Adverse Events not all patients reported Adverse Events during the study.



The Adverse Events CrossTab data represents patient counts and **not** individual Adverse Events. The CrossTab contains only the data from those patients who meet your current patient selection criteria and output filter criteria. There are 75 patients who reported Adverse Events.

AE coded	Highly Probable	Not Related	Possible	Probable	Row Sum
BODY:Allergic reaction		1			1.00
BODY:Back pain		3			3.00
BODY:Body odor			1		1.00
BODY:Pain		1			1.00
BODY:Surgery		8			8.00
BODY:Unevaluable reaction		1			1.00
DIG :Diarrhea		1			1.00
DIG :Duodenal ulcer		1			1.00
DIG :Periodontal abscess		1			1.00
DIG :Rectal pain		1			1.00
DIG :Sore throat		1			1.00
DIG :Tooth disorder		2			2.00
DIG :Vomiting		1			1.00
HAL :Ecchymosis		1			1.00
MAN :Peripheral edema			1		1.00
MS :Arthritis		1			1.00
MS :Myalgia		1			1.00
NER :Dizziness		1			1.00
NER :Headache		8			8.00
NER :Somnolence		1			1.00
RES :Cough increased		3			3.00
RES :Respiratory disorder		1			1.00
RES :Sinusitis		3			3.00
RES :Upper respiratory infection		4			4.00
SKIN:Burning sensation skin	15		2	1	18.00
SKIN:Pruritus	1		1		2.00
SKIN:Skin disorder		1			1.00
SS :Glaucoma		1			1.00
SS :Taste perversion		1			1.00
UG :Urinary tract infection		3			3.00
UG :Vaginitis		1			1.00
Col Sum	16.00	53.00	5.00	1.00	75.00

Compare the crosstab results to a summary listing of individual adverse event counts and corresponding patient counts with total sums. The summary listing displays the total sums for 75 patients who reported 81 Adverse Events where some patients reported multiple Adverse Events.

	count	count subjects
AE coded	AE coded	AE coded
BODY:Allergic reaction	1	1
BODY:Back pain	3	3
BODY:Body odor	1	1
BODY:Pain	1	1
BODY:Surgery	8	8
BODY:Unevaluable reaction	1	1
DIG :Diarrhea	1	1
DIG :Duodenal ulcer	1	1
DIG :Periodontal abscess	1	1
DIG :Rectal pain	1	1
DIG :Sore throat	1	1
DIG :Tooth disorder	3	2
DIG :Vomiting	1	1
HAL :Ecchymosis	1	1
MAN :Peripheral edema	1	1
MS :Arthritis	1	1
MS :Myalgia	1	1
NER :Dizziness	1	1
NER :Headache	9	8
NER :Somnolence	1	1
RES :Cough increased	3	3
RES :Respiratory disorder	1	1
RES :Sinusitis	5	3
RES :Upper respiratory infection	4	4
SKIN: Burning sensation skin	20	18
SKIN:Pruritus	2	2
SKIN:Skin disorder	1	1
SS :Glaucoma	1	1
SS :Taste perversion	1	1
UG :Urinary tract infection	3	3
UG :Vaginitis	1	1
Sum	81.00	75.00

---

*Access to SAS datasets*

SAS datasets are listed with the panels generated from Oracle tables. Items from SAS datasets can be used like other items for CrossTab. You cannot mix items from SAS datasets and Oracle table generated panels within the same CrossTab.

---

### *Edit column width*

To edit the column width of the CrossTab results:

- a. Click the column heading tabs (labeled A, B, etc.) as you would with any windows spreadsheet package.
- b. Move the column boundaries to the position you want.

---

### *Sort by Code Value*

If you want to sort the CrossTab table by the order of the code values, as opposed to the default alphabetic sort of the descriptive text.

Click “Sort by Code Values”.

---

### *Output Filter*

Row filtering is carried out by the Output Filter which facilitates the specification of observations and visits from multi-visit data items to include in your CrossTab results.

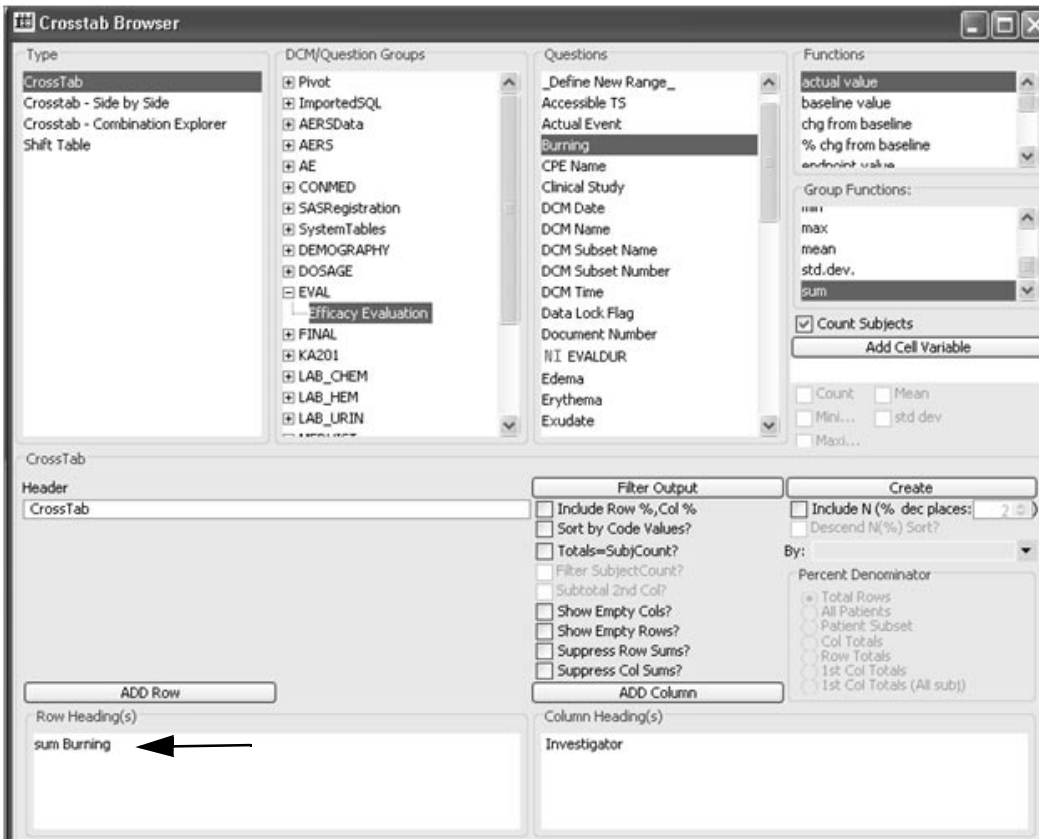
After you define your CrossTab specifications you can use the output filter as a data exploration tool by row filtering data inclusion, then comparing filtered and unfiltered results. (*See Chapter 6 Report Browser: Output Filter*)

6. Click **Filter Output**.
7. Add the filter expressions and click **SAVE**.
8. The **Filter Output** button status toggles to **Filter is ON** when a row filter criteria is active to be applied during the next graph creation.
9. Click **Create**.

*Note: If you save a CrossTab specification with an output filter ON, the same filter will be applied when the CrossTab is recreated.*

*Apply group function*

You may select the 'Group Function' for a numeric item. Select the group function for either ADD Row or ADD Column within the crosstab.



The column for 'sum Burning' displays the unique sum values with counts by investigator.

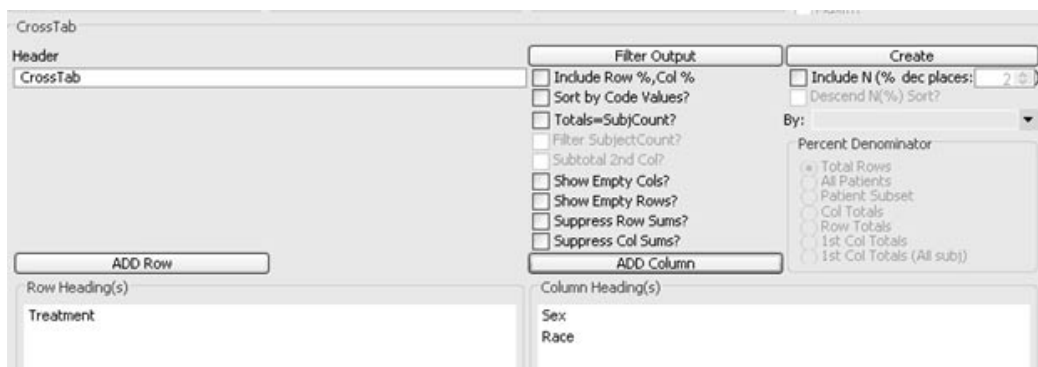
Cross Tab - All Patients								
sum Burning	018	030	056	063	064	065	066	Row Sum
0	8	16	37	10	22	10	10	113.00
1	3	2	1	9	11		9	35.00
2	3	2		3	2	5	3	18.00
3	3		2	2		4	2	13.00
4	1			3				4.00
5	1			2			1	4.00
6	1					3		4.00
7	2					2		4.00
9						1		1.00
Col Sum	22.00	20.00	40.00	29.00	35.00	25.00	25.00	196.00

---

## Show empty values

Click **Show Empty Columns** and/or **Show Empty Rows** if you wish to display a "filler" column and/or row for possible values that never were actually reported in the data. For example, if possible values for race are White, Black, Hispanic, and Oriental, but there are no Orientals in the study, then it would still show a column for Oriental.

In the following example we applied a patient selection criteria for patients who on 'Active' drug in the study. The following crosstabs demonstrate the results when the 'Show Empty' options are checked ON or not.



This crosstab shows the normal results when both 'Show Empty Columns' and 'Show Empty Rows' are not checked ON.

	Female		Male			Row Sum
Treatment	Black	White	Black	Hispanic	White	
Active	4	15	12	4	62	97.00
Col Sum	4.00	15.00	12.00	4.00	62.00	97.00

Observe the different results when empty columns and/or rows are forced to display.

The option to Show Empty Columns is checked ON and the empty column for Hispanic is forced to display.

	Female			Male			Row Sum
Treatment	Black	Hispanic	White	Black	Hispanic	White	
Active	4		15	12	4	62	97.00
Col Sum	4.00		15.00	12.00	4.00	62.00	97.00

The option to Show Empty Rows was checked ON and the empty row for Placebo was forced to display.

	(missing)	Female		Male			Row Sum
Treatment	(missing)	Black	White	Black	Hispanic	White	
Active		4	15	12	4	62	97.00
Placebo							
Col Sum		4.00	15.00	12.00	4.00	62.00	97.00

Both options for Show Empty Columns and Show Empty Rows are checked ON and empty columns and rows are forced to display.

	Female			Male			Row Sum
Treatment	Black	Hispanic	White	Black	Hispanic	White	
Active	4		15	12	4	62	97.00
Placebo							
Col Sum	4.00		15.00	12.00	4.00	62.00	97.00

You may 'suppress row totals' and 'suppress col totals' checkbox preferences even if 'Totals = SubjCount' is not checked ON.



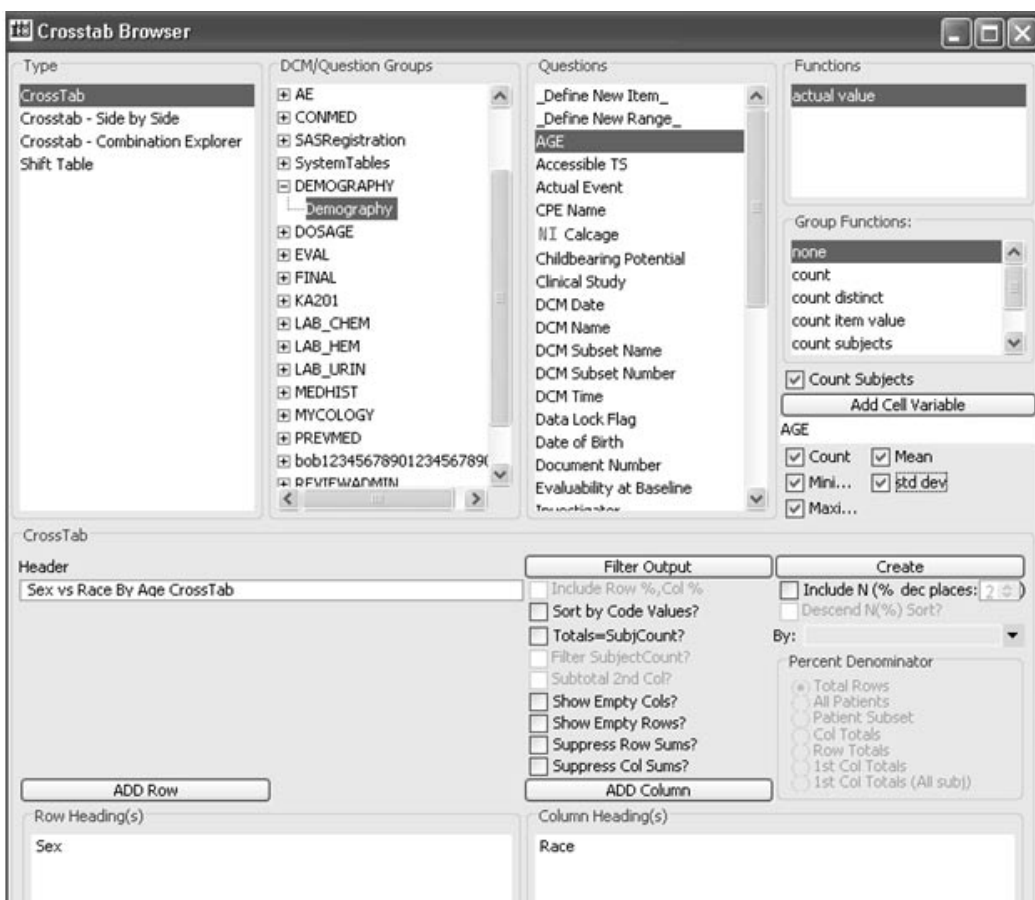
---

## Add cell variable

You can optionally generate statistics for a specified cell variable when you create a CrossTab provided the item is numeric.

- Select a panel.
- Select a numeric item. Optionally click **Count Subjects**.
- Click **Add Cell Variable**.
- Select one or more **Cell Statistics**. You must select at least one.

*Note: The **Add cell variable** cannot be used in conjunction with the **Optional Include Row%, Col%**.*





A legend of the cell statistics displays in the upper left corner. The individual cells display the statistics selected for the cell variable item.

Count:Age	Black	Hispanic	White	Row Sum
Count:Age				
Min:Age				
Max:Age				
Mean:Age				
Std Dev:Age				
Female	6	1	28	35.00
	6	1	28	
	33.00	18.00	20.00	
	56.00	18.00	76.00	
	42.33	18.00	45.29	
	9.07	0.00	16.09	
Male	19	11	131	161.00
	19	11	131	
	18.00	25.00	17.00	
	58.00	72.00	80.00	
	37.32	42.91	45.39	
	10.13	15.76	17.00	
Col Sum	25.00	12.00	159.00	196.00

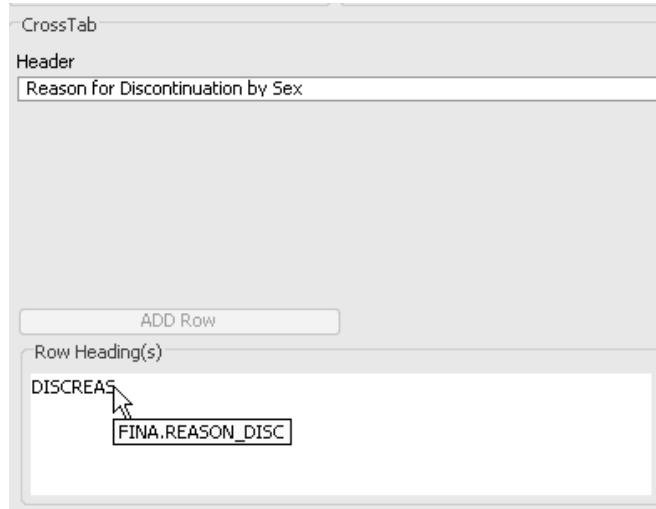
---

*Edit the CrossTab specification*

If you want to change the CrossTab specification that you have defined:

1. Click any element in the CrossTab layout to edit. For example, click on any column heading that you want to delete.
2. Click , or from the **Edit** menu, select **Cut**. This deletes the column heading from the CrossTab specification.
3. To modify the corresponding Filter Output, simply change the criteria expressions appropriately
4. Click **Save Filter**.
5. Click **Create** to create a new results window.
6. If you want to clear the entire CrossTab construct, click .

The **Show Details** feature can be used after you have added items to your crosstab specification. Simply hold the mouse over the item in the crosstab definition to view its source contents.



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## Display Crosstab with Percentages

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### *Include Row% Col%*

You can optionally calculate cell count percentages for CrossTab or Shift Table with a variety of configurations where row and column percentages are displayed.

Only patient selection criteria and/or a filter can affect the patient counts within the output of a crosstab. However, there are several options that can provide cell percentages, as well as modify the cross tab row and column totals.

Options that provide cell statistics are as follows:

- Include Row%, Col%
- Include N (%)

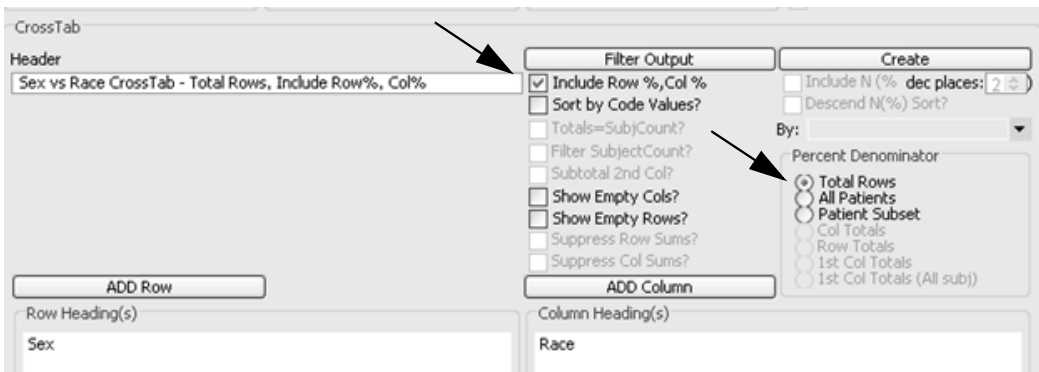
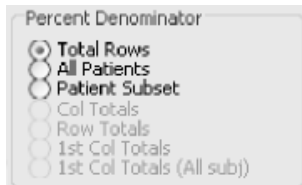
If either of these percent functions are selected, then choose an option for the Percent Denominator.

- Total Rows
- All Patients
- Patient Subset
- Col Totals
- Row Totals
- 1st Col Totals
- 1st Col Totals (All Sub)

---

### *Percent Denominator*

When you click the 'Include Row%, Col%' check box for cell statistics the **Percent Denominator** default is 'Total Rows'. Additional options that corresponds with this function are All Patients in the Study or Patient Subset.



A legend of the cell statistics displays in the upper left corner. The **Include Row% Col%** provides a separate Row Sum with percent and Column Sum with percent including percentages for each cell count. Each row and column is summarized by descriptive statistics.

The example for 6 Female Black patients calculates as:

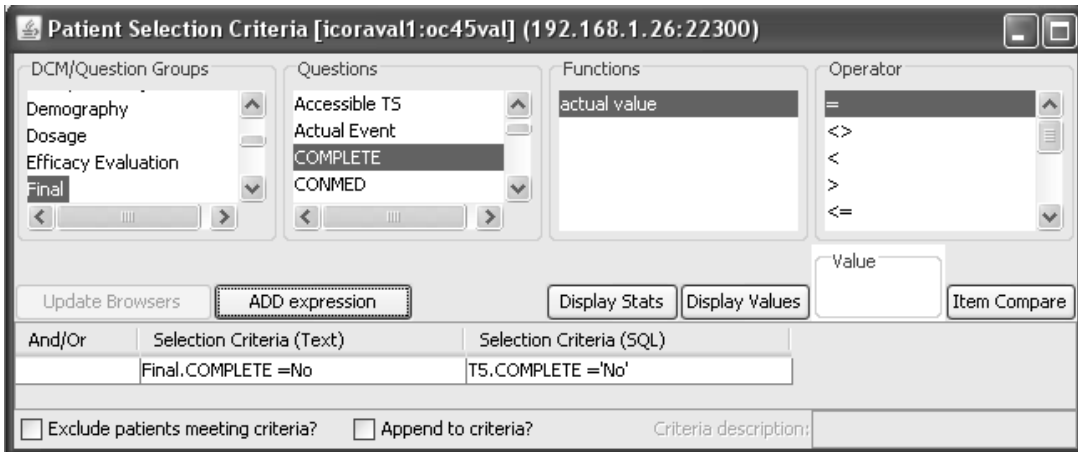
Percent is  $6/\text{default for Total Rows } 196 = 3.06\%$ . The option for Total Rows calculates the same results as the All Patients option.

Row Percent is  $6/\text{Row Sum } 35 = 17.14\%$ .

Column Percent is  $6/\text{Col Sum } 25 = 24\%$ .

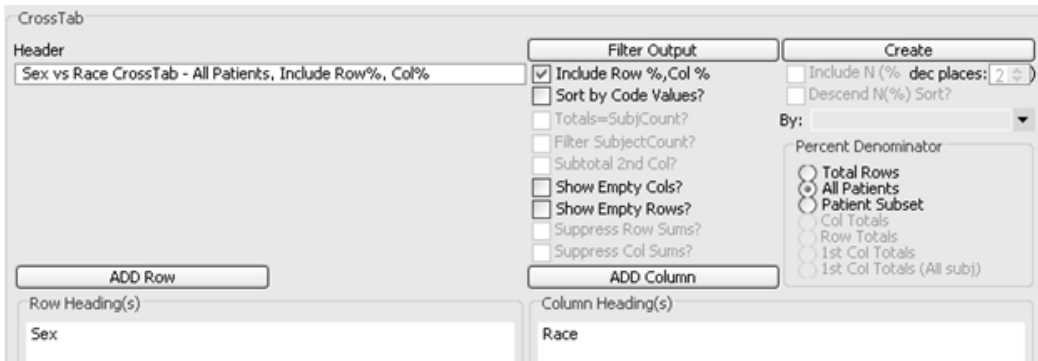
Sex vs Race CrossTab - Total Rows, Include Row%,Col% - All Patients				
No. Cases				
Percent				
Row Percent				
Col Percent				
Sex	Black	Hispanic	White	Row Sum
Female	6	1	28	35.00
	3.06	0.51	14.29	17.86
	17.14	2.86	80.00	
	24.00	8.33	17.61	
Male	19	11	131	161.00
	9.69	5.61	66.84	82.14
	11.80	6.83	81.37	
	76.00	91.67	82.39	
Col Sum	25.00	12.00	159.00	196.00
	12.76	6.12	81.12	100.00

To view the differences between the **Percent Denominator** options when the 'Include Row%,Col%' function is ON, apply the patient selection criteria for discontinued patients.



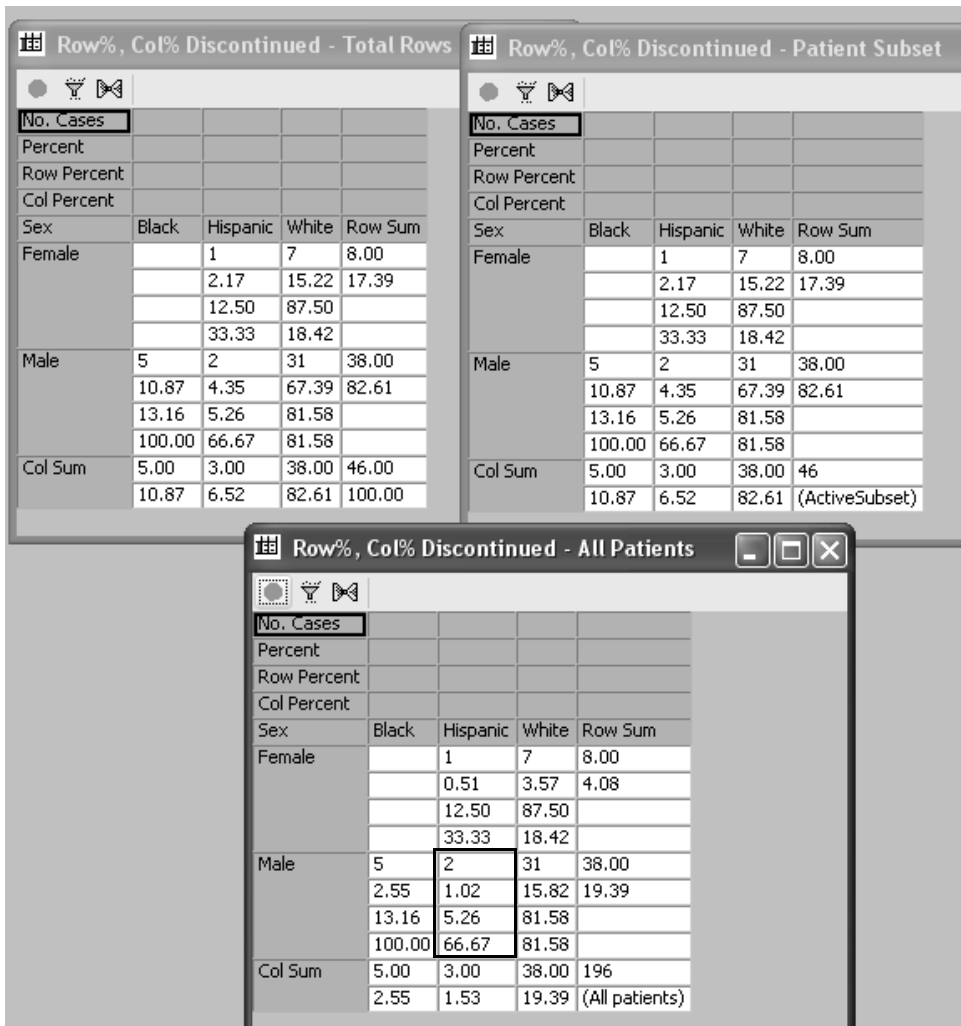
The current patient selection criteria calculates the patient count for 46 discontinued cases. All crosstab cell percents are based on result of the patient selection criteria and where the Data Browser shows cases selected is 46. The Row Sum and Col Sum reflect the counts of the patient subset for Discontinued patients.

Next a crosstab is defined for ADD Row for Sex, ADD Column for Race. We will click the **Include Row%,Col%** box **ON** and calculate the different percentages by changing the percent denominator options from the default 'Total Rows', then change to 'All Patients' and again to 'Patient Subset'.



By applying the patient selection criteria the patient counts within the output of a crosstab are affected. The following crosstabs show the difference between the Percent Denominator options for 'Total Rows', 'Patient Subset' and 'All Patients'. Observe the results for 'Total Rows' and 'Patient Subset' are the same for the Patient Selection Criteria patient count for 46 because the Demography panel is a single collection panel.

When you have the current patient selection criteria for 'Discontinued Patients' and choose the 'All Patients' option as the percent denominator, then the total is 196 patients in the study and all percents are based on that count.



The example above for 2 Male Hispanic patients calculates as:

Percent within 'All Patients' is  $2/196 = 1.02\%$ .

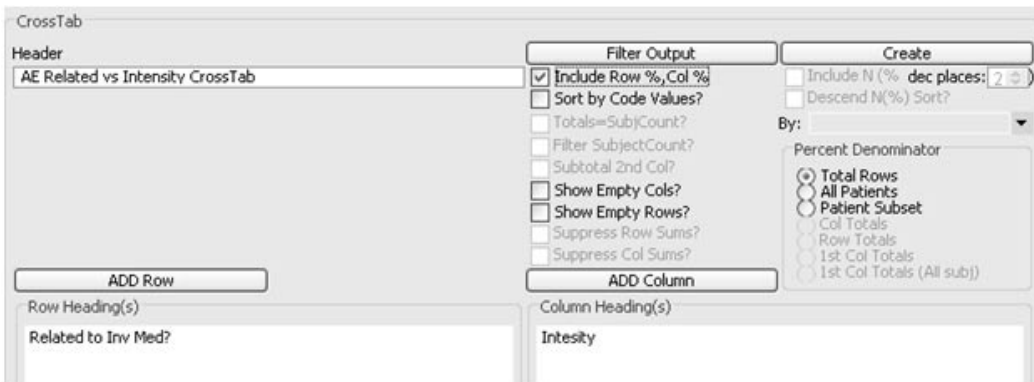
Row Percent is  $2/\text{Row Sum } 38 = 5.26\%$ .

Column Percent is  $2/\text{Col Sum } 3 = 66.67\%$ .

The Percent Denominator options become more evident if not all patients have entries in the CrossTab, for example not all patients reported Adverse Events. The percentages are based on the patients reported.

Then when you apply 'Total Rows' from all Adverse Events you wouldn't get a grand total of all patients but the total number of patients who had data in the CrossTab.

No patient selection criteria was applied.





AE Related vs Intensity CrossTab - Total Rows - All Patients					
No. Cases					
Percent					
Row Percent					
Col Percent					
Related to Inv Med?	(missing)	Mild	Moderate	Severe	Row Sum
Highly Probable		15	1		16.00
		23.08	1.54		24.62
		93.75	6.25		
		38.46	5.88		
Not Related	8	21	14	1	44.00
	12.31	32.31	21.54	1.54	67.69
	18.18	47.73	31.82	2.27	
	100.00	53.85	82.35	100.00	
Possible		2	2		4.00
		3.08	3.08		6.15
		50.00	50.00		
		5.13	11.76		
Probable		1			1.00
		1.54			1.54
		100.00			
		2.56			
Col Sum	8.00	39.00	17.00	1.00	65.00
	12.31	60.00	26.15	1.54	100.00

There are 65 patients who reported Adverse Events in the study. If we review the cell for 14 patients who reported Adverse Events as 'Not Related' and 'Moderate' the calculations are:

**Percent** is  $14 / \text{Total Rows } 65 = 21.54\%$  patients with Moderate Adverse Events reported as Not Related.

**Row Percent** is  $14 / \text{Row Sum } 44 = 31.82\%$ .

**Column Percent** is  $14 / \text{Col Sum } 17 = 82.35\%$ .

Now compare the same crosstab with the percent denominator set for 'All Patients'. The percentages are based on all patients in the study.

Percent Denominator

Total Rows  
 All Patients  
 Patient Subset

The percentages are based on all patients in the study which is 196. If we review the cell for 14 patients who reported Adverse Events as 'Not Related' and 'Moderate' the calculations are:

**Percent** is  $14 / \text{Total Rows } 196 = 7.14\%$  patients with Moderate Adverse Events reported as Not Related.

**Row Percent** is  $14 / \text{Row Sum } 44 = 31.82\%$ .

**Column Percent** is  $14 / \text{Col Sum } 17 = 82.35\%$ .

So within the cell the Percent result changes and Row Percent and Column Percent remain the same as the 'Total Rows' option.

AE Related vs Intensity CrossTab - All Patients Percent Denominator - All Patients					
No. Cases					
Percent					
Row Percent					
Col Percent					
Related to Inv Med?	(missing)	Mild	Moderate	Severe	Row Sum
Highly Probable		15	1		16.00
		7.65	0.51		8.16
		93.75	6.25		
		38.46	5.88		
Not Related	8	21	14	1	44.00
	4.08	10.71	7.14	0.51	22.45
	18.18	47.73	31.82	2.27	
	100.00	53.85	82.35	100.00	
Possible		2	2		4.00
		1.02	1.02		2.04
		50.00	50.00		
		5.13	11.76		
Probable		1			1.00
		0.51			0.51
		100.00			
		2.56			
Col Sum	8.00	39.00	17.00	1.00	196
	4.08	19.90	8.67	0.51	(All patients)

However, what changes significantly are the Total Row Sum percents and the Total Col Sum percents when you compare the crosstab options.

The image shows two side-by-side crosstab reports. The left report is titled 'AEs Related vs Intensity - Total Rows - NO PSC' and the right is 'AEs Related vs Intensity - All Patients - NO PSC'. Both reports have a similar structure with columns for 'Related to Inv Med?' (missing, Mild, Moderate, Severe) and 'Row Sum'. The 'Col Sum' row at the bottom shows the total counts and percentages for each column. In the 'All Patients' report, the 'Col Sum' percentages are based on the total number of patients (196), while in the 'Total Rows' report, they are based on the total number of cases (65.00). Arrows point to the 'Col Sum' row in both reports.

Related to Inv Med?	(missing)	Mild	Moderate	Severe	Row Sum
Highly Probable	15	1			16.00
	23.08	1.54			24.62
	93.75	6.25			
	38.46	5.88			
Not Related	8	21	14	1	44.00
	12.31	32.31	21.54	1.54	67.69
	18.18	47.73	31.82	2.27	
	100.00	53.85	82.35	100.00	
Possible	2	2			4.00
	3.08	3.08			6.15
	50.00	50.00			
	5.13	11.76			
Probable	1				1.00
	1.54				1.54
	100.00				
	2.56				
Col Sum	8.00	39.00	17.00	1.00	65.00
	12.31	60.00	26.15	1.54	100.00

Related to Inv Med?	(missing)	Mild	Moderate	Severe	Row Sum
Highly Probable	15	1			16.00
	7.65	0.51			8.16
	93.75	6.25			
	38.46	5.88			
Not Related	8	21	14	1	44.00
	4.08	10.71	7.14	0.51	22.45
	18.18	47.73	31.82	2.27	
	100.00	53.85	82.35	100.00	
Possible	2	2			4.00
	1.02	1.02			2.04
	50.00	50.00			
	5.13	11.76			
Probable	1				1.00
	0.51				0.51
	100.00				
	2.56				
Col Sum	8.00	39.00	17.00	1.00	196
	4.08	19.90	8.67	0.51	(All patients)

*Include Row%, Col% with selection criteria*

The percent denominator allows you to see the percents relative to the entire population (All Patients) or a particular patient selection criteria (Patient Subset). You are able to see the 'incidence' percentage relative to the entire population.

In following example, the same crosstab definition is created with the patient selection criteria applied for 'Discontinued Patients'.

The screenshot shows the 'CrossTab' configuration window. The 'Header' field contains 'Related vs Intensity - Discontinued Patients - Percent Denom All Patients'. The 'Filter Output' section has several options: 'Include Row %, Col %' (checked), 'Sort by Code Values?', 'Totals=SubjCount?', 'Filter SubjectCount?', 'Subtotal 2nd Col?', 'Show Empty Cols?', 'Show Empty Rows?', 'Suppress Row Sums?', and 'Suppress Col Sums?'. The 'Create' section has 'Include N (% dec places: 2)' (unchecked) and 'Descend N(%) Sort?' (unchecked). The 'By:' dropdown is set to 'Patient Subset'. Under 'Percent Denominator', 'All Patients' is selected with a radio button. Other options include 'Total Rows', 'Patient Subset', 'Col Totals', 'Row Totals', '1st Col Totals', and '1st Col Totals (All sub)'. There are 'ADD Row' and 'ADD Column' buttons at the bottom.

When 'All Patients' is selected for the **Percent Denominator** the following results display for the active patient selection criteria of 'Discontinued Patients'. There are 16 patients who reported Adverse Events and discontinued from the study. The CrossTab for 'Include Row%, Col%' results will change dependent upon the percent denominator option selected.

Now if we review the patients who reported Adverse Events as 'Not Related' and 'Moderate', there are 4 patients as a result of the current patient selection criteria and the results are as follows:

**Percent** is  $4 / \text{Total Rows } 196 = 2.04\%$  patients with Moderate Adverse Events reported as Not Related.

**Row Percent** is  $4 / \text{Row Sum } 8 = 50\%$ .

**Column Percent** is  $4 / \text{Col Sum } 5 = 80\%$ .

AE Related vs Intensity - Discontinued Patients - Percent Demon All Patients - Subset of patients					
No. Cases					
Percent					
Row Percent					
Col Percent					
Related to Inv Med?	(missing)	Mild	Moderate	Severe	Row Sum
Highly Probable		6			6.00
		3.06			3.06
		100.00			
		66.67			
Not Related	1	2	4	1	8.00
	0.51	1.02	2.04	0.51	4.08
	12.50	25.00	50.00	12.50	
	100.00	22.22	80.00	100.00	
Possible		1	1		2.00
		0.51	0.51		1.02
		50.00	50.00		
		11.11	20.00		
Col Sum	1.00	9.00	5.00	1.00	196
	0.51	4.59	2.55	0.51	(All patients)

If 'Patient Subset' is selected for the **Percent Denominator**, the following results display where the current patient selection criteria for discontinued patients is 46.

The screenshot shows the 'CrossTab' software interface. On the left, the 'Header' field contains 'ad vs Intensity - Discontinued Patients - Percent Denom Patient Subset'. Below it, the 'Row Heading(s)' is 'Related to Inv Med?' and the 'Column Heading(s)' is 'Intensity'. The 'Filter Output' panel has several checkboxes: 'Include Row %, Col %' (checked), 'Sort by Code Values?' (unchecked), 'Totals=SubjCount?' (unchecked), 'Filter SubjectCount?' (unchecked), 'Subtotal 2nd Col?' (unchecked), 'Show Empty Cols?' (unchecked), 'Show Empty Rows?' (unchecked), 'Suppress Row Sums?' (unchecked), and 'Suppress Col Sums?' (unchecked). The 'Create' panel has 'Include N (% dec places: 2)' (unchecked) and 'Descend N(%) Sort?' (unchecked). Under 'Percent Denominator', the 'Patient Subset' radio button is selected. There are 'ADD Row' and 'ADD Column' buttons.

The cell the Percent result changes for  $4/46 = 8.70\%$  and Row Percent and Column Percent remain the same.

**AE Related vs Intensity - Discontinued Patients - Percent Demon Patient Subset - Subset of patients**

No. Cases					
Percent					
Row Percent					
Col Percent					
Related to Inv Med?	(missing)	Mild	Moderate	Severe	Row Sum
Highly Probable		6			6.00
		13.04			13.04
		100.00			
		66.67			
Not Related	1	2	4	1	8.00
	2.17	4.35	8.70	2.17	17.39
	12.50	25.00	50.00	12.50	
	100.00	22.22	80.00	100.00	
Possible		1	1		2.00
		2.17	2.17		4.35
		50.00	50.00		
		11.11	20.00		
Col Sum	1.00	9.00	5.00	1.00	46
	2.17	19.57	10.87	2.17	(ActiveSubset)

However, what changes significantly are the Total Row Sum percents and the Total Col Sum percents when you compare the crosstab options.

**(Snapshot) AEs Related vs Intensity - All Patients - PSC Discontinued**

No. Cases					
Percent					
Row Percent					
Col Percent					
Related to Inv Med?	(missing)	Mild	Moderate	Severe	Row Sum
Highly Probable		6			6.00
		3.06			3.06
		100.00			
		66.67			
Not Related	1	2	4	1	8.00
	0.51	1.02	2.04	0.51	4.08
	12.50	25.00	50.00	12.50	
	100.00	22.22	80.00	100.00	
Possible		1	1		2.00
		0.51	0.51		1.02
		50.00	50.00		
		11.11	20.00		
Col Sum	1.00	9.00	5.00	1.00	196
	0.51	4.59	2.55	0.51	(All patients)

**(Snapshot) AEs Related vs Intensity - Patient Subset - PSC Discontinued**

No. Cases					
Percent					
Row Percent					
Col Percent					
Related to Inv Med?	(missing)	Mild	Moderate	Severe	Row Sum
Highly Probable		6			6.00
		13.04			13.04
		100.00			
		66.67			
Not Related	1	2	4	1	8.00
	2.17	4.35	8.70	2.17	17.39
	12.50	25.00	50.00	12.50	
	100.00	22.22	80.00	100.00	
Possible		1	1		2.00
		2.17	2.17		4.35
		50.00	50.00		
		11.11	20.00		
Col Sum	1.00	9.00	5.00	1.00	46
	2.17	19.57	10.87	2.17	(ActiveSubset)

---

## Totals Subject Count

The **Totals Subject Count** option calculates row and column sums by the number of subjects and not the number of records. It can be demonstrated if not all patients have Adverse Events reported or where patients had multiple occurrences of the same events.

The **Totals Subject Count** may be used in conjunction with **Include N(%)** cell statistics function where additional **Percent Denominator** options for 'Col Totals' and 'Row Totals' become available.

In the following examples, there is **no** patient selection criteria applied and the default is all current patients. First, we will view the crosstab results when the **Totals Subject Count** option is set OFF (not checked).

The screenshot shows the 'CrossTab' software interface. The main window title is 'CrossTab'. Below the title bar, there is a 'Header' field containing 'AE Coded vs Related CrossTab'. To the right of the header are two panels: 'Filter Output' and 'Create'. The 'Filter Output' panel contains several checkboxes: 'Include Row %, Col %', 'Sort by Code Values?', 'Totals=SubjCount?' (which is unchecked), 'Filter SubjectCount?', 'Subtotal 2nd Col?', 'Show Empty Cols?', 'Show Empty Rows?', 'Suppress Row Sums?', and 'Suppress Col Sums?'. Below these checkboxes are two buttons: 'ADD Row' and 'ADD Column'. The 'Create' panel contains a 'By:' dropdown menu, a 'Include N (% dec places: 2)' checkbox (checked), and a 'Descend N(%) Sort?' checkbox (unchecked). Below these is a 'Percent Denominator' section with radio buttons for 'Total Rows' (selected), 'All Patients', 'Patient Subset', 'Col Totals', 'Row Totals', '1st Col Totals', and '1st Col Totals (All sub)'. At the bottom of the window, there are two input fields: 'Row Heading(s)' containing 'AE coded' and 'Column Heading(s)' containing 'Related to Inv Med?'.

The Crosstab results show individual column counts for 'Related to Inv Med?'. If you open the Data Browser and select the *Col Sum of 53* for 'Not Related', the Data Browser updates to 37 cases meaning some patients reported the same Adverse Events multiple times.

AE Coded vs Related CrossTab - All Patients					
AE coded	Highly Probable	Not Related	Possible	Probable	Row Sum
BODY:Allergic reaction		1			1.00
BODY:Back pain		3			3.00
BODY:Body odor			1		1.00
BODY:Pain		1			1.00
BODY:Surgery		8			8.00
BODY:Unevaluable reaction		1			1.00
DIG :Diarrhea		1			1.00
DIG :Duodenal ulcer		1			1.00
DIG :Periodontal abscess		1			1.00
DIG :Rectal pain		1			1.00
DIG :Sore throat		1			1.00
DIG :Tooth disorder		2			2.00
DIG :Vomiting		1			1.00
HAL :Ecchymosis		1			1.00
MAN :Peripheral edema			1		1.00
MS :Arthritis		1			1.00
MS :Myalgia		1			1.00
NER :Dizziness		1			1.00
NER :Headache		8			8.00
NER :Somnolence		1			1.00
RES :Cough increased		3			3.00
RES :Respiratory disorder		1			1.00
RES :Sinusitis		3			3.00
RES :Upper respiratory infection		4			4.00
SKIN: Burning sensation skin	15		2	1	18.00
SKIN: Pruritus	1		1		2.00
SKIN: Skin disorder		1			1.00
SS :Glaucoma		1			1.00
SS :Taste perversion		1			1.00
UG :Urinary tract infection		3			3.00
UG :Vaginitis		1			1.00
Col Sum	16.00	53.00	5.00	1.00	75.00

Data Browser - 37 cases selected			
Study	PT	INV	
KA201\$CURRENT	5204	056	▲
KA201\$CURRENT	1120	066	
KA201\$CURRENT	3206	030	

Custom DCM/Question Groups:  
Custom DCM/Question Groups not available



When the 'Totals=SubjCount?' is turned **ON**, the updated results show the actual number of patients who reported Adverse Events.

CrossTab	
Header	Filter Output
AE Coded vs Related - Totals=SubjCount?	<input type="checkbox"/> Include Row %,Col % <input type="checkbox"/> Sort by Code Values? <input checked="" type="checkbox"/> Totals=SubjCount? <input type="checkbox"/> Filter SubjectCount?

This function consolidates the patient counts where the same patient reported multiple occurrences for the same Adverse Event. The 'Totals=SubjCount?' subject count matches the 37 Cases Selected in the Data Browser.

AE Coded vs Related - Totals=SubjCount? - All Patients					
AE coded	Highly Probable	Not Related	Possible	Probable	Subjects
BODY:Allergic reaction		1			1
BODY:Back pain		3			3
BODY:Body odor			1		1
BODY:Pain		1			1
BODY:Surgery		8			8
BODY:Unevaluable reaction		1			1
DIG :Diarrhea		1			1
DIG :Duodenal ulcer		1			1
DIG :Periodontal abscess		1			1
DIG :Rectal pain		1			1
DIG :Sore throat		1			1
DIG :Tooth disorder		2			2
DIG :Vomiting		1			1
HAL :Ecchymosis		1			1
MAN :Peripheral edema			1		1
MS :Arthritis		1			1
MS :Myalgia		1			1
NER :Dizziness		1			1
NER :Headache		8			8
NER :Somnolence		1			1
RES :Cough increased		3			3
RES :Respiratory disorder		1			1
RES :Sinusitis		3			3
RES :Upper respiratory infection		4			4
SKIN:Burning sensation skin	15		2	1	18
SKIN:Pruritus	1		1		2
SKIN:Skin disorder		1			1
SS :Glaucoma		1			1
SS :Taste perversion		1			1
UG :Urinary tract infection		3			3
UG :Vaginitis		1			1
Subjects	16	37	4	1	196
					(All patients)

If you had defined a Summary listing for AE coded with 'count' and 'count subjects', the 'event count' is 81 and the 'count subjects' is 75 where the patient identifier is counted multiple times for multiple Adverse Events reported.

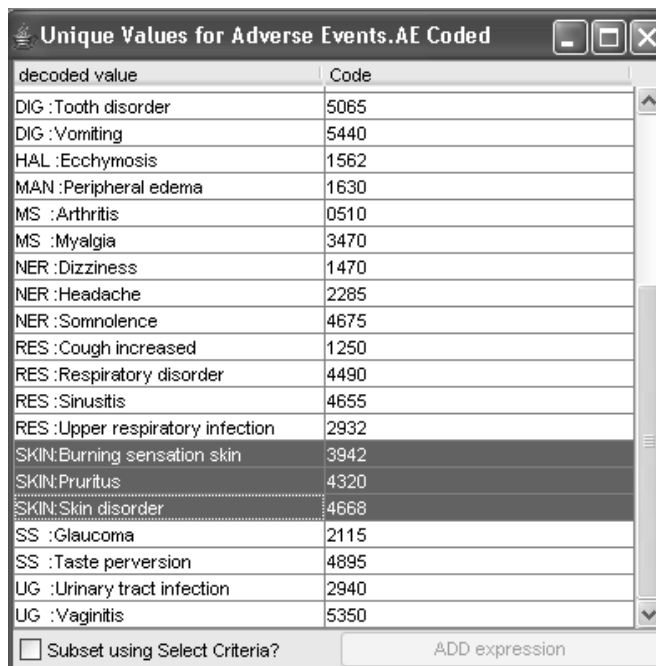
AE		count	count subjects
coded	Related to Inv Med?	Related to Inv Med?	Related to Inv Med?
BODY:Allergic reaction	Not Related	1	1
BODY:Back pain	Not Related	3	3
BODY:Body odor	Possible	1	1
BODY:Pain	Not Related	1	1
BODY:Surgery	Not Related	8	8
BODY:Unevaluable reaction	Not Related	1	1
DIG :Diarrhea	Not Related	1	1
DIG :Duodenal ulcer	Not Related	1	1
DIG :Periodontal abscess	Not Related	1	1
DIG :Rectal pain	Not Related	1	1
DIG :Sore throat	Not Related	1	1
DIG :Tooth disorder	Not Related	3	2
DIG :Vomiting	Not Related	1	1
HAL :Ecchymosis	Not Related	1	1
MAN :Peripheral edema	Possible	1	1
MS :Arthritis	Not Related	1	1
MS :Myalgia	Not Related	1	1
NER :Dizziness	Not Related	1	1
NER :Headache	Not Related	9	8
NER :Somnolence	Not Related	1	1
RES :Cough increased	Not Related	3	3
RES :Respiratory disorder	Not Related	1	1
RES :Sinusitis	Not Related	5	3
RES :Upper respiratory infection	Not Related	4	4
SKIN: Burning sensation skin	Highly Probable	17	15
SKIN: Burning sensation skin	Possible	2	2
SKIN: Burning sensation skin	Probable	1	1
SKIN: Pruritus	Highly Probable	1	1
SKIN: Pruritus	Possible	1	1
SKIN: Skin disorder	Not Related	1	1
SS :Glaucoma	Not Related	1	1
SS :Taste perversion	Not Related	1	1
UG :Urinary tract infection	Not Related	3	3
UG :Vaginitis	Not Related	1	1
Sum		81.00	75.00

---

## Filter Subject Count

In addition, you can use the **Filter Subject Count** feature to calculate Row and Column Sums by the number of subjects based on the current output filter and obtain subject counts.

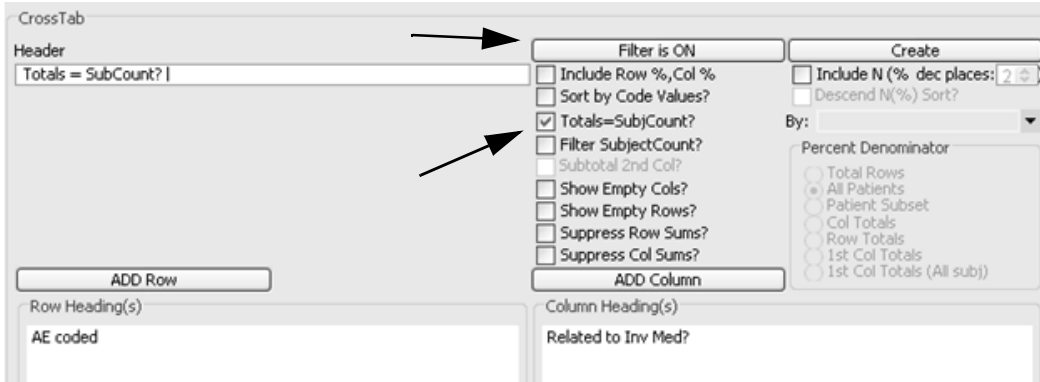
The next example defines a Filter Output for Adverse Events coded for SKIN body system as a multiple selection filter definition. There is **no** patient selection criteria applied to the following examples.



decoded value	Code
DIG :Tooth disorder	5065
DIG :Vomiting	5440
HAL :Ecchymosis	1562
MAN :Peripheral edema	1630
MS :Arthritis	0510
MS :Myalgia	3470
NER :Dizziness	1470
NER :Headache	2285
NER :Somnolence	4675
RES :Cough increased	1250
RES :Respiratory disorder	4490
RES :Sinusitis	4655
RES :Upper respiratory infection	2932
SKIN:Burning sensation skin	3942
SKIN:Pruritus	4320
SKIN:Skin disorder	4668
SS :Glaucoma	2115
SS :Taste perversion	4895
UG :Urinary tract infection	2940
UG :Vaginitis	5350

Subset using Select Criteria? ADD expression

The Filter Output button status is now updated to 'Filter is ON' with the 'Filter SubjectCount?' left unchecked.



Next compare the subject row results when 'Filter SubjectCount?' feature is checked ON/OFF.

The Crosstab results with the 'Filter is ON' and 'Filter SubjectCount?' unchecked displays only the Adverse Events included in the SKIN body system.

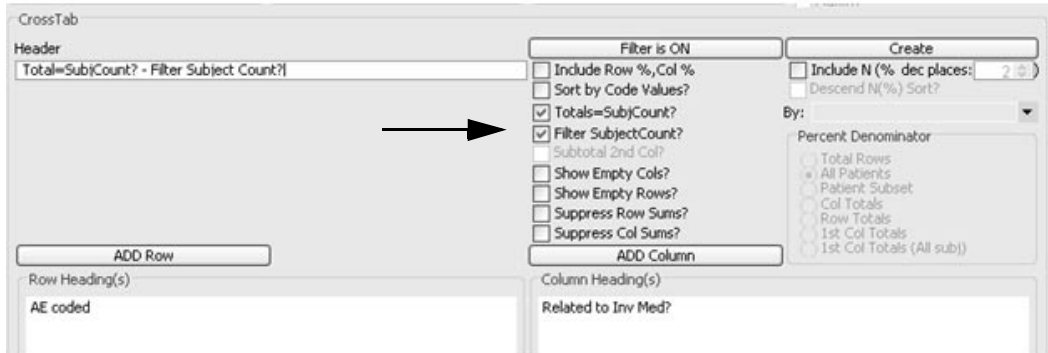
Observe that the 'Subjects' counts display for all available patients who reported Adverse Events. The output filter hasn't been applied yet to the 'Subjects' counts.

The crosstab heading defaults the current patient population status as 'All Patients' and the filter status as 'Output Filter applied'. This information is an automatic heading default to assist in describing the crosstab contents.

The screenshot shows the Crosstab results window titled 'Totals=SubjCount? - All Patients / Output Filter applied'. The table displays the following data:

AE coded	Highly Probable	Not Related	Possible	Probable	Subjects
SKIN:Burning sensation skin	15		2	1	18
SKIN:Pruritus	1		1		2
SKIN:Skin disorder		1			1
Subjects	16	37	4	1	196 (All patients)

Next we will view the subject row results when the ‘Filter Subject Count?’ check box is turned ON.



Now the results display the actual number of patients who reported Adverse Events for SKIN. See the **Subjects (filtered)** row is updated with new subject counts where the filter is now applied to the subject counts.

Totals=SubjCount? - Filter Subject Count? - All Patients / Output Filter applied					
AE coded	Highly Probable	Not Related	Possible	Probable	Subjects(filtered)
SKIN:Burning sensation skin	15		2	1	18
SKIN:Pruritus	1		1		2
SKIN:Skin disorder		1			1
Subjects(filtered)	16	1	2	1	196
					(All patients)

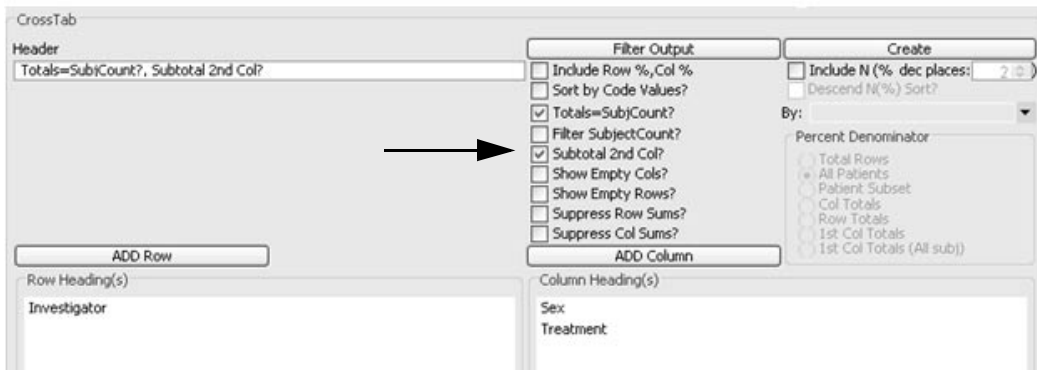
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### Subtotal 2nd column

You can have multiple headers by selecting another item and clicking ADD Column, where the item is added as a “sub-column” of the first column item. When using multiple column headings there are additional options available for ‘Subtotals 2nd Column’.

To use the ‘Subtotal 2nd Col?’ option, you must have two columns added to your crosstab. Selecting the **Subtotals 2nd Column** calculates the subtotal for the first column header and places it as an additional header

in the 2nd column. This count is best used in conjunction with the 'Totals=Subcount?' option. When checked, an intermediate 'Total' column for the 2nd column item values is added.



In this example, notice that under the Female and Male first column values there is a 'Total' column showing the total number of Female patients in each investigator. If you don't check the 'Subtotal 2nd Col?' option you will see the 'No' and 'Yes' nested values under each sex data item. The 'Subtotal 2nd Col?' option adds the 'Total' column.

Totals=SubCount?, Subtotal 2nd Col? - All Patients

Investigator	Female			Male			Subjects
	Total	Active	Placebo	Total	Active	Placebo	
018	8	5	3	14	6	8	22
030	5	3	2	15	6	9	20
056	11	6	5	29	14	15	40
063	4	3	1	25	11	14	29
064	4	1	3	31	17	14	35
065	3	1	2	22	12	10	25
066				25	12	13	25
Subjects	35	19	16	161	78	83	196
							(All patients)

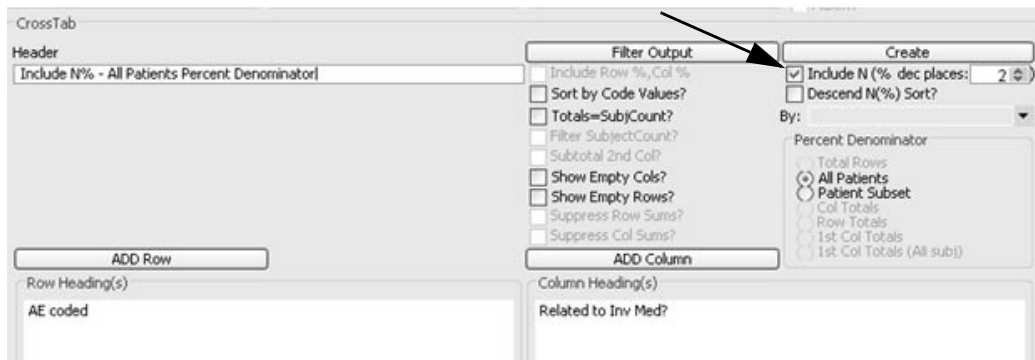
When 'Subtotal 2nd Col?' option is used in conjunction with **Include N(%) function** there is an option for selecting the sort value by the first column with the 'Descend Sort'. The Percent Denominator allows for using the First Column or just the Column Totals as well as the standard options.

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### Include N% function

The **Include N(%)** function only uses the total patient population as the **Percent Denominator** based on 'All Patients or 'Patient Subset' where the default is 'All Patients'.

Also, the Include N(%) function is mutually exclusive from the Include Row%, Col% function, so it is an either/or condition.



In this crosstab example for AE Coded versus Related to Inv Med, there was **no** patient selection criteria applied. The CrossTab displays only the percent result for each cell count against the current patient population.

The cell statistics for the 15 patients who reported 'Burning sensation skin' as 'Highly Probable' against 'All Patients' calculates as 15/196 = 7.65% against all of the adverse events reported.

AE coded	Highly Probable	Not Related	Possible	Probable	Row Sum
BODY:Allergic reaction	0 (0.00%)	1 (0.51%)	0 (0.00%)	0 (0.00%)	1 (0.51%)
BODY:Back pain	0 (0.00%)	3 (1.53%)	0 (0.00%)	0 (0.00%)	3 (1.53%)
BODY:Body odor	0 (0.00%)	0 (0.00%)	1 (0.51%)	0 (0.00%)	1 (0.51%)
BODY:Pain	0 (0.00%)	1 (0.51%)	0 (0.00%)	0 (0.00%)	1 (0.51%)
BODY:Surgery	0 (0.00%)	8 (4.08%)	0 (0.00%)	0 (0.00%)	8 (4.08%)
BODY:Unevaluable reaction	0 (0.00%)	1 (0.51%)	0 (0.00%)	0 (0.00%)	1 (0.51%)
DIG :Diarrhea	0 (0.00%)	1 (0.51%)	0 (0.00%)	0 (0.00%)	1 (0.51%)
DIG :Duodenal ulcer	0 (0.00%)	1 (0.51%)	0 (0.00%)	0 (0.00%)	1 (0.51%)
DIG :Periodontal abscess	0 (0.00%)	1 (0.51%)	0 (0.00%)	0 (0.00%)	1 (0.51%)
DIG :Rectal pain	0 (0.00%)	1 (0.51%)	0 (0.00%)	0 (0.00%)	1 (0.51%)
DIG :Sore throat	0 (0.00%)	1 (0.51%)	0 (0.00%)	0 (0.00%)	1 (0.51%)
DIG :Tooth disorder	0 (0.00%)	2 (1.02%)	0 (0.00%)	0 (0.00%)	2 (1.02%)
DIG :Vomiting	0 (0.00%)	1 (0.51%)	0 (0.00%)	0 (0.00%)	1 (0.51%)
HAL :Ecchymosis	0 (0.00%)	1 (0.51%)	0 (0.00%)	0 (0.00%)	1 (0.51%)
MAN :Peripheral edema	0 (0.00%)	0 (0.00%)	1 (0.51%)	0 (0.00%)	1 (0.51%)
MS :Arthritis	0 (0.00%)	1 (0.51%)	0 (0.00%)	0 (0.00%)	1 (0.51%)
MS :Myalgia	0 (0.00%)	1 (0.51%)	0 (0.00%)	0 (0.00%)	1 (0.51%)
NER :Dizziness	0 (0.00%)	1 (0.51%)	0 (0.00%)	0 (0.00%)	1 (0.51%)
NER :Headache	0 (0.00%)	8 (4.08%)	0 (0.00%)	0 (0.00%)	8 (4.08%)
NER :Somnolence	0 (0.00%)	1 (0.51%)	0 (0.00%)	0 (0.00%)	1 (0.51%)
RES :Cough increased	0 (0.00%)	3 (1.53%)	0 (0.00%)	0 (0.00%)	3 (1.53%)
RES :Respiratory disorder	0 (0.00%)	1 (0.51%)	0 (0.00%)	0 (0.00%)	1 (0.51%)
RES :Sinusitis	0 (0.00%)	3 (1.53%)	0 (0.00%)	0 (0.00%)	3 (1.53%)
RES :Upper respiratory infection	0 (0.00%)	4 (2.04%)	0 (0.00%)	0 (0.00%)	4 (2.04%)
SKIN:Burning sensation skin	15 (7.65%)	0 (0.00%)	2 (1.02%)	1 (0.51%)	18 (9.18%)
SKIN:Pruritus	1 (0.51%)	0 (0.00%)	1 (0.51%)	0 (0.00%)	2 (1.02%)
SKIN:Skin disorder	0 (0.00%)	1 (0.51%)	0 (0.00%)	0 (0.00%)	1 (0.51%)
SS :Glaucoma	0 (0.00%)	1 (0.51%)	0 (0.00%)	0 (0.00%)	1 (0.51%)
SS :Taste perversion	0 (0.00%)	1 (0.51%)	0 (0.00%)	0 (0.00%)	1 (0.51%)
UG :Urinary tract infection	0 (0.00%)	3 (1.53%)	0 (0.00%)	0 (0.00%)	3 (1.53%)
UG :Vaginitis	0 (0.00%)	1 (0.51%)	0 (0.00%)	0 (0.00%)	1 (0.51%)
Col Sum	16 (8.16%)	53 (27.04%)	5 (2.55%)	1 (0.51%)	196 (100.00%)
					(All patients)

Observe the labels for 'Col Sum' and 'Row Sum'. When you check ON the option for 'Totals=SubjCount?' only the unique patients are counted who reported Adverse Events. This option removes counting the same patients multiple times if they reported multiple adverse events. If you click the column cell for 53 patients with the Data Browser open, the actual patient count is 37 unique patients identified.



*Include N% and Totals subject count*

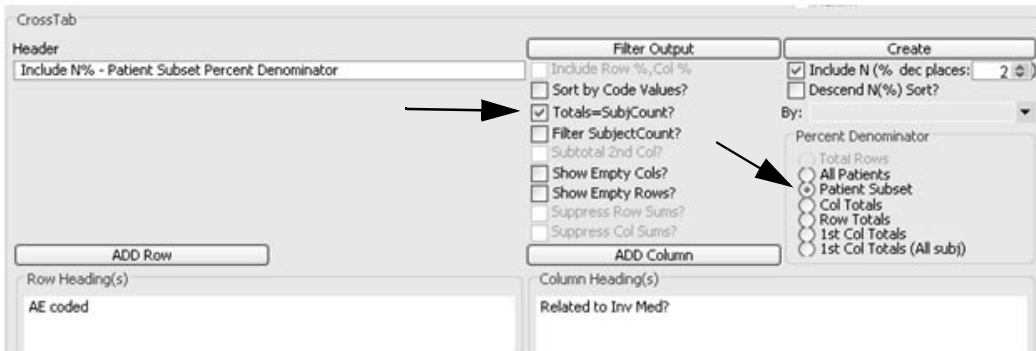
If you select the **Include N(%)** function in conjunction with the ‘Totals=Subjcount?’ function there are more options available for the **Percent Denominator**. The following crosstab has selected both the ‘Include (N)%’ and ‘Totals=SubCount?’ functions as checked On with the Percent Denominator set for ‘All Patients’. There is no patient selection criteria applied.

Now the labels display as ‘Subjects’ when the ‘Totals=SubjCount?’ is checked ON. If you click the highlighted subject cell for 37 patients with the Data Browser open, the actual patient count is 37 which matches the actual number of patients who reported Adverse Events.

AE coded	Highly Probable	Not Related	Possible	Probable	Subjects
BODY:Allergic reaction	0 ( 0.00%)	1 ( 0.51%)	0 ( 0.00%)	0 ( 0.00%)	1 ( 0.51%)
BODY:Back pain	0 ( 0.00%)	3 ( 1.53%)	0 ( 0.00%)	0 ( 0.00%)	3 ( 1.53%)
BODY:Body odor	0 ( 0.00%)	0 ( 0.00%)	1 ( 0.51%)	0 ( 0.00%)	1 ( 0.51%)
BODY:Pain	0 ( 0.00%)	1 ( 0.51%)	0 ( 0.00%)	0 ( 0.00%)	1 ( 0.51%)
BODY:Surgery	0 ( 0.00%)	8 ( 4.08%)	0 ( 0.00%)	0 ( 0.00%)	8 ( 4.08%)
BODY:Unevaluable reaction	0 ( 0.00%)	1 ( 0.51%)	0 ( 0.00%)	0 ( 0.00%)	1 ( 0.51%)
DIG :Diarrhea	0 ( 0.00%)	1 ( 0.51%)	0 ( 0.00%)	0 ( 0.00%)	1 ( 0.51%)
DIG :Duodenal ulcer	0 ( 0.00%)	1 ( 0.51%)	0 ( 0.00%)	0 ( 0.00%)	1 ( 0.51%)
DIG :Periodontal abscess	0 ( 0.00%)	1 ( 0.51%)	0 ( 0.00%)	0 ( 0.00%)	1 ( 0.51%)
DIG :Rectal pain	0 ( 0.00%)	1 ( 0.51%)	0 ( 0.00%)	0 ( 0.00%)	1 ( 0.51%)
DIG :Sore throat	0 ( 0.00%)	1 ( 0.51%)	0 ( 0.00%)	0 ( 0.00%)	1 ( 0.51%)
DIG :Tooth disorder	0 ( 0.00%)	2 ( 1.02%)	0 ( 0.00%)	0 ( 0.00%)	2 ( 1.02%)
DIG :Vomiting	0 ( 0.00%)	1 ( 0.51%)	0 ( 0.00%)	0 ( 0.00%)	1 ( 0.51%)
HAL :Ecchymosis	0 ( 0.00%)	1 ( 0.51%)	0 ( 0.00%)	0 ( 0.00%)	1 ( 0.51%)
MAN :Peripheral edema	0 ( 0.00%)	0 ( 0.00%)	1 ( 0.51%)	0 ( 0.00%)	1 ( 0.51%)
MS :Arthritis	0 ( 0.00%)	1 ( 0.51%)	0 ( 0.00%)	0 ( 0.00%)	1 ( 0.51%)
MS :Myalgia	0 ( 0.00%)	1 ( 0.51%)	0 ( 0.00%)	0 ( 0.00%)	1 ( 0.51%)
NER :Dizziness	0 ( 0.00%)	1 ( 0.51%)	0 ( 0.00%)	0 ( 0.00%)	1 ( 0.51%)
NER :Headache	0 ( 0.00%)	8 ( 4.08%)	0 ( 0.00%)	0 ( 0.00%)	8 ( 4.08%)
NER :Somnolence	0 ( 0.00%)	1 ( 0.51%)	0 ( 0.00%)	0 ( 0.00%)	1 ( 0.51%)
RES :Cough increased	0 ( 0.00%)	3 ( 1.53%)	0 ( 0.00%)	0 ( 0.00%)	3 ( 1.53%)
RES :Respiratory disorder	0 ( 0.00%)	1 ( 0.51%)	0 ( 0.00%)	0 ( 0.00%)	1 ( 0.51%)
RES :Sinusitis	0 ( 0.00%)	3 ( 1.53%)	0 ( 0.00%)	0 ( 0.00%)	3 ( 1.53%)
RES :Upper respiratory infection	0 ( 0.00%)	4 ( 2.04%)	0 ( 0.00%)	0 ( 0.00%)	4 ( 2.04%)
SKIN:Burning sensation skin	15 ( 7.65%)	0 ( 0.00%)	2 ( 1.02%)	1 ( 0.51%)	18 ( 9.18%)
SKIN:Pruritus	1 ( 0.51%)	0 ( 0.00%)	1 ( 0.51%)	0 ( 0.00%)	2 ( 1.02%)
SKIN:Skin disorder	0 ( 0.00%)	1 ( 0.51%)	0 ( 0.00%)	0 ( 0.00%)	1 ( 0.51%)
SS :Glaucoma	0 ( 0.00%)	1 ( 0.51%)	0 ( 0.00%)	0 ( 0.00%)	1 ( 0.51%)
SS :Taste perversion	0 ( 0.00%)	1 ( 0.51%)	0 ( 0.00%)	0 ( 0.00%)	1 ( 0.51%)
UG :Urinary tract infection	0 ( 0.00%)	3 ( 1.53%)	0 ( 0.00%)	0 ( 0.00%)	3 ( 1.53%)
UG :Vaginitis	0 ( 0.00%)	1 ( 0.51%)	0 ( 0.00%)	0 ( 0.00%)	1 ( 0.51%)
Subjects	16 ( 8.16%)	37 ( 18.88%)	4 ( 2.04%)	1 ( 0.51%)	196 ( 100.00%)
					(All patients)

*Include N% Patient Subset*

Next the same crosstab is created with the patient selection criteria for 'Discontinued Patients' applied. Both the 'Include (N)%' and 'Totals=SubCount?' functions are selected with the **Percent Denominator** set for 'Patient Subset' which results in 46 cases.



The Active Subset count for 46 is displayed and percentages are now based on the revised counts in a single cell to the patient subset.

The individual cell statistics are calculated for the Active Subset as discontinued patients. The subject counts represent unique patients

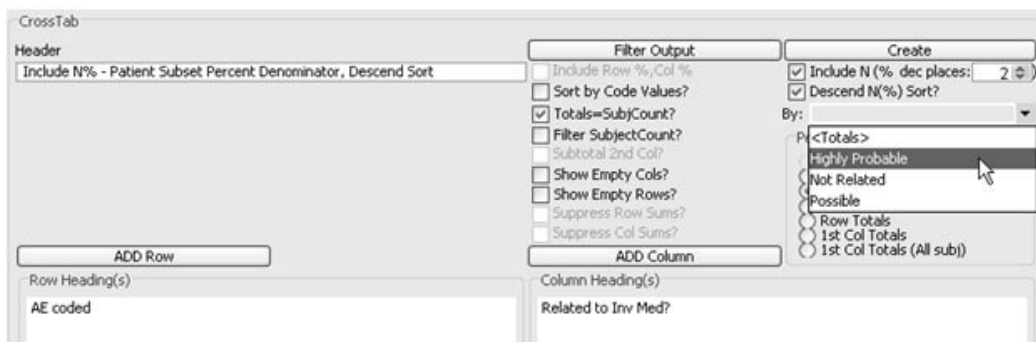
The revised cell statistics are now 6 patients in the patient subset who discontinued the study and reported 'Burning sensation skin' as 'Highly Probable'. The cell statistic is calculated against 'Active Subset' as  $6/46 = 13.04\%$  against the adverse events reported in the 'Active Subset'.

Include N%, Totals=SubCount? - Patient Subset Denominator - Subset of patients				
AE coded	Highly Probable	Not Related	Possible	Subjects
BODY:Back pain	0 ( 0.00%)	2 ( 4.35%)	0 ( 0.00%)	2 ( 4.35%)
BODY:Surgery	0 ( 0.00%)	1 ( 2.17%)	0 ( 0.00%)	1 ( 2.17%)
DIG :Duodenal ulcer	0 ( 0.00%)	1 ( 2.17%)	0 ( 0.00%)	1 ( 2.17%)
DIG :Sore throat	0 ( 0.00%)	1 ( 2.17%)	0 ( 0.00%)	1 ( 2.17%)
MAN :Peripheral edema	0 ( 0.00%)	0 ( 0.00%)	1 ( 2.17%)	1 ( 2.17%)
RES :Cough increased	0 ( 0.00%)	1 ( 2.17%)	0 ( 0.00%)	1 ( 2.17%)
RES :Upper respiratory infection	0 ( 0.00%)	1 ( 2.17%)	0 ( 0.00%)	1 ( 2.17%)
SKIN:Burning sensation skin	6 (13.04%)	0 ( 0.00%)	1 ( 2.17%)	7 (15.22%)
UG :Urinary tract infection	0 ( 0.00%)	1 ( 2.17%)	0 ( 0.00%)	1 ( 2.17%)
Subjects	6 (13.04%)	7 (15.22%)	2 ( 4.35%)	46 (100.00%)
				(ActiveSubset)

## Descend N(%) Sort

The **Descend N(%) Sort** option can be used with the **Include N(%)** function to sort the column percentages in descending order. Use the **By** drop down to choose and control which column for the descending sort column. When selected the First Column Item Values (plus the <total> entry) is the descending sort column.

By selecting the **Sort by Code Values** the row and column headings are sorted by their coded value. By default they are sorted by their description.



The previous example shows 'SKIN: Burning sensation skin' as 'Highly Probable' located at row 9. Now the result sorts to the top of the list when the **Descend N% Sort** option is turned ON and the column sort item is selected for 'Highly Probable'.

Include N%, Totals=SubjCount? - Patient Subset Denominator, Descend Sort - Subset of patients

AE coded	Highly Probable	Not Related	Possible	Subjects
SKIN: Burning sensation skin	6 (13.04%)	0 (0.00%)	1 (2.17%)	7 (15.22%)
BODY: Surgery	0 (0.00%)	1 (2.17%)	0 (0.00%)	1 (2.17%)
DIG :Duodenal ulcer	0 (0.00%)	1 (2.17%)	0 (0.00%)	1 (2.17%)
BODY: Back pain	0 (0.00%)	2 (4.35%)	0 (0.00%)	2 (4.35%)
DIG :Sore throat	0 (0.00%)	1 (2.17%)	0 (0.00%)	1 (2.17%)
RES :Cough increased	0 (0.00%)	1 (2.17%)	0 (0.00%)	1 (2.17%)
RES :Upper respiratory infection	0 (0.00%)	1 (2.17%)	0 (0.00%)	1 (2.17%)
UG :Urinary tract infection	0 (0.00%)	1 (2.17%)	0 (0.00%)	1 (2.17%)
MAN :Peripheral edema	0 (0.00%)	0 (0.00%)	1 (2.17%)	1 (2.17%)
Subjects	6 (13.04%)	7 (15.22%)	2 (4.35%)	46 (100.00%)
				(ActiveSubset)

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Select decimal places

You may optionally select the number of decimal places to display with the 'dec places' click box. The decimal place default is 2 with options for 0, 1 and 2 where the results are rounded up. When you save the crosstab specification with Include N% option checked ON and selected decimal places; these settings are saved within the crosstab specification.



Crosstab with decimal places set to 2.

Crosstab - Decimal place default 2 - All Patients

Sex	Black	Hispanic	White	Row Sum
Female	6 ( 3.06%)	1 ( 0.51%)	28 (14.29%)	35 (17.86%)
Male	19 ( 9.69%)	11 ( 5.61%)	131 (66.84%)	161 (82.14%)
Col Sum	25 (12.76%)	12 ( 6.12%)	159 (81.12%)	196 (100.00%)
				(All patients)

Crosstab with decimal places set to 1.

Crosstab - Decimal place 1 - All Patients

Sex	Black	Hispanic	White	Row Sum
Female	6 ( 3.1%)	1 ( 0.5%)	28 (14.3%)	35 (17.9%)
Male	19 ( 9.7%)	11 ( 5.6%)	131 (66.8%)	161 (82.1%)
Col Sum	25 (12.8%)	12 ( 6.1%)	159 (81.1%)	196 (100.0%)
				(All patients)

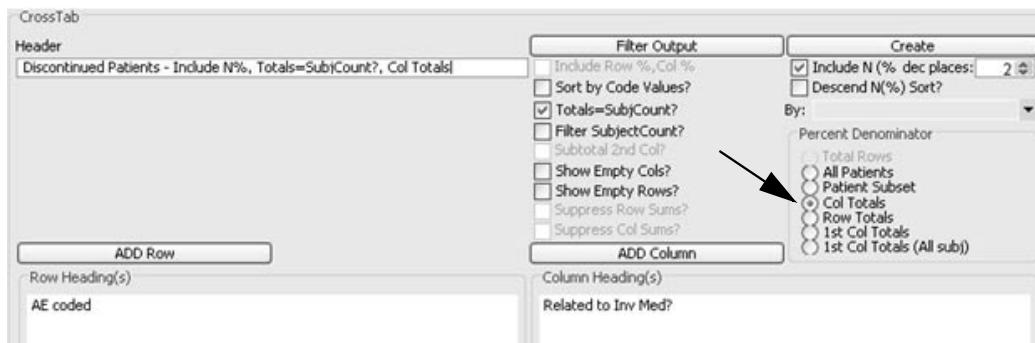
Crosstab with decimal places set to 0.

Crosstab - Decimal place 0 - All Patients

Sex	Black	Hispanic	White	Row Sum
Female	6 ( 3%)	1 ( 1%)	28 (14%)	35 (18%)
Male	19 (10%)	11 ( 6%)	131 (67%)	161 (82%)
Col Sum	25 (13%)	12 ( 6%)	159 (81%)	196 (100%)
				(All patients)

## Include N% Col Totals

The following crosstab has selected both the 'Include (N)%' and 'Totals=SubCount?' functions checked ON with the Percent Denominator set for 'Col Totals'. Patient selection criteria was applied for discontinued patients.

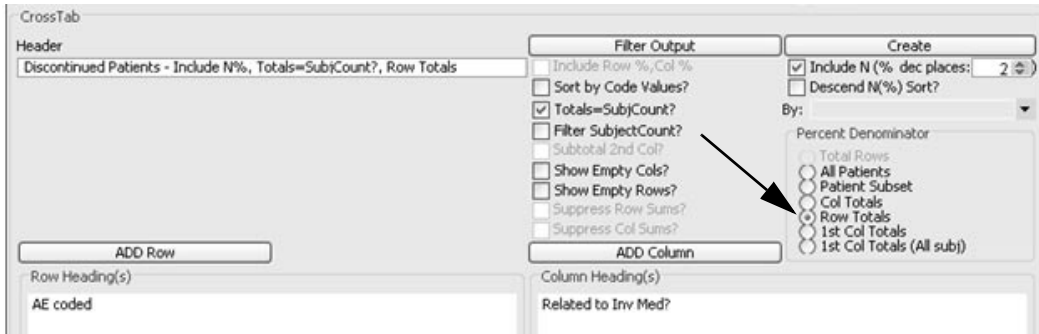


The individual cell statistics are calculated for the individual column categories 'Related to Inv Med?'. For example, cell statistic for 'Back Pain' as 'Not Related' calculates as  $2/7 = 28.57\%$  against the 'Not Related' column total.

Discontinued Patients - Include N%, Totals=SubCount?, Col Totals - Subset of patients				
AE coded	Highly Probable	Not Related	Possible	Subjects
BODY:Back pain	0 ( 0.00%)	2 (28.57%)	0 ( 0.00%)	2 ( 1.02%)
BODY:Surgery	0 ( 0.00%)	1 (14.29%)	0 ( 0.00%)	1 ( 0.51%)
DIG :Duodenal ulcer	0 ( 0.00%)	1 (14.29%)	0 ( 0.00%)	1 ( 0.51%)
DIG :Sore throat	0 ( 0.00%)	1 (14.29%)	0 ( 0.00%)	1 ( 0.51%)
MAN :Peripheral edema	0 ( 0.00%)	0 ( 0.00%)	1 (50.00%)	1 ( 0.51%)
RES :Cough increased	0 ( 0.00%)	1 (14.29%)	0 ( 0.00%)	1 ( 0.51%)
RES :Upper respiratory infection	0 ( 0.00%)	1 (14.29%)	0 ( 0.00%)	1 ( 0.51%)
SKIN:Burning sensation skin	6 (100.00%)	0 ( 0.00%)	1 (50.00%)	7 ( 3.57%)
UG :Urinary tract infection	0 ( 0.00%)	1 (14.29%)	0 ( 0.00%)	1 ( 0.51%)
Subjects	6 (100.00%)	7 (100.00%)	2 (100.00%)	196 (100.00%)
				(Denom=ColTot)

*Include N% Row Totals*

The option for 'Row Totals' works the same as 'Col Totals'. The next crosstab has selected both the 'Include (N)%' and 'Totals=SubCount?' functions with the Percent Denominator set for 'Row Totals'. Patient selection criteria is applied for discontinued patients.



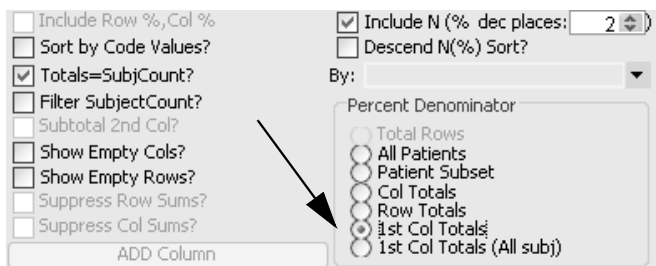
The individual cell statistics are calculated for the individual row categories 'AE Coded'. For example, cell statistic for 'Burning sensation skin' as 'Highly Probable' calculates as  $6/7 = 85.71\%$  against the 'Burning sensation skin' row total.

Discontinued Patients - Include N%, Totals=SubjCount?, Row Totals - Subset of patients				
AE coded	Highly Probable	Not Related	Possible	Subjects
BODY:Back pain	0 ( 0.00%)	2 (100.00%)	0 ( 0.00%)	2 (100.00%)
BODY:Surgery	0 ( 0.00%)	1 (100.00%)	0 ( 0.00%)	1 (100.00%)
DIG :Duodenal ulcer	0 ( 0.00%)	1 (100.00%)	0 ( 0.00%)	1 (100.00%)
DIG :Sore throat	0 ( 0.00%)	1 (100.00%)	0 ( 0.00%)	1 (100.00%)
MAN :Peripheral edema	0 ( 0.00%)	0 ( 0.00%)	1 (100.00%)	1 (100.00%)
RES :Cough increased	0 ( 0.00%)	1 (100.00%)	0 ( 0.00%)	1 (100.00%)
RES :Upper respiratory infection	0 ( 0.00%)	1 (100.00%)	0 ( 0.00%)	1 (100.00%)
SKIN:Burning sensation skin	6 (85.71%)	0 ( 0.00%)	1 (14.29%)	7 (100.00%)
UG :Urinary tract infection	0 ( 0.00%)	1 (100.00%)	0 ( 0.00%)	1 (100.00%)
Subjects	6 ( 3.06%)	7 ( 3.57%)	2 ( 1.02%)	196 (100.00%)
				(Denom=RowTot)

---

*Include N% First column totals*

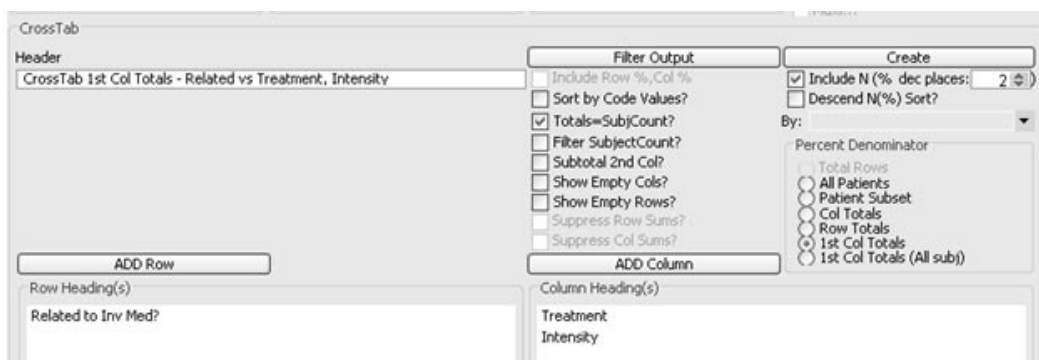
The Percent Denominator has two '1st Col totals' options. The difference between the two last denominator choices is whether to reference the patient selection criteria or not in the '1<sup>st</sup> Col Totals' total values.



The first option always calculates the statistics based on a patient selection criteria if present. The second option (All Sub) never uses the patient selection criteria and always show the total population numbers.

The 'First Column Totals' option is used when you have more than one column item selected and add a second column total line representing the Subjects for only the first column item values. For example, treatment arm as the first column item and then another item as a subgroup.

The following crosstab has functions turned ON for 'Include (N)%' and 'Totals=SubCount?' with Percent Denominator set for 'First Col Totals'.



For the example, a patient selection criteria was entered for patients who discontinued from the study and the results are 92 discontinued patients. These 92 patients are further split into 42 patients who took 'Active' drug and 50 patients who took 'Placebo' drug.

Observe the row results for '1st ColItemSubjects'. The statistical percents in the individual cells are calculated from the individual subject count divided by this treatment count.

Observe the 'Active' treatment column for 'Highly Probable' as 'Severe'. The statistics for the subjects calculate as  $4/42 = 9.52\%$ , then divide this percent by the 4 individual subjects for  $1(2.38\%)$ .

CrossTab 1st Col Totals - Related vs Treatment, Intensity - Subset of patients

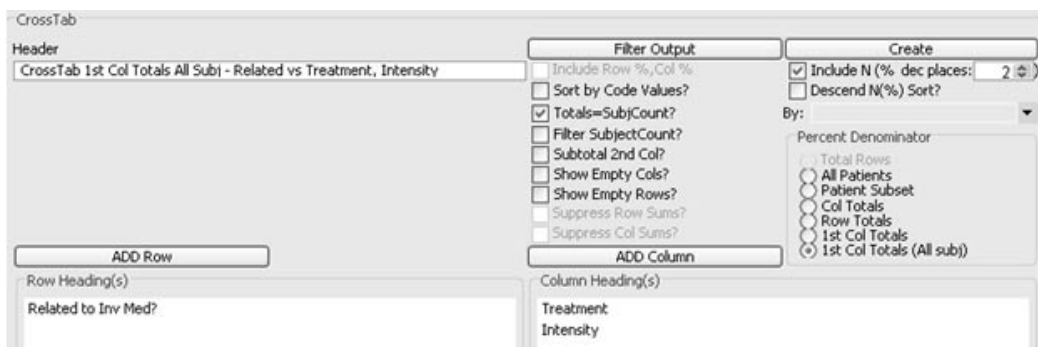
Related to Inv Med?	Active			Placebo (missing)				Subjects
	Mild	Moderate	Severe		Mild	Moderate	Severe	
Highly Probable	6 (14.29%)	0 (0.00%)	1 (2.38%)	1 (2.00%)	6 (12.00%)	0 (0.00%)	4 (8.00%)	18 (4.59%)
Not Related	0 (0.00%)	6 (14.29%)	2 (4.76%)	2 (4.00%)	4 (8.00%)	2 (4.00%)	0 (0.00%)	14 (3.57%)
Possible	0 (0.00%)	0 (0.00%)	0 (0.00%)	0 (0.00%)	2 (4.00%)	2 (4.00%)	1 (2.00%)	5 (1.28%)
Probable	0 (0.00%)	0 (0.00%)	1 (2.38%)	0 (0.00%)	0 (0.00%)	0 (0.00%)	2 (4.00%)	3 (0.77%)
Subjects	6 (14.29%)	6 (14.29%)	4 (9.52%)	34 (68.00%)	12 (24.00%)	4 (8.00%)	7 (14.00%)	392 (100.00%)
1stColItemSubjects	42 (100.00%)	42 (100.00%)	42 (100.00%)	50 (100.00%)	50 (100.00%)	50 (100.00%)	50 (100.00%)	(Denom=1stColTot)



*Include N% First column totals (All sub)*

The 'First Column Totals (All sub)' option is also used when you have more than one column item selected and add a second column total line representing the Subjects. However, this option **never** uses the patient selection criteria if present, and always shows the total population numbers.

The following crosstab has functions turned ON for 'Include (N)%' and 'Totals=SubCount?' with Percent Denominator set for 'First Col Totals (All sub)'.



For the example, a patient selection criteria was entered for patients who discontinued from the study and the results are 92 discontinued patients. However, for the total patient population in the study there were 194 patients who took 'Active' drug and 198 patients who took 'Placebo' drug.

The crosstab results calculate the statistics based upon the total patient population for the item column added. See the 'Placebo' treatment column for 'Highly Probable' as 'Severe'. The statistics for the subjects calculate as  $7/198 = 3.54\%$ , then divide this percent by the 7 individual subjects for  $4(2.02\%)$ .

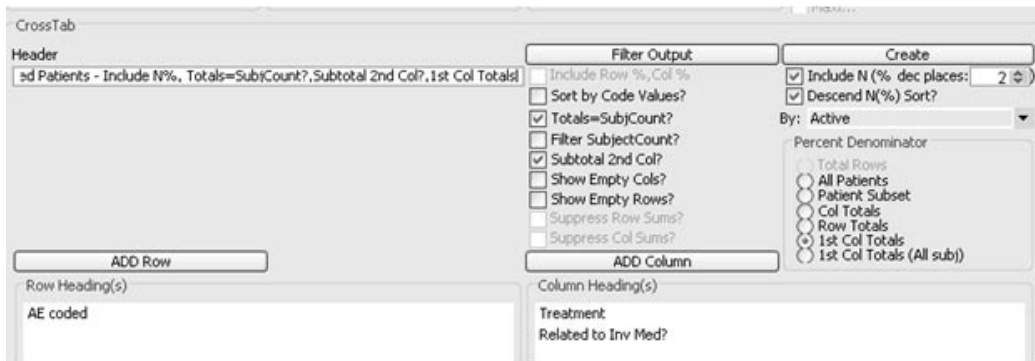
Related to Inv Med?	Active			Placebo (missing)			Subjects
	Mild	Moderate	Severe	Mild	Moderate	Severe	
Highly Probable	6 (3.09%)	0 (0.00%)	1 (0.52%)	1 (0.51%)	0 (0.00%)	4 (2.02%)	18 (4.59%)
Not Related	0 (0.00%)	6 (3.09%)	2 (1.03%)	2 (1.01%)	2 (1.01%)	0 (0.00%)	14 (3.57%)
Possible	0 (0.00%)	0 (0.00%)	0 (0.00%)	0 (0.00%)	2 (1.01%)	1 (0.51%)	5 (1.28%)
Probable	0 (0.00%)	0 (0.00%)	1 (0.52%)	0 (0.00%)	0 (0.00%)	2 (1.01%)	3 (0.77%)
Subjects	6 (3.09%)	6 (3.09%)	4 (2.06%)	34 (17.17%)	12 (6.06%)	4 (2.02%)	392 (100.00%)
1stColItemTot-AllSubj	194 (100.00%)	194 (100.00%)	194 (100.00%)	198 (100.00%)	198 (100.00%)	198 (100.00%)	(Denom=1stColTot-AllSub)

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*Include N% with Subtotal 2nd column*

This option is used when you have two or more column items selected and when checked, an intermediate 'Total' column for the 2nd column item values is added. This option is useful in conjunction with the 'Descend Sort - by a selected 1st column item value'.

In the following example, when 'Subtotal 2nd Column' is used with the 'Include N(%)' and 'Descend N(%) Sort' and selecting one of the values of the first column item from the dropdown list box. If you pick 'Active' for example, then it will do a descending sort on the 'Active' column.



A patient selection criteria was entered for patients who discontinued from the study and the results are 46 discontinued patients. These 46 patients are further split into 21 patients who took 'Active' drug and 25 patients who took 'Placebo' drug.

Observe the row results for '1st ColItemSubjects'. The results for the 'Active' total column calculates the Subjects statistics as  $7/21=7(33.33\%)$ . The statistical percents in the individual cells can be calculated from this total column statistic.

(This screen is a split crosstab example.)

AE Coded	Active		
	Total	Highly Probable	Not Related
SKIN:Burning sensation skin	3 (14.29%)	3 (14.29%)	0 (0.00%)
BODY:Back pain	1 (4.76%)	0 (0.00%)	1 (4.76%)
UG :Urinary tract infection	1 (4.76%)	0 (0.00%)	1 (4.76%)
DIG :Duodenal ulcer	1 (4.76%)	0 (0.00%)	1 (4.76%)
RES :Upper respiratory infection	1 (4.76%)	0 (0.00%)	1 (4.76%)
MAN :Peripheral edema	0 (0.00%)	0 (0.00%)	0 (0.00%)
DIG :Sore throat	0 (0.00%)	0 (0.00%)	0 (0.00%)
BODY:Surgery	0 (0.00%)	0 (0.00%)	0 (0.00%)
RES :Cough increased	0 (0.00%)	0 (0.00%)	0 (0.00%)
Subjects	7 (33.33%)	3 (14.29%)	4 (19.05%)
1stColItemSubjects	21 (100.00%)	21 (100.00%)	21 (100.00%)

The results for the 'Placebo' total column calculates the Subjects statistics as  $7/25=7(28.00\%)$ .

(Continuation from previous crosstab.)

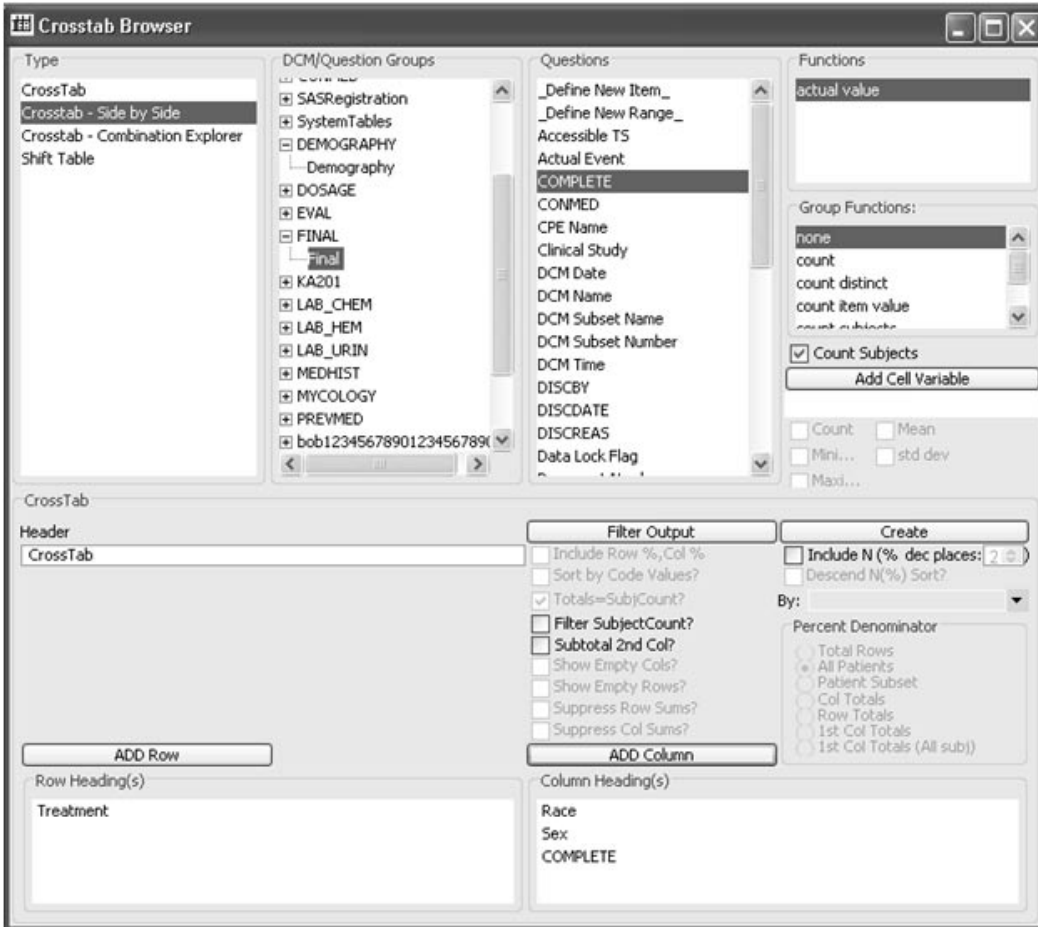
Placebo	Active				Subjects
	Total	Highly Probable	Possible	Not Related	
4 (16.00%)	3 (12.00%)	1 (4.00%)	0 (0.00%)	7 (3.57%)	
1 (4.00%)	0 (0.00%)	0 (0.00%)	1 (4.00%)	2 (1.02%)	
0 (0.00%)	0 (0.00%)	0 (0.00%)	0 (0.00%)	1 (0.51%)	
0 (0.00%)	0 (0.00%)	0 (0.00%)	0 (0.00%)	1 (0.51%)	
1 (4.00%)	0 (0.00%)	1 (4.00%)	0 (0.00%)	1 (0.51%)	
1 (4.00%)	0 (0.00%)	0 (0.00%)	1 (4.00%)	1 (0.51%)	
1 (4.00%)	0 (0.00%)	0 (0.00%)	1 (4.00%)	1 (0.51%)	
1 (4.00%)	0 (0.00%)	0 (0.00%)	1 (4.00%)	1 (0.51%)	
7 (28.00%)	3 (12.00%)	2 (8.00%)	3 (12.00%)	196 (100.00%)	
25 (100.00%)	25 (100.00%)	25 (100.00%)	25 (100.00%)	(Denom=1stColTot)	

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## Crosstab Side by Side Columns

The Crosstab Side by Side Columns allows you to display multiple crosstab columns in a side by side format against one row variable.

This crosstab type displays selected columns across (not nested) where each column (by selected row items) is retrieved separately without intermediate joins. Therefore, the statistics from each column are independent of each other.



Observe for the selected columns Race, Sex and Complete the individual category counts total 196.

	Race			Sex		COMPLETE		
Treatment	Black	Hispanic	White	Female	Male	No	Yes	
Active	16	4	77	19	78	21	76	
Placebo	9	8	82	16	83	25	74	
Subjects	25	12	159	35	161	46	150	196
								(All patients)

You may optionally apply the **Include N(%)** function for total patient population as the **Percent Denominator** and the default is 'All Patients'.

The screenshot shows the software interface for creating a cross-tabulation. On the left, the 'Header' is set to 'CrossTab' and the 'Row Heading(s)' is 'Treatment'. The 'Filter Output' panel has several options, with 'Include N(%)' checked. The 'Create' panel has 'Include N(%)' checked with 'dec places: 2', and 'All Patients' selected as the 'Percent Denominator'. Other options like 'Patient Subset', 'Col Totals', 'Row Totals', '1st Col Totals', and '1st Col Totals (All sub)' are unselected.

The **Include N(%)** function only uses the total patient population as the **Percent Denominator** based on 'All Patients or 'Patient Subset' where the default is 'All Patients'. (See section - Include N(%))

	Race			Sex		COMPLETE		
Treatment	Black	Hispanic	White	Female	Male	No	Yes	
Active	16 ( 8.16%)	4 ( 2.04%)	77 (39.29%)	19 ( 9.69%)	78 (39.80%)	21 (10.71%)	76 (38.78%)	
Placebo	9 ( 4.59%)	8 ( 4.08%)	82 (41.84%)	16 ( 8.16%)	83 (42.35%)	25 (12.76%)	74 (37.76%)	
Subjects	25 (12.76%)	12 ( 6.12%)	159 (81.12%)	35 (17.86%)	161 (82.14%)	46 (23.47%)	150 (76.53%)	196 (100.00%)
								(All patients)

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# Interactive CrossTab - Combination Explorer

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## View patient counts

The CrossTab - Combination Explorer is designed for *interactive* data exploration to evaluate subjects based on calculations which display all permutations of the selected data displaying the number of patients and percentages. The **Include N%** and the corresponding **Percent Denominator** selections are the only permitted percentage calculations.

Patient Selection Criteria or Filter Output may be applied to the CrossTab - Combination Explorer if desired.

*Note: The Combination Explorer is not typically saved as a CrossTab Object due to the interactive design.*

This function is particularly useful when analyzing relationships and trends between Adverse Events or Concomitant Medications within patients. To define the CrossTab – Combination Explorer:

1. Select Type for **CrossTab - Combination Explorer**.

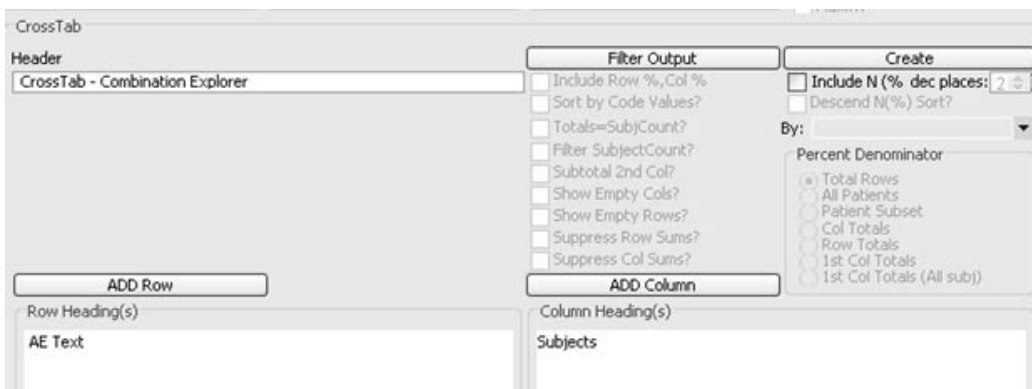
The Column is automatically set to ‘Subjects’ as required. Multiple rows and/or columns cannot be added.

2. Select a panel, an item and the appropriate function or use the default function.

3. Click **ADD Row**.

For example, add ‘AE Text’ as the Row item to be analyzed/explored. Only one row variable is allowed.

4. Click Create.



The CrossTab - Combination Explorer window is generated with a list of Adverse Events for the patients in the current population (or subset) with patient counts for each. The right most column **Subjects (Original)** preserves the original (initial) patient counts for each adverse event for reference during the next exploration phase.

The screenshot shows a software window titled "CrossTab - All Patients". It features a toolbar with icons for selection and analysis. Below the toolbar, there are two main sections: "Selected Rows" and "Selectable Rows".

The "Selected Rows" section contains a single row with the text "AE Text (SELECTED) Subjects".

Below the "Selected Rows" section, there are five buttons: "^ Add (AND)", "^ Add (OR)", "^ Add (NOT)", "Reset", and "Analyze Combinations".

The "Selectable Rows" section contains a table with three columns: "AE Text", "Subjects", and "Subjects(Original)". The table lists 20 adverse events with their corresponding subject counts. A vertical scrollbar is visible on the right side of the table.

AE Text	Subjects	Subjects(Original)
ANGIOPLASTY	1	1
BACK STRAIN	1	1
BLADDER INFECTION	3	3
BURNING ON APPLICATION	2	2
BURNING UPON APPLICATION	2	2
BURNING UPON APPLICATION (FISSURED AREAS	1	1
BURNING WITH APPLICATION OF DRUG	1	1
BURNING WITH APPLICATION OF STUDY DRUG	1	1
BURNING WITH APPLICATION OF STUDY MEDICI	1	1
CHEST CONGESTION	1	1
COLD	1	1
COLD SYMPTOMS	2	2
COLD SYMPTOMS/SINUS PAIN	1	1
COLONOSCOPY ((POLYPECTOMY))	1	1
COUGH	3	3
CRYOTHERAPY	1	1
DENTAL IMPLANT LOWER JAW	1	1
DENTAL SURGERY	1	1
DIZZINESS	1	1
DROWSINESS	1	1

- Select the first Value to add for exploration to the SELECT list.

For example, select 'Cold Symptoms' and click any of the Add buttons to add it to the list of Adverse Events of interest. The other spreadsheet for information (traditional spreadsheet) shows the Adverse Event counts by individual patient (column) to verify correctness of counts at each step.

After adding 'Cold Symptoms' to the SELECTED set, the lower spreadsheet's 'Subjects' column is updated to reflect the patient counts for those patients who have 'Cold Symptoms' and the counts of the other Adverse Events that they have.

You *must* select a between two to six values for exploration to the SELECT list before you click Analyze Combinations.

**Selected Rows**

AE Text (SELECTED)	Subjects
COLD SYMPTOMS	2

Buttons: ^ Add (AND) ^ Add (OR) ^ Add (NOT) Reset Analyze Combinations

**Selectable Rows**

AE Text	Subjects	Subjects(Original)
ANGIOPLASTY	0	1
BACK STRAIN	0	1
BLADDER INFECTION	0	3
BURNING ON APPLICATION	0	2
BURNING UPON APPLICATION	0	2
BURNING UPON APPLICATION (FISSURED AREAS	0	1
BURNING WITH APPLICATION OF DRUG	0	1
BURNING WITH APPLICATION OF STUDY DRUG	0	1
BURNING WITH APPLICATION OF STUDY MEDICI	0	1
CHEST CONGESTION	0	1
COLD	0	1
<b>COLD SYMPTOMS</b>	<b>2</b>	<b>2</b>
COLD SYMPTOMS/SINUS PAIN	0	1
COLONOSCOPY ((POLYPECTOMY))	0	1
COUGH	0	3
CRYOTHERAPY	0	1
DENTAL IMPLANT LOWER JAW	0	1
DENTAL SURGERY	0	1
DIZZINESS	1	1
DROWSINESS	1	1



6. Select the second value for exploration to the SELECT list.

For example, select 'Cough' in the value list then click on the 'Add (OR)' button to add it to the list of selected Adverse Events with the OR between them, i.e., we're interested in patients who had 'Cold Symptoms' OR 'Cough'.

The selected values update the lower spreadsheet counts under **Subjects** for the patients in that set ('Cold Symptoms' OR 'Cough') and which other Adverse Events that they had. See the updated counts for Dizziness and Drowsiness.

There are 2 patients who reported 'Cold Symptoms' OR there are 3 patients who reported 'Cough' for a total of 5 patients. Each of the 5 patients reported one OR both of the selected Adverse Events.

**Selected Rows**

AE Text (SELECTED)	Subjects
COLD SYMPTOMS	5
OR COUGH	5

Buttons: ^ Add (AND) ^ Add (OR) ^ Add (NOT) Reset Analyze Combinations

**Selectable Rows**

AE Text	Subjects	Subjects(Original)
ANGIOPLASTY	0	1
BACK STRAIN	0	1
BLADDER INFECTION	0	3
BURNING ON APPLICATION	0	2
BURNING UPON APPLICATION	0	2
BURNING UPON APPLICATION (FISSURED AREAS	0	1
BURNING WITH APPLICATION OF DRUG	0	1
BURNING WITH APPLICATION OF STUDY DRUG	0	1
BURNING WITH APPLICATION OF STUDY MEDICI	0	1
CHEST CONGESTION	0	1
COLD	0	1
COLD SYMPTOMS	2	2
COLD SYMPTOMS/SINUS PAIN	0	1
COLONOSCOPY ((POLYPECTOMY))	0	1
<b>COUGH</b>	<b>3</b>	<b>3</b>
CRYOTHERAPY	0	1
DENTAL IMPLANT LOWER JAW	0	1
DENTAL SURGERY	0	1
DIZZINESS	1	1
DROWSINESS	1	1

7. Select the third value for exploration to the SELECT list.

For example, select 'Headache' and click on 'Add (OR)' again to add 'Headache' to the mix where we are interested in any patients who had 'Cold Symptoms' OR 'Cough' OR 'Headache'.

The selected values update the lower spreadsheet counts under **Subjects** to reflect the patient counts for patients with any of these Adverse Events and others they have.

Now the results show 2 patients who reported 'Cold Symptoms' OR 3 patients who reported 'Cough' OR 8 patients who reported Headache for a total of 11 patients. Each of the 11 patients reported one OR more of the selected Adverse Events.

**Selected Rows**

AE Text (SELECTED)	Subjects
COLD SYMPTOMS	11
OR COUGH	11
OR HEADACHE	11

Buttons:

**Selectable Rows**

AE Text	Subjects	Subjects(Original)
COLD SYMPTOMS	2	2
COLD SYMPTOMS/SINUS PAIN	0	1
COLONOSCOPY ((POLYPECTOMY))	0	1
COUGH	3	3
CRYOTHERAPY	0	1
DENTAL IMPLANT LOWER JAW	0	1
DENTAL SURGERY	0	1
DIZZINESS	1	1
DROWSINESS	1	1
DUODENAL ULCER	0	1
ECCHYMOSIS ON CHIN	0	1
ELECTRODESICCATION & CURETTAGE R. MEDIAL	0	1
EXCISION OF BCC FROM BACK	0	1
FLARE OF ARTHRITIS	0	1
FOOT ODOR	1	1
<b>HEADACHE</b>	<b>8</b>	<b>8</b>
HEAT REACTION UPON APPLICATION OF MED	0	1
HIVE LIKE LESION LEFT UPPER ARM & L POST	0	1
INCREASED BURNING ON FEET	0	1
INCREASED ITCHING ON FEET	0	1

You can view the individual patients by opening the Data Browser and clicking on any numeric cell value. The Data Browser updates to the included patients.

When adding Adverse Events to the SELECTED list, they can be added using 'Add (AND)', 'Add (OR)', 'Add (NOT)' to determine combinations such as patients who had Headache, but not Cold Symptoms, etc. If you had clicked the 'Add (AND)' button the Boolean selection would be restrictive where the same patients had to report both Adverse Events.

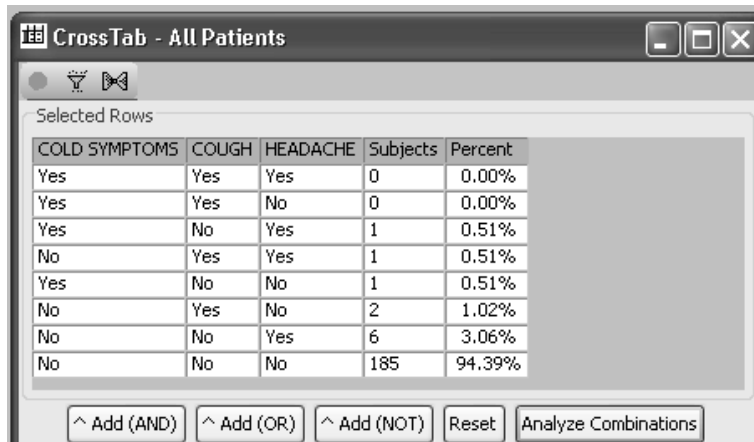
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### Analyze Combinations

Once you have added the selected values to the SELECT list, you can display all permutations of the selected values (Adverse Events) and the number of patients and percent in each.

The previously selected Boolean operators *do NOT* affect the results of Analyze Combinations. The spreadsheet generated shows all subject combinations for the selected values.

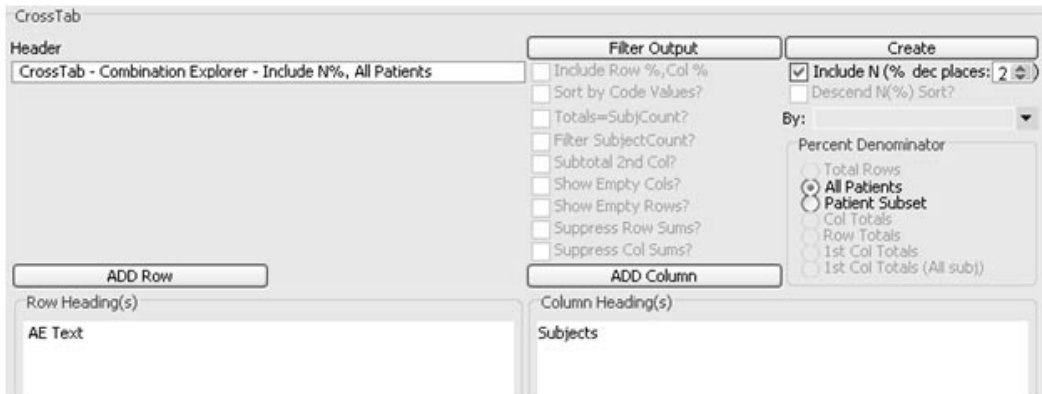
8. Click **Analyze Combinations**.
9. Click the printer icon to print the spreadsheet results in the active window.
10. Click **Reset** to clear selected values.



COLD SYMPTOMS	COUGH	HEADACHE	Subjects	Percent
Yes	Yes	Yes	0	0.00%
Yes	Yes	No	0	0.00%
Yes	No	Yes	1	0.51%
No	Yes	Yes	1	0.51%
Yes	No	No	1	0.51%
No	Yes	No	2	1.02%
No	No	Yes	6	3.06%
No	No	No	185	94.39%

*Include N% to Analyze Combinations*

You can apply Include N% to selected Adverse Events values to view subject percentages.



The percentages are applied to the **Subjects (Original)** column.

**Cross Tab - All Patients**

Selected Rows

AE Text (SELECTED)	Subjects
COLD SYMPTOMS	11
OR COUGH	11
OR HEADACHE	11

^ Add (AND)   ^ Add (OR)   ^ Add (NOT)   Reset   Analyze Combinations

Selectable Rows

AE Text	Subjects	Subjects(Original)
COUGH	3 ( 1.53%)	3 ( 1.53%)
CRYOTHERAPY	0 ( 0.00%)	1 ( 0.51%)
DENTAL IMPLANT LOWER JAW	0 ( 0.00%)	1 ( 0.51%)
DENTAL SURGERY	0 ( 0.00%)	1 ( 0.51%)
DIZZINESS	1 ( 0.51%)	1 ( 0.51%)
DROWSINESS	1 ( 0.51%)	1 ( 0.51%)
DUODENAL ULCER	0 ( 0.00%)	1 ( 0.51%)
ECCHYMOSIS ON CHIN	0 ( 0.00%)	1 ( 0.51%)
ELECTRODESICCATION & CURETTAGE R MEDIAL	0 ( 0.00%)	1 ( 0.51%)
EXCISION OF BCC FROM BACK	0 ( 0.00%)	1 ( 0.51%)
FLARE OF ARTHRITIS	0 ( 0.00%)	1 ( 0.51%)
FOOT ODOR	1 ( 0.51%)	1 ( 0.51%)
<b>HEADACHE</b>	<b>8 ( 4.08%)</b>	<b>8 ( 4.08%)</b>
HEAT REACTION UPON APPLICATION OF MED	0 ( 0.00%)	1 ( 0.51%)
HIVE LIKE LESION LEFT UPPER ARM & L POST	0 ( 0.00%)	1 ( 0.51%)
INCREASED BURNING ON FEET	0 ( 0.00%)	1 ( 0.51%)

Click **Analyze Combinations** to view percentages.

**CrossTab - All Patients**

Selected Rows

COLD SYMPTOMS	COUGH	HEADACHE	Subjects	Percent
Yes	Yes	Yes	0	0.00%
Yes	Yes	No	0	0.00%
Yes	No	Yes	1	0.51%
No	Yes	Yes	1	0.51%
Yes	No	No	1	0.51%
No	Yes	No	2	1.02%
No	No	Yes	6	3.06%
No	No	No	185	94.39%

Selectable Rows

AE Text	Subjects	Subjects(Original)
COLONOSCOPY ((POLYPECTOMY))	1 ( 0.51%)	1 ( 0.51%)
COUGH	3 ( 1.53%)	3 ( 1.53%)
CRYOTHERAPY	1 ( 0.51%)	1 ( 0.51%)
DENTAL IMPLANT LOWER JAW	1 ( 0.51%)	1 ( 0.51%)
DENTAL SURGERY	1 ( 0.51%)	1 ( 0.51%)
DIZZINESS	1 ( 0.51%)	1 ( 0.51%)
DROWSINESS	1 ( 0.51%)	1 ( 0.51%)
DUODENAL ULCER	1 ( 0.51%)	1 ( 0.51%)
ECCHYMOSIS ON CHIN	1 ( 0.51%)	1 ( 0.51%)
ELECTRODESICCATION & CURETTAGE R MEDIAL	1 ( 0.51%)	1 ( 0.51%)
EXCISION OF BCC FROM BACK	1 ( 0.51%)	1 ( 0.51%)
FLARE OF ARTHRITIS	1 ( 0.51%)	1 ( 0.51%)
FOOT ODOR	1 ( 0.51%)	1 ( 0.51%)
<b>HEADACHE</b>	<b>8 ( 4.08%)</b>	<b>8 ( 4.08%)</b>
HEAT REACTION UPON APPLICATION OF MED	1 ( 0.51%)	1 ( 0.51%)
HIVE LIKE LESION LEFT UPPER ARM & L POST	1 ( 0.51%)	1 ( 0.51%)
INCREASED BURNING ON FEET	1 ( 0.51%)	1 ( 0.51%)
INCREASED ITCHING ON FEET	1 ( 0.51%)	1 ( 0.51%)
INTESTINAL UPSET (DIARRHEA)	1 ( 0.51%)	1 ( 0.51%)
INTESTINAL UPSET (VOMITING)	1 ( 0.51%)	1 ( 0.51%)
INTRODUCE TO AIR PRESSURE	1 ( 0.51%)	1 ( 0.51%)

## Defining a Shift Table

### Item analyzed

The Shift Table is a patient count of any numeric multi-visit patient data, providing patient categorization by defined threshold values segmented over time. The panels and items available are limited to data that is multi-visit or multi-measure. You must use numeric data.

When the Shift Table is selected, not all panels listed may contain data suitable for Shift Table calculation. For example, Laboratory and Vital Signs data is meaningful as data values with normal ranges to reference.

The screenshot shows the 'Crosstab Browser' window with the following configuration:

- Type:** Shift Table (selected)
- DCM/Question Groups:** DOSAGE, SASRegistration, EVAL, KA201, LAB\_CHEM, LAB\_HEM, LAB\_LRIN, MYCOLOGY, Pivot
- Functions:** Count Subjects (checked), Add Cell Variable
- Count/Summary Options:** Count, Mean, Mini..., std dev, Maxi...
- Heading:** Shift Table
- Buttons:** Assign 'Baseline' (baseline value), Assign 'Endpoint' (endpoint value), Filter Output, Create
- Item Analyzed:** [Empty field]
- Summary Statistics:** Count, Min, Max, Mean, std dev
- Percent Denominator:** Total Rows, All Patients, Patient Subset
- Text:** A 3 by 3 Shift table will be produced, presenting counts in each of the cells based on where each patient started (Baseline) and ended (Endpoint...)
- Cut points based on:** Low/High entered below (selected), Companion Low/High variable names
- Buttons:** ADD Low Variable, ADD High Variable
- Fields:** Low: [Empty field], High: [Empty field]
- Footnote:** Default Low and High cut points based on mean +/- (2 x std.dev)

---

## Create Shift Table

Define the contents of a Shift Table by applying the same method that you used to build all other browser constructs:

1. Select a panel.
2. Select the item to be analyzed.
3. Click the **ADD Item** button and the item is added into the Item Analyzed box. Basic descriptive statistics are displayed and default cutoff values are assigned.
4. Optionally Assign Baseline and Endpoint values from the Functions list box. The system default for the Shift Table is the 'Baseline value' and 'Endpoint value' definitions entered in ReviewAdmin.
5. Click **Create**. Review opens the Shift Table results.

The screenshot shows the 'Shift Table' configuration window. At the top, there is a 'Heading' field containing 'Glucose Shift Table'. To the right are 'Filter Output' and 'Create' buttons. Below the heading are two rows of buttons: 'Assign 'Baseline'' with a 'baseline value' field, and 'Assign 'Endpoint'' with an 'endpoint value' field. In the center, there is an 'Add Item' button. Below it, a table displays statistics for 'Glucose':

Item Analyzed	Count	Min:	Max:	Mean	std dev
Glucose	362	44	460	104.10	42.02

Below the table, a text box states: 'A 3 by 3 Shift table will be produced, presenting counts in each of the cells based on where each patient started (Baseline) and ended (Endpoint)...'. Underneath, there are two radio button options for 'Cut points based on:'. The first is 'Low/High entered below:' (selected), with an 'ADD Low Variable' button and a 'Low: 20.06' field. The second is 'Companion Low/High variable names', with an 'ADD High Variable' button and a 'High: 188.15' field. At the bottom, a note reads: 'Default Low and High cut points based on mean + (2 x std.dev)'.

A 3 by 3 Shift table will be produced, representing counts in each of the cells based on where each patient started (Baseline) and ended (Endpoint) for the selected item. The Cut Points are based on either Low/High entered range or optionally select Companion Low/High Variable names available in vertical lab tables.

The CrossTab Browser defaults the table type as the heading, however, you can edit the default Shift Table heading in the results window. The heading displays on the Shift Table output, as well as on any printouts.

Read the Baseline values as rows versus Endpoint values as columns. For example, the lab Glucose had 1 patient normal at baseline and high at endpoint of the study.

Baseline v End->	LOW	NORMAL	HIGH	Row Sum
LOW	0	0	0	0.00
NORMAL	0	155	1	156.00
HIGH	0	1	3	4.00
Col Sum	0.00	156.00	4.00	160.00

---

### Range values

Use the default Low/High range values. The Shift Table type presents basic statistics and default boundary values of normal range for the selected item. The normal range by default is +/- two times the standard deviation.

Or, you can edit the default Low/High range values by typing in the values you want to apply.

Shift Table

Heading: Glucose Shift Table

Assign 'Baseline' baseline value

Assign 'Endpoint' endpoint value

Item Analyzed: Glucose

Count: 362

Min: 44

Max: 460

Mean: 104.10

std dev: 42.02

A 3 by 3 Shift table will be produced, presenting counts in each of the cells based on where each patient started (Baseline) and ended (Endpoint...)

Cut points based on:  Low/High entered below:  Companion Low/High variable names

ADD Low Variable

Low: 70

ADD High Variable

High: 110

Default Low and High cut points based on mean +/- (2 x std. dev)



Glucose Shift Table (70:110)				
Baseline v End->	LOW	NORMAL	HIGH	Row Sum
LOW	0	1	0	1.00
NORMAL	2	105	19	126.00
HIGH	1	17	15	33.00
Col Sum	3.00	123.00	34.00	160.00

Use the **Companion Low/High variable names** to select the reference laboratory normal ranges for the item analyzed.

*Note: Define New Ranges is not applicable for use as the Companion Low/High variable names. You must use the reference laboratory ranges.*

---

### *Assign Baseline and Endpoint*

The system default for the Shift Table is the 'Baseline value' and 'Endpoint value' definitions entered in ReviewAdmin. Instead you can use Assign Baseline" or "Assign Endpoint" buttons to pick user defined 'New Event' for either of these time points. The user may define New Event functions. Select the event function from the Functions list box and click either Assign Baseline or Assign Endpoint to replace the system default. The resulting Shift Table uses the New Event descriptions as labels instead of the usual "Baseline v Endpoint ->" at the top of the shift table. (See *Chapter 12: Advanced Topics: New Events function*)

---

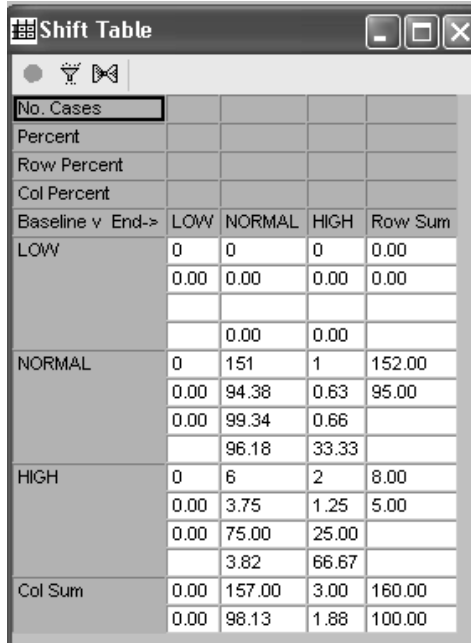
### *Apply Filter Output*

The output filter looks and operates similar to the patient selection criteria window. You select the panel item and value or range value to create a row filtering criteria. The selection of the values or range values are supported by Display Stats and Display Values. (See *Chapter 6: Report Browser: Output Filter*)

---

## Include Row% and Col%

You can optionally create a Shift Table with row and column percentages displayed by checking **Include Row%**, **Col%**. Each row and column will be summarized by the following data:



The screenshot shows a window titled "Shift Table" with a table of data. The table has columns for "Baseline v End->" (LOW, NORMAL, HIGH) and "Row Sum". The rows are grouped by "Baseline v End->" (LOW, NORMAL, HIGH) and "Col Sum". The table includes row and column percentages.

Baseline v End->	LOW	NORMAL	HIGH	Row Sum
LOW	0	0	0	0.00
	0.00	0.00	0.00	0.00
		0.00	0.00	
NORMAL	0	151	1	152.00
	0.00	94.38	0.63	95.00
	0.00	99.34	0.66	
		96.18	33.33	
HIGH	0	6	2	8.00
	0.00	3.75	1.25	5.00
	0.00	75.00	25.00	
		3.82	66.67	
Col Sum	0.00	157.00	3.00	160.00
	0.00	98.13	1.88	100.00


---

## Multiple CrossTab/Shift Tables

---

### Multiple CrossTabs

You can have multiple CrossTabs active at the same time. After you define and create one CrossTab:

1. Click , or from the **File** menu, select **New** to refresh your screen. While creating a new CrossTab you can add to the specifications of the existing CrossTab.
2. Click **Create** to execute the new CrossTab. There will be a CrossTab Browser output window for each CrossTab created. There is no limitation within Review as to how many CrossTabs you create and leave open. Each open CrossTab output window is fully interactive

with all patient level browser displays, to identify and characterize the underlying patient data. You can optionally create a CrossTab or Shift Table with row and column percentages displayed.

*Note: If you enter a patient selection criteria, all currently open Crosstab output windows will refresh to display the new results with the patient selection criteria applied.*

---

## Snapshot output

---

### *Multiple population mode*

Review has an optional multiple-population mode available in the CrossTab Browser. The Snapshot output allows you to change the patient selection criteria and view the different output within the CrossTab browser at the same time. When the results are executed and displayed from the CrossTab browser output window, two icons are displayed for “Snapshot Output” and “Who?”. (See *Chapter 6 Report Browser: Snapshot Output*)


---

## Printing and exporting CrossTab/Shift Tables

---

### *Print Preview*

To display a print preview of your output:

1. Click on the generated output window to make it the active window.
2. Click  or from the **File** menu, select **Print Preview**.

Review displays a screen shot of the selected active screen. The Study Name is automatically added to the CrossTab header.


3. Click either **Print** or **Close**.

The Print Preview function is applicable to all browsers with output results.

---

### *Print the CrossTab/Shift Tables*

To print the CrossTab/Shift Table:

1. Click , or from the **File** menu, select **Print**. Review displays the standard print dialog box.
2. Click **OK** on the printer. The CrossTab/Shift Table prints on the specified printer.

The default printed CrossTab/Shift Table contains the CrossTab/Shift Table heading as you entered it as a header, the study name, the current patient selection criteria, and a page number as the footer.

---

### *Page Setup*

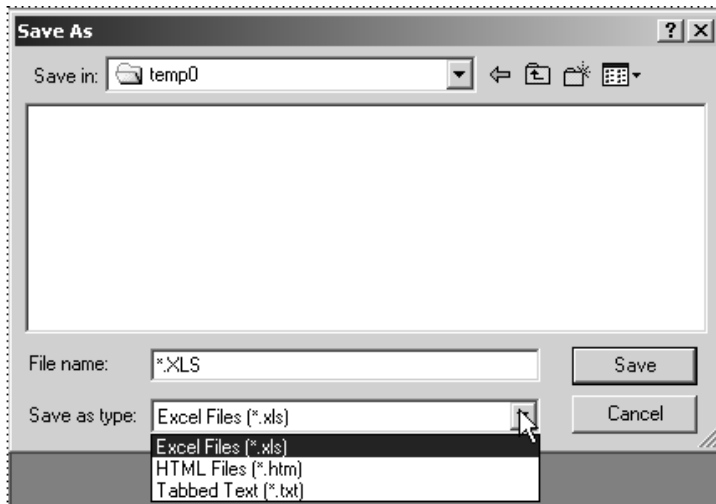
Page setup can be accessed by selecting page setup from the **File** menu. Review displays a standard spreadsheet page setup dialog box, allowing you to make changes.

Export of CrossTab spreadsheet includes Excel 4, 5 and 7, tab delimited files, HTML format and PDF files.

To export your tables:

1. From the **File** menu, select **Export**.

Review displays the Export **Save As** window.



2. Enter the storage location, and Click **OK**.

Your tables are exported to the currently selected disk directory. (See *Chapter 12: Advanced Topics: Shared Object Storage- Location.*)

## Interactive patient-level displays

### *Crosstab cell select*

You can identify patients within a crosstab with the Data Browser while viewing your crosstab results. Open the Data Browser and click on any cell count within the crosstab. The Data Browser updates to identify those patients selected in the crosstab cell.

### *Crosstab multiple cell select*

Selecting multiple cells within the crosstab to identify those patients works similar to selecting a single crosstab cell. Open the Data Browser then hold down the CTRL key and click on multiple cells within the crosstab. The Data Browser result adds the patients in the crosstab cells.

The screenshot displays two windows from SAS. The top window, titled "CrossTab - All Patients", shows a crosstab table with the following data:

	Female			Male			Row Sum
Treatment	Black	Hispanic	White	Black	Hispanic	White	
Active	4		15	12	4	62	97.00
Placebo	2	1	13	7	7	69	99.00
Col Sum	6.00	1.00	28.00	19.00	11.00	131.00	196.00

The bottom window, titled "Data Browser - 16 cases selected", shows a list of patient records with columns for Study, PT, INV, and SEX. The records are as follows:

Study	PT	INV	SEX
KA201\$CURRENT	4103	018	Female
KA201\$CURRENT	4208	018	Female
KA201\$CURRENT	2203	063	Female
KA201\$CURRENT	6113	064	Female
KA201\$CURRENT	2205	063	Male
KA201\$CURRENT	1117	066	Male
KA201\$CURRENT	4104	018	Male
KA201\$CURRENT	7202	065	Male
KA201\$CURRENT	1122	066	Male
KA201\$CURRENT	2112	063	Male
KA201\$CURRENT	6106	064	Male
KA201\$CURRENT	6125	064	Male
KA201\$CURRENT	4108	018	Male

The Data Browser window also includes a "Custom DCM/Question Groups" section with a list of groups: AE Cases (AERS), AE Events (AERS), Adverse Events, Concomitant Medication, SASRegistration, DISCREPANCY\_ENTRIES, and ImportedSQL.

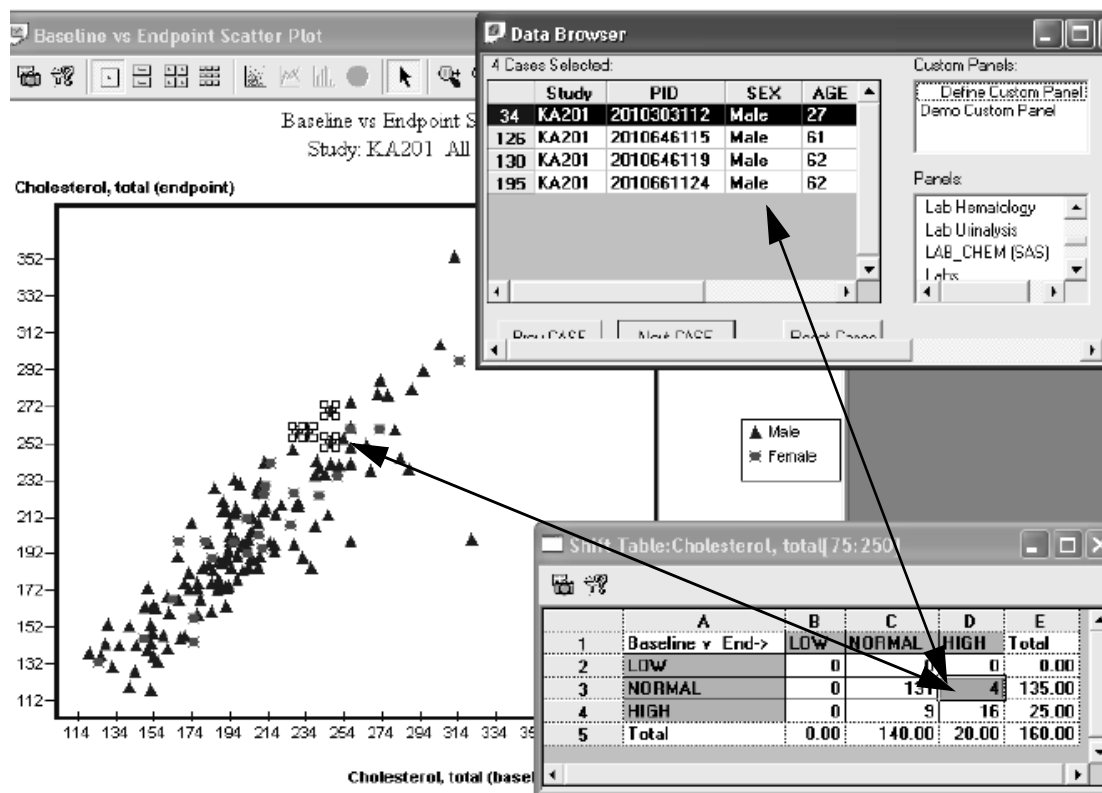
## Detail data patient listings and graphs

The patient counts are fully interactive with all patient-level displays of data. Data Browser and Detail Data Listing reports update to identify and describe only the patients underlying the patient counts clicked on.

If you have created a Detail Patient Listing report, Scatter Plot graph, or have the Data Browser open, you can click on any table values in one of the CrossTab/Shift Table windows to view a patient listing of the selected table value in all open patient-level displays of data.

Scatter plot graphs update to highlight only the patients underlying the patient count selected in the Shift Table, against the patient population subset by the current patient selection criteria.

*Note: Use categorical counts for low, normal and high. Do not use total counts.*



---

## Object storage

For detailed instructions on how to save, retrieve, schedule output and remove object specifications (reports, graphs, crosstabs, etc.). (See *Chapter 11: Saving Objects, plus Alerts Browser*)

If you save a CrossTab specification with a patient selection criteria and/or the output filter on, they are saved with the CrossTab or Shift Table output specification. (See *Chapter 11: Saving Objects, plus Alerts Browser*)

*Note: You cannot schedule a saved Shift Table specification, however, you can schedule a saved CrossTab specification.*

---

## Exploring data

---

### *Changing the patient selection criteria*

After you define the specifications of your CrossTab\Shift Table, and create it by clicking **Create Cross Tab**, you can use the CrossTab\Shift Table(s) that are currently displayed as data exploration views:

1. Change the patient selection criteria, redefining it by adding additional criteria expressions, or removing existing criteria expressions.
2. Clicking **Update Browsers** in the Patient Selection Criteria window to update all active browsers according to the new Criteria.

CrossTabs or other browser objects that are opened will be updated according to your new patient selection criteria.



---

## CrossTab output filter

Row filtering is carried out by the Output Filter Criteria window. The output filter facilitates specification of observations and visits, from multi-visit data items, to include in your focused presentations.

After you define the specifications of your CrossTab, you can use the output filter as a data exploration tool by row filtering data inclusion, then comparing filtered and unfiltered results. Open filtered and non-filtered Scatter Plot graphs can be very informative when Review's complementary browsers, such as the CrossTab browser, are utilized in the multiple patient-mode to identify and characterize subsets of patients:

1. Click **Filter Output**, and create a new filter by adding or removing filter criteria expressions.
2. Click **Save Filter** in the CrossTab output filter window to apply it against the next created CrossTab. The **Filter Output** button in the CrossTab Browser window toggles to **Filter is ON**.

*Note: If you save the CrossTab specification with an output filter on, the same filter will be applied when the CrossTab is recreated.*

---

## Closing the CrossTab Browser

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### Closing a CrossTab Window

If you are finished reviewing the data in a CrossTab or Shift Table, double-click the window's close box.

---

### Closing the CrossTab Browser

If you are finished with the CrossTab Browser and do not want to define any other constructs, double-click the close box of the CrossTab Browser window. Review closes all CrossTab Browser windows currently opened.



# 9 *Generating Statistics*

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# SAS Proc types

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## *Selection set*

In JReview, you can select a previously saved Patient Subset or define your own selection criteria by using the Statistics Browser (SAS Proc Browser). After launching the saved patient subset or building your own patient selection criteria, you can explore stored statistical reports of items for each of the patients who meet the selection criteria. These stored statistical report objects were created in the SAS Proc Browser. *See below the IReview SAS Proc options. A limited list of options are available for creating in the JReview SAS PROC Browser as noted \*.*

---

## *Selecting a SAS Proc*

The following types of **SAS Procs** are available in **IReview**:

- **Create SAS View\*** - generates a SAS view of the items selected.
- **Create SAS DataSet\*** - generates a SAS dataset of the items selected for the patient population currently selected.
- **FREQ\*** - generates a frequency distribution matrix of the items specified.
- **FREQ\*** with Statistics - generates a frequency distribution matrix with additional statistics 'Options'.
- **GLM** - supports many different analyses including regression, ANOVA, covariance, multivariate and partial correlation are available in 'Options'.
- **LOGISTIC** - supports linear logistic regression analyses for subsets.
- **NPAR1WAY** - performs analysis of variance on ranks.
- **REG** - supports general-purpose linear regression models by least-squares. The various model-selection methods are available in 'Options'.
- **TTEST\*** - performs a two sample t-test for testing the hypothesis.
- **LIFEREG** - is a parametric regression procedure for modeling the distribution of survival or failure time data.
- **LIFETEST\*** - is a nonparametric procedure for estimating survival.
- **MEANS\*** - generates a report of basic statistics for each of the items for the population currently selected.
- **TABULATE\*** - generates a cross-tabulation of the items for the population currently selected.

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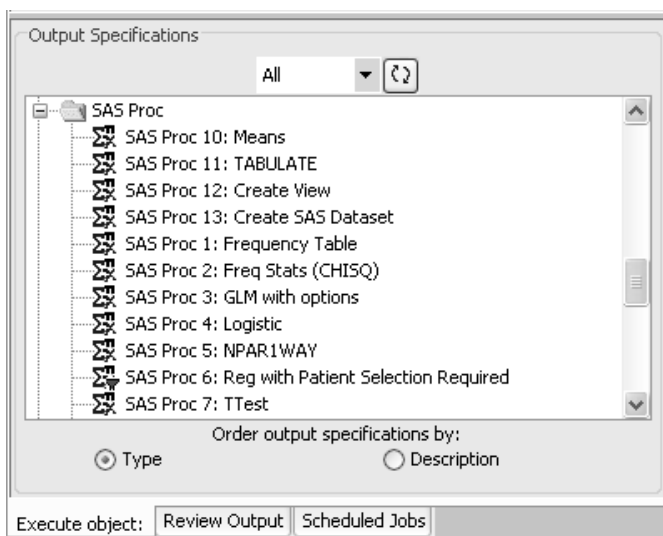
## Execute a SAS Proc specification

---

### *Quick execute*

Both IReview and JReview displays a list of categorical folders for stored patient subsets and output specifications at the selected storage location. Simply select one of the storage locations to display it's specific folders and contents.


Icons are displayed along with the stored object to identify the source as report, graph, registered SAS program, etc. When a patient selection criteria is saved with the stored object; the filter icon displays with the specific browser icon. JReview aids users to quickly locate and launch these stored objects.



---

### *Retrieve a saved output specification*

To retrieve a saved output specification:

1. Double click to open a folder in Output Specifications.
2. The SAS Proc icon , displays next to the SAS Proc specification description.

Double click on the object to launch in a single step. The stored output specification will be launched.

---

## SAS Proc results display

---

### *SAS Proc output*

When you select the SAS Proc specification which contains the information you want, JReview sends your request to be processed by SAS on your server computer, and displays the results in View Output window. The data in your report contains only data from those patients who meet your current patient selection criteria and/or SAS Proc output filter.

Obs	Pat ID	Treatment	Visit No.	Edema	Erythema	Exu
1	2010184101	Placebo	1	0	2	
2	2010184101	Placebo	2	0	1	
3	2010184101	Placebo	3	0	1	
4	2010184101	Placebo	4	0	1	
5	2010184101	Placebo	5	0	1	
6	2010184101	Placebo	6	0	1	
7	2010184102	Placebo	1	0	2	
8	2010184102	Placebo	2	0	2	
9	2010184102	Placebo	3	0	1	
10	2010184102	Placebo	4	0	1	

---

### *Displaying the SAS output, source, or log*


Notice the three buttons at the bottom of the Output display window. By default, the SAS output has been displayed; however, if you want to review the SAS log click **View SAS Log**. If you want to review the SAS source used to create the SAS output click **View SAS Source**. To review the SAS output again, after reviewing the SAS log or SAS source click **View Output**.

If multiple SAS Proc results are active at the same time, each functions independently. That is, you can review the source, log or output of each independently by clicking the appropriate results button in the respective windows.

---

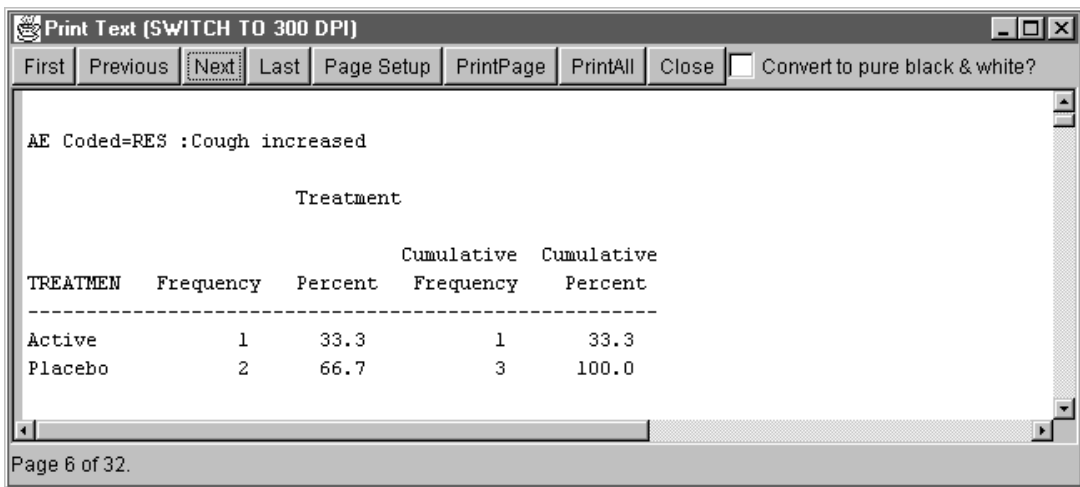
### Print copy of output

The Print function is applicable to all browsers with output results. To get a printed copy of your output:

1. Click on the generated output window to make it the active window.
2. Click  , or from the JReview **File** menu, select **Print**.

**Caution:** Do not select the Internet Browser's FILE menu Print option. This will cause a system error.

JReview displays a screen shot of the selected active screen.



3. Click either **PrintPage**, **PrintAll** or **Close**. The PrintPage option will print only the first page of your output. The PrintAll option will print the entire output. The result prints on the currently selected printer.

The SAS results (output, source, or log) prints on the currently selected printer.

*Note:* Use the **Convert to pure black & white?** option is only applicable to graphs where multiple colors are displayed. If your printer is non-color click this feature for better black and white print resolution of graphs.

(See Chapter 6: Report Browser for Exporting Results)




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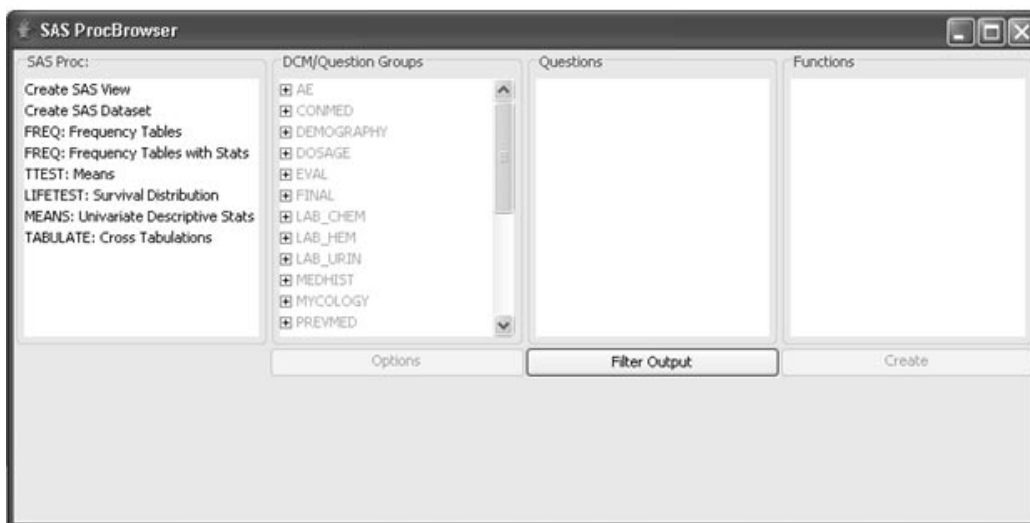
## Defining a SAS View and Dataset

---

### *Opening the SAS Proc Browser*

Full or restricted access to the SAS Proc Browser is enabled/disabled based on the SAS user-level setting made by the administrator. By default, access to all SAS Procs is enabled.

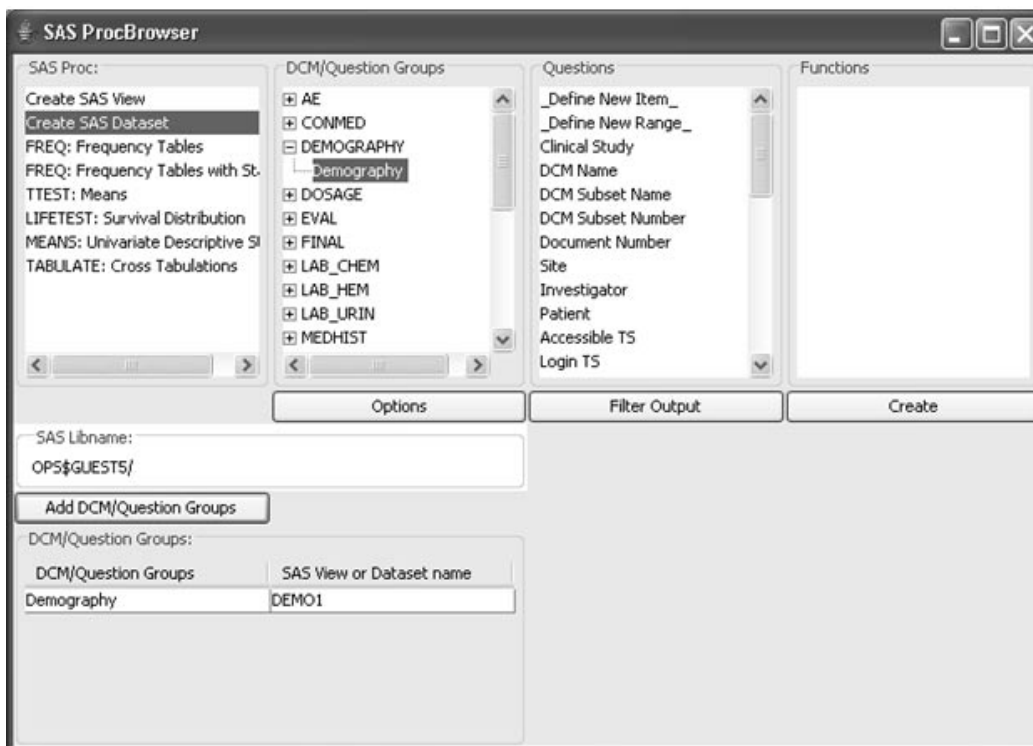
Click , or from the **Browse** menu, select **SAS Procs**. Review displays a new window where you can specify the panels and items to be included for the execution of SAS procedures.



Define the specifications of the SAS View or Dataset by applying the same method that you used to build the patient selection criteria:

1. Select **Create SAS View** or **Create SAS Dataset**.
2. Select a panel.
3. Select each item of interest.
4. When using the **Create SAS View**, and **Create SAS Dataset** you may use the **Add Questions** to select and add single items. Or, click on the **SHIFT** key to select a particular panel for **Add DCM/Question Groups** to default all items for the selected panel. This method of selecting individual items, or all items from multiple panels will create a single SAS View or Dataset.

When selecting individual items from one or more datasets where you have not used the Shift, or CTRL key is referred to as 'Single Dataset mode'. Essentially you can pick any items from any panels to be combined into a single dataset.



5. You can create multiple SAS Views or Datasets by selecting multiple panels in the following ways:

For contiguous panels (panels listed next to each other):

- a. Click the first panel.
- b. Hold the **shift** key and mouse click and drag the cursor over the next panel(s).

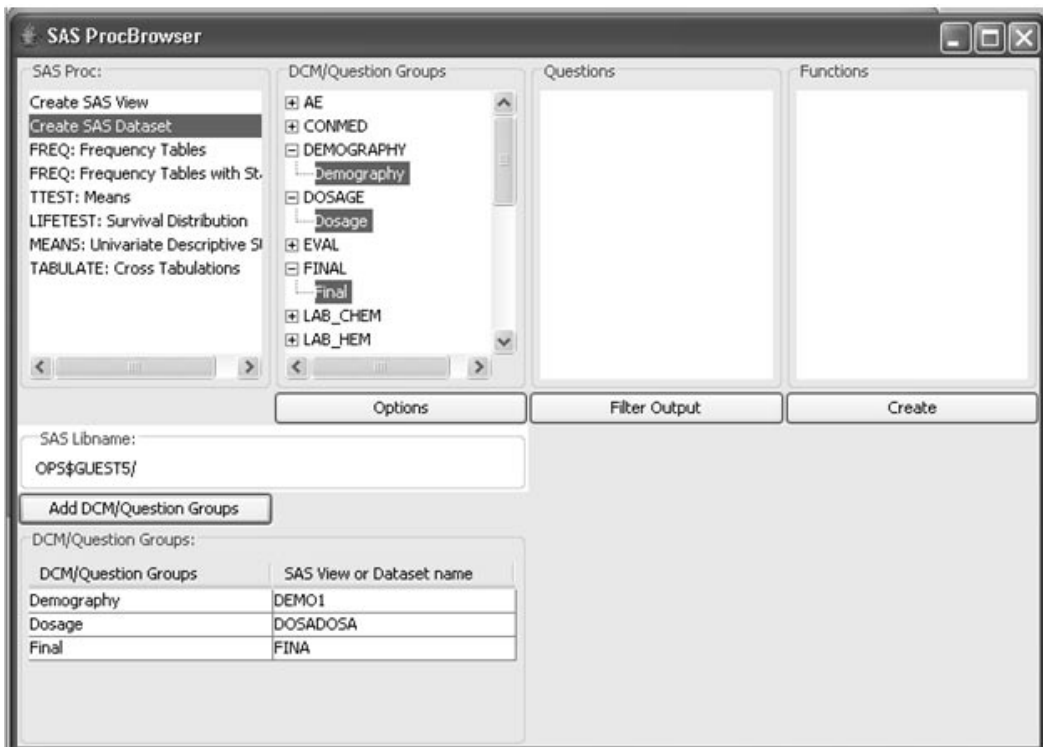
For non-contiguous panels (panels not listed next to each other):

- a. Select the panels you want while holding down the **CTRL** key.
- b. Click each panel you want to select.

When you use the Shift or CTRL key, you enter into Multi-Dataset mode where you can pick one, or more panels. In that case, it will create one dataset per selected panel, where all items for each selected dataset will be included.

Each panel that was selected is assigned an individual SAS View or Dataset name with all items included.

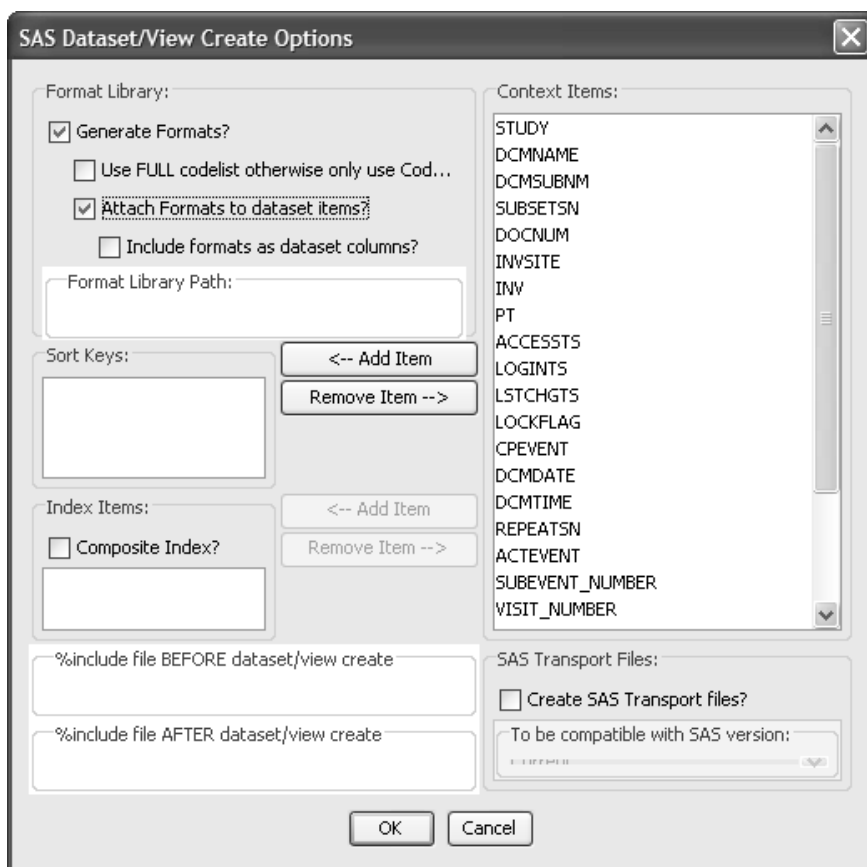
*Note: If multiple panels are selected, and item names are repeated, Review automatically forces unique names to be used in the creation of the SAS View or the SAS Dataset.*



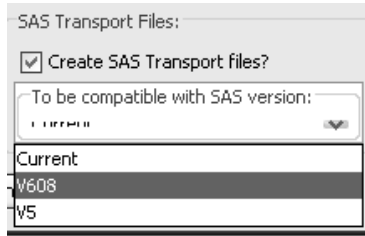
The SAS Dataset/View Create Options window allows you to specify format library options such as generate formats, use FULL codelist, attach formats to dataset items and include formats as dataset columns. In addition, you can define dataset sorting, index items and enter %include files to be added before and after the dataset or view is created. When you create a SAS Dataset all the settings are enabled including Index Items and the option to create SAS Transport files and PDF files.

You must select 'Generate Formats?' in order to 'Use FULL codelist' or to 'Attach Formats'. Likewise, in order to 'Include formats as dataset columns', you must first select the 'Attach Formats' in order to create those columns.

6. Click **Options**. The SAS Dataset/View Create window opens.
7. Enter your options.
8. Create SAS Transport Files?



You must click Create SAS Transport Files in order to select the type of transport file.



The SAS Views you create are dynamic, i.e., whenever accessed by SAS return the current Oracle data. The SAS Dataset created contains the selected items of the current patient population.

This feature allows you to take snapshots of the data while the study is ongoing. Simply select panels and items to add to the dataset, and export if desired. (See Chapter 12 for information about the pseudo-items ‘\_Define New Item\_’ and ‘\_Define New Range\_’ on the pseudo-function, ‘\_New Event Function\_’.)

9. Click **OK**.

10. Click **Create to generate SAS Output**.

---

### V5 (FDA Guidelines) option

When you create SAS Transport Files as V5 (FDA Guidelines) this option is the only one which requires format settings. You must generate format catalogs and attach the formats to the variables in the datasets. It is not mandatory to ‘Include formats as dataset columns’.

*Note: When you click the V5 option the two required options are selected for you and you cannot change it.*



The SAS System

11:56 Wednesd

The CONTENTS Procedure

Data Set Name:	SLIE.MEDHIST	Observations:	1070
Member Type:	DATA	Variables:	25
Engine:	V8	Indexes:	0
Created:	11:56 Wednesday, January 14, 2004	Observation Length:	192
Last Modified:	11:56 Wednesday, January 14, 2004	Deleted Observations:	0
Protection:		Compressed:	NO
Data Set Type:		Sorted:	NO
Label:			

-----Engine/Host Dependent Information-----

Data Set Page Size:	16384
Number of Data Set Pages:	13
First Data Page:	1
Max Obs per Page:	85
Obs in First Data Page:	64
Number of Data Set Repairs:	0
File Name:	/var/home/ireview/v60/I014013/medhist.sas7bdat
Release Created:	8 0202M0
Host Created:	HP-UX
Inode Number:	5648
Access Permission:	rw-rw-rw-
Owner Name:	ireview
File Size (bytes):	221184

-----Alphabetic List of Variables and Attributes-----

View Output View SAS Log View SAS Source **Sub PDF** Save Output? Access to output  Private  UserGro

## Edit panels


When you select the V5 (FDA Guidelines) option and create the SAS Dataset/View, you can edit the panels by clicking the **eSub PDF** button. The Electronic Submission PDF window displays as a panels spreadsheet. The primary function of the panels spreadsheet is to display format details.

1. Click **Edit Panel(s)** to convert the panels spreadsheet into edit mode. The button status changes to save Panel(s).
2. Select a row variable to edit specific fields in the items spreadsheet.
3. Click **Save Panels**.
4. Click **Save PDF**. Print Preview and Print buttons can be selected.

Electronic Submission PDF

Datasets for Study KA201

	Dataset	Description of dataset	Location	Structure	Purpose	Keys
1	MEDHIST	Medical History	crt/datasets/KA201/MEDHIST.xpt	1 per patient	CRT	PID
2	DEMOGRAP	Demography	crt/datasets/KA201/DEMOGRAP.xpt	1 per patient	CRT	PID
3	FINAL	Final	crt/datasets/KA201/FINAL.xpt	1 per patient	CRT	PID

 Edit Panel(s)

Study KA201\_MEDHIST.xpt,Medical History,1 per patient,CRT

	Variable	Label	Type	Codes	Origin	Role	Comments
1	PID	Pat ID	Char(11)		Key		
2	VISIT	Visit No.	Num				
3	VISITDT	Visit Date	Date				
4	VISITLBL	Visit Label	Char(10)				
5	PROTOCOL	Protocol	Char(3)				
6	INVEST	Investigator	Char(3)				
7	PATNO	Pat. No.	Char(4)				
8	DRUGSENS	Drug Sensitivity	Num				
9	ALLERGY	Allergy	Num				
10	EENT	Eyes, Ears, Nose, Throat Dis.	Num				
11	THYROID	Thyroid Disease	Num				
12	DIABETES	Diabetes	Num				
13	CARDIAC	Cardiovascular Disease	Num				
14	HYPERTEN	Hypertension	Num				
15	EPILEPSY	Epilepsy	Num				
16	RENAL	Renal-Hepatic Disease	Num				
17	PULMONRY	Pulmonary Disease	Num				

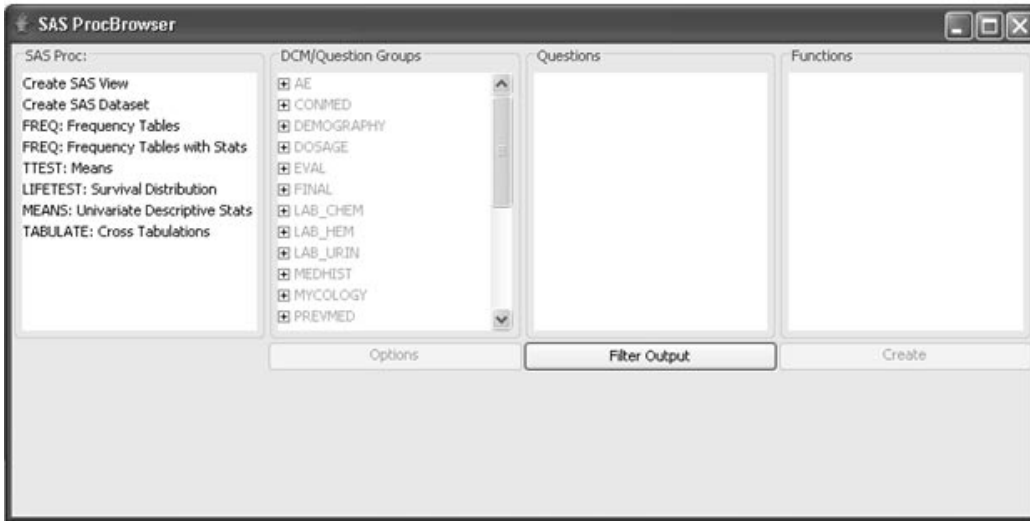
---

## Defining a SAS Proc Specification

---

### *Define SAS Proc specification*

Define the specifications of the SAS Proc run by applying the same method that you used to build the patient selection criteria.



1. Select a SAS Proc.
2. Select a panel.
3. Select each item of interest and an appropriate function, or use the default function.
4. Select a BY Variable(s) to categorize the data if applicable.
5. Click Create.



---

### *Adding items to be analyzed*

Select the individual item(s) to be analyzed, and click **ADD Item** to add the item to the SAS Proc specification.

The following SAS Procs share the same display window for the selections **ADD By Var** and **ADD Item**.

- **FREQ**
- **MEANS**
- **TABULATE**
- **FREQ with Statistics**

---

### *Adding BY variables*

You can further process the data with the use of **BY** categorical variables. Click **ADD By Var** to add the selected Item to the list of **By Variables** for the SAS Proc run.

A **BY** variable is a variable by which the data sets are ordered according to the **BY** statement variable. Statistical observations on **BY** variables are carried out on ordered, grouped, or indexed values of one or more variables.

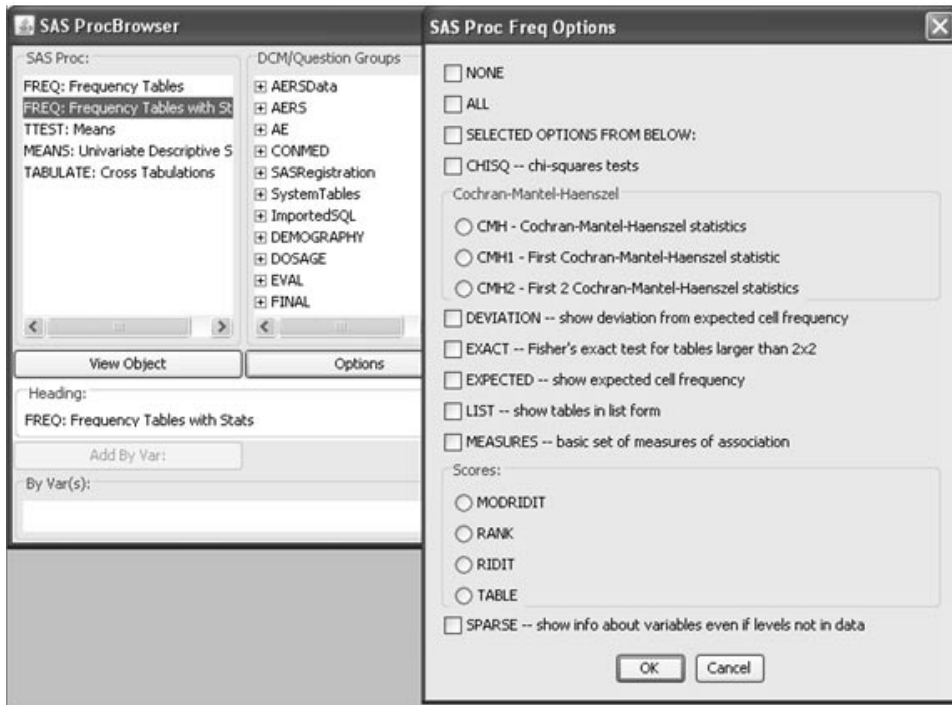
---

### *Statistics options*

Some of the more complex SAS Procs have additional options available to further analyze the data. The statistic options are specific to the SAS Proc selected. You will see the **OPTIONS** button enabled for those specific SAS Procs; otherwise, the **OPTIONS** button is not highlighted. Click **Options** if available.

The **Frequency tables with Stats** has an **Options** button to further analyze the data with additional statistical testing as follows:

1. Click **Frequency tables with Stats** as the SAS Proc type. The **Options** button is enabled when this SAS Proc type is selected.
2. Select a panel.
3. Select each item of interest.
4. Click **Options** to display the SAS Proc Freq Options window.
5. Select the statistical test(s) for analysis and click **OK**.




---

### Output filter

(See *Chapter 6 Report Browser: Output Filter.*)

---

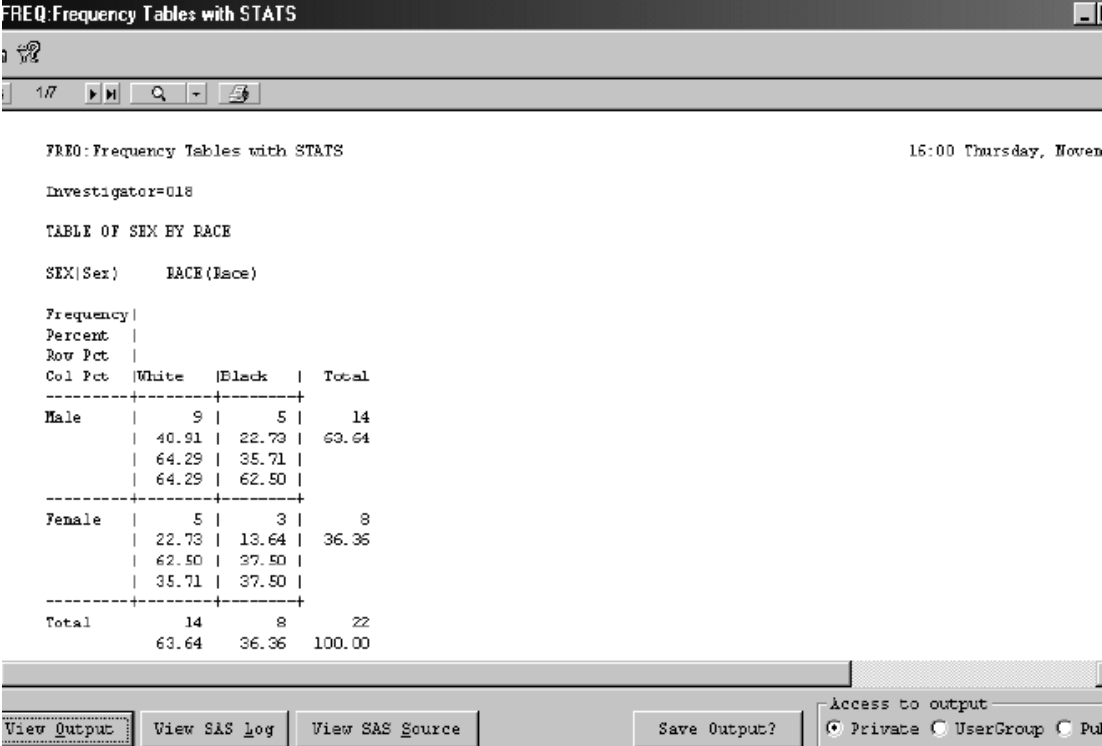
### Defining a SAS Proc title

Enter a title for the SAS Proc that will be displayed as the caption of the resulting SAS Proc output window, as well as on any printouts. Enter the title text in the “Heading” field.

---

## Creating the SAS Proc output

When your SAS Proc specification contains the information you want, click **Create**. Review sends your request to be processed by SAS on your server computer, and displays the results in View Output window. The data in your report contains only data from those patients who meet your current patient selection criteria and/or SAS Proc output filter:



The screenshot shows the SAS View Output window titled "FREQ: Frequency Tables with STATS". The window displays the following text:



```
FREQ: Frequency Tables with STATS                                     15:00 Thursday, Novem
Investigator=018
TABLE OF SEX BY RACE
SEX(Sex)      RACE(Race)
Frequency |
Percent  |
Row Pct  |
Col Pct  |White |Black | Total
-----+-----+-----+-----
Male      |    9 |    5 |   14
          | 40.91| 22.73| 63.64
          | 64.29| 35.71|
          | 64.29| 62.50|
-----+-----+-----+-----
Female    |    5 |    3 |    8
          | 22.73| 13.64| 36.36
          | 62.50| 37.50|
          | 35.71| 37.50|
-----+-----+-----+-----
Total     |   14 |    8 |   22
          | 63.64| 36.36| 100.00
```

At the bottom of the window, there are several buttons: "View Output", "View SAS Log", "View SAS Source", "Save Output?", and "Access to output" with radio buttons for "Private", "UserGroup", and "Pu".

---

## Change a SAS Proc specification

To change the SAS Proc Run specification that you define:

1. Click anywhere in either the **By Variables** or the **Item(s) analyzed** list.
2. Click on the item that you want to delete.
3. Click  or from the **Edit** menu, select **Cut**. This deletes the highlighted row from the SAS Proc specification.
4. To clear the entire SAS specification, click .

---

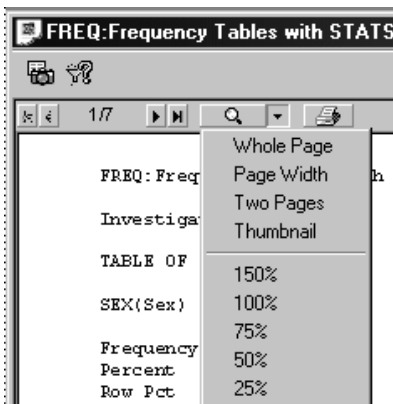
# SAS Proc results display

---

## Toolbar

The toolbar at the top of the output display window allows you to page through the output. The paging feature is necessary to view listings where ADD BY Var is applied to create the output. For example, if investigator is the BY Var then a page break by investigator is applied to the output display.

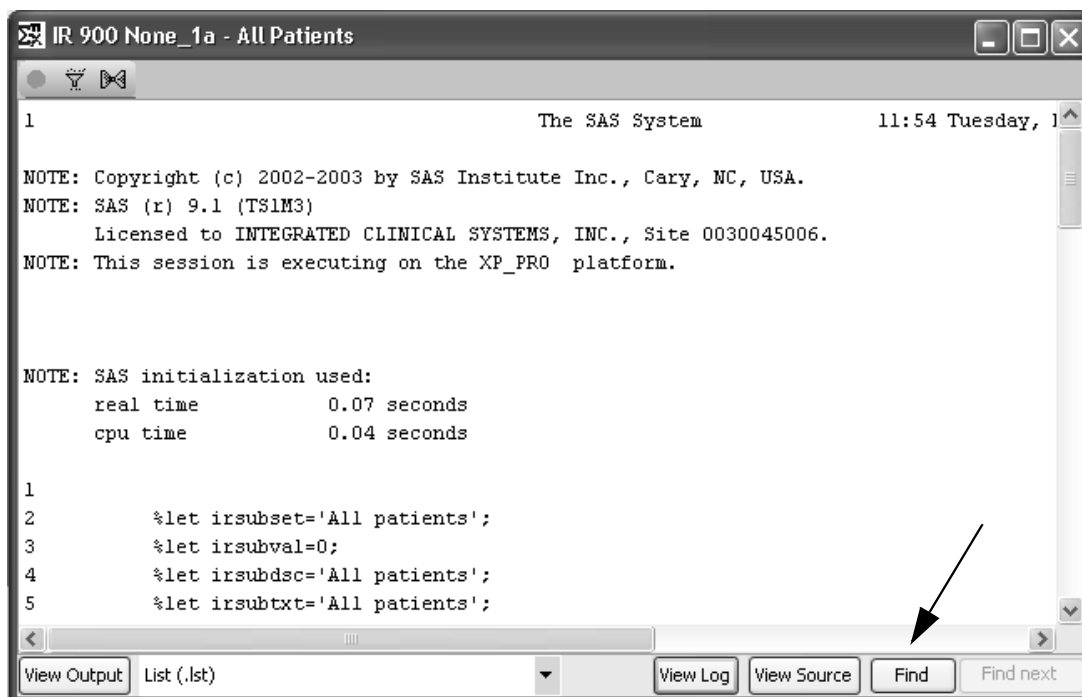
In addition, the magnify button drop down list has percent scale sizing and multiple page display options for you to select.



---

## Find menu command

You can perform a 'Find'/'Find Next' for text search in ASCII type SAS output (.SAS,.LOG). Click on the Find button to enter text search.



---

## Displaying the SAS output, source, or log

Notice the three buttons at the bottom of the output display window. By default, the SAS output has been displayed; however, if you want to review the SAS log click **View SAS Log**. If you want to review the SAS source used to create the SAS output click **View SAS Source**. To review the SAS output again, after reviewing the SAS log or SAS source click **View Output**.

If multiple SAS Proc results are active at the same time, each functions independently. That is, you can review the source, log or output of each independently by clicking the appropriate results button in the respective windows.


---

## Exporting and printing results

---

### *Print Preview*

To display a print preview of your output:

1. Click on the generated output window to make it the active window.
2. Click , or from the **File** menu, select **Print Preview**.

Review displays a screen shot of the selected active screen.

3. Click either **Print** or **Close**.

The Print Preview function is applicable to all browsers with output results.


---

### *Printing the SAS Proc results*

To get a printed copy of your output:

1. From the Toolbar in the output display window, click the Printer button. Review displays the Print window dialog.
2. Enter printing selections and click Print.

OR

1. Click , or from **File** menu, select **Print**. Review displays the Print window dialog.
2. Enter printing selections and click Print.

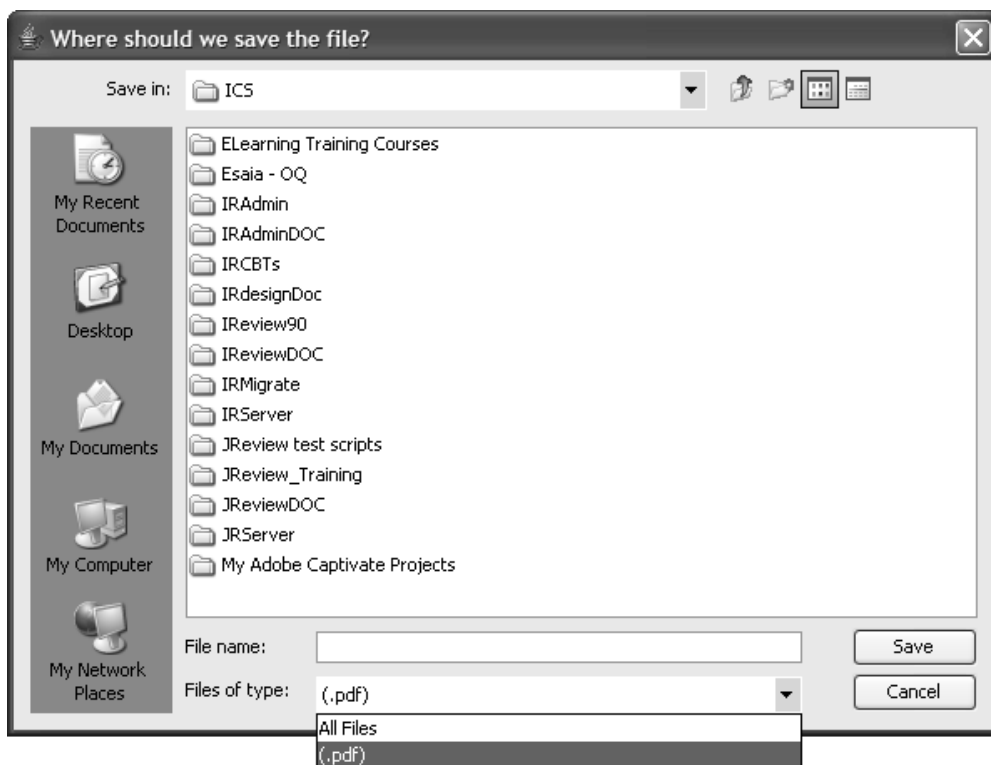
The SAS results (output, source, or log) prints on the currently selected printer.

SAS Program / SAS Proc Output display converts .LST file to PDF in the JRServer, then displaying the converted PDF in the PDF viewer in teh JReview client. This offers better control over font sizes, lines per inch, etc. This .LST file is exportable directly as a PDF file.

Export your result to PDF files.

1. From the **File** menu, select **Export**. The created output window must be the active window.

Review displays the **Export** dialog box.



2. Enter the storage location.
3. Enter the storage type.
4. Click OK.

The result is exported to the currently selected disk directory.

---

## Multiple SAS Proc outputs


---

### *Opening multiple SAS Proc results*

You can have multiple SAS Proc result windows active at the same time. After you execute one SAS Proc output, you can minimize the results and execute another saved SAS Proc specification.

JReview displays a new window for each new SAS statistical analysis. You can have several output windows active at the same time. (The suggested procedure is to minimize the output windows, and open them as needed to help manage window space. The only limitation that an end-user may experience in the number of SAS Proc result windows opened at once is window space).

After you define and create one SAS Proc output, you can minimize the results and/or activate the SAS Proc Browser. Once the SAS Proc Browser is the active window:

1. Click  or from the **File** menu, select **New** to refresh the screen. (You can open saved SAS Proc specification.)
2. You add variables to an active or saved SAS Proc specification, and click **Create SAS Output** to run the SAS Proc request.

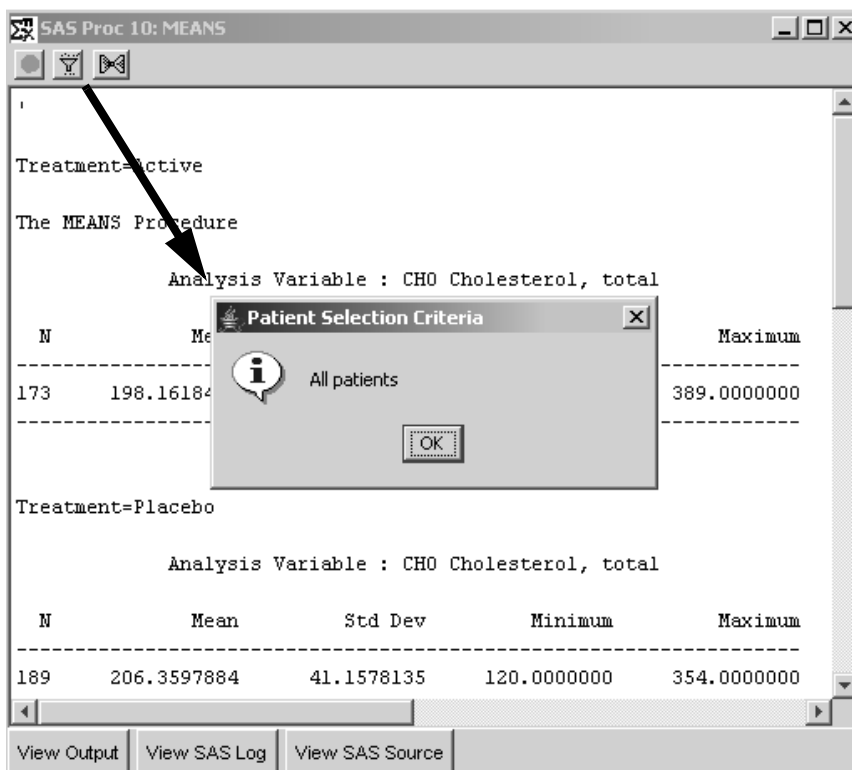
---

### *Snapshot output*

JReview has an optional multiple-population mode available within the individual browsers output window. When the results are executed and displayed from the browser output window, three icons are displayed for “Snapshot Output”, “Selection Criteria” and “Output Filter”. The Selection Criteria button opens a message box to display the current patient selection criteria. The Snapshot output allows you to freeze the current output window and then change the patient selection criteria and view the different output within the browser at the same time.

*Note: If the stored object definition already has a required patient selection criteria defined, you will not be allowed to change it.*





When you click the Snapshot button in the output window, the output heading will display "Snapshot" in the title and the button changes color. This output window is now 'frozen'. You can apply a selection criteria or change a non-required selection criteria and execute new output for display next to the 'Snapshot'.

A patient selection criteria was applied and then the same stored object re-executed to display the two output windows together for comparison. The selection criteria message box shows the new output window has a selection criteria for “COMPLETE = 1”.

The screenshot displays two SAS Proc 10: MEANS output windows side-by-side. The left window shows the full output for both treatment groups. The right window shows the same output but with a 'Patient Selection Criteria' dialog box overlaid, indicating that the analysis was filtered by 'T6.COMPLETE = 1'. The dialog box has an 'OK' button.

Treatment	N	Mean	Std Dev	Minimum
Active	173	198.1618497	46.66926	
Placebo	189	206.3597884	41.15781	
Active (Filtered)	25	206.5200000	55.6799784	125.0000000
Placebo (Filtered)	189	206.3597884	41.15781	

---

## Save and schedule a SAS Proc specification

---

### Save a SAS Proc specification

You can save the SAS Proc specification for later use or validation of results. All saved SAS Procs with output filters on are saved with the filters. All output specification functions for saving, exporting, scheduling, retrieving and removing are covered in a separate chapter. (See *Chapter 11: Saving and Managing Objects, plus Alerts Browser*)

---

### Schedule SAS Proc jobs

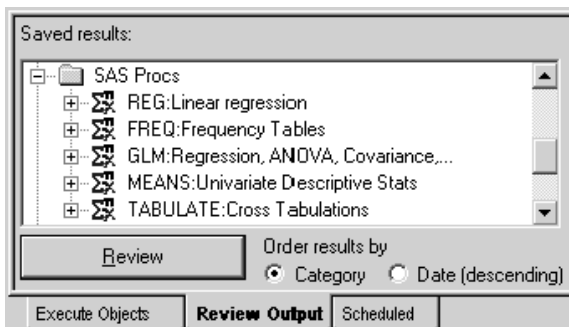
An object specification must be saved before it can be scheduled. The output is saved automatically when a job is scheduled. The Review Output option only displays lists of outputs previously stored. Otherwise, a message will state no output is stored.

There is one difference in scheduling SAS Procs and SAS Programs from other browser objects (reports, graphs, crosstabs). Scheduled SAS Procs and SAS Programs go directly to their respective storage folder in the **Review Output** tab and pending jobs bypass the **Schedule** tab.

---

### Review output

All scheduled SAS Procs objects with saved output are listed in the 'SAS Procs' folder within the **Review Output** tab. They are listed under the major SAS Proc type 'FREQ:Frequency Tables', etc. The reason is that these results are stored differently (run on the SAS server) than the other object types (reports, graphs, crosstabs).



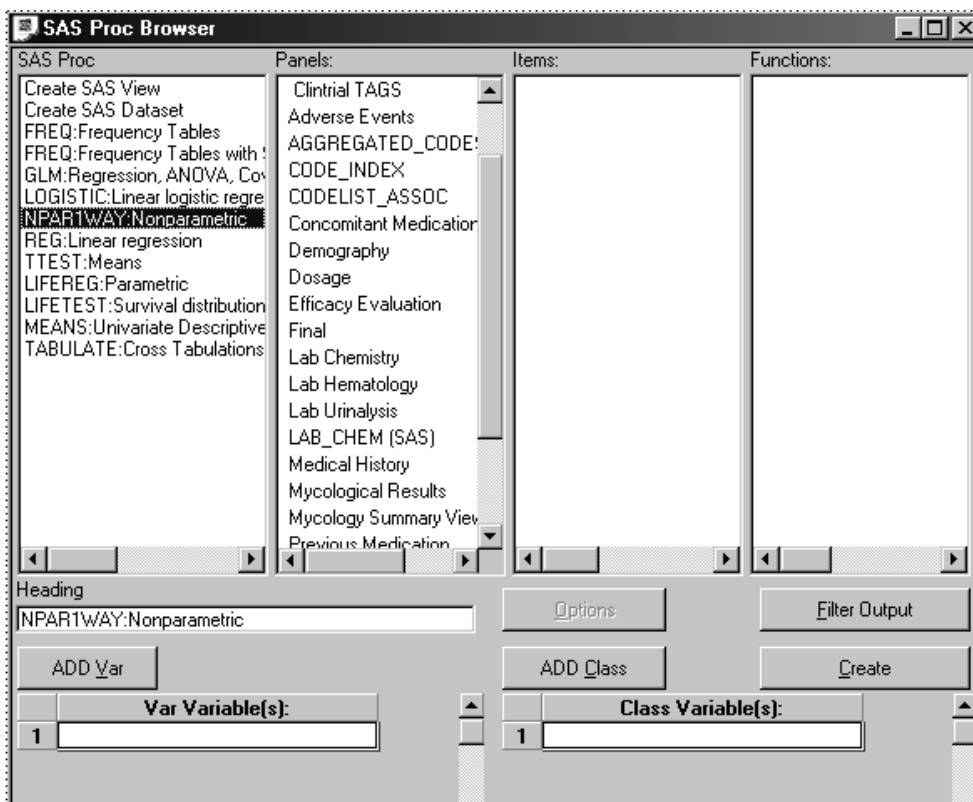
---

## Advanced SAS Proc options *(future release)*

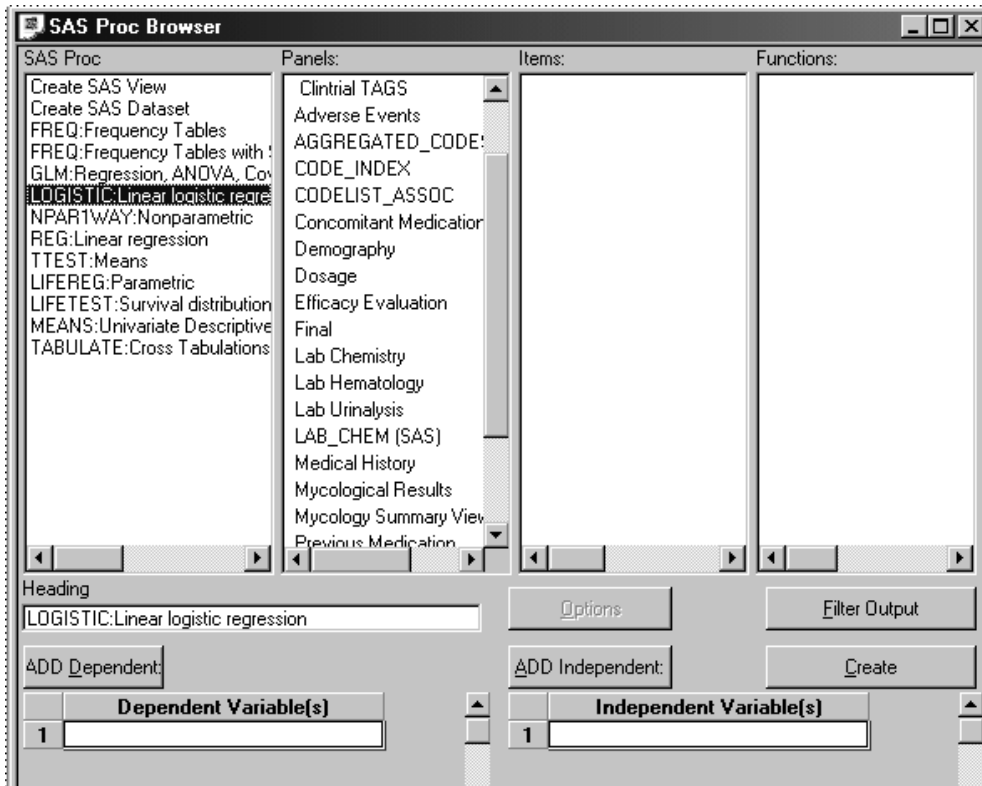
---

### Select SAS display options

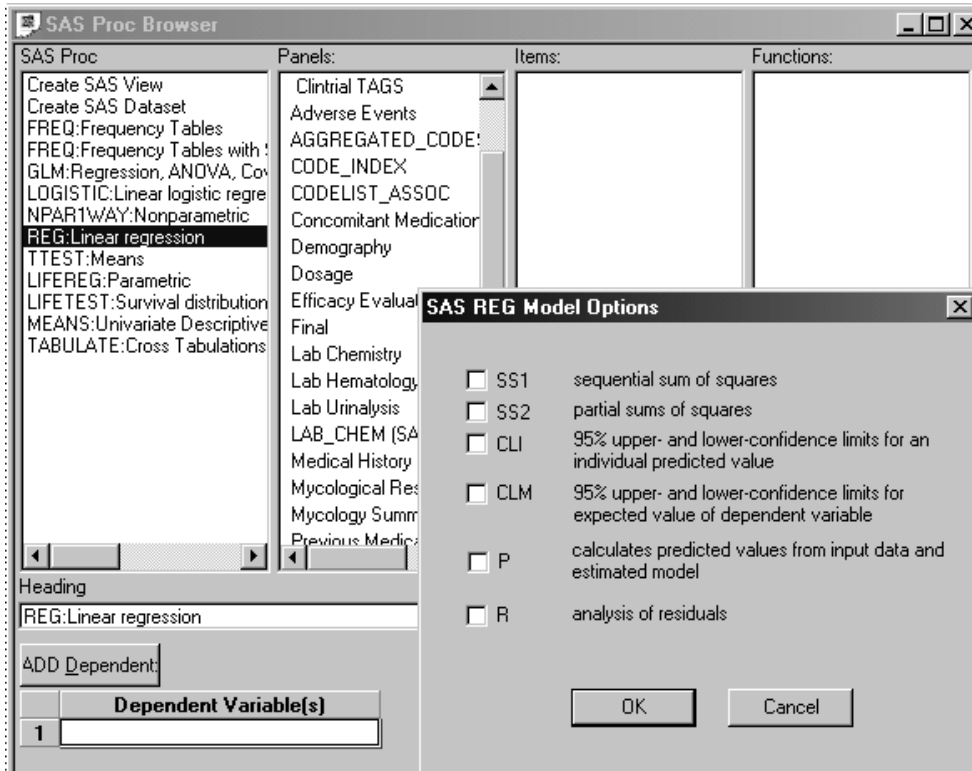
The following SAS Procs: NPAR1WAY and TTEST share the same display window for selections ADD Var and ADD Class. Select panel and item, then click **ADD Var** and **ADD Class** buttons for data items to be analyzed.



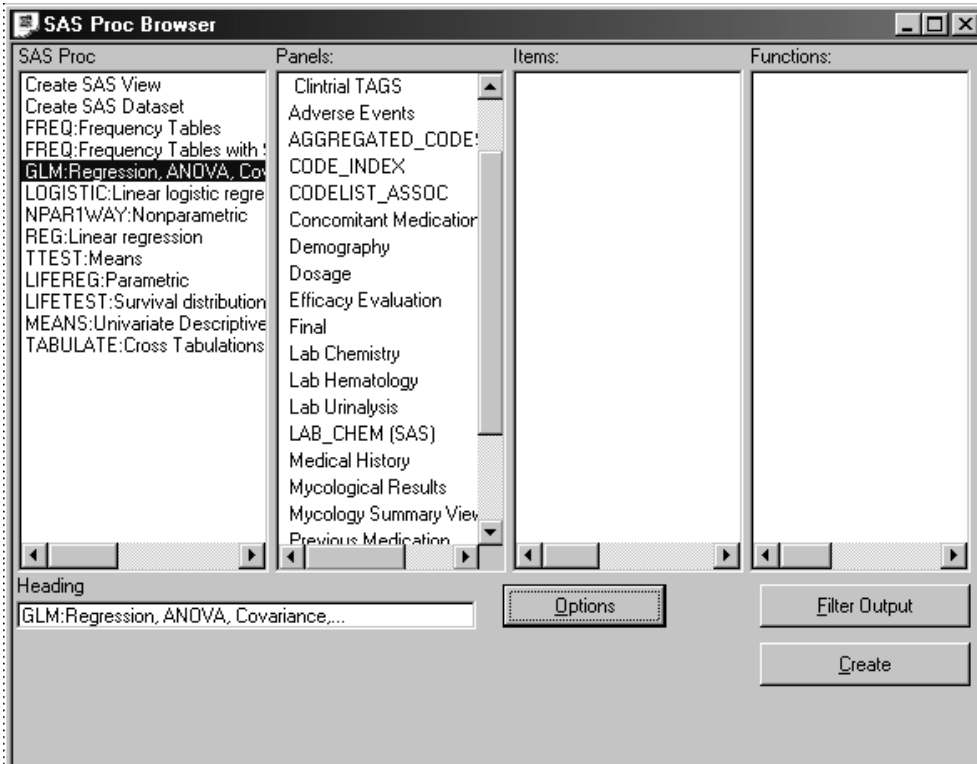
The following SAS Procs LOGISTIC and REG share the same display window for selections ADD Dependent and ADD Independent. Select panel and item, click **ADD Dependent** and **ADD Independent** buttons for data items to be analyzed.



When you select SAS Proc REG, the 'Options' button is automatically enabled for selection of REG Model Options. Click selection boxes desired and click OK. The click **Create to generate SAS output**.



When you select the SAS Proc GLM, the browser window only displays the 'Options' button. Click **Options** to display the GLM Options and define your analysis definitions.



**GLM Options**

CLASS

MODEL

SOLUTION prints a solution to the normal equations

P prints observed, predicted, and residual values for non-missing independent variables

NOUN1 suppresses printing of univariate statistics

MEANS

LSD pairwise t-tests

BON Bonferroni t-tests

REGWQ Ryan-Einot-Gabriel-Welsch multiple-range test

TUKEY studentized range test

SCHEFFE multiple-comparison procedure

LSMEANS

STDERR standard error of LSM and probability level

PDIFF all possible probability values

Other statements:

Item Selector

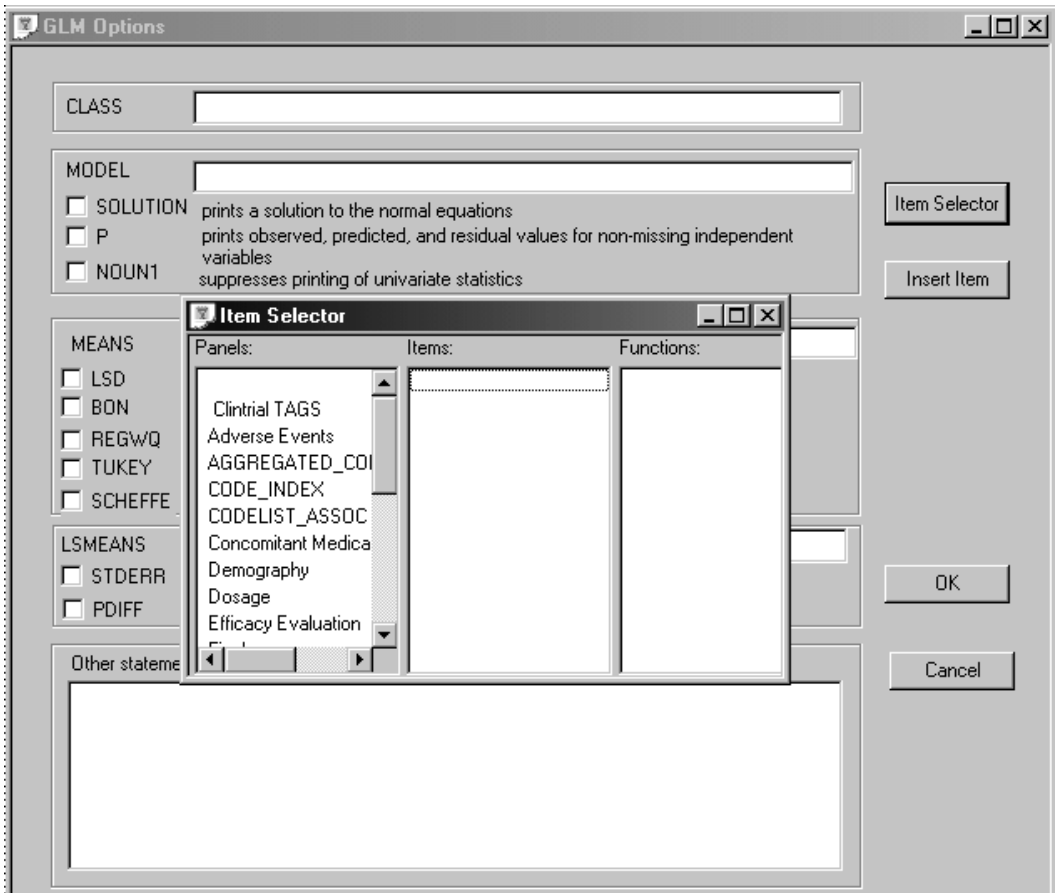
Insert Item

OK

Cancel



Click **Item Selector** to display and select panels and items. You can double-click on the desired item or click **Insert Item** to add items to the various edit areas.



*Note: Do not type text items into the edit areas. You must select items by clicking **Item Selector** and make selections from the panels and items displayed in the **Item Selector** window. Insert a space between each item selected if you add multiple items within the same edit area.*

GLM Options

CLASS: TREATMEN RACE

MODEL: CHO=TREATMEN

SOLUTION prints a solution to the normal equations

P prints observed, predicted, and residual values for non-missing independent variables

NOUN1 suppresses printing of univariate statistics

MEANS: TREATMEN

LSD pairwise t-tests

BON Bonferroni t-tests

REGWQ Ryan-Einot-Gabriel-Welsch multiple-range test

TUKEY studentized range test

SCHEFFE multiple-comparison procedure

LSMEANS: TREATMEN

STDERR standard error of LSM and probability level

PDIFF all possible probability values

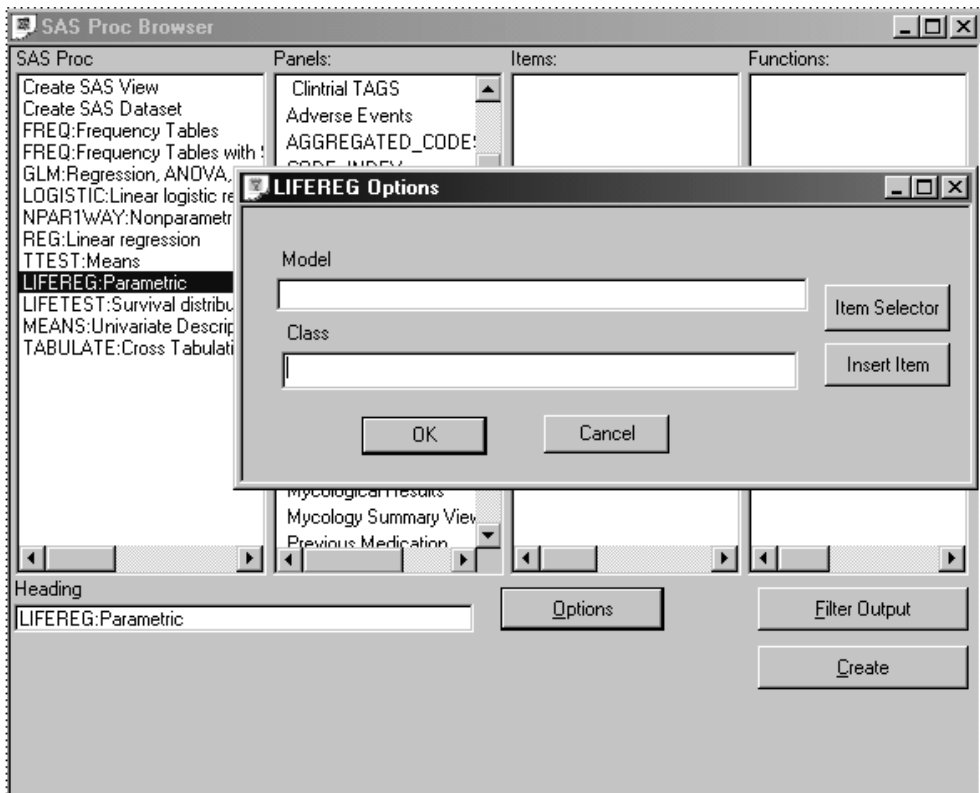
Other statements:

Buttons: Item Selector, Insert Item, OK, Cancel

You can enter additional valid statements in the GLM procedure by typing in the edit area called 'Other statements'.

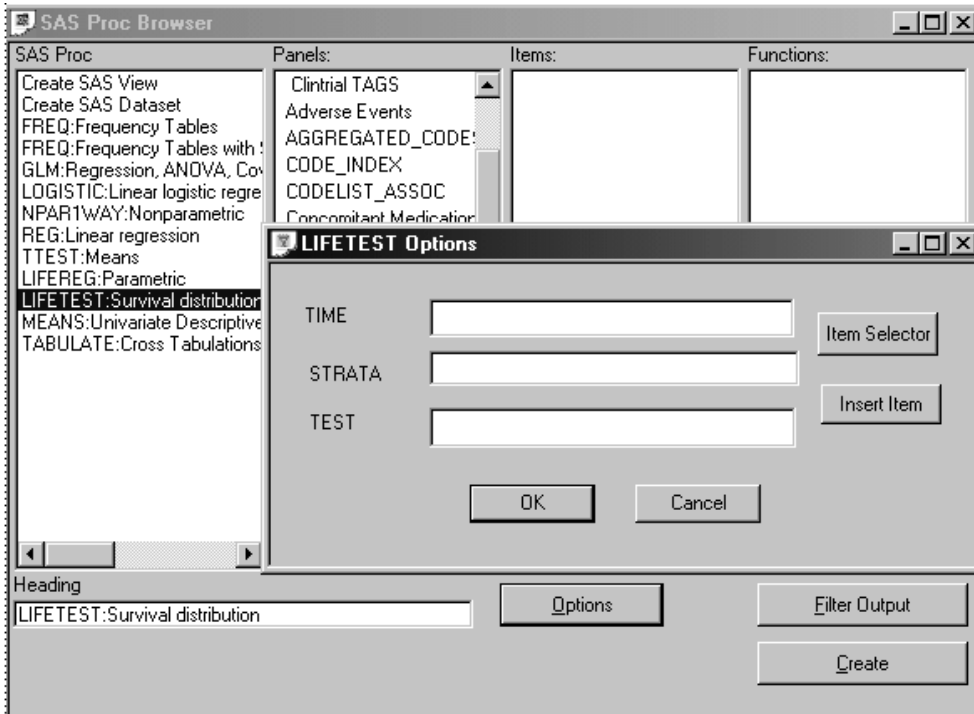
Click **OK** to submit the GLM Options. Click **Create**.

When you select the SAS Proc for LIFEREG: Parametric, click **Options** to display the LIFEREG Options and define your analysis definitions for Model and Class. You must follow the same instructions for the Item Selector and Insert Item as described above.



Click **OK** to submit the LIFEREG Options. Click **Create**.

Select the SAS Proc for LIFETEST: Survival distribution, and click **Options** to display the LIFETEST Options and define your analysis definitions for TIME, STRATA and TEST. Again, use the same steps for Item Selector and Insert Item.



Click **OK** to submit the LIFETEST Options. Click **Create**.

---

## Close SAS Proc Browser and results

---

### *Closing a SAS Proc output window*

If you are finished reviewing the output of a SAS Proc, and do not need to use the output to review any other patient populations: Double-click the window's close box.

---

### *Closing the SAS Proc Browser*

If you are finished with all SAS Proc outputs, and do not need to define any other reports: Double-click the close box of the SAS Proc Browser window. Review also closes all SAS Proc results windows currently opened.

---

## Exploring data

---

### *Changing the patient selection criteria*

After you have executed a stored object, you can use the object(s) that are currently displayed as data exploration views by doing the following:

1. Change the patient selection criteria, redefining it by adding additional expressions, or removing existing expressions.
2. Click **Update Browsers** in the Patient Selection Criteria window to update all active browsers according to the new criteria.

Any SAS Procs, or other browser objects that are open update according to your new criteria. Each report generated with a filter on will update with the same filter criteria with which it was created.

---

## SAS Proc output filter

After you define the specifications of your graph, you can use the output filter as a data exploration tool by row filtering data inclusion and comparing filtered and unfiltered results. Row filtering is carried out by the Output Filter Criteria window. The output filter functionality allows specified observations and visits, from multi-visit items, to focus reporting presentations on clinically specific requisites.

Open filtered scatter plot graphs can be very informative when Review's patient-level interactive browsers are utilized in the multiple-patient mode to identify and characterize a subset of patients.

1. Change the output filter criteria by adding additional expressions, or removing existing expressions.
2. Click **Save Filter** in the SAS Proc Output Filter window to apply it against the next created SAS Proc.

---

## Pivot panels

Pivot Panels provide a powerful display of data, and provides a data structure that can be uniquely utilized by the SAS Proc Browser in producing clinically pertinent presentations of data “on the fly”.

*Note: Saved specifications using a pivot panel will only work with the pivot panel it was created with. If the same pivot panel is recreated with the same name, the objects using the original panel will not work because the system naming convention iterates with each created panel. (See Chapter 12: Common Topics: Define Pivot Panel.)*

---

## Join logic

The pseudo-panel ‘\_Define Join Logic\_’ provides an opportunity to investigate relations within the clinical data defined by medical investigators “on the fly”. Join logic defined for the Clintrial type 0 panel is required to utilize the items within Clintrial type 0 panels. (See Chapter 12: Common Topics: Define Join Logic.)

---

## Clintrial tags

Clintrial tags are accessible to be used in SAS Proc specifications. When the pseudo-panel Clintrial tags is clicked on:

- Clintrial tags are listed as a pseudo-panel.
- Definitions, and Categorizations of tags are listed in the items list. (See Chapter 12: Common Topics: Clintrial tags.)

---

### *Protocol comparison*

Use of the pseudo-item <Study ID> in SAS Proc specifications, facilitates comparisons between protocols. (See *Chapter 12: Common Topics: <Study ID> pseudo Item.*)

---

### *New Event Function*

Utilizing the pseudo-function “\_New Event Function\_” allows you to create and define new landmark events to be evaluated and applied to your selected patient populations. (See *Chapter 2: Selecting Patients: \_New Event Function.*)





# 10 *STAT Program Registration Browser*

---

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---

# STAT Program Registration Browser

---

## General

Your SAS Programmers can register SAS programs and SAS Data Sets used in the formal analysis of the protocol(s) of interest. SAS programs can be registered as study-specific, project-specific or global. These programs and datasets can be made available and registered to Review, typically after the completion of the protocol and cleaning of the database. Your SAS programs can be run against existing SAS datasets, or SAS views that are generated by Review at runtime. Thereafter, you can access these programs and datasets by using the STAT Program Registration Browser.

*Note: Requires IRServer version 8.10)*

STAT programs and program groups can be executed from the Object Explorer like other JReview objects. From the output window, the user has the ability to change the output format from lst to htm, pdf, csv, txt, etc.

A privilege setting [P19] is required to run the STAT Program Browser (and to view and run SAS and R programs in the Object Explorer), and a separate privilege setting [P29] controls access to the STAT Program Registration Browser. Users who have access to the STAT Program Registration Browser also have access to the STAT Program Browser, and to STAT programs in the Object Explorer.

In addition, access to STAT programs and their output can be controlled by User Group membership and User Level settings.

Access the STAT Program Registration Browser from Browse menu; or click on the icon in the tool bar.



SAS program registrations can be viewed, added, edited and deleted using the STAT Program Registration Browser window. A separate window, the STAT Program Registration Browser, is used to execute individual SAS programs and to execute groups of programs in a single batch run.

SAS programs and program groups can also be executed from the Object Explorer like other Review objects.

A privilege setting is required to run the STAT Program Browser, and a separate privilege setting controls access to the STAT Program Registration Browser. Users who have access to the STAT Program Registration Browser also have access to the STAT Program Registration Browser. These privileges are defined in ReviewAdmin.

In addition, access to SAS programs and their output can be controlled by User Group membership and User Level settings.

Sub-dialogs are available from the STAT Program Registration Browser to handle program groups, print formats, and patient selection subsets, and also to manage libraries, categories, status codes, etc. and SAS program memberships in these areas.

The following sections describe the various dialogs and windows and their functions for SAS program registration and the execution of SAS programs and groups.

---

# Interactively register SAS programs

---

## *Converted SAS programs*

SAS Programs previously registered with ReviewAdmin are converted into the STAT Program Registration Browser during the release upgrade. A conversion script converts earlier SAS program registrations into the new table structures without affecting any of the existing tables used by Review. Converted SAS programs will be included with a STATUS of "CONVERTED." These previously registered SAS programs are listed when you view the STAT Program Registration Browser window. If no SAS programs were previously registered through ReviewAdmin, the STAT Program Registration Browser displays a message in the Programs list for "No programs are registered." When you register new SAS programs the default STATUS is "DEFAULT."

*(See the ReviewAdmin manual for Review configuration descriptions of tables.)*

During the conversion, messages are produced if it encounters print formats with missing line size, page size values or inconsistencies between the data origin type and the libname/datalib fields. For example, if the data source is NONE and there are values in either the libname or datalib fields, they will be blanked out. Likewise, if a problem with an invalid data source is encountered then the data source is changed to "None". The messages report the number of adjustments that were made, if any.

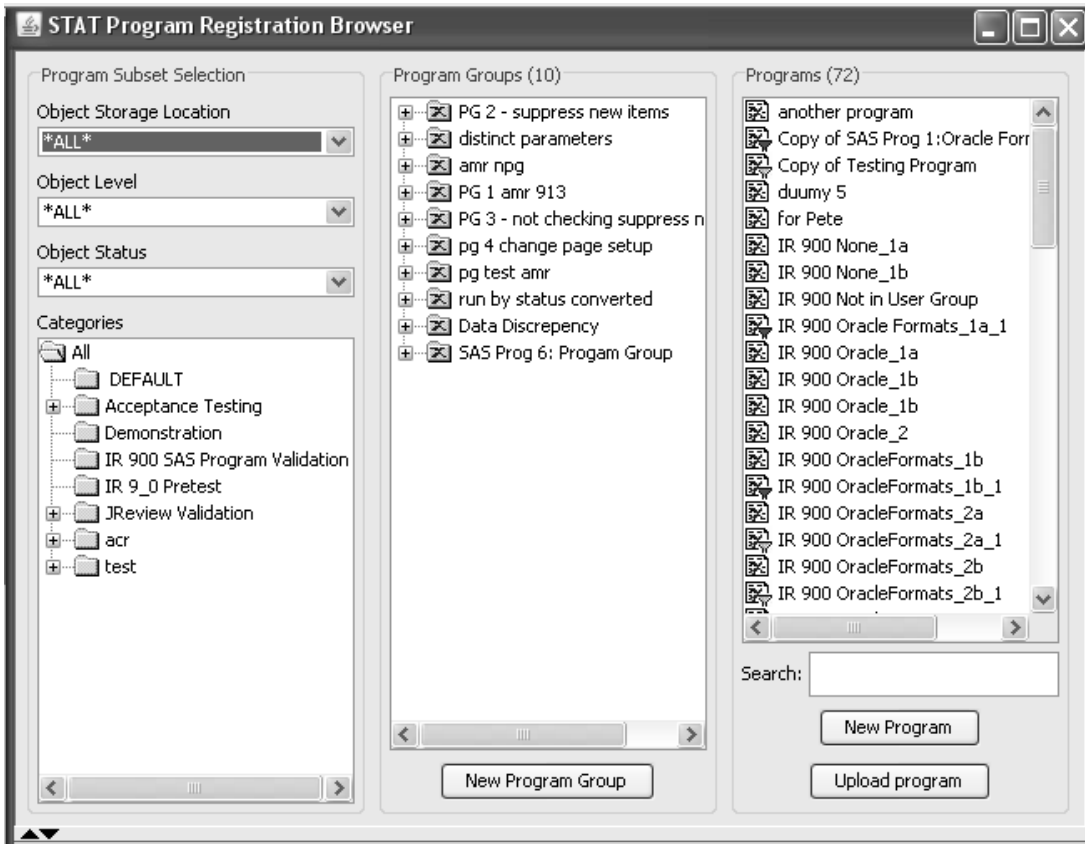
---

## STAT Program Registration window

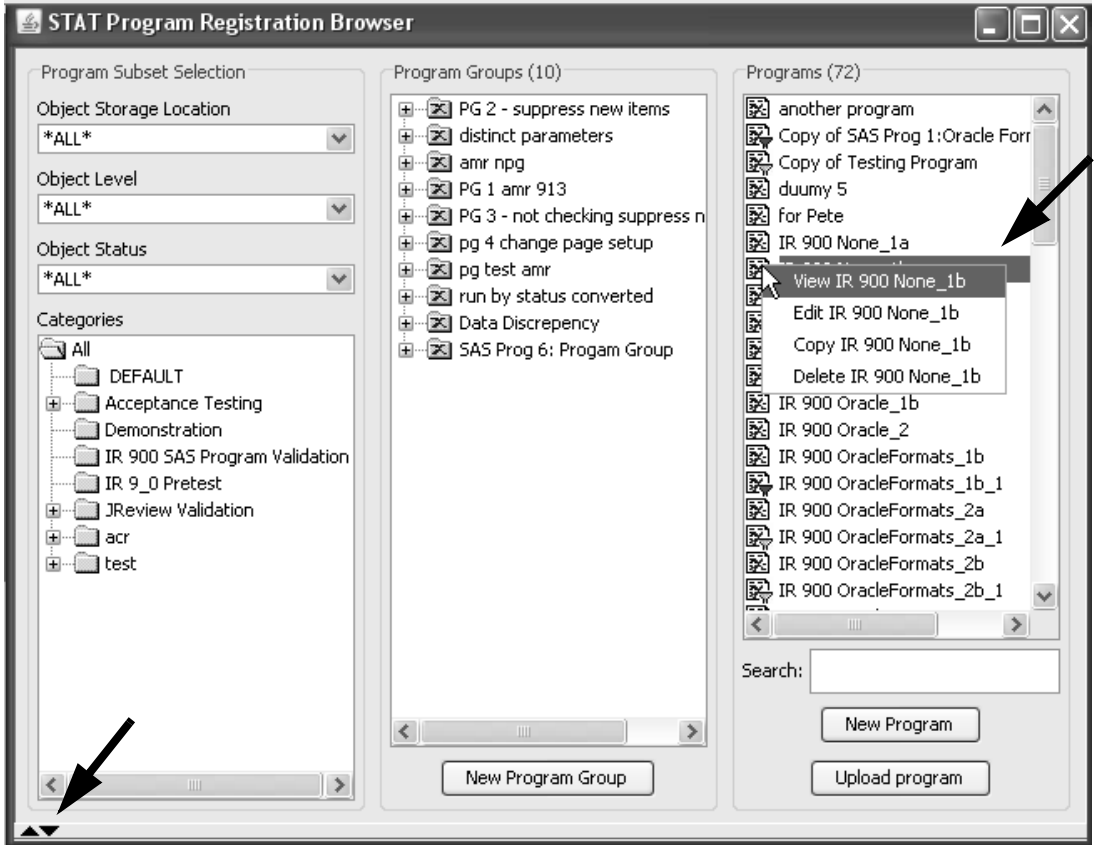
The STAT Program Registration Browser main window displays lists of all available User Groups, Categories, Program Groups and already registered SAS Programs. A count of the contents for each list is displayed to assist in the registration management.

The Programs list displays all programs belonging to the currently selected User Group, Category and Program Group(s). You can select multiple program groups with the CTRL key to display all the programs that belong to the selected multiple program groups.

*Note: You can only access the STAT Program Registration Browser in single protocol mode.*



You may select a Program or Program Group and right mouse click, to display a floating menu of functions for View, Edit, Copy or Delete.



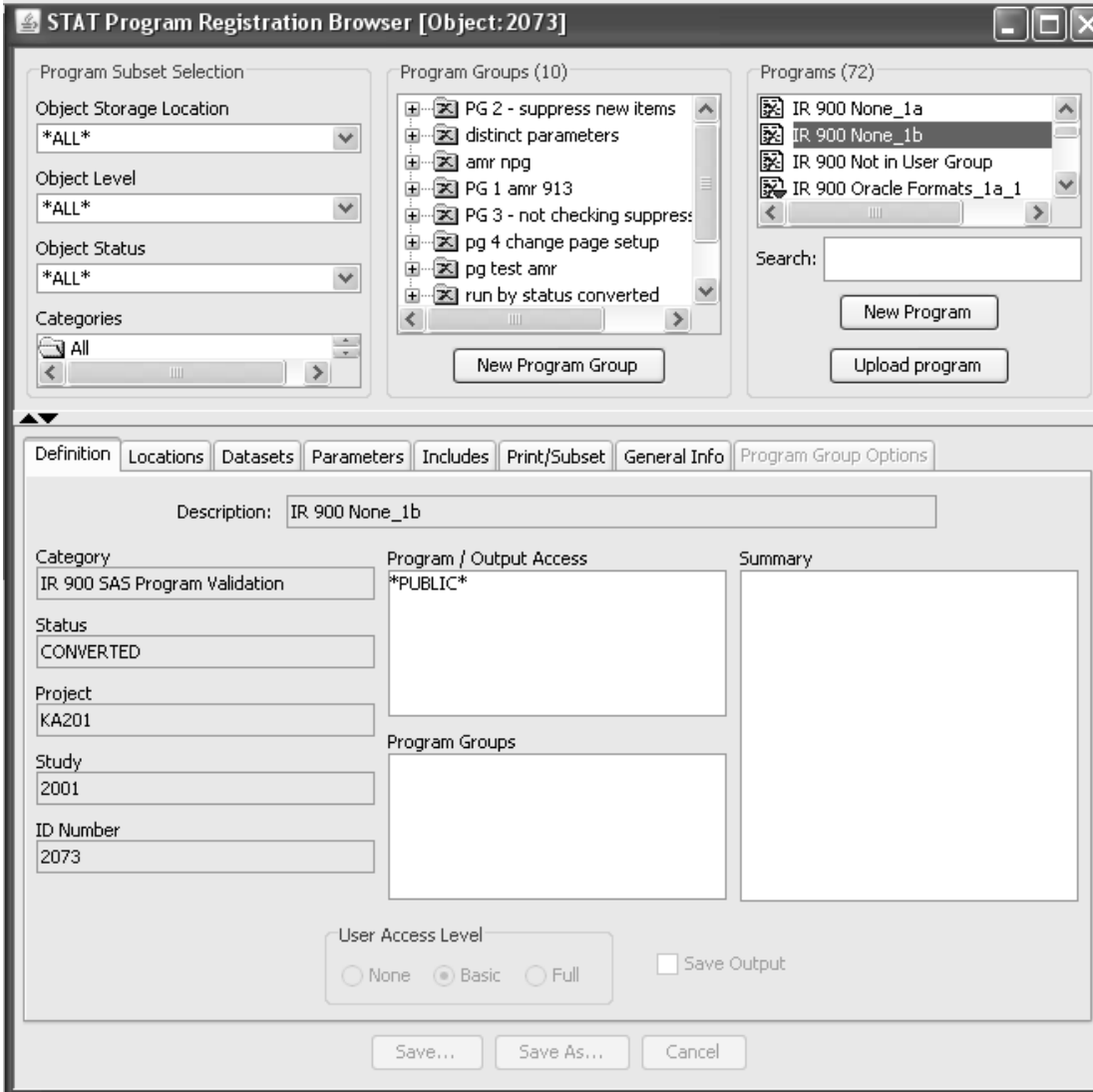
Click the expand arrow in the lower left corner. The STAT Program Registration Browser window expands for access to the function tabs for viewing and registering SAS program information.

The function for **View** was selected. The STAT Program Registration Browser window splits into two viewing areas; detailed information about the currently registered SAS program displays below.

Clicking on a registered SAS program displays information about the program in fields on the tab pages. Clicking on a Program Group displays information about the group in the registration fields below. The program group status code is displayed along with checkbox for the “Run by Status” and “Distinct Parmns” options.

Clicking on a particular tab displays a set of related fields. Taken together, the fields on all of the tab pages display all of the information for a particular SAS program.

Observe in View mode that the **Save**, **Save As** and **Edit** buttons located at the bottom are shaded and disabled.





The next sections describe each of the tab windows in detail for registering a new SAS program or editing an existing program.

The cursor arrows located at the left midway allow you to expand the top window and toggle between viewing and registration details. Refer back to listed programs and program groups above, or register a new SAS program with the registration function tabs below.

Click the **New Program** or **New Program Group** button to register a new SAS program or program group.

*Note: Currently in JReview version 9.12, you can only register a SAS Program and not a SAS Program Group. The ability to register a New Program Group will be made available in a future release.*

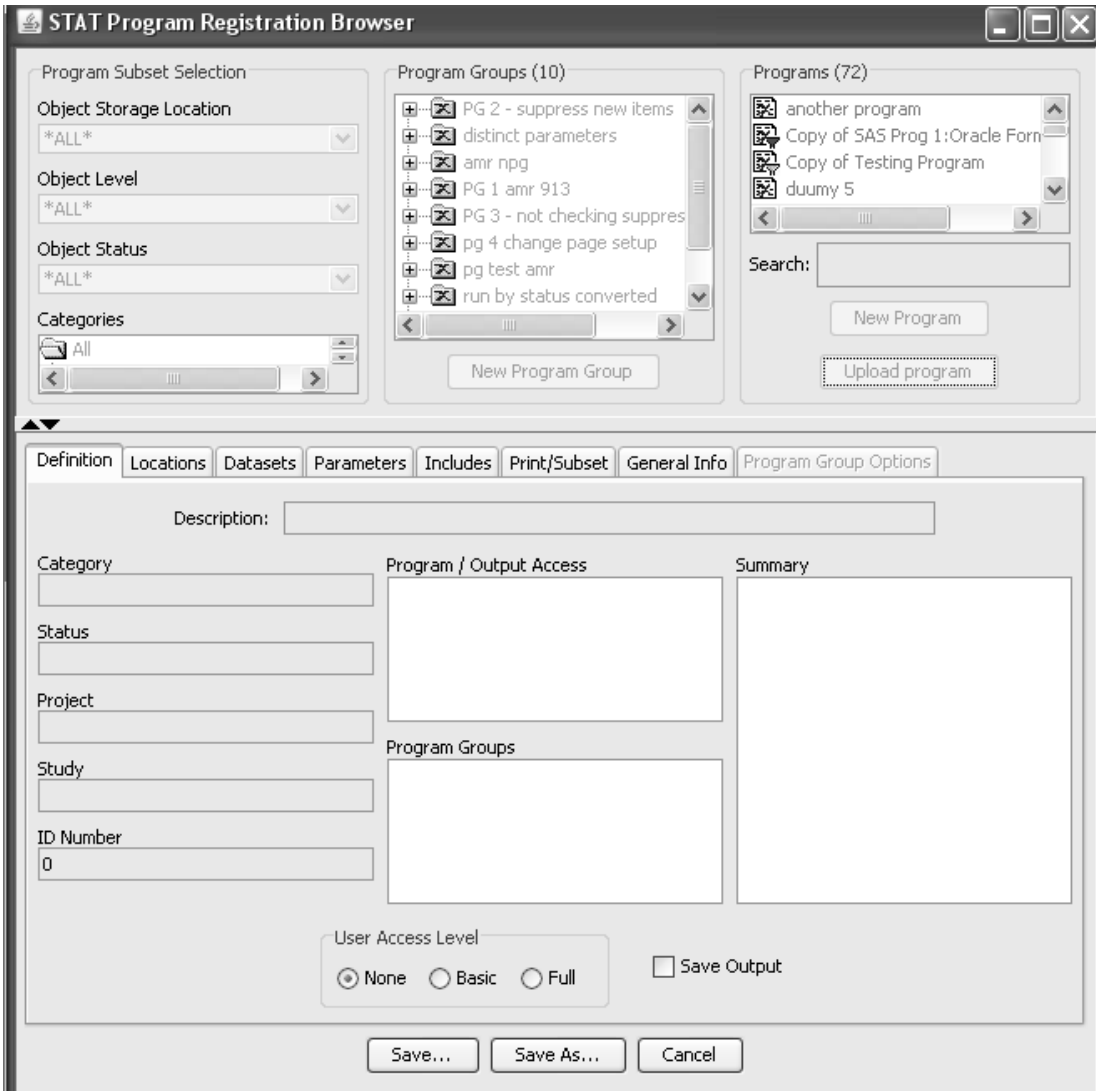
The following functions are enabled when you select **New Program** or **New Program Group** for **Edit** mode.

- **Cancel** - discards the changes (after a “Cancel changes?” dialog confirms this).
- **Save** - opens the Save Object dialog, and clicking on the **Save** button here saves the program changes. Clicking **Cancel** on the Save Object dialog returns to the STAT Program Registration Browser in the same state as before the **Save** button was clicked.
- **Save As** - opens the Save As Object dialog, and clicking on the **Save** button here saves the program changes as a new SAS program.

Right mouse click for functions to **View**, **Copy**, **Edit**, and **Delete** are available.

- **View** - Displays the contents of the fields on the tab pages to view characteristics of a SAS program.
- **Edit** - enables editing the contents of the fields on the tab pages to change characteristics of a SAS program.
- **Copy** - makes a duplicate of the entire current SAS program registration, adding the words “Copy of” to the front of the description.
- **Delete** - deletes the currently selected SAS program registration. A confirmation window always displays where the text indicates if the program belongs to one or more program groups and/or has saved output.

Click **New Program** or **New Program Group** to register SAS programs and to register new program groups. The STAT Program Registration Browser splits into two viewing areas with the registration function tabs below. Use the cursor arrows to expand the top window and toggle between viewing and registration details.



The STAT Program Registration Browser facilitates the entry and registration of SAS programs into JReview. This tool visually organizes the supporting files, datasets, panels, studies, and SAS program parameters where appropriate.

Initially, prior to registering any SAS programs only the **New Program** button is enabled. Once you have registered or converted SAS programs and select a SAS program from the Programs list, then the functions to **View**, **Copy**, **Edit** and **Delete** are available.

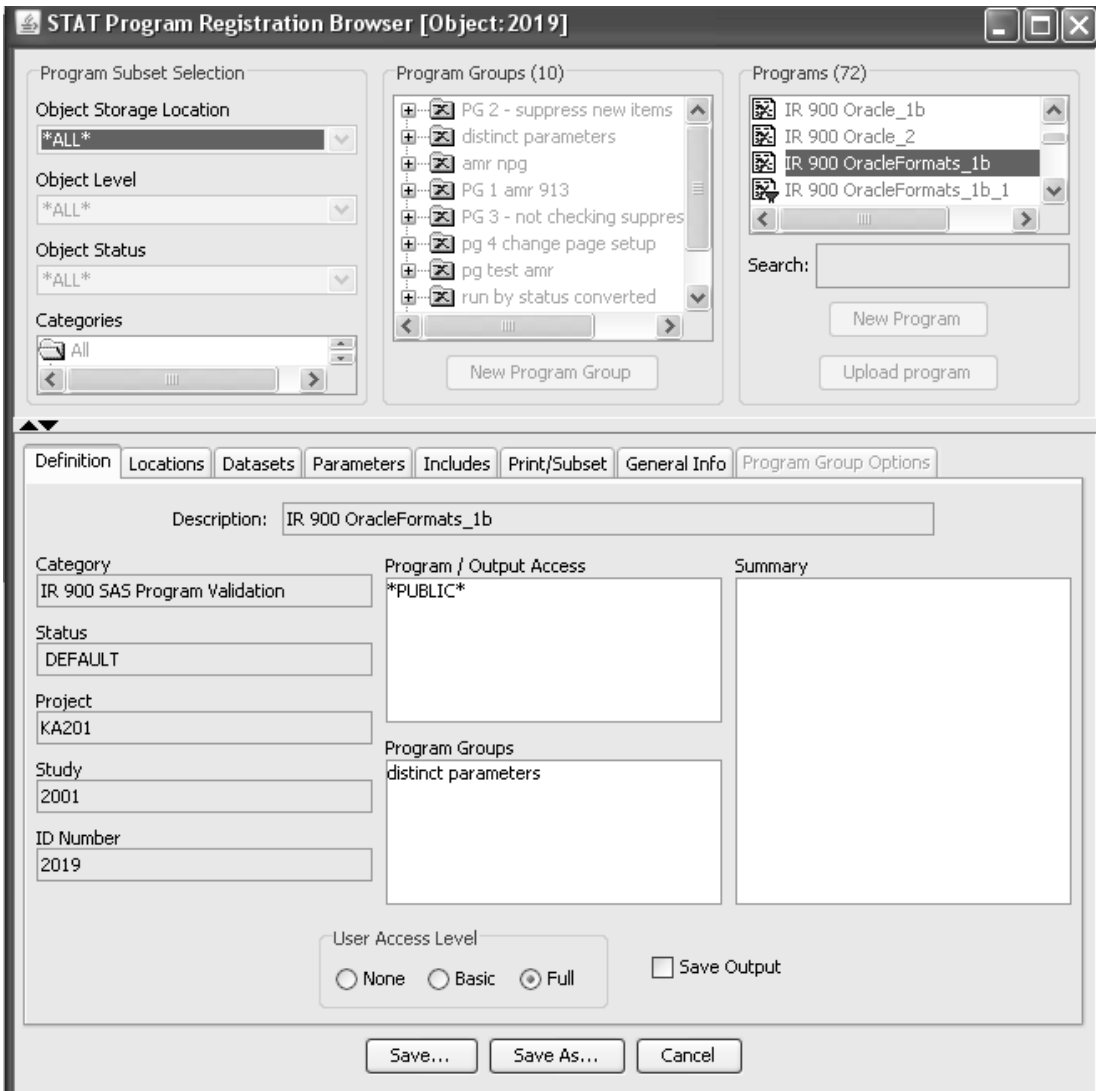
When you click the **New Program** button the registration tabs become available for entry. The *'Definition'* tab is the first entry in sequence to enter details for registering a new SAS program. Some information is entered directly through the *'Definition'* tab. Other information is displayed and determined by the way the program was saved.

The minimal amount of information required to register a new SAS program is the *Description*, *Category* and *Status*. Therefore, you can save a SAS program registration without the actual source code reference. The minimal information entered creates a registration slot for the SAS program where additional runtime information can be entered in the future. If you attempt to run a SAS program registration with a missing source code reference, there are runtime checks for source code and datasets. An error message displays alerting you to the incomplete SAS registration.

Definition tab

When you register a SAS program in the system with the Review STAT Program Registration Browser; you add an entry specifying the appropriate Project and Study, description of the SAS program to appear in the STAT Program Registration Browser list box, category location where the SAS program is located and status. These details are entered in the Definition and Locations tabs.

This example shows a SAS program selected from the Programs list in Edit mode, and displays the available information.



*Hint: Prior to registering new SAS programs you may need to first create a New Category if the folder destination does not already exist. (See System Management: Category.)*

When you click the **New Program** button some program values are defaulted.

- **Project** and **Study** indicate what project and study(ies) the program belongs to. The project and study is selected by choosing the level in the “Save Object” window and not on the tab. \*ALL\* in the **Study** field indicates a project-level program. \*ALL\* in the **Project** and **Study** fields indicates a global program.
- **User Access Level** indicates the level of user that can access the program.

Other item values are modifiable in new or edit modes. Use the dropdown listboxes to enter new item values or edit existing values from converted SAS programs in the **Definition** tab.

- **Description** is the descriptive name for the SAS program to appear in the Program list box.
- **Category** is the folder where the SAS program is to be located (folder hierarchy within Review).
- **Status** is the assigned status code for the program (from a list of pre-defined statuses). Converted SAS programs have a default status of “CONVERTED”.
- **Save Output** indicates whether or not the program output will be automatically saved upon execution to the Review Output Tab.
- **Program / Output Access** shows either a list of user groups or \*PUBLIC\*, indicating what users can access the program and its output.
- **Program Groups** information displays if the program is added to a program group.
- **Summary** is a longer text describing the program.

*Hint: When registering a new SAS program, enter the information in all the SAS registration tabs and then click the SAVE button in the last tab window. If you click the SAVE button on an individual tab window during a NEW registration before completing all the tab entries, the SAS program registration is saved and any incomplete entries must be added or changed in EDIT mode.*

Users can type entries in any of these fields, or, if the IR Server version supports browsing, the **Browse** button next to each entry opens the Browse Server window that displays lists of directories and files on the server. Directories can be navigated to select directories and files. If the server version does not support browsing, the **Browse** buttons are disabled. (See *Auxiliary Windows: Browse Server.*)

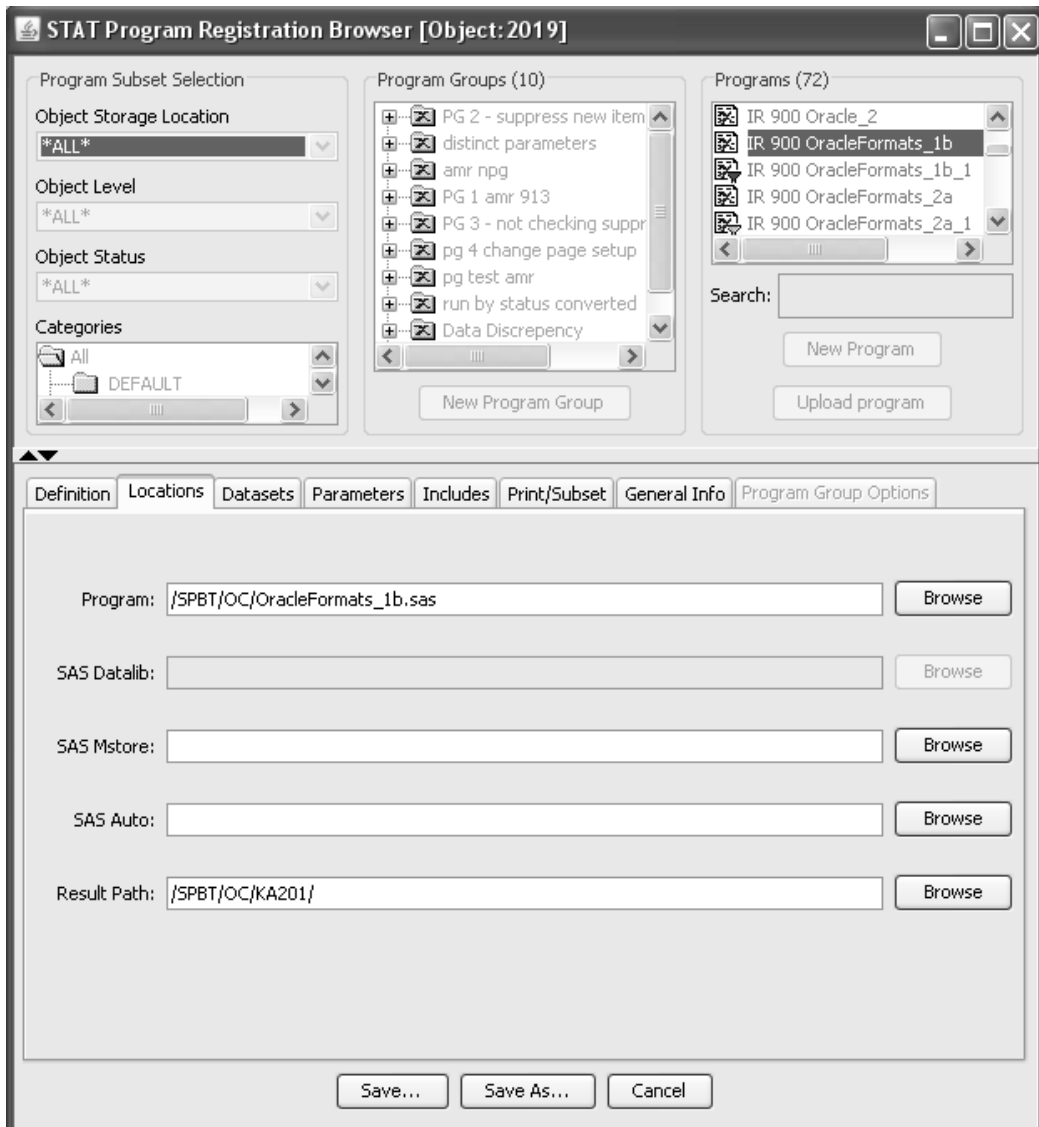
Enter or select the following information in the 'Locations' tab:

- **Program** - File location for the program source code.
- **SAS Datalib** - Directory location for any datasets that are accessed in the program code. (Required and used only if the data origin is SAS.)
- **SAS Mstore** - Location of a MACRO library for the program to use.
- **SAS Auto** - Location of a SAS Autocall library.
- **Result Path** - Directory where output from the program will be stored. If this is left empty, the sever home directory is used.

If you check 'Save Output' on the Definition tab, the output from the SAS program will automatically get saved to the location specified in your 'Result Path' on the Locations tab.

If you do not check 'Save Output' , once the program is run, the user will have the option at that time of saving the output.

The window displays default to SAS.



Several configuration items that refer to directory paths or files can contain substitution parameter tokens which get replaced at runtime with values from the current environment. These tokens are as follows:

- <proj> - references the current Review Project
- <prot> - references the current Review Study
- <sysroot> - refers to the IR Server root directory
- <user> - refers to the current user logon ID (limited to the Result Path directory only under the Locations tab)

The tokens <proj>, <prot>, and <sysroot> can be used with the following configuration items:

**Locations tab:**

- Program source code file
- Data library
- Result path
- Macro library
- Autocall library

**Includes tab:** *(See section for Includes Tab)*

- Study Include files
- Program Include files

In addition, the <user> token can be used in the Result path configuration item.

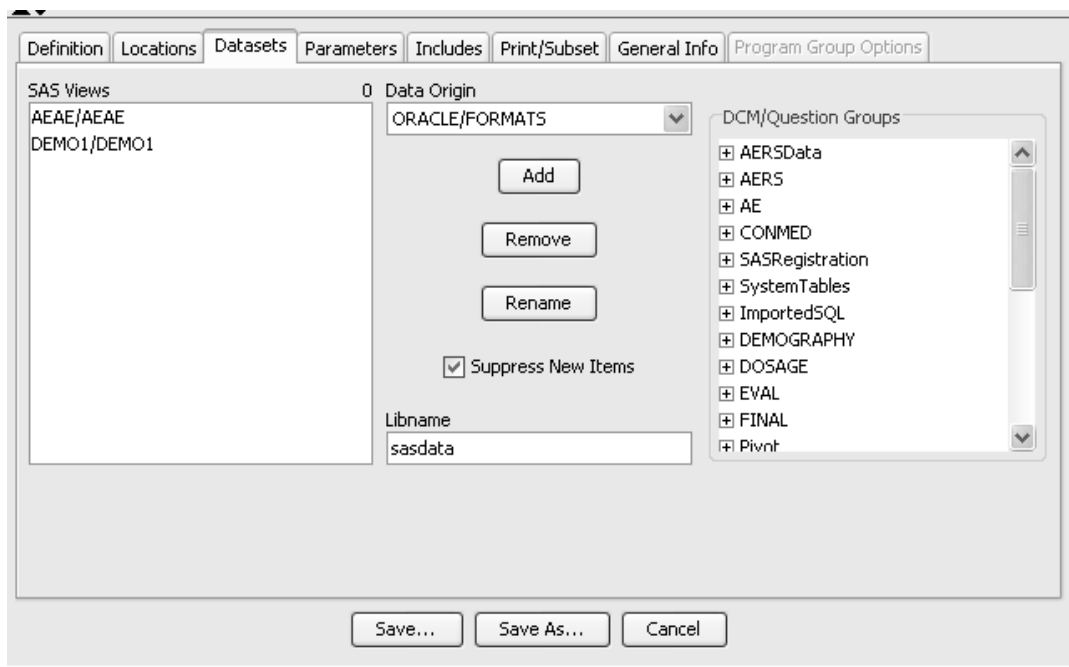
For example, a data library path might be specified as C:\test\<<proj>\<prot>\sasdata when registering a program. Assuming the current project is KA and the current study is KA201, when the program is run, the path would resolve to C:\test\KA\KA201\sasdata. This allows, for example, a Global registered program to run against different studies and use the SAS datasets for the current study without having to change the data library location path.



Click the **Datasets** tab, select the **Data Origin** from the list to indicate where the data for the program originates.

- **NONE** - No SAS or Oracle data source is required (program is self contained and no patient selection criteria can be applied).
- **ORACLE** - Review generates SAS views from specified Oracle tables prior to SAS Program execution.
- **ORACLE/FORMATS** - Review generates SAS Views and SAS Formats for specified Oracle tables prior to SAS Program execution.
- **PATIENTSET** - Review generates a SAS View of the patients. The resulting SAS View of the patients meeting the selection criteria is then used by the registered SAS Program (program is self contained, but patient selection criteria can be applied).
- **SAS** - Runs SAS program against pre-existing SAS Datasets. Enter user named SAS datasets.

*Note: When changing the data origin, if datasets are currently assigned, a confirmation message displays to indicate that the current dataset assignments will be removed.*



Your SAS programs can be run against existing SAS datasets, or SAS views that are generated by Review at runtime. The Review Program Registration Browser lets you specify your preference in the Data Origin.

ORACLE or ORACLE/FORMATS *Data Origin:*

- Review will generate SAS views for each panel you define.
- You must specify the panel name and the SAS dataset name that your program expects to see for the panel.
- SAS Views are recreated each time the Patient Selection Criteria changes.

PATIENTSET *Data Origin:*

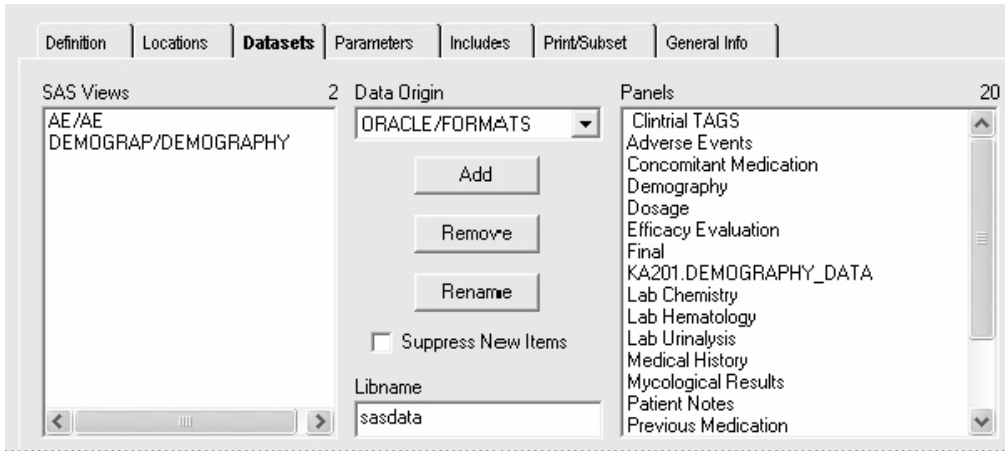
- Review generates a standard named SAS View of the patients meeting any defined patient selection criteria.
- This SAS view can then be utilized within the program.

SAS *Data Origin:*

- If no Patient Selection Criteria is defined, Review will use the existing SAS datasets you define directly.
- If a Patient Selection Criteria is defined, Review will generate a subsetted version of each of the existing SAS datasets to include only those patients meeting the criteria.

If a patient selection criteria is active at the time the end user requests running of an existing SAS program, Review generates SAS code to invoke SAS Proc SQL to create a SAS view containing a list of patients who meet the current subset criteria. This same SAS code then creates new versions of the current SAS datasets referenced by the selected program, using a SAS match merge technique, including only those patients who are in the patient selection criteria subset.

*Note: When the data origin is SAS, Oracle or Oracle Formats then saving requires that at least one dataset or Oracle table has been selected.*



- **Libname** is the reference name for the library of SAS datasets that are accessed by the program. This can only be entered, and is required, if the *Data Origin* is other than NONE or PATIENTSET. (The reserved words SLIB, BASEOS and OS are not allowed here.)
- **SAS Views or Datasets** is the list of datasets that will be accessed by the program. For ORACLE and ORACLE/FORMATS data origins, the dataset and panel names will be listed, and only the dataset name can be changed. For SAS data origin, the names are user-defined. (The reserved words PATSET and SASVIEW are not allowed as dataset names.)
- **Panels** is a list of panel names that can be selected as datasets. For ORACLE and ORACLE/FORMATS data origins, SAS views are created from the panels. For SAS data origin, the panel names are provided as a convenience and do not directly relate to SAS datasets. The default dataset name is the SAS name associated in the Clinical Data Management system.
- **Add / Remove / Rename** buttons are used to add, remove and rename datasets in the list on the left. For SAS data origin, the item “\_Client Defined DataSet\_” allows typing in an arbitrary name.
- The **Suppress New Items** checkbox controls whether new items added to panels are included in the SAS views created for processing.

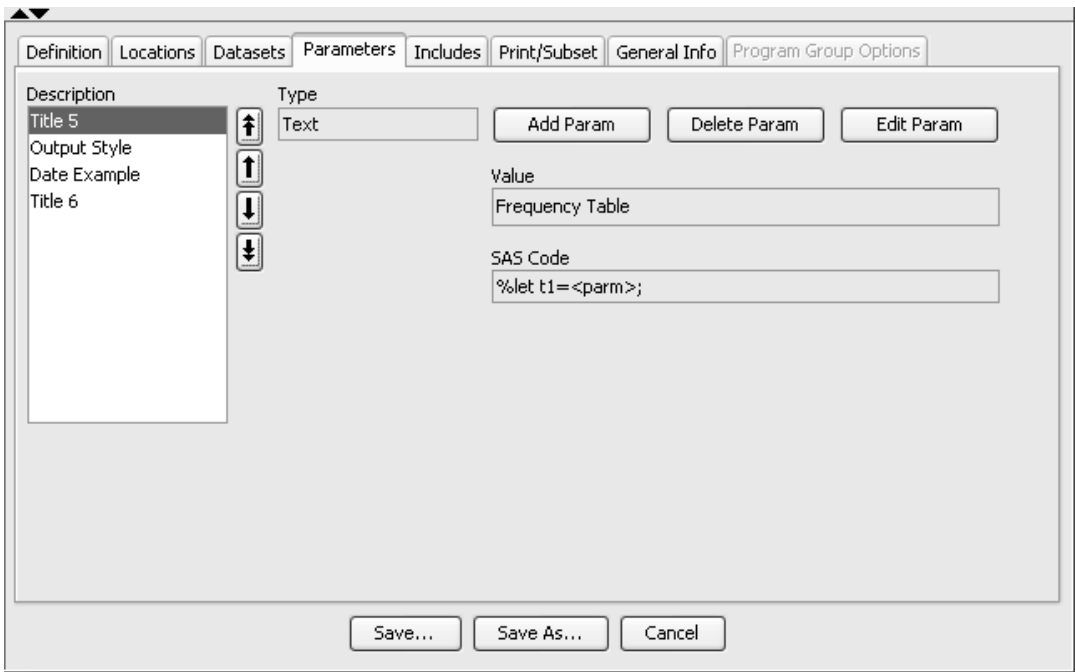
---

*Parameters tab*

The 'Parameters' tab allows you to enter runtime parameters to modify the behavior for the selected SAS program. Review prompts you for runtime parameter values to be selected and passed to your program.

Click the **Parameters** tab to add or edit parameter information. Use the **Add Param**, **Delete Param**, and **Edit Param** buttons to add, delete or edit parameter information.

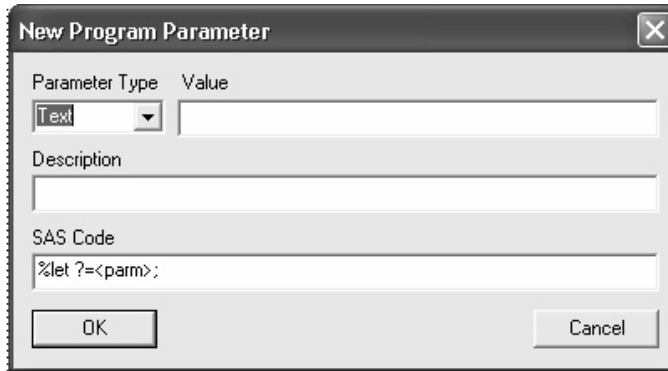
The Parameter # lists existing parameters by sequence number. The number is both for display purposes and for order of parameter inclusion in the SAS job. Click on the parameter number to view information about the parameter. In this example, a previously registered SAS Program was selected from the Programs list and for the **Edit** function.



If there are no parameters registered, the Review Program Registration Browser assigns a SeqNo (1) to the first row to add new program parameter information or edit existing parameters.

**Param #** lists the parameters by sequence number. The parameters for a specific program are sequenced by this value, for display purposes and order of inclusion into the SAS job. Click on a parameter number to see information about that parameter.

1. Click the **Add Param** button and the New Program Parameter window opens.



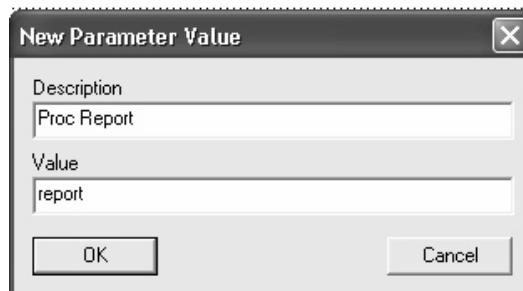
2. **Parameter Type** indicates **Date**, **Directory**, **File**, **List** or **Text**.
3. For **Text** and **Date** parameters:

**Value** is the default text value for the parameter.

For **List** parameters:

Values must be added when you select the List parameter type. Use the **Add Value**, **Delete Value**, and **Edit Value** buttons on the Parameters tab to add, delete and edit values in the list.

**Values** is a list of possible values for the parameter.



4. **Description** is a descriptive name for the parameter.
5. **SAS Code** is the code used to set the parameter value into a MACRO variable in the SAS program code. This is usually of the form “%let ?=<parm>;” where ‘?’ is the name of the MACRO variable used in the SAS program. Replace the question mark with the MACRO variable.
6. Click **OK** to save. Click **Cancel** to discard changes.

Multiple parameters can be included for each SAS program, and the SASCode can include as many <parm> substitution tokens as desired. Each instance is substituted with the value of the user’s selection.

### Example of the parameter type for **Text**.

The screenshot shows the SAS Parameters dialog box with the 'Parameters' tab selected. A table lists parameters 1 through 4, with parameter 1 selected and its type set to 'Text'. An 'Edit Program Parameter' dialog is open, showing the configuration for parameter 1. The dialog has the following fields:

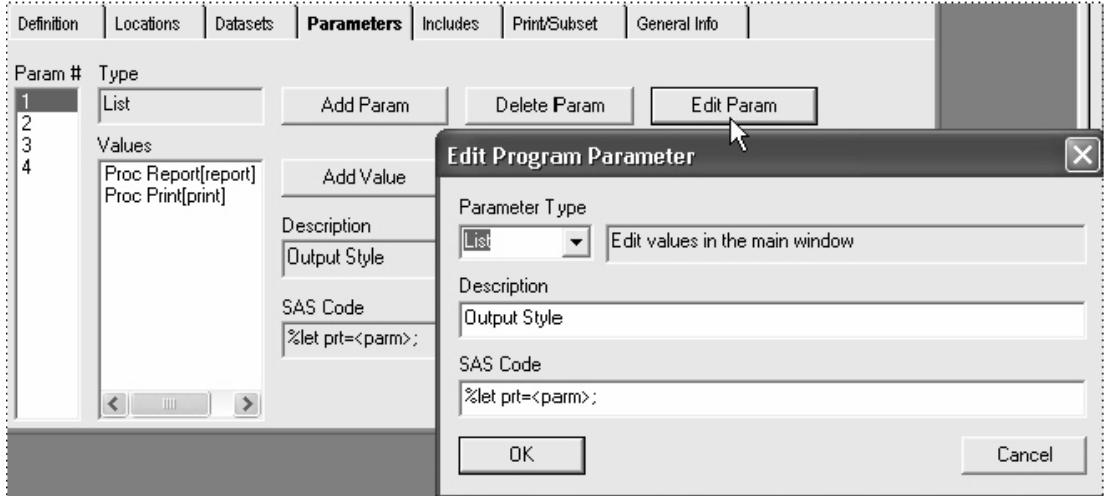
Parameter Type	Value
Text	Frequency Table
Description	Title 5
SAS Code	%let t1=<parm>;

### Example of the parameter type for **Date**.

The screenshot shows the SAS Parameters dialog box with the 'Parameters' tab selected. A table lists parameters 1 through 4, with parameter 1 selected and its type set to 'Date'. An 'Edit Program Parameter' dialog is open, showing the configuration for parameter 1. The dialog has the following fields:

Parameter Type	Value
Date	
Description	Date Example
SAS Code	%let d1=<parm>;

Example of the **List** parameter type where **Values** is a list of the possible choices for the parameter.



The List parameter type is a specifically formatted list of possible parameter values. You must add the values when you select the List parameter type. Each entry consists of parameter text description and parameter value. This is presented in the form of a list with the following entries:

Detail report[1]

Summary report[2]

In this example, if you select the Summary report[2] entry, then `<parm>` in the **SAS Code** will be substituted with the value 2. Note that the value being substituted is a character value, you need to include any required quotes in the **SAS Code** expression.

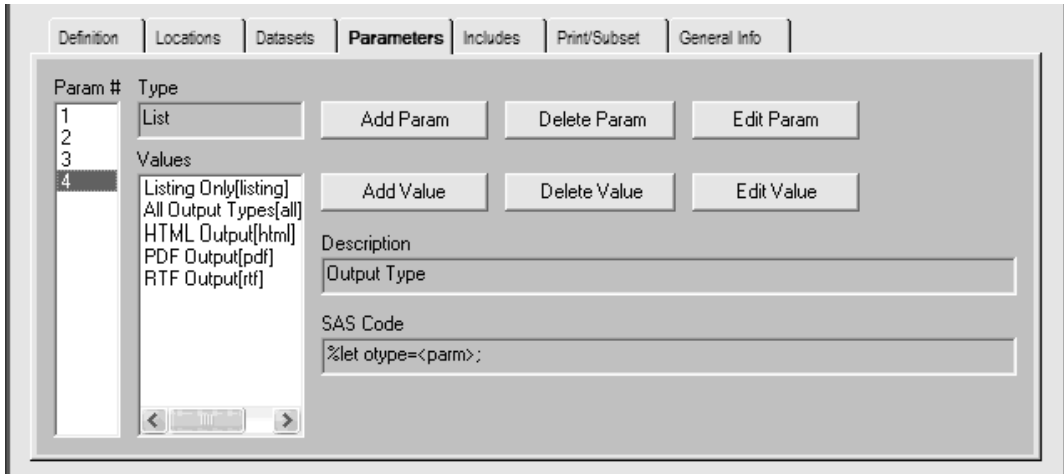
An example is:

```
%let REPSTYLE=<parm>;
```

If you choose 'Summary report[2]' as described above, then `<parm>` is substituted with 2, yielding:

```
%let REPSTYLE = 2;
```

This SAS program shows the parameter type for *List* with multiple values added and listed.



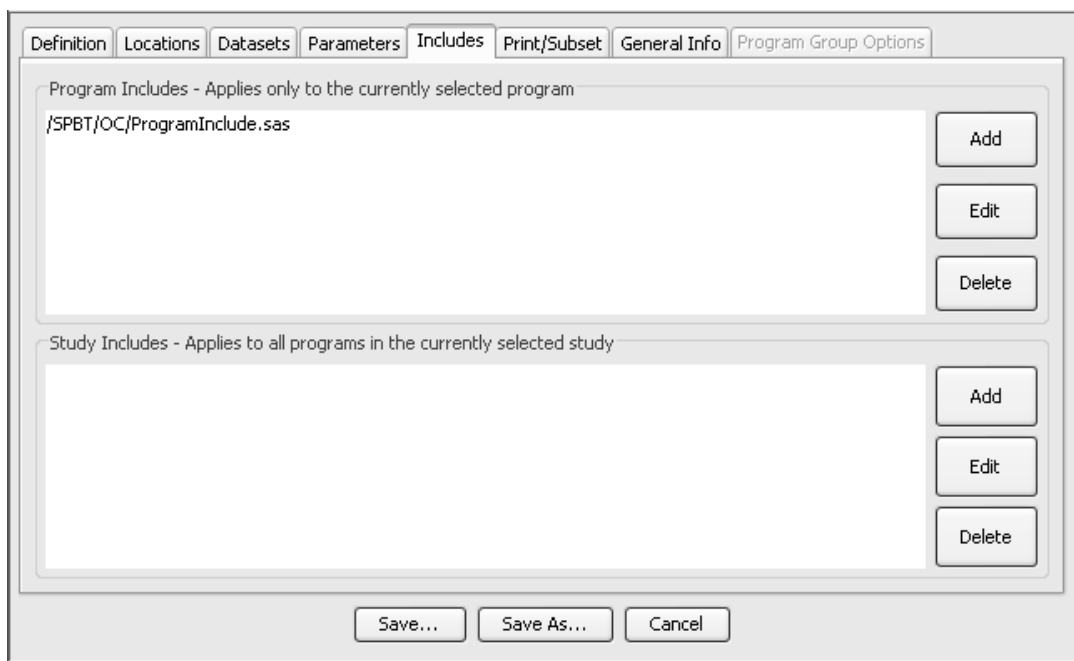


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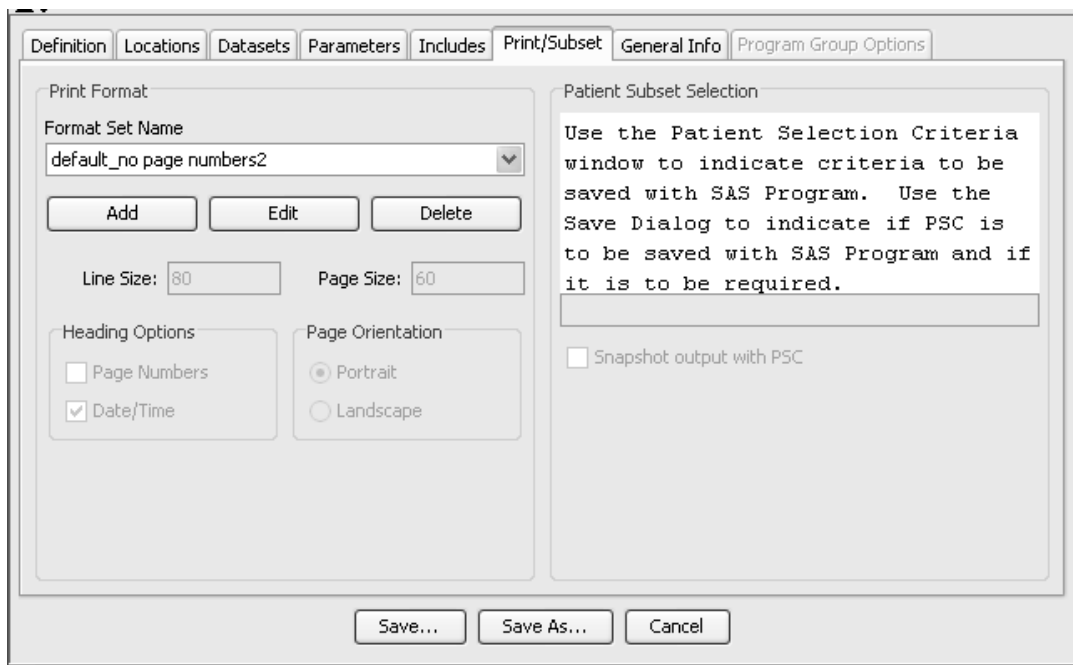
## Includes tab

Click the 'Includes' tab to enter associated source files program to automatically insert include file references in the SAS code that it creates. The system will add a '%include' for each entry. Use the **Add**, **Edit** and **Delete** buttons to add, edit and delete files in the list. (See *Auxiliary Windows: Browse Server*.)

- **Program Includes** contains a list of source files to be included for the selected *individual program*.
- **Study Includes** is a list of source files to be included for *all programs* in the currently selected study.



Use the Print/Subset tab to enter print format options and to apply a patient subset selection if required.



- **Print Format** – shows the current print format assigned for the program. (See *Auxiliary Windows: Print Format.*)
  - **Format Set Name** - displays a drop down list to select changes for the print format. You can also define a new *Format Set* to use for many registered programs and program groups.
  - **Heading options** for Page Numbers and Date/Time are available in addition to setting the Page Orientation.
  - **Page Orientation** for portrait or landscape.
- **Patient Subset Selection** – can be assigned to programs or programs groups. (See *Auxiliary Windows: Select Subset.*)
  - **Current Subset** - defined means the SAS program will automatically execute against the defined patient subset.
  - If a program has no subset assigned and one is active in the Patient Selection Criteria window at runtime, the active patient selection criteria is used in execution.
  - **Select Subset** - opens a dialog window to enter changes or clear the patient subset selection for a SAS program. *If the Data Origin is set to NONE, the Select Subset button is disabled.*

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## General Info tab

The 'General Info' tab displays general information about the registered program.

- **Author** - UserID of the person who added the program registration into the system.
- **Created** - Date the program registration was added.
- **Client Version** - Review client version used to add the program registration.
- **Override** - What program, if any, the program is overriding at the study level. Displays the **Description** and **ID Number** - an internal object ID number for the SAS program (determined by Review).

The screenshot shows a software interface with a 'General Info' tab selected. The tab contains the following fields and values:

Field	Value
Author:	OPS\$GUEST8
Created:	18-NOV-09
Client Version:	9.1.2-1024

The 'Override' section contains the following fields and values:

Field	Value
Description:	
ID Number:	0

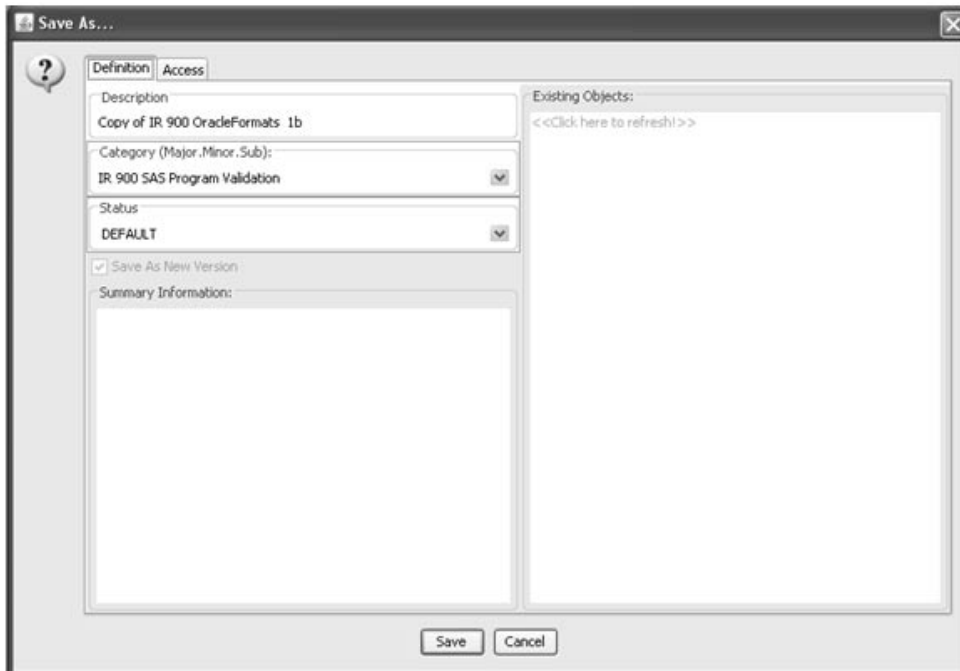
Buttons at the bottom: Save..., Save As..., Cancel

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## Save STAT Program Registration

Once you have entered the STAT Program Registration information in **New** or **Edit** mode from the tabs, click the **Save or SAS As** button on the main STAT Program Registration Browser window. Review displays the Save As window.

(See *Chapter 11: Saving and Managing Objects, plus Alerts Browser*)



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## Interactively register R programs

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### *R scripts overview*


JReview supports the ability to ‘register’ any R scripts stored on the server side to be executed from any JReview user’s session thereafter. The integration of JReview and R programs is intended to support use of standard R scripts from many different studies, even if the study dataset and column names are different.

Variable name remapping is supported, as well as forming R dataframe ‘composites’ from different SAS datasets where join logic has already been determined and implemented by JReview. The benefit is that the user registering the R script can select different items from different datasets, all of which can be presented to the R script as an already prepared R data frame, without any other processing needed within the R script.

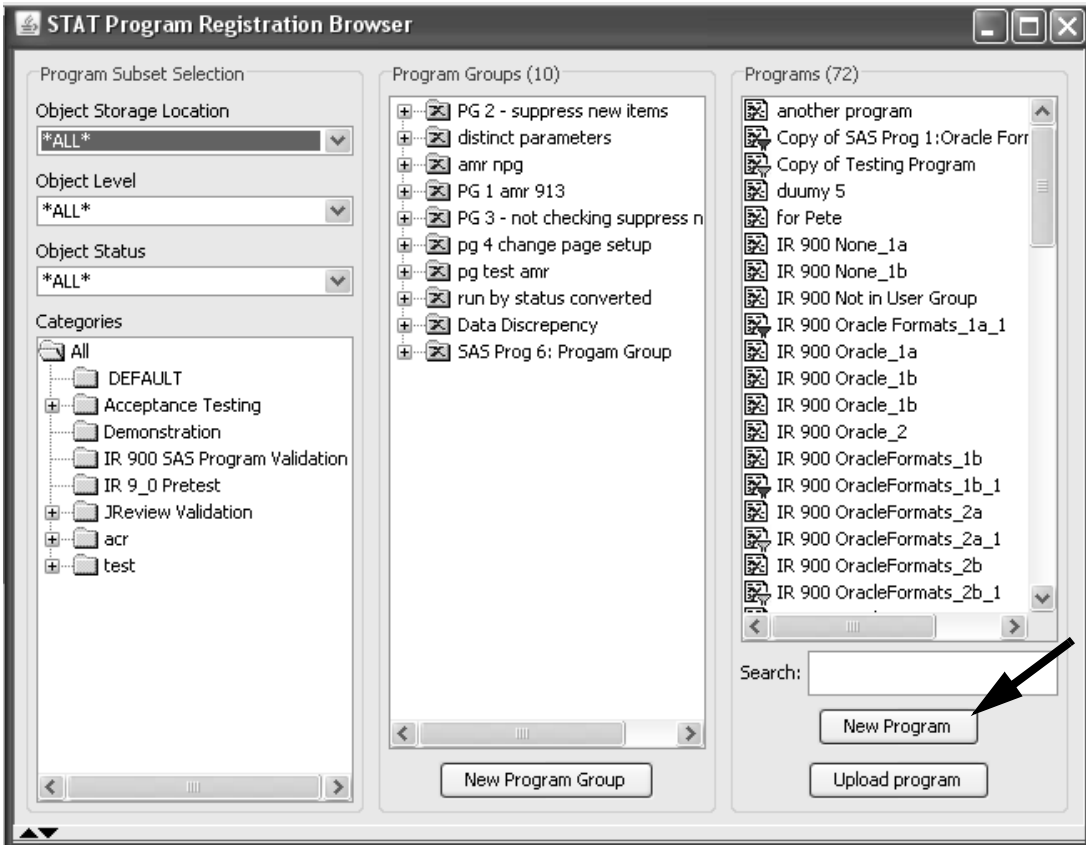
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### *Register R programs*

The following steps details the R script registration process.

1. Launch the ‘STAT Program Registration’ browser (for either SAS or R) by clicking  in the icon toolbar, or select ‘Browse’ menu item, then ‘Stat Programs’ submenu item.

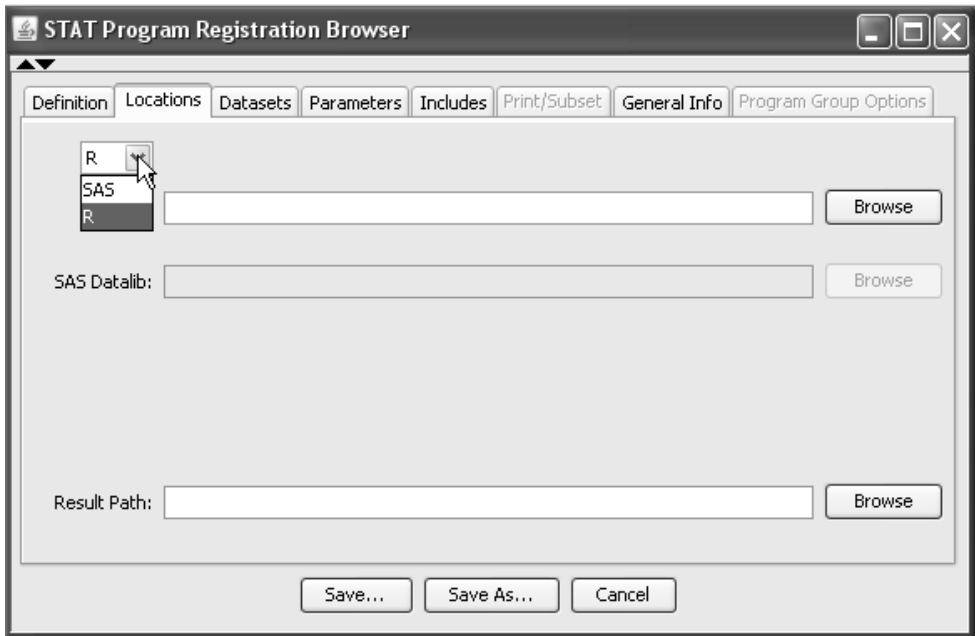
The STAT Program Registration Browser window is displayed which lists the currently registered programs, along with several buttons which allow registering new programs/scripts New Program or Upload Program (to move a program from your PC to the server).



2. Click on the 'New Program' button, (assuming the SAS or R program has already been uploaded to the server); the following dialog window is displayed.

The Locations tabs displays in default SAS settings. When R program” is not installed, or not enabled on the Locations tab; then only information for SAS programs is displayed. If “R program” is installed and enabled, another dropdown listbox appears in the Locations tab. The user can select either a SAS or R program to be registered. Other settings are also conditionally enabled, or disabled based on “R program” status, such as the ‘Composite’ mode button in the Datasets tab.

To register an “R program”, the user selects the R option on the Locations tab. Once the R option is selected, a number of tabs become disabled which aren’t relevant for registering an “R program”.



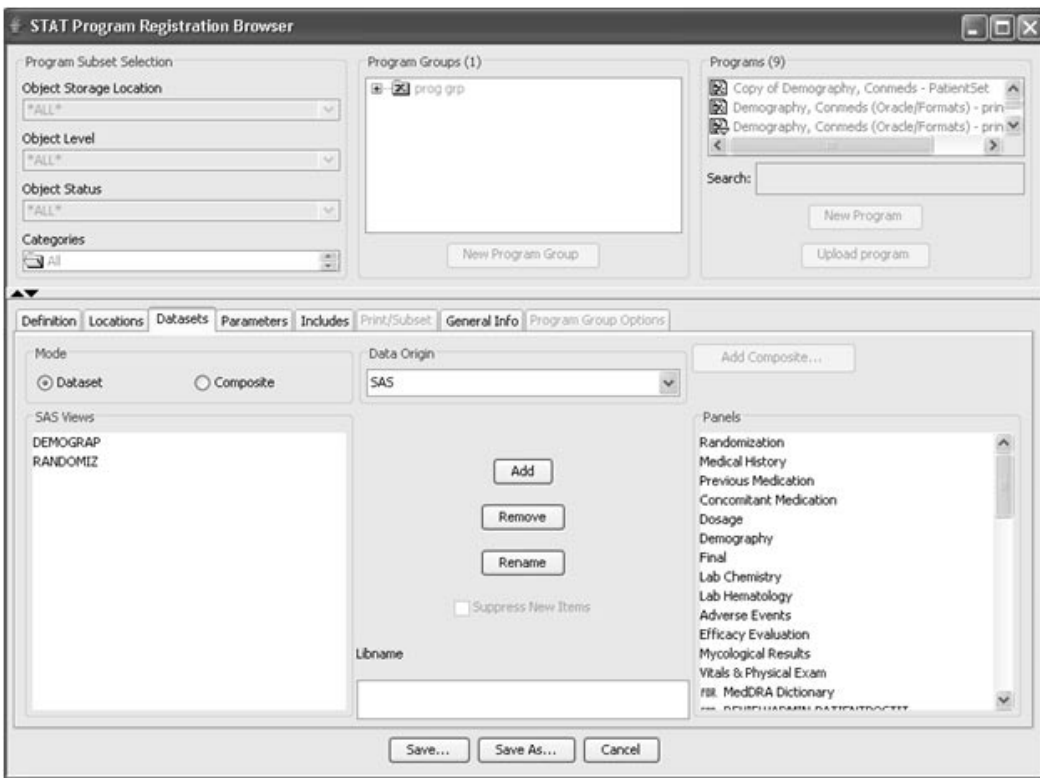
3. The user can select either SAS or R in the dropdown listbox, telling the system what type of program is being registered. Use the ‘Browse’ button to locate the program on the server side, to fill in the ‘Program:’ entry for the fully qualified location/name of the program.

- The next most important task is to tell JReview which SAS datasets should be provided to the SAS or R program. Click on the 'Datasets' tab.

Two main choices are available: 'Dataset' or 'Composites'.

- Datasets** provides complete datasets (subsetting to only include the current Patient Selection Criteria patients), as R dataframes (from R scripts), or subsetting SAS datasets for a SAS program.

Dataset example: Full datasets are provided as R data frames (for R scripts), or SAS datasets (for SAS programs):





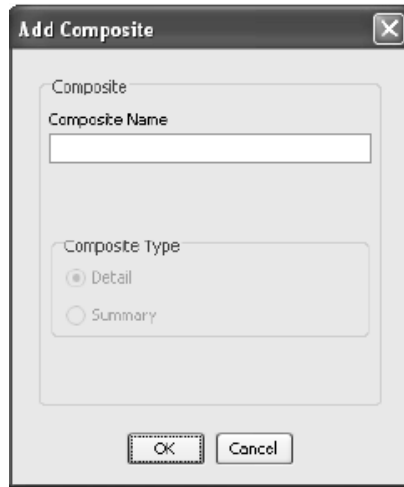
- **Composites** allows the user to select different items from different datasets. This is similar to constructing a detail report in JReview, but the result is a named R dataframe (based on the composite name you provide); and the items from different datasets – with individual variable name renaming supported.

When the R option is selected on the Locations tab, the ‘Composite’ mode button in the Datasets tab is also conditionally enabled, or disabled based on “R program” status.



When Composite mode is selected, click the **Add Composite** button to enter a descriptive label for a Composite.

Adding multiple Composite tabs is supported. The selected panels and items are added in a tree display.



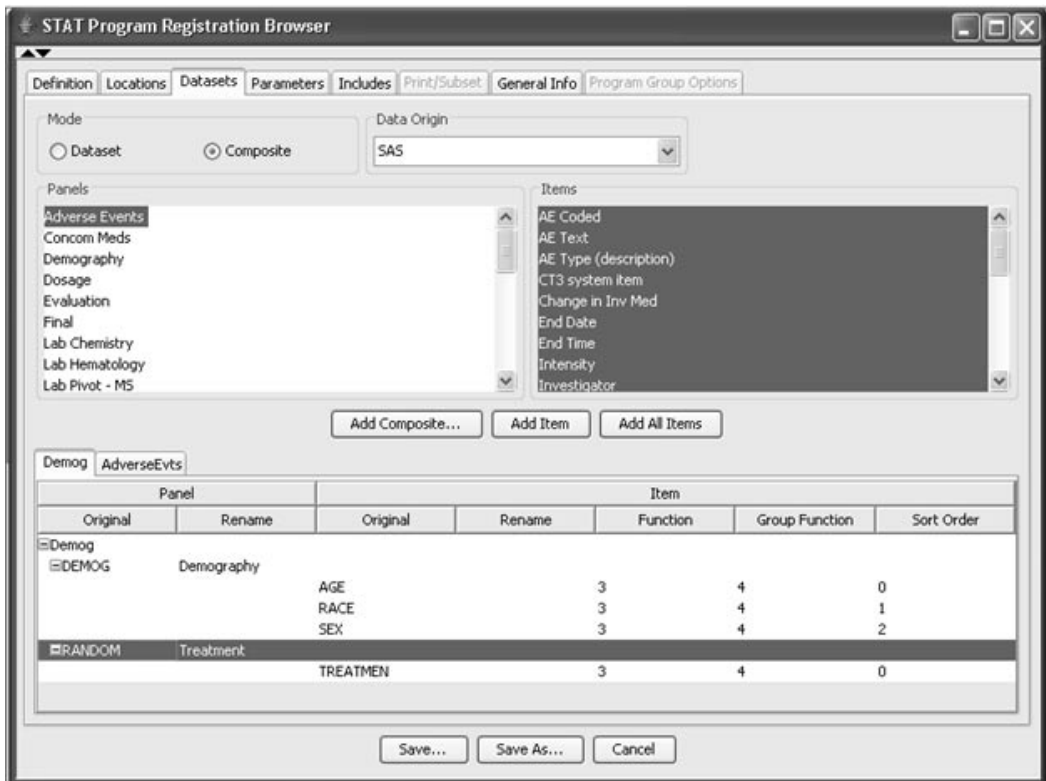
Composite names have a couple of restrictions.

- The name of a composite must be from 1 to 36 characters.
- The name cannot contain spaces.
- There is no limit to the number of composites. However, each composite must have a unique name.

Then select the individual panels and items to add to the defined composite for panels and items of interest.

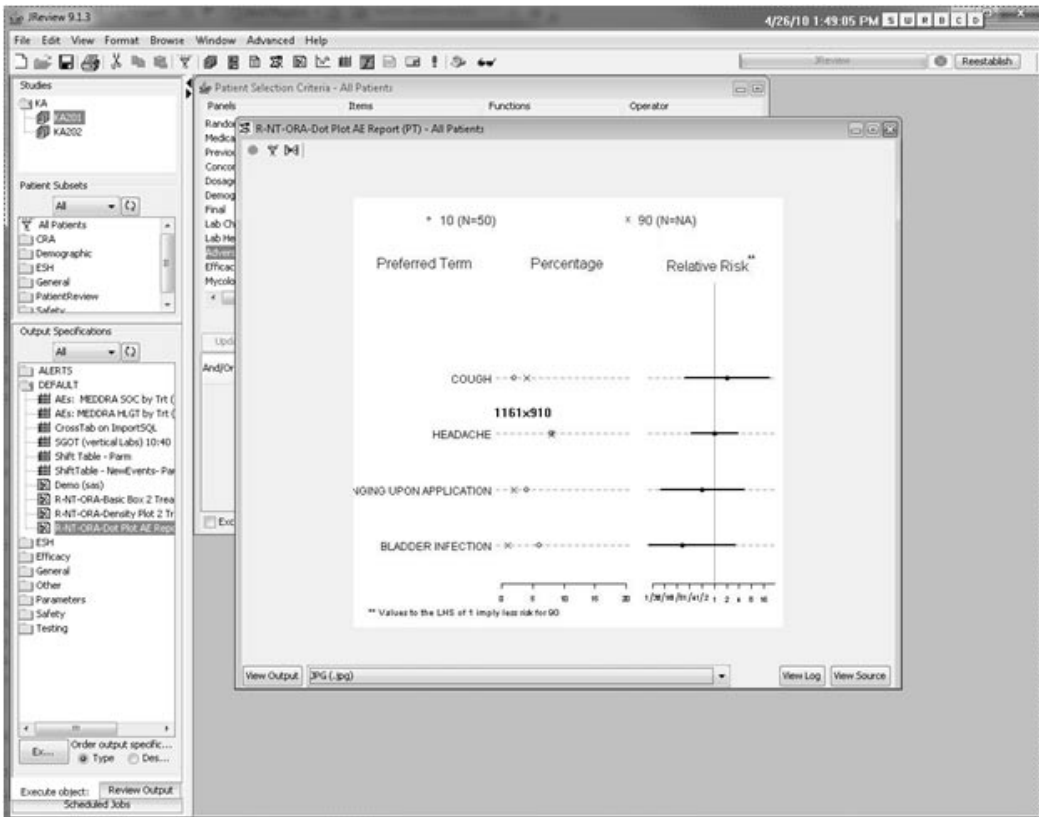
You may double click on a particular panel or item “Rename” column to change the description. Likewise, to remove a renamed description, double click on the column to select and delete.

Composites Example: The User selects items from various datasets resulting in an already joined R dataframe, with just the items selected. Any item name may be RENAMED as desired, so the DataFrame and ItemNames will match the called R script:



- After completing the registration information, telling JReview where to find the R script, what SAS datasets (or composites) are required., click Save.
- Save the R registration the same as with any JReview object, either Private, UserGroup or Public. Specify the definition scope for Study, Project, StudyGroup or Global. Thereafter, the object specification appears in the Output Explorer, along with any report, graph, patient profile, etc. These can also be included in Dashboard Views.

An example of a R script executions, displaying generated plots. The R script output that can be displayed/retrieved includes a variety of graph output types, plus PDF, RTF, table (Excel like output).



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## Auxiliary Windows

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### *Browse Server*

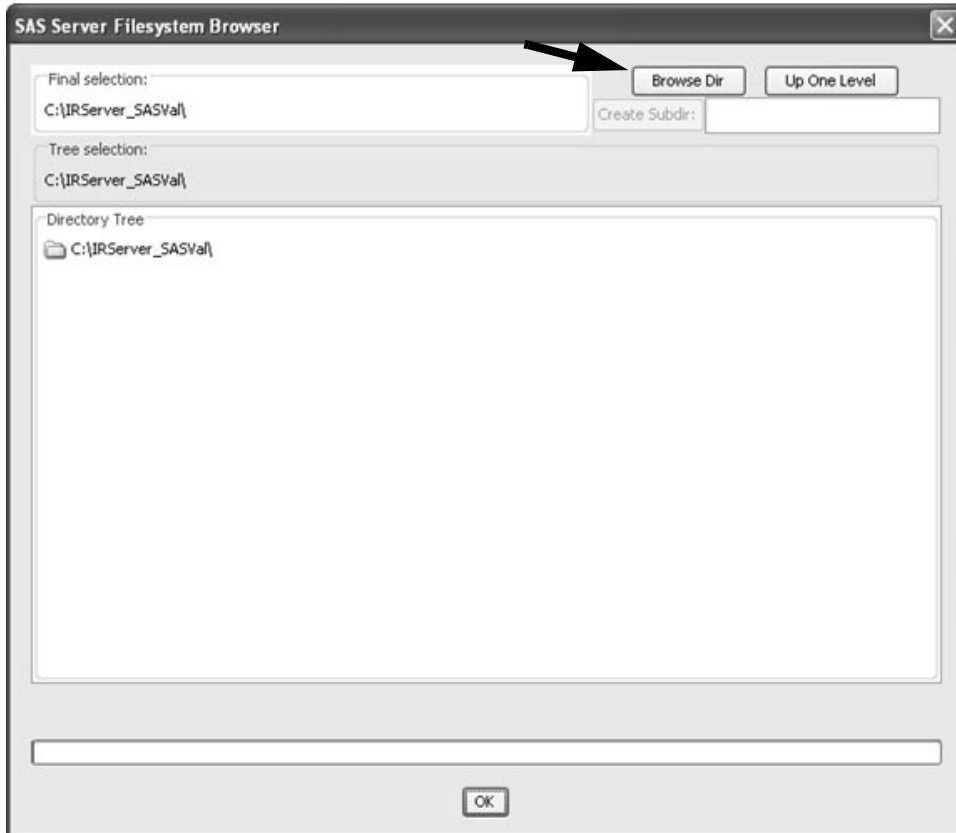
If the Review Server version supports browsing, the **Browse** and **Add** buttons open a Browse Server window that displays lists of directories and files on the server. Directories can be navigated and files can be selected for inclusion in these lists. Access to browse directories is available throughout the SAS Program Registration functions. If the server version does not support browsing, a window opens to allow you to type in a new entry.

You can type entries in any of these fields in the Locations tab, or, if the Review Server version supports browsing, clicking the **Browse** button next to each entry opens a Browse Server window.

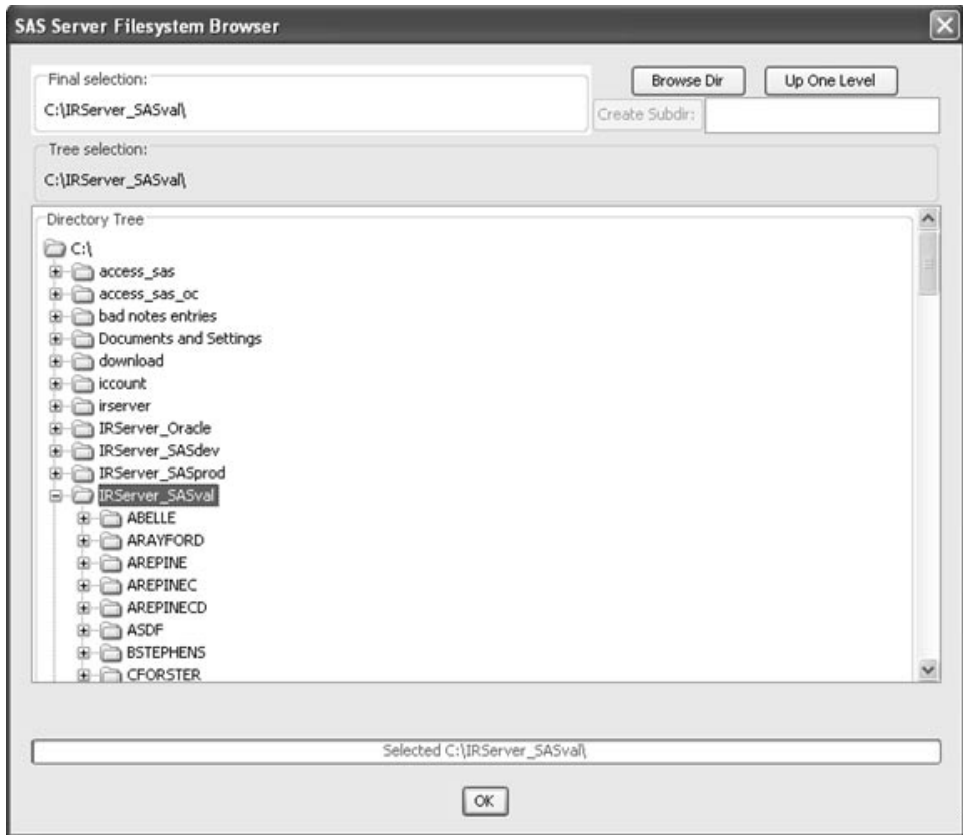
The screenshot shows a dialog box with the following elements:

- Tabbed interface with tabs: Definition, Locations, Datasets, Parameters, Includes, Print/Subset, General Info, Program Group Options.
- Input fields and buttons:
  - Program: [text box] [Browse]
  - SAS Datalib: [text box] [Browse]
  - SAS Mstore: [text box] [Browse]
  - SAS Auto: [text box] [Browse]
  - Result Path: [text box] [Browse]
- Bottom buttons: Save..., Save As..., Cancel.
- An arrow points to the top-right corner of the dialog box.

Click the **Browse Directory** button to display and select subdirectories and files.



The Browse Server window allows users to browse directories and files on the server. This avoids typing errors and also prevents users from typing paths and/or file names that do not exist.

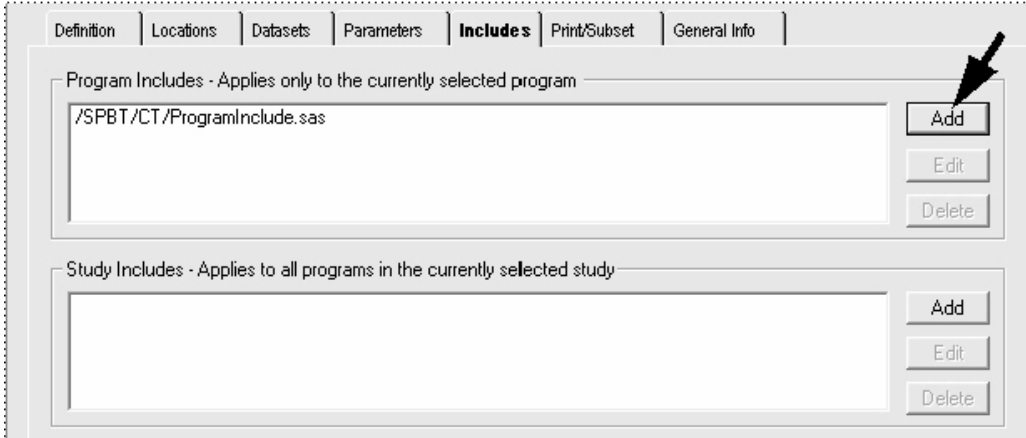


The “Browsing:” text area initially contains the server home directory where you can also type a path here. Clicking the **Browse Directory** button displays directories and files that exist in that directory. Double-clicking on a directory selects it to be the current browsing directory.

Clicking on a directory in the list displays files in that directory. The “Current selection:” text area displays the path/file that will be returned when you click the **OK** button. The dialog also knows if the required return is a directory or a file and will only allow the correct selection type to be returned.

The Includes tab in the STAT Program Registration Browser window displays the **Add** button. When the **Add** button is clicked for Program Includes or Study Includes, the **Browse Server** window opens for the SAS Program Include file.

You *must* click the **Add** button to enter the Program Includes or Study Includes directory and file information and cannot type the information.



You can edit an entry from either list in the Includes tab by selecting it and clicking the **Edit** button, which opens a window where the text of the entry can be changed. Use the same steps and click the **Delete** button to delete an entry from either list.





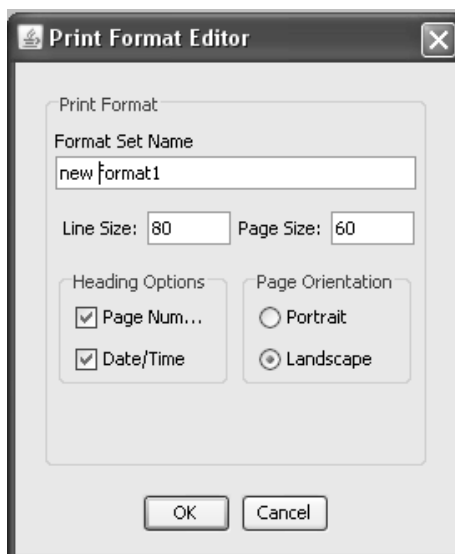
When you click the **Change Print Format** button on either the SAS program Print/Subset tab or on the Add Program Group dialog, the Print Format window opens. This dialog allows adding, editing and deleting print format sets as well as choosing a print format for a particular SAS program or program group.

The `_default_` format is applied to every new SAS program and program group when it is created.

1. Click the **New** button to create a new Format Set.

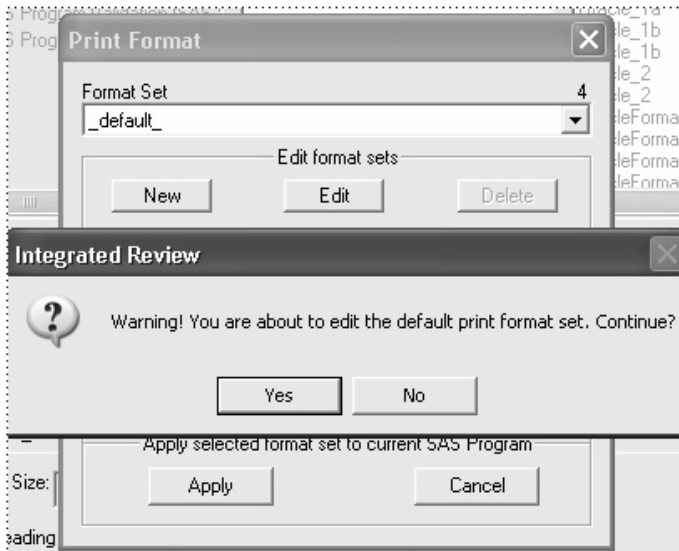
When you open the Print Format window from a program group, the number of programs within the group is displayed at the upper right.

2. Enter a Format Set description. Format set names can be up to 40 characters long.
3. Change the Line Size and Page Size.
4. Check Heading options for Page Numbers and Date/Time.
5. Select the Page Orientation.
6. Click **Save**.

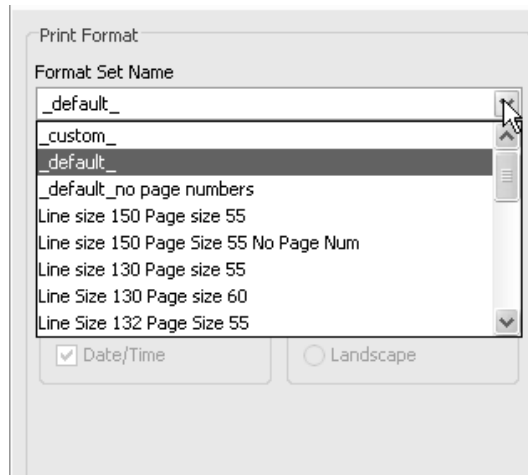


*Note: A print format cannot be deleted if it is currently assigned to a SAS program or program group.*

To edit a Format Set, click the **Edit** button. Follow the same steps used to add a new Format Set. If you select to edit the `_default_` format, a warning message displays. Click **Yes** to continue to edit the `_default_` format set.



Print format sets can be defined and named so that the same format settings can be used for many SAS programs and program groups. Two special names, `_default_` and `_custom_`, are also defined.



The `_custom_` format allows any SAS program or program group to have its own unique print format settings. When the `_custom_` format is selected, the fields on the dialog become editable for you to enter their own format parameters. Click **Apply** to save format changes.

**Print Format Overrides Programs** causes the program group's print format to be used for the entire output. "Heading Options Override Programs in Group" and "Page Format Overrides Programs in Group" are unique to program groups.

These options are set when adding or editing a program group. If a program group has a print format assigned and the "**Page Format Overrides Programs**" box was checked when the program group was saved, all output from the entire batch run will be formatted according to the program group's print format settings. Otherwise, the output from the batch will be formatted using the maximum line size and page size used by any of the programs in the group.

For example, if a program group is run without any print format overrides set for the program group, the display format is determined by taking the maximum page size and maximum line size of all of the programs within the group. For example, if one program has LS=80 PS=60 and another has LS=132 PS=50, the display format will be LS=132 PS=60.

Likewise, if a program group has a heading options assigned and the "**Heading Options Override Programs**" box was checked when the program group was saved, all output from the entire batch run will be formatted according to the program group's heading options. Otherwise, the output from the batch will be formatted using the individual heading options used by the programs in the group.

Print Format

Format Set Name  
Line Size 130 Page Size 60 (2)

Add Edit Delete

Line Size: 130 Page Size: 60

Heading Options

- Page Numbers
- Date/Time
- Heading options override programs in group

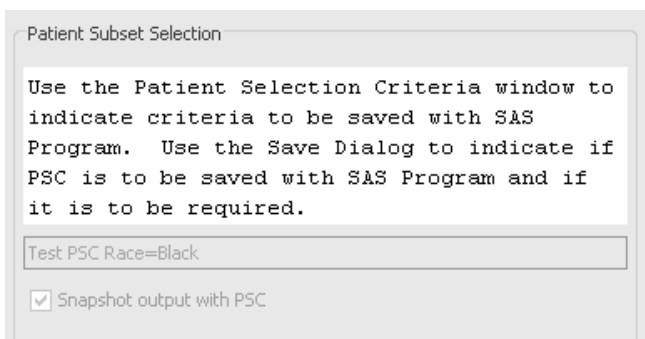
Page Orientation

- Portrait
- Landscape
- Page format overrides programs in group

Note: (See System Management: New Program Group.)

If a program or group has no subset selection assigned and one is active in the Patient Selection Criteria window, the active subset selection will be used in the program or group execution.

The active patient selection criteria may be appended and saved to a SAS Program or Program Group during registration. The patient subset is entered in the Patient Selection Criteria window to be saved with the SAS Program or Program Group. Use the SAVE dialog to indicate if the selection criteria is to be required.



When accessing View or Edit modes for registered SAS Programs or Program Groups previously saved with patient selection criteria; go to the patient selection criteria window to view patient subset details. A filter icon displays next to the object description indicating the program or program group has an appended patient subset. The red filter icon indicates the "Store Required Patient Selection Criteria" option was checked on either for the SAS program or the Program Group dialog.

Forcing "All Patients" can be applied during the registration SAVE dialog by checking the "Store Required Patient Selection Criteria" option on, to disallow changing the patient subset selection for a program or group.

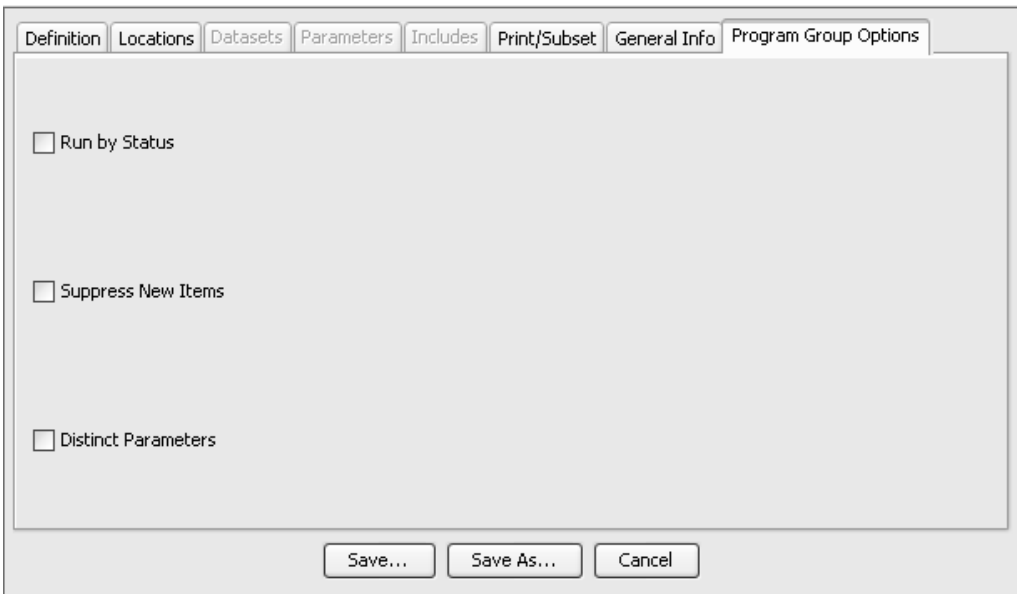
Program group subset selections override all subset selections that may have been assigned to the SAS programs in that group. An exception is that if a program in a program group has a *required* subset, the program group will not run and displays an error message.



---

### *Program group options*

Program group options may be selected for the following functions:



- **Run By Status** will result in only those programs that have the same status code as the program group to display and run as part of the group. If the "Run By Status" is not checked, programs and program group can have different status and all programs will run.
- **Distinct Parameters** displays parameters only once at runtime if they appear in more than one program in a program group.
- **Suppress New Items** overrides the settings for the programs in the group.

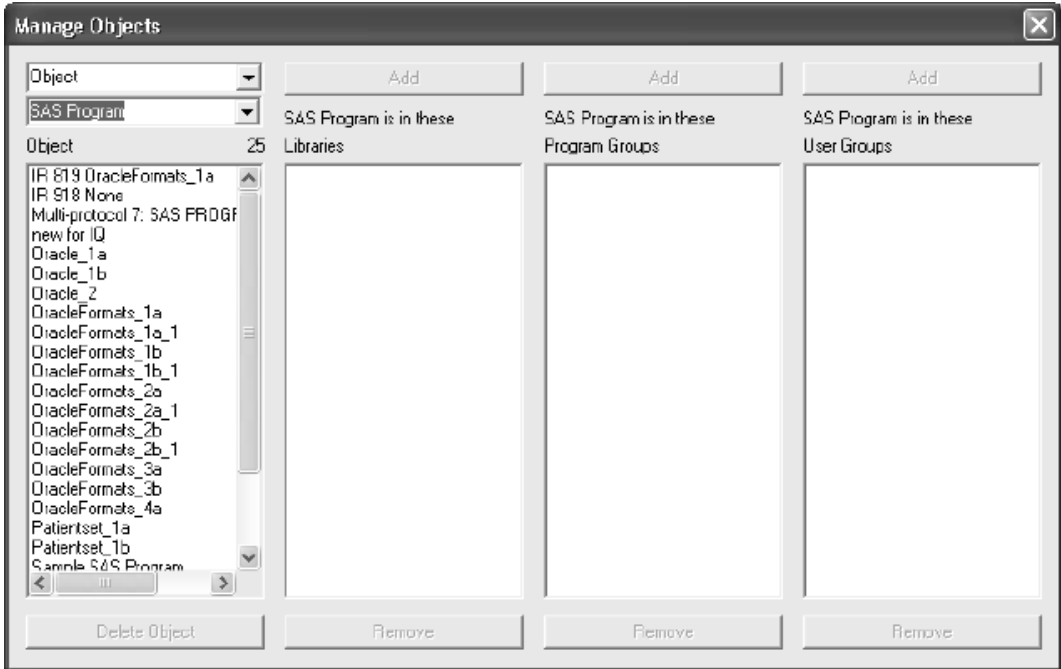
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## Manage SAS objects *(future release)*

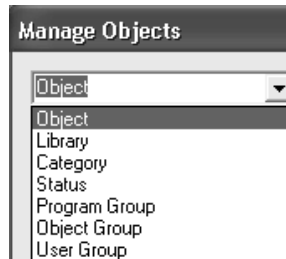
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### Manage SAS programs

Click the **Manage** option in the tool bar for Advanced menu, to access the Manage Objects window.



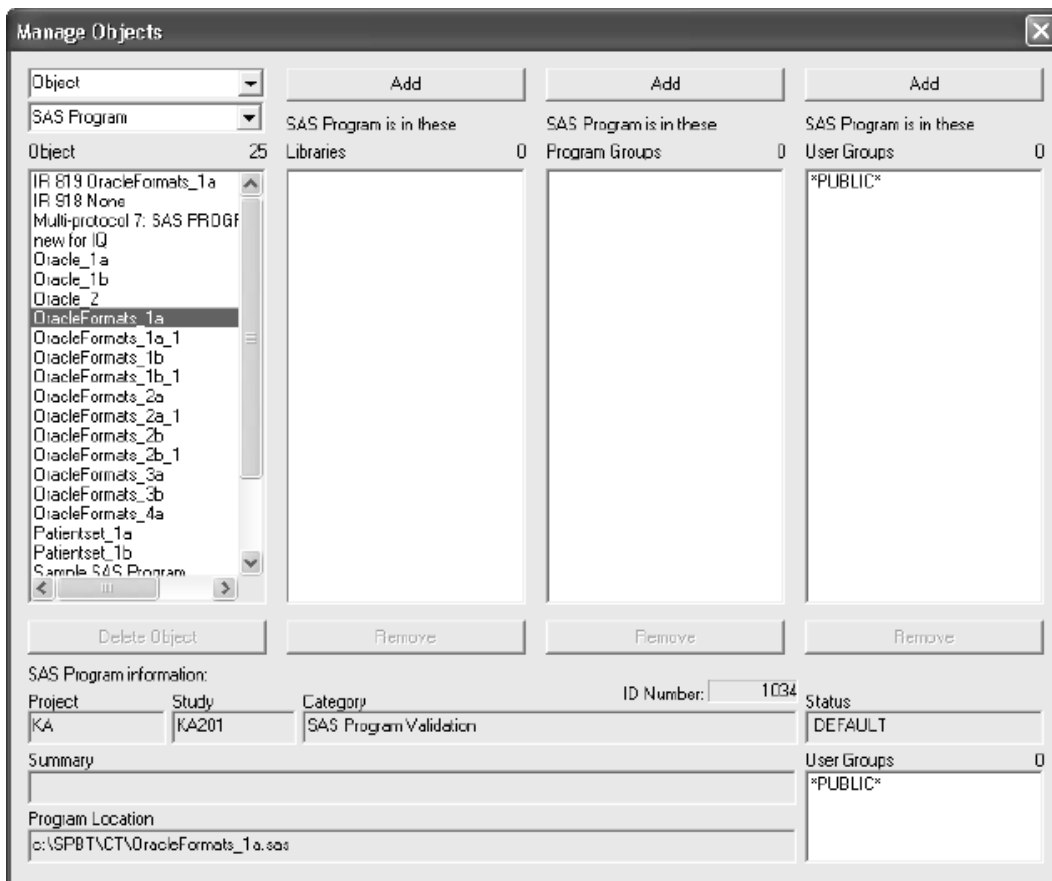
A drop down list displays the available system management options where you can manage the membership of registered SAS programs within the following areas:



- **Object (SAS Program)** - Manage SAS program registrations.
- **Library** - Manage libraries.
- **Category** - Manage categories.
- **Status** - Manage status codes.
- **Program Group** - Manage SAS programs within Program Groups and pertains ONLY to SAS programs. Other object types are excluded.
- **Object Group** - Manages non-SAS program objects within Object Groups and includes SAS Procs.
- **User Group** - Manages objects belonging to User Groups.

You can select a SAS program from the Program list on the SAS Program Registration window, then click the **Manage** button to view the Manage Objects window with the SAS program registration details displayed.

Likewise, you can click the **Manage** button on the SAS Program Registration window to open the Manage Objects window and click SAS Program. Select a SAS program from the list to view detailed information fields displayed at the bottom for that item.





The following functions are available to assist you in managing the membership of SAS programs within Program Groups, Libraries and User Groups.

1. Click on **SAS Program** to display the registered SAS programs.
2. Select a SAS program from the list. You can only select one SAS program at a time.

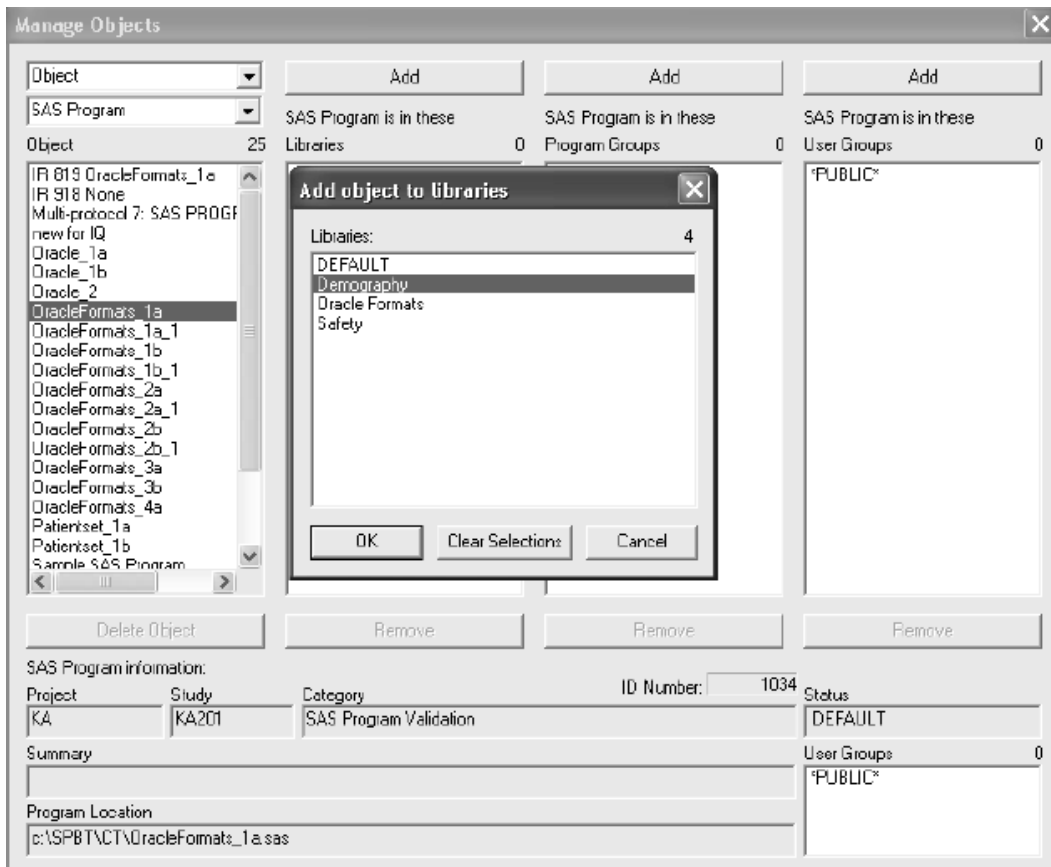
Detailed information about the SAS program displays at bottom.

The Libraries, Program Groups, User Groups display for the SAS program showing current membership status.

3. Click **Add/Remove Libraries** to change a SAS program's membership in a library.

You can select multiple libraries with the CTRL or SHIFT key to add or remove the SAS program's membership in multiple libraries.

Click **OK** to save.



4. Click **Add/ Remove Program Groups** to change a SAS program's membership in program groups.

You can select multiple program groups with the CTRL or SHIFT key to add or remove the SAS program's membership in multiple program groups.

Click **OK** to save.

5. Click **Add/ Remove User Groups** to change a SAS program's membership in user groups.

You can select multiple user groups with the CTRL or SHIFT key to add or remove the SAS program's membership in multiple user groups.

Click **OK** to save.

If you click **Remove all User Groups** the SAS program changes to \*PUBLIC\*.

6. Click **Delete SAS Program** and the SAS program registration and all references are deleted from the database tables.

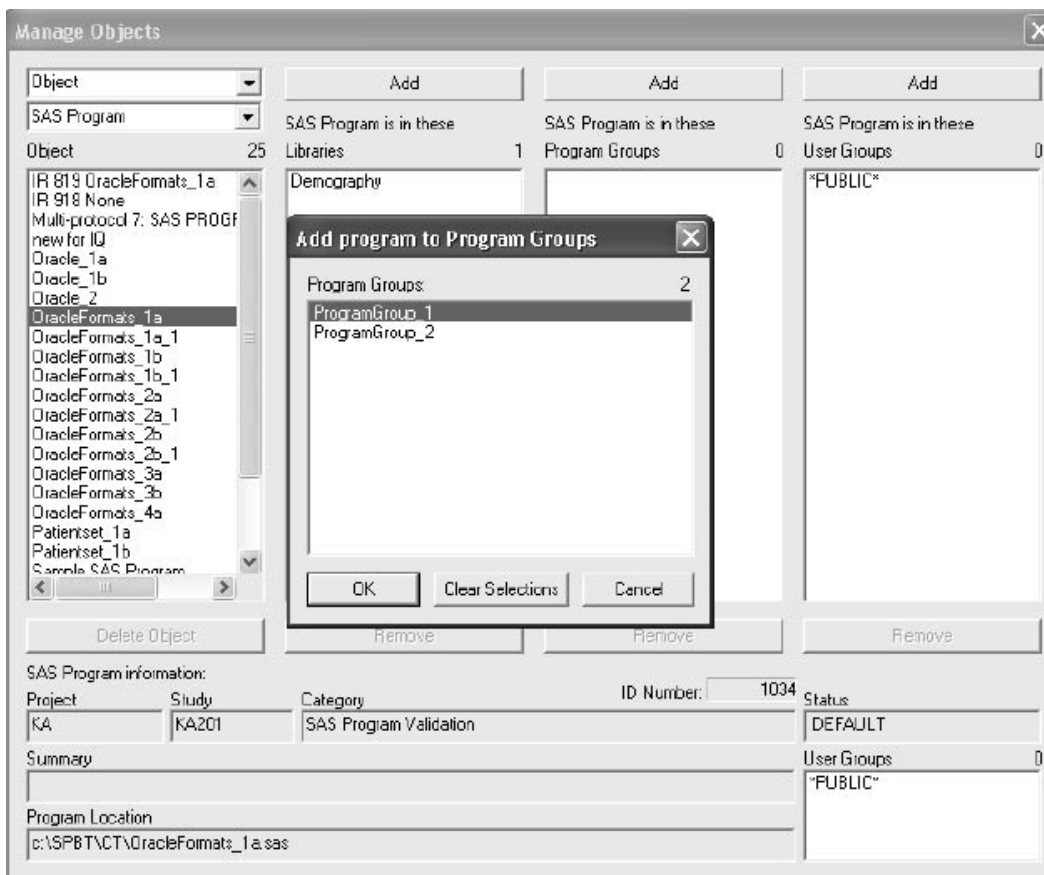
If the SAS program to be deleted belongs to one or more program groups, an "**Are you sure?**" warning message *always* displays, with additional text if belongs to a program group and/or has saved output.

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## Program Group

Open the Manage Objects window and select Program Group. The following functions are available to assist you in managing Program Groups and the membership of SAS programs within Program Groups.

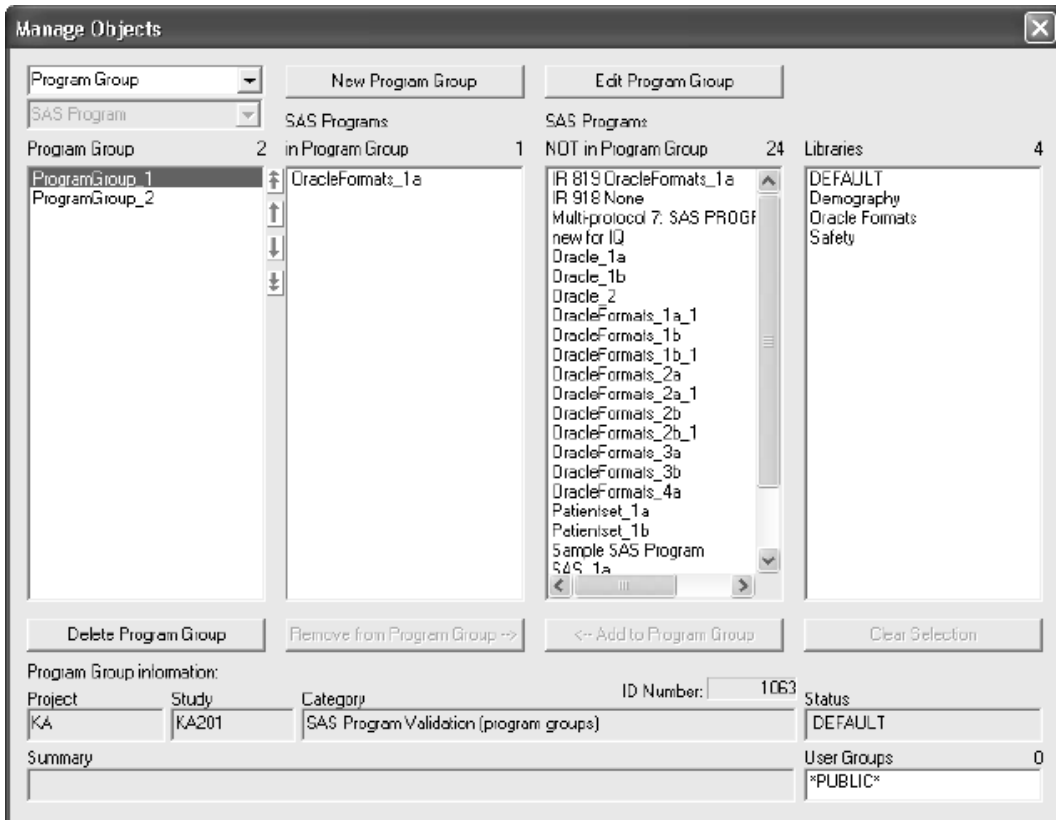
1. Click on **Program Group** to display the existing programs groups.



2. Select a program group from the list. You can only select one program group at a time.

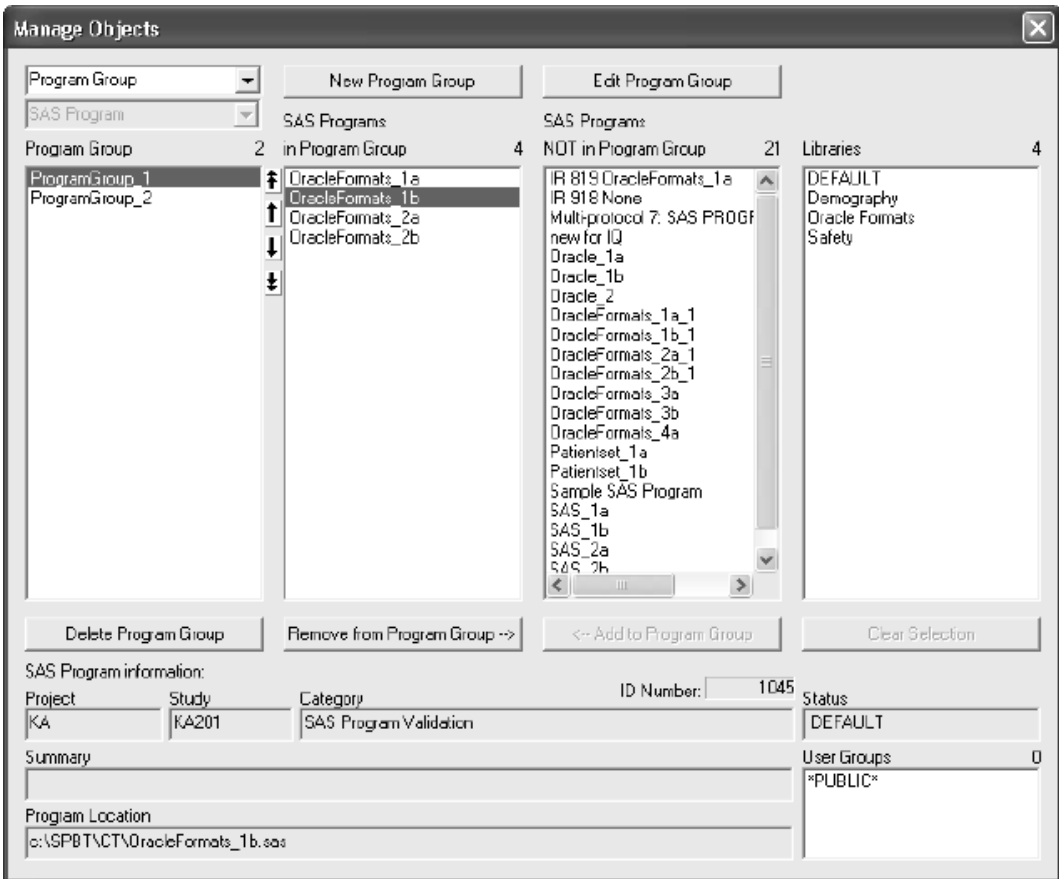
Detailed information about the program group displays at bottom.

The SAS program lists identify which SAS programs are in or NOT in the selected program group.



3. Select a SAS program to display program information in fields at bottom.
4. Click the **Add to Program Group** or **Remove from Program Group** buttons to move SAS programs in and out of the selected program group. The Add and Remove feature changes which programs belong to a program group.

- The **Arrow** buttons become active when a SAS program in the program group is selected. Arrows can be used to move a program up or down one place in the list (middle buttons) or to the top or bottom of the list (top and bottom double-arrow buttons).



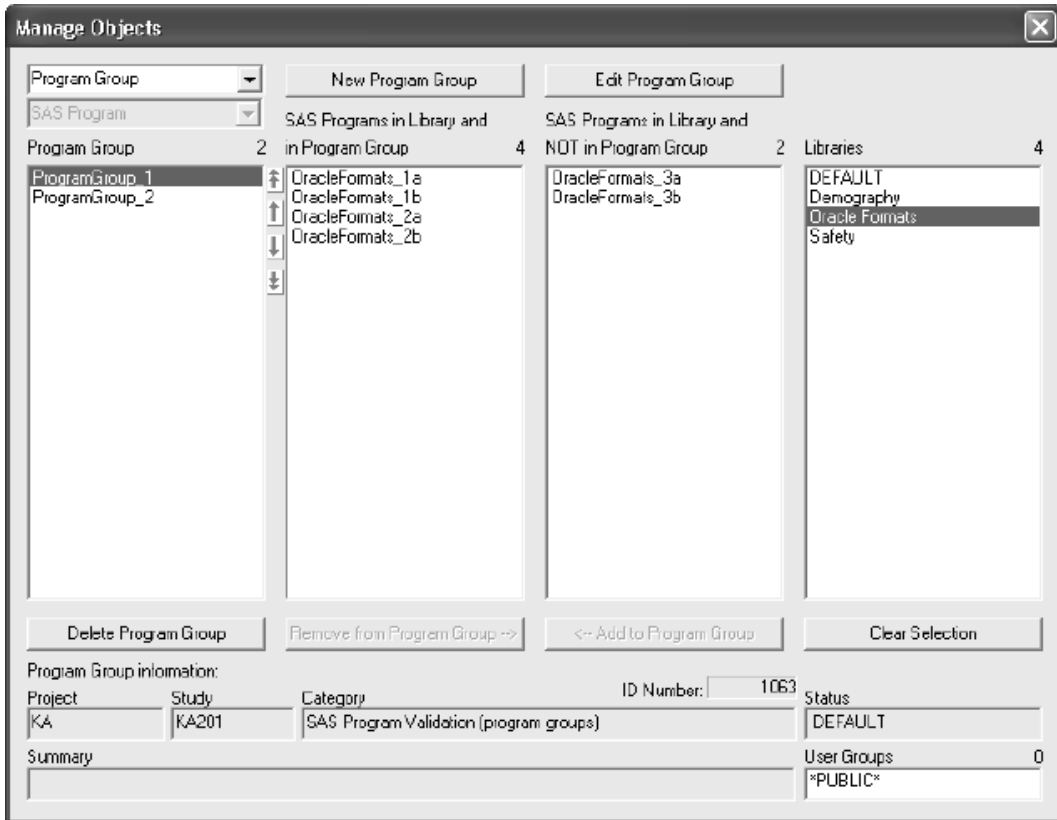
*Note: Review does not allow ANY mixing of data origins with same-name datasets even for Oracle versus Oracle/Formats. The reason is Review generates the SAS view of an Oracle table only once, regardless of how many programs in a program group use the dataset. If the data origin is Oracle/Formats, the format is applied directly in the view to the SAS dataset, otherwise, it is plain SAS variables with no formats applied. Which one gets generated would depend on the order of programs in the group.*

6. Click on a **Library** from the Libraries list.

You can select multiple libraries with the CTRL or SHIFT key to view the SAS programs membership in multiple libraries.

The SAS programs lists identifies which SAS programs are in or NOT in the selected library(ies) for the program group.

Click **Clear Selection** to clear selection(s) in the library list.



Program groups are a convenient way to define a number of programs that are to be executed together as a group, in a specific sequence. Program groups are considered objects, and have the characteristics of other objects such as belonging to a category.

1. Click the **New Program Group** button to open the SAS Program Group window.
2. Required fields for entry are *Name*, *Category* and *Status*.

*Note: A Program Group can belong to only one CATEGORY and have only one STATUS assigned to it.*

*Note: A program group can only be saved at User Group or Public locations.*

Defaults are supplied (e.g., study-level group, print format = `_default_`) and you can select or type in the various fields.

3. You can specify a Patient Selection Criteria be applied to the program group at runtime. Click **Select Subset** for choices. (*See Auxiliary Windows: Select Subset.*)
4. Click the **Browse** button to define a Result Path to save output. (*See Auxiliary Windows: Browse Server.*)
5. **Print Format Overrides Programs** causes the program group's print format to be used for the entire output. "Heading Options Override Programs in Group" and "Page Format Overrides Programs in Group" are unique to program groups. (*See Auxiliary Windows: Print Format.*)

If a program group does NOT have a Print Format Overrides Programs box checked, individual program setting apply for page numbers and date/time. Order of programs will determine page numbers printed unless one of the programs resets the page numbering. If the Print Format Overrides Programs IS checked, the program group settings will be applied at the beginning of the run. *Still, any program may have an OPTIONS statement that may change these settings.*

6. Options available to program groups are:
  - **Save Output** stores all program output files in the group's Result Path. If Save Output is checked then output is automatically saved.
  - **Run By Status** will result in only those programs that have the same status code as the program group to display and run as part of the group. If the "Run By Status" is not checked, programs and program group can have different status and all programs will run.

- **Subset Required** overrides the settings for the programs in the group.
  - **Distinct Parameters** displays parameters only once at runtime if they appear in more than one program in a program group.
  - **Suppress New Items** overrides the settings for the programs in the group.
7. Clicking the **Save** button verifies that required fields are filled (e.g., Description, Category, Status) and opens the Save Object window.
  8. Clicking the **Cancel** button discards changes after a confirmation dialog is displayed.
  9. Select a program group and click the **Edit Program Group** button. The SAS Program Group window opens with the details of the selected program group for you to edit.
  10. Select a program group and click the **Delete Program Group** button to delete a program group and all references in database tables. The SAS program registrations are NOT deleted.

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### *Program Group Restrictions*

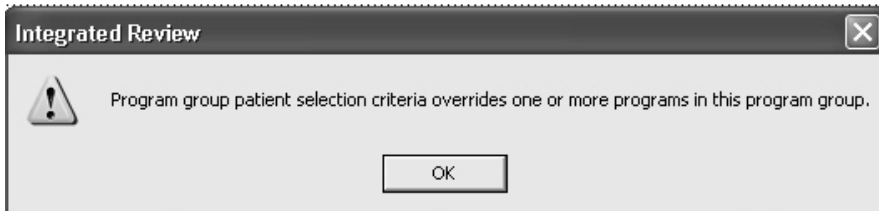
*Program groups may not run for any of the following reasons:*

1. A program has no program source location defined (can't run a program if there is no source code!).
2. Data origin for a program requires datasets (e.g. SAS or ORACLE) but no datasets are defined for the program.
3. Programs within a group have a dataset / data origin conflict. Specifically, two or more programs with different data origins (SAS/ORACLE) or different physical locations (datalib directories) have datasets defined with the same name. Since the collection of datasets for all programs in a group are processed together prior to running the actual programs, this means we have a dataset that comes from two different sources.
4. A program within a group has a required patient subset selection. Since program groups always override patient subset selections for the programs, required subset selections are not allowed in programs within a program group.
5. Distinct parameters have a conflict (e.g. LIST-type parameters with the same name and different possible values in two or more programs). Since the Distinct option means that parameters for all programs are collapsed by name prior to running the programs, LIST parameters with the same name must have the same list of possible values in order for them to be processed together.



*Informational and other messages:*

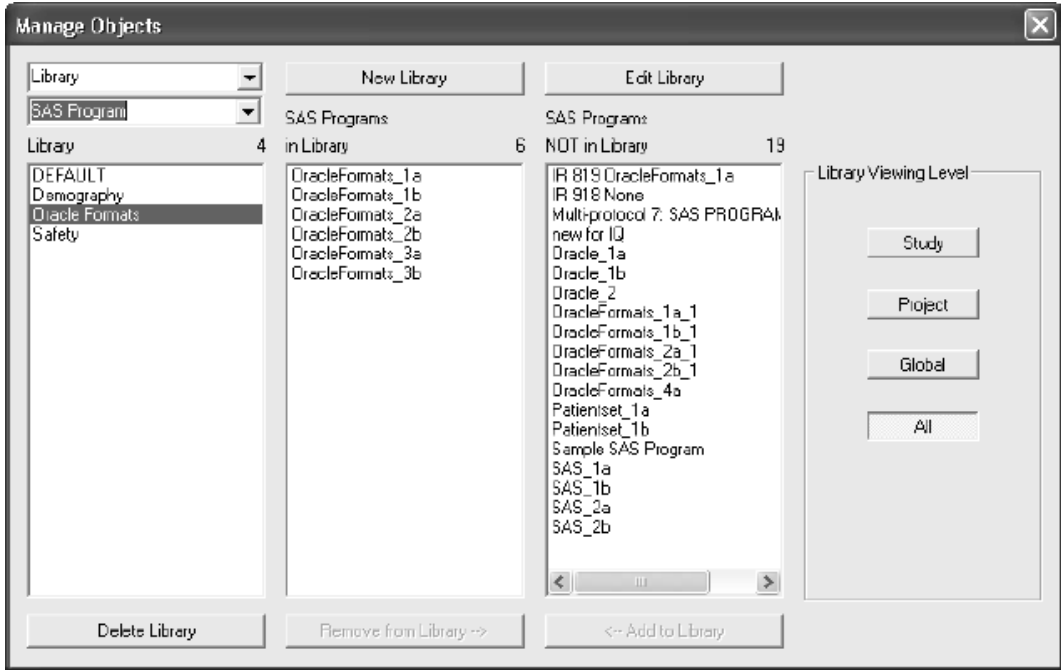
1. One or more programs have a (non-required) patient subset selection that is overridden by the program group. This is true even if the program group has no subset selected – the program’s subset selection will be ignored in this case and “All Patients” will be applied to the program group.



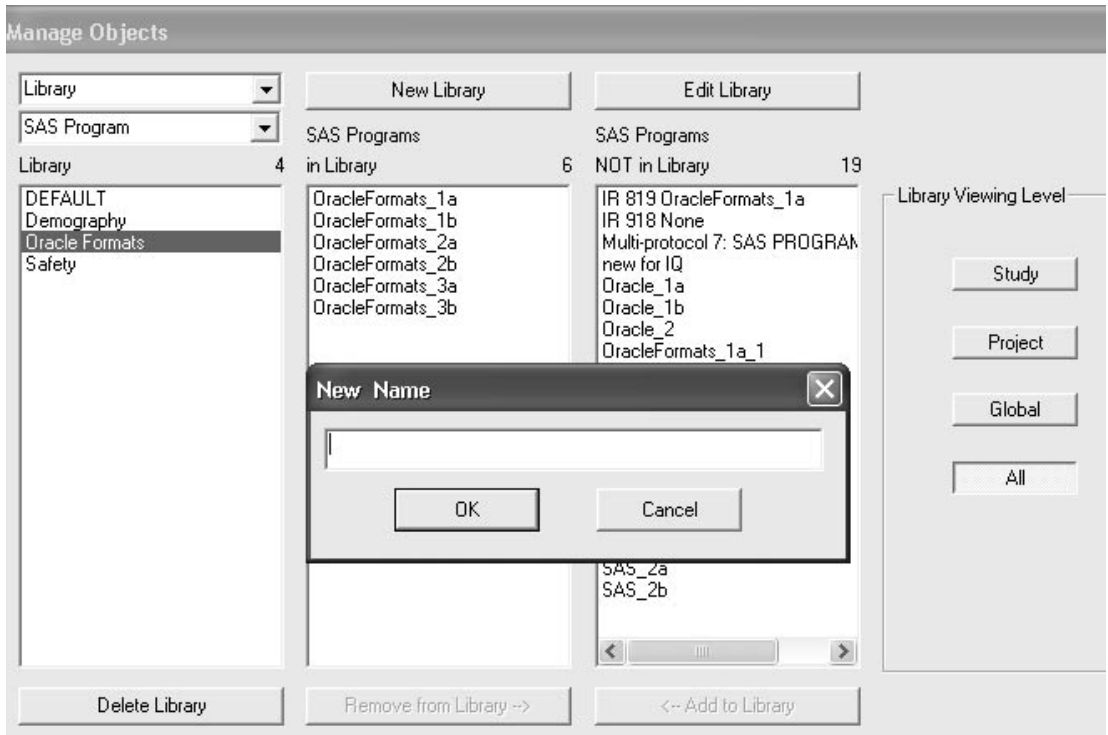
2. Incomplete print formats were fixed (LS=0, PS=0). This could be for a program or program group depending on the Print Format Overrides checkbox.
3. When a study level override is assigned or removed and the target program belongs to a program group, a message is displayed indicating that the overriding program was added or removed from the program group(s) that the overridden program belongs to.
4. If the “\_default\_” print format is edited, a warning message displays – “About to edit default print format” – since this format is automatically assigned to new programs/groups when they are first created.

Open the Manage Objects window and select Library. The Library functions assist you to manage the SAS programs' membership within the Libraries.

1. Click on a **Library** to display the SAS program lists for that library.  
The SAS program lists identify which SAS programs are in or NOT in the selected library.

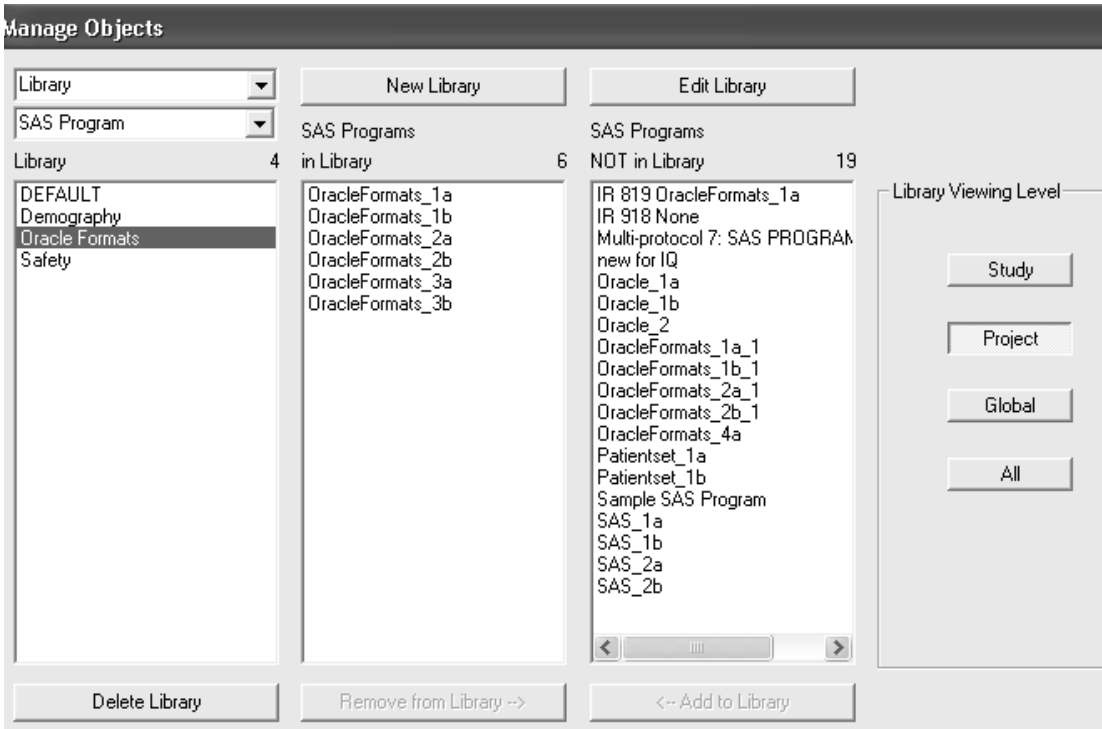


2. Click on a SAS program to display program information in fields at bottom.
3. Click the **Add to Library** or **Remove from Library** buttons to move SAS programs in and out of the selected library. The Add and Remove feature changes which programs belong to a library.
4. Click **New Library** to open a window to enter a new library name and click **OK**. Select a library and click **Edit Library** to open a window to edit a library name.



5. Select a library and click **Delete Library** to delete a library and all references in database tables. The SAS program registrations are NOT deleted.

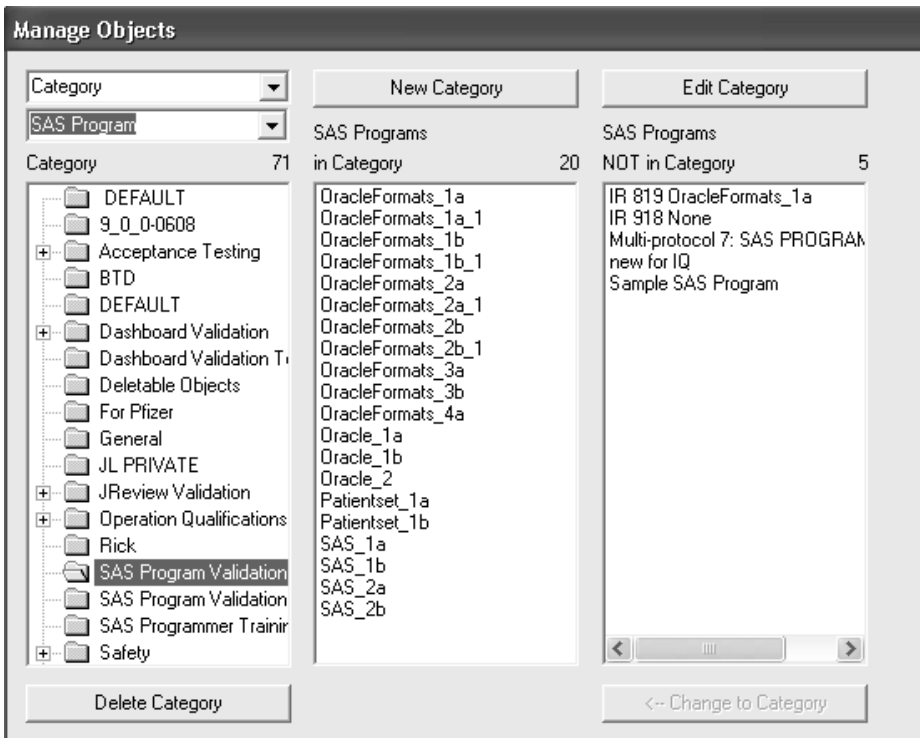
6. The **Library Viewing Level** restricts the lists of SAS program registrations displayed to only show the selected level(s) of programs. Multiple levels can be selected by clicking more than one button. The default view is for **All** levels.



The Category functions assist you to manage the SAS programs membership within Categories. Open the Manage Objects window and select **Category** to access the following functions.

1. Click on a **Category** to display the SAS program lists for that category.  
The SAS program lists identify which SAS programs are in or NOT in the selected category.  
All available categories are listed with the options to create **New**, **Edit**, **Delete** a selected category or **Change** programs to the category.

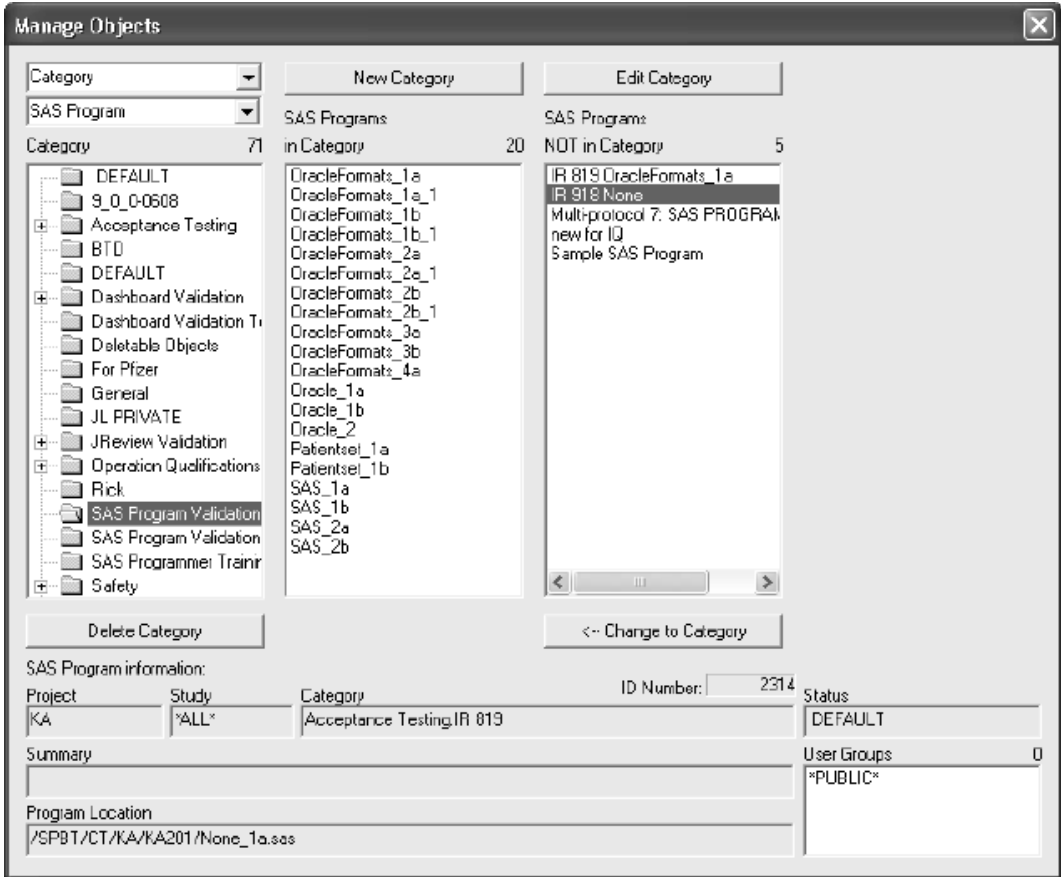
*Hint: Prior to registering new SAS programs you may need to first create a New category if the folder destination does not already exist.*



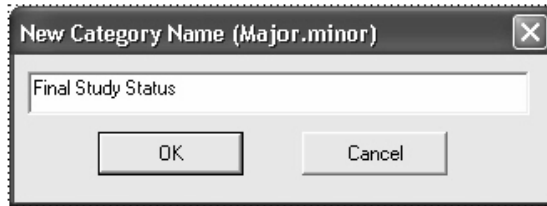
2. Click on a SAS program to display program information in fields at bottom.
3. Select a SAS program from the NOT in Category list. You can select multiple SAS programs with the CTRL or SHIFT key.

Note: A SAS program can belong to only one CATEGORY and have only one STATUS assigned to it. These items are required for SAS registration on the Definition tab.

4. Click the **Change to Category** button to change the category that the program(s) belong to.



5. Click **New Category** and enter a New Category Name. You can add multiple levels (first.second.third). Duplicate names or blank levels are not allowed. Click **OK**.



The new folder category is now available for you to assign SAS programs when you register a new SAS program.

6. Click **Edit Category** to edit at any level (first, middle, end nodes). Duplicate names are not allowed or blank levels. Click **OK**.
7. Click **Delete Category** which will NOT delete a category if any programs are assigned to it. The SAS program registrations are NOT deleted.

You can only delete end nodes (e.g. for category "Safety.Labs.Reports" you have to delete the end node "Reports" before you can delete the next node 'Labs", etc.).

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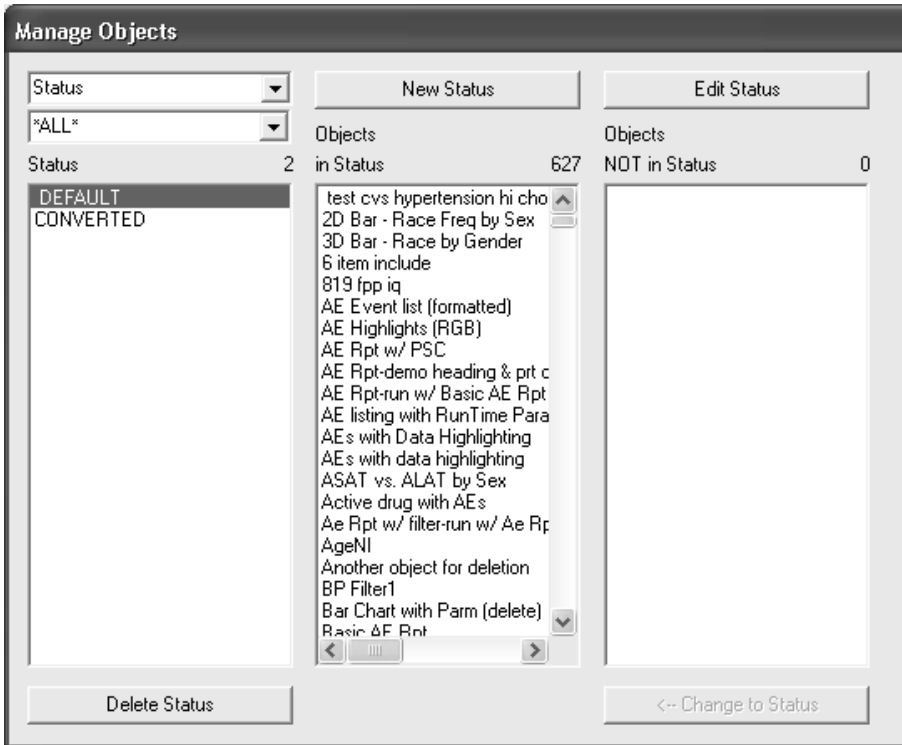
## Status

The Status functions assist you to manage the SAS programs membership within a Status. Open the Manage Objects window and click **Status**. The following functions are available:

1. Select a **Status**. The SAS program lists identify which SAS programs are in or NOT in the selected status.

All available statuses are listed with the options to create **New**, **Edit**, **Delete** or **Change** programs to the status.

- Click on a SAS program to display program information in fields at bottom.

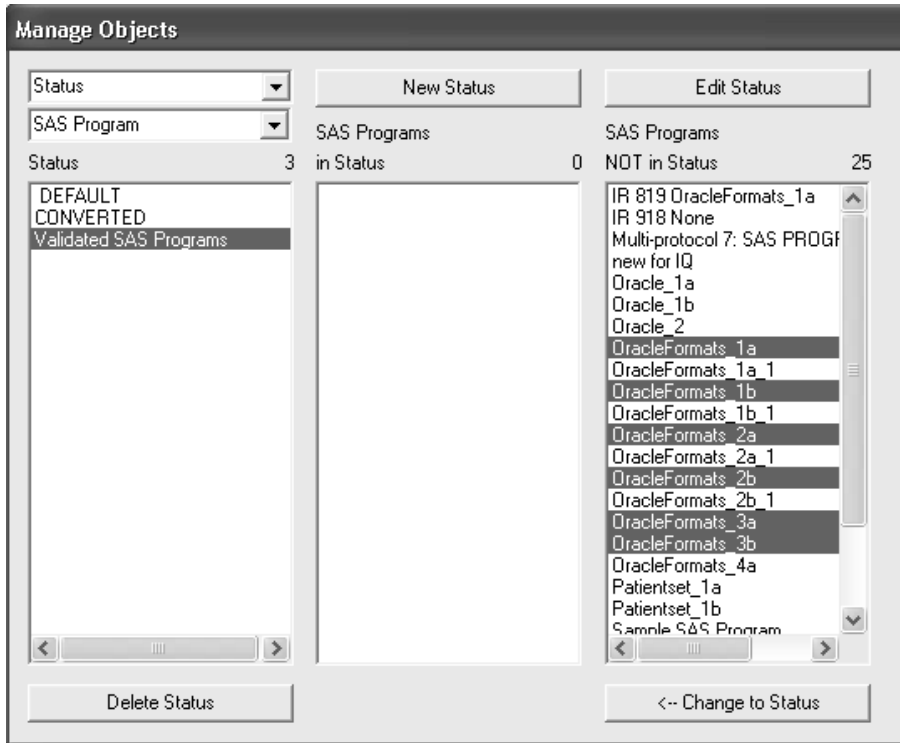


*Note: A SAS program can belong to only one CATEGORY and have only one STATUS assigned to it. These items are required for SAS registration on the Definition tab.*

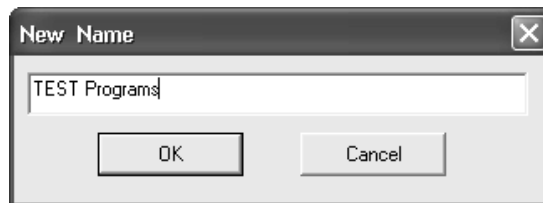


3. Select a SAS program from the NOT in Status list. You can select multiple SAS programs with the CTRL or SHIFT key.

Click the **Change to Status** button to change the status that the program(s) belong to.



4. Click **New Status** and enter a New Status Name. Click **OK**.



The new status is now available for you to assign SAS programs when you register a new SAS program.

5. Click **Edit Status** to open a text dialog to edit a status name.
6. Click **Delete Status** which will NOT delete a status if any programs are assigned to it. The SAS program registrations are NOT deleted.

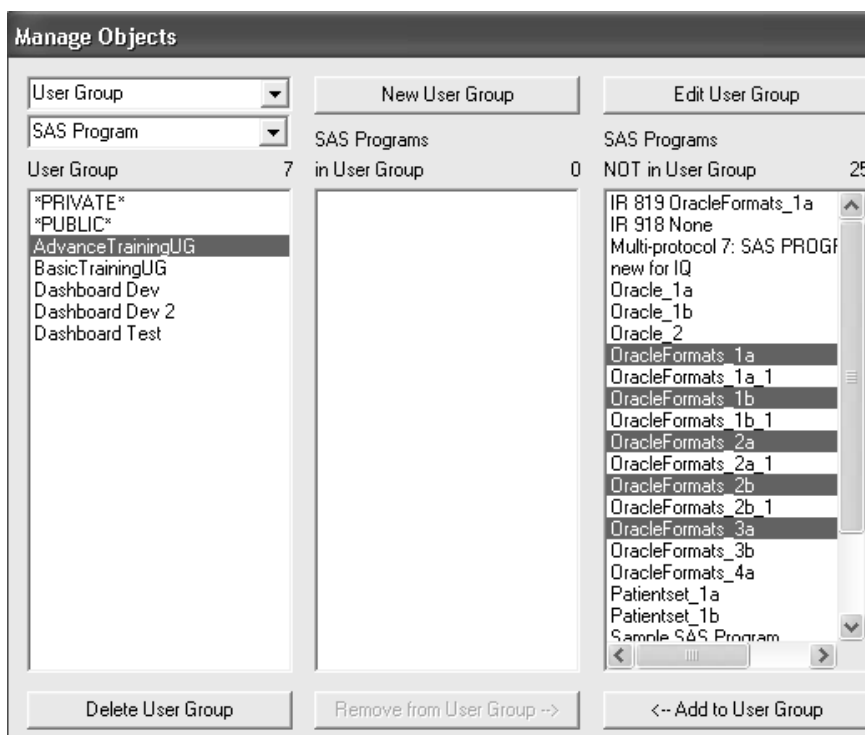
## User Group - SAS Program

By default all programs are available to view in \*PUBLIC\*. You can manage the user's access by assigning a User Group. Therefore, the User Group will determine what programs or program groups a particular user sees in the Object Explorer categories. The STAT Program Registration Browser and Manage Objects windows always show all programs and program groups so users can manage them.

The User Group - SAS Program option assists you to manage the SAS programs membership within a User Group. Open the Manage Objects window and click **User Group** and select SAS Program. The following functions are available:

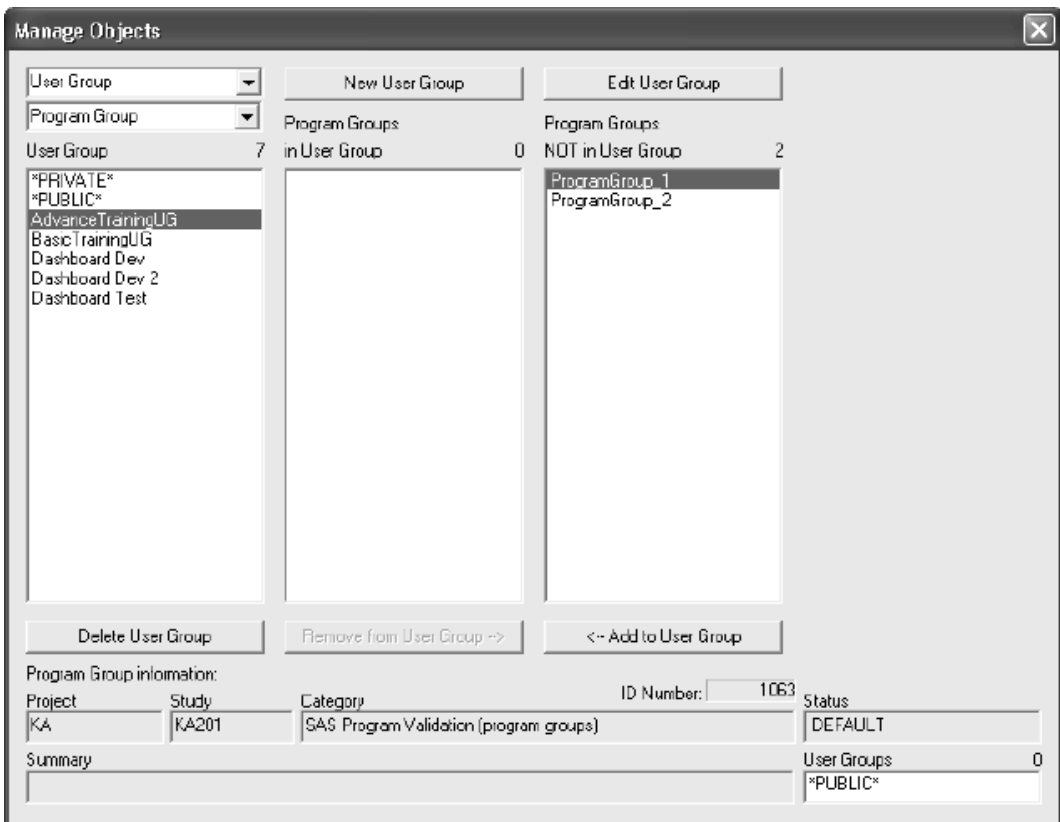
1. Click on a **User Group** (or \*PUBLIC\*) to display SAS program lists for user group (or \*PUBLIC\*).
2. Click on a SAS program to display program information in fields at bottom.
3. Click the **Add to User Group** and **Remove from User Group** buttons to change which programs belong to a User Group.

You can select multiple SAS programs with the CTRL or SHIFT key. Adding to \*PUBLIC\* removes all user group assignments.



The User Group - Program Group option assists you to manage the SAS Program Groups within a User Group. A Program Group can belong to multiple User Groups. Open the Manage Objects window and click **User Group** and select Program Group.

1. Click on a **User Group** (or \*PUBLIC\*) to display program group lists for user group (or \*PUBLIC\*).
2. Click on a SAS program group to display program information in fields at bottom.
3. Click the **Add to User Group** and **Remove from User Group** buttons to change which program groups belong to a User Group.



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# STAT Program Registration Browser

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## *Selection criteria*

You can use the STAT Program Registration Browser to execute registered SAS programs, with the original complete patient population, or to execute the programs with only those patients who meet the current patient selection criteria.

In addition, you can schedule a SAS program to run now or at a later scheduled date/time as a batch job. The actual output can be saved in the designated folder with the creation date/time stamp for future reference. A brief description of the patient subset criteria used to generate the output will display along side the creation date/time stamp. (See *section: Schedule SAS program jobs*)

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## *Opening the STAT Program Registration Browser*

The STAT Program Registration Browser is useful in exploring patient sub-population statistical responses to the clinical trials. After defining your patient selection criteria, click  or from the **Browse** menu, select **SAS Programs**. Review opens the STAT Program Registration Browser window to display the categorical folders containing additional subfolder and all registered SAS programs for the current protocol. Groups of SAS programs can also be defined and executed.

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## *Registered SAS programs*

Your System Administrator can register SAS programs and SAS Data Sets used in the formal analysis of the protocol(s) of interest. They can be current Global and Study Specific SAS programs or Project global SAS programs. These programs and datasets can be made available and registered to Review, typically after the completion of the protocol and cleaning of the database. Thereafter, you can access these programs and datasets by using the STAT Program Registration Browser.

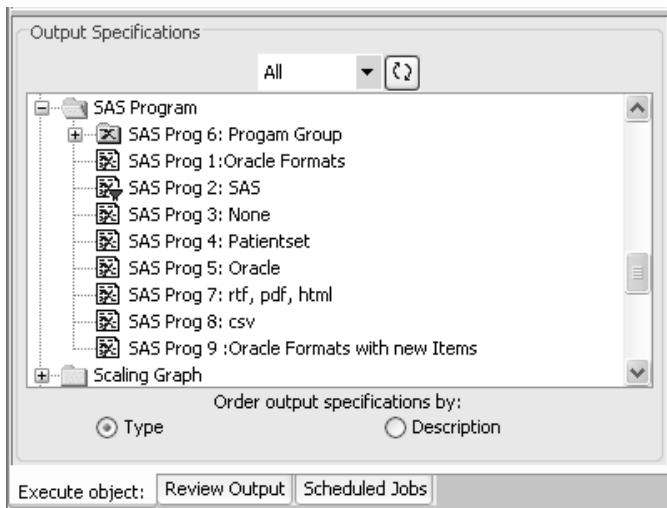
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*Quick execute*

Both IReview and JReview displays a list of categorical folders for stored patient subsets and output specifications at the selected storage location. Simply select one of the storage locations to display it's specific folders and contents. Icons are displayed along with the stored object to identify the source as report, graph, registered SAS program, etc.

The **SAS Programs** icons is  .

When a patient selection criteria is saved with the stored object; the filter icon displays with the specific browser icon.



You may apply a previously stored patient selection criteria to the output specification or define a new selection criteria prior to creating output. To retrieve a saved output specification:

1. Double click to open a folder in Output Specifications.
2. Double click on the object to launch in a single step. The stored output specification will be launched.

JReview aids users to quickly locate and launch these stored objects. This shortcut allows users to bypass opening the individual browsers to launch saved objects.

The STAT Program Registration Browser is useful in exploring patient sub-population statistical responses to the clinical trials. After defining your patient selection criteria, select and click from a list of **SAS Programs** production tables registered by your System Administrator for the current protocol. Groups of SAS programs can also be selected and executed.

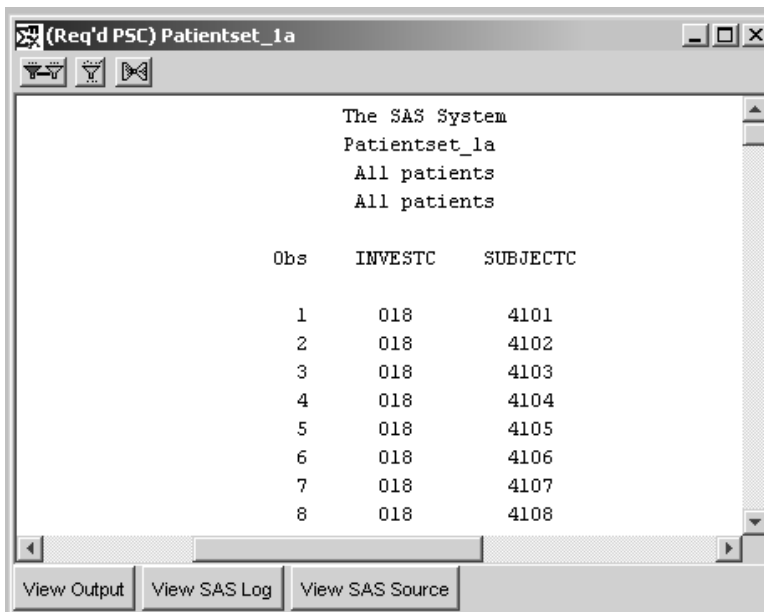
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## SAS program results and log files

---

### *Creating the table output*

When you regenerate the SAS production table, JReview sends your request to be processed by SAS on your server computer, and displays the results on your PC in a Table Output window.



*Note: The data in your report contains only data from those patients who meet your current selection criteria.*

---

### *Displaying the SAS log or source*

Three display options are at the bottom of the output display window.

Click **View SAS log**, to view the SAS log.

Click **View SAS Source**, to view the SAS source used to create the SAS output.

Click **View Output**, to view the SAS output again.

---

## Multiple table outputs

There can be multiple table outputs active at the same time. After you have generated one SAS Production table, you can select another.

Each output is displayed in its own window. Each table output remains active and updates to reflect the current patient selection criteria when **Update Browser** is used.

If there are multiple SAS Proc outputs active at the same time, each functions independently, that is, you can review the source, log, or output of each independently by clicking the appropriate buttons in the respective windows.

---

## Snapshot output

(See *Chapter 9: Generating Statistics - SnapShot with SAS Procs.*)

---

## Schedule SAS program jobs

All output specification functions for saving, exporting, scheduling, retrieving and removing output are covered in the Report Browser.

Scheduled SAS Procs and SAS Programs are listed directly in their respective folder in the **Review Output** tab and pending jobs bypass the **Schedule** tab. Since they're stored in different tables in the ReviewAdmin account they don't have the same information as the ObjectCatalog entries for the other object types.

Unlike the other browser objects (reports, graphs, crosstabs), scheduled SAS jobs cannot be changed or removed from the scheduler. SAS Procs and SAS Programs are placed on the schedule queue of the operating system (of the SAS Server) so it's not possible to remove or change the schedule of these object types.

(See *Chapter 11: Saving Objects, plus Alerts Browser*)



---

# Printing SAS program results

---

## Print table output

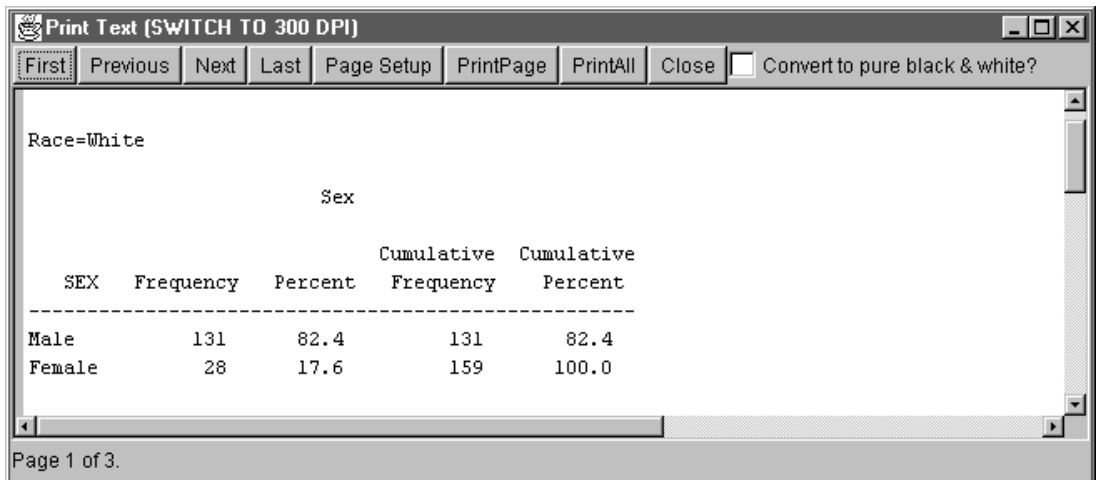
The Print function is applicable to all browsers with output results. To get a printed copy of your output:

1. Click on the generated output window to make it the active window.

2. Click  , or from the JReview **File** menu, select **Print**.

**Caution:** Do not select the Internet Browser's **FILE** menu **Print** option. This will cause a system error.

JReview displays a screen shot of the selected active screen.



The screenshot shows a window titled "Print Text (SWITCH TO 300 DPI)". The window contains a table of results for "Race=White". The table has five columns: SEX, Frequency, Percent, Cumulative Frequency, and Cumulative Percent. The data is as follows:

SEX	Frequency	Percent	Cumulative Frequency	Cumulative Percent
Male	131	82.4	131	82.4
Female	28	17.6	159	100.0

The dialog box also includes buttons for "First", "Previous", "Next", "Last", "Page Setup", "PrintPage", "PrintAll", and "Close", along with a checkbox for "Convert to pure black & white?". The status bar at the bottom indicates "Page 1 of 3."

3. Click either **PrintPage**, **PrintAll** or **Close**. The **PrintPage** option will print only the first page of your output. The **PrintAll** option will print the entire output.

The SAS results (output, source, or log) prints on the currently selected printer.

*Note: The **Convert to pure black & white?** option is only applicable to graphs where multiple colors are displayed. If you have a non-color printer, click this option for better print resolution of graphs.*

*(See Chapter 6: Report Browser for Exporting Results)*

---

## Exploring data

---

### *Opened SAS production table results*

After you have selected a SAS Production table to be executed, click **Execute**, and repeat as desired.

Each output remains active in its own window. You can use the output(s) that are displayed as data exploration views.

---

### *Update patient selection criteria*

Change the selection criteria by adding additional expressions or removing existing expressions.

Click **Update Browsers** on the selection criteria window to update all active browsers according to the new criteria.

# 11 *Saving and Manage Objects, Scheduling plus Alerts Browser*

---

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---

# Object Storage

---

## *Finalize object specification*

All objects in JReview can be saved which includes patient selection criteria, reports, graphs, patient profile and crosstab. The steps to save these objects are all done in the same way.

When the object layout contains the necessary information and all editing is complete, you can save the object specification for future use. You are not saving the output of the object but the specification you defined for building the object. The data or retrieved output represents the database at the time the object is executed, providing access to live data. Your object contains only data from those patients who meet your current patient selection criteria and/or output filter criteria.

All saved objects with output filters turned ON are saved with the filter specifications respectively. If you have an active filter ON when the object specifications are saved, you will have that same active filter turned ON when the saved specifications are relaunched.

The saved patient selection criteria is saved in the Patient Subset section of the Object Explorer, and other objects are saved in the Output Specifications section.

Any changes applied to the graph properties are saved, if you click on **Save** with the graph output window open. The **Save** window opens and the changed properties are saved with the graph.


---

# Save the object specification

---

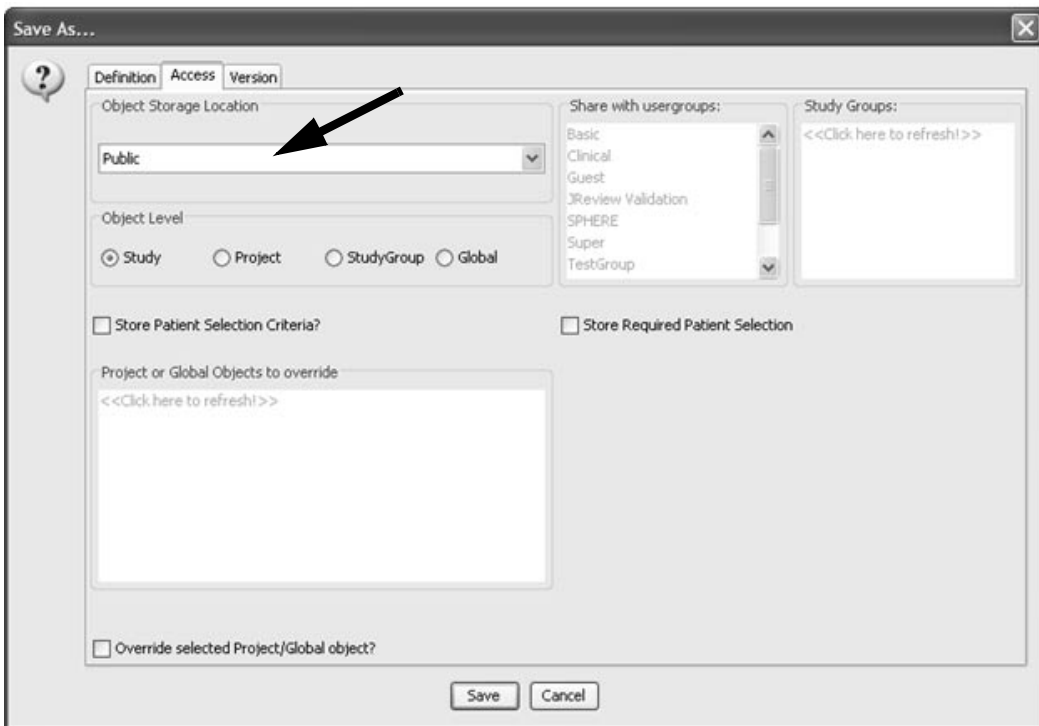
## Access tab

The Browser build window defining your object specification (report, graph, crosstab, patient profile, etc.) must be the active open window when you are ready to save your object specification for later use. In addition, there are two ways to save Graph specifications, either from the browser window which does not save any changed graph properties or from the output window where it saves the changed properties.

1. Click , or from the **File** menu select **Save**.

JReview displays the **Save window** organized by tabs associated with saving an object:

2. In the **Access tab**, select an **Object Storage Location**.



---

## Object storage location

Saving on database object storage sites, requires the author to have “Publishing Authorization” defined in the configuration tables. (See *ReviewAdmin Users Manual*)



There are three user access levels to store the object specification: Private (db), User Group (db) and Public (db). User access levels designated as ‘db’ for database makes the object available for scheduling. Objects may be saved at the study, user group or global level

- **Private** is a database object storage for sole access by the user. IRAdmin review privilege for Protected\_Category at UserID level.
- **User Group** is a database object storage for defined User Groups in the configuration tables. Object storage in User Group level allows you to specify sharing with multiple User Groups. When you are a member in a User Group and click User Group, the ‘Share with usergroups’ list box is made available for selection. Click on a usergroup to share the object, use the CTRL or SHIFT key to make multiple selections.

IRAdmin review privilege for User Group Save where users in a usergroup can update and delete other user group member objects. The privilege is set at either the UserID or User Group level. Also, IRAdmin review privilege for Protected\_Category at User Group level.

- **Public** also has shared network drive for storage where all users have access to public objects, but authorization is required to save an object as public.

---

## Object level

3. Select an **Object Level**. The object may be stored at four levels: Study, Project, StudyGroup or Global.



When you select either Private, User Group or Public for shared network drive storage location, you can assign an object level to restrict access to a specific study level or share access between multiple studies at Project or Global levels.

---

### *Study Override*

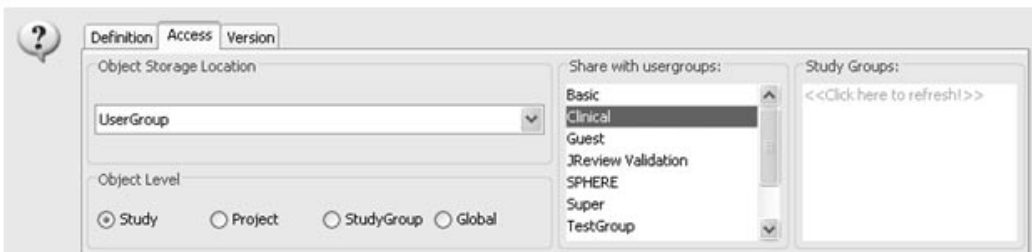
You can override a previously saved object at the Project or Global level with a Study level object. When you select Study level, the 'Override selected Project/Global object?' check box is made available for selection.

Save at the Study Object Level, when you can choose to override a previously saved Project or Global level object. Select the previously saved project or global level object from the 'Projects or Global Objects to override' list. The chosen Project or Global level object will be replaced by the new Study level object when you click SAVE. The original Project/Global object is still available for selection in other studies, but is overridden for the selected study.

---

### *Share with user groups*

When UserGroup is selected the 'Share with usergroups:' box is enabled allowing you to select other usergroups to share access with the object specification. Use the CTRL or SHIFT key to make multiple selections.

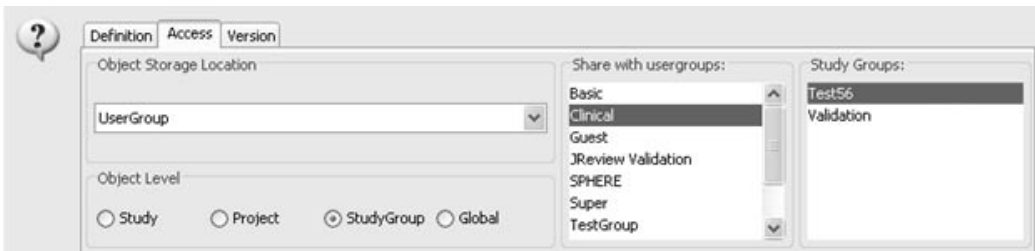




Saving at the Study Group level, makes an object only available to studies, who are part of the same group and are not project specific. Study groups are setup in Review Admin. They are non-visual groupings of studies.

The study group save privilege allows the user to save objects to Study Groups and selected in the 'Publish for Study Groups' list. They can, and are intended to cross projects. Users can create a study group from within Review Admin, assign studies when this option is turned ON, objects can be saved to the study group. These groups are not visible in JReview (like project and study are), but rather help group studies of common architecture.

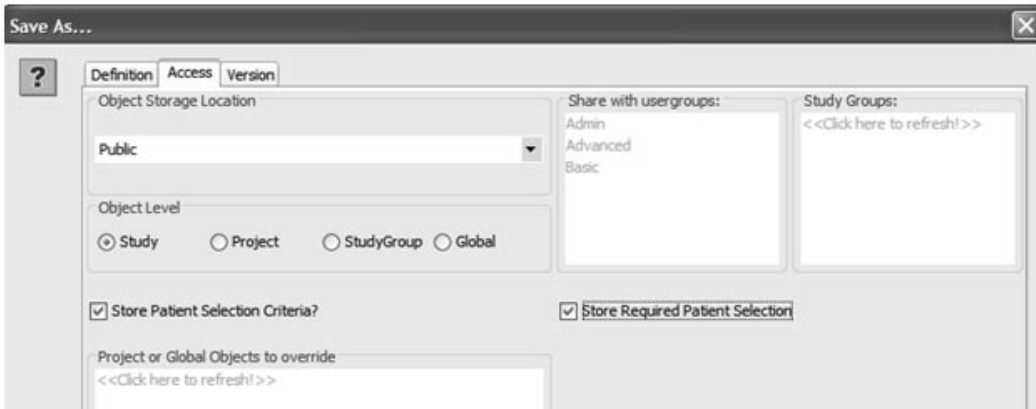
For example, you may create a study group for Therapeutic Areas such as Oncology trials, or a group for versions of database standards. Such as, if three ongoing projects were built on one database standard and each may have two studies. The "Standards Committee" decides on new standards which will affect all future studies. So, the next studies that each of the projects start up will use a new standard. This is a good place to create two study groups. The first study group will have the initial six studies (two from each of the three projects) and another study group will contain all future new studies. The user within JReview does not see the study groups until he/she goes to save an object. This option allows the user to be able to save objects as a global report, but only to a subset of studies that could be across protocols.



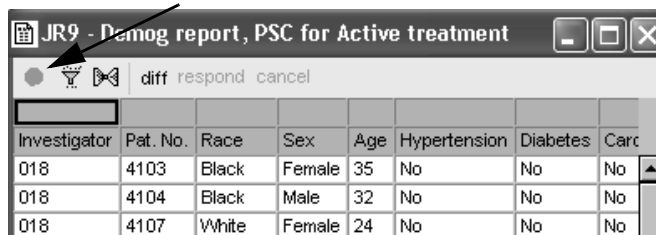
---

Store Patient selection criteria

4. Click the **'Store Patient Selection Criteria'** box if you choose to save the current patient selection criteria with the output specification. When a user selects the stored object specification they can modify the selection criteria and still run the output.

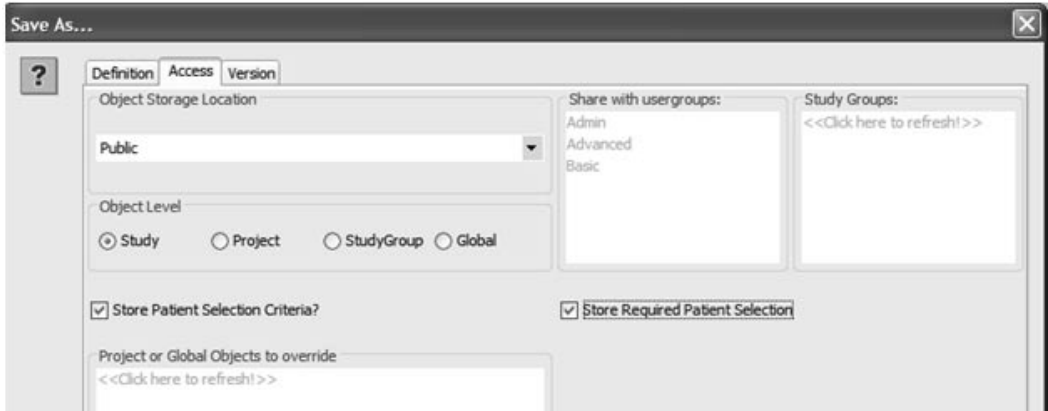


Objects saved without or with a patient selection criteria NOT required allow you to remove or change the current patient selection criteria and refresh the output window. See the first icon in the output toolbar set to green.

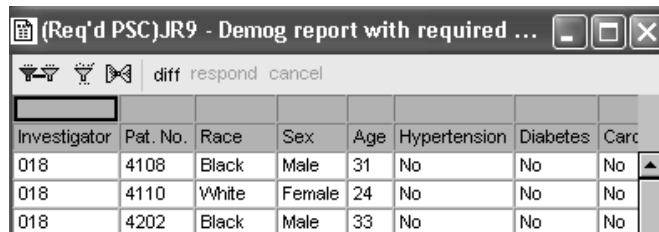


If the particular patient selection criteria is specific for the output, click the **'Store Required Patient Selection'** box. In this instance, the output opens in snapshot mode and the patient selection criteria is required for the output and cannot be cleared. Both check boxes must be checked on to make the PSC required for the saved object.

If you only check on the **'Store Required Patient Selection'** box, then **'All Patients'** are required for the saved object.



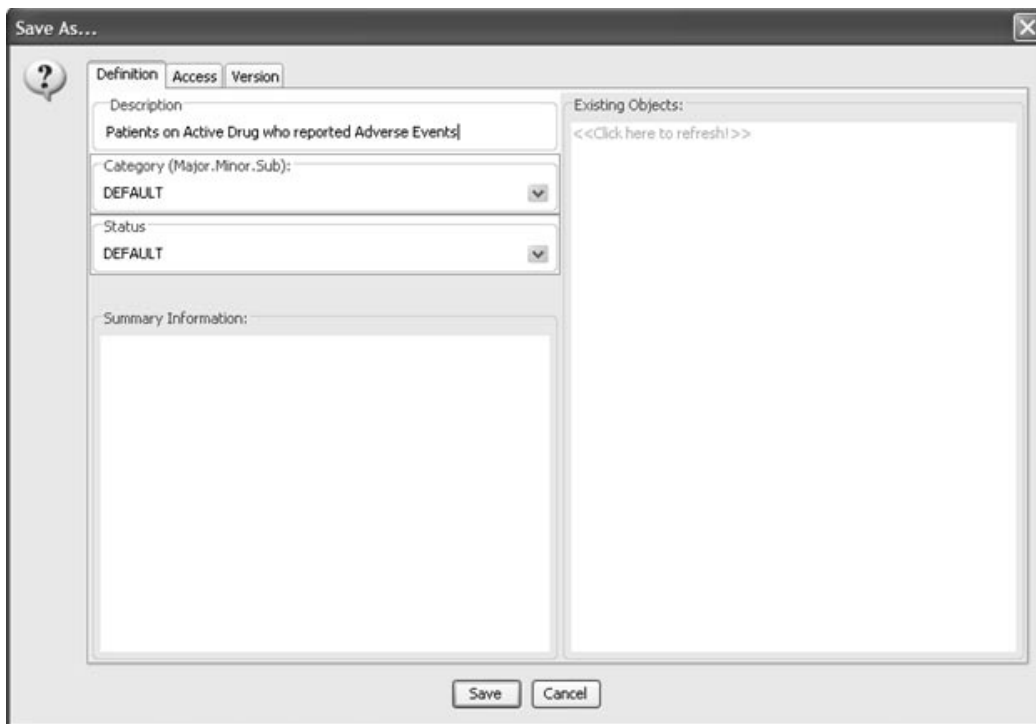
Objects saved with a REQUIRED patient selection criteria do NOT allow you to remove or change the patient selection criteria. See the first icon in the output toolbar set to red.



---

Definition tab

5. In the **Definition tab**, enter an appropriate **Description**. The Description is the name displayed in the **Object Explorer window**, used to retrieve the object.



6. Enter the folder(s) information in the **Category** box. The Category defines the folder hierarchy, for the saved object in the Object Explorer. Each folder (major, minor and subfolder) is separated by a period where folder titles can consist of more than one word separated by a space. For example, the major folder for 'Safety' has two minor folders 'Safety.AEs' and 'Safety.Labs'.  
Folder names are **case-sensitive** and after the folder(s) are initially created, they are selected from the dropdown list box.
7. Enter a **Status** for the object. The Status may be used when managing objects to create Object Groups for launching groups of objects with the same status.
8. You can include **Summary Information** for future reference to be viewed by yourself or others later (optional).  
An ID Number is assigned and used internally by Review to track the object.

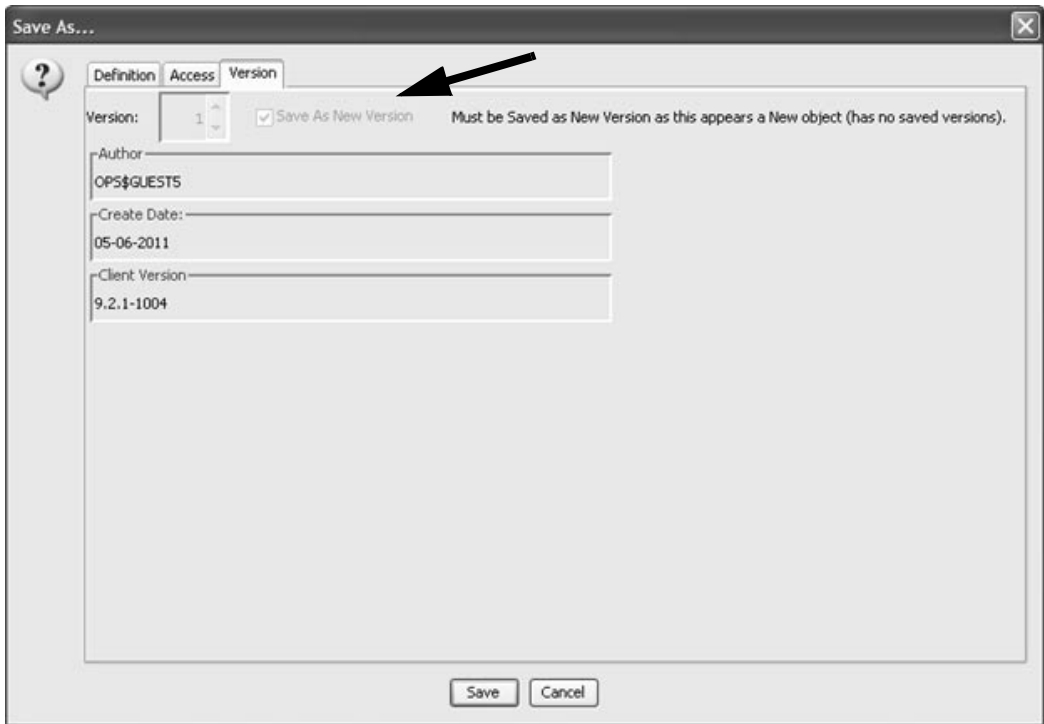
*Note: The Existing Objects display only objects according to level – Private, UserGroup, Public when selected on in the Access tab.*

---

### Version tab

JReview has the following “Allow Updates” privilege settings apply to Save and Update an object. A new object must be saved as New Version as there are no prior saved versions.

Click on **Save**, to save the object specification or defined patient selection criteria to the Object Explorer window.



When an initial/new object is saved it is not necessary to close the output specification to create output. The ObjectID is assigned automatically to a new output specification so that the step of closing and re-opening is not necessary.

---

## Object Explorer window

---

### *Retrieve specification from Output Specifications*

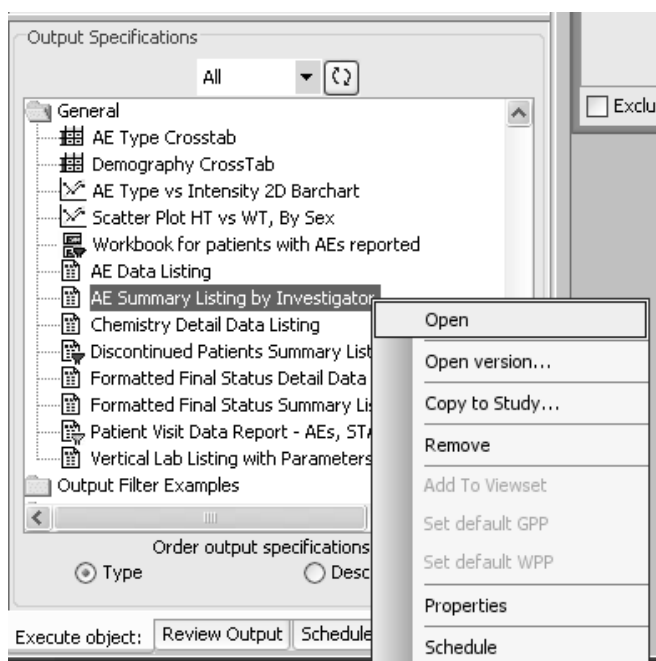
To view the object specification without executing the results:

1. Select the stored object in Output Specifications window.
2. Right-mouse click to display a floating menu.
3. Click **Open**. The object specification displays in the browser build window where it was defined.

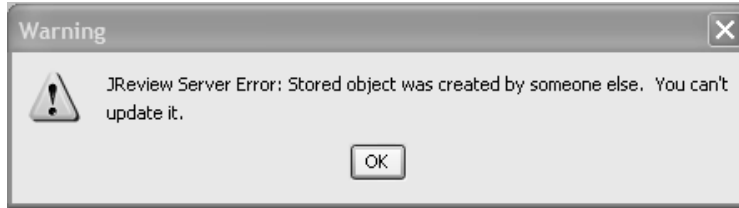
When you select **Open**, the most recently saved object specification version is opened.

When selecting a saved graphic patient profile; you have can click **View Template** for details.

4. Enter changes to the object specification to update current version or resave as a new object.



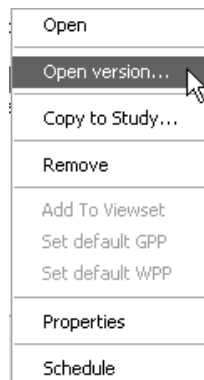
If the user is not the author and attempts to apply changes to the selected object, then this message will display.




---

### *Open specific version*

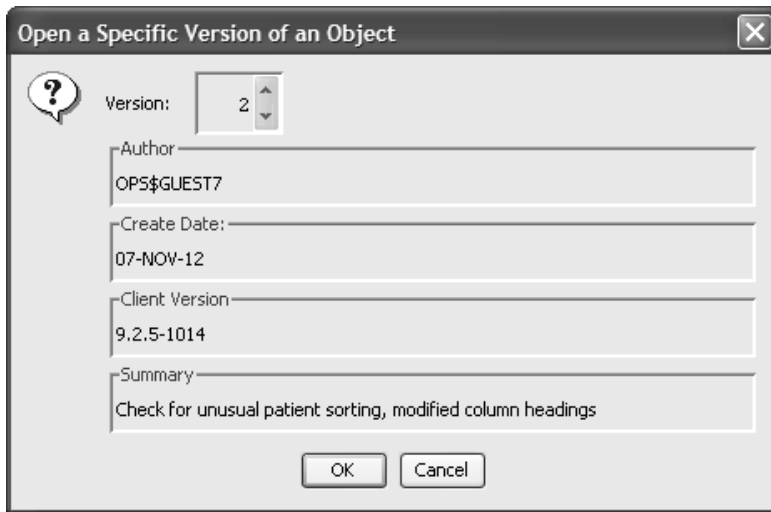
When you right mouse click to display the floating menu, JReview supports **Open Version** on available Output Objects (reports, graphs, etc), to select and access a previously saved version of the output specification.



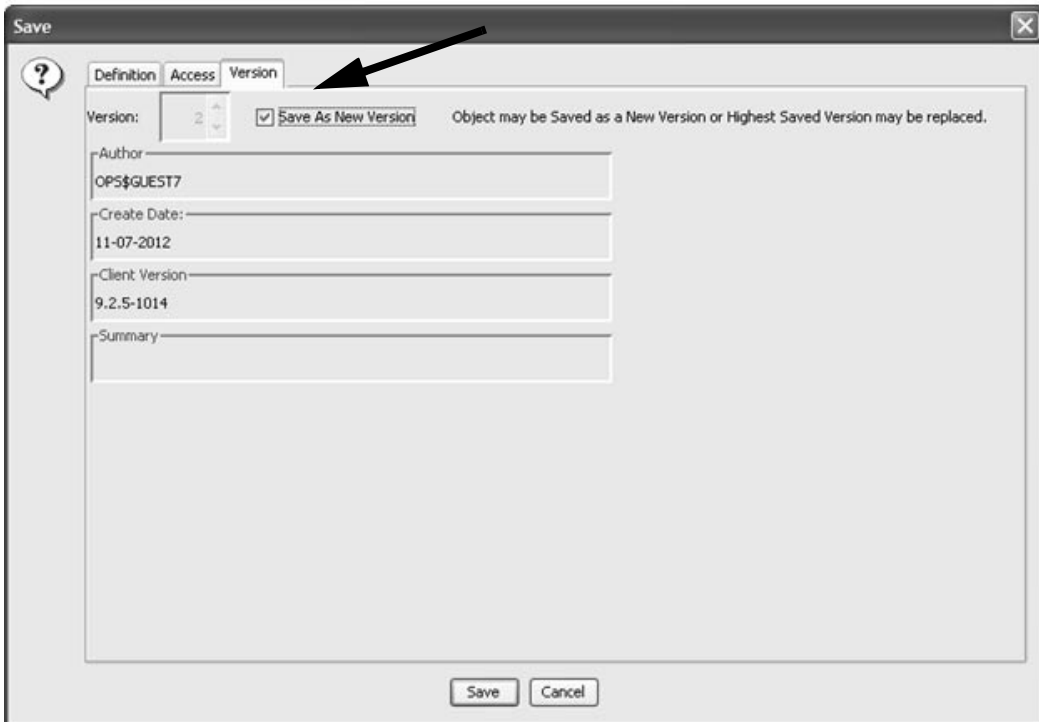
The user may select a specific object to modify and save by clicking  or from the **File** menu select **Save**.

When the user opens an existing object and JReview displays the **Save window** with a checkbox for "**Save As New Version**". If you click to uncheck it, then the **Save** button and title changes to **Update**. You can **Save as New Version** or allow updates to previously saved objects dependent upon the privilege settings.

- If the "Allow Updates" privilege (P37) is N, then saving to an existing object always creates a new version.
- If the "Allow Updates" privilege (P37) is Y, then saving to an existing object always overwrites the current object and version.



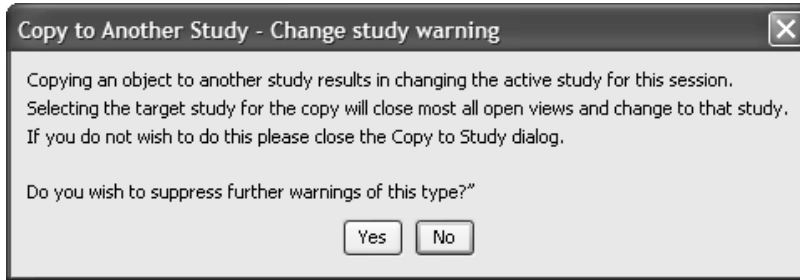
If Allows Updates is permitted, you may un-check the Save as New Version checkbox and update the current version. The **Save window** updates the current version. Otherwise, you would **Save As New Version**.



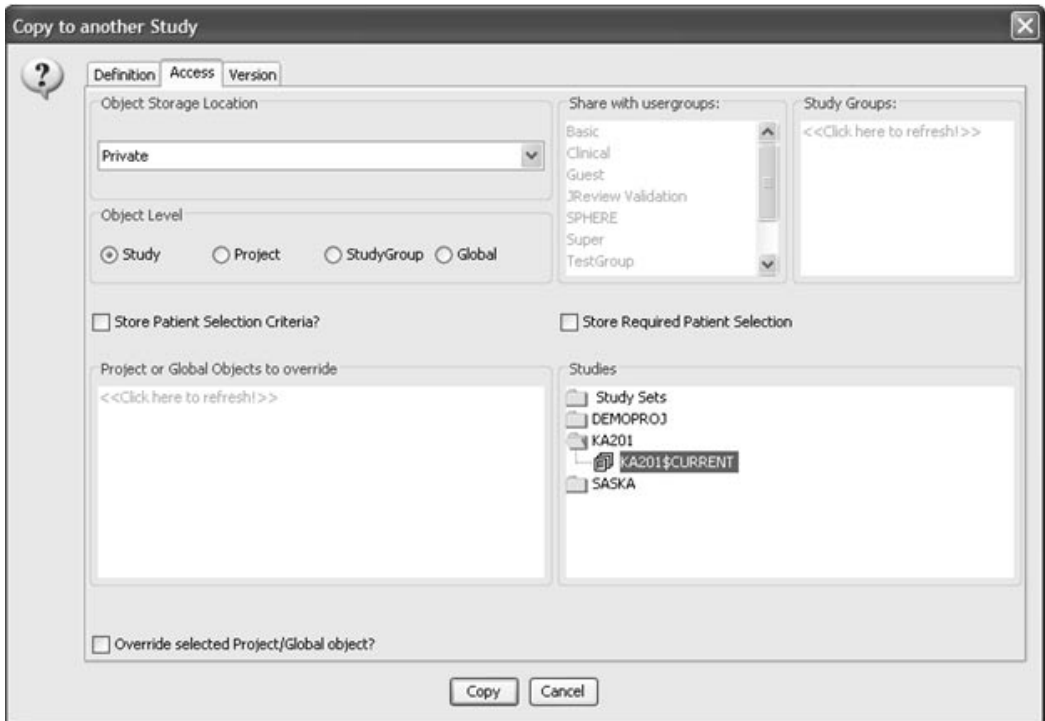


The **Copy to Study** feature will 'push' a copy of the selected object to different Project/Study.

1. Select the stored object in Output Specifications window.
2. Right-mouse click to display a floating menu.
3. Click **Copy to Study**. A message displays stating this action will change the active study for this session. Click Yes/No for the message.



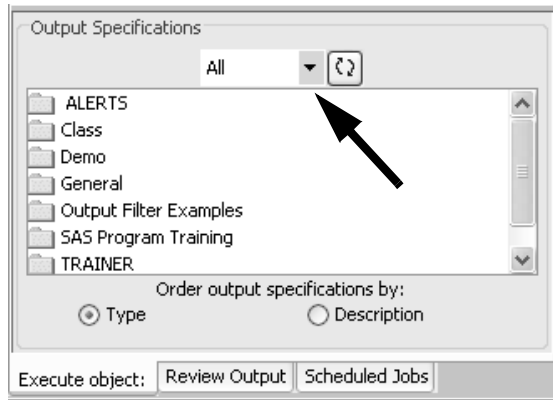
4. Copy to another Study dialog displays. Enter the necessary Save information to save a copy of the object to a new study location.



---

## Saved output specification

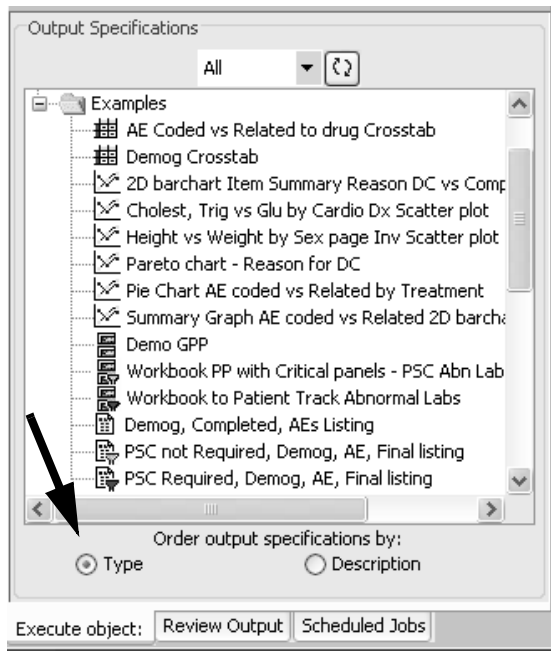
Once you have saved your output specification and assigned folder information, your stored object will display in the Object Explorer window under Output Specifications. Review displays a list of folders for previously saved output specifications at the selected storage location.



Select one of the storage locations as Private, UserGroup or Public to display its specific folders and contents. The circular arrows icon refreshes the displayed folders when you toggle between storage locations.



Icons are displayed along with the stored object to identify the source as report, graph, registered SAS program, etc. When a patient selection criteria is saved with the stored object; the funnel icon displays with the specific browser icon. A red color funnel indicates the patient selection criteria is required for the object.



Saved objects and their associated icons can be sorted to display in their folders by icon type or description. See 'Order output specifications by' and simply click sort by **Type** or **Description**.

---

### *Object Explorer quick execute*

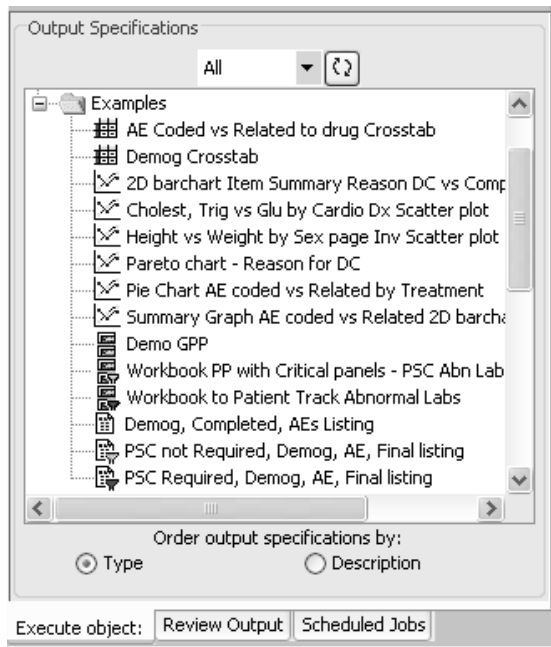
The Object Explorer window aids users to quickly locate and immediately launch previously saved objects stored within organized folders. This shortcut allows users to bypass opening the individual browsers to launch saved objects. Simply select one of the storage locations to display it's specific folders and contents. When you select All (db) then all database stored objects are displayed from Private (db), Usergroup (db) and Public (db).

If you want to retrieve a saved output specification:

1. Select the object storage location from the drop down list.

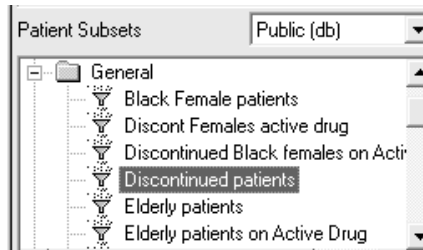


2. Double click to open a folder.
3. Double click on the object. Your stored object specification is launched.



To apply a saved patient selection criteria to your object specification:

1. Double click to open a folder in Patient Subsets.



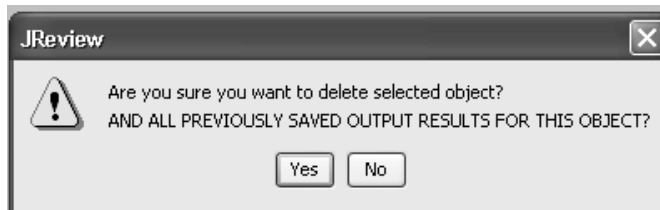
2. Double click to paste the selected patient selection criteria into the Patient Selection Criteria Window. Then follow the previous steps to retrieve and execute a stored output specification or create your own selection criteria for a stored output specification.

---

### *Remove output specification*

If you wish to delete the object specification select **Remove**:

1. Select the stored object in Output Specifications window with a single click.
2. Right-mouse click to display a floating menu.
3. Click **Remove**. Only the author or Super User has permission to delete an object. A warning message displays to confirm delete object.




---

### *Object properties*

You can view information about an object when you select **Properties**.

1. Select the stored object in Output Specifications window with a single click.
2. Right-mouse click to display a floating menu.
3. Click **Properties**. The Properties window opens for the selected object.

4. Click **OK** to close the Properties window.



The image shows a 'Message' dialog box with a close button (X) in the top right corner. On the left side, there is an information icon (i) inside a speech bubble. The dialog contains several text input fields for the following properties:

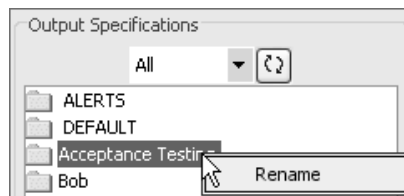
- Category: test.JL
- Project: KA201
- Study: 2001
- Object Index: 7407
- Object Name: NoFileName
- Description: DOSE START TO AE ONSETDATE
- Summary: (empty)
- Author: OPS\$GUEST7
- Create Date: 10-OCT-2011 03:36PM
- Access Level: Public (db)
- Object Level: Study
- UserGroup: (empty)

At the bottom right of the dialog, there is a text label: "Object includes a Patient Selection Criteria". At the bottom center, there is an "OK" button.

---

### *Rename Category*

Users with permission in ReviewAdmin may change a Category folder name with right mouse-click on the selected category.



---

## Schedule output

---

### *Object Explorer scheduled output*

The Object Explorer window aids users to quickly locate and schedule previously saved objects stored within organized folders. The output scheduler allows users to schedule a job throughout all output browsers in Review. This includes reports, graphs, crosstabs and SAS jobs.

1. Select the stored object in Output Specifications window with a single click.
2. Right-mouse click to display a floating menu.
3. Click **Schedule**. A dialog window displays for Job Scheduling.

**Schedule object 2891**

When

Now

Later at [DateTime]

Oct 24, 2006 7:48:18 PM

Later at [DateTime]

Monday  Tuesday  Wedne...  Thursd...

Friday  Saturday  Sunday

at [Time]

7:48:18 PM

Automatically delete previous generations of output?

Number of generations to keep?

Access to output

Public

Submit Job Cancel

*Note: Scheduling Formatted Patient Profiles requires an optional printer server module.*

4. The schedule default is **Now**. If you select Later at (Date Time), click on the arrow to display a drop down calendar to select a future date and time.

OR

Schedule a repetitive frequency using selected days of the week by selecting Later every (day). This feature allows you to **automatically delete previous generations of output** or enter a **number of generations to keep**.

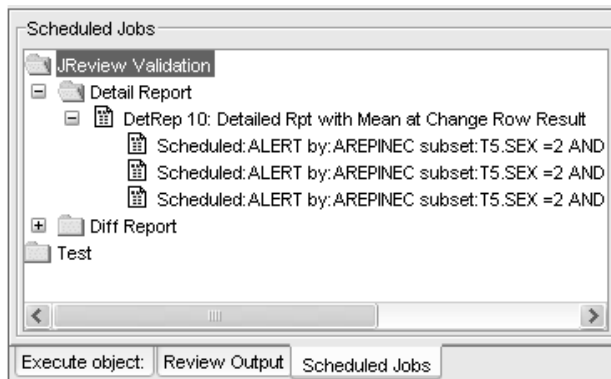
5. Select who can access the stored output results for Private, UserGroup or Public.
6. Click Submit Job.

The output results are placed as archives in the object folder with a date time stamp and identify the user who submitted the job run. Only the person who scheduled the job output can delete the stored results.

---

### *View Scheduled Jobs*

Click the Scheduled tab at the bottom of the Object Explorer window to view jobs currently scheduled. The scheduled jobs are organized and listed in the same folder category as the object specification storage folder.



*Note: Scheduled SAS Procs and SAS Programs bypass being listed in the Schedule tab and go directly to the Review Output tab.*

---

### *Remove Scheduled Jobs*

If you need to remove a scheduled job, highlight the job description and right-mouse click to display a floating menu, click **Remove**.



---

## *Change Schedule*

If you need to change a scheduled job:

1. Click the Scheduled tab at the bottom of the Object Explorer window to view jobs currently scheduled.
2. Select the job description and right-mouse click to display a floating menu.
3. Click **Change Schedule**.
4. The Job Scheduling window opens for you to enter your changes.  
Reports, graphs and crosstabs have their scheduling information saved in the Job Schedule table which is consulted by the Report Scheduling server. This allows you to go back and change the scheduling of these object types.
5. Click Update.

---

## *Schedule SAS jobs*

Both SAS Procs and SAS Programs are placed on the schedule queue of the operating system (of the SAS Server) and are placed directly into the Review Output tab bypassing the Scheduled tab. Therefore, pending SAS jobs are removed from the Review Output tab. The Review server does not use the operating system for scheduling but runs the program using the Review server. The schedule is kept in a file on the server and the Review client does not have access to it.

You can remove a pending SAS job from the Review Output tab, however, the Review server still runs the SAS program, the output is just not accessible through JReview. Therefore, the SAS job is not actually cancelled that is scheduled.

---

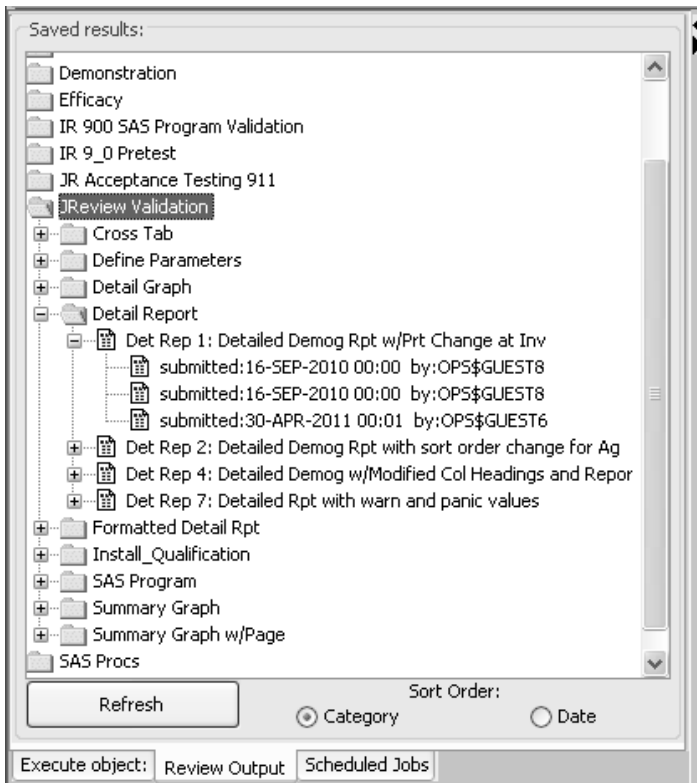
# Review output

---

## *Locate stored output results*

The Saved Results folders are from the category folder definition for each of the objects that were run. Folders are only displayed if an object has output saved.

1. Click the **Review Output tab** at the bottom of the Object Explorer window to view saved output. The stored output results are saved with the date/time stamp and author who submitted the job.
2. Single click on the folder category to open.
3. Double click on the object description to view output.



The exception is previously run and saved SAS Proc output results from an earlier Review release. The SAS Proc browser scheduled a job to be run and the output saved. The output would be listed under the specific SAS Proc that was run. Therefore, old SAS Proc jobs are placed in a SAS Proc folder.

---

### *Export formatted profiles*

Users may export all formatted patient profiles in a given batch to be copied to the users indicated directory location.

In the Review Output List, right click on the formatted patient profile output folder for the job to view menu, and select 'Export All' .

---

### *Quick remove saved output results*

1. Locate and open the output folder.
2. Select the stored object with a single click.
3. Right-mouse click to display a floating menu, click **Remove**.

---

# Manage and Migrate Objects

---

## *Manage Migrate operations*

The Manage Migrate feature is available on the Advanced menu. All users have access to use Manage/Migrate; however they are only able to modify the objects they have authored. There are two exceptions; if the user is a “super user” they have access to modify all objects. Also, only a super user has access to manage the available status options. Import Object activity requires the user to have p58 to perform an object import.

The Manage object functions are used to maintain the object status for add, edit, and delete. Also the ability to change the object location, level, author, status, category, copy to other study, and delete. Saved output may also be selected for deletion. Users initially apply an object filter to filter down to the objects for a selected activity. The Migrate object functions allow users to export and import objects.

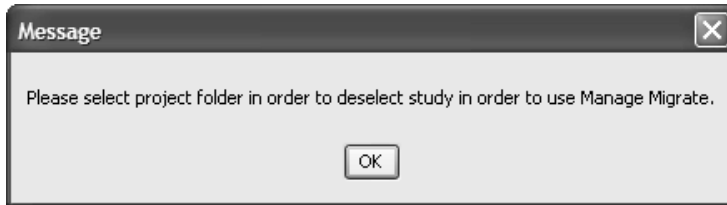
The Manage Migrate functions support object management operations to change the object with the current activities:

- Modify Storage Locations (Private, usergroup or public)
- Modify Level (Study, Study Group, Project or Global)
- Modify Status
- Modify Category
- Import objects from a spreadsheet into a database\*
- Export – create an xls file of exported objects
- Viewsets are not supported
- Delete objects
- Copy Object from one study, project or study group to another.
- Modify author
- Delete saved output
- Maintain Status – add, edit or delete\*

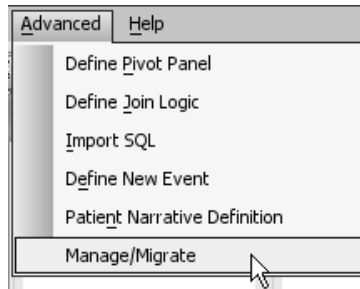
---

*Open Manage Migrate*

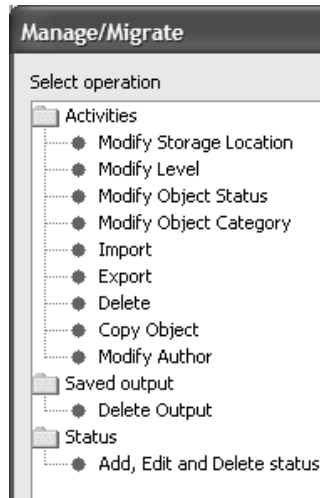
The User must select a project folder – **not a study** prior to selecting the Manage/Migrate from the **Advanced Menu**. You can only import objects from an “export” that was created with the same version as the target database.



Select Manage/Migrate from the Advanced menu.



The first step is to select a Manage/Migrate activity.



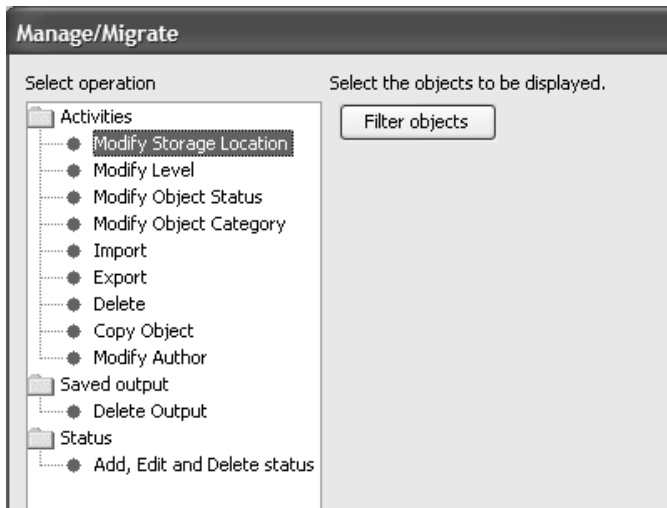
The **Select Filter Objects** is *required* for all activities with the exception of Deletion of saved output and the Add, Edit and Delete Status.

The following steps are apply for changing an object to a new location, level, author, status, or category. For example, under the **Activities** folder, select **Modify Storage Location**.

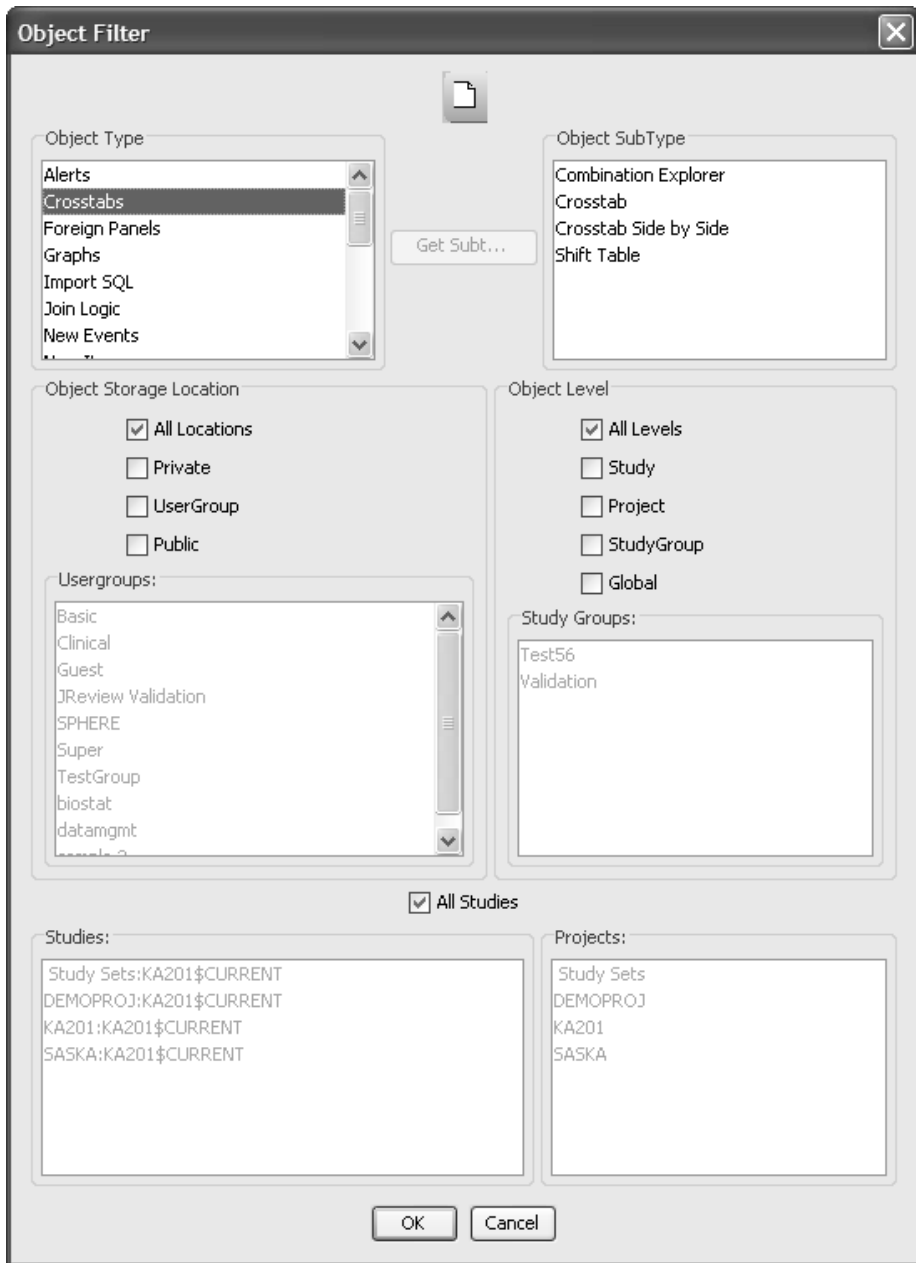
1. Click **Filter objects**.

The **Object Type** is the only required item to select for the filter. All other selections are optional to refine the filter results, such as:

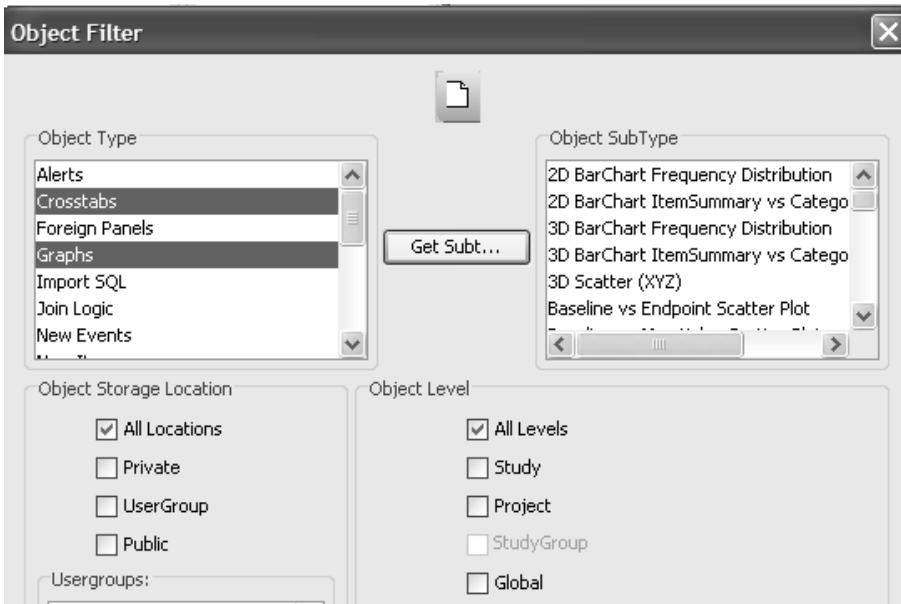
- Object Storage Location
- Object Level
- User groups
- Study Groups
- Studies
- Projects



2. The **Object Filter** window opens. Select an **Object Type** and the **Object SubType** fills with the available object subtypes.



3. If you need to select multiple objects use the Ctrl key or Shift key, then click the **Get Subtype** button. Again, use the Ctrl key to select multiple object subtypes.
4. The **New** button will set the filter selection back to default selections.

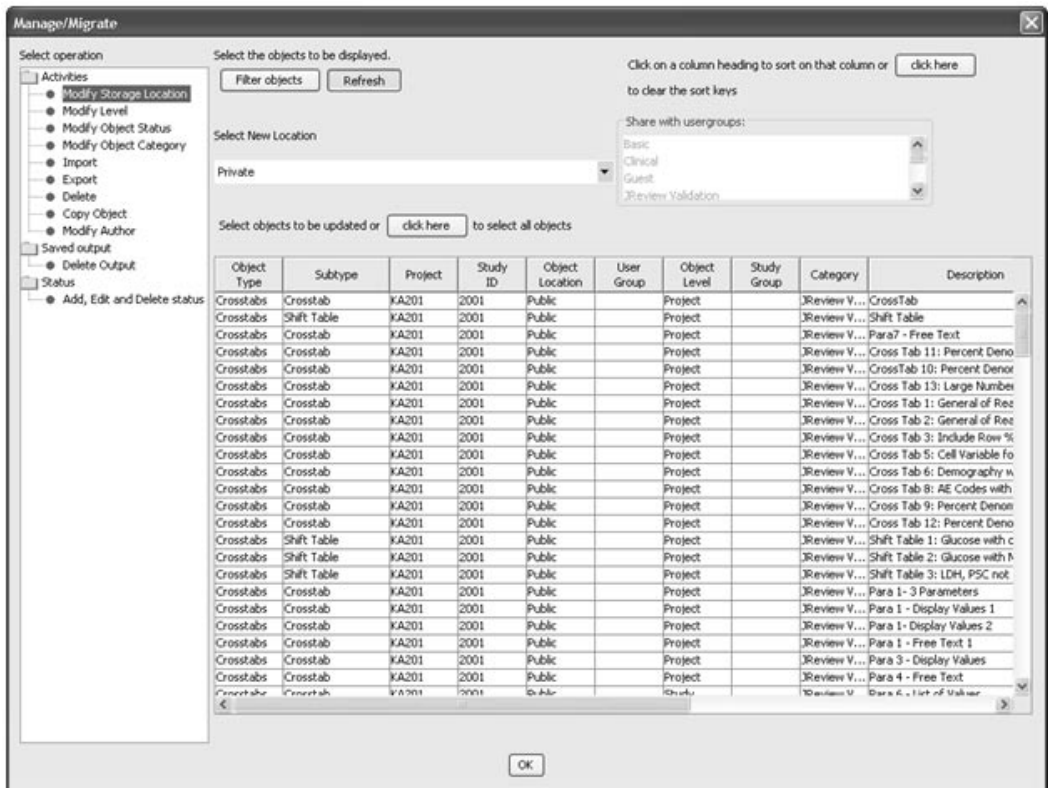


5. Click **OK** button to retrieve objects based on filter settings.

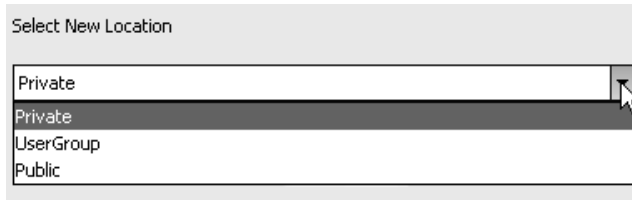


This step generates a spreadsheet for the selected filter objects. After you have selected your object filter, use the generated spreadsheet window to apply your activity. The steps are similar between the various activity functions.

6. From the spreadsheet you may sort up to three columns. Click on a column heading to sort the column. A button is available to clear sort.
7. Use the horizontal scroll bar to view more column details within the spreadsheet.
8. A button is available to select all objects.
9. Select a row or select multiple rows with the Ctrl key or Shift Key.



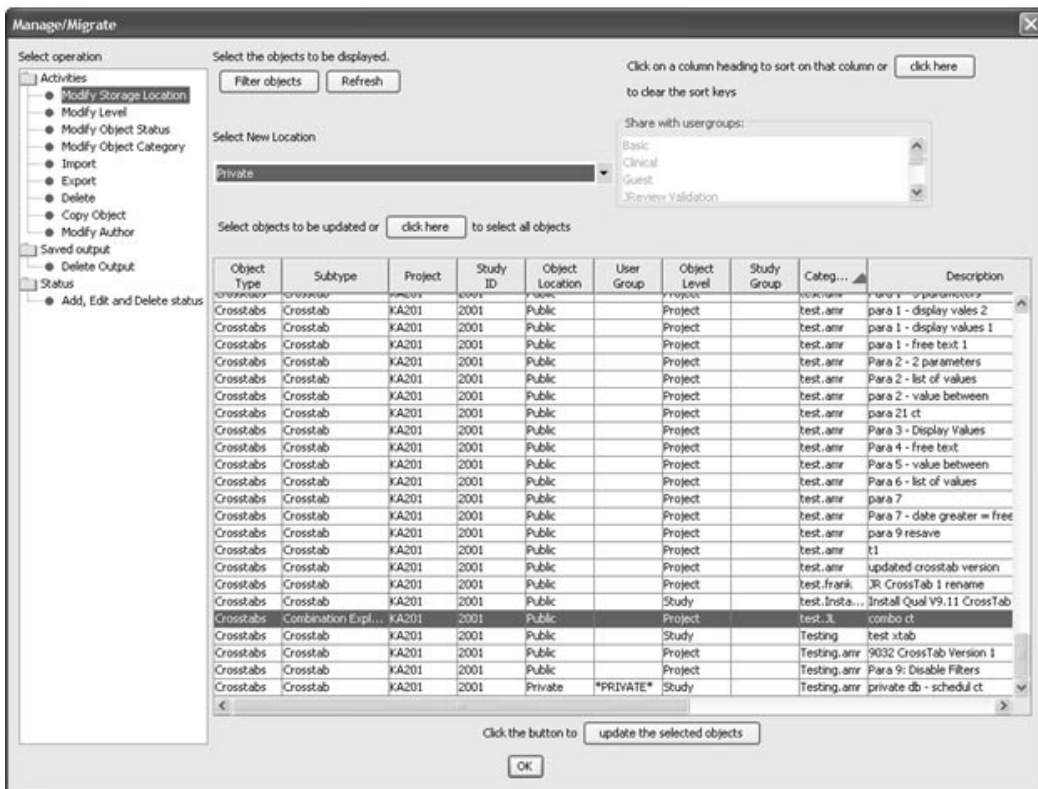
- Once a row or rows have been selected, select the activity description such as New Location for the Modify Storage Location.



Each Modify Activity feature in the Select operation list allows the user to filter objects then apply either a New Storage Location, New Level, New Object Status, New Object Category, or New Author.

Dependent upon on the Modify Activity selected, click **OK** and the update button is made available. For example, the “**update the selected objects**” button.

- Click the **update the selected objects** button to apply changes. The changes are applied to the selected objects.



12. Use the **Filter objects** button on the spreadsheet window, to toggle between the Object Filter window and the objects spreadsheet.

The filter objects button allows the user to go back to the previously defined object filter and make changes.

Select the objects to be displayed.

Filter objects

Refresh

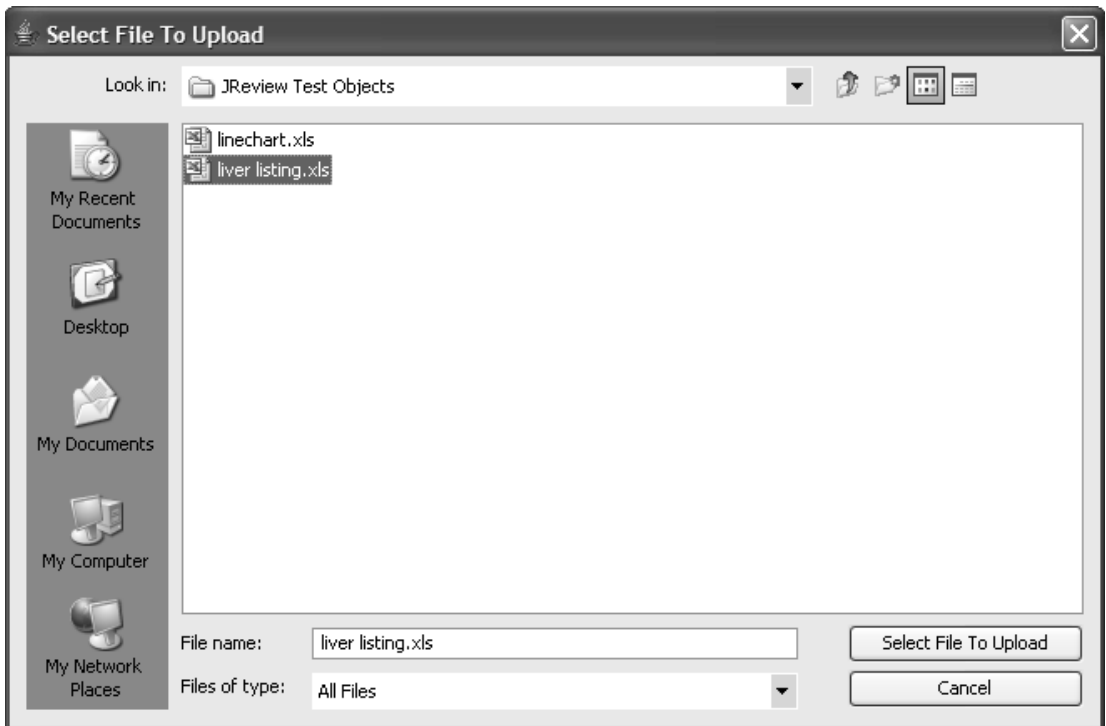
13. The **Refresh** button can be used if changes are made on one activity while a list of objects is displayed, then another activity requires the user to refresh the list after the changes were made.
14. Click **OK** button to close the dialog.

---

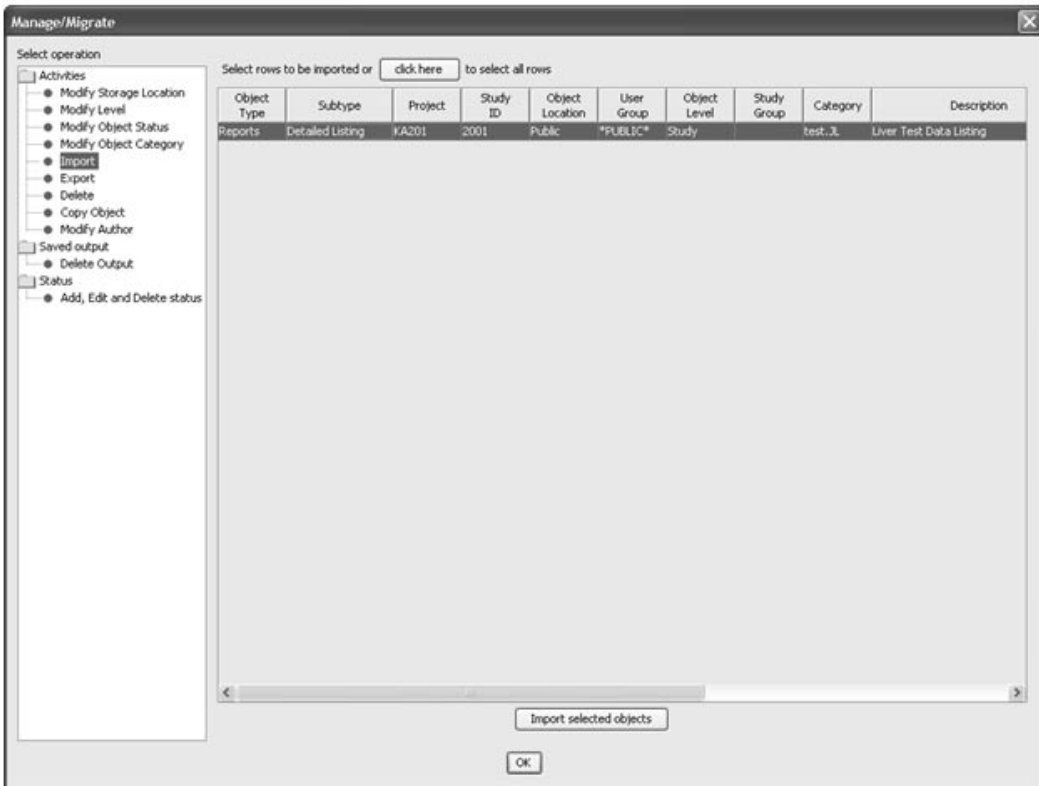
## Import Object

The Import Object activity requires user privilege p58 to import.

1. Under the **Activities** folder, select **Import**.
2. The Import window opens for “**Select File to Upload**”.



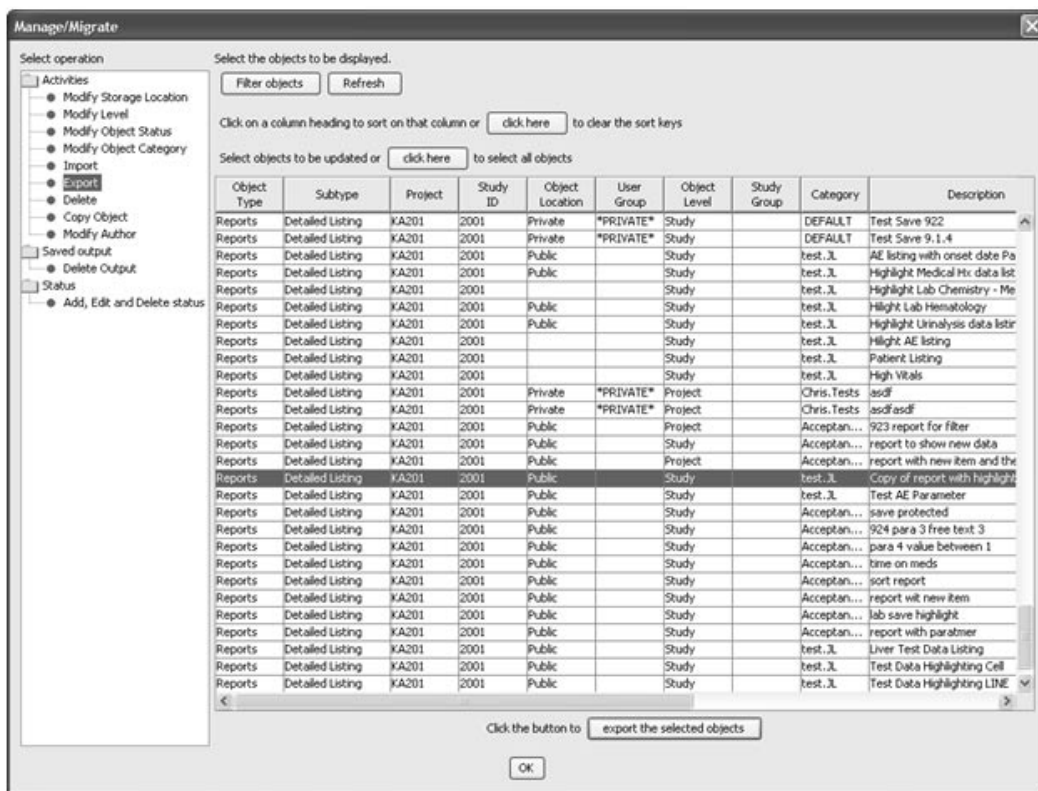
3. Select a file and Click **Select File to Upload** button. The object spreadsheet is generated containing the selected import objects.
4. Select the object row(s) to import.



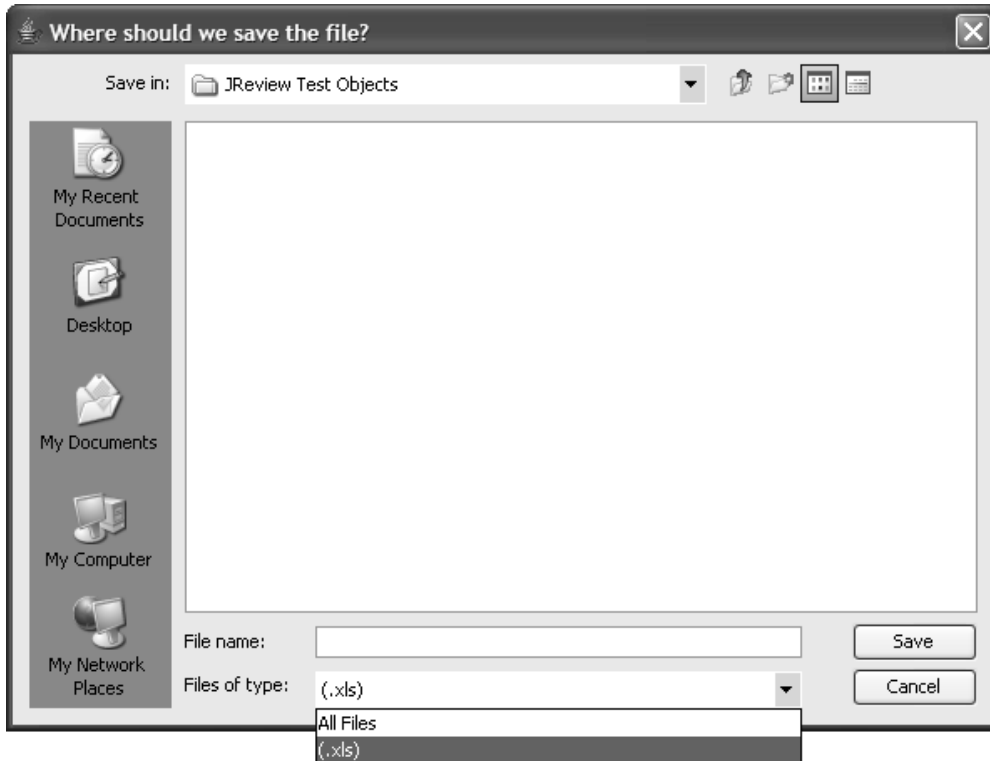
5. Click the **Import selected objects** button. The selected objects are imported.
6. Click **OK** to close the activity.

Users may export objects as follows:

1. Under the **Activities** folder, select **Export**.
2. Click **Filter objects**. Select objects to filter using any additional information if needed.
3. Click **OK** to generate spreadsheet of filtered objects.
4. Optionally sort columns to locate objects.
5. Select the object row(s) to export.
6. Click the **export selected objects** button.



Export window opens for “Where should we save the file?” Select a destination folder and enter a File Name. The file is exported as **xls**.



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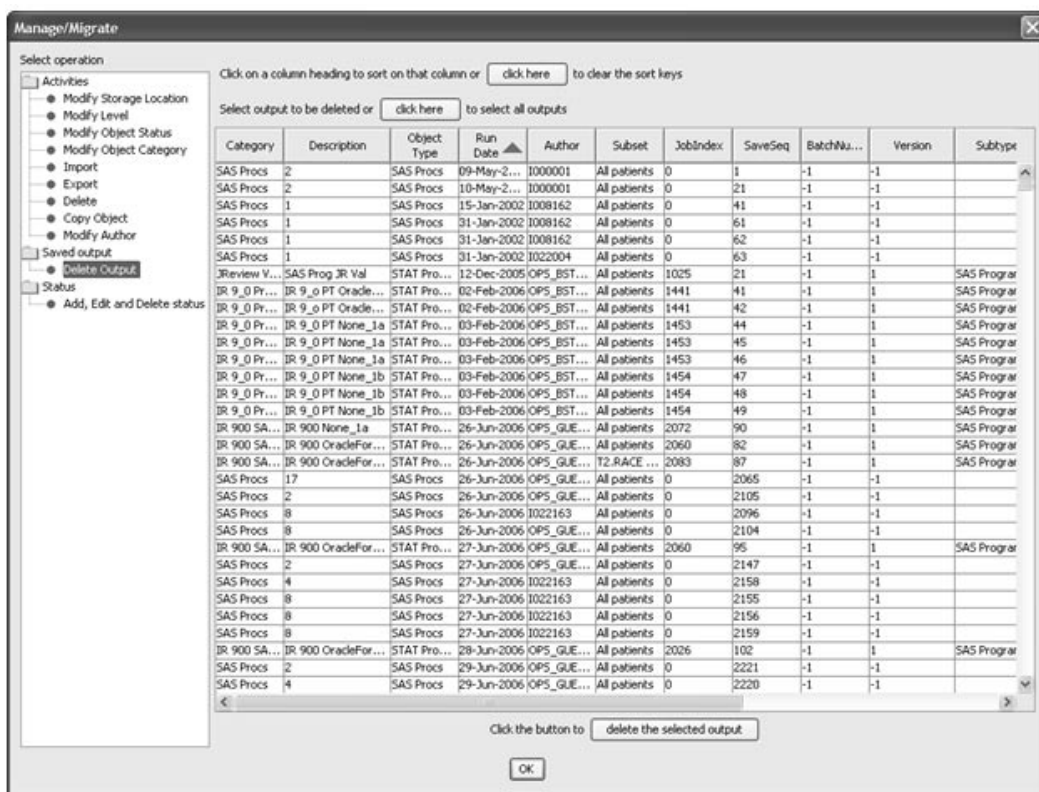
### *Copy Object*

Users may copy objects as follows:

1. Under the **Activities** folder, select **Copy Object**.
2. Click **Filter objects**. Select objects to filter using any additional information if needed.
3. Click OK to generate spreadsheet of filtered objects.
4. Select the object storage level. The default is Study level.
5. Optionally sort columns to locate objects.
6. Select the object row(s) to copy.
7. Click the **copy selected objects** button. An exact copy of the object and description is created and added to the spreadsheet.
8. Optionally, go back to the Activities folder, and modify and activity for the copied object if needed.

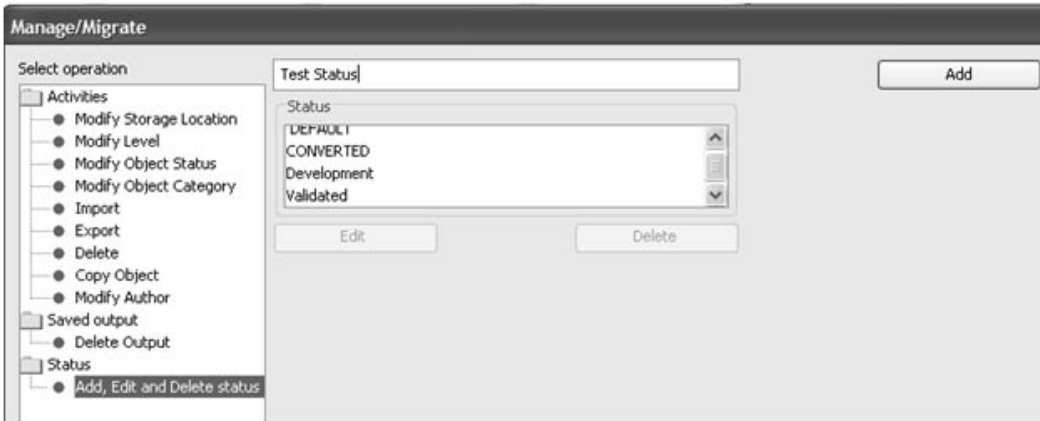
Users may delete saved output as follows:

1. Under the **Saved Output** folder, select **Delete Output**.  
The spreadsheet displays with the saved output scheduled information.
2. Optionally sort columns to locate objects.
3. Select the object row(s) to delete.
4. Click **delete the selected output** button.
5. Click **OK** to close activity.

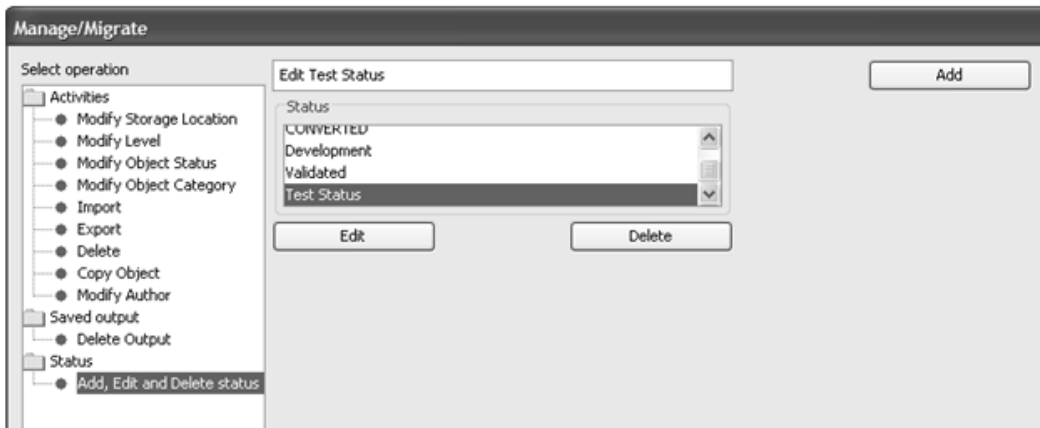


Only super users are allowed access to change an object status and add, edit, or delete available status options.

1. Under the **Status folder**, select Add, Edit, and Delete status.
2. In the text box, enter a new Status. Click **Add**. The status is added.



3. To edit an existing status, select it from the Status list and enter the changed description in the text box. Click **Edit**. The changed status description is applied to the Status list.



4. To delete a status, select it from the Status list. Click **Delete**. The status is removed from the Status list.
5. Click **OK** to close the activity window.



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# Alerts Browser

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## *What are alerts?*

An alert is an object that checks data for a specific condition using an output filter. Alerts are scheduled to execute like other objects and check the data. When the alert executes and the condition is true (the filter produces output), the alert is said to be “triggered” and produces a message. This message can be viewed in Integrated Review and can also be E-mailed to Integrated Review users.

Alerts are created and saved using the Alerts Browser window and are displayed in the Object Explorer in a special category named “ Alerts” located first in the list.

Alerts are scheduled from the Object Explorer like other objects and are displayed in the Schedule tab in a special category named “ Alerts”.

The output from alerts and objects executed by alerts can be accessed in the Review Output tab, once again in the “ Alerts” category.

A privilege setting [P36] is required to run the Alerts Browser, to view and schedule alerts in the Object Explorer, and to view the output from alerts in the Review Output tab.

In addition, access to alerts and their output can be controlled by User Group membership.


The Alerts Browser contains tab pages to define an alert and its characteristics. Alerts consist of an alert filter, an operation mode setting, a text message and optionally, an JReview object to execute. The following sections describe the various tab pages and their functions for defining alerts.

---

## Definition tab

Each tab displays a set of related fields which contain all of the information for a particular alert. In addition to the tabs, the Alerts Browser has four buttons which functions as follows:

- **Save** button opens the Save Object dialog.
- **Filter** button opens the Alert Filter window.
- **View Schedule** button opens the Alert Schedule window.
- **View Output** button opens the Alert Output window.

1. To open the **Alerts Browser**, click  in the toolbar, or from the **Browse** menu, select **Alerts**.

The **Alert Registration window** opens displaying three tabs.

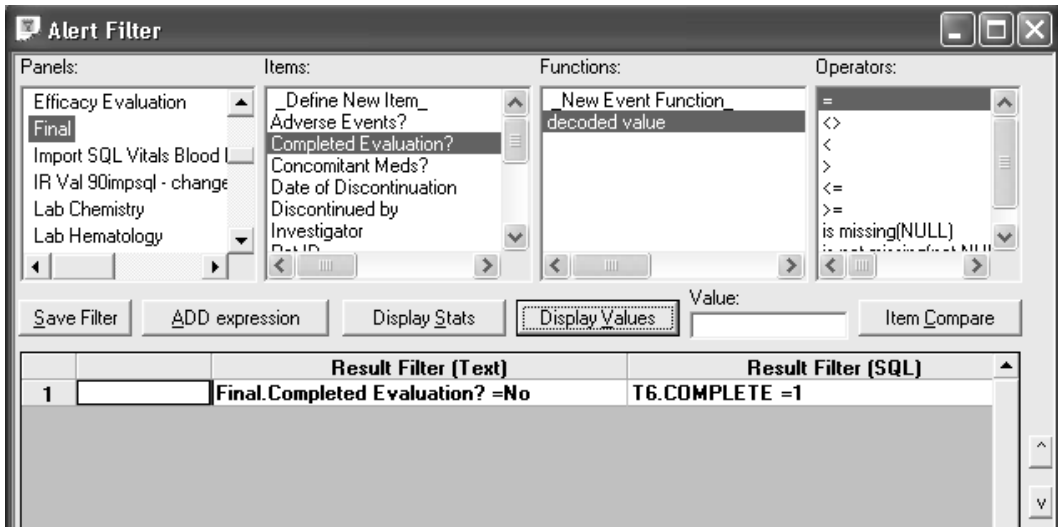
2. Enter a **Description** for the Alert as the descriptive name. This can be up to 60 characters.

The **ID Number** displays the internal object ID number for an existing alert, or \*NEW\* for a new alert being defined.

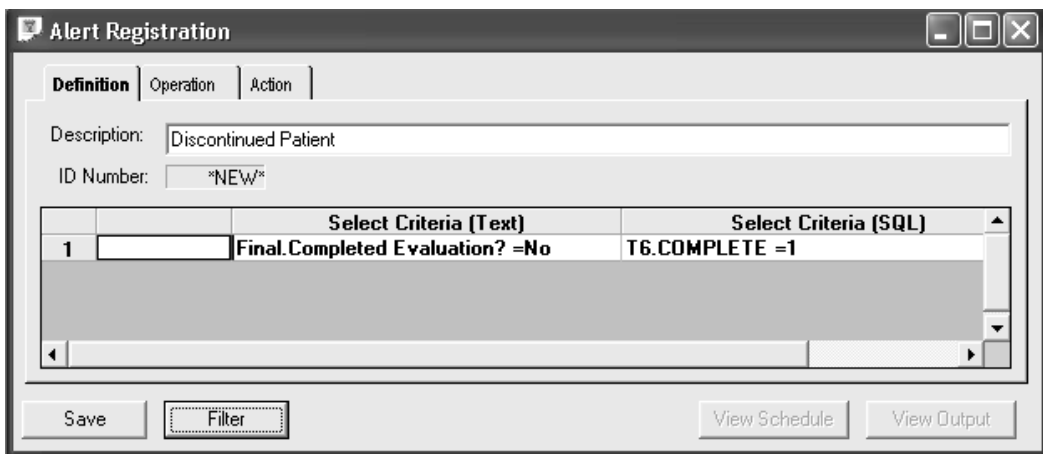
3. Click the **Filter** button.



- The **Alert Filter window** opens to define the criteria that must be met for the alert to produce its output message. This is similar to the output filter window used when defining other objects like reports. (See Chapter 6: Reporting: Output Filters)



- Click the **Save Filter button** and the alert filter criteria displays in the Alert Registration window in the Definition tab.



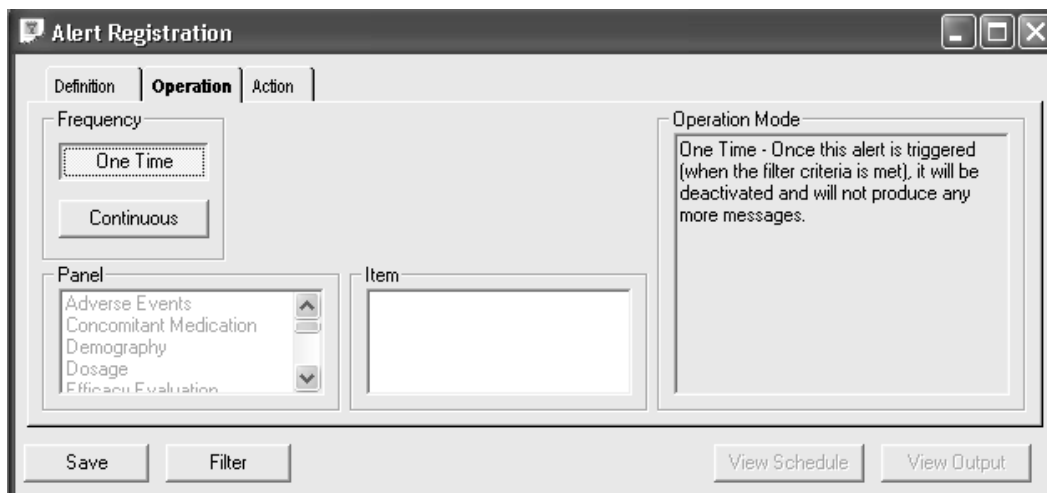
- Click the **Operation tab**.

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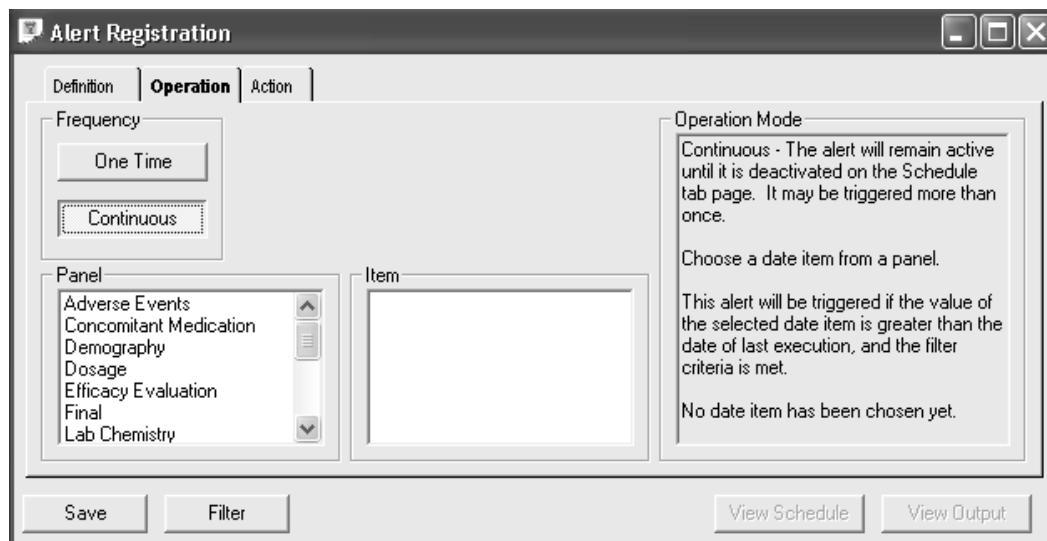
## Operation tab

Next you need to determine the **Frequency** to run the alert. The **Frequency** determines if the alert will only be triggered once, or will continue to remain in the schedule each time after it is triggered.

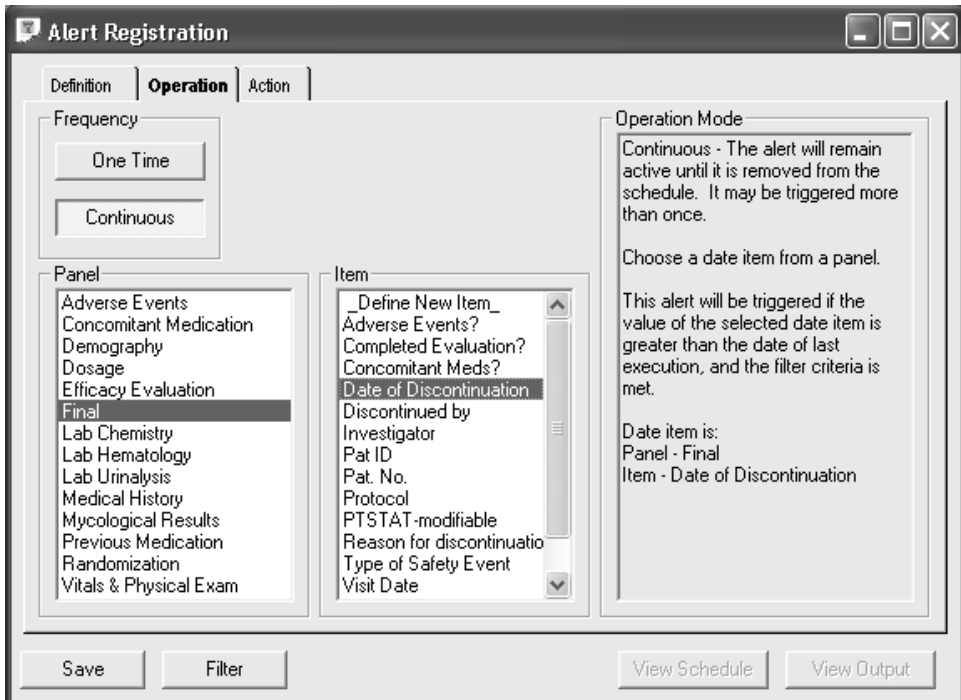
**One Time mode** means that the first time the alert is triggered. It will be removed from the schedule.



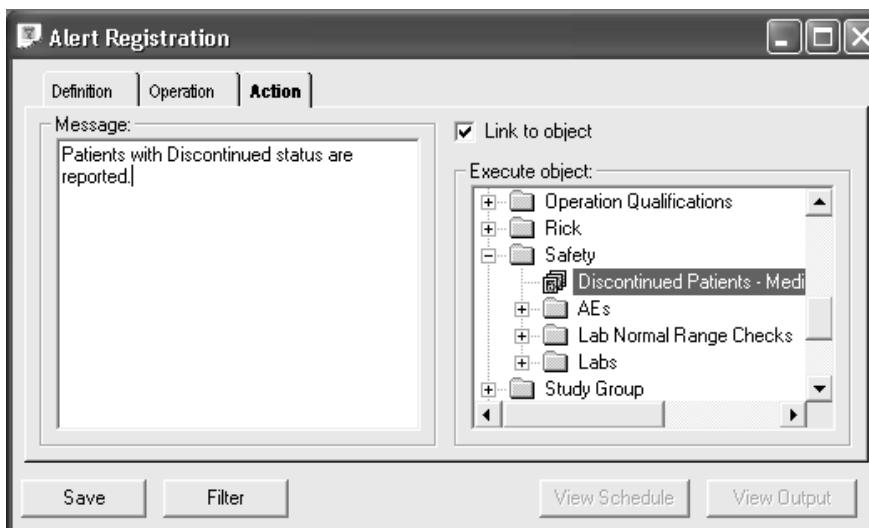
**Continuous mode** means that in addition to the criteria specified in the alert filter, the alert will not be triggered unless the date item chosen is later than the last date the alert was executed. The alert remains active until it is deactivated on the Schedule tab.



7. Select a **Frequency mode**. If you select Continuous mode, a date item is required to trigger the alert.
  - **Panel** indicates the panel name for the date item to be used for Continuous mode.
  - **Item** is the date item in the panel to be used for Continuous mode.
  - **Operation Mode** describes the selected operation mode.
8. Select a panel and item for date.



9. Click the **Action tab**.
10. Enter a text **Message** that is produced when the alert is triggered.
11. Click **Link to object** box (optional), when checked indicates that a stored object will be executed when the alert is triggered.
12. Select an **Execute object** when **Link to object** is checked. The list displays available objects to be executed.



The following Object types are excluded from the list of choices for **Link to Object**:

- Alerts
- Patient Selection Criteria
- Visual Subsets
- Patient Profiles
- Object Groups
- SAS Programs
- SAS Program Groups

Objects that are checked and excluded at save-time (because they are sub-types of another object type) are:

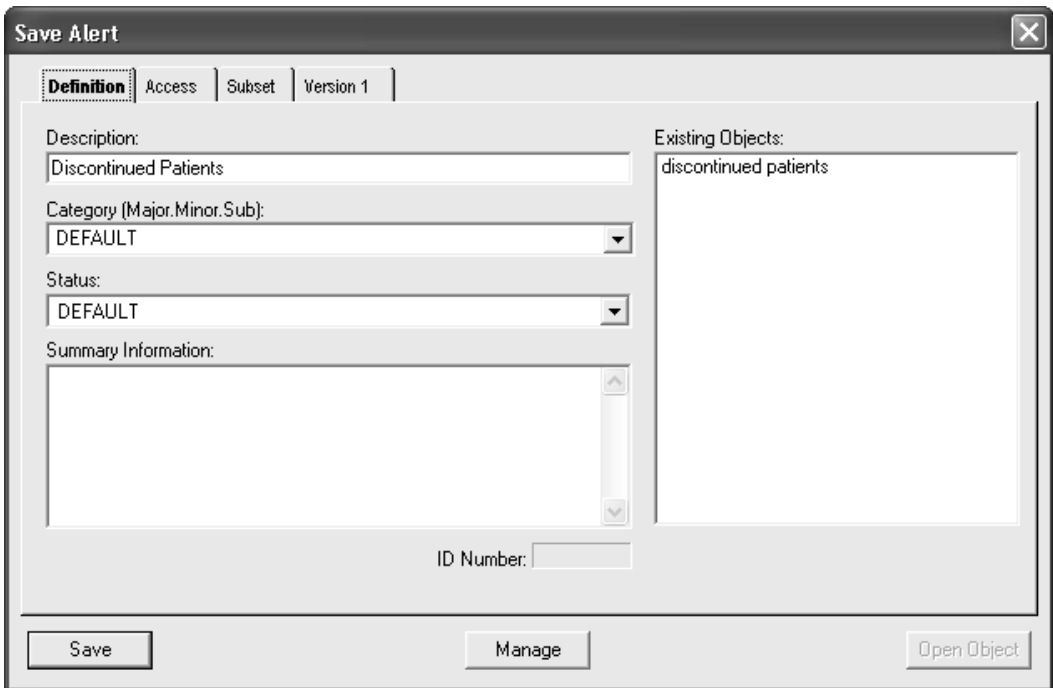
- Patient Visit Reports
- Shift Tables

**All other objects are allowed to be linked to an alert including reports with runtime parameters.**

If you click **Save** before entering a text message the following message window displays.

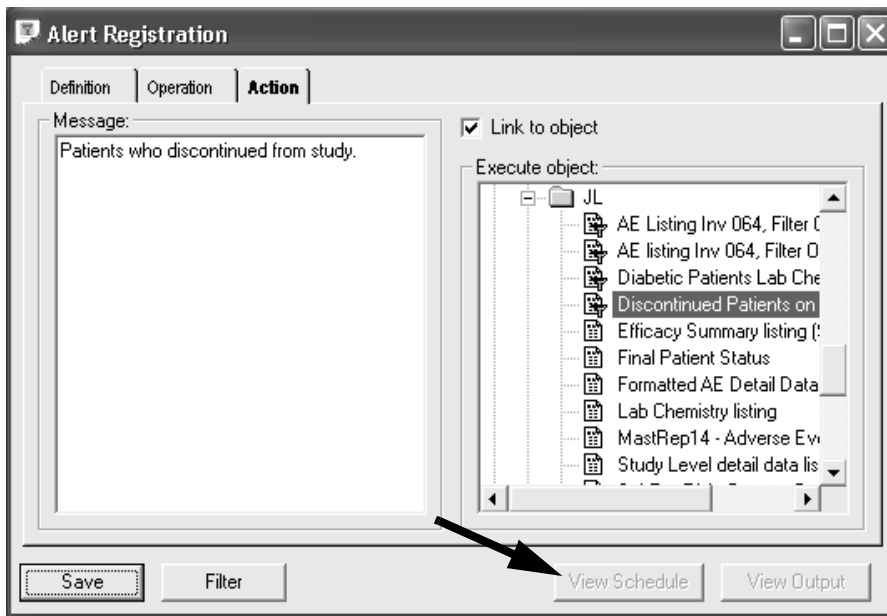


13. Click **Save**. The Save Alert window opens for you to enter the alert object specifications. (See previous section: *Save the object specification*)  
The alert object is saved to the Alerts category in the **Object Explorer** window. If you enter another category on the **Definition** tab, this category is added as a subcategory under the default Alerts category.



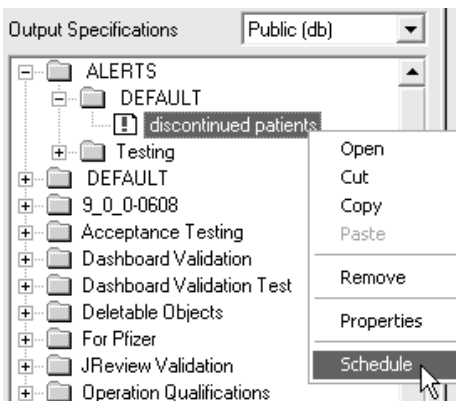
## Alert activation

Once the alert object is saved, you can activate it with your defined operation settings by scheduling the alert. The **Alert View Schedule** window displays the current schedule entries for an alert. If there are no schedule entries, the View Schedule button is disabled.



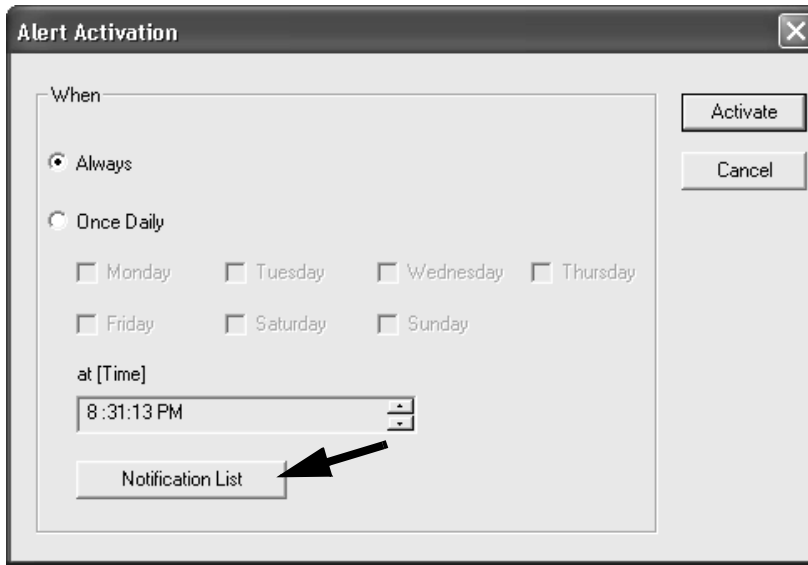
You activate the alert object by scheduling it the same as other objects.

1. Select the alert object in the Alerts category in the **Object Explorer window**.
2. Right-mouse click to display a floating menu.

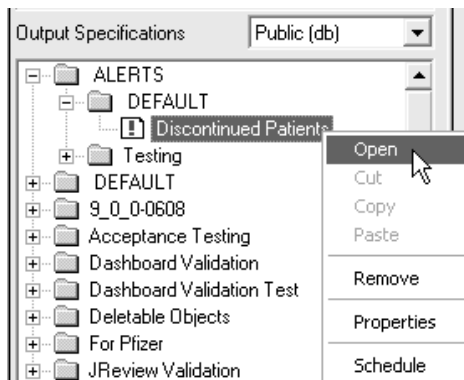




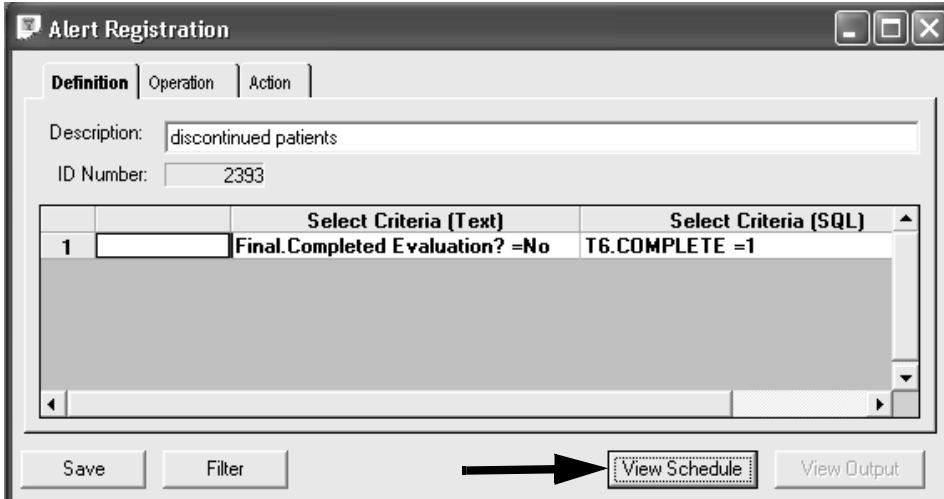
3. Click **Schedule**. The **Alert Activation** window displays for Job Scheduling.
4. Enter when to activate the alert as **Always** or **Once Daily** with a time.



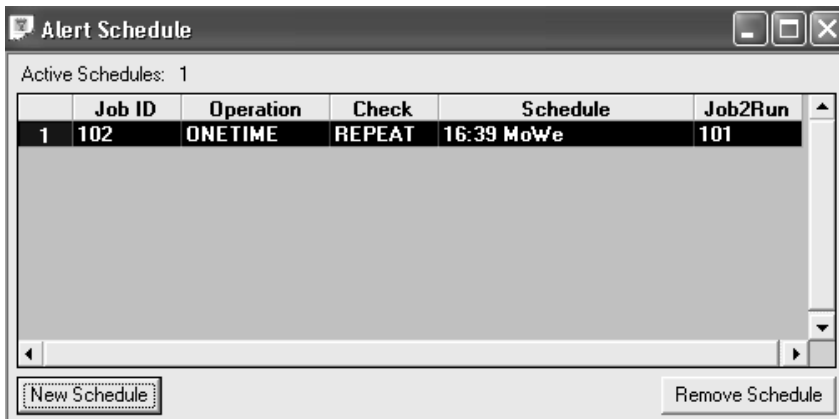
5. Click the **Notification List** and select users to notify.
6. Click **Activate** to schedule the alert.
7. You may enter an Email address from the **Edit** menu when you select **Preferences**.
8. To view the alert schedule, select the alert object in the Alerts category in the **Object Explorer** window.
9. Right-mouse click to display a floating menu and click **Open**.



The **Alert Registration** window opens and the **View Schedule** button is now enabled.



10. Click the **View Schedule** button to open the **Alert Schedule** window.



11. Select an alert job entry and click the **Remove Schedule** button to remove the alert job, or click the **New Schedule** button to change the alert job schedule.

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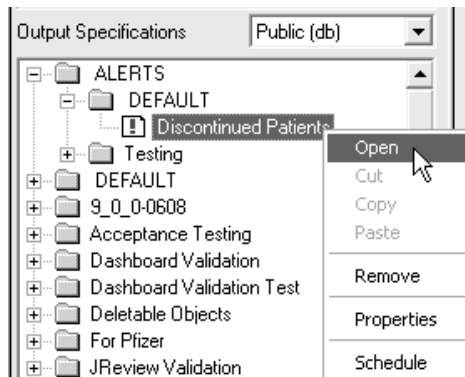
## Alert output

If any new alerts were triggered since your last login, the following message displays.

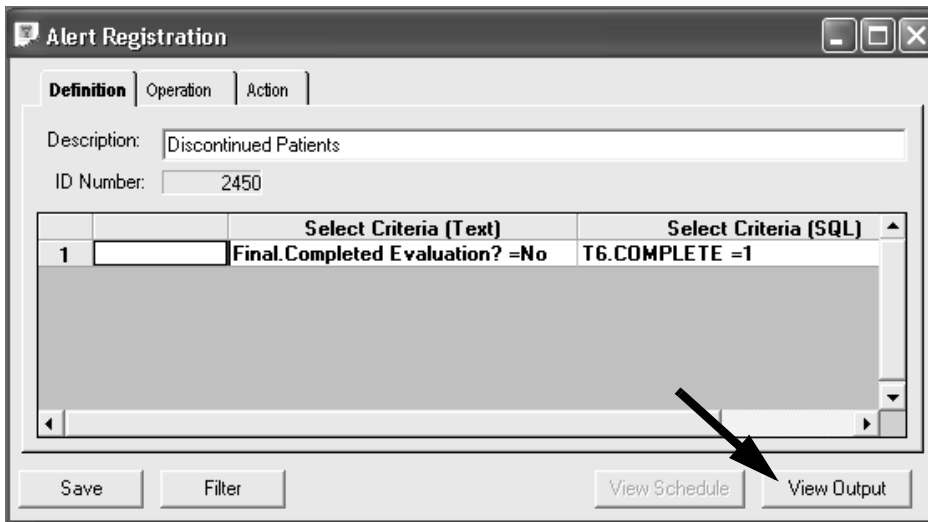


You view an alert object the same as other objects.

1. Select the alert object in the Alerts category in the **Object Explorer window**.
2. Right-mouse click to display a floating menu and click **Open**.



The **Alert Registration** window displays for Job Scheduling.

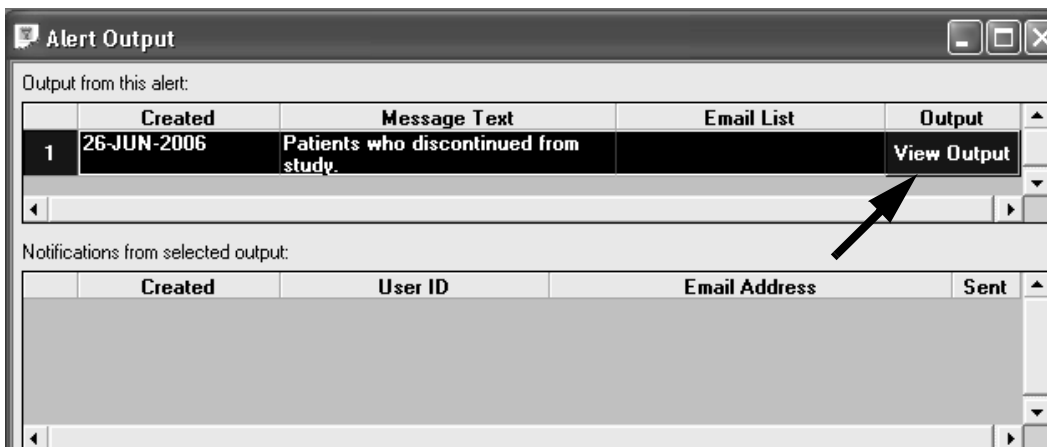


3. Click the **View Output** button.

The **Alert Output** window displays any messages produced by an alert. If another object was linked to the alert that produced output, a **View Output** button displays in the last column.

When an output line is highlighted, if any E-mail notifications were attempted, they are displayed in the lower part of the window. The last columns, labeled "Sent" indicates whether or not the E-mail was successfully sent.

4. Click on the **View Output** button to view that object's output.



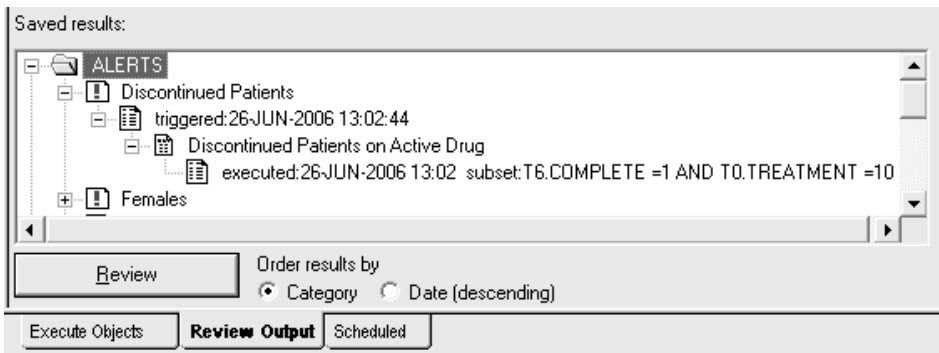
The object output which was linked to the alert trigger opens.

Investigator: 018 Discontinued Patients with Treatment Study: KAZ01 26-JUN-2006 3:02

Investigator	Pat. No.	Demog		Age	Rns	
		Sex			Active Events	Reason for discontinuation
018	4108	1		31	1	0
	4110	2		24	1	0
	4202	1		33	1	1

Another way to view the alert object output, particularly when there are multiple output results from an alert activated as continuous:

1. Click the **Review Output** tab at the bottom of the Object Explorer window to view saved output. The stored output results are saved with the date/time stamp and author who submitted the job.
2. Single click to open the Alerts category and open the particular alert trigger object.
3. Either highlight the output description and click the **Review** button or double click on the description to view output.





# 12 *Advanced functions*

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## Define Join Logic

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### *User-defined logical joins*

If the default join logic used by JReview is not appropriate for a pair of tables, you can specify the join logic between the tables.

A common usage of this utility is to define join logic between the Dosage panel's Start Date item as " $\geq$ " the Adverse Event panel's Onset Date item. This, and any logical join can be defined by the end-user at any time. Thus, the end-user can define joins 'on the fly'.

The Define Join Logic works with only two tables at a time defining the join logic between those two tables only. The system can then pick up the join pairs as needed.

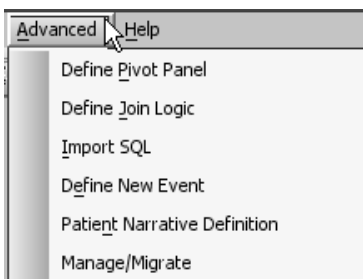
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### *Logical joins with Clintrial Type 0*

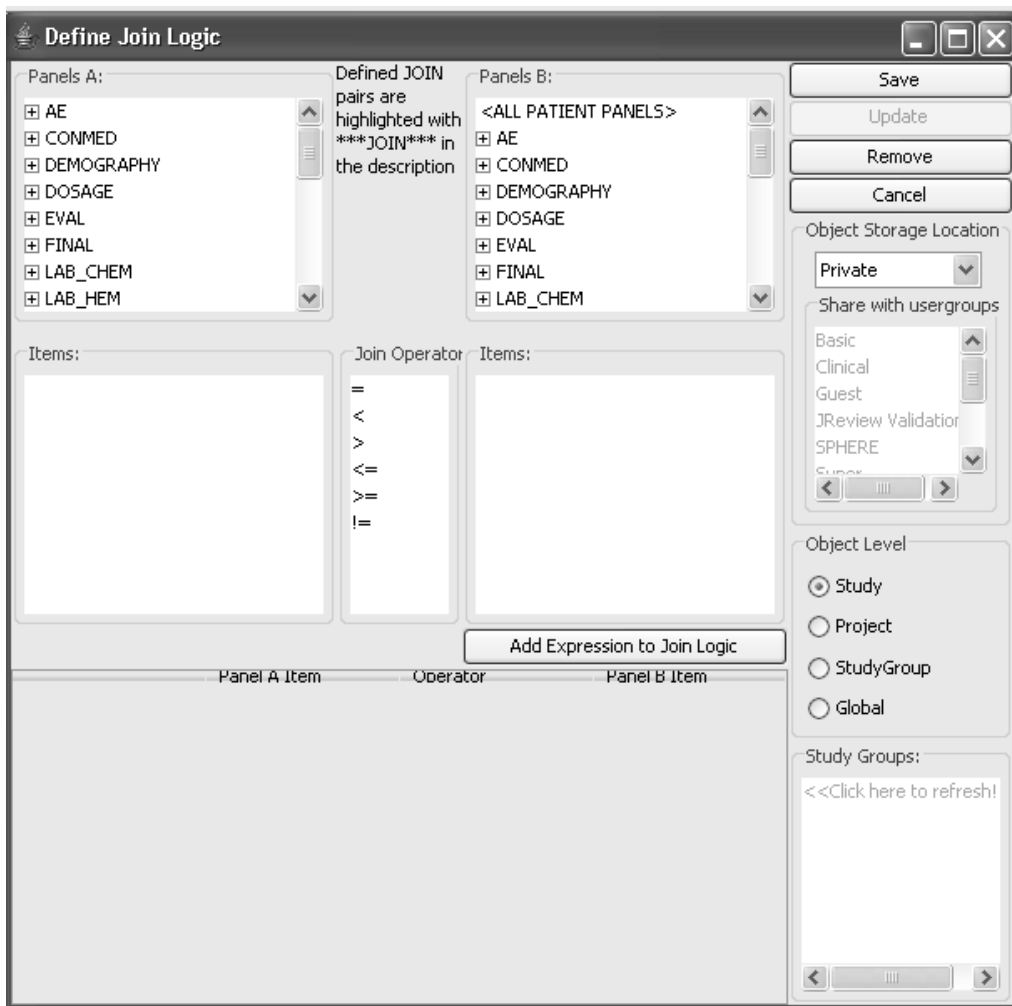
This is a necessary utility in the join logic and utilization of a Clintrial Type 0 panel. The Type 0 panels don't have typical context items, and are typically non-patient data.

*Creating logical joins*

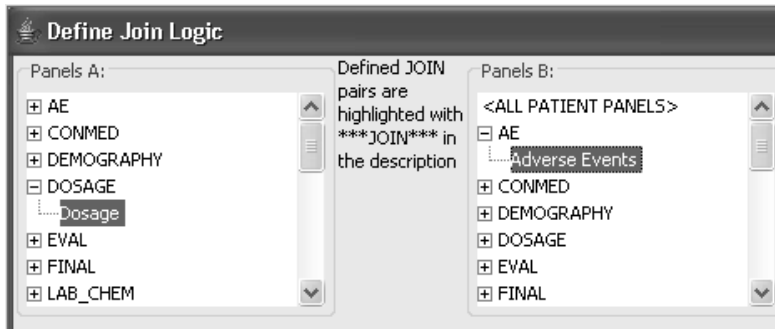
1. From the Advanced menu in the tool bar, select **Define Join Logic**.



The Define Join Logic window opens listing all panels in lists A and B.

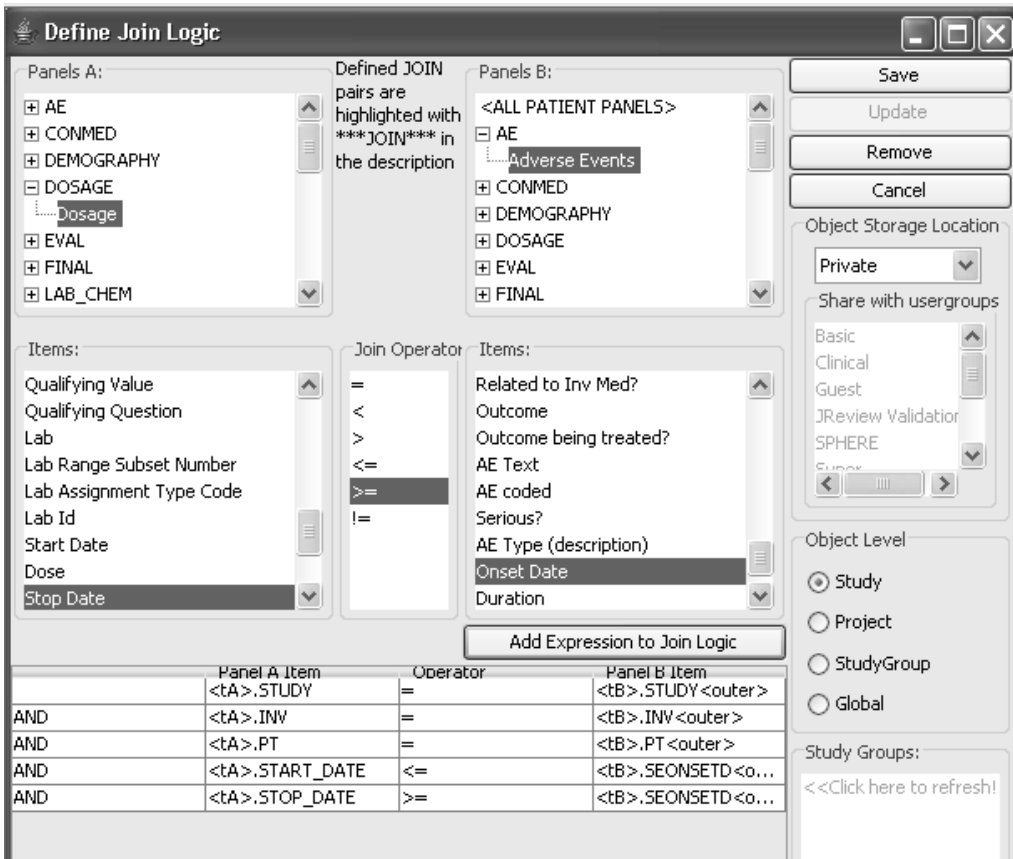


2. Point and click on the panels that you would like to join.



3. Select and click on items and join operators, defining relational joins.

4. Then click **Add Expression to Join Logic** to build the logic for the join between the selected panels.



5. Define the **Object Store** as Private, UserGroup or Public. Select UserGroup and optionally share with multiple UserGroups is supported. The default is private and will allow access only to the author.
6. **Object Level** supports Study, Project, StudyGroup, and Global. Optionally, select 'All Studies' for a Public or UserGroup level join definition as a 'Global Join Define' all studies definition. Multiple StudyGroups may be selected.
7. Click **Save** and view message for 'Join saved'. Click **OK**.

Once the Define Join Logic has been saved, the defined JOIN pairs are highlighted in the description with '\*\*\*JOIN\*\*\*'. You must click on the 'A' panel with '\*\*\*JOIN\*\*\*' description to list corresponding 'B' panel.

*Update or Remove Join Logic*

8. From the Advanced menu in the tool bar, select **Define Join Logic**
9. Select the joined panels pair. Enter changes if needed.
10. Click **Update** or **Remove**.

Define Join Logic 723

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## Join Order

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### *Join order in multi-panel reports*

By default, the Join Order of a multi-panel detail data listing report is ordered by the sequence in which you selected panels and items. The patient records displayed in the report are determined by the first panel selected, for example a head to tail linkage.

Instead of creating multiple reports to obtain different patients in the output, simply change the Join Order of the report and save for your different output requirements.

For example, if you create a multi-panel detail data listing with panels selected in the order first Demography and second Adverse Events then Final, the join order will default in the same sequence.

When the report is created, all patients with demography panels will display in the report even if they do not have Adverse Events records.

Had you selected the Adverse Events panel first, then only patients with Adverse Events would display. This report would show fewer patients than when the Demography panel was ordered first. This example assumes all patients have a Demography panel, but not all patients had Adverse Events.

**Report Browser**

**Type:**  
 Detail Data Listing  
 Summary Listing  
 Patient Visit Data Report

**Panels:**  
 \_Define Import SQL\_  
 AE (SAS)  
 Adverse Events  
 Concomitant Medication  
 DEMOGRAP (SAS)  
 Demog Import SQL  
 Demography  
 Dosage  
 Efficacy Evaluation  
 Final  
 Frank Existence Test - IR  
 Frank Incidence Test - IR  
 Frank Pivot Test 1 - IR  
 ICANDA.AE\_SOURCE  
 Import SQL Vitals Blood Press  
 KExistenceMatrix  
 LAB\_CHEM (SAS)  
 LAB\_CHEM (SAS)

**Items:**  
 \_Define New Item\_  
 \_Define New Range\_  
 Adverse Events?  
 Completed Evaluation?  
 Concomitant Meds?  
 Date of Discontinuation  
 Discontinued by  
 Investigator  
 PTSTAT-modifiable  
 Pat ID  
 Pat. No.  
 Protocol  
 Reason for discontinuation  
 Type of Safety Event  
 Visit Date  
 Visit Label  
 Visit No.

**Functions:**  
 actual value  
 decoded value

Custom Join    ADD Item    Add All It...    Filter Output    Create

Header: Detail Data Listing    Reset Subtotal with change

Show Details?     Suppress duplicate rows?     Autosize Columns

0	1	2	3	4	5	6	7
Col.Head 1	DEMOG	DEMOG	DEMOG	DEMOG	AE	AE	FINAL
Col.Head 2	Inv.	Pat. No.	Sex	Age	Onset Date	AE Coded	Completed?
Sort Order	1	2	3	4	5	6	7
Row results							
Warn -Low							
Warn -High							
Panic-Low							

Detail Data Listing						
DEMOG	DEMOG	DEMOG	DEMOG	AE	AE	FINAL
Inv.	Pat. No.	Sex	Age	Onset Date	AE Coded	Completed?
030	3101	Male	67			
030	3102	Male	36			
030	3103	Male	19			
030	3104	Male	62			
030	3105	Male	43			
030	3106	Male	49			
030	3107	Female	47			
030	3108	Female	33			
030	3109	Male	80			
030	3110	Male	47			
030	3111	Female	66	04-SEP-1991	DIG :Duodenal ulcer	No
030	3112	Male	27	08-NOV-1991	SKIN:Burning sensation skin	No
030	3113	Female	22			
030	3114	Male	25			
030	3201	Male	31			
030	3202	Female	50			
030	3203	Male	61			
030	3204	Male	63			
030	3205	Male	72	16-SEP-1991	SKIN:Burning sensation skin	Yes
030	3206	Male	35	08-OCT-1991	DIG :Diarrhea	Yes
030	3206	Male	35	08-OCT-1991	DIG :Vomiting	Yes

Notice the last column for 'FINAL Completed?' displays as a blank row when the Adverse Event record doesn't exist. The Final panel data is not truly missing, but unable to link in the report due to the previous non-existent record. The patients who show Adverse Events records are able to link and display their Final data.

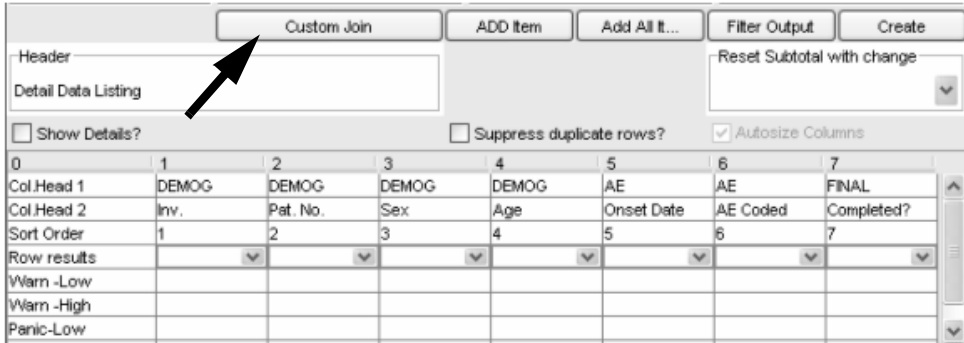


---

## Change Join Order

You can change the default Join Order of the panels entered in your detail data listing specification as follows:

1. Define a detail data listing with data items from multiple panels sources.
2. From the Report Browser window, click **Custom Join**.



The screenshot shows the Report Browser window with the following elements:

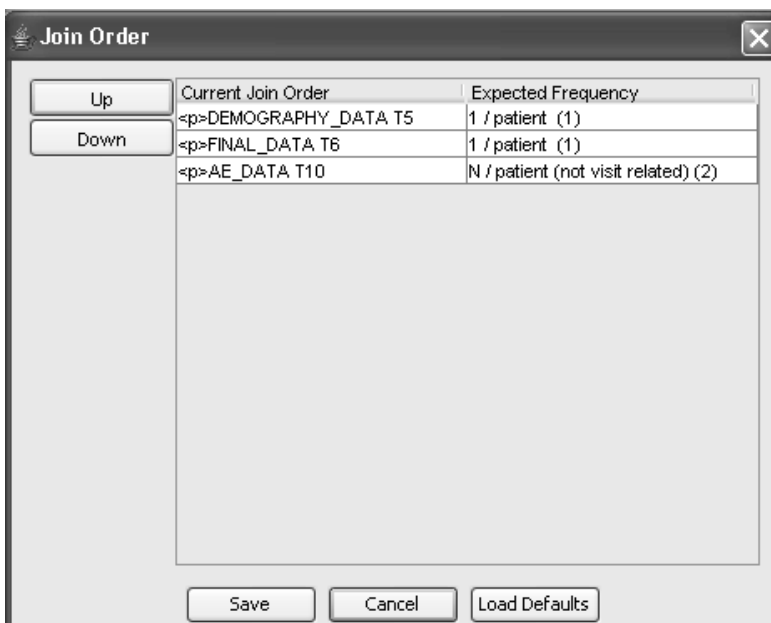
- Buttons: Custom Join, ADD Item, Add All It..., Filter Output, Create
- Header: Header
- Detail Data Listing: Detail Data Listing
- Reset Subtotal with change: [Dropdown]
- Options:  Show Details?,  Suppress duplicate rows?,  Autosize Columns
- Table:

0	1	2	3	4	5	6	7
Col.Head 1	DEMOG	DEMOG	DEMOG	DEMOG	AE	AE	FINAL
Col.Head 2	Inv.	Pat. No.	Sex	Age	Onset Date	AE Coded	Completed?
Sort Order	1	2	3	4	5	6	7
Row results	[Dropdown]	[Dropdown]	[Dropdown]	[Dropdown]	[Dropdown]	[Dropdown]	[Dropdown]
Warn -Low							
Warn -High							
Panic-Low							

3. The **Custom Join Logic** window displays. Click **Join Order**.

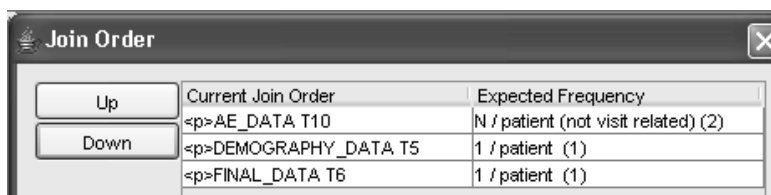


The Join Order Definition window displays with the default Join Order definition.



- Click on the panel you want to reorder and use the up/down buttons to the left.

In the example, Demography is moved to the 2nd order position and Adverse Events is now in the primary or driver position.



- Click **Save** in the **Join Order** window to apply the new Join Order to the report. The Join Order window closes and you are returned to the **Custom Join Logic** window.
- Click **Save** in the **Define Join Logic** window and close the window. The revised custom Join Order is now saved along with your report specifications.

This report shows the revised join order where Adverse Events is assigned the first order position. Any blank records for Adverse Events are dropped from the listing.

DEMOG	DEMOG	DEMOG	AE	AE	FINAL	
Inv.	Pat. No.	Sex	Age	Onset Date	AE Coded	Completed Evaluation?
030	3111	Female	66	04-SEP-1991	DIG :Duodenal ulcer	No
030	3112	Male	27	08-NOV-1991	SKIN:Burning sensation skin	No
030	3205	Male	72	16-SEP-1991	SKIN:Burning sensation skin	Yes
030	3206	Male	35	08-OCT-1991	DIG :Diarrhea	Yes
030	3206	Male	35	08-OCT-1991	DIG :Vomiting	Yes

The last example revises the Join Order as the Final panel in the first order, Demography in second and Adverse Events as last.

Up	Current Join Order	Expected Frequency
	<p>FINAL_DATA T6	1 / patient (1)
Down	<p>DEMOGRAPHY_DATA T5	1 / patient (1)
	<p>AE_DATA T10	N / patient (not visit related) (2)

Notice how the previously blank data for Final panel and completed study contain data. In the first example, where non-existent Adverse Event records displayed the Final panel was unable to link and displayed as blank data.

DEMOG	DEMOG	DEMOG	DEMOG	AE	AE	FINAL
Inv.	Pat. No.	Sex	Age	Onset Date	AE Coded	Completed Evaluation?
030	3101	Male	67			Yes
030	3102	Male	36			Yes
030	3103	Male	19			Yes
030	3104	Male	62			Yes
030	3105	Male	43			Yes
030	3106	Male	49			Yes
030	3107	Female	47			Yes
030	3108	Female	33			Yes
030	3109	Male	80			Yes
030	3110	Male	47			Yes
030	3111	Female	66	04-SEP-1991	DIG :Duodenal ulcer	No
030	3112	Male	27	08-NOV-1991	SKIN:Burning sensation skin	No
030	3113	Female	22			Yes
030	3114	Male	25			Yes
030	3201	Male	31			Yes
030	3202	Female	50			Yes
030	3203	Male	61			Yes
030	3204	Male	63			Yes
030	3205	Male	72	16-SEP-1991	SKIN:Burning sensation skin	Yes
030	3206	Male	35	08-OCT-1991	DIG :Diarrhea	Yes
030	3206	Male	35	08-OCT-1991	DIG :Vomiting	Yes

---

### *Load Default Join Order*

Initially the Join Order window displays the default Join Order determined by the panel sequence defined in the report specification. After the report specification and changed Join Order is saved, you have the option of reloading the join order back to the system default.

1. Launch the saved report object from the Object Specifications window.
2. Open the Report Browser window to display the report specification.
3. Follow the previous steps to define a Join Order.
4. Click the **Load Defaults** button.

The system default join order is reloaded into the Join Order window.

5. Click **Save**.

---

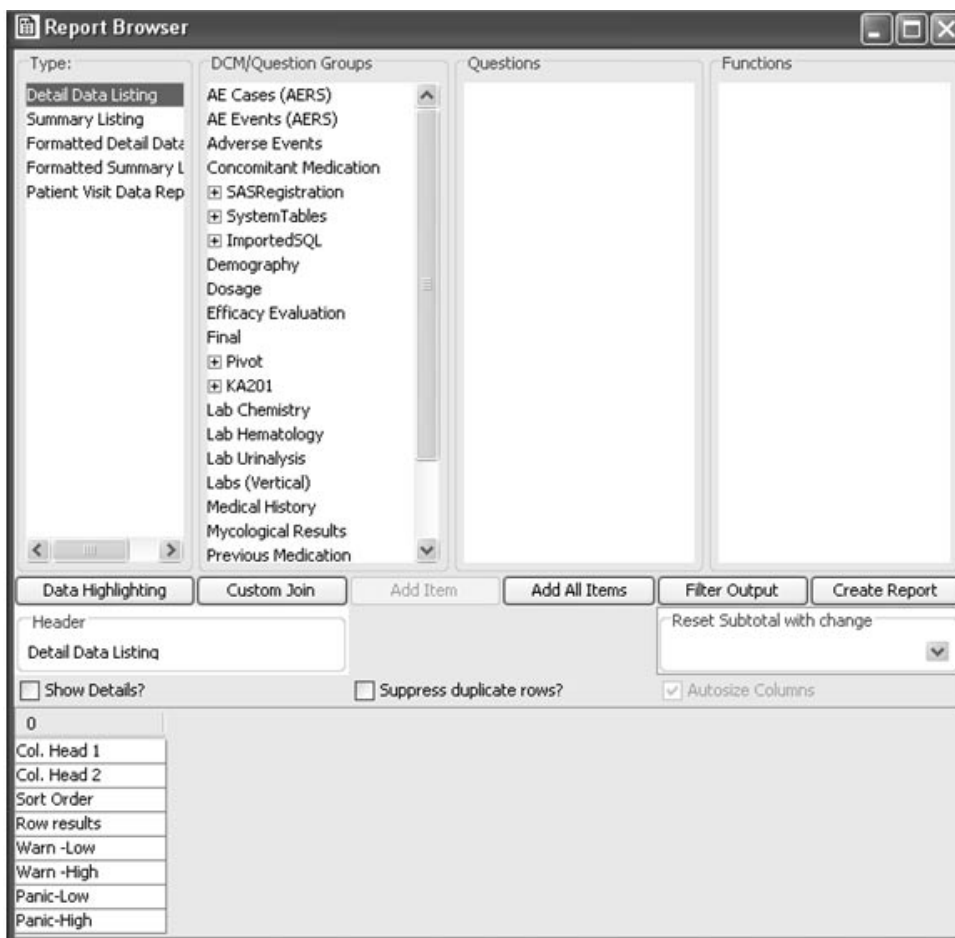
## Define Custom Joins

---

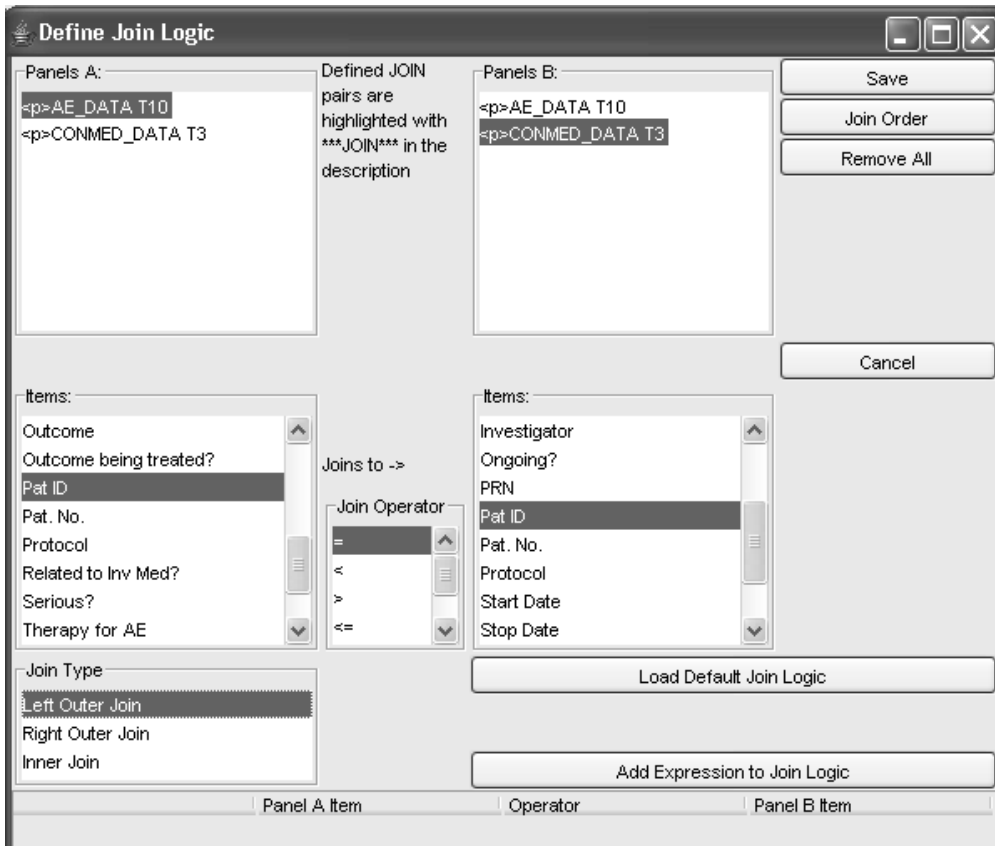
### *Creating custom joins*

You can specify customized join logic at the individual report level in JReview to use between specified tables. In the define Custom Join, the join logic needs to be complete between all the tables in the report. A common usage of this utility is to define custom joins to identify existing versus missing records or entries. The custom join logic is saved with the individual report specification.

1. First define your detail data listing report specification to identify which tables will utilize the custom join logic.



2. From the Report Browser window, click **Custom Join**.  
The **Define Join Logic** window opens listing all panels A and B.  
The maximum number of tables for Custom Joins is 15.
3. Point and click on the panels that you would like to join.
4. Point and click on items and join operators, defining relational joins.



*Note: Define Custom Join does not apply to the Patient Visit Data Report type.*

The Define Custom Join Logic supports a 'tree' join where the join for each table needs to be defined. Otherwise, results may be meaningless.

5. Select the Join Type.



The Left Outer and Right Outer Join dictate which table is the driver table and are identical in behavior, however, just flip which table is the driver table, i.e., examples:

PanelA = AE    PanelB = CONCOM

**Left outer on PID is: AE.PID = CONCOM.PID (+)**

(meaning – report rows for any patients with at least one AE)

PanelA = AE    PanelB = CONCOM

**Right outer on PID is: AE.PID (+)= CONCOM.PID**

(meaning – report rows for any patients with at least one CONCOM)

An example to show the difference in a report is:

AE.PID    AE.SETEXT    CONCOM.PID    CONCOM.DRUGNAME

The left outer join is the usual results seen but the right outer join will display conmeds at the end of the report with no AE entries.

Inner joins only includes rows in the report if a record exists for each table in the report, i.e.,

DEMOG.PID    DEMOG.AGE    AE.SETEXT

With left outer join on all patients will be listed even if they don't have an AE.

With Inner joins on only those patients with at least one AE will be listed.

6. Then click **Add Expression to Join Logic** to build the logic for the join between the selected panels.

7. Click **Save**.

*Note: The Define Custom Join Logic supersedes the Join Order.*



---

## Update or Remove Custom Join

After a report specification is saved with Custom Join Logic specified, you can edit or remove the saved custom join logic.

1. Launch the saved report object from the Object Specifications window.
2. Open the Report Browser window to display the report specification.
3. From the Report Browser window, click **Custom Join**. The previously saved Custom Join Logic definition displays.
4. Click the **Remove** to clear the current custom join logic.
5. Use the scissors icon to remove individual join logic rows. Add changes and click **Update** or **Save**.

---

## Load Default Join Logic

After a report specification is saved with Custom Join Logic specified, you have the option of replacing the custom join logic with the system default. This feature is a way to reload the initial system join logic.

1. Launch the saved report object from the Object Specifications window.
2. Open the Report Browser window to display the report specification.
3. From the Report Browser window, click **Custom Join**. The previously saved Custom Join Logic definition displays.
4. Click the **Load Default Join Logic** button.



5. Click **Yes**. The system default join logic is reloaded into the Custom Join Logic.  
You can also use the system default to initially define the Custom Join Logic as a starting point.
6. Click **Save**.

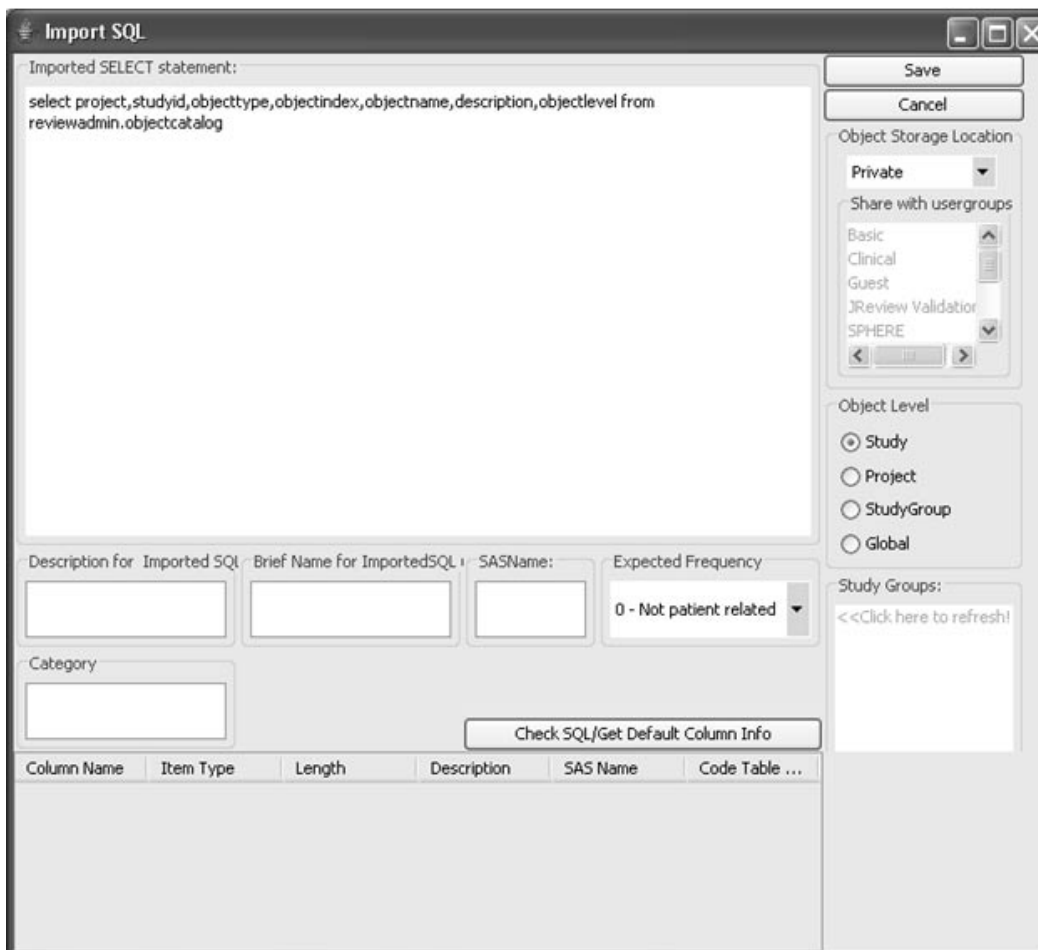
*Note: The maximum number of tables for Custom Joins is 15.*

# Import SQL

*Enter Import SQL SELECT statement*

The Import SQL function is another way to create and access foreign panels for data review. It provides a mechanism for creating complex objects along with utilizing queries previously developed outside of Review.

1. From the **Advanced menu** in the toolbar, select **Import SQL**.



2. Either type in the desired SELECT Statement or copy a SELECT statement to the clipboard and paste it into the 'Imported SELECT statement' edit control.

The maximum is 28,000 characters and requires the new9082.sql script to ImportSQL.table

3. For an example of a select statement accessing our Object Catalog table in the ReviewAdmin oracle account:

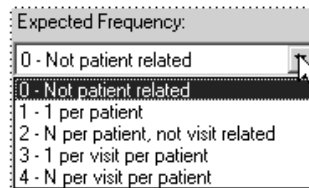
```
select project,studyid,objecttype,objectindex,objectname,  
description,objectlevel from reviewadmin.objectcatalog
```

You can select and copy this select statement to the clipboard, then paste it into the 'Import SELECT statement' edit control. DO NOT end the statement with a semi-colon.

Additional advanced Select statement syntax such as 'USING', as the initial keyword instead of 'SELECT' is allowed.

Supports '&' prefix parameters (&promptName) in addition to <prompt=> syntax. Also, displays parameter references in user prompt dialog - once per parameter - even if included multiple times in SELECT statement.

4. Select the correct 'Expected Frequency' from the dropdown list box which are Clintrial panel types. The default is for non-patient data as Type 0.



*Note: If it's not patient related, it's important not to subset using the Patient Selection Criteria. (See ReviewAdmin: Register Foreign Panels)*

5. Click the **Check SQL/Get Column Info** button which goes out to the database, and checks the SQL syntax and returns an Oracle error if present.



If the SQL syntax is correct, than the 'Column Information in Imported SELECT statement' spreadsheet is filled with the column information from the select statement (col name, type, length, description, SASName).

There is the ability to attach a codelist or DVG reference to an ImportSQL column with the add 'code table'definition column.

Description for Imported SQL:  Brief Name for Imported SQL:  SASName:  Expected Frequency:

Category:

Column Name	Item Type	Length	Description	SAS Name	Code Table ...
PROJECT	C	30	PROJECT	PROJECT	
STUDYID	C	30	STUDYID	STUDYID	
OBJECTTYPE	C	4	OBJECTTYPE	OBJECTTY	
OBJECTINDEX	N	22	OBJECTINDEX	OBJECTIN	
OBJECTNAME	C	30	OBJECTNAME	OBJECTNA	
DESCRIPTION	C	60	DESCRIPTION	DESCRIPT	
OBJECTLEVEL	N	22	OBJECTLEVEL	OBJECTLE	

6. Enter a Description, 'Brief Name, i.e. PanelName', SASName (less than 8 characters).
7. Select the appropriate 'Object Store' and 'Object Level' similar to Saved Objects terminology. The Private Object Store is stored in the database. All definitions are stored in the new 'ImportSQL' table in the ReviewAdmin account.

The Import SQL definition can also be saved at Study, StudyGroup (multiples supported) and Global (\*ALL\*). Save at the Project level is supported.

Select multiple UserGroups is allowed and selecting multiple StudyGroups.

ImportSQLs can be hidden from view by not displaying on the list of panels, for other usergroups. This is similar to Foreign Panel hiding if an author defines a report on a Foreign Panel or ImportSQL, they have access through usergroup membership. However, they do not want those Foreign Panels or ImportSQL's to be visible or available to other users in other usergroups, to be used in other definitions.

This allows complex ImportSQL definitions to be saved and used in reporting definitions, but the details of the ImportSQL can thereby be hidden from users in other usergroups.

8. Only the Description and SASName can be modified. You can delete any of the rows in the spreadsheet, if the user didn't want all the columns to be available for reporting in Review after registering this SQL statement.
9. Click **SAVE**. The information is saved and added to the list of Panels and will function much like a registered Foreign Panel. You can do reports, graphs, use it in Output Filters, etc.
10. To edit or remove after it has been defined, select Import SQL in the Panel or DCM list, then right mouse click to edit or remove.

---

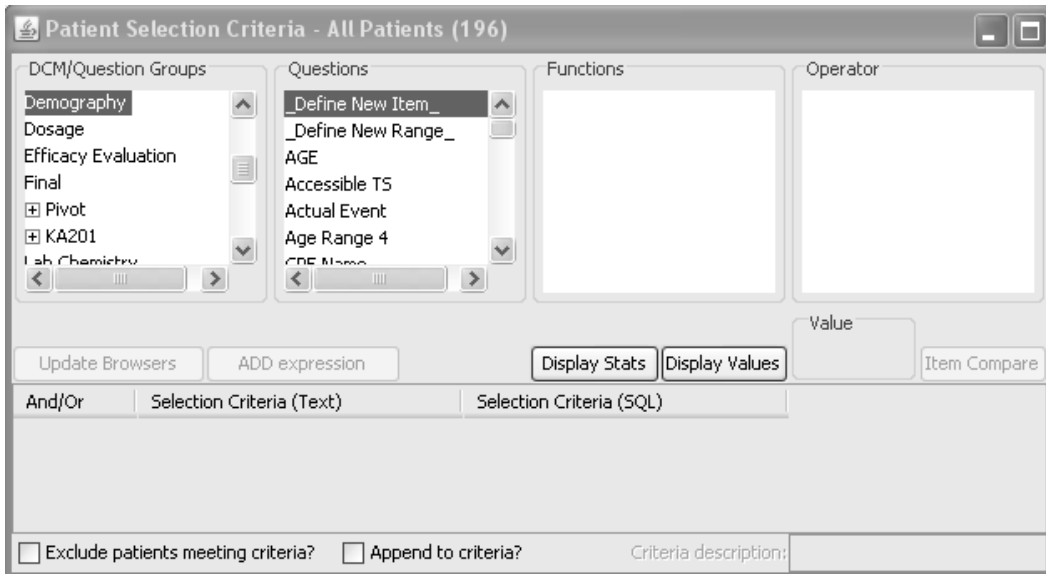
## Define New Item

---

### *Derived items across panels*

You may find it desirable to select and report a derivation of the original clinical data. For example, derive a total score by summing up several raw data items in the database from within the same panel or across panels and panels types. Deriving items across panels requires no programming. You select the panels and the underlying items, using any mathematics operator to join Item expressions and save the derived item.

1. From the Patient Selection Criteria or any Browser build window, select a panel and then click Define New Item.

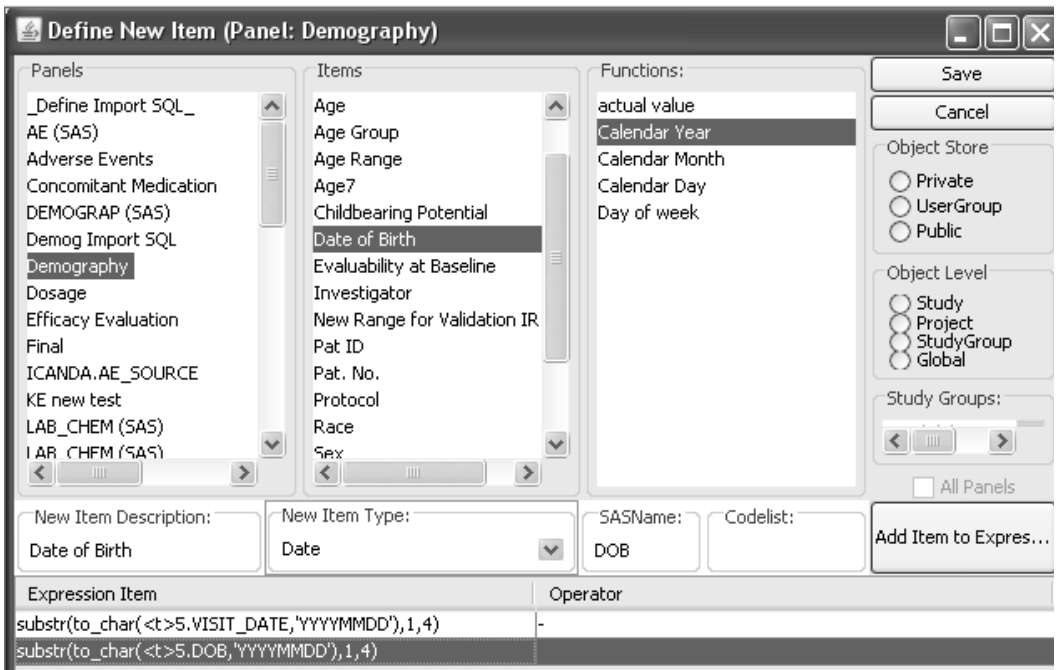


2. Select panel items.
3. Join item expression with mathematical operators.
4. Enter New Item Description.
5. Save New Item.

The newly defined item will be displayed and accessible from the active panel when you clicked on `_Defined New Item_`.

For example, perhaps in the Demography panel the patient's age was not collected, but you have the Date of Birth.

You could define a calculated age by doing date arithmetic on the Date of Birth against the Visit Date.

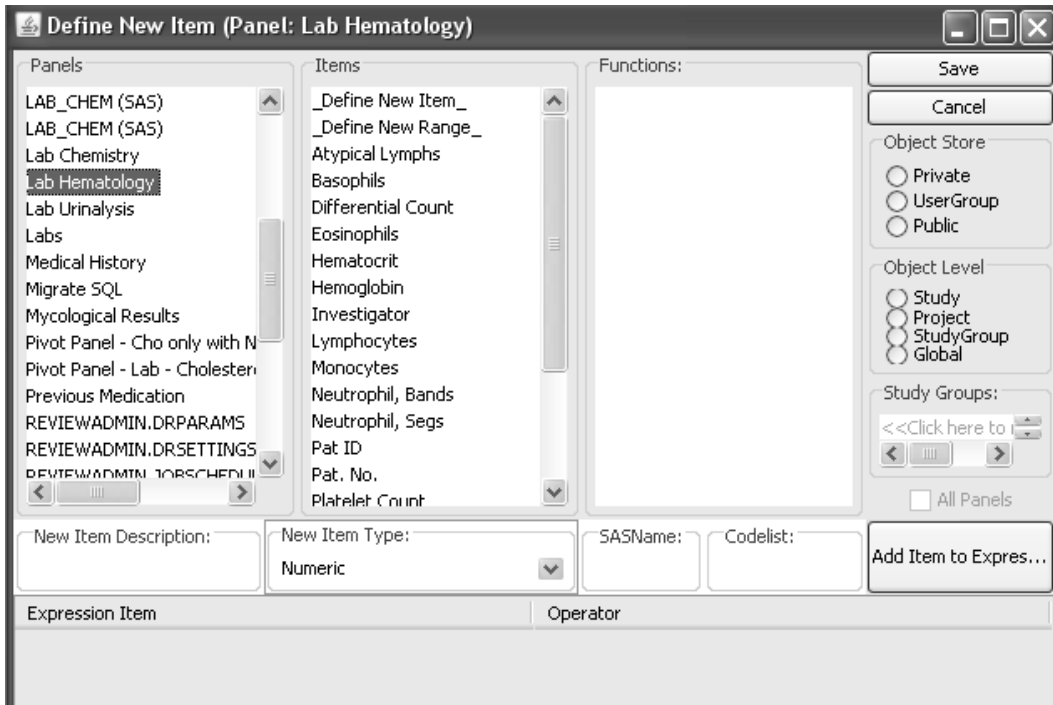


---

## Define New Item

1. The first entry in the Items list for every panel is the pseudo-item; click on ‘\_Define New Item\_’.

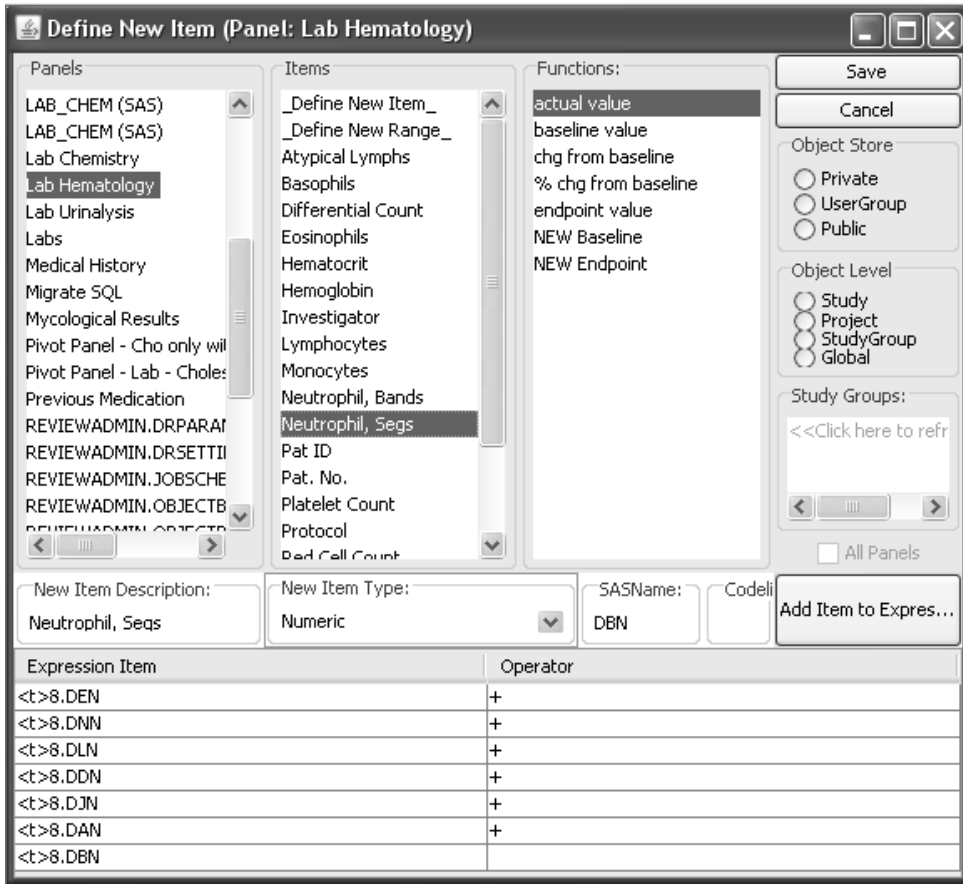
JReview displays the Define New Item window where you can define the expression for the derived item.





2. Select the items. Click **Add Item to Expression** to paste the item and function into the expression spreadsheet.

As each item is added, its description and codelist reference is defaulted into the New Item Description text. This is handy if you want to copy an existing item(s) from one panel to another for convenience in display. The item(s) is then available for use throughout all the browsers.



*Note: If any items used in a mathematical calculation contain NULL data, the resulting derived item will be NULL per standard Oracle functionality.*

---

## Add operators

By default, the rows are joined by '+' operators; however, you can change the operator. By clicking on the operator field, you can change it to any mathematical operator of choice.

You can also edit more complex mathematical expressions within the Expression Items edit box by editing the SQL to adjust your derived item calculation, as shown in the next example. Double click on the cell row to begin edit. Be sure to hit the **Return** key on the last expression line so all expression items and operators are processed into the calculation.

*Note: You must use parentheses between rows to control operator precedence if it is a complex expression.*

You can edit the SQL within the Expression Item edit box to adjust your derived item calculation, as shown in the next example.

The screenshot shows the 'New Item Description' dialog box. The 'New Item Description' field contains 'Cell Diff Cnt', 'New Item Type' is 'Numeric', 'SASName' is 'SAScelldiff', and 'Codelist' is empty. There is an 'Add Item to Expression' button. Below this is a table with the following data:

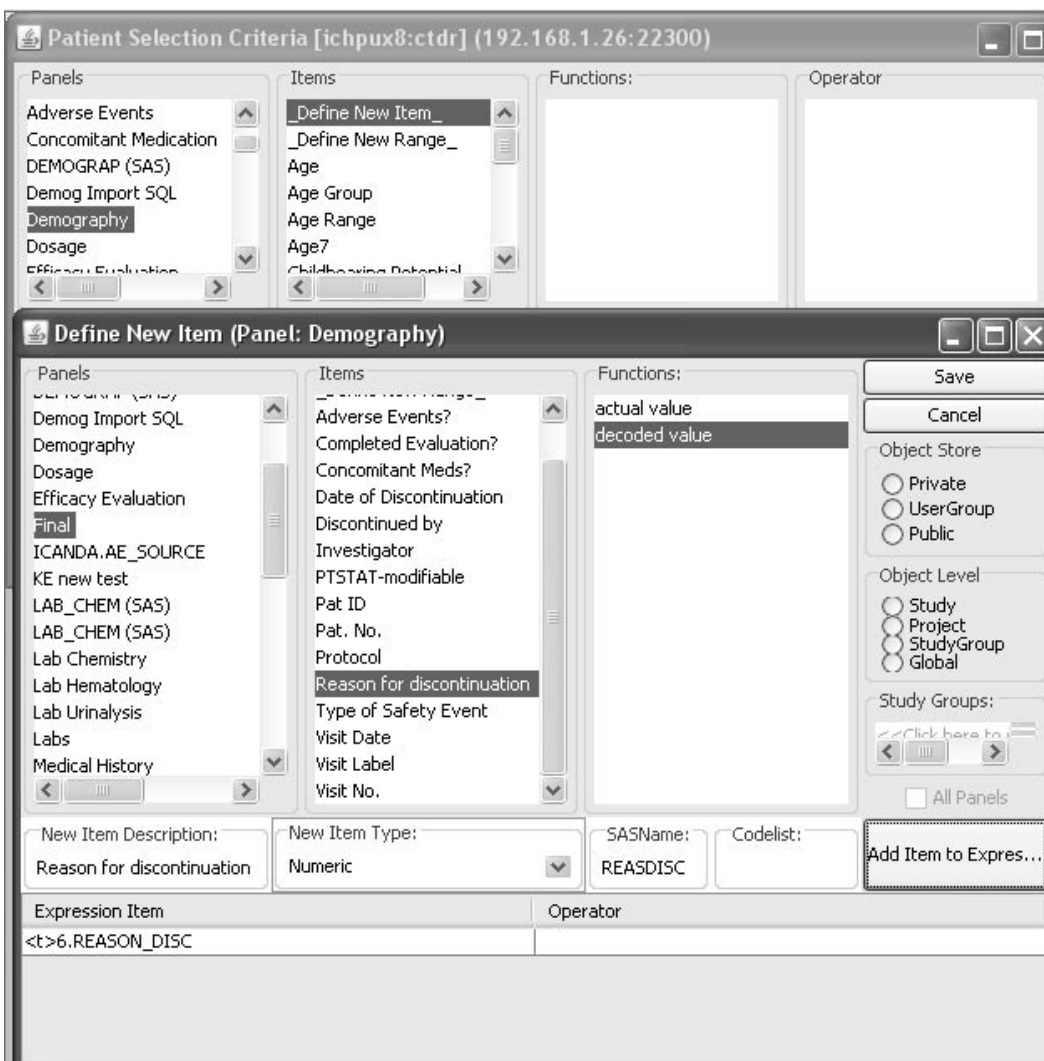
	Expression Item	Operator
1	nvf(<t>8.DEN,0)	+
2	nvf(<t>8.DNN,0)	+
3	nvf(<t>8.DLN,0)	+
4	nvf(<t>8.DDN,0)	+
5	nvf(<t>8.DJN,0)	+
6	nvf(<t>8.DAN,0)	+
7	nvf(<t>8.DBN,0)	

*Note: The overall length of the expression is currently limited to 256 characters. Review prevents you from exceeding this limit.*

The screenshot shows the 'New Item Description' dialog box. The 'New Item Description' field contains 'Estimated Hct', 'New Item Type' is 'Numeric', 'SASName' is 'SAScalchc', and 'Codelist' is empty. There is an 'Add Item to Expression' button. Below this is a table with the following data:

	Expression Item	Operator
1	<t>8.HGB *3	

In the next example, you can define a new item to reference an existing decode in one panel and display the new item in a different panel.



The Expression Item is modified to reference specific decode values.

New Item Description:	New Item Type:	SASName:	CodeList:	
Safety Status	Numeric	ASsafestat	ICDISCRE	Add Item to Expression

	Expression Item	Operator
1	decode(<t>6.REASON_DISC.0.9.1.9.2.9.4.4.6.9.9)	

When the New Item is saved and added to the Demography panel, while decode information is taken from Reason for discontinuation item in the Final panel.

The screenshot shows the 'Patient Selection Criteria' window. The 'Items' list includes 'Safety Status'. A pop-up window titled 'Unique Values for Demography.Safety Status' is open, displaying a table with two rows of data.

	Decode Text	Code
1	Other	3
2	Safety	4

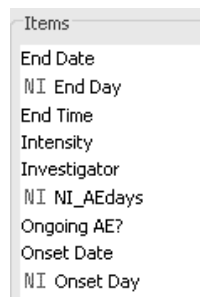
3. Enter a description.

The “New Item Description” field allows you to enter a description of your expression. This description will be in the item list when you select the panel to which you are adding the new data item.

4. If you need to change your item type from the default value, click the **New Item Type** button to select from the drop list.
5. When you enter a SAS name into the SAS Name field, there is an internal check to prevent duplication of SAS names within the same panel.
6. Select the Object Storage location.

If you save the new item as **Private**, you must select ‘Private’ in the Object Explorer area for Patient Subsets and Object Specifications to access the new item. In addition, you may need to refresh the window to view the private new item.

The saved “New Item” displays in the Items list for the selected panel with the new item prefix for “NI”.



---

*Save a Global New Item*

7. Select **UserGroup** or **Public** for Object Storage Location to optionally save as a **Global New Item**.

Selecting multiple UserGroups for save is supported.

If you are granted “SuperUser” capability through the ReviewAdmin’s Review Privileges and you select **UserGroup** or **Public** you can optionally save as a **Global New Item**.

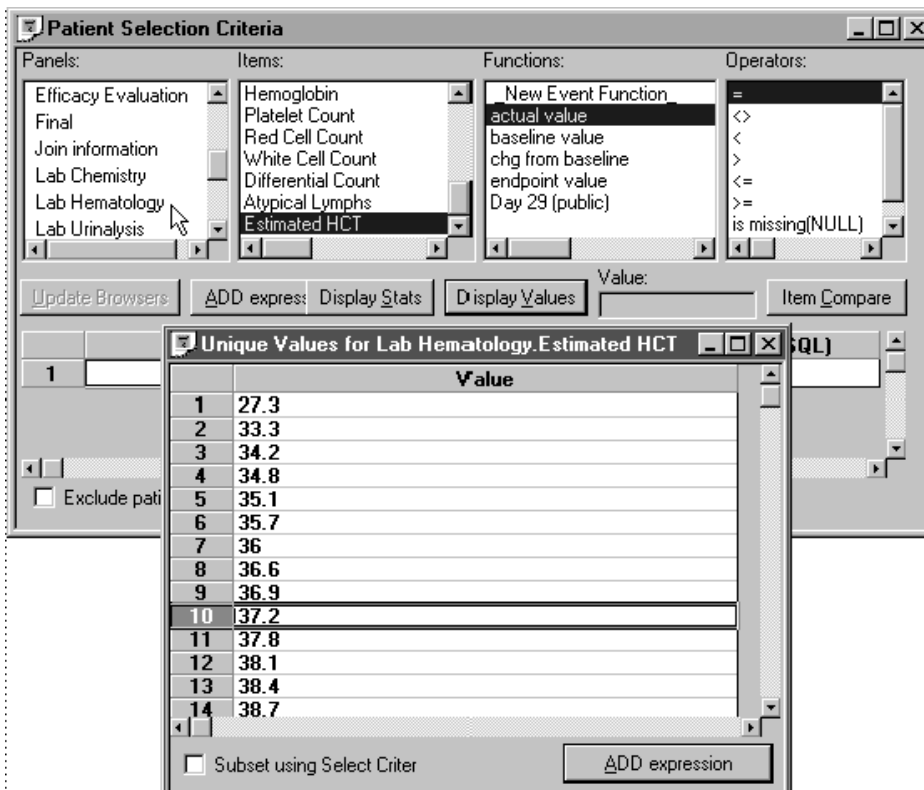
The screenshot shows a dialog box with the following elements:

- Buttons: Save, Cancel
- Section: Object Storage Location
  - Dropdown menu: UserGroup
- Section: Share with usergroups:
  - List box containing: Clinical, datamgmt, biostat
  - Up and down arrow buttons on the right side of the list
- Section: Object Level
  - Radio buttons for: Study, Project, StudyGroup, Global
- Section: Study Groups:
  - Text: <<Click here to refresh! >>
  - Empty list box with scroll bars
- Checkbox: All Panels

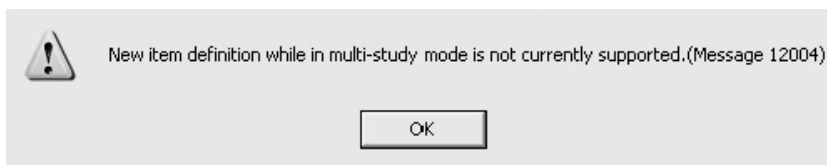
8. Optionally select Global New Item for **All Panels** to display and select the new item across all panels.

9. Click **Save**.

Review saves the definition and the description and posts the New Item from the panel in which it was activated.



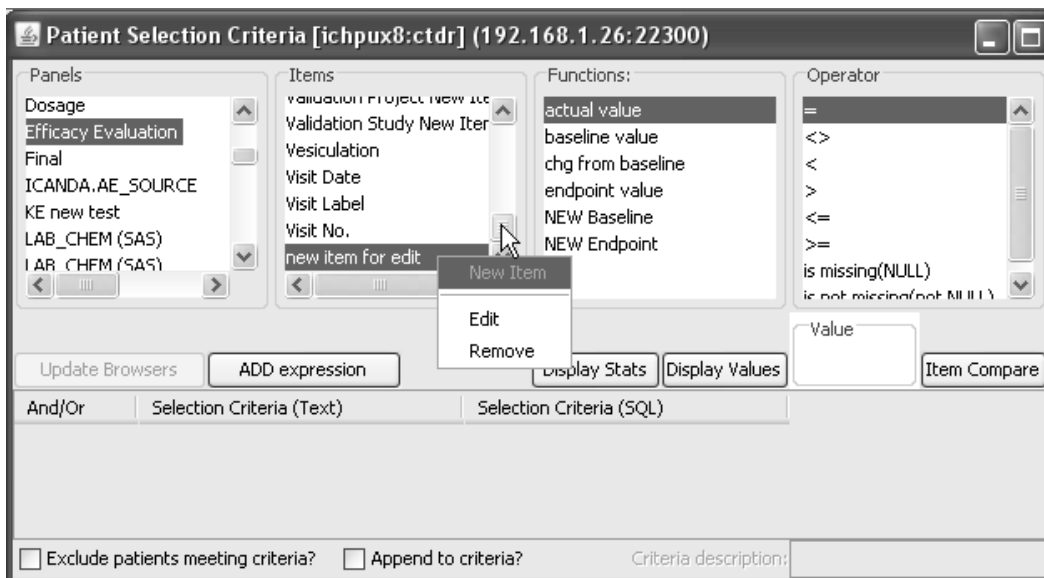
You can select the new item in studies other than the study where it was defined and saved. A message will display if you attempt to define a new item in multi-study mode. Likewise, you cannot access a new item in multi-study mode.



---

### *Edit defined new item*

When you return to the define New Item dialog box, notice that the description of your newly defined item has been added to the end of the list of items.



To change the expression for the new Item that you have defined and saved:

1. Select the panel that it belongs to.
2. Select the New Item's description from the item list.
3. Right mouse click on the item to display a floating menu; select **Edit**.
4. Change any portion of the New Item Expression with Add/edit items, functions and operators.
5. Click **Update** and JReview saves the changes.

---

### *Remove saved new item*

To remove the new item that you have previously defined.

1. Select the panel it belongs to.
2. Select the new item description you would like to remove.
3. Right mouse click on the item to display a floating menu; select **Remove**.



---

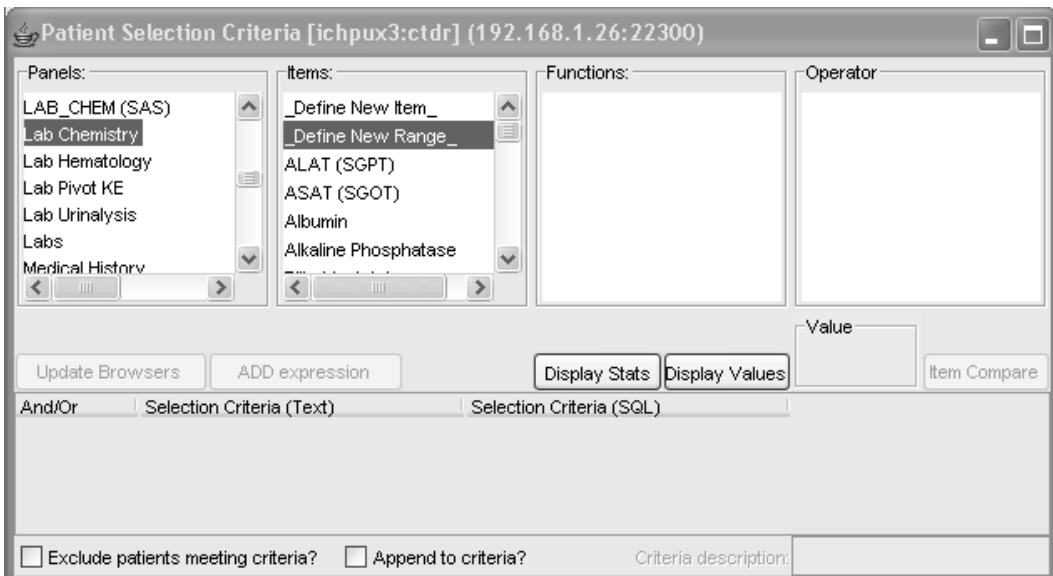
# Define New Range

---

## *User-defined range variables*

You can report continuous numerical data as groups of values or categories based upon range variables is often a desirable task. JReview supports user definition of range variables upon numeric data items throughout the Report, CrossTab, Graph Browsers and SAS Proc.

From the Patient Selection Criteria or any Browser build window, select a panel and then click Define New Item. The second entry in the item list is the pseudo-item “\_Define New Range\_”.



---

## *Define New Range*

1. Click on “\_Define New Range\_”. Review displays the **Define New Range Variable** window where you enter the definition of your new range variable.
2. Select the numeric data item upon which to base your new range variable.

JReview automatically displays the current range of the numeric variable in the database displayed as the Min and Max values.

3. Enter a **Range Description**. Your description will be listed in the Items list when you select the panel in which you added the new range variable.

**Define New Range (Panel: Lab Chemistry)**

Item Range based upon:

- Uric Acid
- Urea Nitrogen
- Calcium
- Cholesterol, total**
- Chloride
- CO2 Content

Range Description:  
Revised Cholesterol Ranges

Range Min: 118      Range Max: 389

Global New Range?

Object Store

- Private
- UserGroup
- Public

Range Category Definition:

Range Max.	Label for Range (PreviousRow) to (Cur...)
150	Low
200	Mid
500	High

---

### *Define range cut points*

4. Double click on each cell in the **Range Max** column, and enter the numeric 'cut points' of your ranges .
5. Double click on the cell to enter a **Label for Range** to describe the relation of the previous row to the current row and to Range columns.

The definition of ranges are entered as the Maximum value of each range; as opposed to entry of the minimum and maximum values for every range. In essence, you are entering the only the Maximum value of each range; because Review uses the previous row's Maximum value as the Minimum value of the following row's range.

The first row's Minimum value is automatically generated by Review to include all points less than, but not including, the range maximum of the following row.

Missing item values for a patient or group are automatically assigned to a range noted as a 'missing' entry.

6. Select the **Object Store** access as **Private**, **UserGroup** or **Public**.  
Selecting multiple UserGroups for save is supported.

The dialog box contains the following elements:

- Buttons: Save, Cancel
- Checkbox:  Global New Range?
- Section: Object Storage Location
- Dropdown menu: UserGroup
- Section: Share with usergroups:
- List of usergroups: Clinical, datamgmt, biostat, JReview Validation
- Navigation arrows: Up, Down, and a list icon

If you save the new item as **Private**, you must select 'Private' in the Object Explorer area for Patient Subsets and Object Specifications to access the new range. In addition, you may need to refresh the window to view the private new range.

7. Optionally select **Global New Range**.
8. Click **Save**. JReview saves the definition and the description and posts the New Range from the panel in which it was activated.

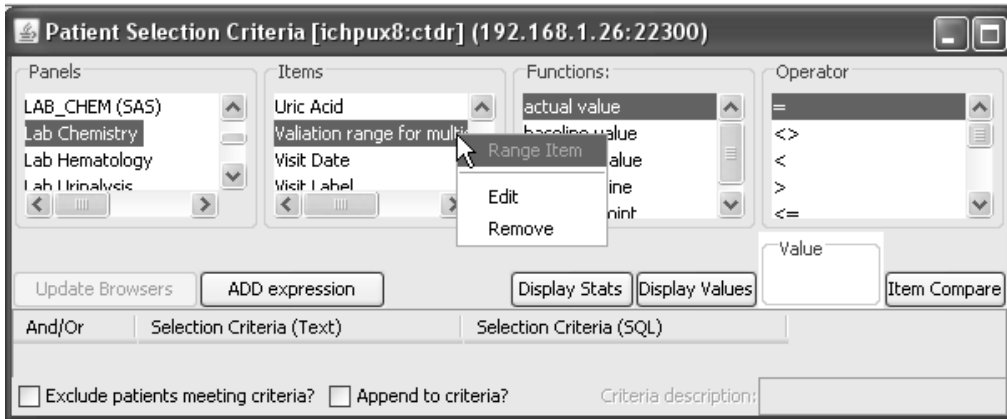
JReview saves the descriptive information about the range within internal tables. The actual set of ranges values will be stored on the database under your User ID, in a new table of the form.

The saved "New Range" displays in the Items list for the selected panel with the new range prefix for "NR".

The 'Items' list contains the following items:

- \_Define New Item\_
- \_Define New Range\_
- Age
- NI Age CMF
- NR Age Group
- NR Age Range
- NI Age7
- Childbearing Potential
- Date of Birth
- Evaluability at Baseline
- Investigator
- NR New Range for Validation IR & JR

To apply changes or remove to the range variable that you have defined and saved:



1. Select the panel.
2. Select the range variable description in the **Items list**.
3. Right mouse click on the range variable to display a floating menu; select **Edit** or **Remove**.
4. Change any portion of the New Range Expression.
5. Click **Update** and JReview saves the changes.
6. Enter changes to any of the range value definitions.
7. Click **Update** where JReview saves your changes to **Edit** or **Remove** the range variable from selected panel's Items list.

---

# Define New Event

---

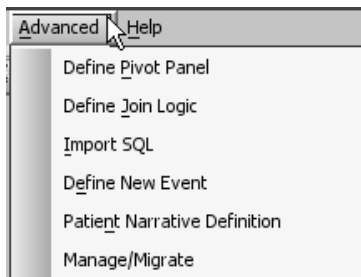
## *User-defined time related milestones*

You can define time-related milestones, such as baseline, endpoint, or any description of your choice, for use throughout Review. From the pseudo-function “\_New Event Function\_” you can view a current listing of event derived-values and add new event criteria.

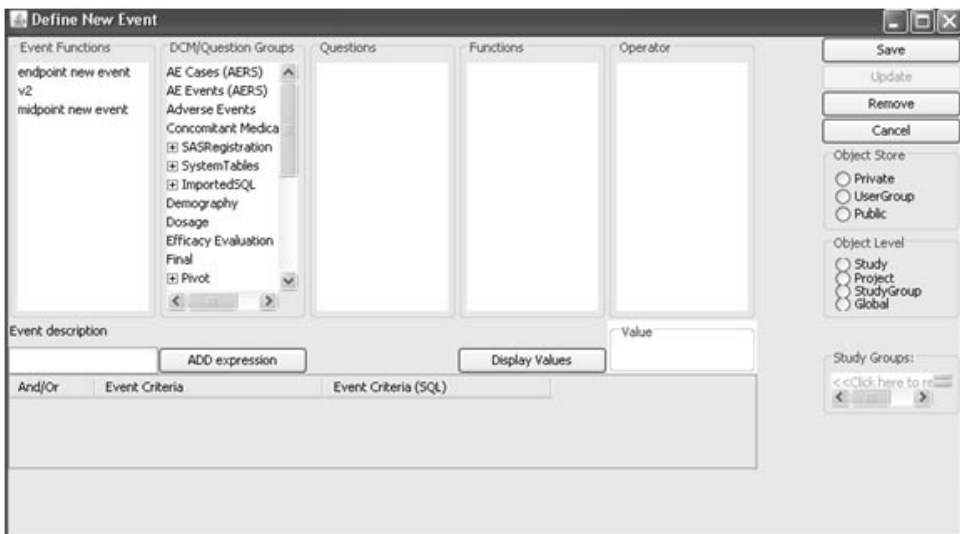
---

## *Define New Event*

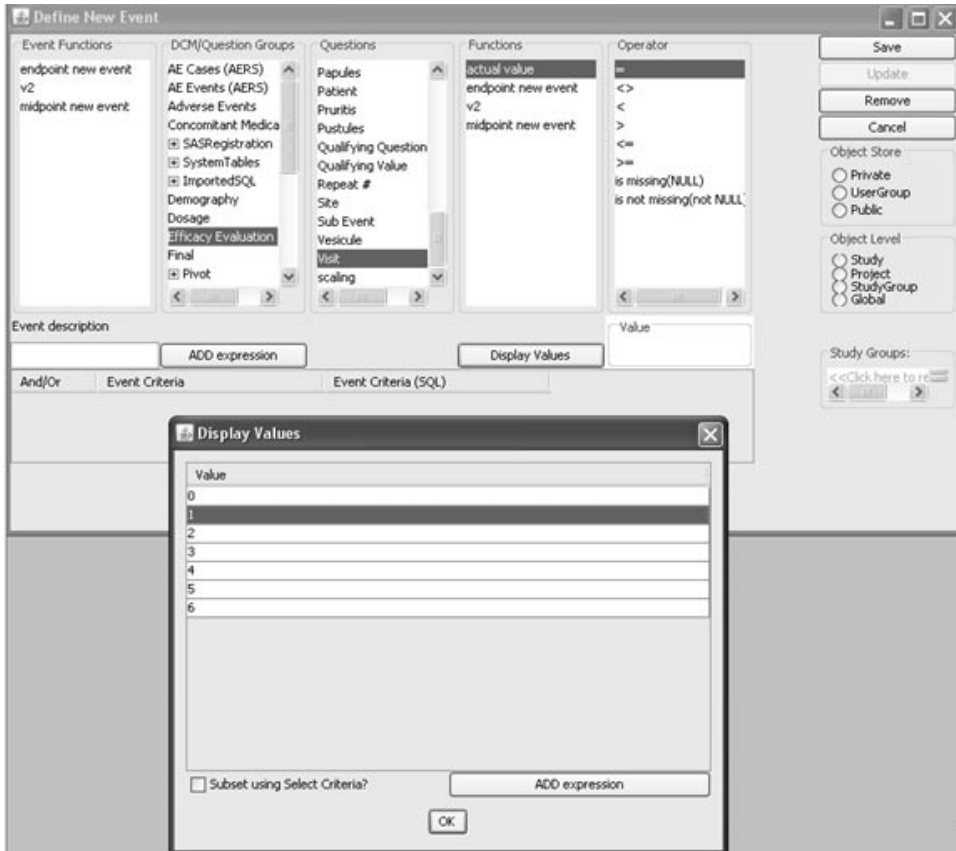
1. From the **Advanced** menu, click **Define New Event**.



2. Select a Panel and item to reference the event you wish to define.



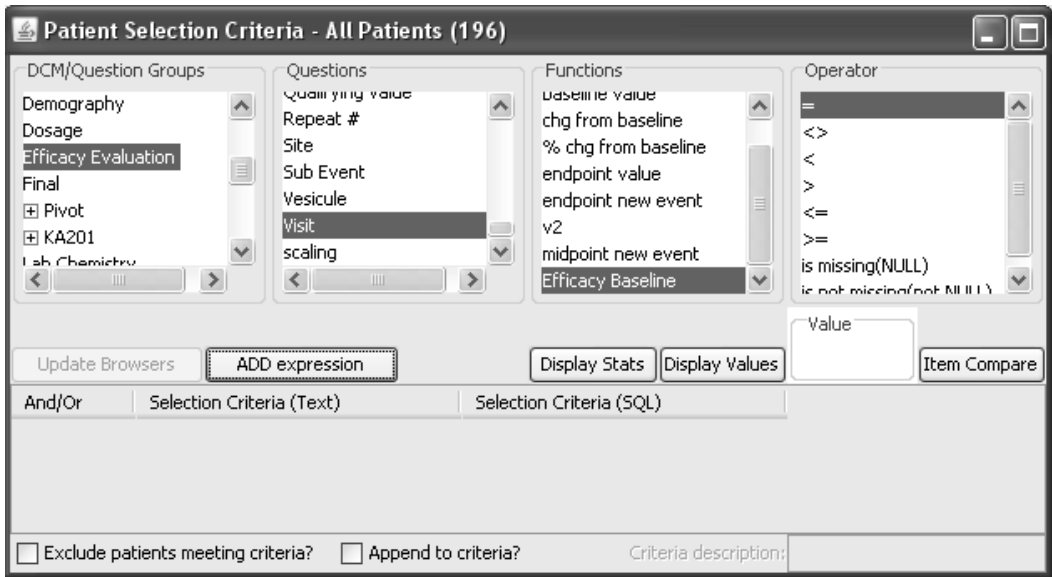
3. Select an existing event function, or define a new event by clicking on a reference **Panel**.



4. Select an **Operator**.
5. Select a value from the **Display Values** list or enter a value in the “Value” field.
6. Click **ADD Expression** to build the new event function value. The values will be entered in the Event Criteria spreadsheet.
7. When you are finished defining the event function value; enter the **Event Description**.
8. Select the **Object Storage Location** access as **Private**, **UserGroup** or **Public**.  
If you save the new item as **Private**, you must select ‘Private’ in the Object Explorer area for Patient Subsets and Object Specifications to access the new event. In addition, you may need to refresh the window to view the private new event.
9. Select the **Object Level** as **Global**, **Project**, **StudyGroup** or **Study**.

10. Click **SAVE**.

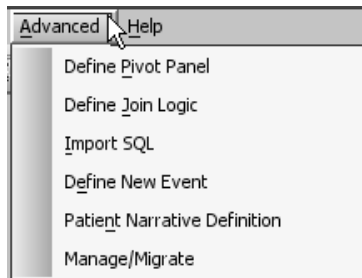
The New Event function is displayed in the Functions list with the function values.



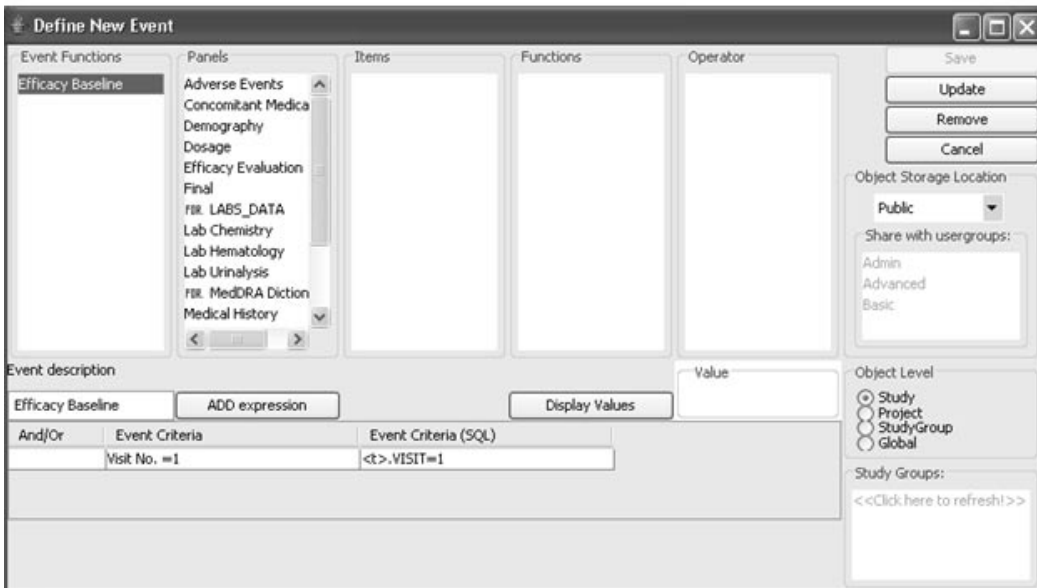
---

*Edit or remove new event function*

1. From the **Advanced** menu, click **Define New Event** list. The **New Event** window opens.



2. Select the Event Function you want to edit or remove.



3. Enter any changes and click **Update** to resave the event function; or click **Remove** to delete.



---

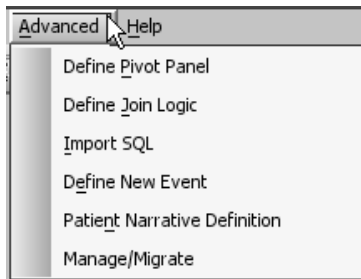
# Pivot panels

---

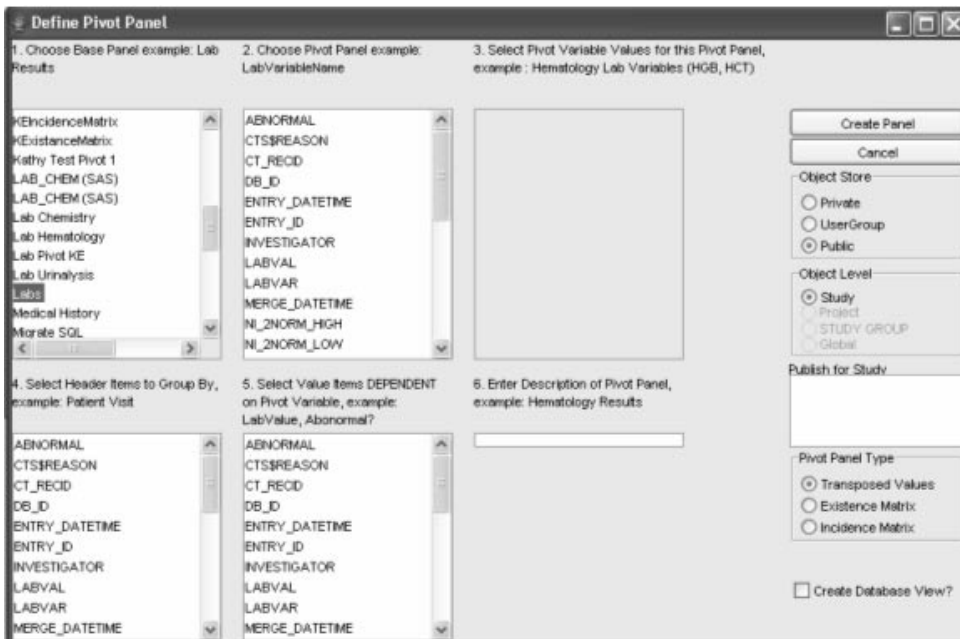
## *Transposing normalized clinical data*

The Pivot Panel allows the transposing of data from a “vertical” table to a “horizontal” table. The user can choose which variables will make up the “horizontal” table. You can transpose clinical data stored in a normalized manner into a more easily reportable horizontal data structure.

From the **Advanced** menu in the tool bar, select **Define Pivot Panel**.

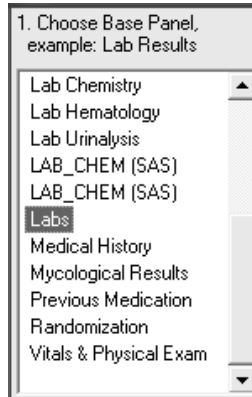


The Define Pivot Panel window opens where you sequentially enter your selections to define the pivot panel.

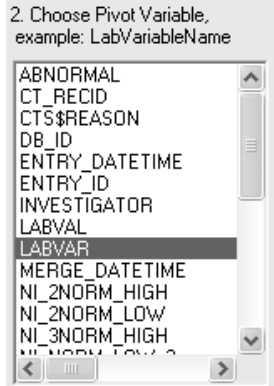


The creation of the pivot panel is a point and click operation. You construct the new data structure by selecting the appropriate items sequentially according to the number of the list box. Each list box is numbered and includes a brief description and instruction:

1. Choose a base panel.



2. Choose a pivot variable.



- The left editable column allows you to edit the code description by double clicking in the cell. Next select the pivot variable Values. Hold down **Ctrl** key and click to select multiple values.

3. Select Pivot Variable VALUES for this Pivot Panel, example: Hematology lab variables (HGB,HCT...)

editable	code
Albumin	ALB
Alk Phos	ALK
Creatinine	BC9
BilirubinTotal	BT
Uric Acid	BUA
BUN	BUN
CAB	CAB
CHO	CHO
CLB	CLB
CO2	CO2
GLU	GLU

- Select header items to group by, generating a new row in the new data structure for each change in the header items. By default, Patient ID is included as one of the header items.

For example, if you include Patient ID and Visit Number, a new row will be created not only for a change in Patient ID, but also for each Patient Visit Number. You must hold down the **Ctrl** and click to select multiple Values.

4. Select Header Items to group by, (generates a new row), example: Patient, Visit

VISIT
PATNO
MERGE_DATETIME
STATUS
ENTRY_ID
ENTRY_DATETIME
CT_RECID
DB_ID
SUBJECT_ID
CTS\$REASON
INVESTIGATOR
PID
PROTOCOL
VISIT_DATE

5. Select items that are dependent on the pivot variable. This is the data which will be stored for each pivot variable value. Multiple dependent variables can be selected. Optionally use the left editable column to edit the code description by double clicking in the cell.

5. Select 'Value' items DEPENDENT on Pivot Variable, examples: LabValue, Abnormal?

editable	code
INVESTIGATOR	INVESTIGATOR
PID	PID
PROTOCOL	PROTOCOL
VISIT_DATE	VISIT_DATE
OBS	OBS
PAGENO	PAGENO
PAGEREP	PAGEREP
RID	RID
LABVAR	LABVAR
LABVAL	LABVAL
NORM_LOW	NORM_LOW
NORM_HIGH	NORM_HIGH
ABNORMAL	ABNORMAL

6. Enter a description for the pivot panel.

**Define Pivot Panel**

1. Choose Base Panel, example: Lab Results

2. Choose Pivot Variable, example: LabVariableName

3. Select Pivot Variable VALUES for this Pivot Panel, example: Hematology lab variables (HGB,HCT...)

4. Select Header Items to group by, (generates a new row), example: Patient, Visit

5. Select 'Value' items DEPENDENT on Pivot Variable, examples: LabValue, Abnormal?

6. Enter Description of Pivot Panel, example Hematology Results

Object Storage Location: Public

Object Level:  Study

Study Groups: <<Click here to refresh>>

Pivot Panel Type:  Transposed Val...

Create Database View

7. Select the **Object Store** for Private, UserGroup or Public.

8. Select the **Object Level** for Study, Project, StudyGroup or Global.

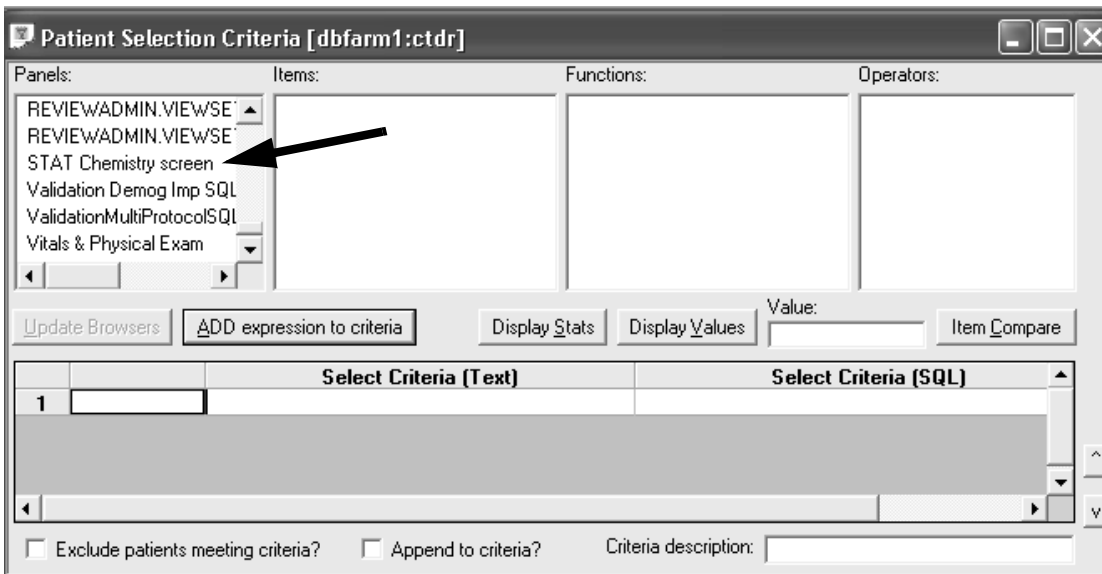
If the selected study belongs to a StudyGroup you have the option to share or **Publish for StudyGroups**. Use the CTRL for multiple selections for studygroups.

9. Select the **Pivot Panel Type**.

- **Transposed Values** - demonstrated with the Lab Hematology example.
- **Existence Matrix** - will define either a 1 or a 0 when the presence of a value is in the specified field. For example, when used as a method for looking for the existence of a specific Adverse Event (i.e. Headache) per patient; in step 2 choose AE Text and select 'HEADACHE' as the value in step 3. Next just use PID as the header field and leave the dependent variable blank. If you use this pivot panel to create a detailed report, then any patient who has a 'HEADACHE' value for the field will be 1 and if they did not then it will be 0. Even if the patient had 20 headaches it will only show a 1 (meaning that at least one existed).
- **Incidence Matrix** - is similar to the Existence matrix, but using the previous example would show the number of headaches per patient. So if a patient had 20 headaches then the value would be 20.

10. Create Database View option creates an Oracle view.

11. Click **Create Panel**. When the pivot panel is created, it is included in the panel listing with a dependent variables listing in the items list box.



*Note: Saved specifications using a pivot panel will only work with the pivot panel it was created with. If the same pivot panel is recreated with the same name, the objects using the original panel will not work because the system naming convention iterates with each created panel.*

A comparison between the Laboratory Examination Panel and the defined Pivot Panel is best demonstrated by opening the panels with the Data Browser.

The Laboratory Examinations Panel previously stored in a normalized manner is pivoted into a horizontal data structure.

	A	B	C	D	E	F
1	PID	2010184101	2010184101	2010184101	2010184101	2010184101
2	PATNO	4101	4101	4101	4101	4101
3	VISIT	1	2	3	4	5
4	ALK:LABVAL	97.75	115	128.8	110	129.8
5	ALK:NORM_LOW	67	67	67	67	67
6	ALK:NORM_HIGH	135	135	135	135	135
7	ALK:ABNORMAL	N	N	N	N	N
8	BUN:LABVAL	13.6	16	17.92	18	21.24
9	BUN:NORM_LOW	10	10	10	10	10
10	BUN:NORM_HIGH	18	18	18	18	18
11	BUN:ABNORMAL	N	N	N	N	H
12	CHO:LABVAL	141.1	166	185.92	191	225.38
13	CHO:NORM_LOW	157	157	157	157	157
14	CHO:NORM_HIGH	259	259	259	259	259
15	CHO:ABNORMAL	L	N	N	N	N
16	GLU:LABVAL	81.6	96	107.52	97	114.46
17	GLU:NORM_LOW	61	61	61	61	61
18	GLU:NORM_HIGH	152	152	152	152	152
19	GLU:ABNORMAL	N	N	N	N	N
20	SGO:LABVAL	20.4	24	26.88	24	28.32
21	SGO:NORM_LOW	16	16	16	16	16
22	SGO:NORM_HIGH	37	37	37	37	37
23	SGO:ABNORMAL	N	N	N	N	N
24	SGP:LABVAL	21.25	25	28	22	25.96
25	SGP:NORM_LOW	8	8	8	8	8
26	SGP:NORM_HIGH	57	57	57	57	57
27	SGP:ABNORMAL	N	N	N	N	N
28	TRI:LABVAL	79.9	94	105.28	88	103.84
29	TRI:NORM_LOW	52	52	52	52	52
30	TRI:NORM_HIGH	343	343	343	343	343
31	TRI:ABNORMAL	N	N	N	N	N

*Remove pivot panel*

12. Right mouse click on the selected pivot panel to display a floating menu; click Remove. Pivot panels can not be edited.

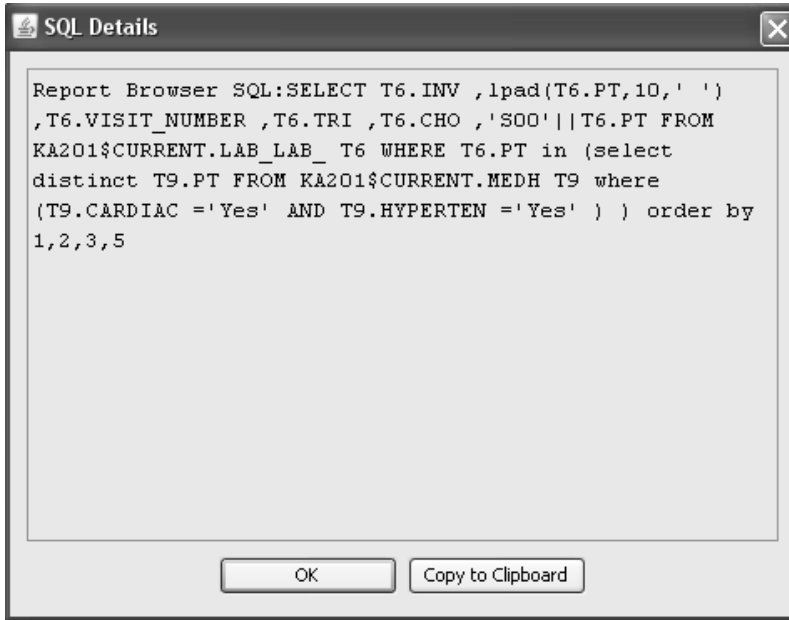
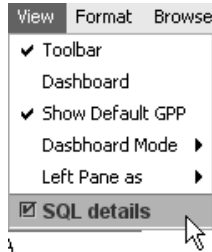
---

# Copy to Clipboard

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## View SQL details dialog

You can view the SQL details dialog from the From the Advanced menu in the tool bar, click **SQL details**. The various browsers will display the SQL details as you explore the data. JReview allows you to copy the SQL to Clipboard.





# 13

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## *Dashboard Views*

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# Viewing Patient Data

---

## What is Dashboard?

Dashboard is an easy and user friendly solution to the problem of distributing clinical trial data to a broad base of data review personnel.

Dashboard leverages the use of JReview™ by enabling a broad range of users to have desktop access to ongoing Clinical Trial patient subsets, reports, multi-dimensional analysis, basic/advanced statistical and graphical objects and results.

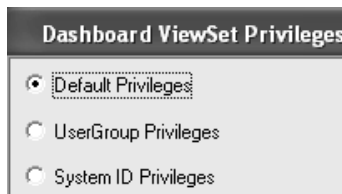
Dashboard provides the ability to create viewsets displaying multiple reports, crosstabs and graphs that have been previously defined utilizing IReview™ and JReview™. These reports, crosstabs and graphs may be viewed simultaneously from a high level summary perspective. Or, drill down to individual graphic patient profiles is also provided. Data may be viewed in *LIVE* mode or in *CACHED* mode where it is refreshed on a regular basis.

Users can select previously saved objects to organize and save as viewsets for routine retrieval. Viewsets may be labeled as 'Favorite' for preferred access. Customized viewsets may be kept privately or shared.

---

## Dashboard access

Any user of JReview has access to the Dashboard features through permissions granted in *ReviewAdmin*. The setting to allow for Dashboard use is in JReview.tx located on the server set by systems personnel to show 'DashboardViewMode=TRUE'. This setting provides a site with wide permission.



Additional Dashboard access options control direct entry and use of Dashboard only; versus access to JReview to define output specifications.

JReview Dashboard View supports as a preferred start-up mode, the option where the user goes into Dashboard View mode automatically after initial JReview logon.

- JReview Author (p23)
- JReview Initial startup mode (p52)
- Allow switch between native DR views (p53)

ENABLED P52 brings the client into JReview.

DISABLED P52 brings the client into Dashboard viewsets.

If the user chooses 'Dashboard View' as their 'home page' preference, that is what they will see initially in JReview after they connect, and select a project/study. Alternately, if they leave their preference as native JReview user Interface, the current JReview/IREview user interface is displayed, but they can choose to enable the Dashboard View interface at any time during their session dynamically. Similarly, a 'Dashboard View' default user can switch to 'native JReview' mode dynamically and switch back and forth if they choose.

The initial display of JReview Dashboard View includes a list of 'tabs' across the top corresponding to the users favorite 'Dashboard Viewsets'.

---

## Dashboard functions

Dashboard users can perform the following functions.

- Simultaneously view results from multiple IReview™ and JReview™ saved output specifications.
- Define a set of saved outputs they wish to view side-by-side. This “ViewSet” may then be displayed in a “dashboard” style view of data outputs.
- Define multiple viewsets for each project/study they have access to.
- Create viewsets for their own private use or for sharing with other users.
- Create ‘Favorite’ viewsets for easy access as tabs.

Dashboard supports the following types of output specifications:

- **Cross Tabs** - cross tabulations and Shift tables.
- **Graphs** - Scatter plots, bar charts and pie charts. Multi-page graphs are supported.
- **Reports** - Non-formatted and formatted reports.
- **Parameterized Objects.**

The following object types CANNOT be added to a viewset:

- **Patient Visit Reports**
- **Patient Profiles**
- **Formatted Patient Profiles**
- **Graphic Patient Profiles**

---

## Types of data access

Dashboard provides two types of access to data:

- “LIVE Mode - access to data as it currently exists in the connected database.
- “CACHED Mode - access to data which has been extracted from the connected database via a scheduled job.

The access mode options available in Dashboard are set in *ReviewAdmin*:

- Switching Mode
  - Live Mode Only
  - Cache Mode Only
- Default Mode

- Live Mode
- Cache Mode

Use the **Change mode** icon in the Dashboard tool bar to toggle between CACHE and LIVE mode.



When a viewset is first saved, a scheduled job is created for each view in the viewset. These are repeating jobs where the repetition is specified in the JRServer initialization file. If the user tries to view a viewset before the scheduled jobs have completed, the user needs to change to *LIVE* mode manually to view output results. Once the scheduled jobs have run, *CACHED* mode output results will be available. The *CACHED* mode output will then be refreshed based on the repeating job schedule. The run date/time displays for Cached objects.

Objects marked as “Slow” can be disallowed from executing in Live mode so the effect on the interface is that Slow objects will only show up in Cached mode. Also, there is the ability to disable mode switching between cached and live mode.

---

### *Schedule Views*

In ReviewAdmin there is a setting for Dashboard Viewset Job Runtimes. In Cached mode the data would reflect the last time the scheduled job was run according to what is set in Dashboard Viewset Job Runtimes. This allows for different runtimes for different studies so multiple jobs are not running at once on the server.

Scheduling of Dashboard can only be done at the time the viewset is saved. During the save process, prior to sending the JSCH command, a check is made. If there is not an entry in the drjobs table for the current study, then the "global" job date and time is used. If there is an entry then the study job date and time is used to schedule a viewset as assigned by study. This supports the ability to schedule by study so that different times could be set for different studies. This setting is implemented in ReviewAdmin.

---

# Create Dashboard Viewsets

---

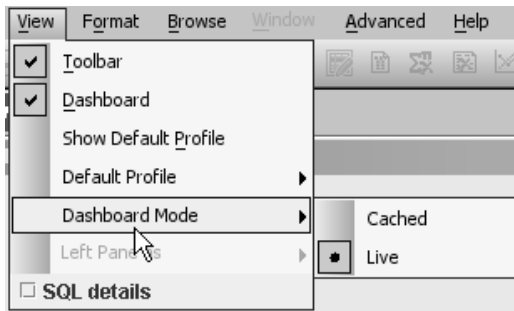
## *Open Dashboard*

After you open a clinical project folder and select a study, you can access Dashboard.

Open Dashboard from the **View** menu and select **Dashboard**.

The default option for '**Show Default Profile**' is checked ON. When this option is ON you are required to assign a 'Default Profile' to save and view your viewset. The option 'Show Default Profile' checked ON allows 4 views as maximum in the viewset because the Patient Profile Browser patient list and 'Default Profile' reserve the last 2 view window positions.

The default **Dashboard Mode** for *Live* or *Cached* is set in *ReviewAdmin*.



If you click OFF the option for 'Show Default Profile' before opening Dashboard then you have access to specify a maximum of 6 views within a viewset when the Default Profile is not required.

---

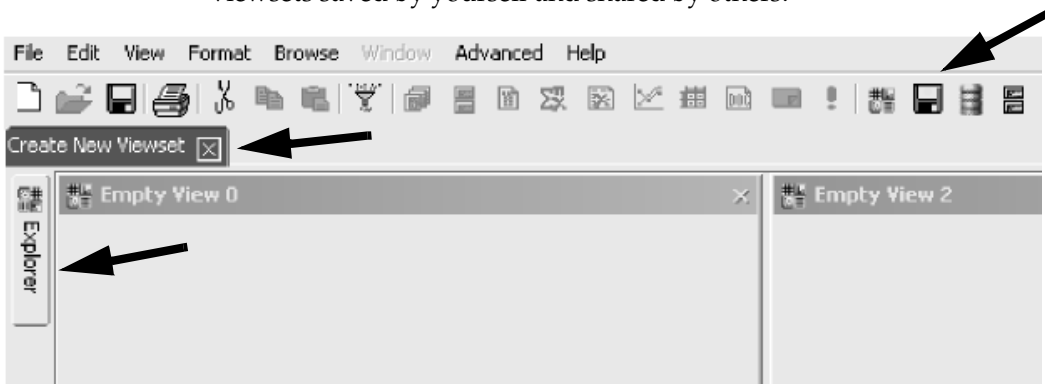
## Dashboard tool bar

Initially upon opening Dashboard, a blank window may display with empty views until someone defines a shared favorite viewset or the user has private favorites. There is no limit to the number of viewsets saved with a favorite status however, only 10 favorite viewsets will be displayed across the header area.

So the header area displays shared **Favorite tabs** created by all users when saved as User Group or Public. Private access would allow you to only view your Favorite tabs.

The header area displays Favorite tabs across the top and the highlighted tab reflects the current viewset displayed. The header area displays a **Create New Viewset** tab until a 'Favorite' default viewset is defined.

Click **Explorer** tab on the side to access the Dashboard category folders of viewsets saved by yourself and shared by others.



There are four additional icons located at the end of the tool bar, that pertain specifically to Dashboard and only display when in Dashboard.



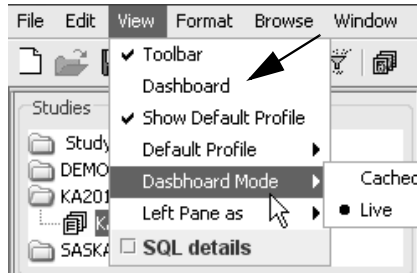
- **New Viewset** - Adds a new viewset tab for adding views.
- **Save Viewset** - Click to save selected views as viewset.
- **Change mode** - Toggle between CACHE and LIVE mode.
- **Default Profile** - Toggle between Show Default Profile ON/OFF.

---

## Create New Viewset

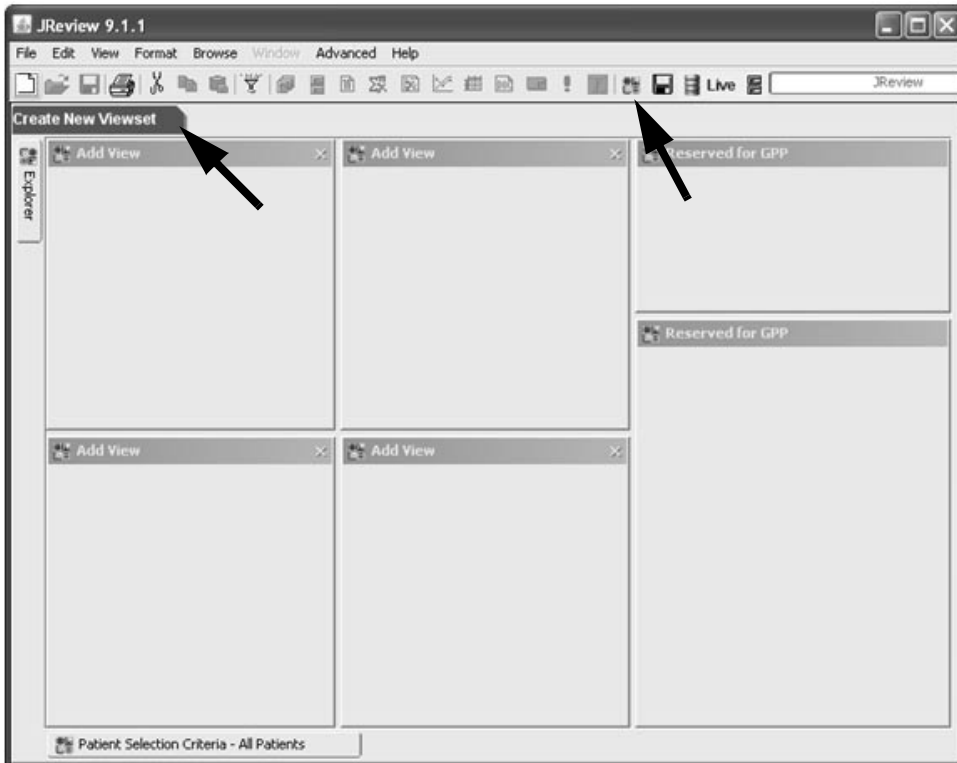
The following steps define how to add a viewset with a Default Profile.

1. Open **Dashboard**, from the **View** menu, select **Dashboard** with defaults as 'Show Default Profile' and default mode setting.



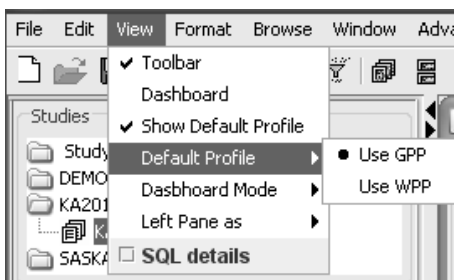
2. The main Dashboard viewing window displays. Dashboard requires at least one viewset tab be displayed in the tab headers.

Initially the 'Create New Viewset' tab displays in the top left corner. Or click the **New Viewset** icon in the tool bar, or select from the File menu **Create Viewset** to add the Create New Viewset tab to the Dashboard window.





If you select to Show Default Profile, a message will display if one has not been selected.



A Default Graphic Profile (GPP) and Workbook Profile (WPP) can be saved using public, usergroup, or private. Only one Default Graphic Profile and one Default Workbook Profile can be set for each profile level (private, usergroup and public).

Only viewset authors with privileges can save Default Graphic Profile (GPP) and Workbook Profile (WPP), at the public and usergroup levels. Users may only save default profiles at their private level.

If the PP is saved at Public it would be considered at the study level, (as Public for anyone in that particular study). It can also be saved at the UserGroup level or Private level. When Dashboard opens the system will check if the user has a Private default and use that one, if not a check is done for UserGroup level on the user's usergroups, if not then the public default is used if one exists. If there is not a PP set then the above message will display so that one can be set.

When a Default Profile is saved, it is applied to any viewsets open in each viewset level (Public, Private or User Group), at the lowest profile level for that user (private being the lowest and then usergroup and public), regardless who the author was of the particular viewset.

For example, if a profile is set at the usergroup level and a user belongs to that usergroup, and this user does not have a private profile, the profile at the usergroup level will show.

Either the Graphic Profile OR the Workbook Profile will show depending on which one is chosen in the View Menu.

The user can change between Graphic Profile OR the Workbook Profile, where JReview will remember which one the user was using upon exit (GPP or WPP). The next session will start with the last profile type used.

You must set both default profiles, via right click in Object Explorer when in Dashboard mode. The Object Explorer checks for the profile type before it allows set default to be enabled.

---

### *Select Default Profile*

After you have added the Create New Viewset tab to the Dashboard window, you may proceed to select the Default Profile and add views to the viewset.

*Note: Recommend selecting a Profile without a patient selection criteria.*

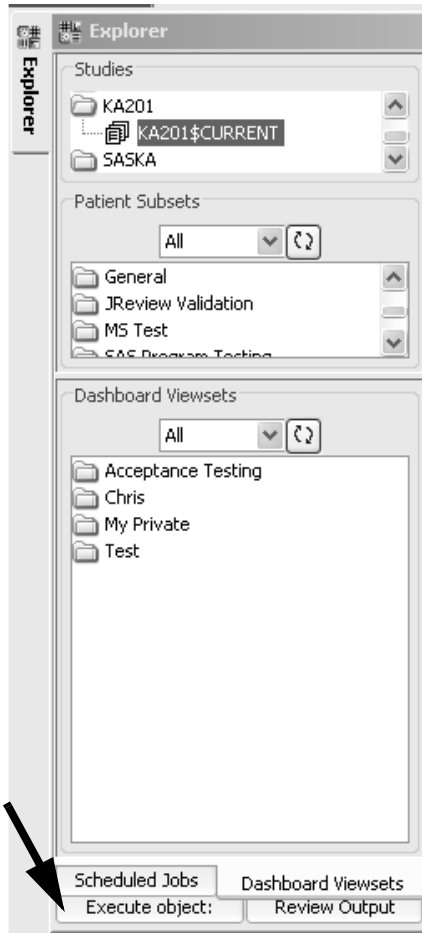
1. Click on the **Explorer** tab (located on the side).

The **Explorer** tab opens and displays all previously saved viewsets as private or public. Initially the Explorer window shows no previously saved viewsets.

- The **Execute object** tab is accessed to select objects for views and to save viewsets.
- The **Dashboard Viewsets** tab is clicked to go back to the Explorer window to view and launch saved viewsets.

2. Click the **Execute object** tab located at bottom, to access the Output Specifications category folders.

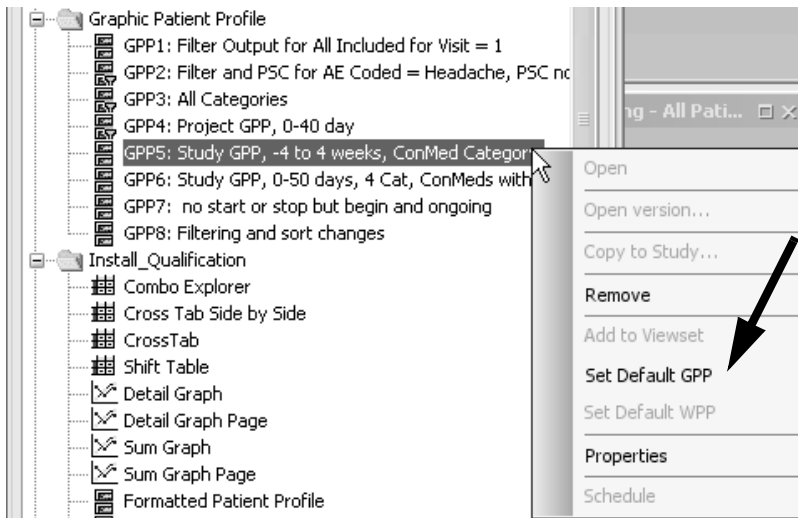
In the Output Specifications, next select the Default Profile and output objects to add as views in the viewset.



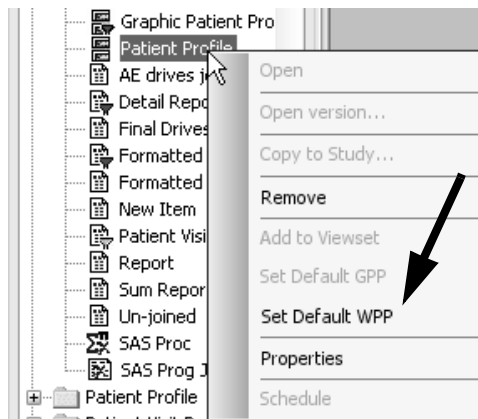
3. Select a Default Profile and right mouse click to display a floating menu for either the selected GPP or WPP.

After right click a screen with information regarding whether the GPP or WPP is default and if so the level appears.

4. Click **Set Default GPP** for graphic profile type, OR



Click **Set Default WPP** to select a workbook profile type



A window opens to save the selected Default Profile allowing the user to save as private, usergroup or public.

If the GPP/WPP is set at more than one level the dropdown box at the top of the screen will indicate. The user can remove the GPP/WPP from default based on what is chosen in the drop down box. The user can save the GPP/WPP to default after choosing a Level.

Object Index:

Default Profile ?

Project

Study

Level:

Author

Default Profile Storage Location

Private

Share with usergroups:

- Basic
- Clinical
- Guest
- JReview Validation
- SPHERE
- Super
- TestGroup
- biostat

MAKE DEFAULT REMOVE FROM DEFAULT Cancel

5. Select the **Default Profile Storage Location**.



The image shows a configuration dialog box with a close button (X) in the top right corner. On the left side, there is a question mark icon in a speech bubble. The dialog contains several input fields and a list:

- Object Index: [Empty text box]
- Default Profile ? [No]
- Project: [Empty text box]
- Study: [Empty text box]
- Level: [Empty text box]
- Author: [Empty text box]
- Default Profile Storage Location: [UserGroup]
- Share with usergroups: [List containing Basic, Clinical, Guest, JReview Validation, SPHERE, Super, TestGroup, biostat]

At the bottom of the dialog, there are three buttons: **MAKE DEFAULT**, **REMOVE FROM DEFAULT**, and **Cancel**.

6. Click **MAKE DEFAULT** to save.

---

## Add views to Viewset

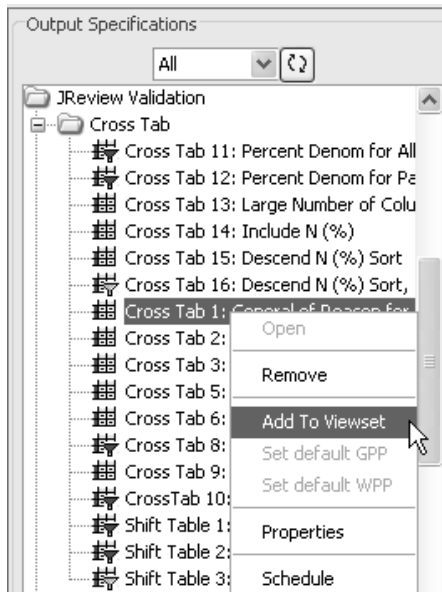
After adding the Default Profile in the open 'Create New Viewset Tab', now you may add object views to the viewset. There are 2 ways to add object views to a viewset:

1. In the Object Explorer under Output Specifications, access the category folders and select the objects.
2. Select the object you wish to display and drag/drop to the view location. If you wish to change a selected object view, select another object to drag/drop over the current object. It will be replaced by new the object.

Parameterized objects that contain runtime or prompting filters are supported in Dashboard Viewsets.

**OR**

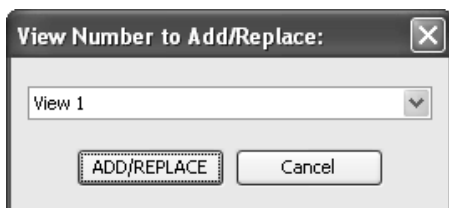
3. Right click on the object you wish to display the floating menu to add to the viewset. Click **Add to Viewset** to display the View Number to Add/Replace window.



The View Number represents the view location in the viewset. Choose the view number from the drop down list, where the object should be placed.

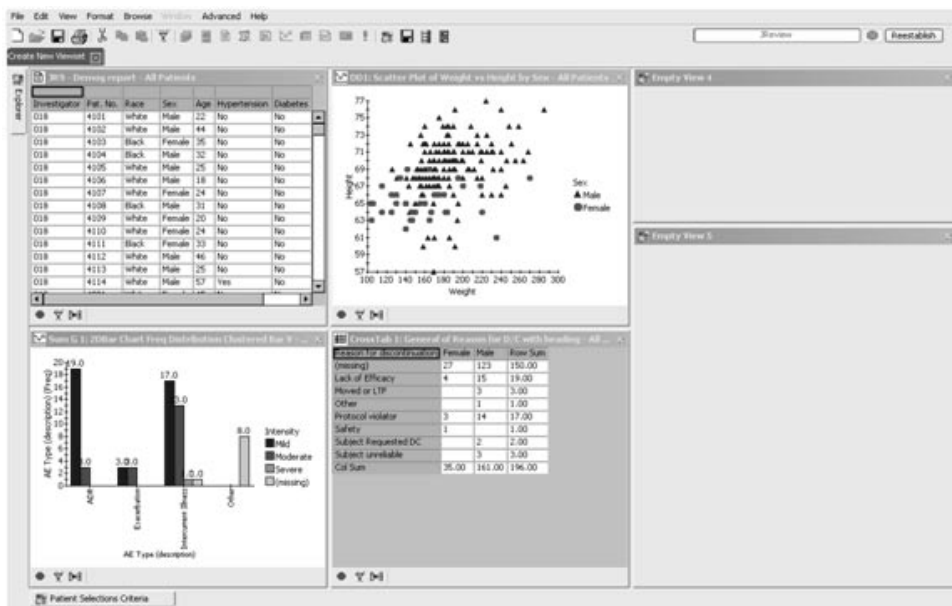


- Click on **ADD/REPLACE**, and the object will execute and be placed in the **Create New Viewset** tab in the selected position.



- Click the Explorer tab after each view is added and repeat the steps to add all object Views 1 through 4 to the new viewset. Before saving, you can change any of the objects by choosing the view position.

You may enter up to 4 views, when the **Show Default Profile** option is checked ON. If the **Show Default Profile** option is not checked ON, then you may enter up to 6 views for the viewset.





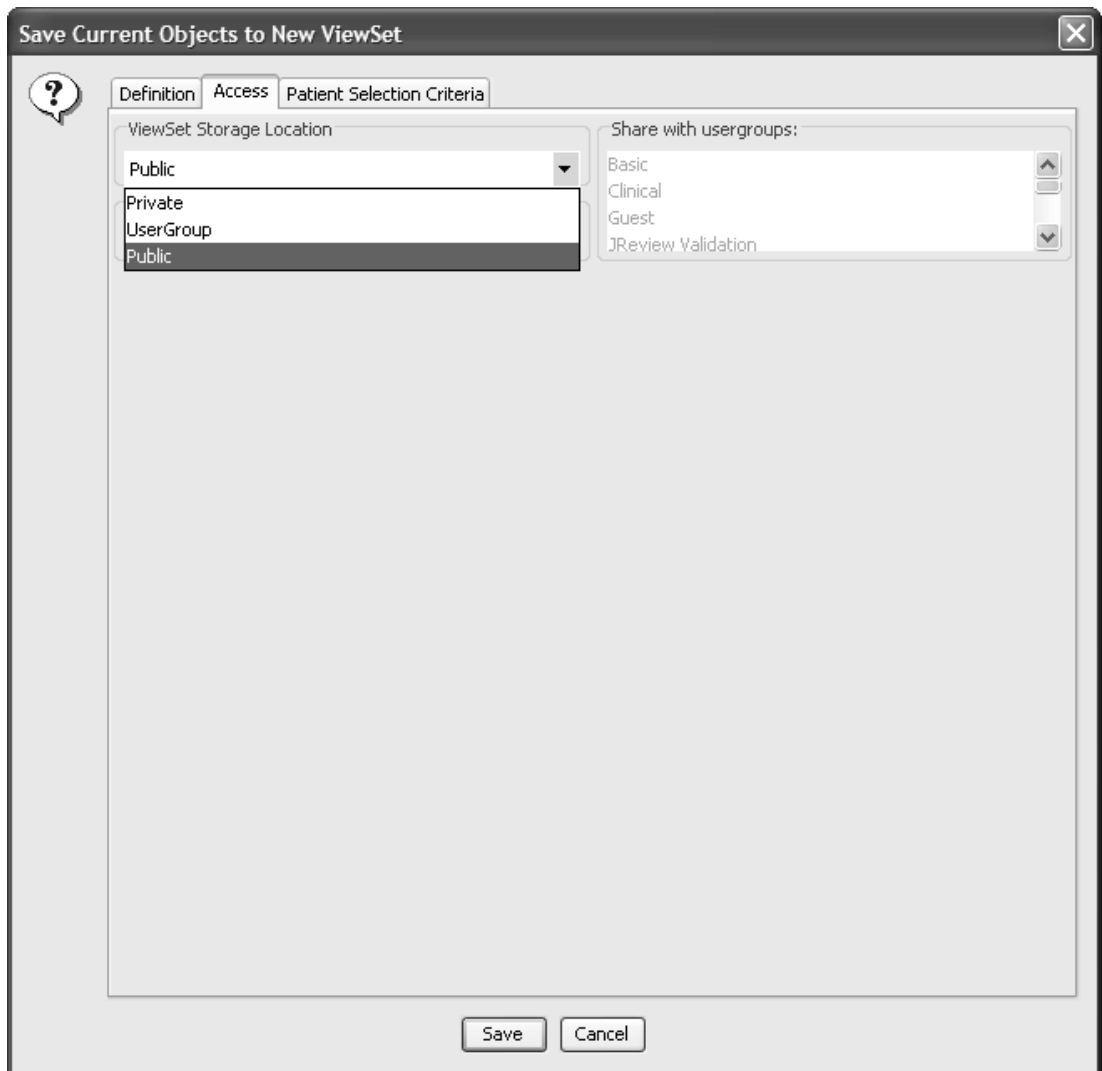
---

## Save Viewset

1. When you are finished adding views, click save viewset from the **File menu**, or click the **Save Viewset** icon in the Dashboard tool bar.



2. The **Save Current Objects to New Viewset** window opens. Click the **Access** tab, to enter information for **Viewset Storage Location** and **Object Level**.



3. Select the **Viewset Storage Location** as *Private*, *UserGroup*, or *Public* to display folders of saved patient subsets and output specifications. The selected **Viewset Storage Location** determines which folders are displayed for **Create ViewSet**.

Dependent upon which views are included in the viewset determines how the study, project and global levels are saved. Select the **Object Level**.

- **Study level** - If at least one view (object) is study level, the viewset is study level and will only be saved in that study level.
- **Project level** - If all views (objects) are project level or a mixture of project and global level, then the viewset is project level and will be available across the entire project.
- **Global level** - If all the views (objects) are global, then the viewset is saved as a global viewset and will be available across all studies and projects.

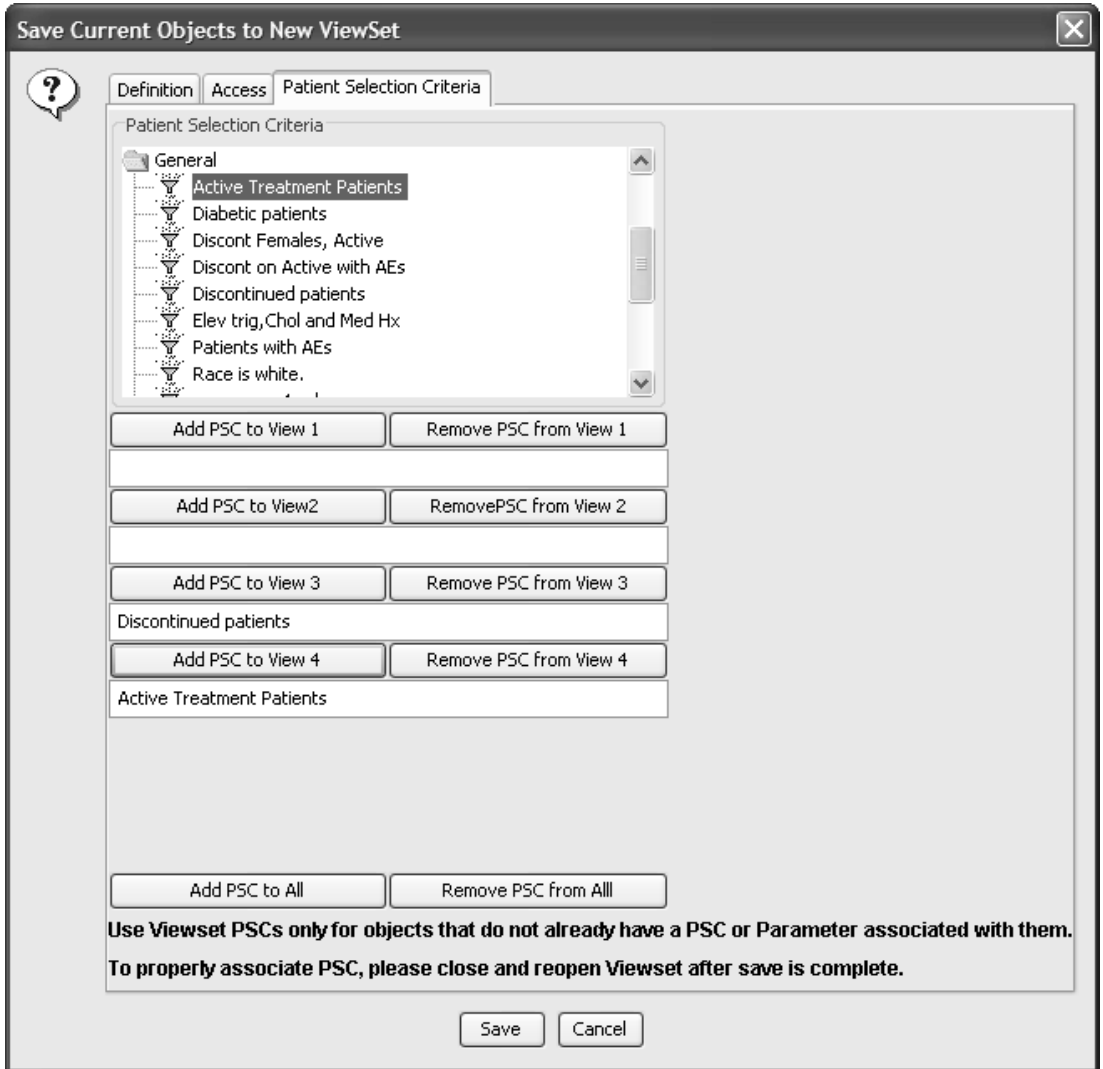
Study Group does not appear in Dashboard as an option. However, Dashboard will check if an object is in a study group when creating a viewset. So during create viewset if all objects are study group level or a mixture of study group and global level; then the viewset is study group level, and will be available across all the studies in that study group.

A restriction applies where study group and project level objects are not allowed in the same viewset, as this could cause an object to be run in a study where it does not apply.

4. Click the **Patient Selection Criteria** tab. Open PSC category folder to select and add individual selection criteria definitions to preferred objects within the viewset, by their designated view location. Use the Add and Remove buttons. The selected PSC may all be the same or different or some combination.

Use the Viewset PSC only for objects that do not already have a PSC or Parameter associated with them. To properly associate PSC, close and reopen the viewset after the save is complete.

After each object opens sequentially within the viewset and gets it's possible PSC, the PSC is cleared before opening the next object, and cleared at the end of opening the viewset . This is only during the opening of the viewset. The Patient Profile is excluded from the PSC on open viewset.



5. Click the **Definitions** tab and enter a viewset name in the **ViewSet Name** box.
6. Enter to create a new folder or select a **Category** from the drop down list box to add the viewset to an existing folder.
7. Optionally click the checkbox **Add to Favorite Viewsets**, to automatically display this viewset tab in the header tabs when you open Dashboard. Or you may add **Add to Favorite Viewsets**, after saving the viewset.

Multiple favorite viewsets are allowed and the maximum number of Favorite Viewsets is 10.

**Save Current Objects to New ViewSet**

Definition Access Patient Selection Criteria

ViewSet Name  
ViewSet 1 - Demog, AEs

Category (Major, Minor, Sub):  
General

Add to Favorite ViewSets

Favorites Storage Location  
UserGroup

Share with usergroups:  
Basic  
Clinical  
Guest  
JReview Validation

Existing ViewSets  
<<Click here to refresh!>>

Save Cancel

8. Optionally share Favorite Viewsets. Click on the Favorites Storage Location drop down list box.

This allows the user to save favorites as private or usergroup when they are in viewsets that are public or usergroup. However, once a user has private viewsets that is what will take precedence. So the user has the ability to have private favorites and usergroup favorites for public viewsets that exist.

9. If share with usergroup location, select from the usergroups list. Add multiple usergroups with the CTRL or Shift key.
10. Click **Save** and the viewset is added to the selected category and as a favorite viewset to your header tabs. A message displays stating the viewset has been saved.

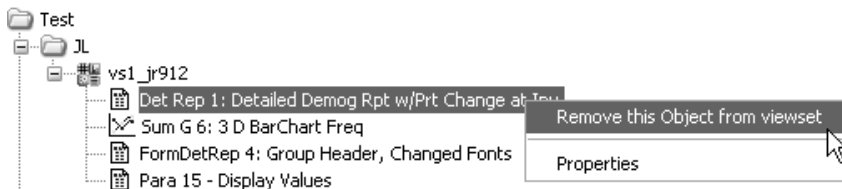
If you need to clear the current view entries, click **Cancel** to clear the view windows and start over.

---

### *Remove object from viewset*

There are two ways to remove an object or objects from a viewset:

- Right click on the object in the Viewset Tree.
- Choose **“Remove this object from Viewset”**.

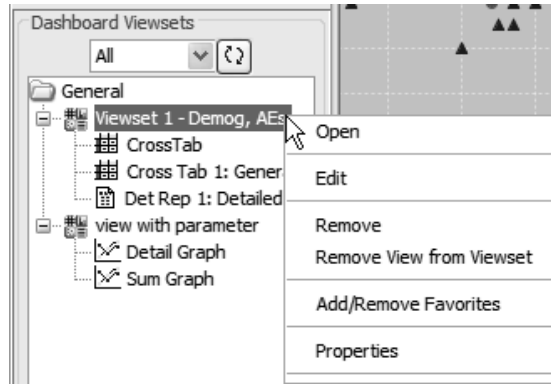


A message displays asking if you are sure, click OK. The object is removed from the viewset. (The object will still be available in the Execute object tree).

- You can also right click on the viewset (in the viewset tree).
- Click **Remove View from Viewset**.
- Select and remove the object by the viewset number.

Dashboard Viewsets supports editing to add or delete objects from a viewset. To edit an object or objects from a viewset:

1. Either right click on the Viewset in the viewset tree and choose **Edit**, or right click on the Tab and choose **Edit**. This opens the viewset in Edit mode.



2. Go to the Execute object, and right click on an object.
3. Choose the view number you wish to replace. Click add/replace and the object executes in the position you chose.

If the original viewset had less than the maximum number of objects, you can add objects to the open positions in the same manner.

4. When you are satisfied with the objects and arrangement, resave the viewset by clicking the **Save Viewset icon**, or **Save Viewset** from the menu.

The save dialog window displays populated with the save information. You can make changes in the save dialog or just accept as is. The original viewset will be overwritten with the new information. Once you edit a viewset even if you change the name, the original viewset will no longer exist.

After the edit/create process is complete and the viewset is saved, the Tab will remain open as the viewset that was just created or edited.

---

## Remove viewset

The user who saved the viewset can remove it.

1. Select the viewset and right mouse click to display the floating menu box.
2. Click **Remove** and the viewset is removed. If a user attempts to remove a viewset and is not the author, a message displays identifying the author.

If a particular object was deleted in IReview or JReview and currently belongs to a viewset; the object is automatically removed from the viewset. A message displays '**This object no longer exists!**' for the missing view when the viewset is opened.

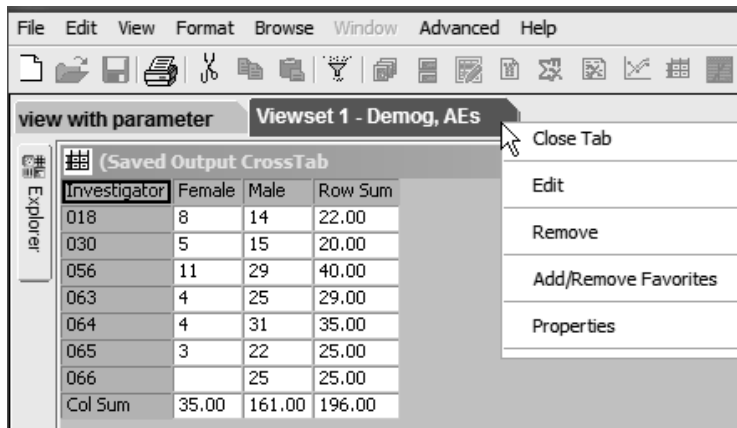
When all the objects are removed in IReview or JReview then the viewset is automatically deleted.

---

## Add to Favorites

You can add a view set to your favorites after it has been saved. It allows add to favorites and remove from favorites.

1. Select the viewset and right mouse click to display the floating menu box and choose Add/Remove Favorites.



Level of favorites can be chosen from this screen. Favorites can be saved to private, usergroup or public level at any viewset level (dependent upon author privileges.)

2. Right click on a viewset and choose **Add/Remove Favorites**.

Level/Author \*PRIVATE\*/OPS\$GUEST7

Viewset Index 1387

Favorite? Yes

Favorite Level \*PRIVATE\*

Favorite Author OPS\$GUEST7

Favorites Storage Location Public

Share with usergroups:

- Basic
- Clinical
- Guest
- JReview Validation
- SPHERE
- Super
- TestGroup
- biostat

Add Remove Cancel

3. Click **Add** to add viewset to Favorites, or click **Remove** and the selected viewset is removed as a favorite.

This shows favorite information about the viewset. Also, it allows the user to add to favorites and remove from favorites. The **Favorite Level** can be chosen from this window to save to private, usergroup or public level at any viewset level.

Saving and removing favorites can occur from the viewset tree, the tabs or during saving of the viewset.

If a viewset is a favorite at more than one level the drop box at the top of the screen will indicate this, and changing the drop box will facilitate deleting a favorite at the appropriate level.



For example at the public viewset level a favorite can be saved to private or usergroup. When favorites get retrieved at any viewset level, the first check will be if the user has any private favorites, if so only those will be opened. If no private favorites, the next check is for usergroup favorites from the usergroups the user belongs to. If there are usergroup favorites and no private for that user, those favorites will be opened. If neither private nor usergroup favorites are available for that user, the last check is for public favorites. If those exist, those favorites will be opened. Only the first 10 favorites that get returned will be opened.

The user can save favorites as private or usergroup when they are in viewsets that are public or usergroup. Once a user has private viewsets that is what will take precedence. So there is the ability to have private favorites and usergroup favorites for public viewsets.

4. Click **Properties** to see how the viewset was saved. This shows favorite information about the viewset.



The image shows a 'Message' dialog box with a close button in the top right corner. On the left side, there is an information icon (a lowercase 'i' inside a speech bubble). The dialog contains several text input fields with labels on the left and values in the boxes:

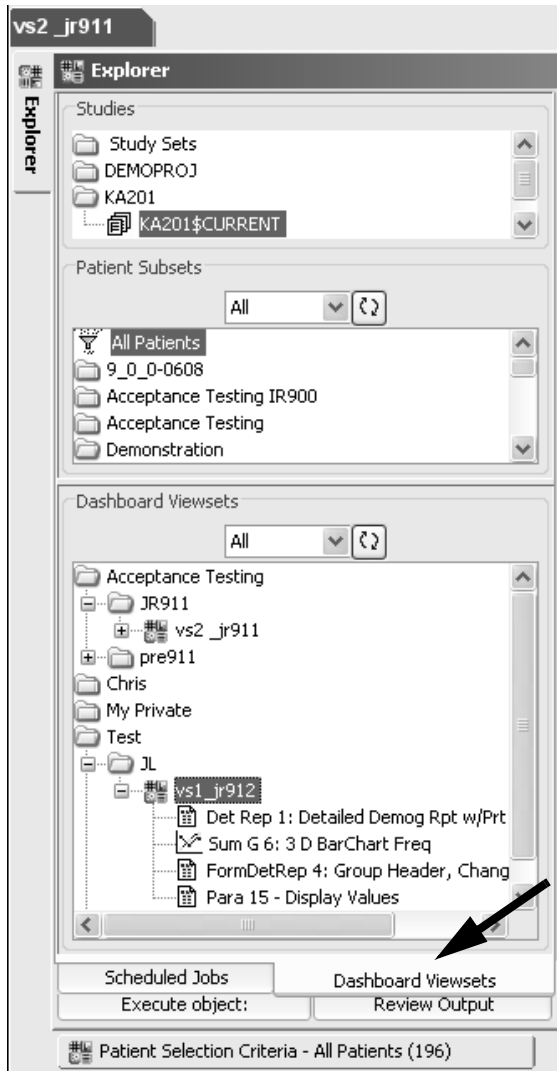
Category	General
Project	KA201
Study	2001
Viewset Index	1387
Viewset Name	Viewset 1 - Demog, AEs
Author	OPS\$GUEST7
Create Date:	15-NOV-12
Access Level:	Public (db)
Object Level	Study
UserGroup	
Favorite?	Yes
Favorite Level	*PRIVATE*
Favorite Author	OPS\$GUEST7

At the bottom center of the dialog is an 'OK' button.

# View Viewsets

## Select a viewset

When you open Dashboard and favorite viewsets have already been saved; the window will display the default favorite viewset. However, the user can select and view other saved viewsets as follows:



1. Click on a different favorite viewset already displayed in the header.
2. If the viewset is not a “Favorite” viewset displayed in the header tab, then click the **Explorer** tab to display the **Dashboard Viewsets** window.

3. Select the user access level as *Private, UserGroup, Public or All*.

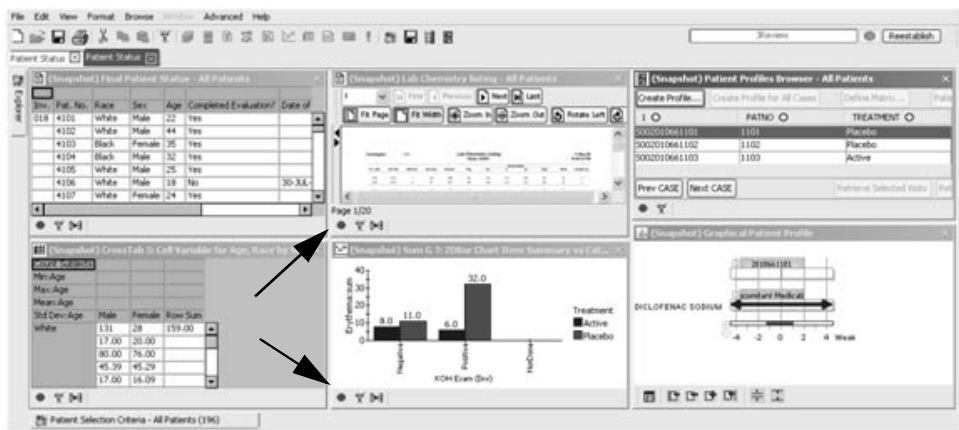
Whatever user access level you select to access will be your default access level the next time you open Dashboard. So, if your preference is *Private* access you will not need to reselect it each time you open Dashboard.

4. Select the category folder to display the list of saved viewsets.

Use the plus + signs to expand the viewset folders and display the contained views.

5. Click on a viewset name to open that viewset on the Dashboard.

The viewset opens with the views in ‘Snapshot’ mode as indicated by the red button in the lower left corner of each view window. Double click on any view header to enlarge the window, then double click to restore..



### Apply Selection Criteria to viewset

Dashboard can apply a patient selection criteria to a viewset if the opened output specification did not have a required subset. The user can apply different patient subsets to different view selections when saved in the viewset.

To apply a current patient selection criteria to a particular object view you must turn OFF Snapshot mode by clicking the red button. The button will indicate as green the Snapshot is turned OFF.

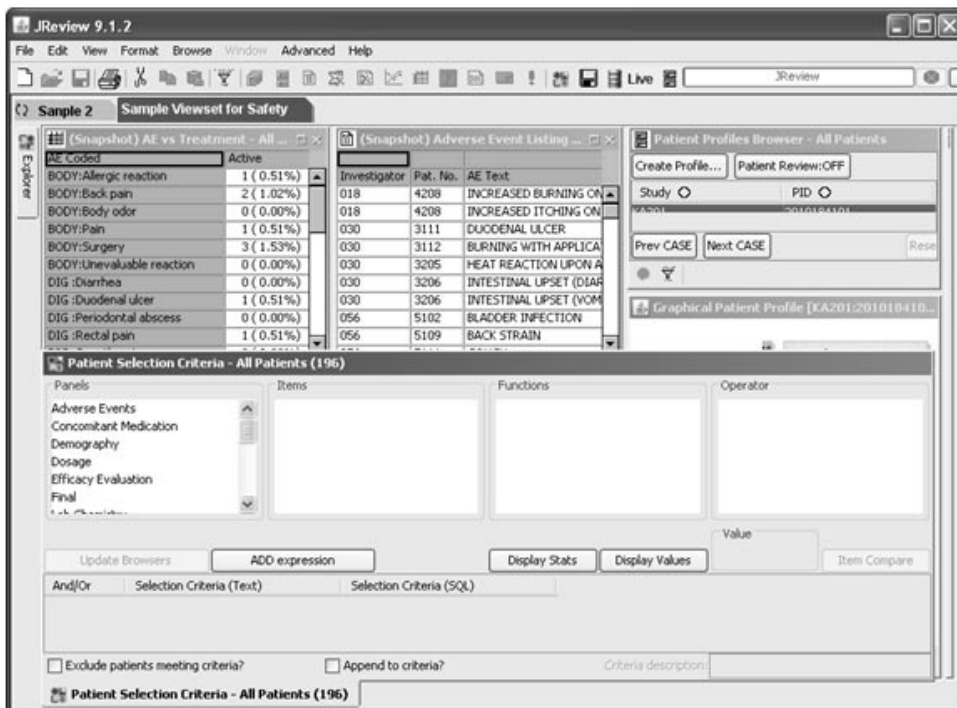
If you have the Default Profile turned ON, you may want to turn OFF the Snapshot mode for the Patient Profile Browser list displayed. Then the patients listed will update the subset applied by the patient selection criteria.

You may select a previously saved patient selection criteria or define your own as follows:

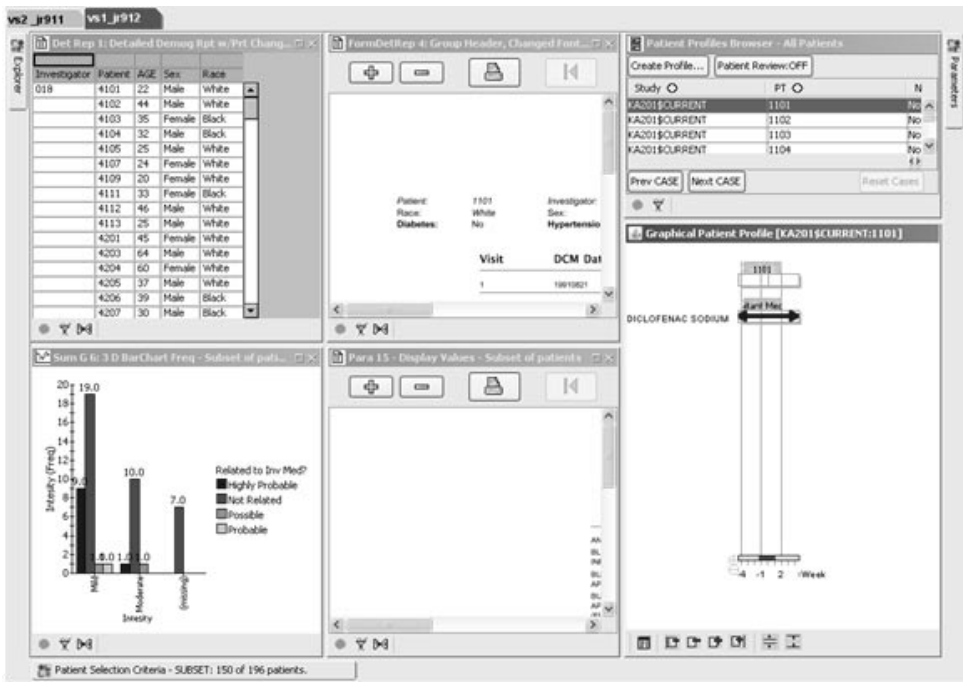
1. Click the **Explorer** tab to display the **Dashboard Viewsets** window.
2. Select the desired viewset and turn OFF Snapshot in the individual object views.
3. Optionally select the Patient Profile Browser patient list and turn OFF Snapshot.
4. Select the category folder to display the list of saved Patient Selection Criteria. Double click to launch the selected criteria and automatically update the displayed viewset objects.

OR

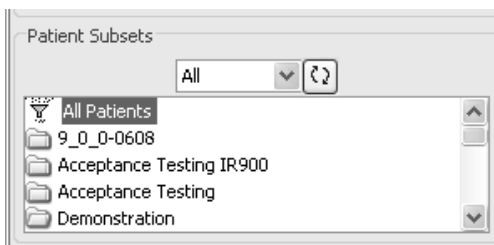
Click the **Patient Selection Criteria** tab located at the bottom, where the Patient Selection Criteria window opens to enter your own selection criteria. After entering your selection criteria, clicking update browsers; the Patient Selection Criteria window automatically closes after the selection criteria updates the viewset..



All object views and/or Patient Profile Browser patient list with Snapshot mode OFF update to the applied Patient Selection Criteria subset. The Patient Selection Criteria button shows the subset count.



5. Use the **New** icon in the tool bar to clear the patient selection criteria. Apply your own patient selection criteria.
6. Or, select and double-click on '**All Patients**' in the Patient Subsets window, to clear the patient selection criteria and return to all patients..



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## View Patient Data

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### *Patient drill down*

The Patient Profile Browser patient list displays on the right side.

You may select a patient to display in the Default Graphic Patient Profile view.

The user can drill down on a selected patient in the Dashboard Views window if the particular view is a detail data listing, crosstab or summary graph. Formatted reports and detail scatter plots do not support individual patient drill down.

Click **Reset Cases** if needed to refresh the patient list between selections. If you had selected patients from a graph, first click on the graph '**Reset**' button, before clicking the Patient Profile **Reset Cases**. Selecting patients from graphs controls the patients listed in the Patient Profile and data listing. So, you must reset all graphs first before the Patient Profile list can reset. Or, you could simply click on the Explorer tab to go to the Dashboard Viewsets tab to select 'All Patients'. All views and the Patient Profile list are reset or cleared of any graph selections.

When viewing a viewset in the Dashboard Views window and the viewset contains a detail data listing, the user can drill down on a selected patient for more detail just like the Output Explorer window.

The individual object views are interactive with the Patient Profile Browser patient list. Clicking on a bar in a Bar Chart Graph updates the patient list to contain those patients represented in the selected bar. The Graphic Patient Profile updates to display the first patient in the updated list. Selecting a patient row in a detail data listing updates the opens Graphic Patient Profile view window for the selected patient.

You may double click on the Graphic Patient Profile view header to enlarge the window. Then double click on the header again to restore to view size. This feature works on all view windows.

You may click on Patient Review, to turn ON the Patient Review Tracking Tool. (See Chapter 4 - Patient Profile Browser: Patient Review Tracking Tool)

**Patient Profiles Browser - All Patients**

Create Profile... Patient Review:OFF

Study	PT	Not Defined
KA201\$CURRENT	2206	Not Retrieved
KA201\$CURRENT	2101	Not Retrieved
KA201\$CURRENT	2126	Not Retrieved
KA201\$CURRENT	2123	Not Retrieved
KA201\$CURRENT	2205	Not Retrieved

Prev CASE Next CASE Reset Cases

---

**Graphical Patient Profile [KA201\$CURRENT:2206]**

ATENOLOL  
HYDROCHLOROTHIAZIDE  
NIFEDIPINE  
PRAZOSIN HYDROCHLORIDE

Week





# 14 *Risk Assessment Browser*

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# Risk Assessment Analysis

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## What is the Risk Assessment Browser?

The Risk Assessment Browser is used to evaluate the 'distribution' of patients when investigating different Adverse Events, as a systematic approach to quantify the burden of disease/injury resulting from major risk factors. Relative Risk (RR) is the risk of an event (or of developing a disease) relative to exposure. The risks are defined as the probability of an adverse event and/or a factor that raises the probability of an adverse event.

Multiple study mode is supported. Patient Selection Criteria may be applied the same as other output browsers, to specify which patients will be included in the Risk Assessment.

---

## What is Relative Risk Ratio?

Another term for the *relative risk* is the *risk ratio* because it is the ratio of the risk in the exposed divided by the risk in the unexposed. The relative risk ratio is the probability of the event occurring in the exposed group versus a non-exposed group.

$$RR = P \text{ exposed} / P \text{ non-exposed}$$

Consider an example where in the probability of developing lung cancer among smokers was 20% and among non-smokers 1%. This situation is expressed in the 2\_x\_2 table to the right.

Here,  $a = 20(\%)$ ,  $b = 80$ ,  $c = 1$ , and  $d = 99$ . Then the relative risk of cancer associated with smoking is where Smokers would be twenty times as likely as non-smokers to develop lung cancer.

$$RR = \frac{a/(a+b)}{c/(c+d)} = \frac{20/100}{1/100} = 20$$

**RR = 1**) association between exposure and disease unlikely to exist.

**RR >> 1**) increased risk of disease among those that have been exposed.

**RR << 1**) decreased risk of disease among those that have been exposed.

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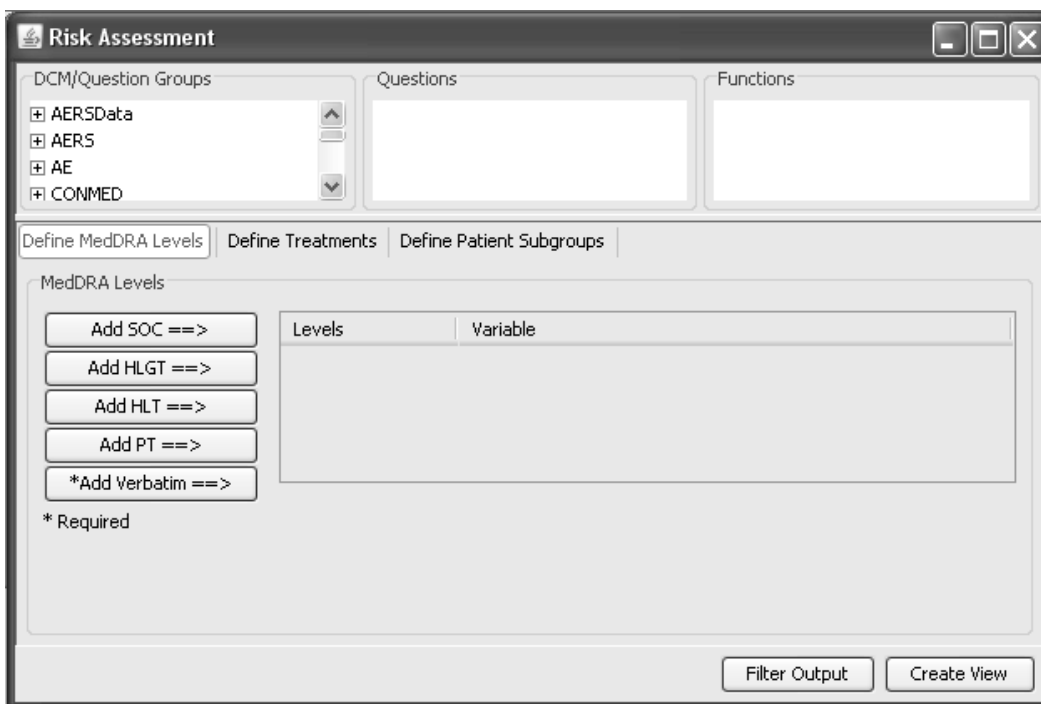
## Open Risk Assessment Browser

After selecting single or multi-study mode, users with access privileges set in *ReviewAdmin* can click the Risk Assessment icon in the tool bar;



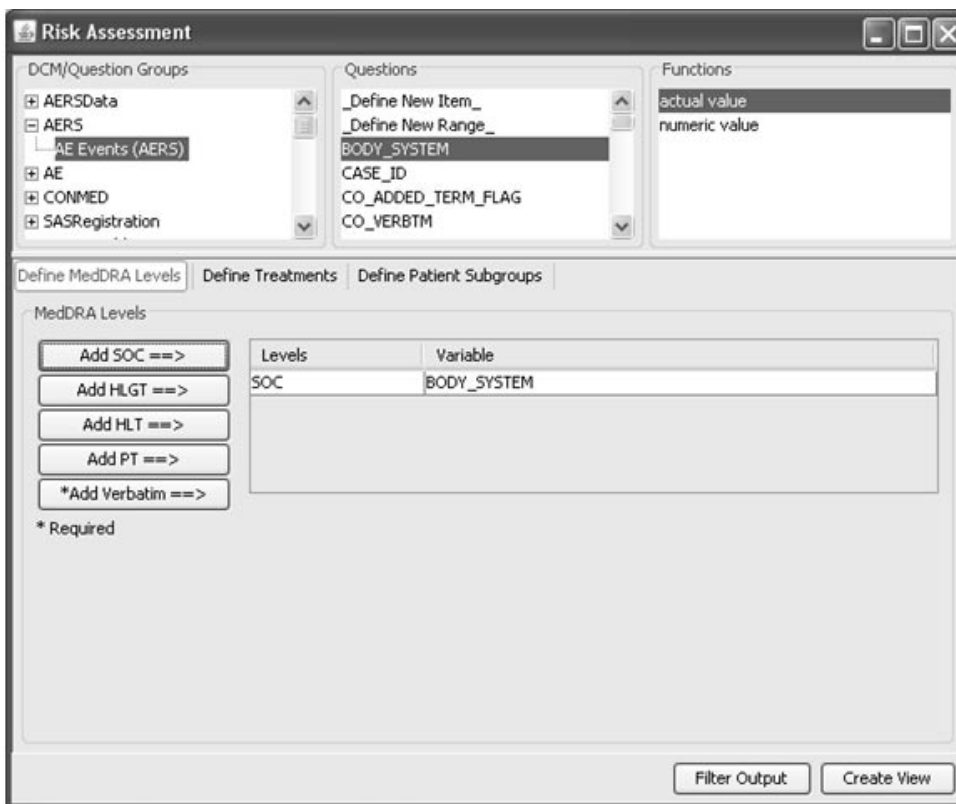
or from the browser menu, select Risk Assessment.

The main Risk Assessment definition window opens where you can enter information captured from either CDISC or Legacy systems.



There are three data functions for entering risk assessment information.

- Define MedDRA levels
  - Define Treatments
  - Define Patient Subgroups
1. Select the **Define MedDRA levels** option to enter MedDRA terms. You may enter any available MedDRA terms as not all terms are required.
  2. Select Adverse Events in the panels list; select SOC data item for System Organ Class.
  3. Click on the **Add SOC** button to add System Organ Class.



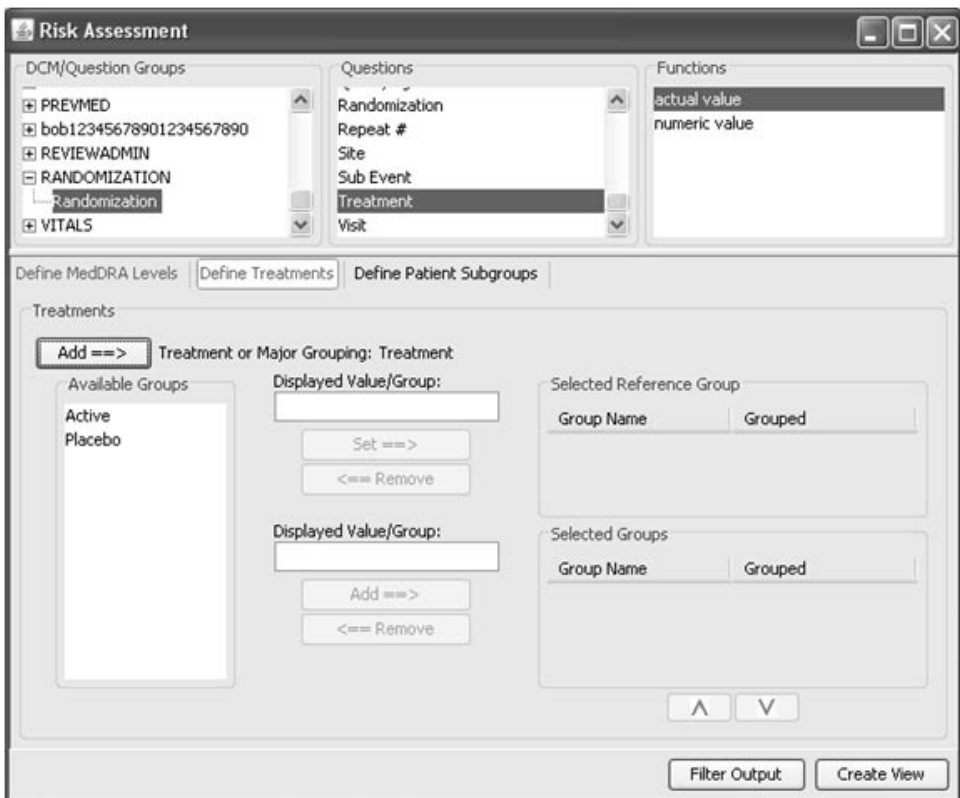
4. Repeat the same steps to add the following data items:
  - Select the High Level Group Term, click on **Add HLGT** button.
  - Select the High Level Term, click on **Add HLT** button.
  - Select the Preferred Term, click on **Add PT** button.
  - Select the Adverse Events Text, click on **Add Verbatim** button.

The 'Add Verbatim' term is required where you may optionally add other MedDRA level terms.

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### Define Treatments

5. Select the **Define Treatments** level option. The **Treatments** area displays to enter available treatment groups information.
6. Select the Randomization panel and item for Treatment, click **Add**. The **Available Groups** for Treatments to be analyzed are entered.



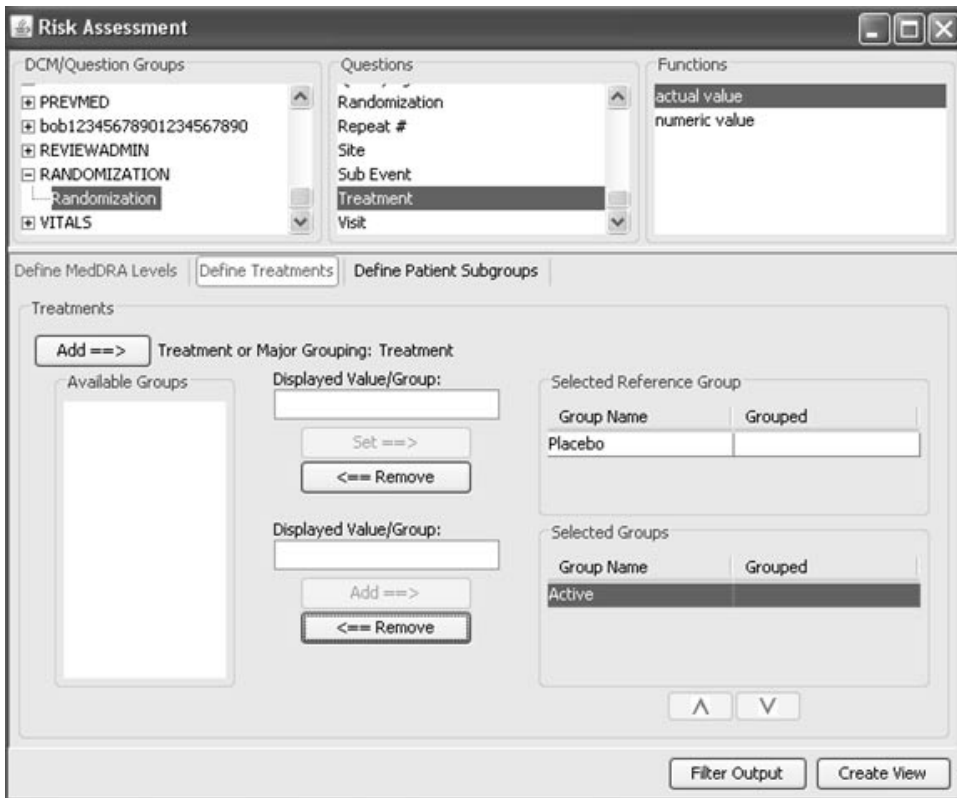
7. Select the treatment group to be applied as the **Reference Group**, and click **Set** button.

The treatment item selected for the Reference Group is applied as the denominator in the ratio calculation.

8. Select the treatment Item(s) to be added as the **Selected Group(s)** at the bottom, and click **Add** button. The treatment items selected for the 'Selected Group' are analyzed against the above 'Reference Group'.

If needed, you may select and add multiple treatments, optionally rename a treatment description, or define a treatment group with multiple selections (low, medium, high), and enter a new group name.

For the example, Placebo is set to 'Reference Group' as the denominator in the ratio against the Active' Selected Group'.



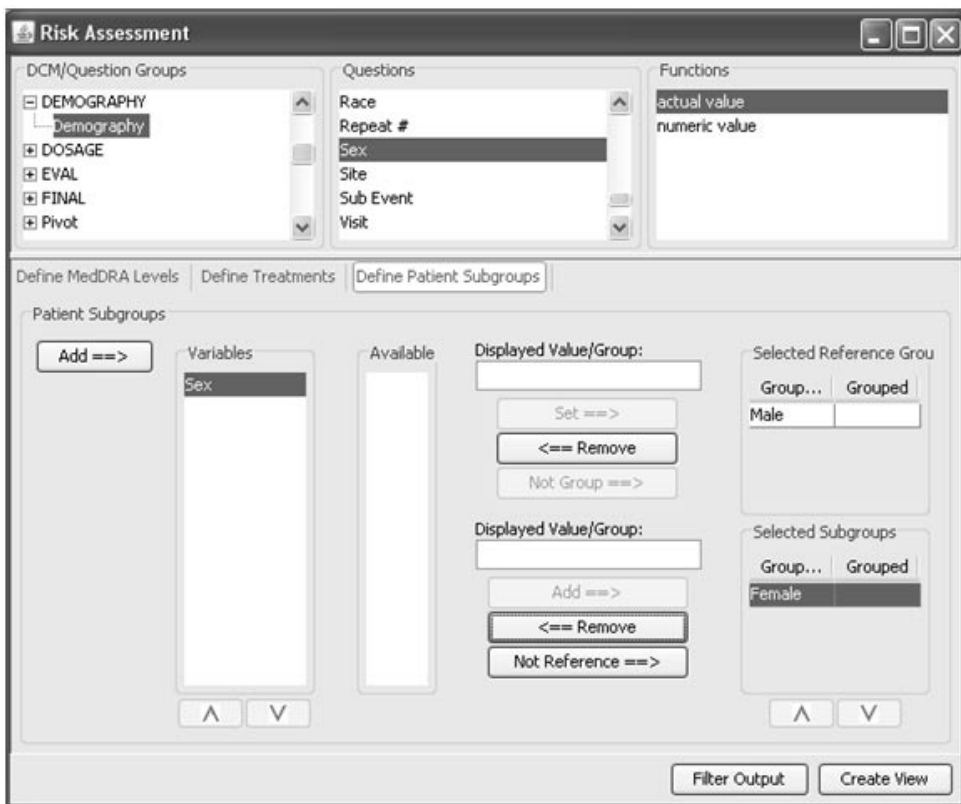
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## Define Patient Subgroups

9. Select the **Define Patient Subgroups** level option. The **Patient Subgroups** area displays to enter available patient subgroups information.
10. For example, select the Demography panel for Sex data item and click **Add**. The item variable for Sex is added with **Available Subgroups** as 'Female' and 'Male'.
11. Select the **Reference Group** data item for the denominator applied in the ratio calculation, and click **Set**.
12. Select the **Selected Subgroups** data item to be analyzed against the Reference Group.

For the example, the Male 'Reference Group' was selected as the denominator in the ratio calculation referenced against Female as the 'Selected Subgroup'.

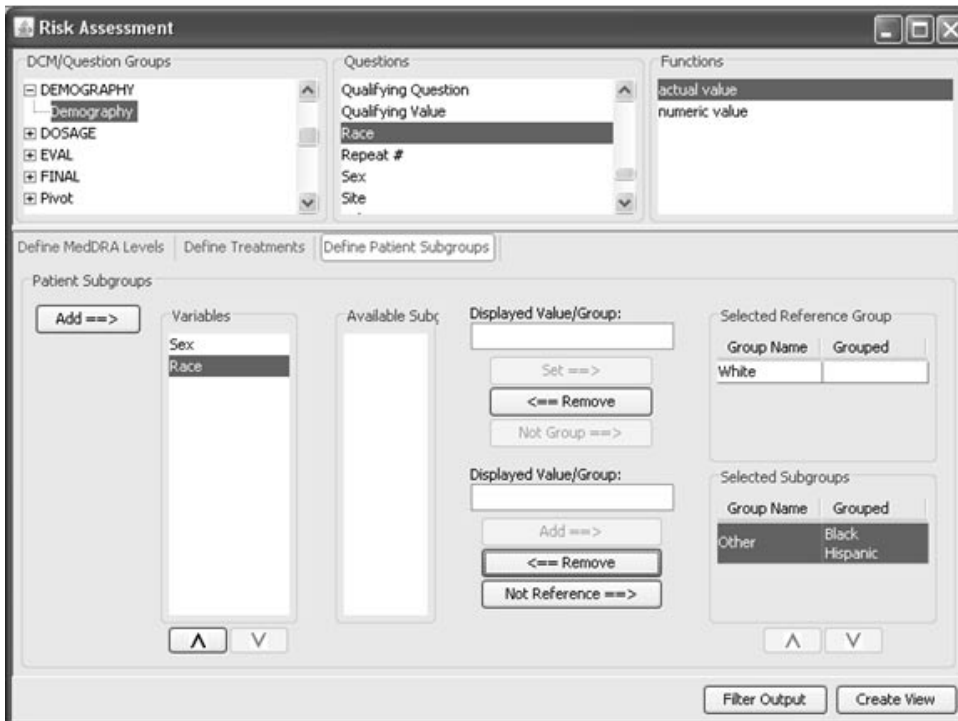
Use the **Remove** button to select and remove individual variable selections.



You may add multiple variables if needed, optionally rename a subgroup description, or define a subgroup with multiple selections, and enter a new group name.

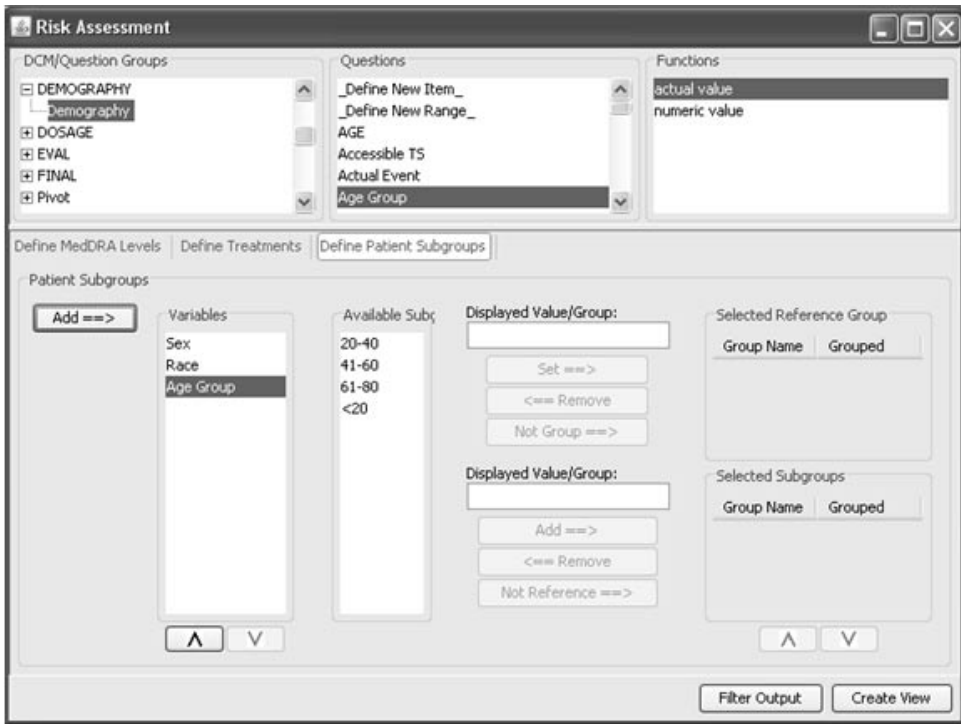
This example for Patient Subgroups shows white entered as the 'Reference Group', and multiple groups selected and renamed with a new group name as the 'Selected Subgroup'.

When adding multiple variable selections and rename a group, first enter the displayed value/group name. Then multi-select the variables and click either **Set** or **Add**, dependent if you are entering the top **Reference Group** or lower **Subgroups**. The added 'Group Name' displays with the multiple 'Grouped' variables.



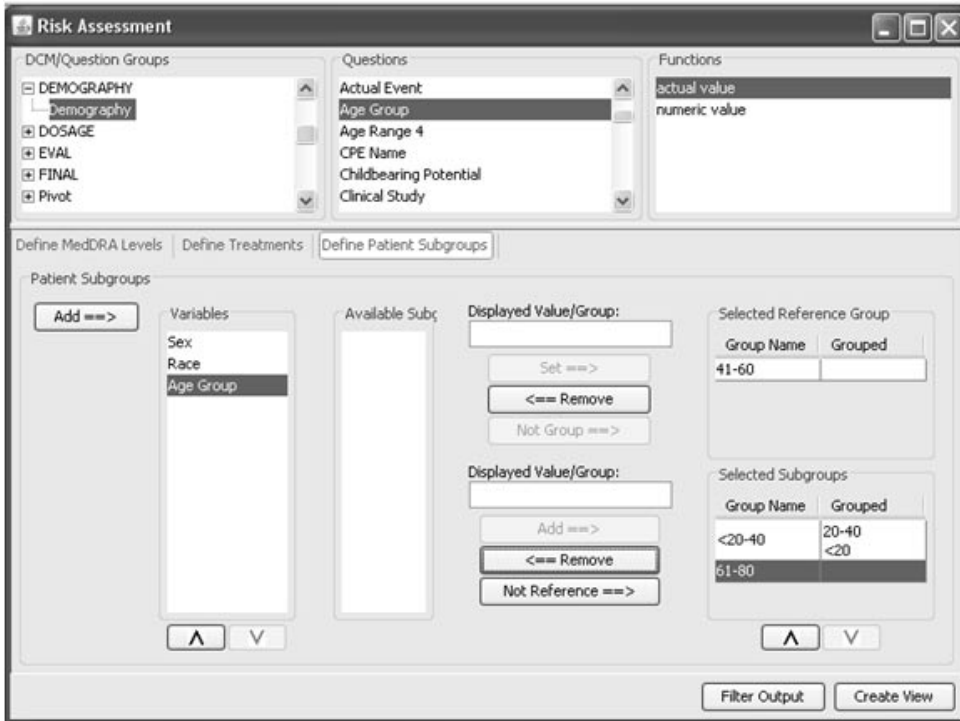


Another Patient Subgroup example shows the new data range defined for Age Group was added with four available subgroups. Again, you may organize and add as individual subgroups.

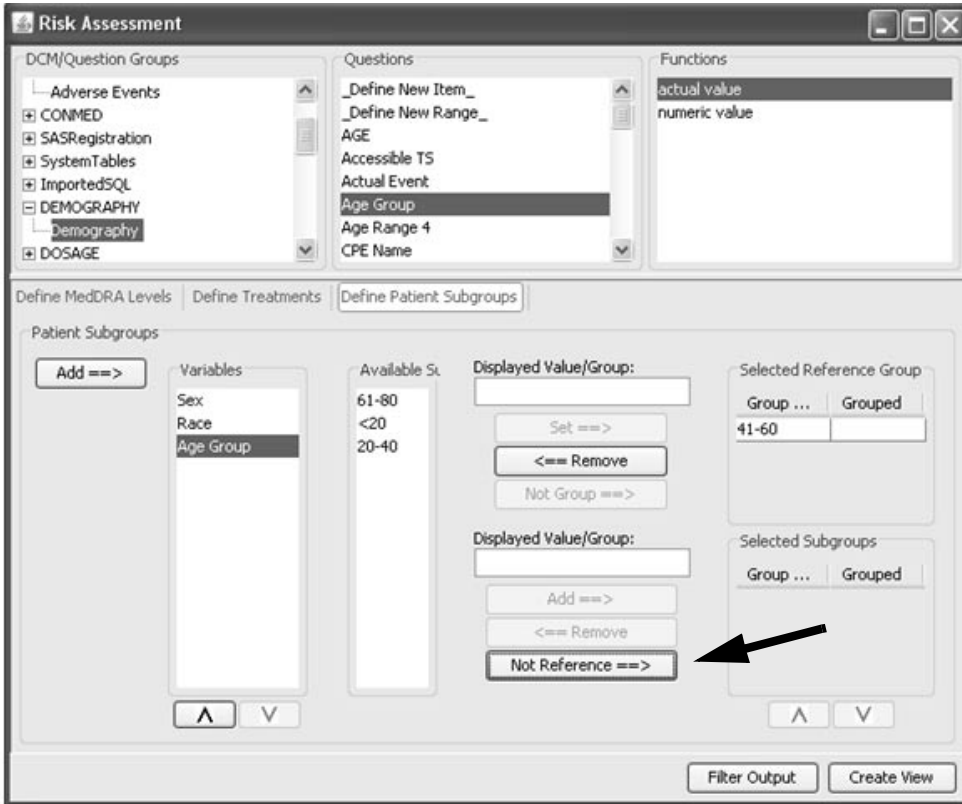


The Age Group for 41 - 60 was selected and set as the Reference Group for the denominator in the ratio calculation.

Next the new label for '<20 - 40' was entered in the Displayed Value/Group text box. The two age groups for '<20' and '20 - 40' were selected and click Add. The last age range was added for '60 - 80', to show multiple age groups added to the **Selected Subgroups**.

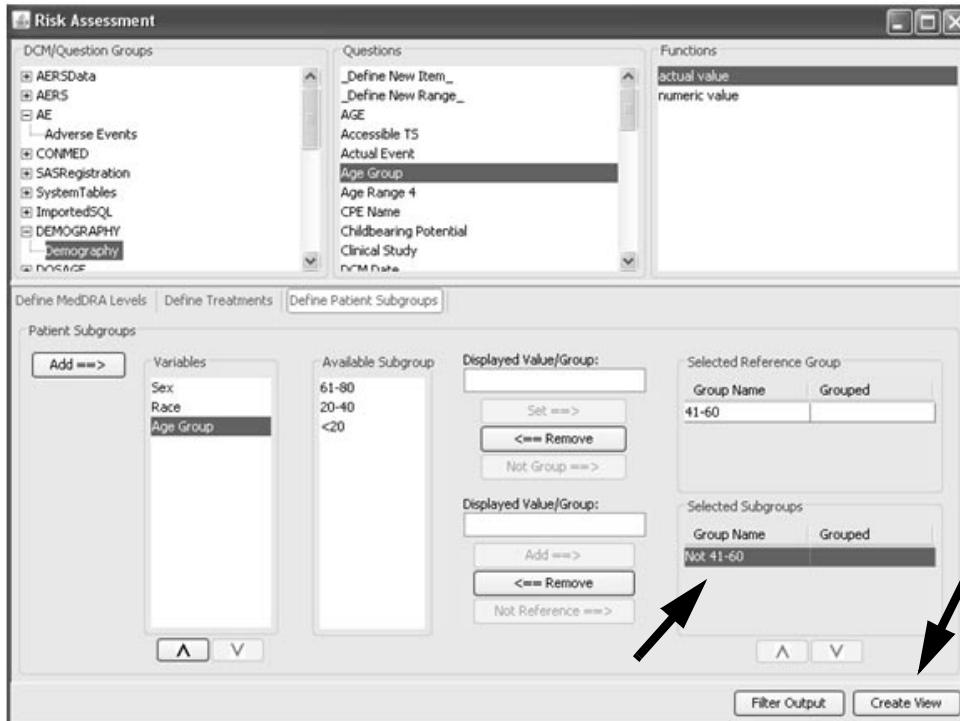


If you wish to consolidate multiple subgroups instead of entering as individual subgroups, you may use the **Not Group** or **Not Reference** feature.



First the subgroup for '41-60' was entered as **Set for Selected Reference Group**.

Next **Not Reference for Selected Subgroups** was clicked, the remaining subgroups were consolidated and entered as 'Not 41-60'.

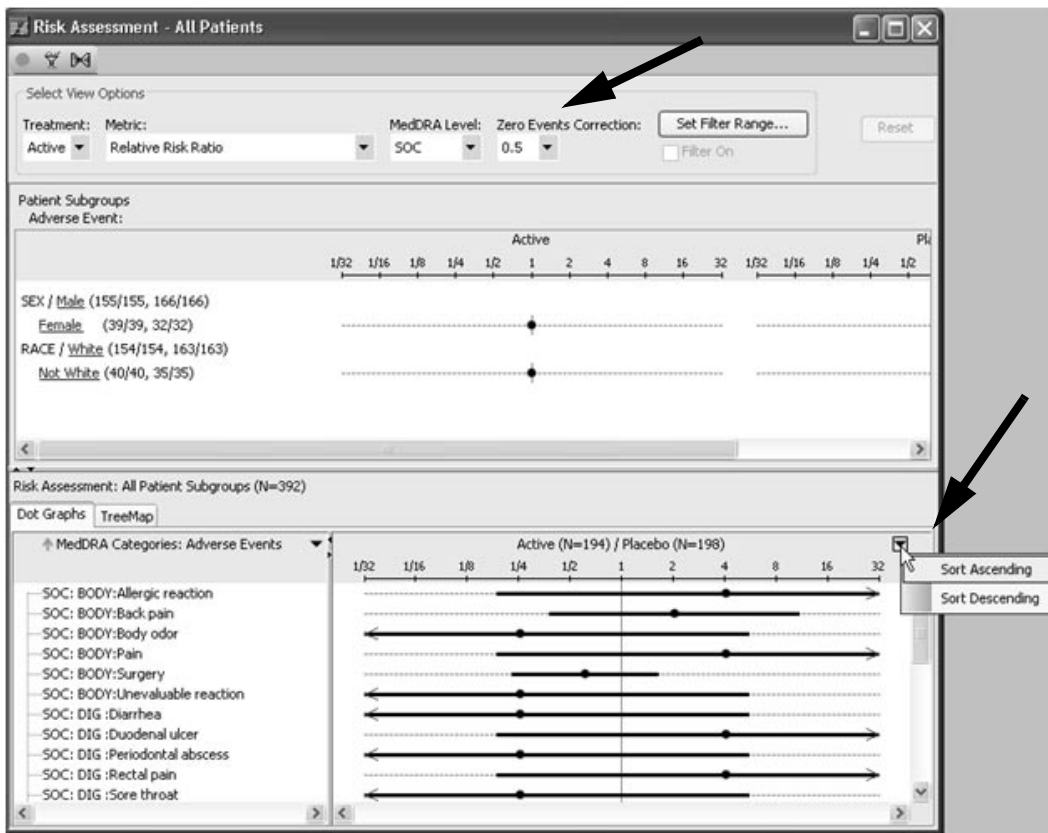


After you have entered the MedDRA levels, Treatments and Patient Subgroups for the Risk Assessment analysis, you may analyze the data results by clicking **Create View**.

# Interact with Risk Assessment Results

## View Risk Assessment

The Risk Assessment window opens organized with the **Select View Options** located at the top for **Treatment**, **Metric**, **MedDRA Level**, and **Zero Events Correction**. If you had entered multiple treatment groups than you would select which reference treatment group to apply for comparison analysis. Metric selections are available for relative risk ratio and various risk difference options.



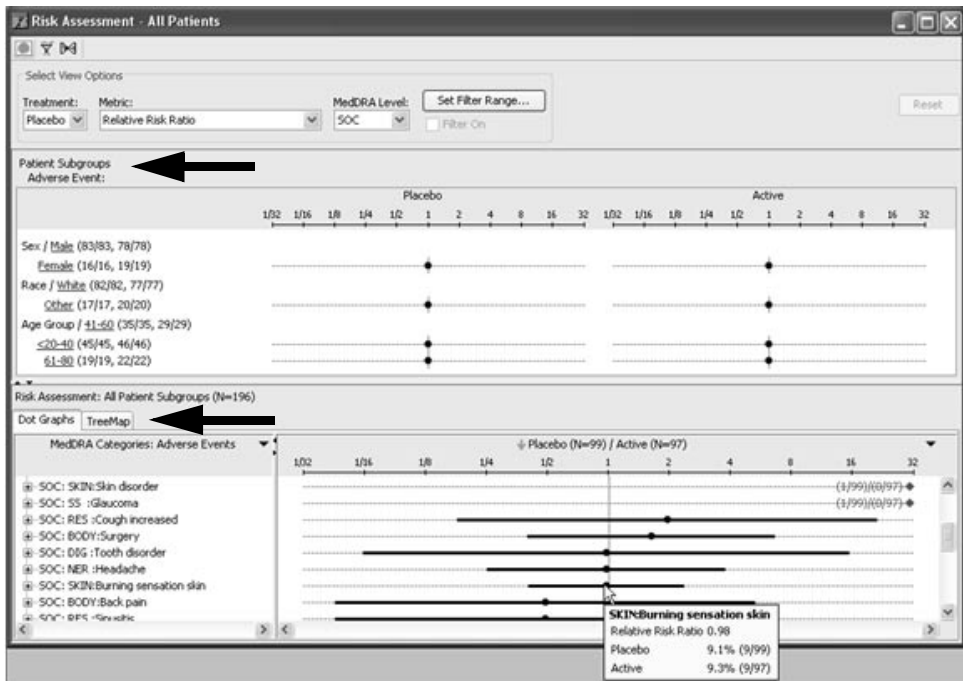
The default **Zero Events Correction** measure for “0.5” is enabled. You may toggle to the none corrected presentation which displays all incalculable ratios that have zero incidence in at least one ARM. When the Zero Events Correction (0.5) is turned OFF as disabled then red shows AEs present in one treatment ARM versus not present in the other ARM when the frequency changes. The Risk Ratio algorithm cannot be calculated if there is a zero in the numerator.

The Risk Assessment analysis plot opens with two tab display options for **Dot Graphs** and **TreeMap**. The Dot Graphs initially opens to display the default MedDRA level for SOC as the top level sort term listed in alpha order. Typically you may prefer to view in descending order, and may change the Risk Assessment default sort by clicking the arrow in the upper right corner. A drop down sort list displays to select for ascending or descending sort. A tab to view as TreeMap display is also available.

In the Risk Assessment, the size of the central dot in the plot analysis corresponds to the importance of the SOC, where a larger dot represents more patients and smaller dot means fewer patients reported the Adverse Event within the SOC. This feature provides a quick visual aide to the importance of the Adverse Event on the patient population.

The top Patient Subgroups plot displays the two treatment group arms with separate ratios displayed at baseline. When an SOC is selected the treatment arms re calibrate to show ratio differences between treatment arms separated by confidence intervals.

You may hover over a SOC dot to display a tool tip window of specific details for relative risk ratio and percentages.



---

## Select MedDRA level

Select and click on an SOC dot to modify the upper Patient Subgroup analysis to show the treatment arm distributions. The **Patient Subgroups** label shows the selected SOC description and the ratios show the adjustments for Active versus Placebo.

Whenever you select a different SOC level from the Risk Assessment plot; the Patient Subgroups re calibrates for treatment distribution ratios across the entered patient subgroups.

Missing values display at the side in red with ratio details.

Click the **Reset** button to return to baseline status and remove any prior sub setting selections.



If you click on the plus sign for the SOC, you can display the list for the next MedDRA Level term entered for HLT. Use the same steps to select more detailed level for ratio calculations, and to drill down into the levels below HLT, if they were entered in the MedDRA details.



## Select patient subgroup

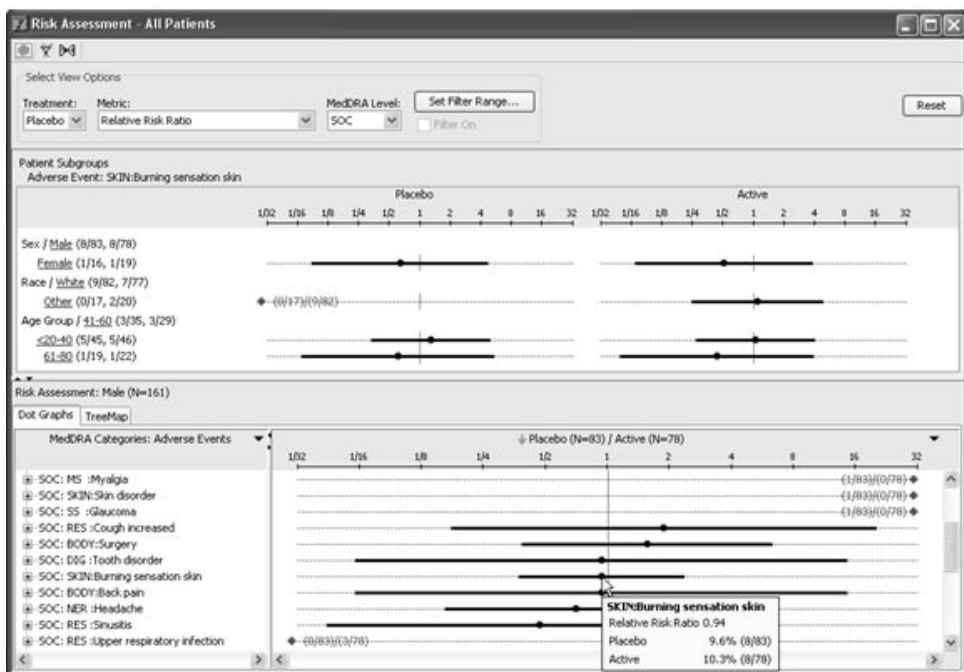
Select a patient subgroup by clicking on the highlighted subgroup, then the Risk Assessment recalculates the distribution and the header updates for the selected patient subgroup. The Risk Assessment difference as different calculation shows for multiple patient population options when applied. Red shows AEs present in one treatment arm versus not present in the other arm when the frequency changes.

The subgroup for 'Males' was selected and displays in the Risk Assessment header. The selected Adverse Event for 'SKIN:Burning sensation skin' and patient subgroup for males recalculates the relative risk ratio as follows:

$$\text{Active } 8/78 = 0.1025 = 10.3\%$$

$$\text{Placebo } 8/83 = 0.0963 = 9.6\%$$

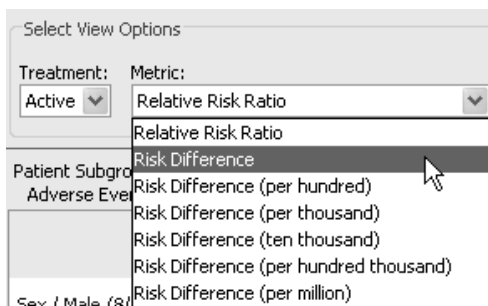
$$0.1025 / 0.0963 = \text{Relative Risk Ratio } 1.064$$



In the current example, the 'covariate/subset' items are presented in 'ratio' manner which is straight forward for two value items such as Gender. It is a little more complex for multi-value items such as Race, Age Groups, where for each of those, the user would choose the 'base' or 'subset value' of primary interest with each of the other ratios determined relative to that.

## Select Metric options

The 'Risk Difference' metric is selected for the same patient subgroup for 'Males' and MedDRA Level SOC for 'SKIN:Burning sensation skin'.



The Risk Difference recalculates as follows:

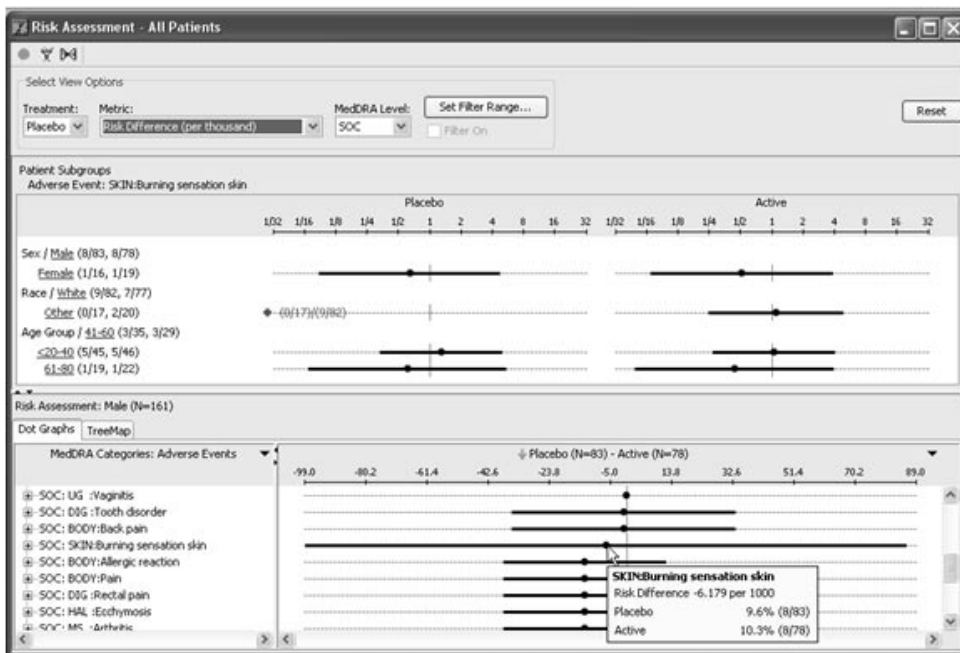
$$\text{Active } 8/78 = 0.1025 = 10.3\%$$

$$\text{Placebo } 8/83 = 0.0963 = 9.6\%$$

$$0.1025 - 0.0963 = \text{Risk Difference } 0.006$$



Other risk difference options may be selected for comparison.

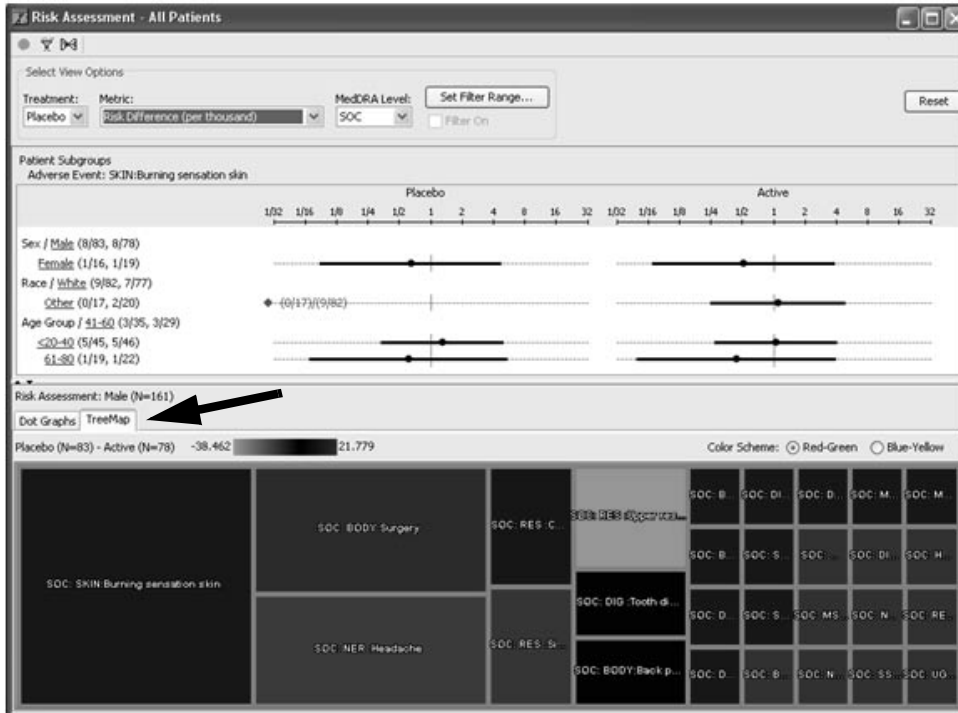


### *Patient Highlighting*

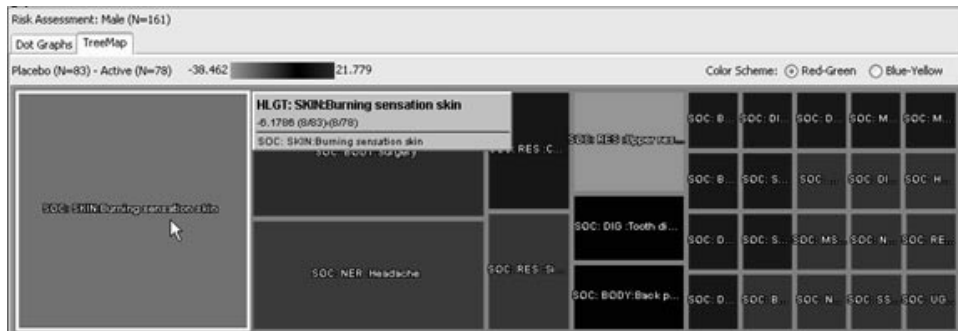
When points are selected in the AE Risk Assessment graphic the patients contained therein generate Patient highlighting in other areas. The selected patients are highlighted in other output display, i.e. other reports, graphs, etc. in the normal manner.

## View TreeMap

Another Risk Assessment viewing option is the TreeMap. Click on the TreeMap tab to display a rectangle presentation of an adverse event.

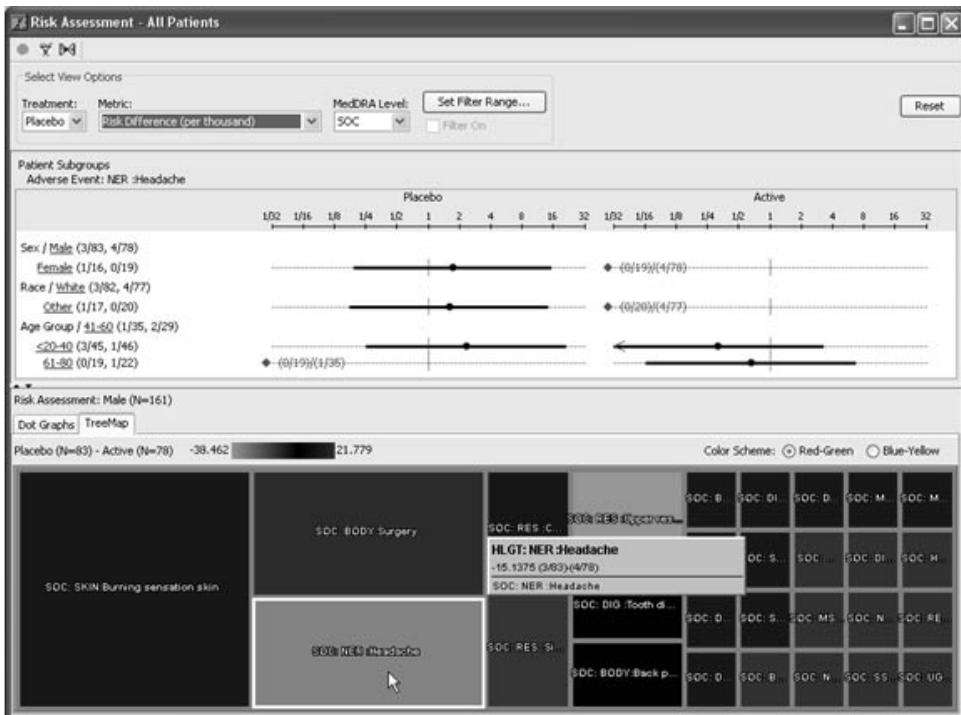


These rectangles can be nested in “higher-order” rectangles, each representing a classification such as an SOC type. The size of the rectangle represents the number of patients showing an adverse event. So, the larger the rectangle, the more patients exhibited the adverse event. You may hover over a SOC rectangle to display a tool tip window of specific details for relative risk ratio and percentages.



The colors relate to the metric's value (e.g., Relative Risk Ratio, Risk Difference) for an adverse event. When the color is "black", the difference between the treatment groups (e.g., "Placebo" vs. "Active") is small or nonexistent. When the color is red, relatively more adverse events appeared in the Placebo group. When the color is green, relatively more adverse events appeared in the Active group. The degree of reddishness or greenness (the luminosity) indicates the magnitude of the metric's value. For example, a "dark" red means that relatively more adverse events appeared in the Placebo group, but the "difference" or "ratio" is small.

Clicking on an SOC in the TreeMap affects the patient subgroup data in the upper panel. This operation is similar to what happens when clicking on a row in the dot-plot graphs.



The range for the Risk Ratios is fixed: it is always 1/32 to 32. However, the range for the Risk Differences is determined by the actual minimum and maximum values in the data.

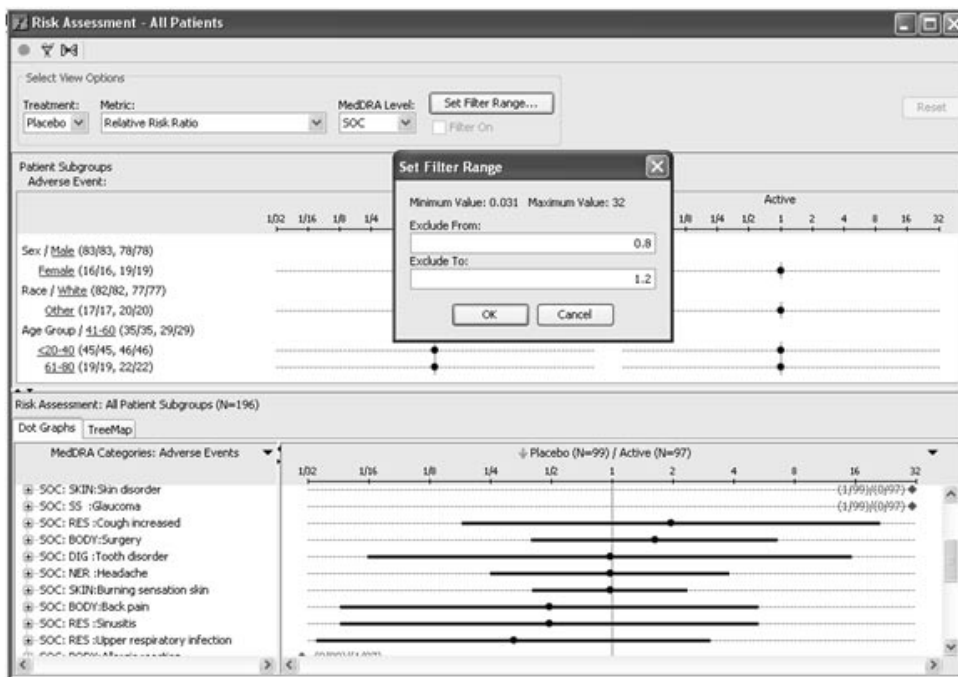
Double clicking on a rectangle allows the user to zoom-in to a lower level in the MedDRA hierarchy.

# Filtering visual results

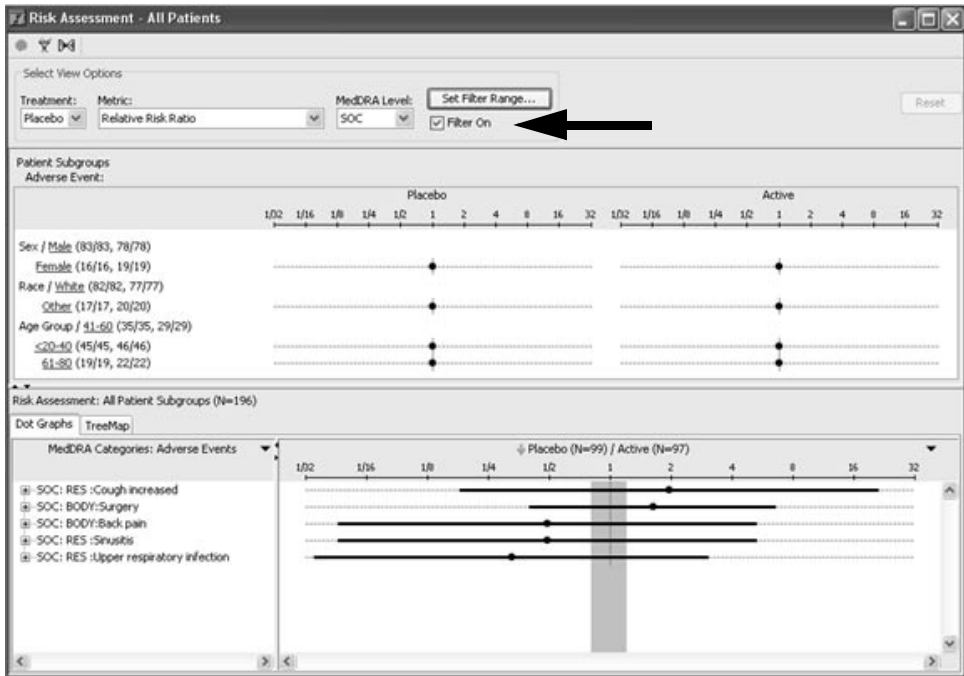
## Set Filter Range

The “Filter Range” feature allows the user to exclude rows in the dot plots that may have no or only negligible effect sizes. For example, for the Risk Difference (per thousand) metric, the user might want to hide relatively small differences, say, where the difference is less than 10. In such a case, the user can enter a range of -10 to 10. Any dot plot (row) where the difference is between -10 and 10 will not be shown.

The Set Filter Range may be turned ON or OFF using the checkbox. When the filter is ON, a gray area on the graph shows the range of values that are used for excluding adverse events. In other words, any adverse event where the middle of the dot would fall within the gray area is hidden.



Similarly, for Risk Ratios, the user might want to hide dot plot rows where the ratio is close to “1”, meaning that the treatment groups are almost the same in terms of the relative number of patients showing a particular adverse event. Because the user is looking for “significant” differences between treatment groups, such data is regarded as “clutter.” So, the user might enter a range of “.8 to 1.2” to filter out adverse events that have small ratio sizes.



The user can choose any part of the range, and thus could use the filter for somewhat different purposes as well. For example, the user might want to hide adverse effects where a Placebo group showed more adverse effects.

---

### *Apply output filter*

Risk assessment can be used with an output filter, so only the adverse events of interest will be analyzed. In the main Risk Assessment window, apply an output filter the same as in other output browsers, to remove the ‘not related’ adverse events or low intensity. The risk factors selected are where there is good quantitative evidence of a dose-response relationship and clear exposure.

The risk assessment definition can be saved like other output objects using the same object save steps. The saved risk assessment objects are available in the Object Specifications window for access by other users. You may optionally apply and save patient selection criteria with the risk assessment object specification.

For detailed instructions on how to save, retrieve, schedule output and remove object specifications (reports, graphs, crosstabs, etc.), *See Chapter 11: Saving Objects, plus Alerts Browser.*

*Note: The ability to schedule saved Risk Assessment objects will be available in a future release.*




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# Printing and Exporting Graphs

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## *Printing the graph*

To get a printed copy of your graph you must access a **Print Preview window** and menu bar.

1. Click on the result window to make it the active window.
2. Click  , or from the **Browser File** menu, select **Print**.

Click either **PrintPage**, **PrintAll** or **Close**. The PrintPage option will print only the first page of your output. The PrintAll option will print the entire output. The result prints on the currently selected printer.

---

## *Exporting the graph*

1. From the menu bar in the **Print Plot window**, click **Export to JPG**. The save dialog window opens.
2. Select a folder location and enter a **File Name**.

Click **Save** to export the graph results.

---

## *Edit menu Copy*

1. Click on the result window to make it the active window.
2. Select Edit in the menu bar.
3. Select the Copy function, to copy the currently displayed output window to clipboard for pasting into Word, etc.



# 15 *Patient Narratives Browser*

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# Patient Narrative Privileges

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## *Narratives Access Levels*

The Patient Narratives Browser provides a facility to define, generate, edit and manage the patient narrative writing process all from within JReview. The end product of the patient narrative definitions is either a PDF or RTF document which contains the automatically inserted patient overview information (header information), standard boiler plate text with patient specific details inserted, including conditional inclusion of text blocks, as well as area for patient specific narrative text to be written and saved, with selected reports or graphs to illustrate the items of interest for the patient. An example patient narrative after being defined, edited, and 'created' is the generated PDF document which can also be exported as an RTF document.

The Patient Narratives Browser is used to define Patient Narrative templates, and support the capability to create and manage the workflow for Patient Narratives. It supports the Medical Writing team functionality to define templates for Patient Narratives, and check out cases to create the patient narratives. Ideally the patient narrative template is defined at the start of the study and then not accessed again unless an update is required.

The Patient Narratives access levels must be setup in ReviewAdmin under Review Privileges for the Patient Profile/Narrative tab. There are three privilege settings:

- ***Enable Patient Narrative Template Definition*** – allows for advanced lead medical writers to initially setup a narrative template for access.
- ***Enable Check Out Browser/Patient Narratives*** – allows for medical writers to access created narrative templates to enter and check out patient narratives.
- ***Enable View Check Out Browser/Patient Narrative*** - allows for view only access to other personnel to read the patient narratives.

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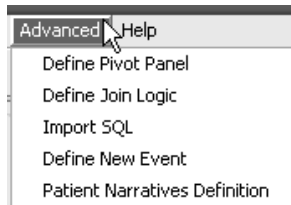
# Patient Narrative Templates

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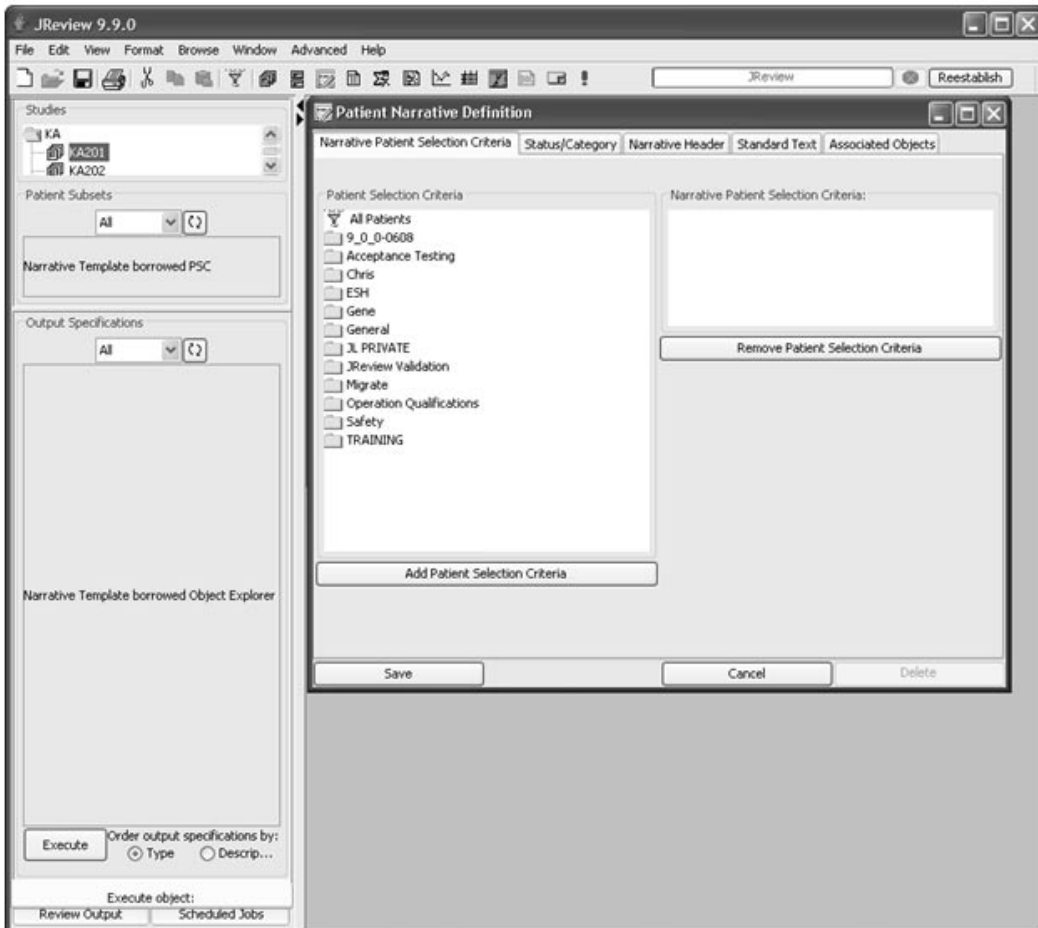
## *Define Patient Narrative Template*

Once settings and privileges are granted, the next step is the initial setup of a narrative template.

1. From the Advanced menu, select **Patient Narrative Definition**.



The **Patient Narrative Definition** window opens showing the Narrative Template borrowed the PSC and Object Explorer.



There are five tabs in the **Patient Narrative Definition** window used to define the patient narrative template.

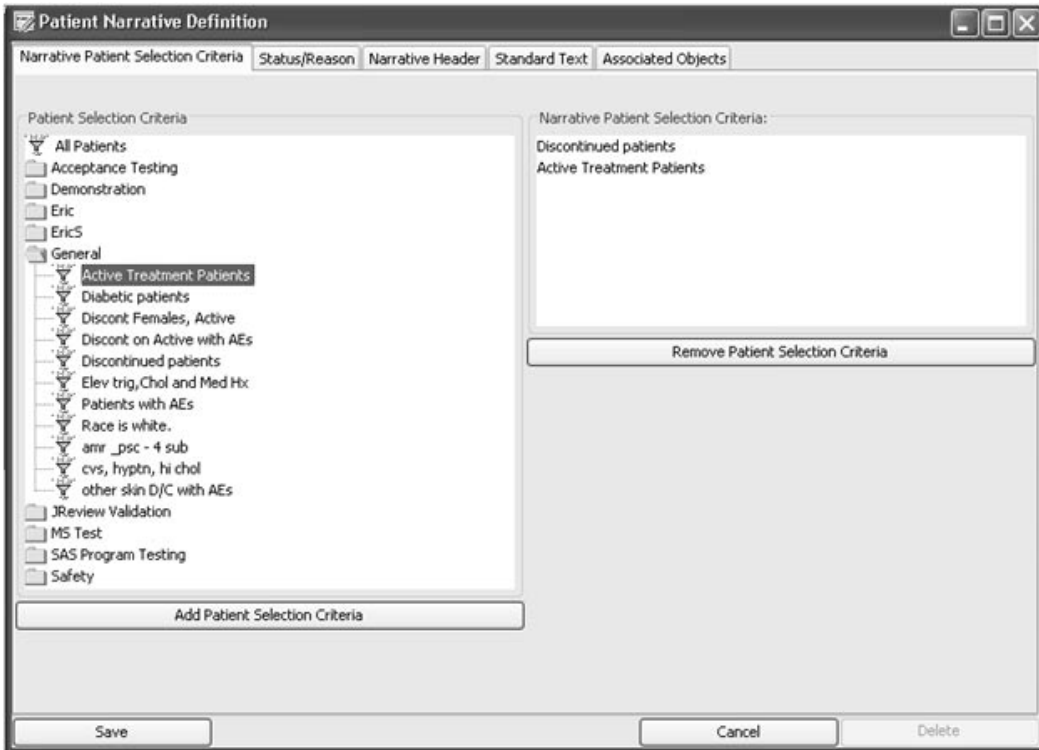


- ***Narrative Patient Selection Criteria*** – rules to include patients in the narrative based upon existed patient selection criteria, or add new patient subsets. Multiple patient subsets may be selected and included in the narrative definition.
- ***Status Reason*** – display option status types which can be added as config parameters. The two required status types are: New and Checked Out. Only one user can check out a narrative at a time. The status column tracks the work flow of the patient narratives.
- ***Narrative Header*** – defines the template content by adding and removing questions. It is based upon selecting patient information from Type 1 panels. The patient narrative template definition may be saved at the Study, Project, Global, or StudyGroup level. The narrative supports PDF or RTF display options.
- ***Standard Text*** – defined narrative header details are displayed in the narrative template along with any additional added data items selected from the DCM/Question Groups.
- ***Associated Objects*** – specific object can be associated or embedded into the narrative.

2. In the **Narrative Patient Selection Criteria tab**, you have the options to enter as:
  - “All Patient”
  - Define new patient subset
  - Add existing patient subsets

Multiple patient subsets may be selected and added with the **Add Patient Selection Criteria button**. When multiple subsets are included, the patients selected by the subsets are by “OR” selection criteria to represent each subset.

Use the **Remove Patient Selection Criteria button** to select, and remove narrative patient selection criteria.





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### Status Reason tab

3. Click the **Status/Reason tab**. Select from the Optional Status Types list box, all appropriate statuses. Use the **Add and Remove Status Type buttons**.

'New' and 'Checked Out' will be used by default. You must select at least one other status type for 'Check In' status.

The Administrator must add the Status Types in the ReviewAdmin Config Table for NRSTATUSYPES=Needs Review, Needs Data, Needs Update, Final.

---

### Add Reason definitions

4. Select or **Add Reason** as a definitions/assignments, (the reason why the narrative is being written – 'Death', 'SAE', etc).

The **Reasons** are updated in both the patient narrative definition dialog, checkout browser (primary reason displayed), and writers panel.

The screenshot shows the 'Patient Narrative Definition' dialog box with the 'Status/Reason' tab selected. The dialog is divided into four main sections: 'Optional Status Types', 'Chosen Optional Status Types', 'Reasons', and 'Chosen Reasons: (up to 6)'. Below these sections are four buttons: 'Add Status Type --->', '<--- Remove Status Type', 'Add Reason --->', and '<--- Remove Reason'. A 'Note' section contains the text: 'New' and 'Checked Out' will be used by default. Please select at least one other status for 'Check-In'. At the bottom are 'Save', 'Cancel', and 'Delete' buttons.

Narrative Patient Selection Criteria	Status/Reason	Narrative Header	Standard Text	Associated Objects
Optional Status Types Needs Review Needs Data Needs Update Final	Chosen Optional Status Types: Needs Review Needs Update Final	Reasons Death SAE Discontinuation due to AE Other Significant AE Enter other Reasons: _____ _____ _____ _____	Chosen Reasons: (up to 6) Discontinuation due to AE Other Significant AE	

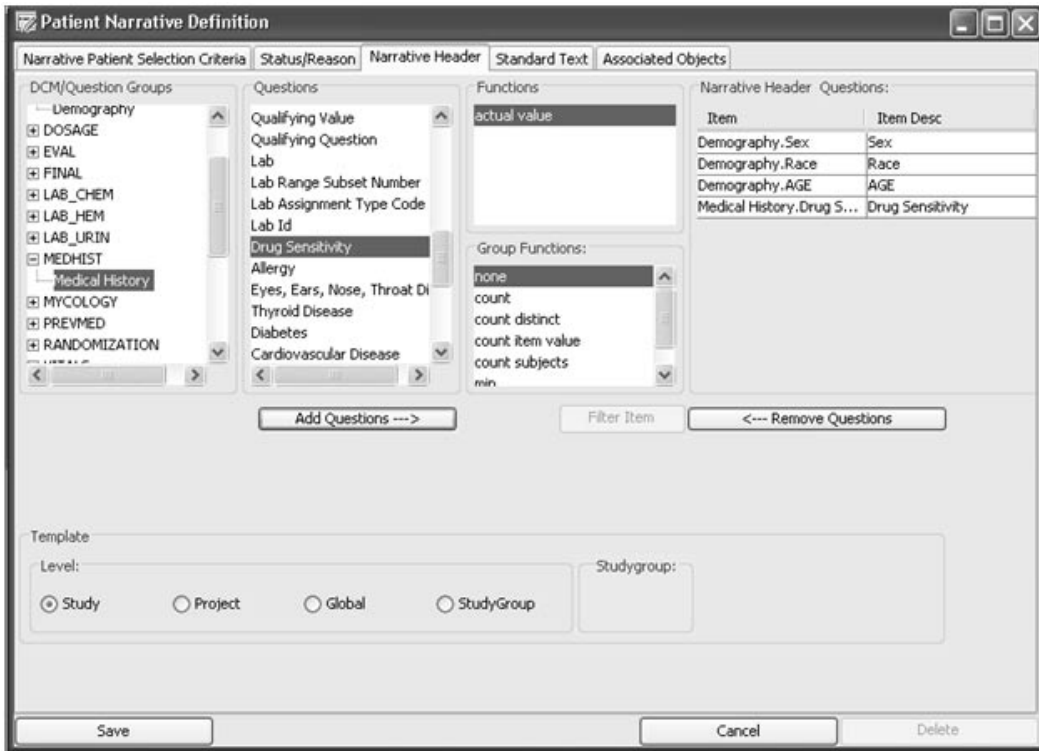
Add Status Type --->    <--- Remove Status Type    Add Reason --->    <--- Remove Reason

Note:  
**'New' and 'Checked Out' will be used by default. Please select at least one other status for 'Check-In'.**

Save    Cancel    Delete

5. Click the **Narrative Header** tab. Typically you would select Narrative Header details for basic patient information collected from Type 1 panels.

From the list of Panels, select items to be added to the Narrative Header. Use the **Add Questions** and **Remove Questions** buttons.



If needed, you may edit the **Item Description** in the Narrative Header Items list. Click on the item description to select and edit.

6. Optionally, you may filter on a selected item. Select the item in the Narrative Header Items list. The **Filter Item** button is activated to apply a filter.

The intention for Filter use is to choose a single value for each header item, if the user knows or expects there might be multiple entries. There is added logic to limit entry of the value for any of the header items to the first one returned, and to note if there are more than one entry being returned – with a trailing ellipsis '...'.

7. Select the **Template Level** for Study, Project, Global, or StudyGroup.

If you select StudyGroup, a dialog window will display to select the StudyGroup.

In most instances, Study and Project will be used. The way it works is when the Medical Writer accesses the Checkout Browser at whatever study, it will open at the lowest level template available. So, if a Study level template is available then it would be used. If not, then the access is to the Project level template. When there is no Project level template, then StudyGroup is next, and if no StudyGroup template then use the Global template last.

It is probably unlikely to use the same template for all the studies and projects, because header information and standard text may be different between studies or projects. Also, the subset of patients based upon the patient selection criteria applied may be different.

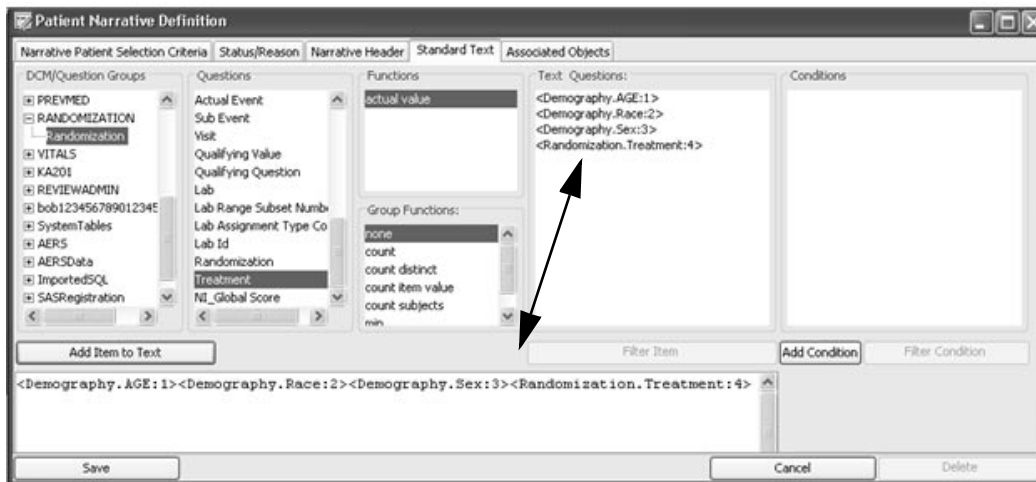
Where a project contains studies that are of similar design, then the Project level template will be used. If some studies within that project are different (in the way you want to define the template), then put them in a StudyGroup or just define the different ones individually. It will depend upon the specifics required in the Narrative Reporting for those particular studies. The usual reasons are SAE, Death, and Discontinuation due to Adverse Event where these are mandated by an FDA guidance. The Reason for 'Other significant AE' is included but each customer may want to specify reasons asked for by the FDA, such as elevated liver enzymes, etc. This information might also be applied to drive the Patient Selection Criteria for the template.

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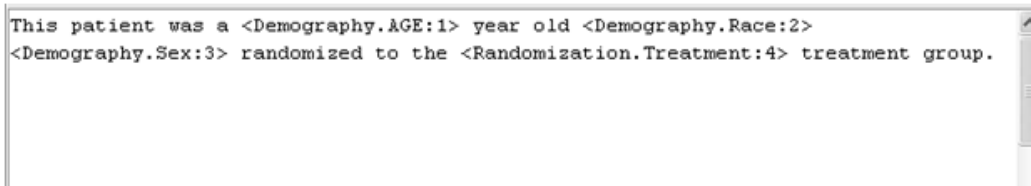
Standard Text tab

8. Click the **Standard Text** Tab. Include Items in the Standard Text display box by selecting the question group/panel and question/item. Click the **Add Item to Text** button.

The Text items are added in the Text Questions list and displayed in the Standard Text box.



Edit the Standard Text display for the added text items, by entering information into the template using a combination of added items and typed text.



If you need to remove any added Text Item, select and delete the added item in the Standard Text display box. It will be removed from the Text Questions list after you click **Save**, or **Update**.

**Note:** It is not necessary to add a carriage return after the first paragraph to add a blank line before the condition began. Avoid the tendency to hand enter a lot of carriage returns for viewability during the definition of the standard text. This will create a problem caused by the user in the way the conditions are being spaced in the definition. It will generate extra spaces in the final output. The key is to make sure that any extra carriage returns are within the conditional blocks.

For example, if the template is defined as follows, there are a lot of extra spaces in the writers panel:

**Template**

This patient was a <Demography.Age:1> year old <Demography.Race:2> <Demography.Sex:3> randomized to the <Randomization.Treatment:4> treatment group.

<Begin Condition 1:Completer>

The patient completed the trial.

<End Condition 1:Completer>

<Begin Condition 2:Discontinued>

The patient discontinued the trial due to <Final.Reason for discontinuation:5>

<End Condition 2:Discontinued>

**Writers Panel**

This patient was a 66 year old White Female randomized to the Active treatment group.

The patient discontinued the trial due to Safety

However, if the template is defined instead as follows, the writers panel looks correct:

*Template*

This patient was a <Demography.Age:1> year old <Demography.Race:2> <Demography.Sex:3> randomized to the <Randomization.Treatment:4> treatment group.

<Begin Condition 1:Completer>

The patient completed the trial.

<End Condition 1:Completer><Begin Condition 2:Discontinued>

The patient discontinued the trial due to <Final.Reason for discontinuation:5>

<End Condition 2:Discontinued>

*Writers Panel for patient 3111*

This patient was a 66 year old White Female randomized to the Active treatment group.

The patient discontinued the trial due to Safety

*Writers Panel for patient 5111*

This patient was a 32 year old White Male randomized to the Active treatment group.

The patient completed the trial.

9. Optionally, you may filter on a selected text item.

Select the item in the Text Items list. The **Filter Items** button is activated to apply a filter, to allow selection of specific rows of data for the standard header items.

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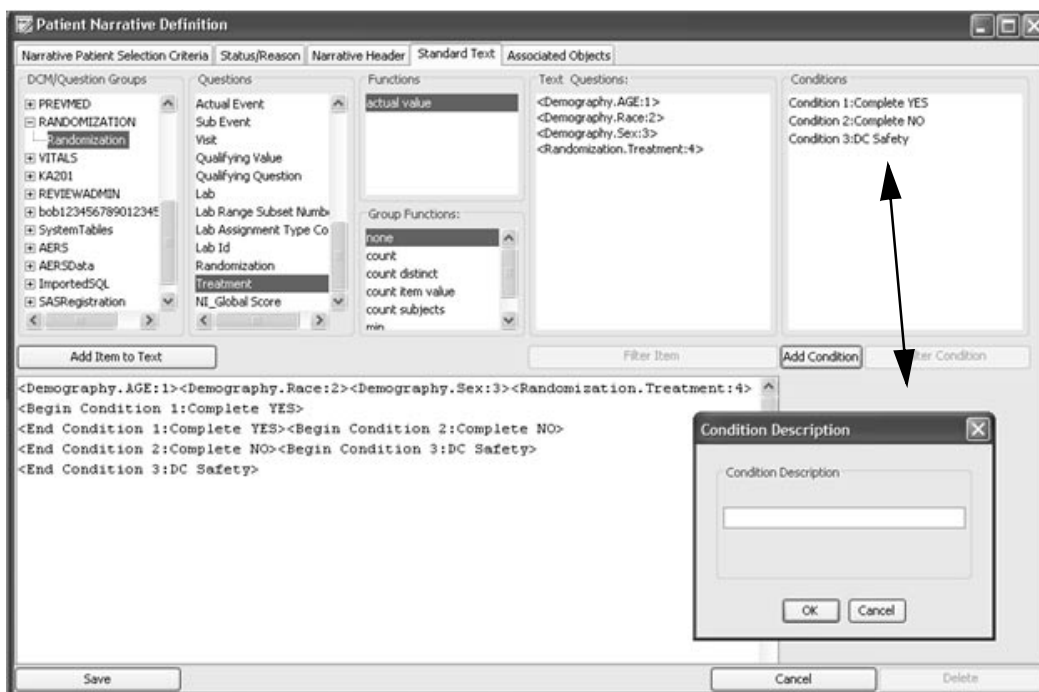
## Add Conditions

Optionally, you may add **Conditions**. The Standard Text area includes user modifiable descriptions for the item descriptions included.

10. When you click on **Add Condition**, first the Condition Description box opens to enter your description.

When you click **OK**, the **Filter Output** window opens to enter an individual filter to apply to your Condition. Each **Condition Description** only works for an individual filter value. It supports the use of conditionals (include text block only if the condition is true), and supports group functions such as 'max blood pressure', etc.

As the conditions are defined they are automatically added to the Conditions list box and the Standard Text box where you may edit the added conditions to a readable text format.



To remove a condition, delete it from the Standard Text area. It will be removed from the Conditions list box after you click **Save** or **Update**.

```
This patient was a <Demography.AGE:1> year old <Demography.Race:2>
<Demography.Sex:3> randomized to the <Randomization.Treatment:4> treatment group.
<Begin Condition 1:Yes Complete>The patient completed the study. <End Condition
1:Yes Complete><Begin Condition 2:No Complete>The patient discontinued the
study.<End Condition 2:No Complete> <Begin Condition 3:DC Safety>The reason was
Safety.<End Condition 3:DC Safety>
```

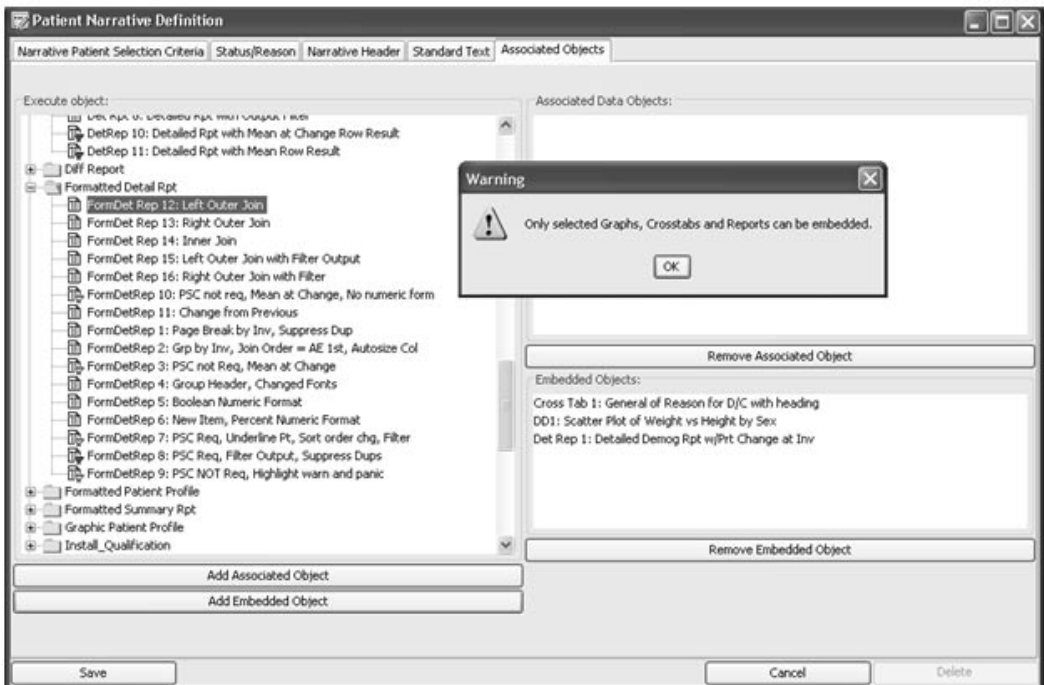


Optionally, you may **Add Associated Objects** or **Add Embedded Objects** to the narrative template.

11. Click the **Associated Objects** tab.

Only basic type scatter plots, crosstabs and reports may be embedded or a message will display. Instead add complex output objects as Associated Objects.

Select objects from the **Execute Object** category folders. Use the Add and Remove buttons for Associated Data Objects and Embedded Objects. .



12. Click **Save** or **Update**. The Patient Narrative Template is saved.

The narratives templates and created patient narratives never display in the Object Explorer. They are only accessible through the Patient Narratives Browser.

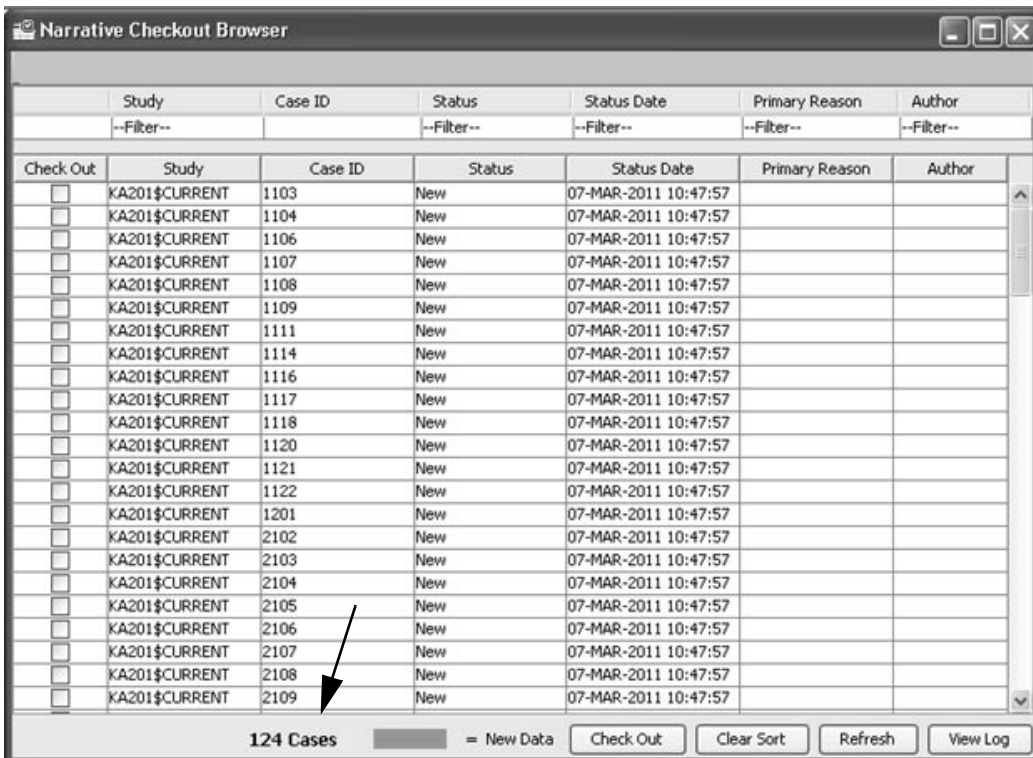
# Check Out Patients and Create Patient Narratives

## Enter patient narrative

Once the template is saved then Medical writers with privileges may access the created narrative templates to check out and enter patient narratives. They access the **Narrative Check Out** Browser where the patients who meet the patient selection criterias are displayed, to select cases and checkout.

1. Click on the **Narrative Check Out** icon in the tool bar, or select Narrative Check Out from the Browse menu. The Narrative Check Out Browser window opens

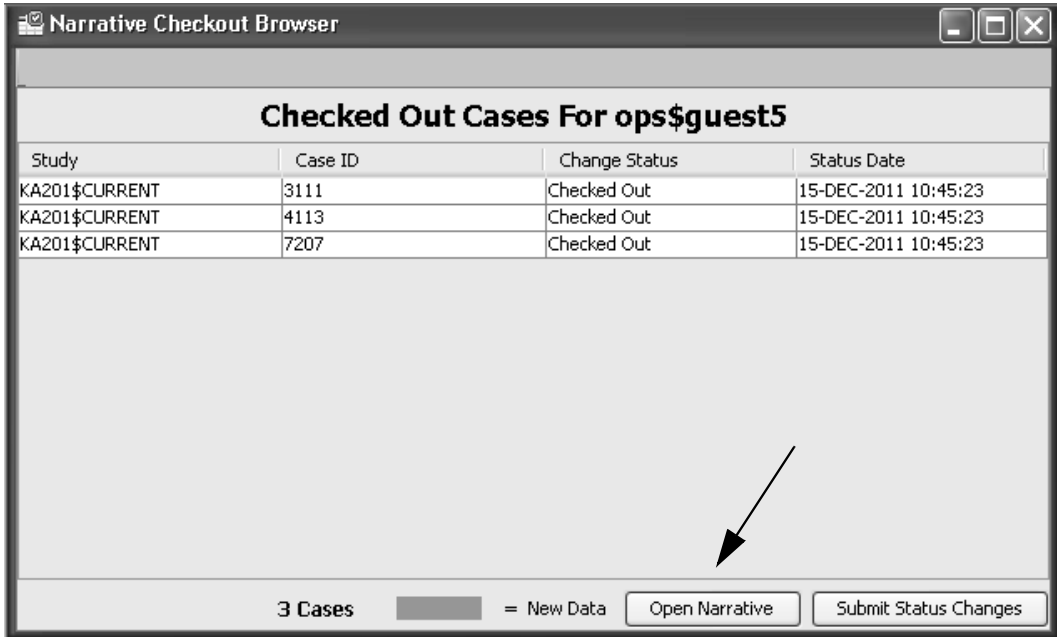
The number of patients is displayed who meet all patient selection criteria as defined in the Narrative definition.



If the Medical Writer currently has No narratives checked out, a message prompts to check out at least one case for check out.

If the Medical Writer had cases previously checked out for patient narrative; the initial window displays the current **Checked Out Cases**.

2. Select a case by highlighting the patient row. Click the **Open Narrative** button.



3. The Writer's Panel dialog opens for the Medical Writer to enter and/or edit the patient narrative. The defined Narrative Template information displays for the Header Information and Standard Text.

Writer's Panel

View Log -View Associated Objects- -Embedded Objects- EX Add/View Notes

Header Information:

Sex	Female	Race	White	AGE	66
Drug Sensitivity	No				

Select Reason(s) for Narrative:

Discontinuation due ...  Other Significant AE

Standard Text:

This patient was a 66 year old White Female randomized to the Active Treatment Group. The patient discontinued the study. The discontinu reason was for Safety.

Clinical Summary:

Save Create Narrative Remove Std. Text Cancel

4. Select a **Reason for Narrative**. This information is required.
5. Click the **Remove Standard Text** button, if you prefer to replace the template default standard text. Likewise, an **Include Standard Text** button will allow you to replace the removed Standard Text.
6. Double click in the **Clinical Summary** text box to enter narrative text. Press 'Enter' to start and add new lines in the Clinical Summary box when adding objects. Allow for lines to add text between objects.

*Note: It is recommended to enter the Clinical Summary then add any Embedded objects at the end. Add a carriage return.*

7. Use the **Associated Objects** and **Embedded Objects** drop down list to select and add specific objects within the Clinical Summary box.

Click the **EX button** to execute the selected embedded object to view in another window.

8. Optionally, click on the **Add/View Notes** button. The **Notes Browser** opens to display and reference saved notes for the selected patient.

The screenshot shows the 'Writer's Panel' window. At the top, there are buttons for 'View Log', '-View Associated Objects-', a dropdown menu showing '1197:Graph:DD1: Scatter Plot of...', an 'EX' button, and an 'Add/View Notes' button. Below this is a 'Header Information' section with a table:

Header Information:	Female	Race	66
Sex	Female		66
Drug Sensitivity	No		

Below the table is a 'Select Reason(s) for Narrative:' section with two checkboxes: 'Discontinuation due ...' and 'Other Significant AE'. The 'Standard Text:' section contains the text: 'This patient was a 66 year old White Female randomized to the Active Treatment Group. The patient discontinued the study. The discontinuation reason was for Safety.' The 'Clinical Summary:' section contains the text: '<EMBED>1225:Report:Det Rep 1: Detailed Demog Rpt w/Prt Change at Inv<ENDEMBED><EMBED>1197:Graph:DD1: Scatter Plot of Weight vs Height by Sex<ENDEMBED>'. At the bottom, there are buttons for 'Save', 'Create Narrative', 'Remove Std. Text', and 'Cancel'. Two black arrows point to the 'Add/View Notes' button and the 'Create Narrative' button.

9. Click **Create Narrative** to view the **Current Narrative** for that case. The selected embedded objects are executed within the narrative display.

- Close the Current Narrative window and click **Save**, to save changes to the narrative.

**Current Narrative**

**Patient Narrative Report** Date: 03/03/2011  
Time: 10:56

Sex	Female
Race	White
AGE	66
Drug Sensitivity	No

Reason for Narrative Narrative  
This patient was a 66 year old White Female randomized to the Active Treatment Group. The patient discontinued the study. The discontinu

Investigator	Patient	AGE	Sex	Race
030	3111	66	Female	White

reason was for Safety.

Scatter (itemX vs itemY) Plot  
Study: KA201\$CURRENT  
PSC: Demography.Patient =:111

Page 1 of 1

- Optionally, click **View Log**.

**Narrative Log**

Study	Case ID	Status	Status Date	Author
KA201\$CURRENT	3111	New	28-FEB-2011 11:56:27	
KA201\$CURRENT	3111	Checked Out	01-MAR-2011 10:24:25	ops\$guest5
KA201\$CURRENT	3111	Needs Review	01-MAR-2011 14:50:47	ops\$guest5

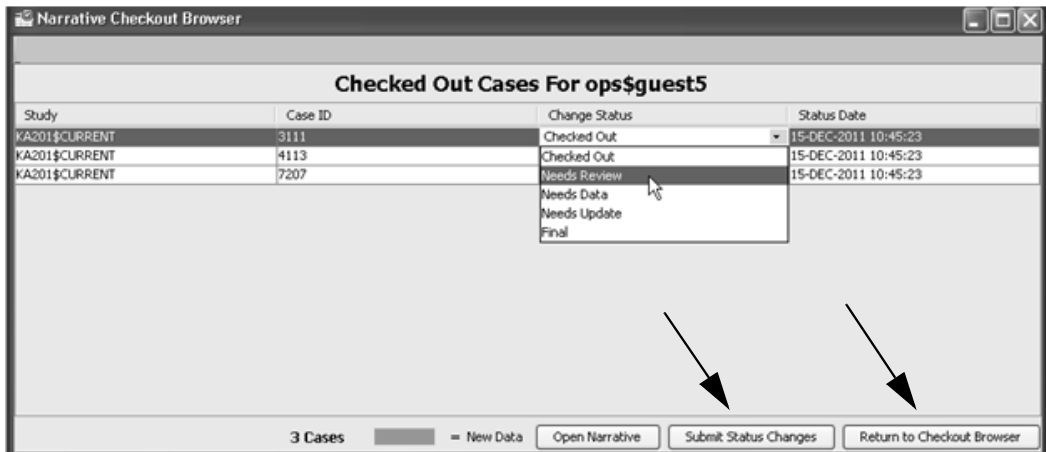
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### Change Case Status

1. Select the patient row and click on the **Change Status** header to display the drop down list. Select a Change Status, then click the **Submit Status Changes** button.

The selected case status is changed from 'Checked Out', and the Case ID will be removed from the Checked Out Cases list. The Case ID will display back on the Check Out Browser list.

2. Click the **Return to CheckOut Browser** button.



---

### New Data Flag

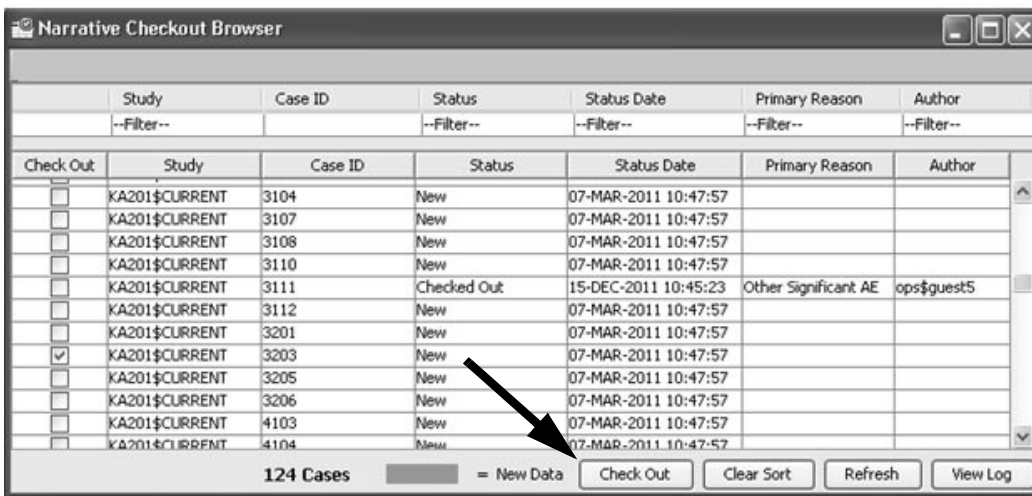
Upon opening the Narrative Check Out Browser window, cases in the the Check Out Browser list will show with green highlighting for 'New Data'. The patient is highlighted when the date of any data item in the database is greater than the last narrative status date for that patient.

---

## Check Out Case

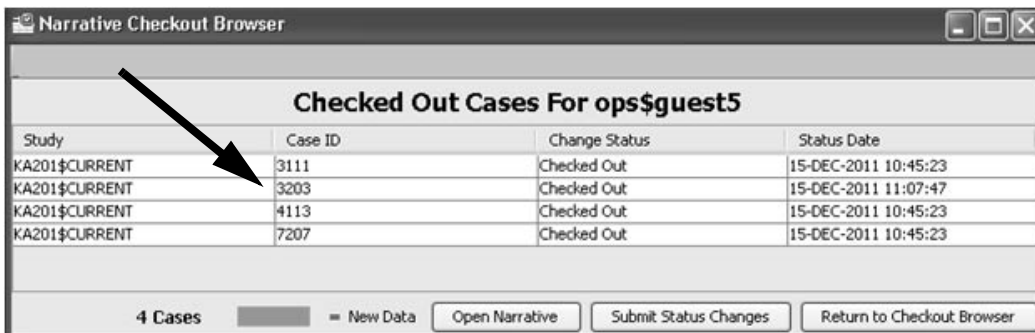
For Medical writers with privileges to access created narrative templates to check out and enter patient narratives; the Check Out Browser window is different than for users with view only privilege. The Medical Writer is able to open the narrative, change the status, or return to the CheckOut Browser.

1. To initially checkout a patient, select a case by clicking the **Check Out** box for the patient row. You may select multiple patients for check out.
2. Click on the **Check Out** button.



3. The selected case(s) is added to the **Checked Out Cases** list, for the Medical Writer to access the patient narrative.

Select a case by highlighting the patient row. Click the **Open Narrative** button. (See steps to enter patient narrative.)



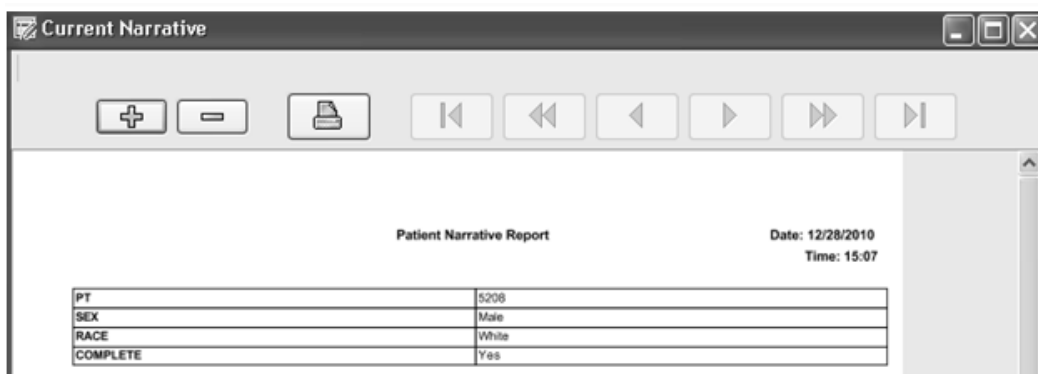


Patient Narratives may be printed in PDF or RTF formats. A print server is required to support the patient narratives print options.

1. Click on the **Narrative Check Out** icon in the tool bar, or select Narrative Check Out from the **Browse** menu.
2. Select a case in the list and click the **View Narrative** button.

The **Current Narrative** window displays icons for support features to changing the image size, print narrative, and move between pages.

3. Click on the Printer icon.



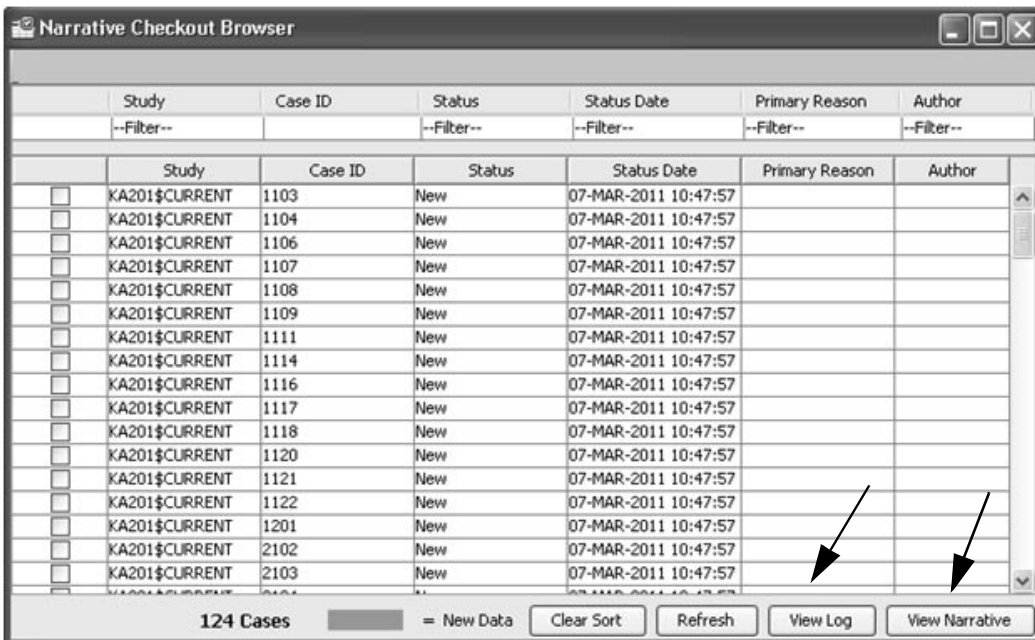
# View Check Out Browser and Patient Narrative

## View patient narratives

Users with the privilege to **view** narratives that have been created by the Medical Writers, may access the **Narrative Check Out** Browser.

1. Click on the **Narrative Check Out** icon in the tool bar, or select Narrative Check Out from the Browse menu.

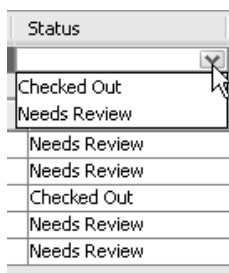
The **Narrative Check Out Browser** window allows users with view privilege to select patients for **View Log**, and **View Narrative**.



---

### Filter columns

- The **Narrative Check Out Browser** window allows filtering on the Study, Status, Status Date, Primary Reason, and Author. Click on a filter column to display the drop down filter list..



Use the **Clear Filter** button to remove all filter entries.

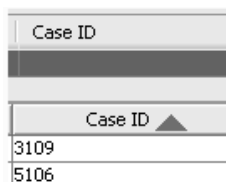


---

### Sort columns

- The user is able to sort the various columns within the spreadsheet. Individual columns may be sorted by clicking on the column header to display sort arrows.

Click the arrow display to change sort from ascending or descending options. Use the **Clear Sort** button to remove all column sort entries.



- Select a case by highlighting the patient row. Click the **View Log** button to view the **Narrative Log** for that case.

Study	Case ID	Status	Status Date	Author
KA201\$CURRENT	5208	New	23-DEC-2010 07:23:28	
KA201\$CURRENT	5208	Checked Out	23-DEC-2010 07:29:43	ops\$guest9

- Select a case by highlighting the patient row. Click the **View Narrative** button to view the **Current Narrative** for that case.

The **Current Narrative** window displays icons for support features to change the image size, print narrative, and move between pages.

The screenshot shows a software window titled "Current Narrative" with standard window controls (minimize, maximize, close) in the top right corner. Below the title bar is a toolbar containing icons for zooming in (+), zooming out (-), printing, and navigation (back, forward, and search). The main content area displays a "Patient Narrative Report" for a patient with ID 5208, dated 12/28/2010 at 15:07. A table lists patient details: PT (5208), SEX (Male), RACE (White), and COMPLETE (Yes). Below the table, a "Narrative" section describes a 76-year-old White Male randomized to the study. A scatter plot titled "Scatter (ItemX vs ItemY) Plot" shows Height (Y-axis, 60-70) versus WEIGHT (X-axis, 150-160). A single data point is plotted at approximately (152, 68) and labeled "Male". The plot is identified as "Study: KA2015CURRENT" and "PSC: Demography.PT =5208". The page number "Page 1 of 1" is visible at the bottom right of the window.

Patient Narrative Report		Date: 12/28/2010
PT	5208	Time: 15:07
SEX	Male	
RACE	White	
COMPLETE	Yes	

**Narrative**  
A 76 year old White Male was randomized to the study and received the Active treatment. Detail Graph object added for narrative.

Scatter (ItemX vs ItemY) Plot  
Study: KA2015CURRENT  
PSC: Demography.PT =5208

Height

70

60

150

160

WEIGHT

Male

Page 1 of 1

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