**SIEMENS**

*syngo*® Dynamics

Online Help - Portal Manual

VA20

**Answers for life.**

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# Manufacturer Note

**CE** 0123

Whenever the hardware is necessary to start the supplied software, the CE mark is provided in accordance with, if applicable, Electro Magnetic Compatibility Directive 2004/108/EC and / or Low Voltage Directive 2006/95/EC.

The software described herein is CE-compliant in accordance with Directive 93/42/EEC Appendix II of June 14th, 1993.

The CE marking applies only to Medical Devices which have been put on the market according to the above mentioned EC Directive. Unauthorized changes to this product are not covered by the CE mark and the related Declaration of Conformity.

Siemens reserves the right to modify the design and specifications contained herein without prior notice.

Please contact your local Siemens Sales representative for the most current information.

US Patent 7,636,899

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# Introduction

*syngo* Dynamics is aimed at providing physicians and staff with fast, easy access to important patient data. *syngo* Dynamics has made the all-digital cardiology department a practical reality, incorporating images and information from echocardiography, cardiac catheterization, nuclear medicine, OB, and ultrasound departments. Ease of use, customizable reporting templates, and clinical tools all combine to provide our customers with improved workflow efficiencies and help provide optimal patient care. *syngo* Dynamics supports a streamlined, rapid and efficient decision-making process based on better and more accessible information.

This document introduces you to the way of working with the *syngo* Dynamics software.

For better readability, we refer to the user in the masculine form.

All parameters and images shown in this document are examples. Only the parameters displayed in your system are definite. All names and data of patients and institutions that are used in this document are entirely fictional. Any resemblance to names of existing people or organizations past or present is entirely coincidental.

Configuration-dependent designations are names of drives, network nodes, and databases. The names that are used in this document are usually not the same as the designations to be found on a particular installation of the system in a clinical environment. For confidentiality reasons, some of the data may have been masked in the images.

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# *Intended Use*

*syngo* Dynamics is an image and information system intended for acceptance, transfer, display, storage, archive and manipulation of digital medical images, including review, analysis, quantification and reporting.

As a Cardiology PACS and information system, *syngo* Dynamics supports the physician in interpretation and evaluation of examinations within healthcare institutions, in particular, in Cardiology, Obstetrics and Gynecology or other departments.

*syngo* Dynamics is not intended to be used for displaying of digital mammography images for diagnosis in the U.S.

## Responsibility Statement

The evidence-based reporting in *syngo* Dynamics is intended to be a supporting tool for the diagnosing physician. Physicians should look at all relevant images and measurements prior to concluding on a diagnosis. While Siemens may provide sample templates for user customization, the accuracy and appropriateness of clinical phrases, clinical observations, and user-defined measurements and calculations in *syngo* Dynamics worksheets and reports are the responsibility of the diagnosing physician and/or facility.

All quantitative data ranges are derived from the clinical experience of echocardiology laboratories and are included in observation libraries for *syngo* Dynamics users. Siemens strongly recommends that clinicians review these ranges with their individual diagnostic needs in mind prior to using *syngo* Dynamics for clinical reporting.

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# *Legal Notes*

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## User Profile

Please note that the following profiles may vary in practice depending on (hospital) organization, qualification, and personal responsibilities and can only be considered as a general guide.

The following profiles may vary depending on the site, qualifications, and personal responsibilities. They should be considered general guides.

**Technologist**  The technologist is responsible for quality assurance of images, including the preparation of images for reading. This preparation includes manipulation of image size, position, or windowing values; creation of preliminary markers or measurements; generation of additional result series, for example, parallel ranges; and sending data for archiving.

Technologist must have the proper training, work experience, product training certification or comparable product experience.

**Physician**  The physician performs the imaging examination, reporting of patient images, completing and / or verifying reports, interventions, and justifying indications. The physician is responsible for the safety of patients.

The physician must be a doctor of medicine and have the proper training, work experience, and product training certification or comparable product experience.

**Clinical Administrator**

The clinical administrator configures application settings, DICOM nodes, archiving, and manages short term storage and licenses, performs patient data administration, and is the first support contact for reading physicians.

The clinical administrator is an application specialist who has work experience, product experience, knowledge of the clinical workflow, and is English speaking.

**IT Administrator**

The IT administrator is responsible for data security, data protection, user management, configuration of DICOM nodes, as well as backup and archiving. The IT administrator manages the IT infrastructure of the clinical network, and is responsible for the administration and configuration of IT components.

The IT administrator must have expert knowledge of networks, operating systems, user administration, knowledge of the workflow, and is English speaking.

## Training

*syngo* Dynamics can be used intuitively. Nevertheless, a training course tailored to your specific user situation is mandatory.

To enable users to routinely operate the *syngo* Dynamics system and give them the necessary theoretical and practical experience for the efficient usage, different kinds of training are available:

- User documentation packaged as part of the *syngo* Dynamics software package
- Integrated Help, which is part of the respective application
- Classroom trainings which take place at the Siemens Training Centers
- On-site trainings which provide the most intensive training for you. The trainings are conducted by trainers from the local Siemens organization. On-site trainings can be optionally extended depending on your specific needs.

If you require an additional training, please contact your local Siemens Sales Representative.

# *Documentation Overview*

The *syngo* Dynamics software offers several levels of user assistance, beginning with tooltips on the screen, and accompanied by the basic Online Help and Operator Manual.

The Online Help are available only in English and is applicable for the tools and applications designed to be used with/for the *syngo* Dynamics software. The basic Operator Manual, if available, is localized and contains safety advisories and information on frequently-used user interaction.

## Conventions Used in this Documentation

To help you find and understand the appropriate information, the following visual orientation aids are used:

◆         One-step operation

1         Operating sequence

■         List item

➡         Guidelines

Bold letters   Any user interface item, such as Window titles, menu items, function names, field names, and buttons are written in bold letters

!         Note for optimal handling

Screenshots   Screenshots that are intended to illustrate general principles are shown in a neutral form for greater simplicity. Screen shots that illustrate instructions contain text to show the context within the application.

## Labeling of Safety Advices

Cautions are specially marked in the documentation.

The content of a caution is structured in three different sections:

- Source of danger
- Consequence
- Countermeasure

**Caution**    CAUTION indicates potential risk that may result in minor physical injury or material damage.

---

⚠️ CAUTION

First, the source of danger is addressed!

**Then, possible consequences are described.**

- Finally, measures are given to prevent a dangerous situation.

---

## Safety Advisory

! All safety advisories that users need to consider for the use of *syngo* Dynamics are noted in the *syngo* Dynamics Safety Advisory manual. Refer to this manual specific to the software version installed at your hospital.

Additionally, all safety advisories applicable in an application workflow are indicated in the respective manual where the workflow is described.

# *Getting Started*

The information in chapter "Getting Started" helps you to quickly start working with *syngo* Dynamics. It familiarizes you with the most important concepts and the basic operating elements of *syngo* Dynamics.

The basic screen layout for the components associated with a study is explained in the images below. The portal layout is also similar with minor differences.

**Study List layout**



Toolbar with Search options/open report & worksheet options

Study list column headings

Study list

Password change/Logout/Help/ Page scroll options

**Image layout**



Study details

Patient details

Image thumbnails

Images in the chosen layout

Toolbar to work with images and open reports/worksheets

Logout/Help/Page options

Toolbar to scroll images/clear images
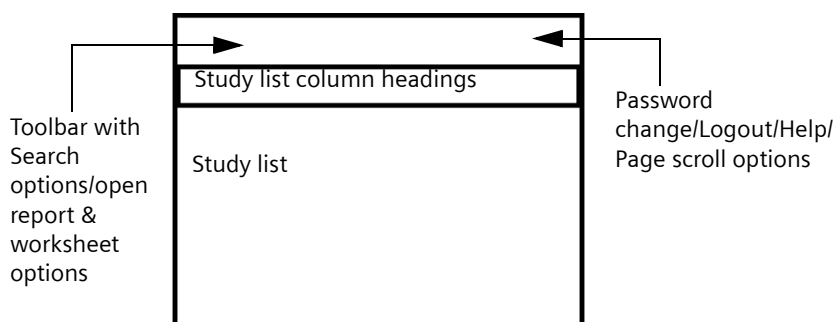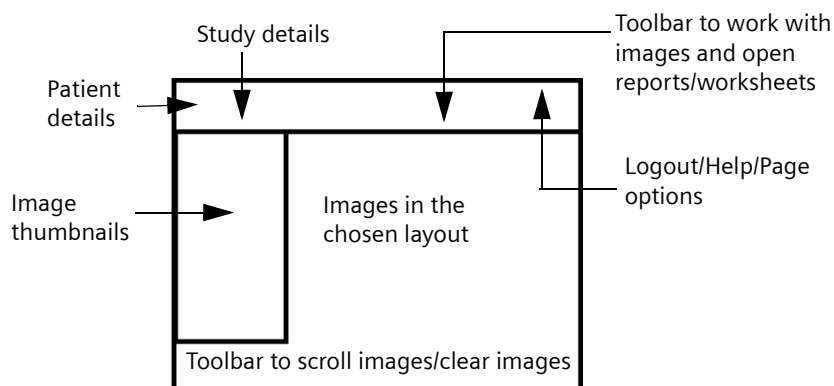
**Report and Worksheet layout**

Study details

Patient details

Toolbar to work with reports/worksheets

Report details

Worksheet details

Toolbar to work with reports/worksheet templates
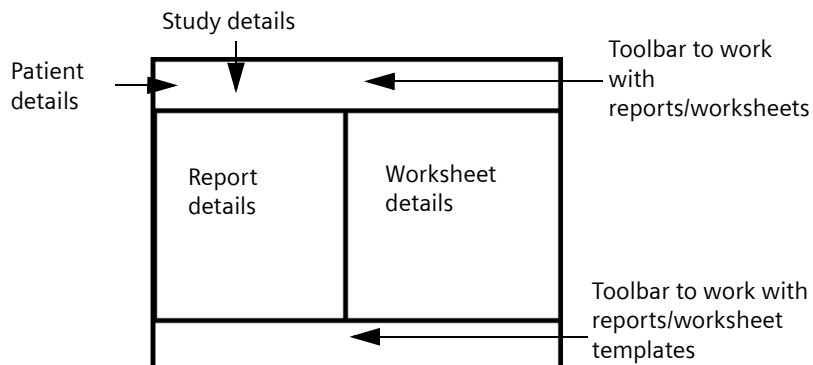
The exact screenshots of the specific items mentioned in the layouts are available in the pertinent sections in the topic describing a task involving the layout item.

# *Portal Overview*

The *syngo* Dynamics Portal (Portal) application allows you to view images on a wide variety of display hardware and presents both additionally compressed and original quality images.

Portal allows you to use standard Web browser software (such as Internet Explorer) to open and read patient studies and review the following types of images:

- Ultrasound (US)
- X-ray angiography (XA)
- Computed tomography (CT)
- Magnetic resonance (MR)
- Secondary capture (SC)
- Computed radiography (CR)
- Digital X-ray (DX) images
  CR and DX are designated as XR.

You can also double-check measurements and re-measure images, enter observations on worksheets, and update and verify patient reports.

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# Hardware and Software Specifications

This topic contains information on the hardware and software specifications recommended to install the *syngo* Dynamics Portal.

| | |
|---|---|
| Memory | 1GB RAM minimum |
| | 2 GB RAM recommended |
| Color Display | 17" or larger monitor recommended |
| | 1280x800minimum resolution |
| | 1280x1024 recommended resolution |
| Video Card | 24-bit minimum |
| Web Browsers | Internet Explorer 8.0 to IE 11.0 |
| | OR |
| | Mozilla Firefox v34 or greater |
| | OR |
| | Chrome v34 |
| | Requires Java and JavaScript support set to "Full Screen" mode |
| Operating Systems | Microsoft Windows 7 or higher |
| Connection Methods Supported | Intranet: Local Area Network Enterprise required |
| | Internet: Firewall and other internet access is the responsibility of the customer |
| | Point to Point Modem: ISDN line recommended |
| Web and Other Applications | Microsoft Silverlight Version 5.0 or higher |
| | Microsoft .NET Version 4.5.2 |
| | Adobe Acrobat Reader Version 8.0 or later |

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# Installing syngo Dynamics Portal

## Installing Portal Client on a Client Machine

Refer to "Hardware and Software Specifications" on page 21 for information on the hardware and software required for *syngo* Dynamics Portal Client installation.

Please go through the following considerations before you start the installation process.

■   The Portal application installer checks for all supported operating systems and it can be installed only on the following operating systems: English, German, Swedish, Spanish, and Portuguese.

■   The *syngo* Dynamics Portal installers run on all supported client operating systems irrespective of the level of the User Access Control (UAC) settings and the mode of installation (i.e., browser or silent). You can set the UAC settings from the Control Panel. If the UAC level set is anything other than **Never Notify**, a message box is displayed requesting for user approval to proceed with the installation that is being performed.

## Configuring Internet Explorer Security Level

If your Internet Explore security level is set to medium-high or higher, you will be prompted to re-install Portal components, such as those in the next sections. If the security setting is set to medium and the Internet Explorer window is closed and re-opened, Portal installation will proceed.

Perform the following steps to change your security settings.

1   In the menu bar, click **Tools** and select **Internet Options**.

2   Select the **Security** tab.

3   In the **Security** level for this zone section, click **Custom level**.

4   In the **Reset Custom Settings** section under **Reset to**, click on the arrow and select **Medium** from the list.

5   Click **Reset**, and click **Yes** in the dialog box when it displays.

**6**   Click **OK** and **OK** again.

## Installing Adobe Reader

To view reports, you need Adobe Reader Version 8.0 or later to view PDF files in a Web Browser. Download the latest version from http://www.adobe.com/downloads.

## Installing Microsoft Silverlight

To install Microsoft Silverlight 5.0 or higher, you must have administrator privileges.

**1**   Using a supported browser, type in the address http://servername/sdportal substituting servername for the name of the server where the sdportal is installed.

**2**   Using a user name configured in SysAdmin to have "remote access" privileges, log in to *syngo* Dynamics Portal (see "Logging in to syngo Dynamics Portal" on page 37).

If your computer does not have Microsoft Silverlight installed, the *syngo* Dynamics Portal: Install Silverlight screen is displayed.



**syngo Dynamics Portal: Install Silverlight**

The syngo Dynamics Portal requires that Microsoft Silverlight be installed on your computer. Silverlight is a relatively small ( ~ 6 Megabyte ) download. Silverlight works in the Internet Explorer, Firefox, or Safari browsers.

1. If you have a direct connection to the internet, click here to download Silverlight from Microsoft. If you do not have a direct connection to the internet, select Windows or Mac to download it from the syngo Dynamics Portal web site.

2. A dialog should appear asking "Do you want to run or save this file?" or something similar. It varies from browser to browser. Please save the file.

3. After the file is saved, run the file. There may be a 'Run' button somewhere, or you may have to double-click the file. It varies from browser to browser.

4. You may be asked "are you sure you want to open this file?". Please click 'OK' or 'Run'.

5. A bright blue Silverlight dialog should appear. Click 'Install now'.

6. You may see a screen that says 'Enable Microsoft Update'. If so, uncheck the 'Enable Microsoft Update' box and hit the 'Next >' button.

7. An 'Installation successful' screen should appear. Click the 'Close' button.

8. You are now ready to run syngo Dynamics Portal. Click here to begin.

More Information / System Requirements

3   Click the link in the on-screen instruction that applies to your particular situation.

4   Follow the on-screen instructions to install Microsoft Silverlight.

Ensure that you select **Never Check for Updates** to disable automatic updates. (

5   After the installation is successfully completed, click **Close**.

6   Click the link to return to the Login screen.

You can now log in to *syngo* Dynamics Portal (see "Logging in to syngo Dynamics Portal" on page 37 for instructions).

## Installing Client Components

You can install the client components through the browser or remotely in the silent mode.

!   User account must have Windows administrative rights to install the client components.

**Browser Installation**   The first time you click on either the report tab or the Original Quality Vewer button, the Additional Components window will appear. This window will display the required software for *syngo* Dynamics Portal.

You must install these features in order for *syngo* Dynamics Portal to work properly. When you click one of the links, you will be prompted through a series of install screen similar to other software installs.

Depending on the type of Internet connection, it takes between 1 and 2 minutes to download the applications. Alternately, you may perform the following steps.

1   Enable ActiveX controls in Internet Explorer.

2   Open Internet Explorer.

3   Go to **Tools -> Internet Options ->Security** tab.

4   Click **Custom** level.

5   Enable everything that says ActiveX.

6   Launch *syngo* Dynamics Portal in browser by specifying http://<server name>/sdportal.

7   Open a study and then open image.

**8** Click **Original** in the lower right pane of the image.
The Additional Components window is displayed.



**9** Click **Install NET Framework 4.5.2** and run the installer.
To use the reporting features, you need to install .NET Framework 4.5.2.

Customer sites installed with a Microsoft OS in a language other than English (German, Swedish, Spanish, or Portuguese) will require the supported **Microsoft .NET Framework Full Language Pack** to be installed. If not installed, studies may fail to appear in the *syngo* Dynamics Study List.

**10** Once this is done, click **Install *syngo* Dynamics Components** and run the installer.

**11** Close the window.

> **!** If ActiveX is not enabled, it will ask you to install *syngo* Dynamics Components over and over again.

**Silent Installation**    To perform the silent installation or upgrade, include the following command at the command prompt.

```
msiexec /i {path}WSC.Setup.20A.msi /quiet /l {path}sd.log
```

The .msi is located at
C:\inetpub\wwroot\sdportal\Installers\WSC.Setup.20A.msi.

You will receive a response in the command prompt on the installation complete. *syngo* Dynamics Portal installation can be deemed complete only after this. To validate the installation, go to **Programs and Features** in **Control Panel** and search for *syngo* Dynamics **Portal (VA20A)**.

## Uninstalling *syngo* Dynamics Portal

You can uninstall the client components from the Control Panel or remotely in the silent mode.

**Uninstalling from Control Panel**

Perform the following steps to uninstall the *syngo* Dynamics Portal from the server or the client.

1   Navigate to **Control Panel -> Programs -> Programs and Features**.

2   Scroll down until you find *syngo* Dynamics **Portal (VA20A).**

3   Right-click *syngo* Dynamics **Portal (VA20A)** and select **Uninstall**.

The *syngo* Dynamics Portal and its associated components are removed.

**Uninstalling Silently/Remotely**

You can uninstall the *syngo* Dynamics Portal software silently without the Portal user knowledge or intervention. To uninstall silently, include the following command at the command prompt.

```
msiexec /x {guid} /quiet /l sduninstall.log
```

All remote uninstallations can be done using the command line options of the installer. To push the uninstallations on the network remotely from the server, you could either write a script or use the Software Deployment tool.

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# syngo Dynamics Mobile

A touch-enhanced website or web application (*syngo* Dynamics Mobile) allows you to access the study list, perform searches, view images, and display PDF versions of reports. Worksheets are not available for viewing. The information displayed is "read only" and cannot be changed.

**!** *syngo* Dynamics Mobile is for non-diagnostic use only.

**Software Requirements**   The *syngo* Dynamics Mobile runs on Safari, which comes standard on the iPad and iPhone. *syngo* Dynamics Mobile is designed for optimal performance on the iPad and iPhone.

The *syngo* Dynamics Mobile application is also supported on mobile devices with an Android Operating System greater than version 4.2.2. However, in Android devices, it may or may not function as designed.

**!** This manual contains *syngo* Dynamics Mobile access and use information pertaining to iPad only. Though accessibility and usage of *syngo* Dynamics Mobile pertaining to Android devices is not available in this manual, the information is similar. Differences, if existing, have been noted at appropriate locations in the manual.
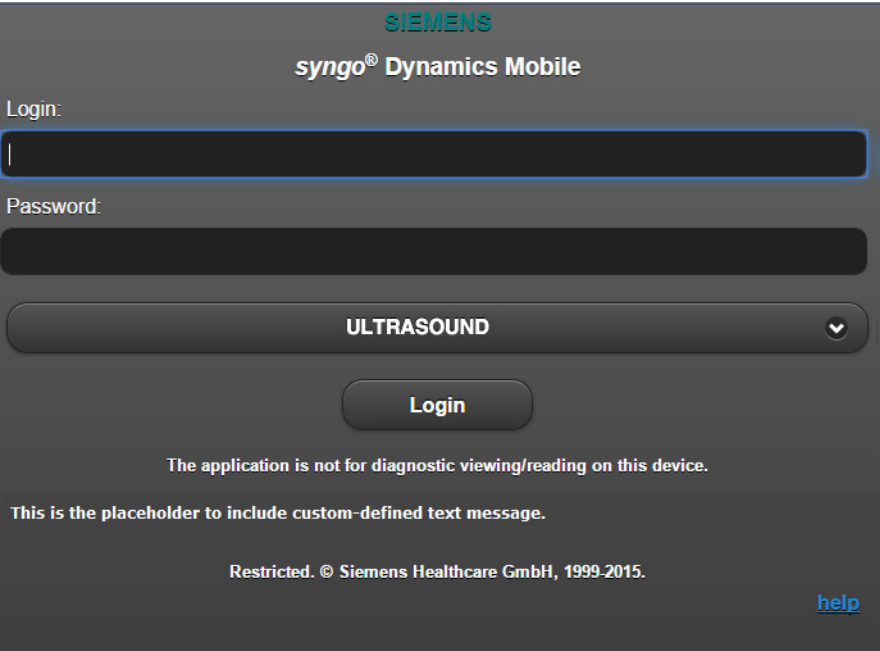
## Logging in to *syngo* Dynamics Mobile

If Active Directory integration exists and you have been configured as an Active Directory user by your system administrator, you can log on to the Mobile application using your Active Directory credentials. If the Active Directory server is offline, you can log on to the Mobile application using your local user credentials. For more information, refer the *syngo* Dynamics Server Installation Manual specific to the software version installed at your hospital.

**!** Irrespective of the Active Directory integration, you may choose to log on to the system using your local user credentials.

To log in to Mobile, you must be granted the privilege to log in to *syngo* Dynamics. See your system administrator for details. Perform the following steps to log in to *syngo* Dynamics Mobile in an iPad.

1   Touch the Safari icon on the bottom of the screen. Safari should be set to accept "cookies".

2   At the top of the screen, touch the navigation bar.

3   When the keypad displays, type in the IP address or name of your server:
    http://<server name>/sDmobile
    The server IP address or name differs depending on your *syngo* Dynamics Server configuration.

4   Touch **Go** on the keypad.



If you have not created a bookmark for *syngo* Dynamics Mobile, you can do so now. Go to the menu bar at the top of the page, click on the ⬆️ icon, and select **Add Bookmark**.

5    Touch the Login field and type in your *syngo* Dynamics user name.
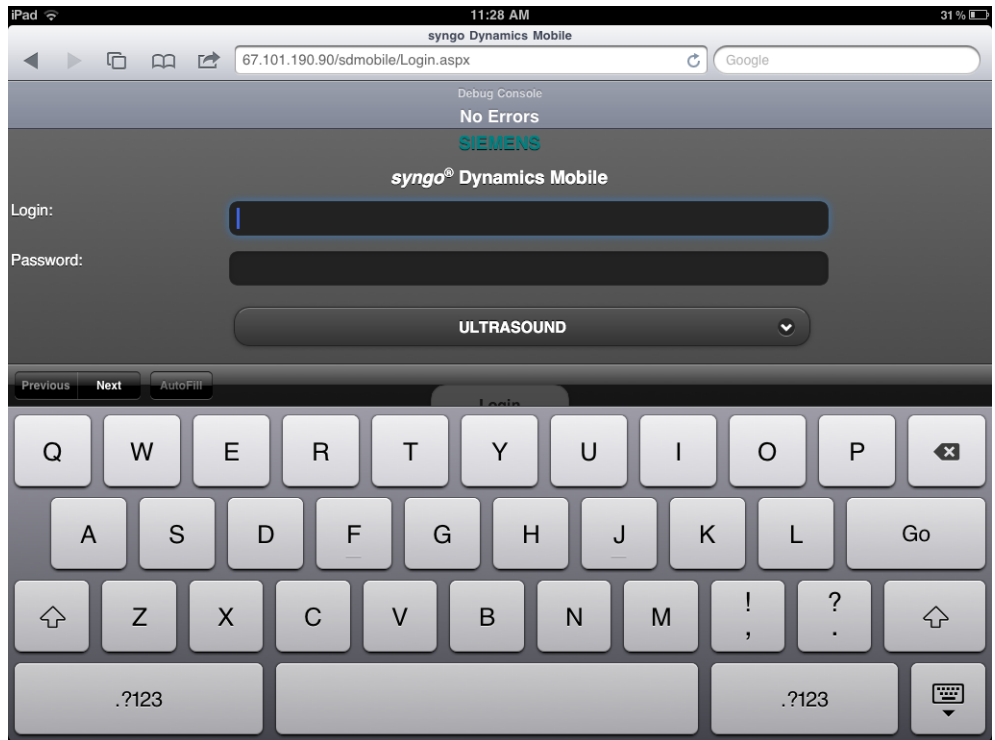


6    Touch the Password field and type in your *syngo* Dynamics password.

7    Touch the arrow in the department field and select your department when the list displays.

**8**   Touch **GO** on the keypad or the **Login** button on the page. The study list will display. By default, all studies acquired on the current date (Today's) are displayed.

Now you can search for your studies.
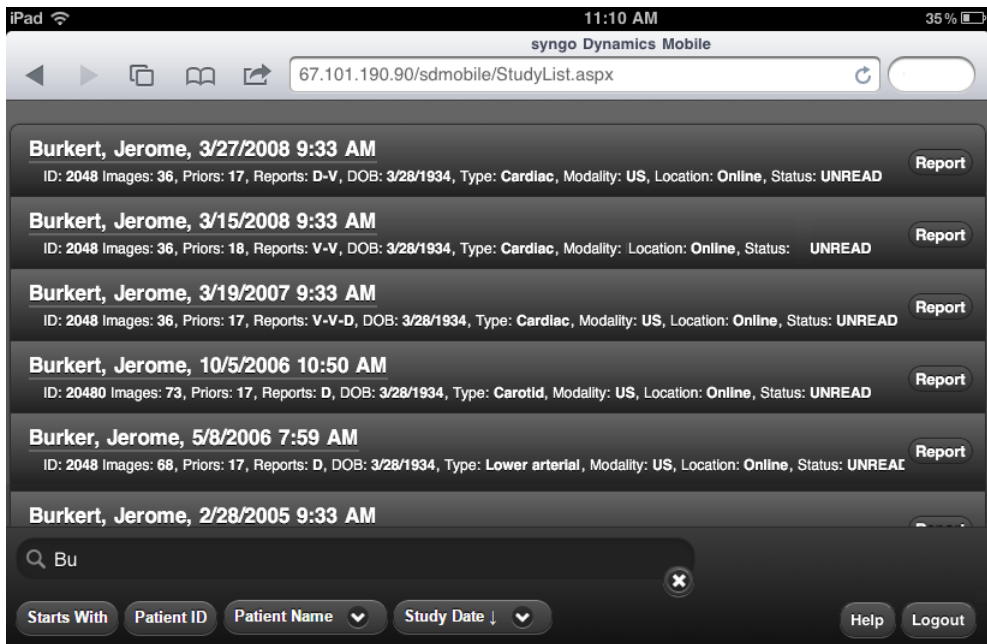


## Performing Study List Searches with *syngo* Dynamics Mobile

To perform a quick name search, touch the search field on the bottom of the page. When the keypad displays, type in the first few letters of the name and touch the **Starts With** button.

To search by Patient ID, touch the search field. On the keypad touch the number key to change the keypad from letters to numbers. Type in the patient ID and touch the **Patient ID** button.

To see unread studies in the study list for a period of time, such as three days, touch the **All Unread** button on the bottom of the page and select the time period from the list. Or, select **All Unread** to see all of the unread studies in the study list.

To see studies performed on a certain date, touch the Study Date button and enter the date of the study you want to view**.**

The study list is limited in size, which means that each search returns a fixed number of studies. To locate a study that is not in the current list, you must add more information to your search criteria.

**!** Field search is not supported on Mobile.

## Viewing Images on *syngo* Dynamics Mobile

| ⚠️ CAUTION | Compression for Mobile Portal viewing causes inadequate image quality.<br>**Misdiagnosis: undetected image quality problem with compressed images**<br><br>◆ *syngo* Dynamics Mobile allows users to view images and presents additionally compressed images. Images that have been compressed by a lossy method are of lower diagnostic quality than the original images. Lossy compressed images are not intended for primary diagnosis. |
|---|---|

Perform the following steps to view images.

1  In the Study List, double-click the desired study.

The study images begin to load. Depending on the type of connection to the *syngo* Dynamics Mobile, it may take a few seconds for the images to display.

The screen displays the thumbnail pane. This panel displays smaller versions (thumbnails) of all of the images and clips included in the selected study.

When a study has multiple series, a list appears in the toolbar. You can select the series you want to view from the **Series** drop-down list.

For US and NM studies only, the **All Series** option is selected by default. The **All Series** option is not displayed for Stress Echo studies.The **All Series** option, when selected, displays all the series of the currently loaded study one after another in the same order as listed in the **Series** drop-down list. The study with series may be present in *syngo* Dynamics or may be opened from the media or from the local cache.

2    Touch the thumbnail version of the image or images that you want to view, and the selected image will display.

There are some limitations to images in Mobile:

■ Measurement tools and image tools are not supported on Mobile.

■ Mobile does not show differences between stress and non-stress echo studies.

■ No biplane display or edge enhancement is available.

■ Images with DSA masking always display with masking turned on.

■ Only one clip can play at a time.

■ Mobile site clips cannot be viewed on iPad with self-signed certificate. This is because of a security issue enforced by the iOS operating system. For information on the resolution, refer the Siemens Knowledge Base (SKB).

■ Some Android devices may not support automatic video play for clips. Click the available button to play the clip.

## Viewing Mobile Site Clips with Self Signed Certificate

Mobile Site clips cannot be viewed on iPad with Self Signed Certificate

If a self-signed certificate is used for SSL connections on the mobile (sdmobile) site, the iPad will not load clips correctly. A black window will display and using the controls or clicking on the clip frame will display the following message - **You are not authorized to open this file**.

This issue has not been observed when using a certificate from a Trusted Root Authority.

This appears to be a security issue enforced by the iOS operating system.

Use the following article to attempt to install the self signed certificate on the iPad, http://support.citrix.com/article/CTX130173.

Apple does not appear to have official instructions on installing self signed certificates, however, and this ability may be deprecated in future release versions of Apple products.

Another option, if SSL is necessary, is to use a certificate provided by a Trusted Root Authority.

Please contact Apple for support on this issue.

## Viewing Reports on *syngo* Dynamics Mobile

Perform the following steps to view the report for a study.

1   Touch a study in the study list to select it.

2   Touch the **Report** button to the right of the study. A PDF of the report will display. If there is no report for the study, a blank report template will display.

## Finding Help

1   Touch the **Help** button in the bottom right corner of the screen to display the Help screen.
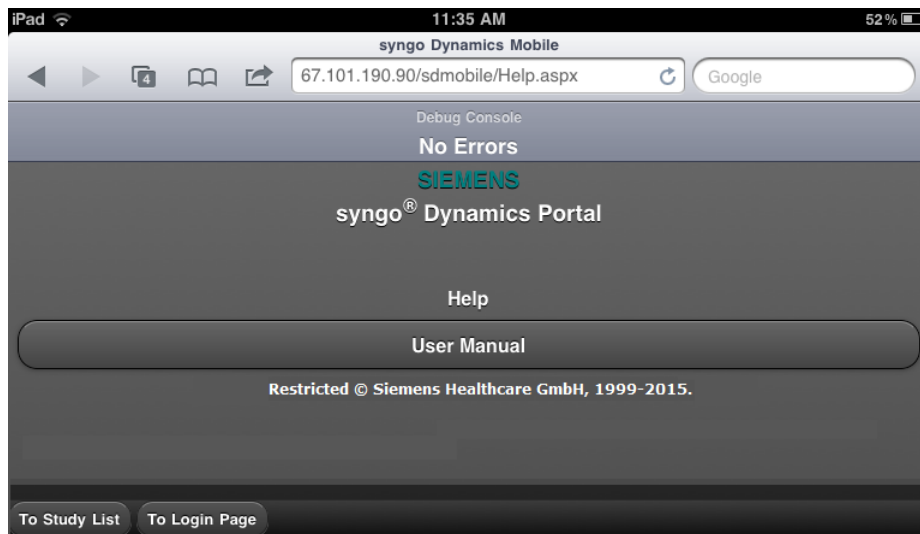
2 Touch the **User Manual** button bar to access the manual.

At the bottom of the page, touch the **To Study List** button to go to the study list.

Touch the **To Login Page** to return to the login page.

## Logging out of *syngo* Dynamics Mobile

To log out of Mobile, return to the study list page, and touch the **Logout** button at the bottom of the page.

# Accessing Portal

Ensure that you have the supported Microsoft Operating System environment for launching the Portal application. Do not use the *syngo* Dynamics Portal application for diagnostic purposes if you do not have the supported Operating System. We strongly recommend that you upgrade to the supported Microsoft Operating System.

## Logging in to *syngo* Dynamics Portal

If Active Directory integration exists and you have been configured as an Active Directory user by your system administrator, you can log on to the portal using your Active Directory credentials. If the Active Directory server is offline, you can log on to the portal using your local user credentials. For more information, refer the *syngo* Dynamics Server Installation Manual specific to the software version installed at your hospital.

**!**   Irrespective of the Active Directory integration, you may choose to log on to the system using your local user credentials.

To log in to Portal, you must be granted the privilege to log in to *syngo* Dynamics. See your system administrator for details.

1   Use either of the following methods to log in to *syngo* Dynamics Portal:
    The server IP address or name differs depending on your *syngo* Dynamics Portal Server configuration.

■   Type the following Web address:
    http://*<syngo* Dynamics Server name>/sDPortal
    or

■ Select the bookmark that you created for the *syngo* Dynamics Portal. The *syngo* Dynamics Login screen is displayed.



2   Read the security message at the bottom of the screen. This message reminds you to guard the privacy of the patient information you are viewing.

3   Type your login name and password.

The **Login** and **Password** fields are case sensitive.

Use the same login name and password in *syngo* Dynamics Portal as you do for the *syngo* Dynamics Workplace. See your System Administrator if you forget your login name and password.

4   Select your department from the **Department** list. Please note if a department was just added to the **Department** list it may not immediately display for a period of time.

**5**  Click  **Login**   .

If too many users are currently logged in to the *syngo* Dynamics Portal application, a message is displayed to let you know that all sessions are taken and that you should try to log in again later.

The Study List is displayed. See "Study List" on page 43 for detailed information about the Study List.

| 🔒 | PDF | Patient Name | Patient ID | Date Of Birth | Study Date ▼ | Accession Number | Study Type | Study Status | Reports | Diagnosing Physician | Modality | Study Lo |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | 📄 | Dillow, Raleigh | 777777 | | 7/14/2015 11:48:04 AM | 5324758 | Cardiac | Unread | D-C-D-C-D | Burrough, Melanie | US | |
| | ☑ | Lorentz, Rolland | 14550276 | 11/1/1975 | 7/14/2015 10:50:02 AM | | | Read | V | Burrough, Melanie | US | |
| | 📄 | Mcgovern, Astrid | 12345 | | 7/13/2015 5:41:49 PM | | | Unread | D | Burrough, Melanie | US | |
| | 📄 | Lavold, Antonio | 22000603 | 11/11/1990 | 7/13/2015 1:29:38 PM | | | Read | D | Burrough, Melanie | US | |
| | ☑ | Harwood, Sylvia | 45329677 | 6/10/2002 | 7/12/2015 12:18:55 PM | | | Read | V | Burrough, Melanie | US | |
| | 📄 | Pete, Anne | 32672838 | 6/26/1997 | 7/12/2015 9:38:19 AM | | | Read | D | Burrough, Melanie | US | |

You do not use up any workplace license when you log in to the portal and access images.

Licenses (floating) are used up only when you open a worksheet and/or a report in the reporting component using the **Report**, **&**, or **Worksheet** buttons.

License will also be used up if you have accessed images and made changes to the images that result in the worksheet and/or the report being modified. You would need report modification privileges to make such changes. For example, a floating license will be used up when you access an image without opening the worksheet and/or report and open up the Tool Palette to make generic measurements on the image that ultimately result in the worksheet and/or the report being modified.

If there are no available licenses, a message is displayed indicating the same. You can, however, view worksheets and reports in read-only mode when no license is available. The worksheet and/or report will open in the read-only mode with the following watermark messages displayed on them respectively.

**Watermark message on worksheet**

Worksheet cannot be edited – There are no *syngo* Dynamics licenses currently available

**Watermark message on report**

Report cannot be edited – no reporting licenses currently available

You will need to wait until a license is freed up so that you can open a worksheet and/or a report. The following message is displayed when you open up a study for the first time.

Loading Study from the server
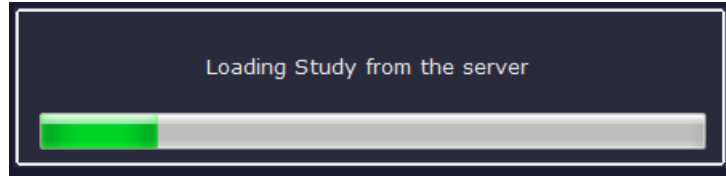
## Changing Passwords in *syngo* Dynamics Portal

You can change your login password only if you are a local user. The options are disabled if you are an Active Directory user.

1   Click ![key icon] on the tool bar to change password.
    The **Change Password** dialog box opens.

2   Enter the old and the new passwords.

3   Re-enter the new password to confirm it.

4   Click **Change**.

A message confirming that password has been changed successfully appears. An error message appears if you have not entered the correct old password or have not re-entered the same new password.

When you change password in the portal, some of your configured workplace preferences reset to default values. You would need to re-configure the preferences.

## Logging Out of *syngo* Dynamics Portal

To log out of *syngo* Dynamics Portal, you can use one of two methods.

■   To log out of the Portal application and the *syngo* Dynamics server, perform the following steps.

1   On the Study List toolbar, click ![exit icon] .

2   Click **Yes** to confirm that you want to exit.

3   Close your Web browser.

■   If your system administrator configures the *syngo* Dynamics Portal application to automatically log you out after a period of inactivity, a message is displayed to inform you that your session expired. To return to the Login screen, click the **To Login Page** link.

## Accessing This Manual Online

Perform the following steps to access the online PDF version of this manual.

1   Click  [?]  (**Help** button), which is located in the upper right corner of the screen.

2   Select **User Manual.**

*syngo* Dynamics Portal API Manual is a related manual that provides programmers with the information needed to integrate software with the *syngo* Dynamics web-based image server. The API (Application Programmers Interface) allows the software to display the images or reports for a specific study. You can find this manual on the User Manual CD.

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# Study List

This chapter describes the information in the Study List and shows you various ways to locate a study in the *syngo* Dynamics database. This chapter also shows you how to customize the display of the Study List so that it suits your particular style and preference for viewing patient study data.

## Displaying the Study List

There are two ways to display the Study List:
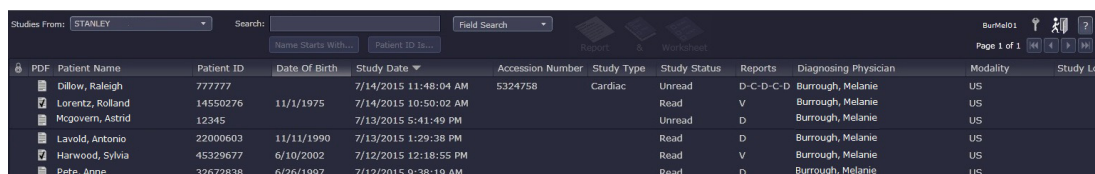
■ Log in to *syngo* Dynamics. The Study list is automatically displayed.

■ From anywhere in the application, display the Study List by clicking the Help button [?] .

   This is located in the upper right corner of the screen, and then selecting **To Study**.

## Information on the Study List

The Study List contains all of the patient studies in the *syngo* Dynamics database. If you are granted the privilege to view all studies in a department, you can see all studies in the Study List and the Work List. If your *syngo* Dynamics system is configured to filter studies by Login name, you see only the studies assigned to you when you log in.

The following figure shows you an example of the Study List:



By default, when you display the Study List, all studies acquired on the current date (Today's) are displayed. You can use different filters to view only those studies you are interested in (See "Finding a Study" on page 49.) for details.

Up to 5 (inclusive) physicians and technicians can be assigned to one study. However, only one physician/technician can be assigned at one point in time.

The study list displays the name of the physician/technician to whom the study is last assigned. When read or verified, the names of all the physicians and technicians who have read/verified the study appear in the study list delimited by "\".

The table below lists the information provided in the Study List:

In addition to Patient Name and Patient ID, some sites identify patients by Site ID. This unique ID can reduce conflicts if two patients from different locations have the same ID or if there are two different IDs for the same patient. If your site is configured to use site IDs, the Study List includes a column labeled "Site ID".

| Column Heading | Description |
|---|---|
| 🔒 | Indicates that the study is locked.You can access the study, but it is read-only. The lock icon indicates that the study is currently opened by another user who is on the Workplace or at another Portal location. Thus, multiple users are prevented from changing study data.<br><br>To find out who is currently accessing a locked study, position your mouse over the icon. An informational box is displayed that contains the name of the user, a timestamp, and the IP address of the workstation. |
| PDF | A document icon next the study indicates that a PDF report is available for the study. A tick mark on the icon indicates that the report is verified. Click to view the report. |
| Patient Name | The name of the patient (last name followed by first name). |
| Patient ID | Unique medical record ID of the patient. |
| Date of Birth | Date of birth of the patient. |
| Accession Number | Unique Hospital Information System (HIS) or Radiology Information System (RIS) number. |
| Study Type | Type of study (for example, adult echocardiogram or exercise stress). |
| Modality | Type of machine that the image originated from. |
| Study Date | Date the study was performed. |
| # of Images | Number of images available. |
| Study Location | Location where the study is present from the server standpoint.<br><br>Examples are Online (if study is on the server), PACS (if study is archived to PACS), and Nearline (if study is in a media in the library) |
| Prior Studies | The number of prior studies that were performed. Double-click to view the list of prior studies. |

| Column Heading | Description |
|---|---|
| Study Status | Status of the study as "Read" or "Unread". |
| Reports | Status of each report as "D" (Draft), "C" (Completed), or "V" (Verified). For information on changing the status of a report, see "Changing the Status of a Report" on page 132. |
| Indication | Numeric code and associated description of purpose of the study. |
| Diagnosis | Numeric code and associated description of the diagnosis. |
| Technologist | Technologist assigned to the study. |
| Diagnosing Physician | Diagnosing physician assigned to the study. |
| Referring Physician | Referring physician assigned to the study. |
| Custom <number> | Custom fields as configured for a department by the system administrator. |
| Report Upload Status | Status of report uploaded to HIS. |
| Study Performed Location | Physical location where the study is performed, such as the examination room. |
| Server Name | Server name configured for the portal. |
| Department Name | Department name where the study is performed. |
| Master Patient ID | Unique patient ID used to identify patients in an enterprise set up. |

## Adjusting the Width of a Column

To adjust the width of any column in the Study List, place your cursor on the right edge of the column. When you see the double-arrow cursor, click and drag the boundary until the column is the width that you want.



Double-Arrow Cursor
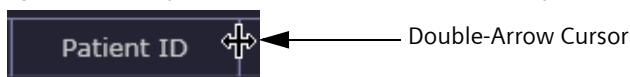
## Sorting Studies in the Study List

The Study List has clickable headers that you can use to sort the list by the column that you select.

1   Click the heading of the column that you want to use as the basis for the sort.

An arrow icon is displayed in the header to indicate the direction of the sort: ▲ (ascending) or ▼ (descending).

2    Click the column heading again to reverse the direction of the sort.

# Refreshing the Study List

The update behavior of an in-progress study depends on the type of machine acquiring the study and that machine's configuration. Some machines update the worksheet as data is acquired. Other machines update the images first and then send data to the worksheet after the study is completed. Still other machines wait until the study ends and then send all images and data to the worksheet.

To make sure that you are viewing the most recently imported study data and images, press **F5** to refresh the Study List.

# Filtering the Study List

By default, the Study List displays patient studies acquired on the current date (Today's). To use a different filter, select an option from the **Today's** list box, which is shown in the following figure.
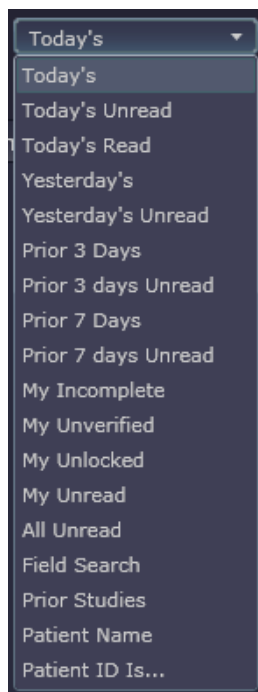
The following table lists the filters and describes their function:

| Filter | Description |
|---|---|
| **Today's** | (Default) All studies acquired on the current date. |
| **Today's Unread** | All studies acquired on the current date with a status of "Unread". |
| **Today's Read** | All studies acquired on the current date with a status of "Read". |
| **Yesterday's** | All studies acquired on the previous day. |
| **Yesterday's Unread** | All studies acquired on the previous day with a status of "Unread". |
| **Prior 3 Days** | All studies acquired in the previous 3 days (including today and the previous 2 days). |
| **Prior 3 Days Unread** | All studies acquired in the previous 3 days (including today and the previous 2 days) with a status of "Unread". |
| **Prior 7 Days** | All studies acquired in the previous 7 days (including today and the previous 6 days). |

| Filter | Description |
|---|---|
| **Prior 7 Days Unread** | All studies acquired in the previous 7 days (including today and the previous 6 days) with a status of "Unread". |
| **My Incomplete** | All studies assigned to the current user that have incomplete reports. |
| **My Unverified** | All studies that have unverified reports and that are assigned to the current user. Reports can be in the completed (C) or draft (D) state. |
| **My Unlocked** | All unlocked studies that are assigned to the current user. |
| **My Unread** | All studies that are assigned to the current user and that have a status of "Unread". |
| **All Unread** | All studies that have a status of "Unread". |
| **Field Search** | Studies selected by using the custom Field Search controls. |
| **Prior Studies** | All previously conducted studies that match the specified patient ID number. |
| **Patient Name** | All studies that match the specified patient name. |
| **Patient ID Is...** | All studies that match the specified patient ID number. |

## Correcting Patient Name or ID Conflicts

Patient demographics (for example, patient name or date of birth) that are entered at a qualified acquisition machine are automatically transferred to the worksheet and the report.

For more information, refer the *syngo* Dynamics Measurements and Calculations Manual specific to the software version installed at your hospital.

To find this manual, click [?] (Help) on the Workplace.

You can also find this manual on the User Manual CD that comes with the product.

A conflict occurs if a study that arrives from an acquisition device has the same patient ID as a study that is already in the *syngo* Dynamics system, but the patient names do not match.

The system alerts you about the problem by displaying the **Resolve Name/ID Conflict** button under the **Patient Name** or **Patient ID** field on the worksheet.

Perform the following steps to correct the problem.

1    Open the patient's worksheet.

**2** Click [ Resolve Name / ID Conflict ] .

A screen is displayed that provides information about the source of the conflict. For example:



**3** Follow the on-screen instructions to correct the problem.

**4** Click **Resolve** to save the change or click **Cancel** to exit without saving the change.

After the conflict is resolved, the **Resolve Name/ID Conflict** button disappears from the Study List.

# Finding a Study

You can use several methods to find a study in the *syngo* Dynamics database:

- ■ Scroll through the Study List

- ■ Search for a specific patient name, patient identification number (ID), or site ID

- ■ Use a custom field search.

You are able to perform a single department search or an enterprise search by selecting the enterprise option.

Based on your department configuration, the search results automatically display studies associated with the patient and that have been conducted across departments in the enterprise setup. Alternately, you may manually search the enterprise for all studies. Refer "Perform the following steps to perform an Enterprise search." on page 50.

## Prior Studies Enterprise Search

To perform an enterprise-wide search for a particular study or studies previously performed for a patient, your username and password must be defined in all departments on all servers that you wish to access. Enterprise Search

The conditions for a standard Enterprise search are the same as those above for a Prior Studies Enterprise search.

Perform the following steps to perform an Enterprise search.

1  Click **Studies From** at the top of the Study List on the left and select **Enterprise**.

2  Click on the **Search** menu on the right side of the Study List and select a standard search query or use the **Quick Search** at the top of the Study List.

   The Study List will be filled with studies that you have the privileges in SysAdmin to access. As soon as a study appears in the Study List, you can select and open it even if the search for other studies is not complete.When you click on a study, the Study List updates will be suspended until you click on the study again to de-select it. The Study List will continue to update.

When the search is complete, any errors will be displayed if there are problems during the search.

**Opening Remote Studies**
You are able to open a study from the Study List that is not from the current department, or click on the reports, worksheet, or the & button at the top of the screen, or select Report, Worksheet, or Images in the Patient menu to select a study.

**Comparing Remote Studies**
You can open two remote studies in compare mode if the two studies are in the same remote department. You are able to compare a prior studies (pdf version) to your current study through the prior study list.

## Enterprise ID Search

When searching by ID, *syngo* Dynamics implements either a Master Patient Index (MPI) or Patient ID (PID) search based on whether MPI or Site ID (SID) is configured for the server.

If MPI SID is configured for the server, then all SID enabled departments on the sever use MPI for enterprise ID searches. Departments on the server without SIDs receive no results from remote departments in an enterprise ID search. Searching by PID or MPI is performed within the current department only.

If the MPI SID is not configured for the server, then all SID enabled departments on the server use SID/PID combinations for enterprise ID searches. Departments on the server that do not have SIDs use PIDs for enterprise searches.

## Scrolling Through the Study List

Click the navigation buttons at the bottom of the screen to scroll through the Study List one page at a time. The following figure shows you the paging buttons and describes their function:
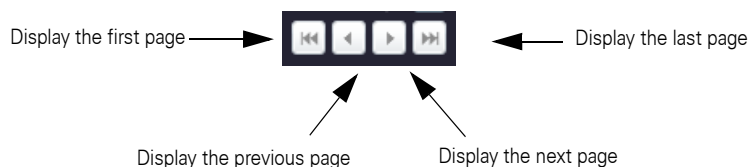


## Searching by Patient Name or Patient ID

Perform the following steps to search by patient name or patient ID in the **Search** box, located above the Study List,

1   Enter a patient name or patient identifier (ID) number in the **Quick Search** field.

To search by name, enter all or the first few letters of the patient's last name. Use ^ as the delimiter to differentiate between the first and last names. This is to ensure that Quick Search results in optimum turnaround time.

The more characters you enter, the more specific the search. The characters you enter are not case-sensitive. Studies with patient names that start with the entered text are displayed. For example, if you enter "Jon" or "Jon%", studies for "Jones, C" are returned; studies for "Doe, Jon" are not.

If you create a new study with the patient name Jerome Burkert, you can find this patient by doing a **Name starts with** quick search for "Burkert^Jerome". The ^ character makes this possible.

2   Click **Name starts with** to search by name, or click **Patient ID is** to search by patient ID.

To search by patient ID, enter all of the patient ID characters. Only exact matches are displayed.

A search progress bar displays at the bottom of the screen until the search is complete.

The search results are displayed in the Study List. There may be more studies than can be displayed on a single page. Use the scroll bar or mouse scroll wheel to access the rest of the pages.

Double-click any study in the Study List to view that study's images. You can review a selected study by clicking on the Report or Worksheet buttons. You can also select Images, Report, or Worksheet options from the **File** menu.

3   If your site is configured to use site IDs, a site ID can be used for a search. Click the arrow and select the site ID from the list.

To search by Site ID, enter all of the Site ID characters. Only exact matches are displayed

In order to utilize a Site ID search Site IDs must be configured, see *syngo* Dynamics System Administration Manual specific to the software version installed at your hospital.

A list of patient names or patient IDs matching your search criteria is displayed.

## Searching by Site ID

If your site is configured to use a site identification number (ID). Perform the following steps to search by site ID.

1   Select the site from the **Site ID** list box.

2   In the **Search** box, supply the first few letters of the patient's name, the patient's entire name, or the patient ID.

3   Click one of the following buttons.

■ **Name Starts With** - to search by patient name or by the first few letters in a patient's name.

■ **Patient ID Is** - to search by patient ID number.

For the selected site, a list of patient names or patient IDs matching your search criteria is displayed.

## Creating a Custom Search to Locate a Study

Use the **Field Search** screen to create your own contextual search of the *syngo* Dynamics database. For example, you can create a search based on a range of dates, based on an exact patient name or site ID, or based on several letters contained in a patient's name.

1   In the **Today's** list box, select **Field Search**.

The **Field Search** dialog box is displayed:



The following table defines the meanings of the search term operators for each field:

| Use This Operator | To Display |
|---|---|
| **Is** | Studies that exactly match the text that you enter. |
| **Contains** | Studies that contain the text that you enter. |
| **Starts with** | Studies that start with the text that you enter. |

2    Do one of the following:

■    To search for a patient name, patient ID, Patient BirthDate, or type of study, select a search operator in the box to the immediate right of the desired field. Then, in the box to the far right, type or select an option.

■    To search by study date, select a predefined date range using one of the ranges listed in the following table.

| Date Range | Includes |
|---|---|
| Today's | Studies with today's date. |
| Yesterday's | Studies with the previous day's date. |
| Prior 3 Days | Studies performed today and in the previous 2days. |
| Prior 7 Days | Studies performed today and in the previous 6 days. |
| This Week | Studies performed in the current calendar week. |

To change the date range of your search, click the calendar to the right of the **From** and **To** date boxes to display a calendar. Select a new date range on the calendar.



■    To search by modality, select an option from the **Modality** box.

3    Click **Search** to start the search.

Search results are displayed in the Study List.

4    Select the desired study from the list.

The images in the study you selected are displayed.

You can choose to view only those studies you are interested in by using filters. See "Filtering the Study List" on page 46.

## Redisplaying the List of Studies from the Last Search

To obtain results from this procedure, you must have previously conducted a database search like one of the two searches described earlier under "Finding a Study" on page 49.

◆ On the images screen, click [icon].

The list of studies from the last search you conducted is redisplayed.

## Displaying Prior Studies for a Patient

To view all of the prior studies performed on a patient:

1  Double-click the study on the Study List.
   The image panes are displayed.

2  Click the **Priors** button.
   A list of prior studies is displayed, as shown in the following figure:
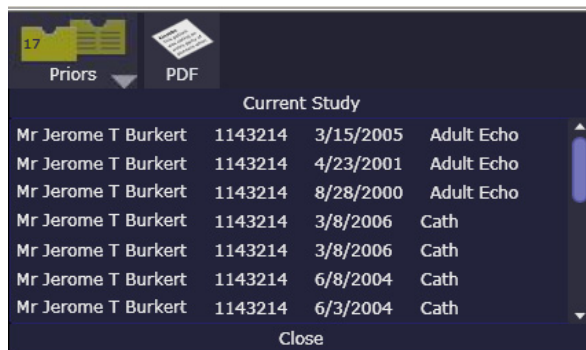


   Note that the number of prior studies for the selected patient is shown on the **Priors** button.

Number of Prior Studies → 

3  To close the **Prior Studies** list, click **Close**. You return to the image panes.

## Opening a Study

Select a study and double-click to open it. Alternately, you can select the study and click either of the following:

■ **Report** - to open the report pertaining to the study.

■ **Worksheet** - to open the worksheet pertaining to the study.

■ **&** - to open both the report and the worksheet pertaining to the study.

The selected study opens.

If the information is available, the patient gender and the date of birth associated with the open study is displayed on the Workplace toolbar.
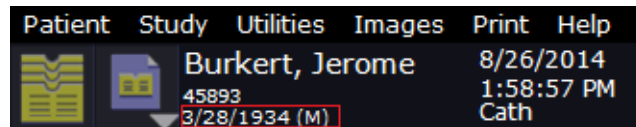
Patient Date of birth and gender

In the open study, you can specify the diagnostic and non-diagnostic information in the worksheet. The information is reflected accordingly in the report. Some of the information that appear may depend on internal calculations and configurations. For example, if the physician ID (National Provider Identifier - NPI) is configured in SysAdmin for a physician and the data item is present in the worksheet, the physician ID pertaining to the selected physician is automatically displayed on the worksheet.

Physician ID or NPI as configured for the physician

# Viewing Reports for a Study

Perform the following steps to view a report for a study.

1  Select the desired study from the Study List.

2  Click PDF to display the report.

   The report for the study is displayed. If the study has no report, a blank report template is displayed.



For information on editing a report, see "Editing a Report" on page 127.

This page is left blank intentionally.

# Reviewing Study Images

This chapter shows you how to view static images and video clip images in *syngo* Dynamics Portal (Portal). It also describes the tools you can use to re-measure images to verify the accuracy of a study's data and to obtain additional basic measurements.

| ⚠️ CAUTION | Compression for Mobile Portal viewing causes inadequate image quality. |
|---|---|
| | **Misdiagnosis: undetected image quality problem with compressed images** |
| | ◆ Portal allows users to view images on a wide variety of display hardware and presents both additionally compressed and original quality images. Images that have been compressed by a lossy method are of lower diagnostic quality than the original images. The clinician must assess image quality when reading studies. Lossy compressed images are not intended for primary diagnosis. |

## Displaying Images
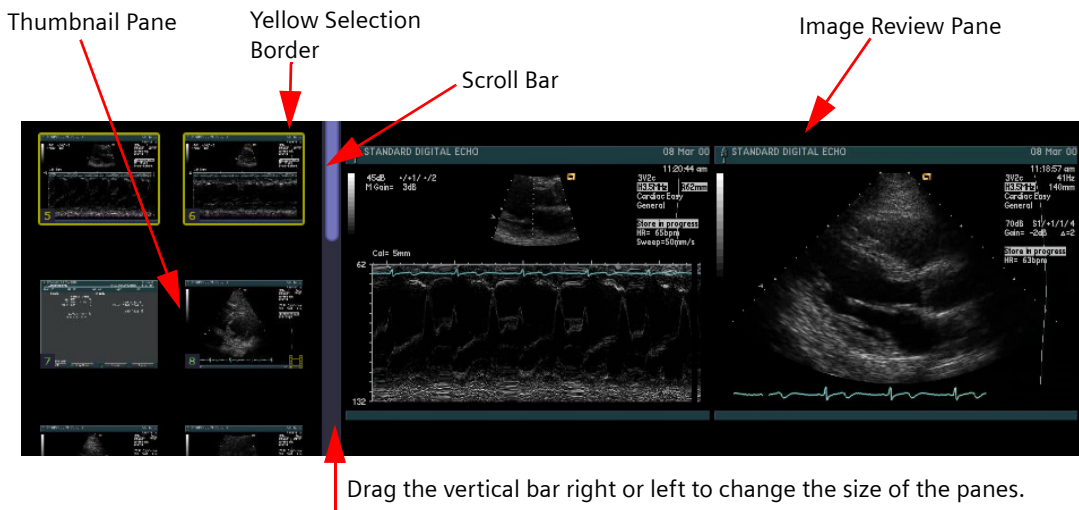
Perform the following steps to display images.

1   On the Study List, double-click the desired study.

The study images begin to load. Depending on the type of connection to the *syngo* Dynamics Portal, it may take a few seconds for the images to display.

The left side of the screen displays the thumbnail pane (see next figure). This panel displays smaller versions (thumbnails) of all of the images and clips included in the selected study.

Use the scroll bar or the scroll bar arrow keys to view thumbnail images that are not visible in the window.

2   Do one of the following:

■   Click the thumbnail version of the image or images that you want to view.

A yellow border appears on the thumbnail to indicate that the thumbnail is selected. The selected image is displayed in an available space on in the image review pane.

■ Click and drag the thumbnail version of the image to the desired location in the image review pane.

■ Click the ⬆ (Up) or ⬇ (Down) arrow button to move the thumbnails into to the image review pane.

The number of images that are moved at one time depends on the layout setting you select (see "Changing the Layout of Images" on page 61). For example, if the layout setting is 4:1, four images are moved into the image review pane.

In addition, the arrow keys determine whether the thumbnails are selected from the top or the bottom of the thumbnail pane. Using our example, clicking the Down arrow moves four thumbnails from the top of the pane and clicking the Up arrow button moves four thumbnails from the bottom of the pane into the image review pane.

Thumbnail Pane    Yellow Selection Border    Image Review Pane

Scroll Bar



Drag the vertical bar right or left to change the size of the panes.

To change the size of thumbnail and image review panes, place your cursor in the area between the two panes. When you see the double arrow ⟷ ,click and drag the vertical bar in the desired direction.

The image displayed in the image review pane is not at its original resolution. However, it is a fully functional version of the image, which is suitable for viewing in your web browser. If you want to view the image at its original resolution, see "Viewing Images at Original Resolution" on page 67

## Viewing a Larger Version of an Image

Use either of the following methods to enlarge an image for better viewing:

■ In the image review pane, double-click the image to enlarge it. To return to the previous layout view, double-click the image again.

■ Click ▩. This button is located in the top right corner of the screen. In this mode, the image fills the image review pane. To view the original size, press **ESC** or click ▩ again.

## Changing the Layout of Images

On the image review pane, you can display images in a number of different layouts:

The number of possible layouts depends on the resolution of your computer monitor. The higher the resolution, the more types of layouts you can display.

■ **Full** to display a full-screen view in which the image fills the browser window.The image displays at full resolution (native resolution) from the acquisition device.

■ Max to display a single image, which is magnified to full-screen size. The magnified image is larger than the native resolution from the acquisition device.

■ **2:1** (default) to display 2 images at a time.

■ **3:1** to display 3 images at a time.

■ **4:1** to display 4 images at a time.

■ **6:1** to display 6 images at a time.

■ **9:1** to display 9 images at a time.

■ **12:1** to display 12 images at a time.

To change the layout, click the layout button, which is located in the top right side of the screen:



The **Layout** menu is displayed.

Select the desired setting. The setting you choose remains in effect until you change it even after you log out and log back in again.

## Scrolling Through Images in the Thumbnail Pane

If the thumbnail pane has more images than can fit in the panel, you can perform any of the following actions to view additional images:

- Drag the scroll bar, which is located along the right edge of the panel, to bring more images into view.

- Click the ⌃ (Up) or ⌄ (Down) arrow button. These buttons are located at the bottom of the thumbnail pane:

View All Images option →

View Key Images option

Up and Down Arrows

Clear Images Button
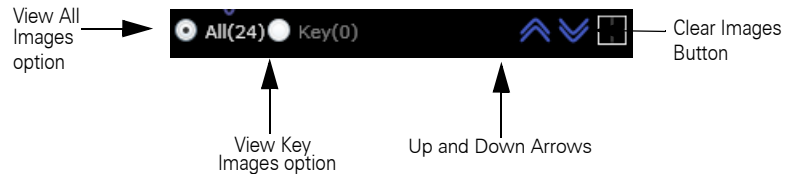
The number of images that are scrolled per button click depends on the selected layout (see "Changing the Layout of Images" on page 61). For example, if the selected layout is 4:1, the Up or Down arrow button respectively moves four images up or down at a time in the thumbnail pane. The corresponding images are displayed in the image review pane.

- On the keyboard, press the **PAGE UP** or **PAGE DOWN** key to scroll through the images.

## Viewing All Images

To view all of the images in a study, click the **All** option. This option is located at the bottom of the thumbnail pane (see the previous figure). The total number of images in the study is displayed in parentheses.

## Viewing Key Images

Key images are those images that the user designates as "selected images" on the Workplace by using the **Selected Images** button.

For more information, refer the *syngo* Dynamics Workplace Manual specific to the software version installed at your hospital.

To view key (or "selected") images, click the **Key** option. This option is located at the bottom of the thumbnail pane (see the previous figure). The number in parentheses shows you how many key images are in the study.

If you want to change the images that are shown as key images, you must make the change on the Workplace.

### Selecting a Series of Images in CT, MR, US, NM, and XA Studies

Most studies have only one series of images; however, CT, MR, US, NM, and XA studies usually have multiple series of images within each study. When a study has multiple series, a list appears in the toolbar. You can select the series you want to view from the **Series** drop-down list.



For US and NM studies only, the **All Series** option is selected by default. The **All Series** option is not displayed for Stress Echo studies. The **All Series** option, when selected, displays all the series of the currently loaded study one after another in the same order as listed in the **Series** drop-down list. The study with series may be present in *syngo* Dynamics or may be opened from the media or from the local cache.
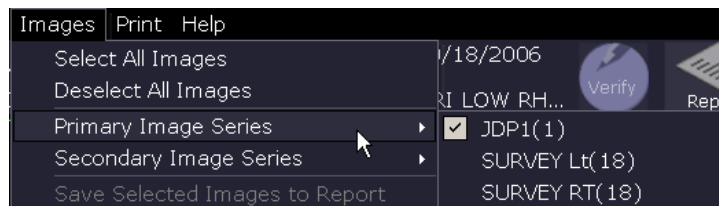


When a study has multiple images in a series, the series will be listed in the **Images** menu. If there is more than one series, the first series will display as the **Primary Image Series**, and the second as the **Secondary Image Series**, and so on. You can select the series you want to view from the list.

If you want to compare two series of images from the same study, click on the **Priors** button in the tool bar and select the current study to open a copy of what you are viewing and select another series from the series selection list in the secondary study. In the compare mode, the images indicated in **All Series** in the secondary study are displayed.

## Rearranging Images in the Image Review Pane

To rearrange images in the image review pane, click and drag them one at a time to the desired locations.

You can even click and drag an image to location that is currently occupied by another image. When you do this, the images swap locations. The location is determined by your layout setting. For example, if your layout setting is 9:1 and you move image 9 to the location occupied by image 1, image 1 moves to the location previously occupied by image 9.

## Clearing Images from the Image Review Pane

To clear all of the images from the image review pane, click 🔲 (**Clear Images)** button. This button is located at the bottom of the thumbnail pane next to 🔽 (Down arrow button) as shown in the previous figure.

# Changing the Appearance of an Image

This section shows you how to adjust the brightness and contrast settings for an image to obtain the best viewing on your computer monitor.

## Adjusting the Brightness or Contrast

If an image is too dark or too light, you can adjust the brightness and contrast.

1   In the thumbnail pane, select the image or images that you want to adjust.

A yellow border is displayed on the image to indicate that it is selected. The selected image is displayed in the image review pane.

2   Click **Tools** to open the Image Tool Palette.
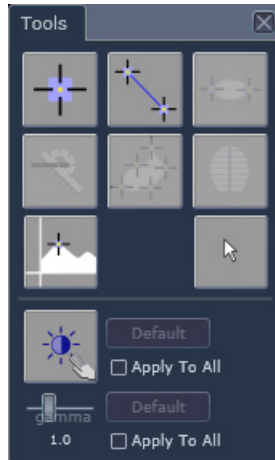


3   (Optional) To apply the same brightness and contrast settings to all of the images you selected, select the **Apply To All** box.

4   Click [icon] and then position the mouse cursor over the image.
    The shape of the cursor changes and looks like this: [icon] .

5   To change the contrast, click and drag the cursor left or right. To change the brightness, click and drag the cursor up or down.
    As you drag the mouse, the image visually lightens or darkens. If you do not like the changes and want to start over, you can return to the original settings by clicking **Default.**

6   When you are satisfied with the adjustment, right-click to apply your settings.

7   To exit the tool, click [icon] .

## Digital Subtraction Angiography (DSA) Masking

Images taken with a technique called digital subtraction angiography (DSA) are displayed in Portal with masking set to "on". When viewing such images or clips in Portal, you cannot set masking to "off".

## Applying Gamma Correction to an Image

Many DICOM images and clips display color representations of moving structures. Changing the gamma setting on these types of images is a way to adjust the lightness or darkness levels of color in the image.

The gamma setting ranges from 0.5 to 4.0 (default=1.0). A higher gamma setting increases the intensity of the colors in an image while a lower gamma setting decreases their intensity.

1   In the thumbnail pane, select the image or images you want to adjust.
    A yellow border is displayed on the image to indicate that it is selected. The selected image is displayed in the image review pane.

2   Click  to open the Image Tool Palette.

3   (Optional) To apply the gamma setting to all of the images you selected, check the **Apply To All** box.

4   Click and drag the **Gamma** slider until you achieve the desired changes to the image.
    As you move the slider, you can see changes in the intensity of the colors and brightness in the image.
    If you do not like the changes and want to start over, you can return to the original gamma setting (1.0) by clicking **Default.**

## Viewing Images at Original Resolution

The Original Quality Viewer is a program that enables you to view an image or a clip at the same resolution it was acquired in. In its original resolution, an image or clip is significantly larger in size. Therefore, it requires more time to download completely.

You do not need the Original Quality Viewer to view standard web images and clips. However, if you want to view an image or a clip at its original resolution, you need to install the portal client components.

The Original Quality Viewer is compatible with Microsoft Internet Explorer version 6 SP2 or higher only.

## Viewing Images in the Original Quality Viewer

You can run more than one Original Quality Viewer at the same time. The performance of simultaneously running several Original Quality Viewers depends on the hardware and software capabilities of your computer.

1   In the thumbnail pane, select the thumbnail for each image that you want to view.

A yellow border is displayed on the image to indicate that it is selected. The selected image is displayed in the image review pane.

2   In the image review pane, click  to start the Original Quality Viewer.

A progress indicator along the bottom of the image shows how long it will take to download the image or clip. Depending on the speed of your network connection, it may require several seconds or even minutes for the original quality image to transfer completely. If an image or clip is too large, a message is displayed to indicate that the clip is too large to view in its original quality.

After a static image downloads, it displays immediately. A video clip plays automatically.

!
■   Network connection speed determines the length of time it takes to download an image.

■   The capacity of your computer and the size of the video file determine how well the clip plays.

■   A clip is a dynamic image composed of multiple frames. If an image can be viewed as a clip, an icon that resembles a film strip is displayed on the thumbnail image:  .

■   To maintain the frame rate, the Original Quality Viewer skips any missing frame and displays the next frame in the sequence.

3   If you need to resize the image, do one of the following:

You must stop a clip before you can resize the image in a frame. See "Playback Controls" on page 71 for details.

■   Click  to resize the window so that it displays the image in its original size and resolution. Click the button again to return to the original view.

If the image is scaled to fit the window, a message is displayed to let you know that the image is in its original size.

■   Click  to size the image to fill the entire screen. To exit full-screen mode, press **ESC**.

**Using the Image Magnifier:** You must stop a clip before you can use the tool in this step. See "Playback Controls" on page 71 for details.

4 Click [Tools] to display the **Tools** tab.
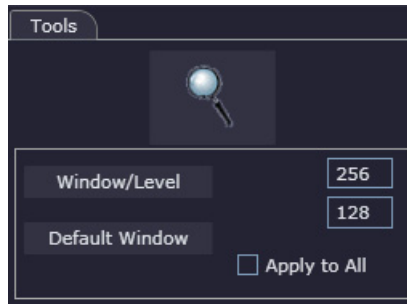


5 To view close-up details, click [🔍] .
The cursor changes into a magnifying glass.

6 Click and drag the magnifying glass over the areas of the image that you want to view close up.

**Adjusting the Image Brightness**

7 To adjust the brightness or contrast of the image, use one of the following methods:

- Click the **Window/Level** button. The cursor changes and looks like this: [☀] . Click and drag the mouse up or down to change the brightness. Click and drag to the right or left to change the contrast.

- Supply an exact value in the **Window/Level** box.

- Click **Default Window** to use the default brightness and contrast settings.

- To apply the brightness and contrast settings to all of the selected images, select the **Apply to All** chec kbox.

**Viewing Additional Images**

8 To view additional selected images, do the following:

- Click **Next** to display the next image.

- Click **Previous** to display the previously displayed image.

**Exiting Tools** 9 To exit the **Tools** tab, click **Tools**.

## Playing a Video Clip

A clip is a dynamic image composed of multiple frames. If an image can be viewed as a clip, you see this filmstrip icon displayed on the thumbnail image .

To play a video clip, click the thumbnail image. The clip immediately starts to play. The capacity of your computer and the size of the video clip determine how well the clip plays.

The blue slider indicates the progress of the playback.

Clips are compressed for efficient storage and faster transfer over lower bandwidth connections. The compression ratio (n:1) is displayed at the bottom of the clip, as shown in the next figure.

| ⚠ CAUTION | Software defect |
|---|---|
| | **Misdiagnosis: undetected difference between clip playback speed on workplace or web portal and clip acquisition speed** |
| | ◆ To prevent misdiagnosis, ensure that you check the clip carefully. Some frames in a clip may be skipped to maintain playback speed. If frames are skipped, an indicator is displayed on the application. |

Some frames in a clip may be skipped in the following conditions.

- Many clips are playing on the screen at one time.
- The clips are magnified or are in presentation mode.
- Memory is running low.

The clip playback speed cannot be adjusted. In high performance software clips, the clip indicator will flash red when frames are skipped.

## Playback Controls

The playback controls are located in the left bottom corner of the clip, as shown in the following figure:



ause and Play Button

Frame-by-Frame Play Buttons

Progress Indicator

Compression Ratio
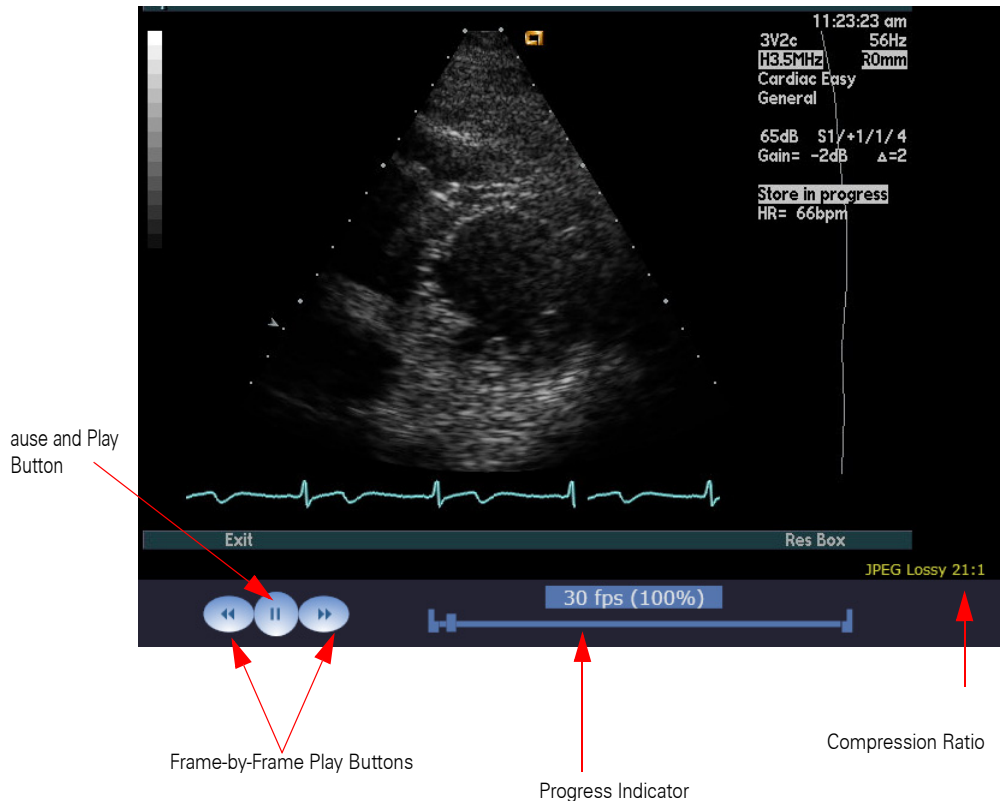
The blue slider indicates the playback progress of a clip. To control playback of a clip, do the following:

- To stop or pause a clip, click ▐▐ .

  The clip stops playing, and the blue slider stops moving

- To resume playing a clip, click ▶ .

  The clip resumes playing, and the slider continues moving.

- To view a clip frame by frame, click ▐▐ to stop the clip. Then, click ◀◀ or ▶▶ to play the clip one frame at a time forward or backward, respectively. The blue slider moves frame by frame.

## Measuring Images

You can only make generic measurements in Portal irrespective of the department (see "Measurement Tools" on page 75).

You can only make generic measurements on images and paused clips that you view in Portal. The measurements available depend on type of image or clip you are viewing (for example, 2D, M-mode or Doppler).

As you make measurements on an image, the results are displayed in a separate area of the screen in the Data Display Box (see "Measurement Results" on page 84) and held in temporary storage. If you switch to another study and then return to the study where you made the measurements, the results are still visible but not permanently saved.

To permanently save measurement results, you must manually enter them on the worksheet in the appropriate sections (see "Editing Measurements" on page 101). After you exit the study, any results that you enter on the worksheet are transferred to the report and saved to the server. The next time you open the study and display the image or clip, you can view the results in Portal or from the Workplace.

To make other types of measurements, you must move the study from the Workplace. You cannot move a study while in Portal.

## Image Tool Palette

The Image Tool Palette contains the image measurement tools. and is available on compressed clips as well as original quality images and clips.

The palette that is displayed when viewing images and clips in the OQV is different from the palette that is displayed when viewing compressed images. The Image Tool Palette in the OQV contains only the magnifier and the window level controls. Refer to "Using the Image Magnifier:" on page 69 for more information. The Image Tool Palette displayed when viewing compressed images is similar to (but not the same as) the tool palette available on the Workplace. Refer to "Opening and Closing the Image Tool Palette" on page 73 for more information.

In addition to the tools for measuring images, the palette includes controls for changing the brightness and contrast of an image.

The measurement tools are not enabled if an image is not calibrated. Portal does not provide a calibration tool. You must calibrate images while on the Workplace.

## Opening and Closing the Image Tool Palette

To open the Image Tool Palette, do one of the following:

- Click [icon] .
  OR [Tools icon]

- Position the cursor over an image and then press the **SPACEBAR**.
  The Image Tool Palette is displayed:



See "Measurement Tools" on page 75 for a description of the tools on the Image Tool Palette.

The Image Tool Palette remains open until you close it. Click [Tools icon] to close the palette.

## Moving the Image Tool Palette

To move the image tool palette, click the title bar and drag the palette to the desired location.

After you move the palette, it remains where you place it. Even if you select a new image to view or if you scroll through pages of images, the palette remains where you place it.
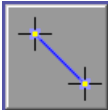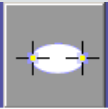
## Guidelines for Using the Measurement Tools
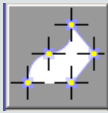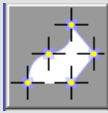
The following practices apply to use of the image measurement tools:
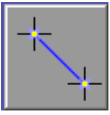
■ To use a tool, click its button on the Tool Palette. To exit a tool, click its button again or click the [Select icon] **(Select)** button.

■ If you make multiple measurements, the results are numbered.

■ For certain tools, the right mouse button provides special functions. For example:
  – When using the Trace Tool, right click to close the trace.
  – When making a series of measurements, right click to indicate the end of the series.

■ Click the [Close icon] (Close) button to close the measurements Data Display Box. If you make new measurements while the box is closed, only the new measurements are displayed. Click the [Show icon] (Show) button to open the box so that you can view all of the measurements.

■ You cannot use the measurement tools on a clip that is playing. Stop the clip first and then select the desired tool.

■ You cannot use the measurements tools if an image is not calibrated. Calibration is a task that must be performed on the Workplace.

## Measurement Tools

The tables in this section provide step-by-step instructions on how to use the measurement tools on ultrasound, cardiac, and non-ultrasound images.

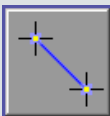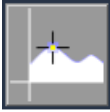| Ultrasound Images | | |
|---|---|---|
| **Measurement** | **Tool Button** | **How to Measure** |
| **2D** | | |
| **Distance**<br><br>Distance between two points measured in cm | The Line tool creates a linear distance. | 1  Position the caliper at the first endpoint of the distance you want to measure.<br><br>2  Click the mouse button once to assign the first endpoint.<br><br>3  Do one of the following to measure the distance between the two points:<br><br>■  Move the caliper to the second endpoint, and click the mouse button to assign the second endpoint.<br><br>■  Draw the line by clicking the first endpoint and dragging the mouse to the second endpoint.<br><br>4  To reposition the line, drag the endpoints with the mouse. |
| **Elliptical Areas**<br><br>D2 = minor axis of the ellipse in cm<br><br>Circ = closed perimeter of the ellipse in cm<br><br>Area = area of the ellipse in $cm^2$ | The Ellipse tool creates an area measurement. | 1  Move the mouse to position the caliper in the desired location.<br><br>2  Click and drag the mouse to the far side of the object you are measuring and then release the mouse button.<br><br>3  Click the ellipse handle in the middle of the axis and drag the side of the ellipse to the correct location. Release the mouse button after the ellipse is the desired size.<br><br>4  To reposition the ellipse, click the ellipse (do not grab the handles) and drag it to the desired location.<br><br>5  To resize the ellipse, click and drag one of the handles until the ellipse is the desired size. |

| Ultrasound Images | | |
|---|---|---|
| **Measurement** | **Tool Button** | **How to Measure** |
| **Angle** | The Angle tool creates an angle measurement. | First, create the baseline.<br><br>1 Position the caliper at the first endpoint of the line you want to draw.<br><br>2 Click the mouse button once to assign the first endpoint.<br><br>3 Do one of the following:<br><br>■ Click the mouse button again to assign the location of the second endpoint.<br><br>■ Draw the line by clicking the first endpoint and then dragging the mouse to the second endpoint.<br><br>Next, create the angle. To do this, draw a second line to the baseline.<br><br>To reposition any line, drag the endpoints with the mouse. |
| **Irregular Areas**<br>Perimeter = circumference of the trace in cm<br>Area = area of the trace in $cm^2$ | The Trace tool defines an irregular contour on 2D images. | 1 Position the caliper at the beginning of the area you want to trace.<br><br>2 Click each desired point along the envelope. Or, hold down the left mouse button and drag to draw the contour with a continuous line.<br><br>**Important:**<br><br>■ To delete the last point, press the **BACKSPACE** key.<br><br>■ To delete multiple points, press and hold the **BACKSPACE** key.<br><br>■ You cannot delete points after the trace is closed.<br><br>3 After you create the contour, press **ENTER** or click the right mouse button.<br>A straight line is automatically drawn between the last point and the first point of the trace. |

| Ultrasound Images | | |
|---|---|---|
| **Measurement** | **Tool Button** | **How to Measure** |
| **Distance**<br><br>Distance = distance between two points measured in ms<br><br>Delta T = difference in time displayed in msec<br><br>HR = heart rate derived from Delta T in bpm (presuming the calipers define the limits of a single heart beat)<br><br>Slope = mean velocity in cm/s | The Line tool creates a linear distance. | 1  Position the caliper at the first endpoint of the distance you want to measure.<br><br>2  Click the mouse button once to assign the first endpoint.<br><br>3  Do one of the following:<br><br>■  Move the caliper to the second endpoint, and click the mouse button to assign the second endpoint.<br><br>■  Or, draw the line by clicking the first endpoint and dragging the mouse cursor to the second endpoint.<br><br>4  To reposition the line, drag the endpoints with the mouse. |
| **Spectral Doppler** | | |
| **Peak Velocity/Pressure Gradients**<br><br>V = peak velocity measured in m/s<br><br>PG = pressure gradient calculated from velocity and displayed in mmHg | The Caliper tool measures velocity on a Doppler image. | Place the caliper in the desired location and click once to read peak velocity and pressure gradient. |

| Ultrasound Images | | |
|---|---|---|
| **Measurement** | **Tool Button** | **How to Measure** |
| **Resistive Index**<br><br>V1 = velocity for caliper 1 in m/s<br><br>V2 = velocity for caliper 2 in m/s<br><br>RI = calculated resistive index<br><br>S/D = calculated systolic to diastolic ratio | The Line (D Cal) tool measures a delta on a Doppler image. | 1  Position the caliper at the first endpoint of the distance you want to measure.<br><br>2  Click the mouse button once to assign the first endpoint.<br><br>3  Do one of the following:<br><br>■  Click the mouse button again to assign the location of the second endpoint.<br><br>■  Draw the line by clicking and dragging the mouse from the first endpoint to the second endpoint.<br><br>4  Reposition the line by dragging the endpoints with the mouse. |

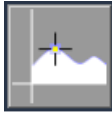| Ultrasound Images | | |
|---|---|---|
| **Measurement** | **Tool Button** | **How to Measure** |
| **Velocity**<br><br>TAMX = time averaged maximum velocity measured in m/s<br><br>Max = maximum velocity measured in m/s<br><br>Min = minimum velocity measured in m/s<br><br>PI = calculated pulsatility index<br><br>RI = calculated resistive index<br><br>S/D = calculated systolic to diastolic ratio | <br><br>The Doppler Trace traces the irregular contour of a spectral Doppler display. | 1  Position the caliper at the beginning of the area you want to trace.<br><br>2  Click each desired point along the envelope. Or, hold down the left mouse button and drag to draw the contour with a continuous line.<br><br>**Important:**<br><br>■ To delete the last point, press the **BACKSPACE** key.<br><br>■ To delete multiple points, press and hold the **BACKSPACE** key.<br><br>■ You cannot delete points after the trace is closed.<br><br>3  After you create the envelope, press **ENTER** or click the right mouse button.<br><br>A straight line is automatically drawn between the last point and the first point of to close the trace.<br><br>If the first or last point of the trace is not at the baseline, the tool generates a connecting line from the trace point to the baseline and calculates the Velocity Time Integral of the area under the curve.<br><br>After you draw a trace and assign the measurement, calipers are generated automatically at peak velocity.<br><br>4  Click the calipers to reposition them. |

| Ultrasound Images | | |
|---|---|---|
| **Measurement** | **Tool Button** | **How to Measure** |
| **Volume**<br><br>Area in cm$^2$<br><br>Major axis in cm<br><br>Volume in ml | The MOD tool obtains volumes of the left ventricle by means of the "Method of Disks" also known as the Modified Simpson's Rule.<br><br>If used like the 2D Trace tool, this tool produces additional results including major axis length and chamber volume. | 1 Start at one point of the mitral annulus and trace the contour of the LV around to the opposite MV annulus attachment point.<br><br>2 Click the right mouse button to finish the trace.<br>This draws a straight line across the plane of the Mitral Valve (MV). It also places a line from the center of the MV plane to the most distant point along the trace. This line represents the major axis.<br>If the major axis is incorrect (due, for example, to an LV aneurysm), you can edit the apical endpoint of the major axis indicator line by selecting and dragging it with the mouse.<br><br>3 Press **ENTER** to calculate the chamber volume.<br>The graphic on the image shows the 20 segments of the long axis connected perpendicularly to the walls of the LV. |
| **Slope**<br><br>Delta V = difference in velocities displayed in m/s<br><br>Delta T = difference in time displayed in milliseconds (msec)<br><br>Slope = slope displayed in m/s2<br><br>P1/2T = pressure half time displayed in msec | The **Line** tool measures a delta on a Doppler image. | 1 Position the caliper at the first endpoint of the distance you want to measure.<br><br>2 Click the mouse button once to assign the first endpoint.<br><br>3 Do one of the following to measure the distance between the two points:<br>■ Move the caliper to the second endpoint, and click the mouse button to assign the second endpoint.<br>■ Draw the line by clicking the first endpoint and dragging the mouse to the second endpoint.<br><br>4 To reposition the line, drag the endpoints with the mouse. |

Cardiac Images    The following table explains how to apply the Tool Palette measurement tools to images in cardiac studies. See "Guidelines for Using the Measurement Tools" on page 74 for information on how to use the tools.
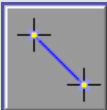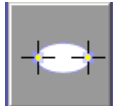
**Cardiac Images**

| Measurement | Tool Button | How to Measure |
|---|---|---|
| **Spectral Doppler** | | |
| **Velocity** <br><br> VTI = velocity time integral displayed in m <br><br> MnPG = mean pressure gradient displayed in mmHg <br><br> TAMX = time averaged maximum velocity measured in m/s <br><br> VMax = peak velocity on VTI trace displayed in m/s <br><br> Peak Grad = peak pressure gradient from VMax displayed in mmHg |  <br><br> The Doppler Trace traces the irregular contour of a spectral Doppler display. | 1  Position the caliper at the beginning of the area you want to trace. <br> 2  Do one of the following: <br> ■  Click on each desired point along the envelope. <br> ■  Click and drag the mouse to draw the contour with a continuous line. <br><br> **Important:** <br> ■  To delete the last point, press the **BACKSPACE** key. <br> ■  To delete multiple points, press and hold the **BACKSPACE** key. <br> ■  You cannot delete points after the trace is closed. <br> 3  After you create the envelope, press **ENTER** or click the right mouse button to close the trace. <br> After you draw the trace and assign a measurement, calipers automatically calibrate VTI and MnPG. <br> 4  Click the calipers to reposition them. |

**Non-Ultrasound Images**   The following table explains how to apply the Tool Palette measurement tools to calibrated non-ultrasound images. See "Guidelines for Using the Measurement Tools" on page 74 for information on how to use the tools.
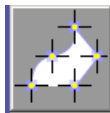
| Images (CT and MR) | | |
|---|---|---|
| **Measurement** | **Tool Button** | **How to Measure** |
| **Distance**<br><br>Distance between two points measured in cm | <br><br><br>The Line tool creates a linear distance. | 1  Position the caliper at the first endpoint of the distance you want to measure.<br><br>2  Click the mouse button once to assign the first endpoint.<br><br>3  Do one of the following to measure the distance between the two points:<br><br>■  Move the caliper to the second endpoint, and then click the mouse button to assign the second endpoint.<br><br>■  Draw the line by clicking the first endpoint and then dragging the mouse cursor to the second endpoint.<br><br>4  To reposition the line, drag the endpoints with the mouse. |
| **Elliptical Areas**<br><br>D1 = major axis of the ellipse in cm<br><br>D2 = minor axis of the ellipse in cm<br><br>Perimeter = perimeter of the ellipse in cm<br><br>Area = area of the ellipse in $cm^2$ | <br><br><br>The Ellipse tool creates an area measurement. | 1  Move the mouse to position the caliper in the desired location.<br><br>2  Click and drag the mouse to the far side of the object you are measuring and then release the mouse button.<br><br>3  Click the ellipse handle in the middle of the axis and drag the side of the ellipse to the correct location. Release the mouse button when the ellipse is the desired size.<br><br>4  To reposition the ellipse, click the ellipse (do not click the handles) and drag it to the desired location.<br><br>5  To resize the ellipse, click and drag a handle until the ellipse is the desired size. |

| Images (CT and MR) | | |
|---|---|---|
| **Measurement** | **Tool Button** | **How to Measure** |
| **Angle**<br><br>Angle between two independent lines displayed in degrees. | The Angle tool create an angle measurement. | First, form the baseline:<br><br>**1** Position the caliper at the first endpoint of the line you want to draw.<br><br>**2** Click the mouse button once to assign the first endpoint.<br><br>**3** Do one of the following:<br><br>■ Click the mouse button again to assign the location of the second endpoint.<br><br>■ Draw the line by clicking the first endpoint and dragging to the second endpoint.<br><br>Second, form the angle. To do this, draw a second line to the baseline.<br><br>To reposition any line, drag the endpoints with the mouse. |
| **Irregular Areas**<br><br>Area = area of the trace in cm$^2$<br><br>Perimeter = perimeter of the closed trace in cm | The Trace tool defines an irregular contour on 2D images. | **1** Position the caliper at the beginning of the area you want to trace.<br><br>**2** Click each desired point along the contour. Or, hold down the left mouse button and drag to draw the contour with a continuous line.<br><br>**Important:**<br><br>■ To delete the last point, press the **BACKSPACE** key.<br><br>■ To delete multiple points, press and hold the **BACKSPACE** key.<br><br>■ You cannot delete points after the trace is closed.<br><br>**3** After you create the contour, press **ENTER** or right click the mouse button.<br>A straight line is automatically drawn between the last point and the first point of the trace. |

## Measurement Results

After you make a measurement, results and calculated values are displayed in a Data Display Box that appears on top of the image:



Measurement results remain in the Data Display Box until you delete them (see "Deleting Measurements" on page 85). If you delete all of the measurements, the entire box disappears.

If you make a measurement, modify it, or delete it, the results displayed in the box are updated in real time.

The Data Display Box opens automatically when you select an image for measurement. To move the box, click and drag it to the desired location.

If you move the Image Tool Palette to a new image, the Data Display Box automatically closes.

■ To re-open the Data Display Box, click ⊞ (located in the upper left corner of the image).

■ To close the box, click ▣ (located in the top right corner of the box).

■ To open or close all Data Display Boxes in a series, press and hold the Shift key while clicking ⊞ (open) or ▣ (close).

The following figure shows you the Data Display Box as it appears on an image:

Click to close the
Data Display Box.

Data Display
Box
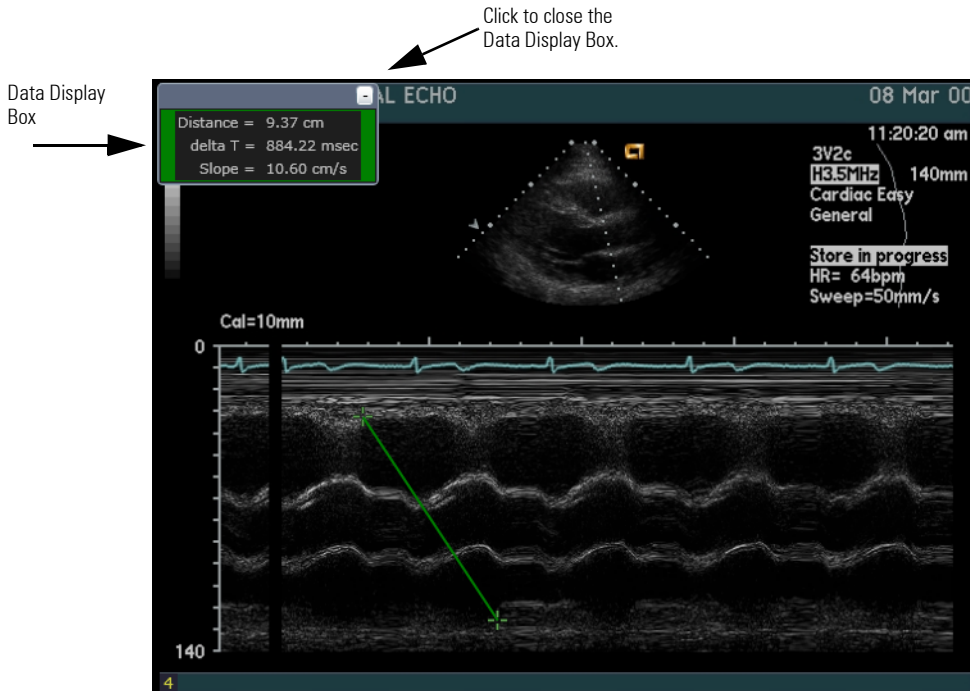


If you make measurements on a read-only study (for example, a locked ultrasound study, a CT or MR study, or a studied reviewed from external media, such as a DVD), a message is displayed indicating that the study is "read-only."

Measurements made on read-only studies disappear after you close the study. If you make temporary measurements on a study while it is locked by someone on a different Workplace, those measurements are automatically deleted after you close the study, making the study available for editing.

### Deleting Measurements

If the study is marked "Read and Locked", you cannot delete any measurements.

1   Click [Tools] to open the Image Tool Palette.

2   In the image review pane, select the image and then do the following:

■   To delete one measurement, select it and then press **DELETE**.

■ To delete more than one measurement, press and hold the **CTRL** key. Select the measurements you want to delete. Then, press **DELETE**.

### Transferring a Measurement to the Worksheet

After you make a measurement on an image, it is automatically displayed in the Data Display Box (see "Measurement Results" on page 84).

To transfer the measurement to the worksheet, you must manually enter it into the appropriate field on the worksheet (see instructions on how to edit the fields on a worksheet).

## Stess Echo Images

Stress echo display is a special way of presenting clips acquired during cardiac stress echo exams. Stress echo display is determined by the study types that are created or selected in the *syngo* Dynamics SysAdmin program in the **Study Types** tab. For more information, refer the *syngo* Dynamics System Administration Manual specific to the software version installed at your hospital. Stress echo images can be viewed in stages (by default), views, or in thumbnails.

You can select to display the images either by stages or by view by selecting the appropriate option on the toolbar. Depending you the option you select, you must then specify the stage or view in the drop-down list next to the options.



The different views are listed here.

**Thumbnails**  This is displayed on the left-hand side of the portal for both the stage and view display.

**Stage layout**  This is displayed when you select **Stage** option and specify a stage. To display a specific image, you may select it from the thumbnails on the left-hand side of the portal.
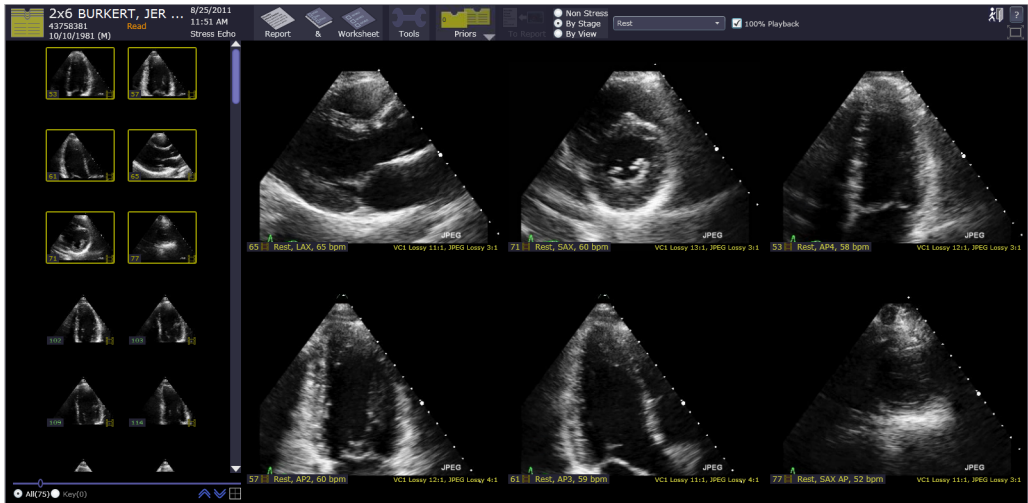
**View layout**    This is displayed when you select **View** option and specify a view. To display a specific image, you may select it from the thumbnails on the left-hand side of the portal.
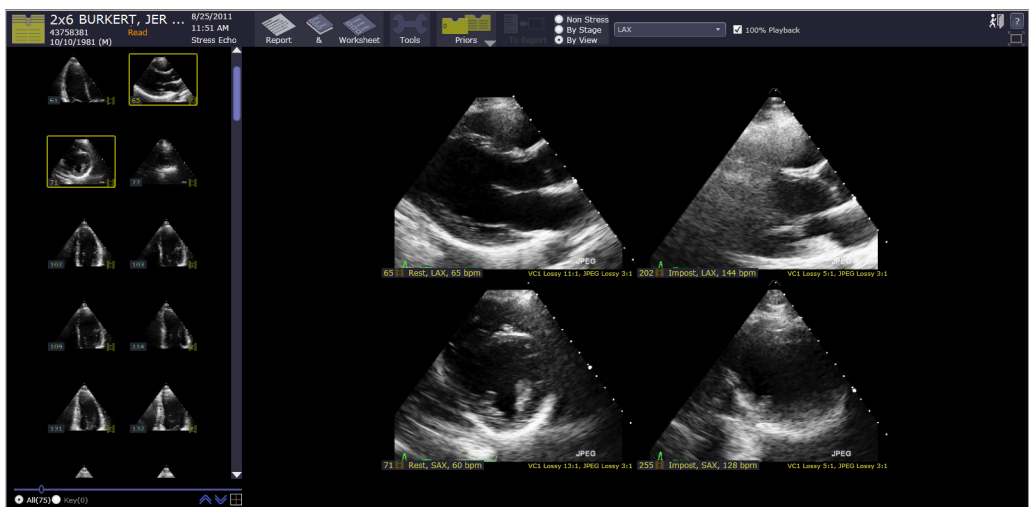
**100% Playback**

The **100% Playback** check box in the toolbar is not selected by default if the configured speed in the **Server Configuration Tool** is at 50%. You can override the configuration by selecting the **100% Playback** check box in the toolbar. The override is applicable for the current session only.

**Non-stress layout**

You can toggle between stress and non-stress display, which is important if extra images have been saved with the stress study. Select the **Non Stress** option to display the non-stress studies.

You can choose to display the images in different layouts, such 4:1, 9:1. The layout, as configured by your system administrator, appears by default. Click the drop-down list in the layout box in the toolbar to display the different layouts. You may choose to toggle to Stress studies from here too.

Drop-down list in toolbar where the layout can be specified

Full

Max

2:1

3:1

4:1

6:1

9:1

12:1

Different non-stress image layouts that can be selected

Toggle to stress images

Stress

## Sending Images to a Report

You must stop a clip before you can select a frame to send to a report. Perform the following steps.

**1**   Select one or more thumbnails of the images you want to include in a report.

**2**   Click **To Report** at the top of the study list.

   The selected images are now displayed in the report.

## Saving Study Data

To save study data to the *syngo* Dynamics database, do one of the following:

■   Click **Save** to save study data and continue working.

■   Click [X] to save study data and exit the worksheet and/or report and return to the Study List.

## Printing Images

In Portal, you cannot print images to a DICOM printer. Printing must be done from a *syngo* Dynamics Workplace.

# *Reporting*

This chapter shows you how to use the *syngo* Dynamics Reporting in the *syngo* Dynamics Portal to review images and edit worksheets and patient reports.

Reporting in Portal is basically the same as Reporting on the Workplace. Therefore, if you have a license to use a specific feature on the Workplace (for example, coronary artery diagramming) that license extends to use of the feature in Portal. However, be aware that the two reporting systems are distinct. As a result, certain features available on the Workplace may not available in Portal. For example, on the Workplace, you can use the edge enhancement tool for image correction, but this tool is not available in Portal. In addition, a report for a study that is linked to a Sensis study is not supported. Sensis data will be displayed with a watermark and is read only. If a key feature is not available in Portal, the system displays a message.

A study is automatically locked when you start the reporting process. This is a precautionary measure to prevent multiple users from changing study data. On the Study List, this icon is displayed to inform you that a study is locked: 🔒 In addition, reporting is not available if the study is in the **DEFAULT** department. The system displays the following message:



The study must be moved to an existing department. You cannot move a study from Portal. You can move a study on the Workplace only.

## Templates

Templates are files that contain pre-defined content and layout information. The *syngo* Dynamics Reporting system provides two types of templates: a worksheet template and a report template. They function as a set. The worksheet template defines all of the possible content that can be included in its associated reports. The report template defines the specific content of the report and the format of its content.

The information in this chapter assumes that you understand the relationship between the worksheet and report templates and how they are used for reporting. For more information, refer the *syngo* Dynamics Report Designer Manual and *syngo* Dynamics Workplace Manual specific to the software version installed at your hospital. You can find both manuals on the User Manual CD that is shipped with the product or you can click (**Help** button) in the application.

## Types of Templates

The templates are created or customized using the *syngo* Dynamics Report Designer application. A number of pre-designed templates are supplied with the application. The supplied templates can be used as-is or they can be customized for your site.The following types of templates are available:

- Abdominal US
- Adult Echo
- CATH
- EP
- CT
- MR
- NM
- OB
- Pediatric Echo
- Vascular
- Vascular US

After the templates are imported into your department and linked to the appropriate study type, you can use the worksheets to create a variety of reports.

## Changing Templates

Default templates for your study type are assigned by your system administrator. If you need to change the template for the current study, click the **Template** button, which is located in the bottom right corner of the Worksheet window. The **Template** button shows the name of the template you are currently using, for example:

**Adult Echo**

**1**   Click the button to display the list of available templates.

**2**   Select the template that you want to use.
     The worksheet and report for the selected template are displayed.

## Worksheets

The worksheets form the basis of the *syngo* Dynamics Reporting system. A worksheet contains three basic types of information that can be transferred to a patient report.

■   Demographic information (for example, patient name and address)

■   Quantitative or evidence-based data (measurements and calculations)

■   Qualitative assessments and clinical observations

### Displaying a Worksheet

■   Click [icon] to display both the worksheet and reports.

■   When both the worksheet and reports are visible, click [icon] to close the worksheet only or click [icon] to close the reports only.

■   To close both the worksheet and the reports, click [icon].
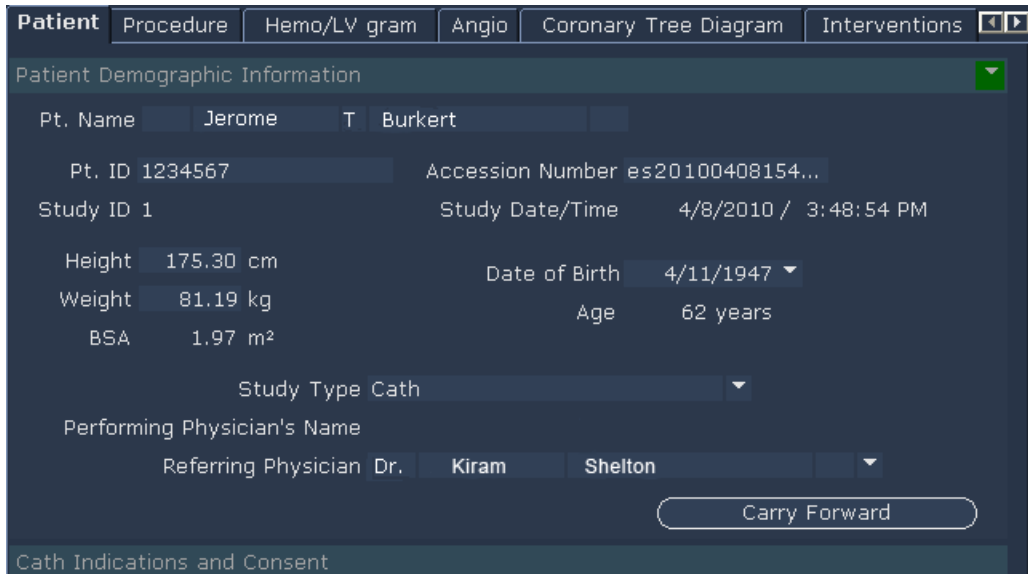
Perform the following steps to display a worksheet.

**1**   Select the desired study from the Study List.

Reporting is not available if the study is in the **DEFAULT** department. You must move the study to an existing department. In Portal, you cannot move a study. You can move a study on the Workplace only.
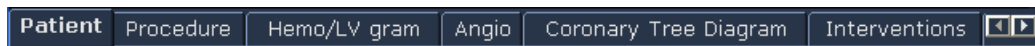
**2**   Click  .

The worksheet for the selected study is displayed. For example:



A typical worksheet has two or more pages. It contains navigation tabs at the top to organize the pages. For example:
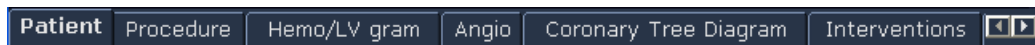


If your system administrator customized the name of a tab to make it more descriptive, the tab shows the new page name.

**3**   Click the tab to display the page that you want to edit.

If the worksheet has more tabs than you can view in the window, click the arrow buttons to the far right to move the tab into view.

## Moving the Worksheet Window

After you display a worksheet, it appears in a separate window. You can move the window to any location on your screen by clicking and dragging the title bar.

## Editing the Patient Data Page

The Patient data page is common to all study types and always appears as the first tab on the worksheet. This page contains patient demographic information sent from the acquisition machine (for example, patient name and date of birth).

You can edit the information on the Patient data page using standard text editing methods, which are described in the following sections.

**Handling Warnings**     A brown exclamation point displays on the **Patient** tab if mandatory information is missing from the Patient data page:  ▐Pt .

Scroll through the page to locate the fields with missing information. Those fields are highlighted in brown. You must supply the missing information for these fields before you can verify a report.

**Editing Text Entry Fields**     To edit a text entry field, such as **Comments** or **Other Findings**, select the field and then type the desired information.

**Viewing Text Overflow**     If the amount of text extends beyond the boundary of a text entry field, an ellipsis (...) is displayed to indicate that more text is available.

To view all of the text in the field, position the mouse over the field.

**Editing a Date Field**     To edit a date field, such as **Date of Birth**.

1   Click the drop-down arrow to the right of the field.
A calendar appears with today's date highlighted.

Click the year. Then, click the Up or
Down arrow to change the year.

Click an arrow to
select the
previous month

Click an
arrow to
select the
next month



To change the
day, click to
select it
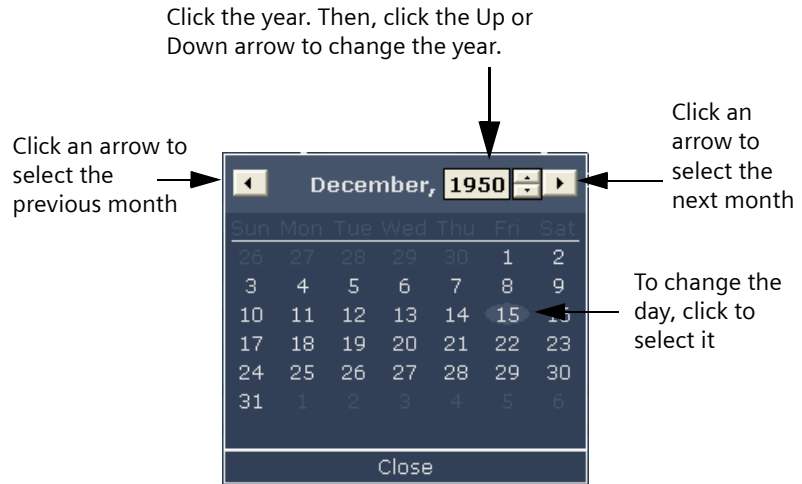
2   Select the day, month, and year (refer to the previous figure).

**Editing a Selection Field**

To edit a selection field, such as **Pt. Gender**, click the drop-down arrow and select an option from the list. For example:

In Portal, the Department, Patient ID, and Site ID fields are read only and cannot be changed on the worksheet. If the template is configured to enable this type of change, you must change it from a *syngo* Dynamics Workplace.

**Selecting a Physician**

To change or add the name of the referring or diagnosing physician, select the desired name from the list.

If you want to change or add a name to the list of diagnosing or referring physicians, contact your System Administrator.

**Editing Indications and Diagnoses**

The **Indications** and **Diagnosis** fields are combination fields that consist of both a list box to select observations and phrases and a text box for entering comments to support or explain your selections.
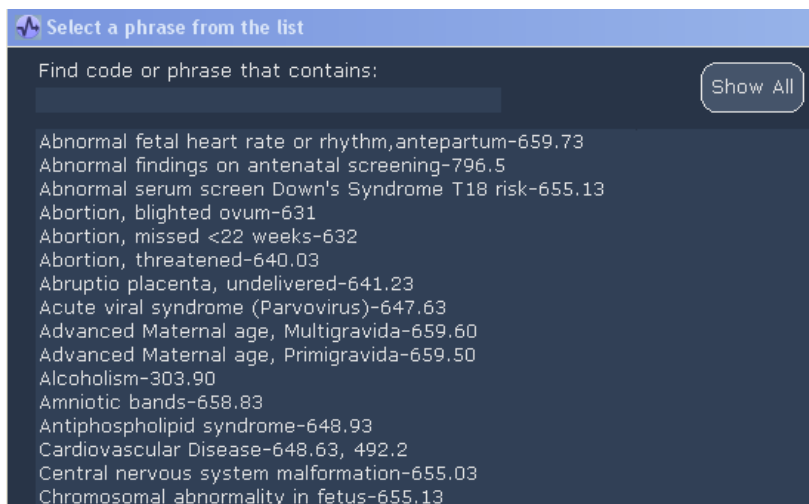
To edit the **Indications** and **Diagnosis** fields, perform the following steps.

1   If desired, type a comment in the text box. For example:
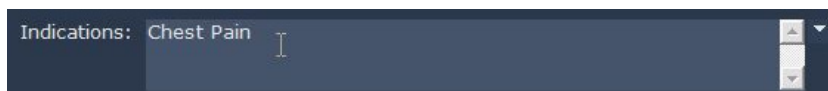
2   To add predefined codes and phrases to your comment, click the arrow to the right of the text box.

A list of codes and phrases is displayed:



The listed codes are not updated by *syngo* Dynamics. You will need to confirm that they are correct. Your system administrator can configure this list so that it also contains non-ICD9 codes and diagnosis and indication phrases.

3   Do one of the following:

■   Click the **Show All** button to view the complete list of codes and phrases that pertain to the current type of study.

■ In the **Find code or phrase that contains** field, type an ICD9 code or part of a phrase.

The list automatically displays only those codes or phrases containing the numbers or phrases that you type. For example, if you type "abn", only those phrases containing the letters "abn" are displayed.



4 To insert codes and phrases into the worksheet, use any of the following methods:

■ To select one phrase, click it and then click Select . Alternatively, you can double-click the phrase.

■ To select more than one phrase, press and hold the **CTRL** key and select each phrase that you want to appear on the worksheet. Then, click

Select .

All of your selections appear in the **Inserted Items** field below the list, for example:



5 To delete a phrase from the Inserted Items field, select it and then press the **DELETE** key on your keyboard.

You can also delete a phrase after you put it on the worksheet by selecting the phrase and then pressing **DELETE**.

6 When you finish, click **Close** to exit.

The selected codes and phrases appear on the worksheet.

## Editing an Assessment Page

A worksheet can contain one or more Assessment pages. An Assessment page typically contains diagnostic quantitative data (measurements and calculations) and qualitative observations for a study.

Most of the information on the patient report is automatically transferred from the Assessment pages. Therefore, after you enter or modify data on an Assessment page, it immediately appears in the report.

To display an Assessment page, click the desired tab. The following figure shows you an example of an Assessment page.

If your system administrator customized the names of the Assessment tabs to make them more descriptive, the tabs show specific names for the pages.



If your site is not using *syngo* Dynamics Reporting for clinical reports, you can still use the Assessment pages to summarize a study and enter qualitative data into the *syngo* Dynamics database.

An Assessment page is organized into sections. Each section has a heading that identifies the type of data (for example, "Left Ventricle" and "Aortic Valve").

If a section contains more data than can be displayed on the page, you see this arrow button to the right of the heading: ▼ .

If your system administrator customized the ▼ button, you may see a name on the button.

Click ▼ to display a Daughter page. A Daughter page is a secondary page that typically contains related but less common calculations and observations.

Colored highlighting on this button indicates the following:

■ Green: you can view additional data on a secondary page.

■ Brown: you can view abnormal values on a secondary page.

To exit the Daughter page, click the **Close** button.

## Editing Fields Common to All Assessment Pages

This section describes how to edit fields common to all types of Assessment pages. For information on editing fields on Assessment pages for specialty studies, see the following sections: "Obstetric Assessment Pages" on page 105, "Cardiac Assessment Pages" on page 109, "Wall Scoring" on page 111, and "Viewing Study Measurements" on page 120.

**Setting Values to "Normal"**

If a field has values that can be reported as "normal", you can automatically select all normal values in a section by clicking set normal .

This command sets all of the blank, non-numeric observations to "normal".

To generate a report that contains normal values from all sections, click Set All Normal . This button is located at the bottom of the Assessment page.

Clicking Set All Normal does the following:

■ Sets to normal all non-numeric fields and previously non-selected fields that have a normal value in the Observation Library.

■ Inserts the appropriate phrases into the report.

**Editing Mandatory Fields**

Mandatory fields with missing information are highlighted in brown on the worksheet.

You must provide a value for all mandatory fields before you can mark the report as **Complete** or **Verified**.

The Report Designer application is used to configure a field as "mandatory". For more information, refer the *syngo* Dynamics Report Designer Manual specific to the software version installed at your hospital.

**Viewing Text Overflow**

Cardiac, obstetric, and vascular measurements and calculations performed at an acquisition machine or *syngo* Dynamics Workplace are usually transferred automatically to one of the Assessment pages.

If the transferred data extends beyond the boundary of a field, an ellipsis (…) is displayed to indicate that more data is available. To view all of the data, position the mouse over the field.

**Editing Measurements**

1   Click the desired measurement field.

A pop-up window is displayed. The window contains up to 10 entry fields. For example:
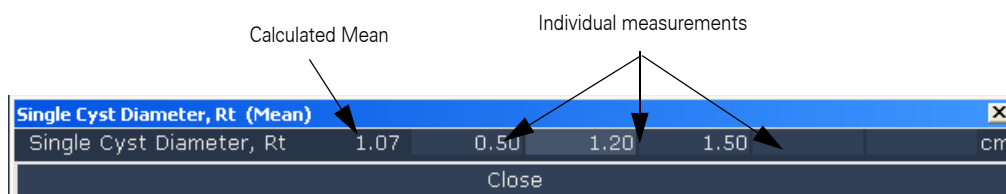


2   Enter or delete a value in one or more of the measurement fields.

A mean value is automatically calculated if more than one field contains a value.

3   Click **Close** to exit the pop-up window.

**Checking for Out of Range Measurements and Calculations**

If you open a worksheet and a measurement or calculation is not displayed, it may be because the value is out of the desirable range for the measurement or calculation. You can check to determine whether the value is out of range.

1   Pause the mouse over the measurement or calculation.

A tool tip displays showing you all of the inputs for the measurement or calculation and indicating whether any of them are out of range, as shown in the following figure:

2   Edit any measurement or calculation that is out of the acceptable range
    (see "Editing Measurements" for instructions).

**Editing Selection Fields**   To edit a selection field, such as Severity, click [icon] . Then, from the list box
select the desired option (for example, **mild**, **moderate**, or **severe**).

**Editing Observations**   Observations are of four types: inclusive, exclusive, anatomic, and
hierarchical.

■   Inclusive observations allow you to select one or more observations from
    a list. Expand the list to view all of the options and then click either in the
    check box or anywhere on the observation to select the option. A check
    mark identifies your selection.

■   Exclusive observations allow you to select only one observation from a list.
    Click [icon]  and then select the desired option.

■   Anatomic observations apply to a selected body part. You can choose one
    option only: **Normal**, **Not Well Visualized**, **Abnormal**, or **Other**.

■   Hierarchical observations are organized in successive levels. Click the +
    (plus sign) to view the levels of observations.

The icons to the right of an observation have the following meanings:

[icon] : indicates that the default value was manually changed (overridden).

[icon] : identifies the default value (as configured in the Report Designer).

For certain observations, you can type a comment to accompany a selection.
To enter a comment, click inside the text box and either edit the existing text
or add new text.

You can use more than one observation in a report phrase. To enable a phrase
with more than one observation to appear in the report, you must select a
value for each observation in the phrase.

If a value selected for a field is not normal, the background color of the field containing the value is brown.

**Deleting Observations**

■ To delete all of the observations on a worksheet page, right click the desired tab and select **Clear observations on this page**.

■ To delete all observations in a study, right click any worksheet tab and select **Clear all observations**.

**Editing a Macro Diagnosis**

Macro diagnosis fields are configured in the Report Designer application. For more information, refer the *syngo* Dynamics Report Designer Manual specific to the software version installed at your hospital.

A macro diagnosis is single finding that is composed of several observations and/or measurements. The single (macro) diagnosis appears on the worksheet. When you select a macro diagnosis, the individual measurements or observations that make up the diagnosis are displayed in a pop-up window.

In the following example, **grade 1** is a macro diagnosis for **Mv grading**.

MV grading  grade 1  ▼

Selecting **grade 1** causes a pop-up window to display. For example:
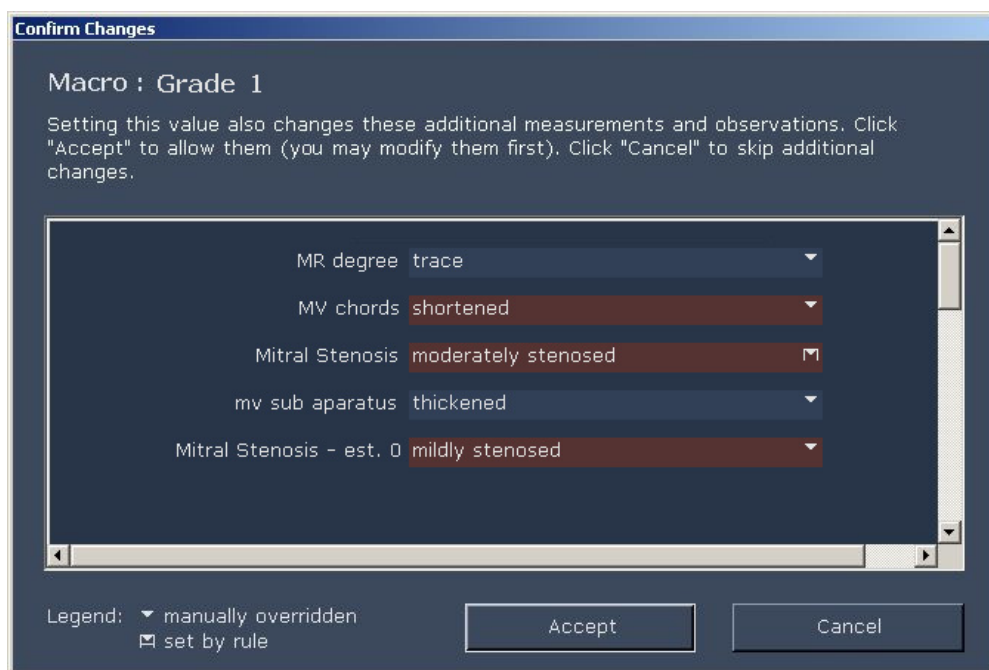
As shown in the previous figure, the macro diagnosis **grade 1** consists of five individual observations.

You can change the value of any observation that is not appropriate for a patient. To do this, click ▾ and then select the desired option from the list.

The legend at the bottom left explains the meanings of the icons:

- ▾ indicates that the default value was manually changed. (The default value is configured in the Report Designer application).

- ⊡ identifies the default value. (The default value is configured in the Report Designer application).

When you finish editing, click Accept to save your changes to the *syngo* Dynamics database or click **Cancel** to exit.

**Editing Data in a Table**

You can edit the measurement and calculation data that is displayed in a table.

- If multiple measurements were taken, the mean value is displayed in a cell. To view the individual measurements that comprise the mean, click the mean value.

- Click an individual measurement to view a table of individual data points and their mean value.

You can edit or delete individual values. When you do this, the mean value is automatically recalculated.

**Carrying Forward Observations**

You can carry forward observations and phrases from prior studies to the current study:

You can carry forward observations and phrases only if the **Carry Forward** option is enabled during template design. For more information, refer the *syngo* Dynamics Report Designer Manual specific to the software version installed at your hospital.

1   On the Patient Data page, click the **Carry Forward** button.
   A list of prior studies for the patient is displayed.

2   Select the prior study (or studies) that contains the information that you want to carry forward.

3   Click **PDF** button to view the report before you carry the data from that report over to the current report.

4   Click **Carry Forward** to bring the observations and phrases from the prior studies you selected into the current study.

The only MacLab data that is carried forward is study data (for example, demographics, X-ray data, and conscious sedation).

**Adding Free Text**  "Free text" fields are provided so that you can type comments and observations. The text you supply automatically flows into the appropriate section of the report.

**Editing Auto-generated Text**  You can edit text that is automatically transferred to the worksheet from an acquisition device. To do this, click the field that contains the text and type your changes. The edited text automatically flows to the appropriate section of the report.

## Obstetric Assessment Pages

This section describes how to edit fields on the assessment pages that are unique to obstetric studies.

**Resolving Prior Study Data Conflicts**  The *syngo* Dynamics system automatically searches for prior studies within the date range of the current pregnancy. If the system detects a conflict between data in the most recently related study and the current study, a warning is displayed when you open the worksheet. The warning is displayed every time you open the worksheet until you resolve the conflict.

Both the current study data and the conflicting prior study data are shown, and the conflicting prior study data is highlighted in red.

To resolve the conflict, do one of the following:

■ To apply the current study data, click the **Use Current** button.

■ To apply the prior study data to the current study, click the **Use Prior** button.

■ Click **Cancel** to close the dialog box without making changes
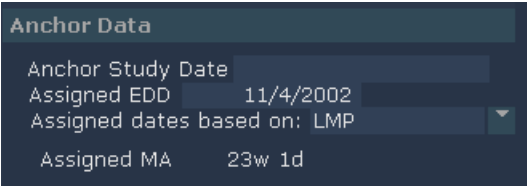
**Editing an Achor Date**  The anchor date is the date used to calculate fetal age. The anchor date determines how LMP%, growth charts, and growth percentiles are reported.

You can assign or change an anchor date for a pregnancy. You can either select a calendar date or fetal measurements as the criteria for anchoring the fetal age. The choice depends on the information you supply.

If a prior study was performed, the anchor date is transferred to the current study. If no prior studies exist, the current LMP or EDD is used to calculate the anchor date. If no LMP or EDD is entered, fetal measurements (US MA) are used to calculate an EDD and anchor date.

Perform the following steps to edit an anchor date.

1   In the **Anchor Data** section, click the arrow to the right of the **Assigned dates** based **on** option



Click this arrow.

The following screen is displayed:



2   Click the button for the type of anchor you want to use (LMP, EDD, or US MA). If you select **Assign EDD To**, you must supply a date. Alternatively, you can type a date in the **Clinical EDD** field at the top of the worksheet.

The anchor date is updated to reflect your selection.

**Creating/Deleting a Fetus Data**   OB calc worksheets contain a section for fetus data. In this section, you can select, create, or delete fetus data.

Deleting fetus data permanently removes all data related to that fetus from the study.

- To manually create fetus data, select **Create New Fetus** from the fetus drop-down list. You can add up to 11 fetuses to each study (labeled A through K).

- To delete fetus data, select **Delete fetus** from the fetus drop-down list.

**Creating/Deleting Sac Data**

OB calc worksheets contain a section for fetal sac data. In this section, you can select, create, or delete fetal sac data:

Deleting sac data permanently removes all data related to that sac from the study.

- To create sac data, select **Create New Sac** from the sac drop-down list. You can add sacs A through K to each study.

- To delete sac data, select **Delete Sac** from the sac drop-down list.

**Editing Fetal Measurements**

Perform the following steps to edit a measurement.

1  Click the desired measurement field.

    A pop-up window is displayed. The window contains up to five entry fields. For example:



Calculated Mean

Individual measurements (up to five)

2  Enter a measurement in one or more fields.

    A mean value is automatically calculated if you enter more than one measurement. The mean is used in all calculations.

    If the mean value is outside the valid range for the defined MA equation, no simple MA is computed and the measurement is automatically excluded from the composite MA calculations.

3  To exclude a measurement from US MA calculations (doing this does not affect EFW calculations), select the check box to the left of each measurement under **Exclude from MA**.

    If acquired measurements do not have regression equations to calculate MA defined in the *syngo* Dynamics System Administration program, the **Exclude from MA** box for that measurement is checked and no ultrasound MA value is computed.

4  Click **Close** to exit the pop-up window.

**Editing Fetal Calculations**

Calculations based on fetal measurement values may appear on the worksheet. You can edit certain types of calculations. If you click the field and a pop-up window displays with editable fields, you can change the calculations using standard editing methods (see "Editing Measurements" on page 101).

Changes to the MA and EFW calculation equations may cause data to change in existing studies that are not locked and marked as "Read."

The equations used to calculate US MA and EFW are defined in the Report Designer Measurement and Calculation Library. All calculations are set up and ratios are defined in the *syngo* Dynamics Report Designer Measurement Library Editor.

Ratio results with the normal range for that ratio can also be displayed on the worksheet. If the ratio result falls outside of the normal range, the abnormal value is displayed in brown.

Growth percentiles are calculated for the standard measurements BPD, HC, AC, FL, HUM, ULN, and TIB if the fetal age is in the valid range for each measurement. If no values exist for a measurement, no growth percentile is displayed.

**Understanding the Growth Charts**

In the *syngo* Dynamics database, all previous studies for the pregnancy contribute data points to the growth charts. Each data point is labeled with a letter that corresponds to a fetus. If a study more than one fetus, each fetus is given an alphabetic label (A through Z). In the following example, two fetuses are represented by the labels A and B:
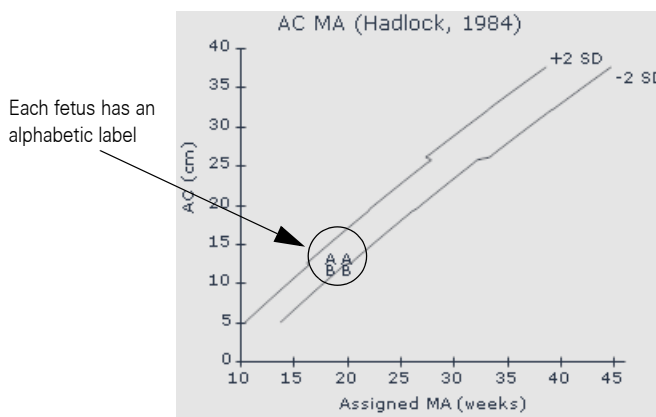


Beneath the growth charts, the anchor data is displayed. Fetal age is computed by calculating the difference between each study's acquisition date and the anchor date. If you need to change the anchor date, see "Editing an Achor Date" on page 105 for instructions.

## Cardiac Assessment Pages

You cannot import third-party hemodynamic data, electrophysiology data, or measurements from Clinical Applications Packages into a study. You must use the Workplace to import this type of data. After the data is imported, you can edit measurement values on the cardiac worksheets.

**Editing Multiple Instances of a Single Measurement**

Certain types of cardiac measurements consist of multiple instances of the same measurement. The mean value of those measurements is displayed on the worksheet. When you select the mean value, a dialog box that contains the individual values that comprise the mean is displayed.

You can tell whether a single measurement has additional related measurements available because the measurement is displayed in a field that has a light colored background.

The following figure shows the individual measurements that make up LV diastolic dimension (LV d) by 2D imaging. When you select the mean value on the worksheet, a dialog box similar to that shown in the figure is displayed. The dialog box shows the individual measurements (up to 10) that make up the mean.

You can edit or delete the individual values as described under "Editing Measurements" on page 101, and the mean is automatically recalculated and displayed on the worksheet.

| LV d, 2D | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| LV d, 2D | 5.95 | 6.00 | 5.92 | 5.94 | | | | | cm |
| HR | 81 | 79 | 80 | 85 | | | | | bpm |

Close

**Editing Peer Measurements**

Peer measurements are measurements that are simultaneously derived from a single cardiac measurement that produces multiple results. For example, spectral Doppler VTI is a single measurement that can also yield results for the following: Vmax, AT, and ET. Each of these can be measured individually on an ultrasound machine, but generating them from a single measurement is as accurate and more efficient.

The following figure shows an example of a dialog box that is displayed when the single measurement AoV VTI is selected. The dialog box shows the single measurement and its related peer measurements:

| **AoV VTI** | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| AoV VTI | 0.993 | 0.993 | | | | | | m |
| AoV Vmax | 3.86 | 3.86 | | | | | | m/s |
| AoV mean grad | 38.5 | | 38.5 | | | | | mmHg |
| AoV AT | 136 | 136 | | | | | | msec |
| AoV ET | 336 | 336 | | | | | | msec |
| AoV Vmn | 2.958 | | 2.958 | | | | | m/s |
| HR | | | | | | | | bpm |
| | | | | | | Close | | |

You can edit or delete the values for the single measurement and its related peer measurements as described under "Editing Measurements" on page 101.

If you delete a peer measurement value that was generated in a Sequoia study, all results obtained from the single measurement including the heart rate are automatically deleted. If you want to delete a measurement that was imported from any other ultrasound system or that was manually entered, you must manually delete its peer measurements.

If you delete one peer group measurement, all measurements in that peer group are deleted (Sequoia studies only).

The following table lists root measurements and their related peer measurements:

| Root Measurement | Related Peer Measurements |
|---|---|
| AoV VTI | AoV VTI |
| | AoV Vmax |
| | AoV Mn Grad |
| | AoV Mn Vel |
| | AoV AT |
| | AoV ET |
| AR Slope | AR Slope |
| | AR DT |
| LV Area, d, A2C | LV Area |
| | LV Major Axis |
| | LV Volume |

| Root Measurement | Related Peer Measurements |
|---|---|
| LV Area, d, A4C | LV Area |
| | LV Major Axis |
| | LV Volume |
| | LV Semi-Major Axis |
| | LV Truncated Semi-Major Axis |
| LV Area, s, A2C | LV Area |
| | LV Major Axis |
| | LV Volume |
| LV Area, s, A4C | LV Area |
| | LV Major Axis |
| | LV Volume |
| LVOT VTI | LVOT VTI |
| | LVOT Vmax |
| | LVOT Vmn |
| RVOT VTI | RVOT VTI |
| | RVOT Vmax |
| | RVOT Vmn |
| PV VTI | PV VTI |
| | PV Vmax |
| | PV Mn Grad |
| | PV AT |
| | PV ET |
| | PV Vmn |
| TV VTI, leaflet tips | TV VTI |
| | TV Mn Grad |

## Wall Scoring

This section describes how to edit fields on the assessment pages that are unique to wall score diagrams of the heart.

*syngo* Dynamics supports both 16 and 17 segment wall scoring with configurable scoring schemes and automated report generation. Four basic schemes are supported:

■  Wall Motion

■  Perfusion

■  Viability

■  Wall Thickening

For more information, refer the *syngo* Dynamics Report Designer Manual specific to the software version installed at your hospital.

Perform the following steps to display the wall score assessment page.

■  Click the **Wall Score** button and navigate to the wall score area of the worksheet

 OR

■  Click the **Wall Score** tab (or similarly named tab).

The wall score assessment page is displayed. For example:



Segment Diagrams
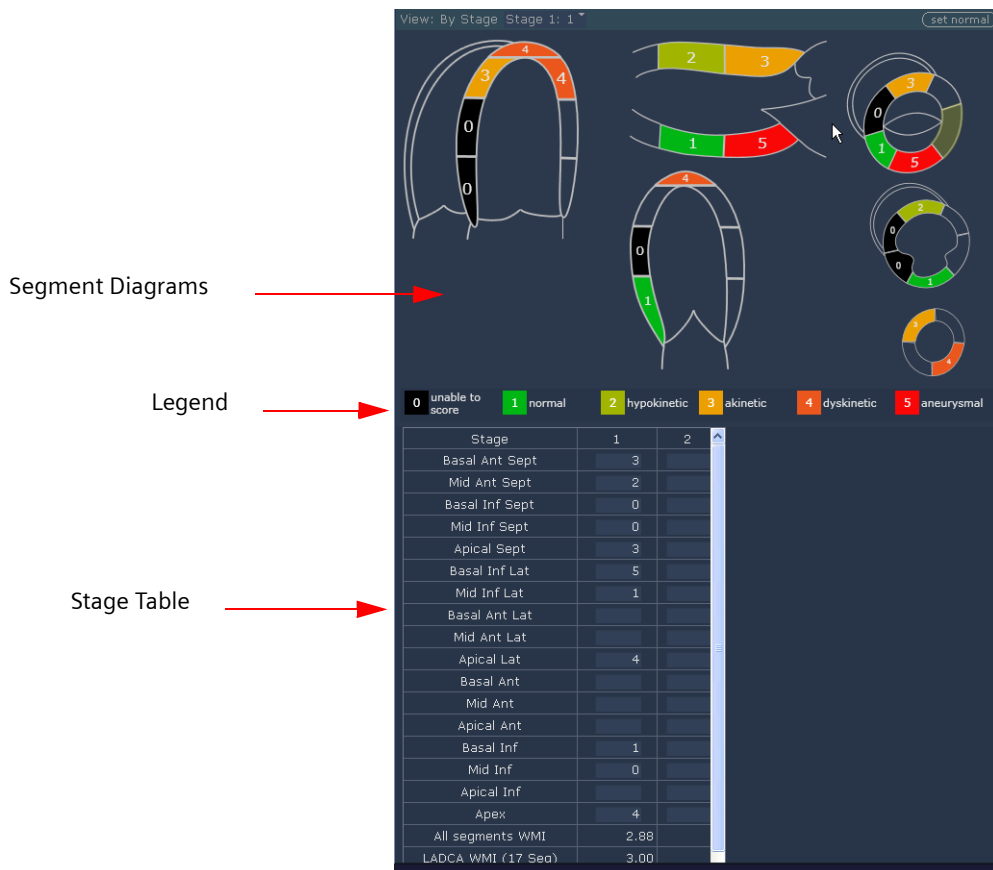
Legend

Stage Table

A wall score assessment page typically contains three main sections:

◼ Segment diagrams: shows views of the heart.

◼ Legend: displays a color-coded range of scores (from 0 to 5) and specifies their meanings.

◼ Stage table: lists the sections of the heart and all of the calculations from the study by stage. When you enter a score on the diagram, it is automatically entered into the table. As scores are entered, values in the table for the segments are recalculated.

If you prefer, you can add each of the previous sections to the worksheet as a separate page. You must create the sections in the Report Designer.

| | |
|---|---|
| **Entering Wall Scores** | In the **View: By Stage** list, select the desired stage. Then, use either of the following methods to enter scores on the worksheet: |

- Using the mouse, click segments of the diagram. Each click increments the wall score by one, cycling through the scores (0 to 5) defined in the legend.

- Pause the mouse over the desired segment. Then, using the keyboard, type a score (0 to 5) on the segment.

- Click `set normal` to specify that all values that you have not already selected and that can be set to "normal" will be reported as "normal".

As you enter values on the diagram, they are entered into the table and calculations for the segments are displayed. Phrases are also transferred to the report and a cartoon corresponding to the diagram is also displayed.

| | |
|---|---|
| **Changing the Scoring Schemes** | You cannot change any of the scoring schemes provided by *syngo* Dynamics. However, you can "clone" or duplicate a scheme and then modify it using the Wall Scoring Scheme Library Editor. To use the editor, start the Report Designer application and locate the editor on the Libraries menu. |
| **Customizing Phrases** | Phrases for the report are developed based on wall scoring calculations and the values you enter on the diagrams. To customize the phrases, use the Wall Scoring Report Generation Library. |
| **Setting Severity Levels** | Each wall score has a severity associated with it. The severity is specified during design time with the Wall Scoring Scheme Library Editor. |
| | For more information, refer the *syngo* Dynamics Report Designer Manual specific to the software version installed at your hospital. |

## Coronary Tree Diagrams

Coronary tree diagrams are schematic depictions of a patient's coronary anatomy. The diagrams provide a graphical interface for you to indicate normalities and abnormalities in the anatomy of a patient's heart and to report findings from cardiac catheterization. Using the diagram, you can indicate the location and severity of every stenosis and visually represent various treatments, such as a coronary bypass or a stent.

There are two types of diagrams: **Without Interventions** and **With Interventions**. Each type of diagram shows the main coronary arteries and branches. You can specify arterial dominance on each diagram by selecting a **Dominance** option (**Right**, **Left**, or **Co**) from the palette.

For ease of identification, the diagrams contain abbreviated labels on the all of the coronary vessels displayed in the diagram. If you position the mouse over the label, the complete name of the vessel is displayed.

A palette of coronary features accompany the diagrams. In general, you edit the diagrams by selecting icons from the palette that represent treatments and abnormalities and dragging the icons to the desired location on the diagram. You can add refinements to your selection by selecting a caliber or a degree of severity from an accompanying menu. The annotation and comment features enable you to document your observations and explain diagnoses and treatments directly on the diagram.
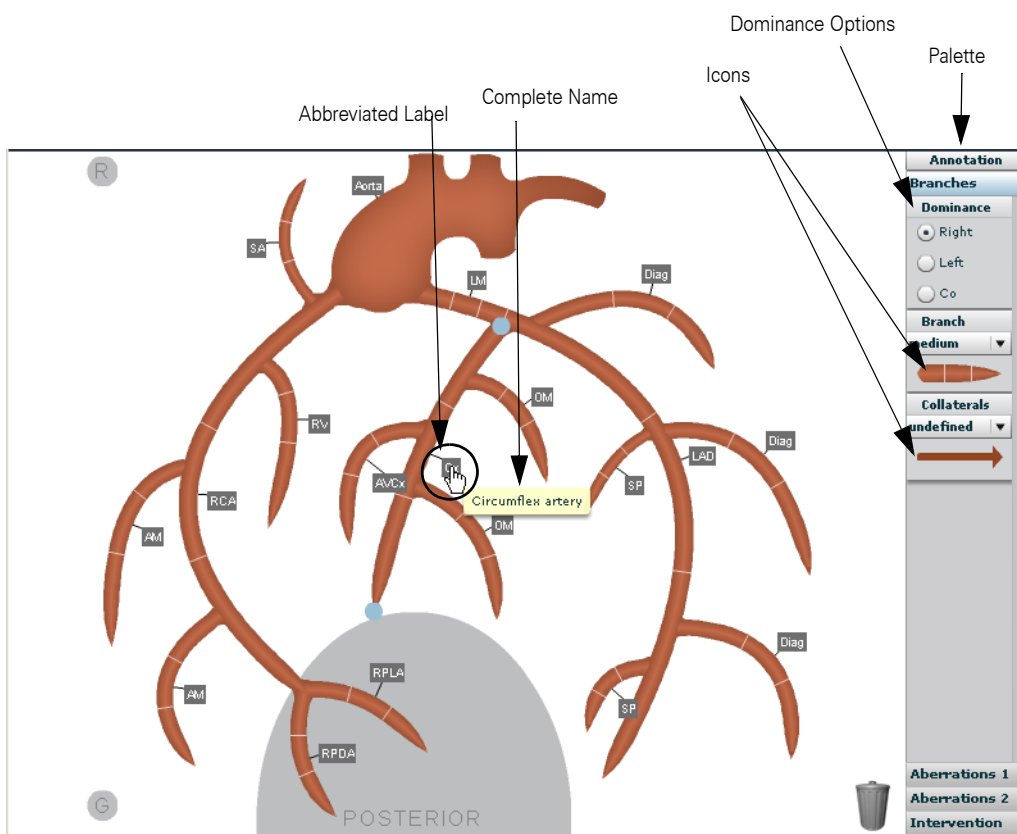


**Loading a Previously Saved Diagram**

To load a previously saved diagram, right click and then select **Load from Library**. Select the desired diagram from the menu.

**Setting All Coronaries to "Normal" Values**

If all coronary arteries are in the normal range, you can indicate this by selecting the **Normal coronaries** check box, which is located under the coronary tree diagram:
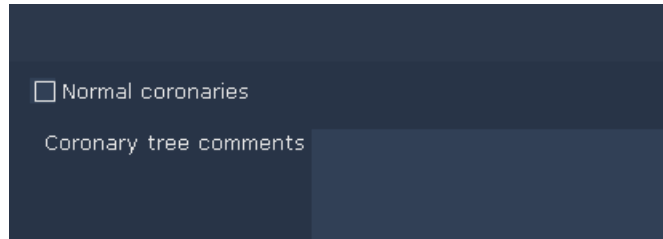


**Entering Diagnostic Information**

You document diagnoses, abnormalities, as well as visible interventions that exist from any previous studies (for example, a previous stent) for the patient on the "Without Interventions" diagram.

Perform the following steps to display the "Without Interventions" diagram.

1   Click the **Coronary Tree Diagram** (or similarly named) tab. The initial view displays a diagram of the heart without interventions.

2   Click the diagram. A palette is displayed to the right of the diagram.

3   On the palette, specify which artery is dominant. Under **Dominance**, select **Right**, **Left**, or **Co**. The diagram changes to reflect your selection.

4   Edit the diagram. (See specific sections that follow for details.)

5   When finished, click **Save** and continue working or click **Save and Close** to exit.

**Recording Treatments**

You can record treatments and interventions, such as stents, grafts, and bypasses, on the "With Interventions" diagram. This diagram may also include diagnostic information from any previous studies on the patient.

Perform the following steps to display the "With Interventions" diagram.

1   Click the **Coronary Tree Diagram** (or similarly named) tab.
    The initial view shows a diagram of the heart without interventions.

2   Click With Interventions to display the "With Interventions" diagram.

3   On the palette, specify which artery is dominant. Under Dominance, select **Right**, **Left**, or **Co**. The diagram changes to reflect your selection.

4   Edit the diagram. (See specific sections that follow for instructions.)

**Modifying the Shape and Length of the Coronaries**

You can modify the shape and length of a coronary artery and even move it to a different location so that the diagram more accurately reflects the patient's anatomy.

1 Click the desired artery.

Blue selection handles appear at the proximal and distal ends to indicate the artery is selected. For example:



Proximal End

Diag

Selection handles
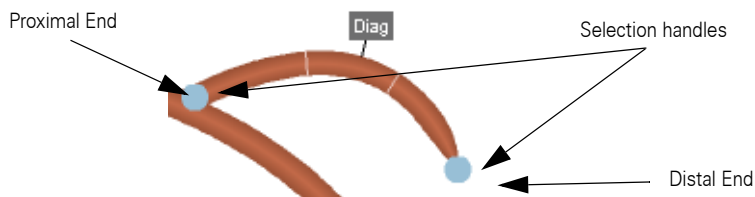
Distal End

2 Do the following:

■ To lengthen or shorten the artery, click and drag the blue handle at the distal end away from or toward the heart, respectively.

■ To bend or smooth the artery, click anywhere on the artery and drag it in the desired direction.

■ To reposition the artery, click and drag the blue handle at the proximal end to detach the artery. Move the artery to the desired location and then release the mouse button.

**Indicating a Collateral Vessel**

To indicate the location of a collateral vessel on the diagram:

1 On the palette, select **Collaterals**.

2 From the **Collaterals** menu, select the type of flow (for example, **faint**).

3 Click and drag the icon to the desired location on the diagram. Then, release the mouse button.



② Click and drag the icon to the diagram

**Collaterals**
undefined ▼

① Select the type of flow
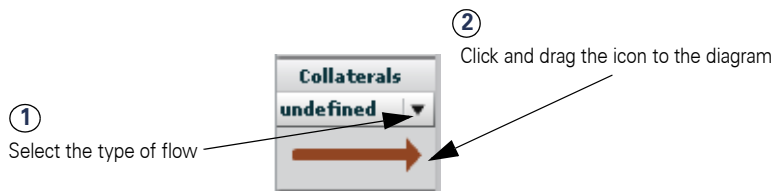
**Recording Abnormalities**

Abnormalities are grouped under two menus on the palette: **Aberrations 1** and **Aberrations 2**.

Perform the following steps to place an abnormality on the diagram.

1   Click the desired **Aberrations** button. The following menu is displayed:



① Select a severity value

② Click and drag the icon to the diagram
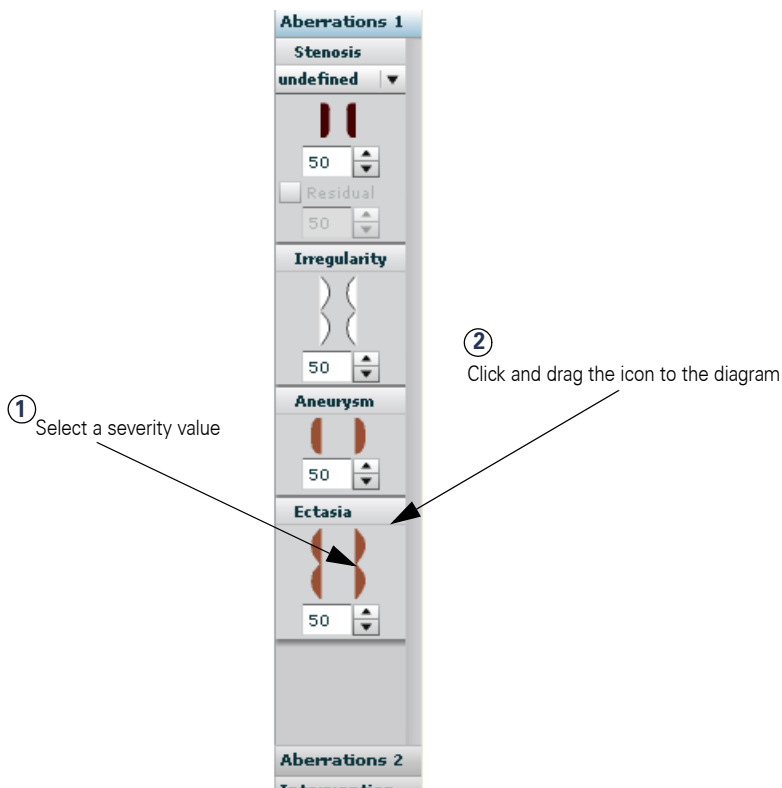
2   Select a severity value.

3   Click and drag the icon to the desired location on the diagram. Release the mouse button when the icon is in the correct location.

**Recording Interventions**

To record an intervention, click **Intervention** .

You record interventions on the diagram using the same method you employ to record an abnormality (see "Recording Abnormalities" on page 117).

**Adding a TIMI Value**

Right click the desired location on the diagram and select **pre-TIMI** or **post TIMI**. Then, select a TIMI value from the menu.

**Adding Branches**

1   Click **Branch** .

2   Select a caliber option (for example, **atretic**).

3   Drag the icon to the desired location on the diagram.
    The added branch will be labeled with the appropriate name.

| | |
|---|---|
| **Adding and Deleting Annotations** | **1** Do one of the following: |

■ On the palette, click and drag **Annotation** to the desired location on the diagram.

■ Right click the location on the diagram where you want to add a comment. A text entry box is displayed.

**2** Enter the desired text.

If you need to expand the size of the text box, place the cursor along the edge and drag the size handles until the box reaches the desired size.

To delete an annotation, click the trash can 🗑 icon in the upper right corner of the text box.

**Adding Comments**

You can add comments for any element that you add to the diagram.

**1** Right click the element on the diagram.

**2** Select **comment** from the menu.

A text box is displayed next to the element.

**3** Enter the desired text.

**4** When finished, click ✓ to accept the text and close the box.

A red dot is displayed on the diagram to indicate that there is a comment associated with the element. For example:



Comment marker
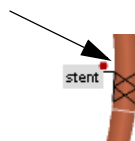
Place your mouse over the red dot to view the full text of the comment.

**Deleting Graphical Elements**

Use any of the following methods to delete an element you placed on the diagram:

■ Select the element and drag it to the trash can 🗑 located in the lower right corner. Alternatively, right click the element and then select **Delete** from the menu.

■ To delete all of the changes you made before the last save, right-click anywhere on the diagram and select **Reset**. All of the changes are deleted.

■ To delete the previous change you made to the diagram, right-click anywhere on the diagram and select **Undo**.

**Saving Changes**

To save your changes without closing the diagram, click **Save**. To save and close the diagram, click **Save and Close**.

**Printing a Diagram**    Use one of the following methods.

■ Right-click and then select **Print** to do a quick print to the default printer.

■ Right-click and then select **Print** from the menu. On the Print screen select a printer. Click **OK** to print.

## Viewing Study Measurements

To view actual measurements that were taken by the acquisition machine for a specific study or that were made on images at the Workplace, click the **View Data** button and then select **Study Calcs**.

The **View Data** button is located at the bottom of the worksheet, as shown in the following figure:
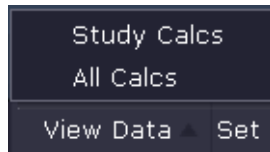


The **Study Calcs** screen is displayed (see the next figure).

Following is an example the type of information that is displayed on the **Study Calcs** screen. The example shows actual measurements taken during a cardiac study and sent by the acquisition machine to the *syngo* Dynamics database.

| Study Calcs | | | | ☒ |
|---|---|---|---|---|
| **2D** | | **Aortic Valve** | | |
| BSA (Haycock): | 1.21 m² | AoV area (Vmax): | 1.52 cm² | |
| | | AoV area (Vmn): | 1.17 cm² | |
| **Left Ventricle** | | AoV area (VTI): | 1.24 cm² | |
| LV ETc, Mmode: | 421 msec | AoV area i (Vmax): | 1.78 cm²/m² | |
| LV HR for ET: | 73 bpm | AoV area i (Vmn): | 1.38 cm²/m² | |
| LV HR for meanVcfc: | 73 bpm | AoV area i (VTI): | 1.46 cm²/m² | |
| LVOT area: | 6.44 cm² | AoV AT: | 100 msec | |
| LVOT CI: | 9.50 l/min | AoV AT/ET: | 0.33 | |
| LVOT CO: | 8.08 l/min | AoV ET: | 304 msec | |
| LVOT diam s: | 2.86 cm | AoV mean grad: | 45.5 mmHg | |
| LVOT HR for LVOT CO: | 68 bpm | AoV pk grad: | 83.0 mmHg | |
| LVOT peak grad: | 5 mmHg | AoV Vmax: | 4.56 m/s | |
| LVOT SI: | 139.7 ml/m² | AoV Vmn: | 3.150 m/s | |
| LVOT SV: | 118.8 ml | AoV VTI: | 0.959 m | |
| LVOT Vmax: | 1.07 m/s | | | |
| LVOT Vmn: | 0.575 m/s | **Patient Demographics** | | |
| LVOT VTI: | 0.185 m | Pt. Age: | 067Y | |
| | | Pt. Age (yrs): | 67.95 years | |
| **Patient Exam Info** | | Pt. Birth Date: | 6/21/1942 | |
| BSA: | 0.85 m² | | | |
| BSA (Boyd): | 1.34 m² | **Study Info** | | |
| Height: | 60.00 cm | Study Date: | 6/4/2010 | |
| Number of Prior Studies: | 9 | Study Time: | 7:50:15 AM | |
| Weight: | 70.00 kg | **Wall Scoring – Perfusion** | | |
| | | Number of Stages: | 1 | |
| **Wall Scoring – Motion** | | | | |
| Number of Stages: | 1 | **Wall Scoring – Viability** | | |
| | | Number of Stages: | 1 | |

## Adding Measurements to a Study

The measurements and calculations that are possible for every type of study (for example, cardiac and obstetric) are configured in the Report Designer application.

In certain situations, you may make measurements offline that you want to add to a study. This procedure shows you how to add those measurements to your study.

**1**  Click the **View Data** button and then select **All Calcs**.
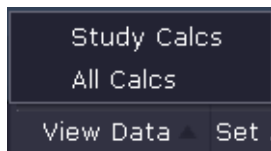


The **All Calcs** menu is displayed.
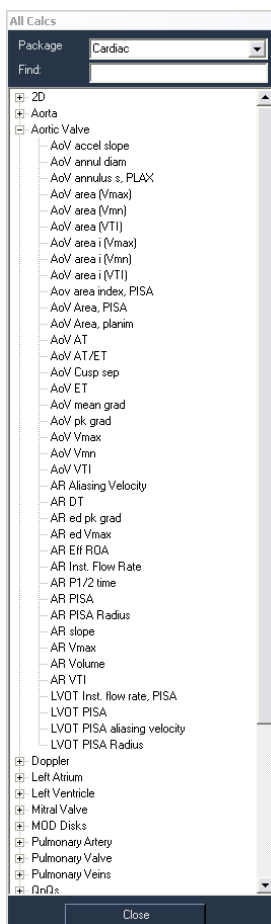


On this menu, you can access all of the measurement categories for every study type.

**2**  In the **Package** list, select the type of study, for example, Cardiac.

All of the measurement categories for the type of study you selected are displayed.

3    To locate the category for the measurement that you want to add, type the name of the category in the **Find** box.

4    For each measurement that you want to add to the study, do the following:

■    Click the **+** (plus sign) next to the category to display a list of measurements.

■    Select the measurement.
A pop-up window is displayed.

■    Enter the offline measurements in the individual fields.
Calculations are automatically computed.

5    When finished, click **Close**.
One of the following actions occurs.

■    If the worksheet and report are set up to include the new measurement, the measurement and any derived calculations are automatically transferred to the worksheet and report.

■    If the worksheet and report are not set up to contain the new measurement, the measurement is saved in the database. If you open a different worksheet and report that is set up to include the measurement, it will be automatically displayed.


## Printing a Worksheet

You cannot print worksheets in the *syngo* Dynamics Portal application.


## Saving Changes to the Worksheet

To save worksheet changes to the *syngo* Dynamics database, click **Save**. The worksheet remains open and you can continue to make changes.


## Closing the Worksheet

Click the **Close** button to close the worksheet. Any changes you made are automatically saved to the *syngo* Dynamics database.

## Patient Reports

Reports are the documents of record for a study. They contain "evidence-based" data (patient demographics, study measurements, and calculations) and clinical observations.

Reports typically include the following information:

- Hospital or clinic's logo or letterhead
- Demographic information about the patient, such as the patient's name and address
- Date of the study
- Type of study performed.
- Specific measurements taken and a written account of significant clinical observations
- Summary list of diagnostic findings. **BACKSPACE** and **DELETE** keys on your keyboard do not function in the summary.
- Name of the physician.

Each section of a report can be generated quickly by transferring information from the worksheet for the study.

A study can have multiple reports (for example, a Nurse, Patient, Physician, and Technologist report). You can create all of the reports for a given study from the same worksheet.

Following is an example of the type of information that can be included in a patient report:

Logo and header

Patient data

Table of measurements

Clinical observations and phrases



**SIEMENS Demo Hospital**
**Ann Arbor, MI  48103**
Phone: 734 555 1212 Fax: 734 555 1213

| | | | | | |
|---|---|---|---|---|---|
| Pt. Name: **Jerome Tood Burkert** | | Sex: | M | Study Date: | 4/23/2001 |
| MRN #: 00778877 | | DOB: | 9/4/1964 | Sonographer: | Lonnie Hollis |
| ACC#: 201245 | | Ht.: | 67 in | Wt.: | 154 lb |
| | | | | BSA: | 2 m² |

| M-Mode | Diastole (cm) | NL Values (cm) | Systole (cm) | NL Values (cm) | | |
|---|---|---|---|---|---|---|
| RV | 2.1 | 1.9 - 2.6 | 1.6 | 1.5 - 2.2 | LV EF | 75 % |
| IVS | 1.2 | 0.6 - 1.1 | 1.4 | 0.6 - 1.1 | LV SV | 55 ml |
| LV | 4.1 | 3.7 - 5.6 | 2.3 | 2.0 - 3.8 | LV SI | 30 ml/m² |
| LVPW | 0.9 | 0.6 - 1.1 | 1.2 | 0.9 - 1.4 | LV CO | 4 l/min |
| Ao Root | 2.7 | 2.0 - 3.7 | | | LV CI | 2 l/min/m² |
| LA | | | 3.89 | 1.9 - 4.0 | | |

| AoV | | AoV | LVOT | | |
|---|---|---|---|---|---|
| VTI | | 0.2 m | 0.2 m | | |
| VMax | | 0.7 m/s | 0.7 m/s | LVOT Diam | 2.00 cm |
| PGrad | | 6 mmHg | | | |
| Mn Grad | | 3 mmHg | | | |

| MV | | | | | |
|---|---|---|---|---|---|
| | Mn Grad | 2 mmHg | E VMax | 1 m/s | |
| | P 1/2 T | 101 msec | A V Max | 0 m/s | |
| | MV Area | 2 cm² | E/A | 4.00 | |
| | MV DT | 349 msec | MV VTI | 0.23 m | |

| TV | | | | | |
|---|---|---|---|---|---|
| | TR Vmax | 3.10 m/s | TV E Max | 0.80 m/s | |
| | TR Pk Grad | 38.4 mmHg | TV Mn Grad | 2.0 mmHg | |
| | RA Pressure | 10 mmHg | P 1/2 T | 108 msec | |
| | RVSP | 48.4 mmHg | TV VTI | 0.210 m | |

**Left Ventricle:** The left ventricular cavity size is decreased. Normal left ventricular systolic function. Ventricular wall thickness is mildly increased. LV shape and wall thickness are normal. Normal LV filling pressures.

## DICOM Structured Reports

*syngo* Dynamics uses DICOM structured report (SR) objects as a means of receiving measurements and data from acquisition machines, and as a means for providing measurements and data to other DICOM devices. Information, except for observations and custom-defined measurement calcs, contained in reports and worksheets can be retrieved by means of DICOM SR.

When you use reporting on Portal, the most current data from the worksheet and reports is saved to the *syngo* Dynamics server as part of a standard DICOM SR, unless SR creation is disabled (see your system administrator for details).

*syngo* Dynamics supports structured reporting from many vendors, for example, Philips iE33 for cardiology and vascular, Philips iU22 for OB Gyn and vascular, and Siemens CV70 for adult echo. Contact your Siemens representative for a list of supported machines and a list of measurements that can be imported into *syngo* Dynamics.

*syngo* Dynamics cannot guarantee that all elements from a third-party DICOM SR object will be imported into *syngo* Dynamics.

## Moving a Report Window

After you display a report, it appears in a separate window. You can move the window to a different location by clicking and dragging the title bar. Moving the window to a different location is useful when it blocks your view of images and clips that you want to examine in the user interface display.

## Editing a Report

As mentioned earlier, some of the information that appears in a report is generated automatically from data entered at the acquisition machine. That data is then transferred to the worksheet and ultimately into the report.

You can edit data that was automatically transferred (measurements and calculations), but care must be taken when doing so. This section shows you how to edit data that is automatically transferred as well as how to edit observations and phrases, and how to add information and images to a report.

You can enter and save data into a worksheet or report for an in-progress study. You need not wait until the study is completed.

In-progress studies are indicated by a watermark at the bottom of the screen. This is a static indicator and remains even if the study ends during the web reporting session.

**Study is in progress**

Any changes made to the worksheet and report data (either by you or by an acquisition device) are saved to the study database on the server and can be viewed by all *syngo* Dynamics Workplace and Portal users.

You can now view a Sensis study. Data will be displayed with a watermark and will not be updated unless the study is closed.

! If structured report objects arrive during in-progress reporting, these will not be reflected in the web worksheet or report until the report and/or worksheet are closed and re-opened. Any edits made during the web reporting session (including measurements) will not be overwritten by a subsequent structured report import.

Perform the following steps to edit a report.

1   Click **Report**.

All of the reports for the selected study are opened. Each report has its own labeled tab.

2   Select the tab for the report that you want to view and edit.

The following sections show you how to edit sections of a report.

**Editing Patient Data**   For most patients, demographic data remains the same from visit to visit. If you need to change patient data, you should do this on the worksheet (see "Editing the Patient Data Page" on page 95 for details). The changes you make on the worksheet are then automatically updated in the report.

**Editing Measurements and Calculations**   Measurements and calculation data are often displayed in tables in a report. If you need to change measurements that appear in a report, you can use one of the following methods:

■   Make editing changes directly on the worksheet (see "Editing Measurements" on page 101). The changes you make on the worksheet are then automatically updated in the report.

■   Use the following procedure to change a measurement or calculation in a report:

1   In the report, right click on the measurement or calculation.

A menu is displayed that lists the associated measurement or calculation.

For example, if you right click the measurement **Left atrium diameter**, a menu similar to the following is displayed.
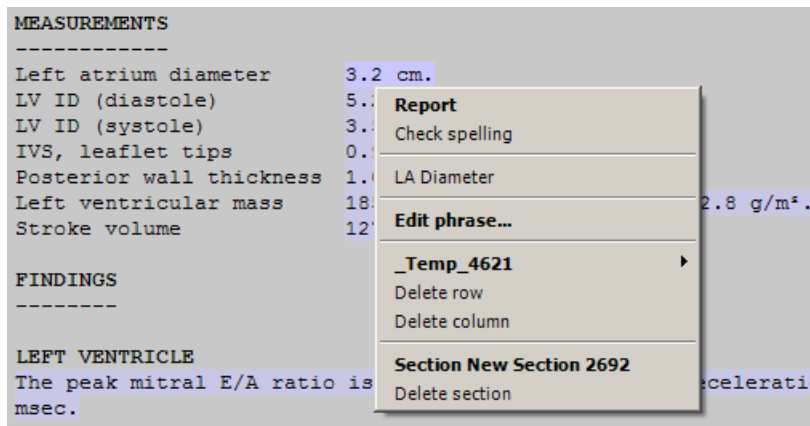


2   From the menu, select the measurement or calculation that you want to change. For example, in the previous figure, select **LA Diameter**.

Your selection takes you to the exact field on the worksheet where the measurement or calculation is located.

3   Change the measurement or calculation on the worksheet.

The change is automatically transferred to the report.

If you change report data manually, links to associated worksheet items are broken. Any subsequent change on the worksheet for a data item whose link is broken will not be transferred to the report.

**Editing or Adding Text**

If you need to add text to a report or edit auto-generated phrases, you can use one of the following methods:

Make changes directly on the worksheet. (See "Adding Free Text" on page 105 and "Editing Auto-generated Text" on page 105 for details). The changes you make on the worksheet are automatically updated in the report.

Perform the following steps to edit phrases in a report.

1   In the report, right click the phrase that you want to change.

   A menu is displayed that lists the associated observations related to the selected phrase. For example:

```
FINDINGS
--------

LEFT VENTRICLE
The peak mitral E/A ratio is 2.14.   The mitral flow deceleration time is 537
msec.                                    Report
                                         Check spelling
RIGHT ATRIUM
The right atrium is structurally normal.   MV DT

MITRAL VALVE                             Edit phrase...
The mean mitral gradient is 25.9 mmHg.   The   Section New Section 26 3500
msec.                                         Delete section

AORTIC VALVE                             Section Left Ventricle 3448
The peak gradient is 60.5 mmHg.   The mean g   Delete section
diameter of the left ventricular outflow t                ity
in the left ventricular outflow tract is 95   Section Dependent venous refilling   he
aortic valve is 324.0 cm/s.                   Delete section
```

2   Select the desired observation from the menu.

   Your selection takes you to the exact location on the worksheet where the observation is located. The observation is highlighted.

3   Edit the observation on the worksheet. In the report, the phrase containing the observation is automatically updated.

If you change report data manually, links to associated worksheet items are broken. Any subsequent change on the worksheet for a data item whose link is broken will not be transferred to the report.
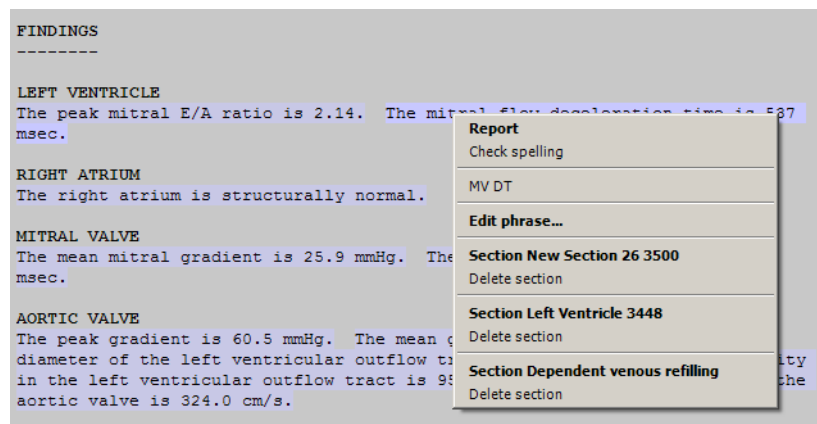
**Editing Observations and Phrases**

You can change phrases directly in a report if you have the appropriate privileges. In the report, right click the observation or phrase and then make the desired change.

Any changes to the structure or content of a report must be made in *syngo* Dynamics Report Designer. For more information, refer to the *syngo* Dynamics Report Designer Manual specific to the software version installed at your hospital.

**Correcting the Spelling**    Perform the following steps to correct spelling errors in a report.

1    Right click anywhere in the report. A menu is displayed.

2    Select **Check Spelling**.
     A dialog box is displayed that contains a suggested spelling:
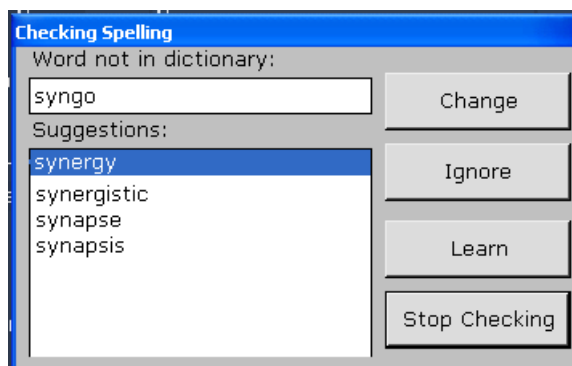


Misspelled words or words not found in the *syngo* Dynamics dictionary are highlighted in yellow.

3    Do one of the following:

■    If one of the suggested spellings is correct, select it and click **Change**.

■    If the word is correctly spelled but *syngo* Dynamics does not recognize it, click **Ignore**.

■    If you want to add the word to the dictionary, click **Learn**.

4    To stop the spell checker and exit the utility, click **Stop Checking**.


## Adding and Deleting Images

If the Report template is configured to accept images, you can add an image to a report. Follow these steps:

1    In the Study List, select the desired study. All of the images from the study are displayed in the Image Review Panel.

2    Click the **Report** button at the top of the study list to open the reports for the study and select the desired report.

3    Select the desired image. Then, click the **To Report** button. The image you selected appears in the report.

4    To add comments to accompany the image, click in the body of the report and type your comments.

◆ To delete an image, right click on the image and then select **Delete** from the menu.

## Changing the Status of a Report

The reports at your site can vary in number and by type. For example, your site may have a separate report for the patient, one for the technologist, and another for the physician. Each report is handled separately and may change its status several times before it is finalized or "verified".

To denote the status of each report, the letter D (Draft), C (Completed), or V (Verified) appears in the **Report** column on the Study List. If there is more than one report for the study, each report is assigned a letter and the letters are separated by a dash (-), for example D-C-C.

Following are the stages that each report may pass through:

■ Draft (D) indicates that the report has been created and is in a preliminary form.

■ Completed (C) indicates that the report contains all of the required and necessary information.

■ Verified (V) indicates that the report is approved and signed by the physician who has the required privileges.
  Your system administrator can also configure a report to be automatically locked after it is "Verified".

■ "Unlocked" (U) indicates that the report is currently unlocked and can be updated.

If you look at the report tab, you will see an icon (to the right of the label) that indicates the current status of the report, for example:

■ **Physician** ☐ the report is in the draft stage.

■ **Physician** ▮ the report is completed and unlocked.

■ **Physician** ☑ the report is verified and unlocked.

■ **Physician** ☑ the report is verified and locked.

Depending upon how the status levels for a report are configured (by your system administrator), certain actions may automatically result after you change a report's status. These configured actions are the same in Portal as on the Workplace.

A watermark may also be displayed on each report to indicate its current status:

■ "Preliminary" indicates that the report is in the preliminary or draft stage.

■ "Final (Updating)" indicates that the report is unlocked and is currently being changed.

■ "Final (Updated)" indicates that the report is locked.

■ "Final (Amended)" indicates that an addendum was added to the report.

## Marking a Report as "Completed" or "Verified"

The appropriate personnel marks the report as "Completed" after determining that the necessary information is included and it is ready for review. A report is marked "Verified" after the person with the appropriate privileges authorizes its contents. Verification is typically the last stage of reporting and indicates final approval of the report.

To verify a report, you must be granted dual privileges: the privilege to mark the report as "Completed" and the privilege to mark the report as "Verified". The system administrator is responsible for configuring the required permissions.

Note that your system administrator can also configure a report to be automatically locked when it is "Verified". In addition, the report can also be configured to be automatically "Marked as Read" when it is "Verified".

1   From the Study List, select the desired study. Then, click the **Report** button.

All of the reports for the selected study are displayed. Each report has a labeled tab that identifies it.

2   Do one of the following:

■ Select the report tab whose status you want to change and then click


.

OR

■ Select the report tab and then select **Mark Current Report as Completed** or **Mark Current Report as Verified**.

3   If a report is assigned to a different physician and you are verifying it, a dialog box is displayed stating that you are attempting to verify the report that is not assigned to you. Click **OK** to continue with the report verification.
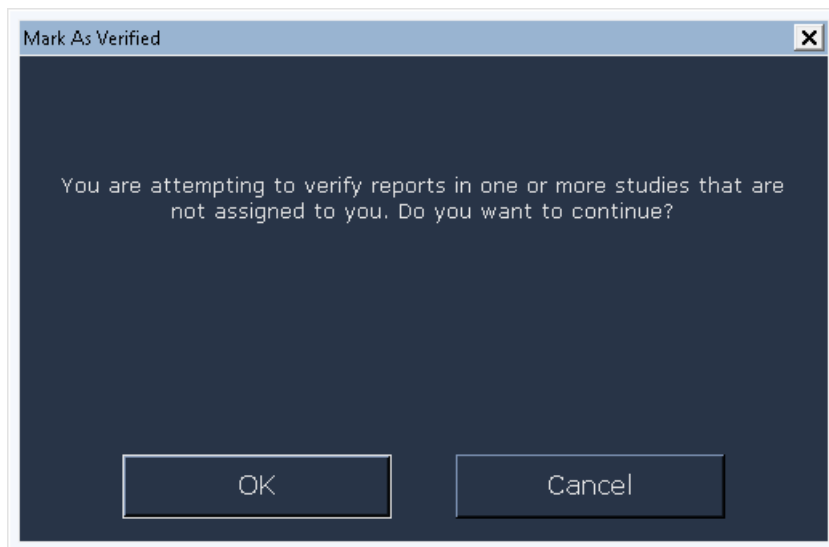
4   If prompted, type in your password.

If a report is assigned to a different physician and you are verifying it, the following dialog box is displayed with the name of the assigned physician (as illustrated below). You may choose a different user name, specify the password, and then click **Mark as Verified**.
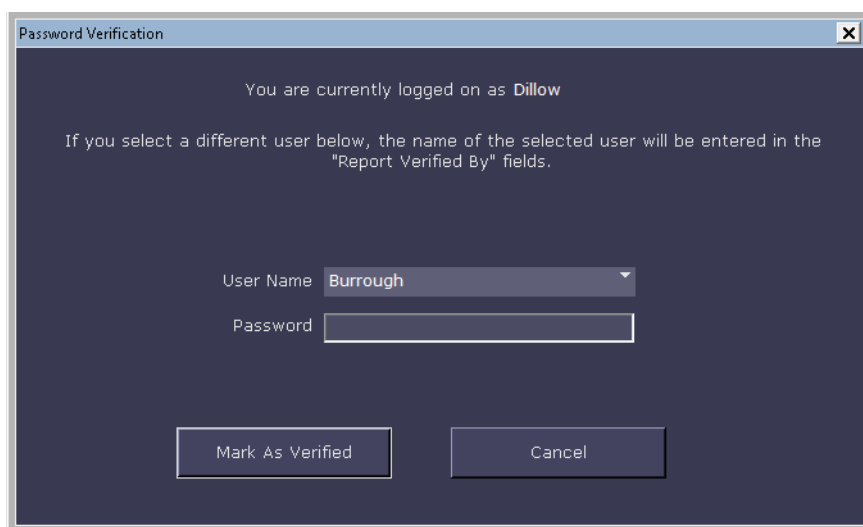
The status of the report is updated based on your selection and a time stamp (based on the time settings of the *syngo* Dynamics server) is inserted into the report.

The report tab is also updated. An icon (to the right of the label) reflects the change, for example:

- **Physician ☐** the report is completed and unlocked.
- **Physician ✓** the report is verified and unlocked.
- **Physician 🔒✓** the report is verified and locked.

For studies that contain multiple reports assigned to different physicians, the diagnosing physician field is updated with all the physician names who have verified a report. Any subsequent study assignments overwrite the diagnosing physician field until the next report is verified. On verification, the field is updated with the recent physician names who have verified the study. The corresponding physician ID (National Provider Identifier - NPI), if configured, is also displayed on report completion or verification.

## Manually Marking a Study as Read

You cannot manually mark a study as read in Portal. However, your system administrator can configure the study to be automatically marked as read when the report is marked as verified (see "Marking a Report as "Completed" or "Verified"" on page 133).

## Adding an Addendum to a Report

After a report is verified and locked, you should not make subsequent changes that significantly affect its meaning or contents.

If you need to make changes to a report, you can add one or more addenda. Each addendum is dated and signed by the person who writes it.

Perform the following steps to add an addendum.

1  Click **Addendum** at the bottom of the report.
   The **Addendum** is available only if the report has been verified and locked.

2  In the **Addendum** dialog box, type the information you want to add.

3  If prompted, supply a password.
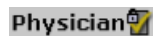
The addendum is added to the report.

## Saving Changes to a Report

To save report changes to the *syngo* Dynamics database, click **Save**.

The report remains open so that you can continue to update the content.

## Unlocking and Re-locking a Report

If a report is locked, a lock icon is displayed on the report tab:

**Physician**

If you need to make minor changes (for example, correct a spelling error or add a missing word) to a report, you must first unlock it.

The unlock feature should only be used to make minor changes to a report. If you need to change the content or accuracy of a report, you should add an addendum (see "Adding an Addendum to a Report" on page 135" for instructions).

You must be assigned the privilege to unlock a report. See your system administrator for assistance.

Perform the following steps to unlock a report.

> **!** You cannot unlock a report in a study that is locked. To unlock the study, ensure that the study is first **Marked as Unread** from the Workplace.

1   Right-click on the report tab and then select **Unlock Current Report**.
    The report status changes to unlocked. Note that the locked icon no longer appears on the report tab.

2   Make the desired changes to the worksheet and, if necessary, to the report.

You may now want to re-lock the report.

◆   To re-lock the report, right-click the report tab and then select **Lock Current Report**. The lock icon re-appears on the report tab.

## Managing Reports

This section shows you how to manage your reports. You can add and delete reports from the system, print or fax them, and send them from Portal to physicians and to your information system

### Adding and Deleting a Report

1   Click the **Template** button.
    This button is located in the bottom left corner of the Report window. It has the name of the template you are using. For example:

    **Adult Echo**

2   Do one of the following:

■   To add a report, select **Add Report**. Then, select the type of report you want to add from the menu.

■   To delete a report, select **Delete Report**.

A message is displayed that asks you to verify the request. Click **Yes** to delete the report or **No** to cancel.

### Replacing a Report

1   Click the **Template** button.
    This button is located in the bottom left corner of the Report window. It has the name of the template you are using.

2   To replace a report, select **Replace Report**. Then, from the menu select the report that you want to replace the current report with.

The report you selected replaces the current report.

### Cloning a Report

1   Click the **Template** button.
    This button is located in the bottom left corner of the Report window. It has the name of the template you are using.

2   Select **Clone Report**.

An exact duplicate of the current report is created. A tab for the cloned report is added.

## Saving a Report to a File or as an Image

In Portal, you cannot save a report to a file. In addition, you cannot save a report as a DICOM image. These actions must be performed from a *syngo* Dynamics Workplace.

## Printing a Report

You can print a report on a Portal printer that is configured in *syngo* Dynamics or on a local printer that is selected in the Windows **Settings** > **Printers and Faxes** dialog box.

The system administrator can configure the application to automatically print a report after it is marked as "Verified".

Do one of the following:

■ Click **Print Preview** to review the report. Then, click **Print**.

■ Click **Send to** at the bottom of the Report window and then select **Printer**:

If buttons for menus do not appear at the bottom of the worksheet or report, maximize your browser window or adjust your screen resolution until the options appear.

## Faxing a Report

If your site has the Report Faxing option (ask your system administrator), you can fax a report to a referring physician and up to four additional recipients.

The system administrator can configure the application to automatically fax the referring physician after the report is marked as "Completed" or "Verified".

1   Click **Send to** at the bottom of the Report window.

2 Select **Fax to**.

The **Fax** dialog box is displayed:



3 In the **Referring Physician** field, either select or type the name of the physician.

If you regularly send faxes to persons who do not appear on the Referring Physician list, ask your System Administrator to add the names to the list.

4 In each **Report Recipients** field, either select or type the name of a physician.

5 If necessary, type a fax number in the **Fax Number** field.

Note: If you change a fax number in the fax dialog, it is not changed in the physician database. To permanently change a fax number, contact your System Administrator.

6 (Optional) In the **Fax Location** field, type a location.

7 Do one of the following:

■ Click **Fax** to fax the report.

- Click **Fax and Print** to fax the report and print the report on your local printer.
- Click **Cancel** to exit without sending a fax.

**Viewing the Fax Log**   All faxes sent from your *syngo* Dynamics network are recorded in a central log. If you want to view the fax log to check on the status of a transmission, you must do so from the Workplace.

### Sending a Report to a RIS/CIS/HIS

After you review or create a report in Portal, you can send it to your RIS/CIS/HIS.

1   Click **Send to** at the bottom of the Report window:
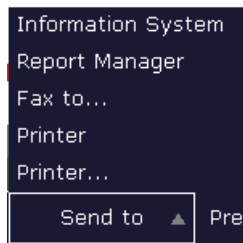


2   Select **Information System**.
  The report is sent to the information system designated by your system administrator.

In case the report template contains multiple reports (and when configured) the system shall append all completed or verified reports before uploading them to a RIS/CIS/HIS. This shall be done after each report state change.

The reports are uploaded in the order they appear in the portal. The appended report shall contain the signatures of all the physicians who have signed the report.

Uploading reports requires HL7 interface integration. Contact your IT administrator to ensure that this is done prior to system configuration.

## Viewing the Event Log

The Portal application adds messages and information to the event log to document significant actions that you perform or that the system executes. The information in the event log can help you identify and diagnose the source of problems you experience.

Perform the following steps to view the log.

1   Click [?] (Help button), which is located in the upper right corner of the screen.

2   Select **Event Viewer** to display the log of user actions and application, security, and system events.

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# Image Testing

## Constancy Check

*syngo* Dynamics is a category A diagnostic imaging devices (DID) requiring special conditions for the technology and at the installation site. This is in accordance with the X-ray regulations (RöV, January 8, 1987, in the version of the regulations amending the RöV and other atomic energy regulations of June 18, 2002).

These imaging devices require the user to perform a monthly constancy check in accordance with RöV, § 16, as per DIN V 6868-57 2000, Safeguarding Image Quality in Diagnostic X-ray Operations, Acceptance Test for Imaging Devices.

The characteristics and reference values for the constancy check are determined during the acceptance test. Reference values are generated with test tools (light meter, class B (DIN 5032-7) or higher, with valid calibration, range of 0.05 cd/m2 - 10000 cd/m2).

Siemens provides the SMPTE test images for the constancy check.

■ Use clinical reference images from each imaging device (modality), whose images are displayed on a Workplace. Typical of the medical application, these images are stored in the imaging device with their optimal display parameters and key image properties.

■ Make sure that the test image fills the screen completely (Zoom / Acquisition Size).

■ The room lighting for the constancy check should be the same as when generating and documenting reference values for the imaging devices.

# Loading Test Images

*syngo* Dynamics provides test images for service activities on this CD.

Perform the following steps to import test images.

1   Start the *syngo* Dynamics application.

2   Insert the "Image Constancy Check" CD into the CD drive.

3   In Windows Explorer, click on the CD drive to show the list of studies.

4   Copy the studies directly from the CD or import them to the server by using the **Copy To** button at the bottom of the *syngo* Dynamics study list.

5   Go to the computer you will use for *syngo* Dynamics Portal access, open a study, and follow the instructions to select a test image.

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**CE 0123**

Manufacturer's note:

All product designations and company names are trademarks or registered trademarks of the corresponding companies.

Siemens reserves the right to modify the design and specifications contained herein without prior notice.

Some of the specifications described herein may not be currently available in all countries. Please contact your local Siemens Sales representative for the most current information.

Caution: US federal law restricts the herein described devices to sale by or on the order of a physician.

The software described herein is CE compliant in accordance with Directive MDD 93/42/EEC Appendix II of June 14th, 1993.

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