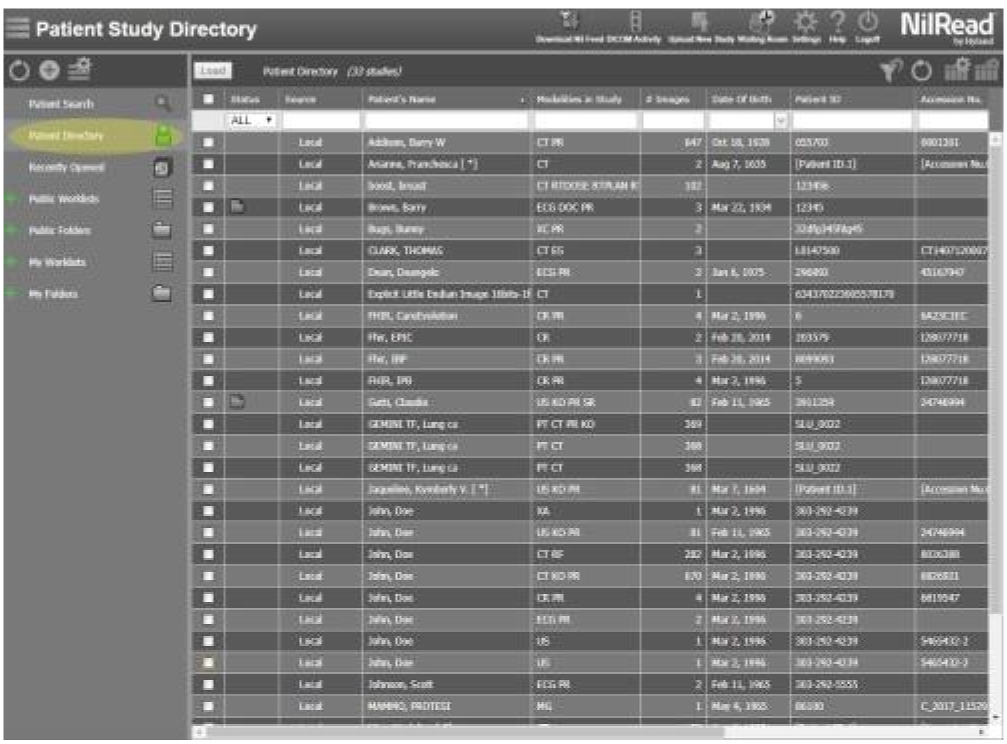
NilRead provides several methods to open a study. The easiest method is the Patient Directory.

> **Note**
> The studies you can view depend on your privileges in NilRead. You may be given access to specific studies or you may be able to view the full directory.

> **Note**
> Other methods to open a study include a more detailed search, worklists, folders, and a list of recently opened studies. For details, see **Access studies**. You can also open multiple studies at once. This allows you to review multiple studies in a single session without having to return to the Patient Study Directory. For details, see **Open multiple studies**.

1. In the Patient Study Directory, select **Patient Directory**.



All studies are shown. If multiple studies exist for a patient, they are listed on separate lines.

> **Note**
> Studies are loaded on demand as you scroll down the page. On mobile devices, you can also swipe to move through the pages.

2. To open a study, click (or tap) anywhere on the directory entry for the study.

To find a study in the directory:

1. Enter information about the study in the blank row below the column headings (patient name, patient ID and so on).
2. To find a study based on status, select one of the following options in the **Status** column:
   - **All** Show all studies.
   - **Available** Show studies containing at least one report.
   - **Not Available** Show studies with no reports.
   - **Approved** Show studies containing at least one approved report.
   - **Locked** Show locked studies.
3. To view all studies again, select **Clear** .

To customize the columns:

- Select **Customize** in the top-right corner. To add a column, drag a column from the **Customize** list to the location where you want to place it. To remove a column, drag it to the **Customize** list.
- Click (or tap) a column heading to sort the studies. Click (or tap) the column heading again to sort the studies in the reverse order.
- To rearrange the columns, drag a column heading to a new location.
- Select **Reset** to reset the columns to the default sort order, remove any custom columns and reload all studies.
- Select **Refresh** to refresh the studies list and view the latest changes made by all users.

Use presentations

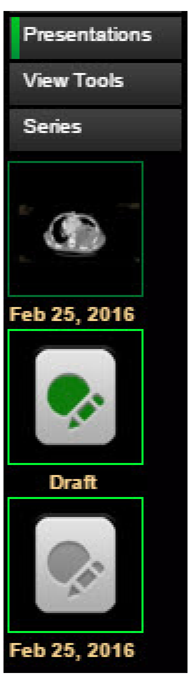
The measurements and annotations you apply to an image are saved in a presentation.

A draft presentation is automatically created when you open a study (if a draft does not already exist). Your changes will continue to be added to the draft until you approve the presentation. Once a presentation is approved, it cannot be modified.

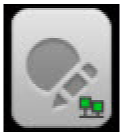
When viewing an image, you can apply presentations in order to view different measurements and annotations you have saved.

> **Note**
> A bookmark is a special kind of presentation. In addition to measurements and annotations, bookmarks also store image visualization settings such as layout, window, level, and zoom. For more information, see **Share bookmarked images**.

Presentations are shown in the side panel with the most recent presentation at the top of the list. Bookmarks are listed first, then draft presentations, then approved presentations. For approved presentations, the approval date is shown. The following example shows a bookmark, a draft presentation, and an approved presentation:



The list may also include presentations that originated from a third-party, such as PACS or VNA. These presentations are automatically marked as approved and use the following icon:



> **Note**
> If you do not have permission to use persistent presentations (for example, if you are a guest user), you will be able create annotations and measurements but your changes will not be saved.

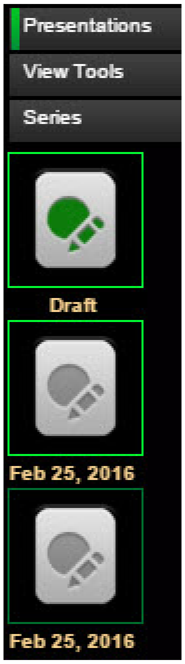
Select presentations

You can apply one or more presentations to the image you are currently viewing. When you open a study, the most recent draft presentation and the most recent approved presentation are automatically applied. Use the Presentations side panel to manually select the presentations you want to apply.

> **Note**
> Applying a bookmark may change the current draft presentation for the image. When you view a bookmark, the following settings that were captured during the bookmark creation will be applied: the layout, the series selected for each viewport, and the presentations applied to the displayed images.

1. Select **Presentations** (side panel) to view the presentations for a study.
2. Select one or more presentations to apply them.

The presentations you have selected are highlighted in the side panel. In the following example, the draft presentation and the first approved presentation have been applied to the image:



To remove a presentation from an image, select the highlighted presentation in the side panel. The presentation is no longer applied to the image and is no longer highlighted in the side panel.

Approve a presentation

Right-click (or touch and hold) a presentation, then select **Approve**.

An approved presentation cannot be modified. Annotations in approved presentations are shown with dashed lines, indicating that they cannot be modified. The Presentations label in the bottom-left corner of the image will contain the word “Approved” and the approval date.

Note that a typical NilRead implementation will automatically push back to PACS or VNA presentations through a lifecycle rule.

Create a draft presentation

If you approve or delete a draft presentation, a new draft presentation is not automatically created during the current viewing session. To create a new draft presentation, right-click (or touch and hold) any existing approved presentation, then select **Make Draft**. A blank draft presentation is created.

If you attempt to apply annotations or measurements to an image and a draft presentation does not exist, you will be given the choice to:

- Make a new draft presentation which will be used to save your changes.
- Allow transient in-session overlays. This allows you to apply annotations and measurements during your current session. These changes are temporary and will not be saved.

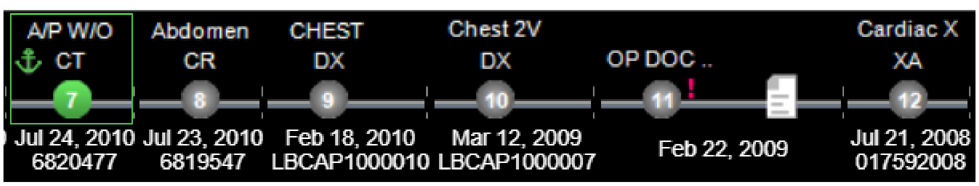
If you choose to allow transient in-session overlays, the Presentations label in the bottom-left corner of the image will contain the word “Transient”, indicating that your changes will not be saved.

Delete a presentation

Right-click (or touch and hold) a presentation, then select **Delete**.

Use the patient timeline

When you open a study, a timeline with additional studies and reports for the patient is shown at the top of the image viewing area.



> **Note**
> The timeline is only shown if enabled by the system administrator.

The following information is shown on the timeline:

- Prior studies and DICOM embedded PDF reports are shown in chronological order.
- Anchor indicating this is the current study.
- Exclamation mark to identify if a warning exists for a study or report.
- Number of studies including the modality.

- Date of the report
- Accession number
- Study description

View study or report details

Hover over a study or report in the timeline to view more detailed information.

Accession Number:	6819547
Time:	Jul 23, 2010 2:43 PM
Number Of Series:	2
Number Of Images:	2
Study Description:	Abdomen
Referring Physician:	Willacker, Lisa Lynn
Device:	Local
Availability:	Local
Report Status:	No Reports
Keywords:	ABDOMEN

View a study

Select a study in the timeline to load it in all viewports. The study is opened using the default hanging protocol for the study.

or

Drag a study from the timeline to a viewport. This allows you to place different studies in different viewports. A warning appears near the top of the image viewing area stating that multiple studies are displayed.

View a report

Select a report in the timeline. The report opens below the timeline. The following options are available when viewing reports:

- **Save** Save a PDF copy of the report.
- **Print Report** Print the report from your browser.
- **Vert/Horiz** Place the report area on the right side (Vert) or bottom (Horiz) of the screen.

- **Maximize/Restore** View the report area only and hide the image viewing area (Maximize) or view both the report area and the image viewing area (Restore).
- **Close** Close the report.

> **Note**
> To resize the image viewing and report areas, drag the divider between the two areas.

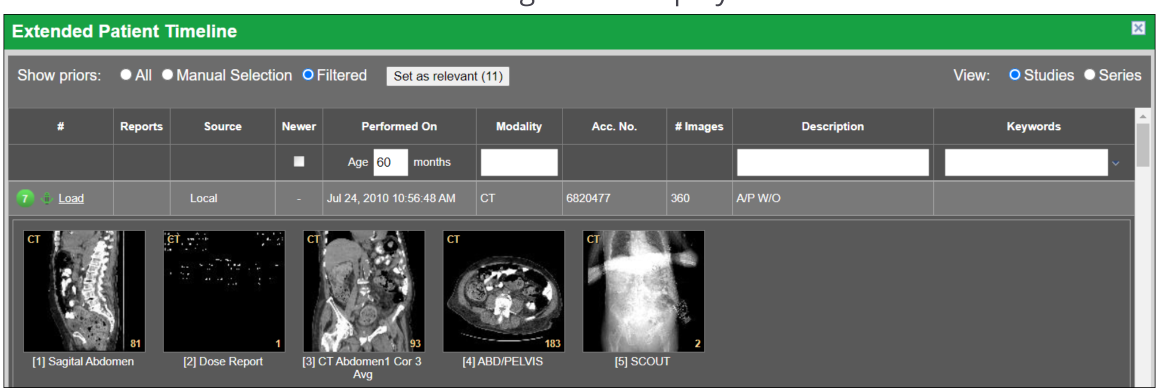
Select priors to include in the timeline

You can select the priors to include in the timeline.

1. Select the **Filter icon** located at the right side of the timeline. The number under the icon indicates how many studies are displayed in the timeline (for example, All or 2/3).

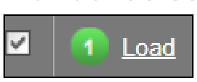
   The **Extended Patient Timeline** dialog box is displayed.

2. Select **Set as relevant**. The selected prior studies are shown in the timeline.
3. To filter the available priors, select one of the following options beside **Show priors**:

   All. Include all priors.

   Manual Selection. Select the check box for the prior to include.

   Filtered. Enter search information in the blank row below the column headings. You can select priors based on **Age**, **Modality**, **Description** and **Keywords**.

4. To load a prior in the image viewer, select the prior study, then select **Load** link.

Retrieve prior studies

Use the prior icon in the timeline to trigger a background retrieve of prior studies while reading the current (anchor) study. This behavior is only available for priors located on dicom devices using a 'cache' retrieve mode.

Filter the timeline using one-click

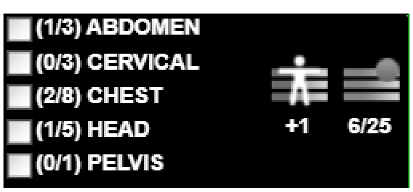
When viewing a patient's timeline, you can filter the studies according to keyword(s) associated with that study.

In order to see keywords, you must have the following options enabled:

- **Enable study keyword tagging** enabled through **Settings | System | Timeline** (option available to system administrators only).
- Matching Hanging Protocols Templates configured through **Settings | Hanging Protocols | Rules Templates**.

To filter the timeline using one or more keywords:

1. At the far right of the timeline, select the checkbox(es) for the applicable keyword(s). The number in parentheses indicates the number of studies shown, All matching studies are displayed in the timeline.



If no keywords have been associated with a study, the text "no keywords found" is displayed inside of the keyword list.

2. To see what keywords are associated with a particular study, hover over the study to display the keyword information.
3. To update the timeline and remove any previously selected keywords, select the checkbox for the applicable keyword(s).

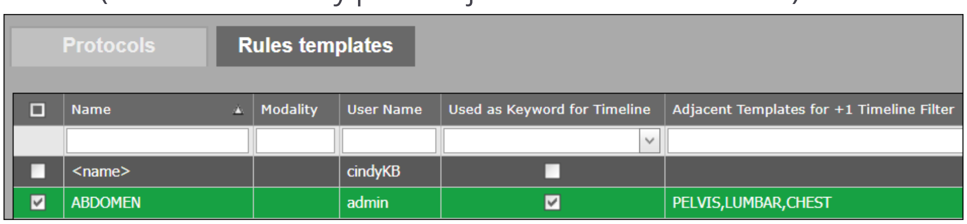
> **Note**
> It is possible to filter the timeline entries only by keywords, ignoring any other existing timeline filters. This option is available by enabling the **Available Keyword Matching Only** option through **Settings | User Preferences | Patient History**.

Filter the timeline using Plus One (+1)

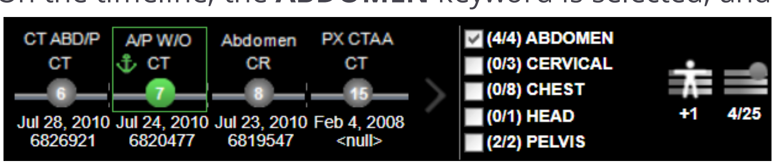
The Plus One (+1) feature expands the studies in the timeline based upon the adjacent keyword relationship as defined in the **Rules Templates**. This allows you to append the current study type with other relevant studies, allowing for easier and quicker viewing of related material.

Example scenario

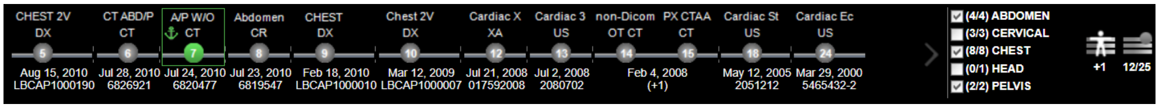
- The Rules templates for **ABDOMEN** includes the adjacent templates **PELVIS, LUMBAR and CHEST** (as these are body parts adjacent to the ABDOMEN).



- On the timeline, the **ABDOMEN** keyword is selected, and the timeline looks like this:



- When the **+1 icon** is selected, the keyword(s) defined as adjacent to the ABDOMEN in the Rules templates are automatically selected; for example, CHEST and PELVIS. The timeline is updated and shows all the relevant studies by date.



- If you continue to click the **+1 icon**, more adjacent keywords are selected, and more studies are shown based. For example: The ABDOMAN, CHEST and PELVIS keywords are selected. When you select **+1 icon**, the adjacent keywords for CHEST - CERVICAL and HEAD - are selected, and the timeline is appended with the relevant studies.
- If all keywords are selected and you select the **+1 icon**, all the keyword selections are cleared.

Timeline display options

The timeline display can be changed in several ways:

- Hovering over the image area to bring the timeline to the foreground.
- Using the collapse/expand arrow widget to hide the timeline.
- Changing the **Workstation Preferences | Image viewer controls | Always show timeline** to **Yes** so that the timeline displays a separate area, and not overlapping the image.

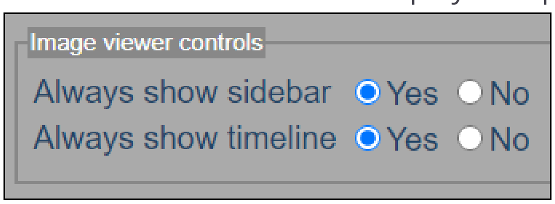


Image stitching

Use image stitching to assemble several images into a larger, more cohesive image. This can be useful to produce an image containing a larger area or an entire body part to which measurements can be applied.

> **Important**
> The images will be stitched in the order you select them. **For the best results, stitch images sequentially from top to bottom.**

1. Open a study.
2. In the side panel, select the first image in the sequence.
3. Select **View** (toolbar), then select **2D View > Stitch Editor**.
4. In the side panel, continue to select the images you want to stitch together. The images will be stitched in the order you select them. **For the best results, stitch images sequentially from top to bottom.**
5. To remove an image from the stitched image, right-click (or touch and hold) the image, then select **Delete**.
6. To fine-tune the stitched image, zoom in and drag the images to align them more precisely. To zoom in on the stitch areas, select **View Tools** (side panel), then select **Zoom on Stitch** to view the first stitch area. Select **Zoom on Stitch** again to view the next stitch area. To view the entire image again, select **Fit View**.
7. When done, select **Save** from the **View Tools** panel. The stitched image is saved in a new series.

Hide images on the screen

When viewing a study, you can hide the images on the screen without closing the study. This allows you to quickly hide sensitive information from others who may be able to see the screen.

To hide images, select **Close** (toolbar). To view the images, select **Open** (toolbar).

Add notes to a study

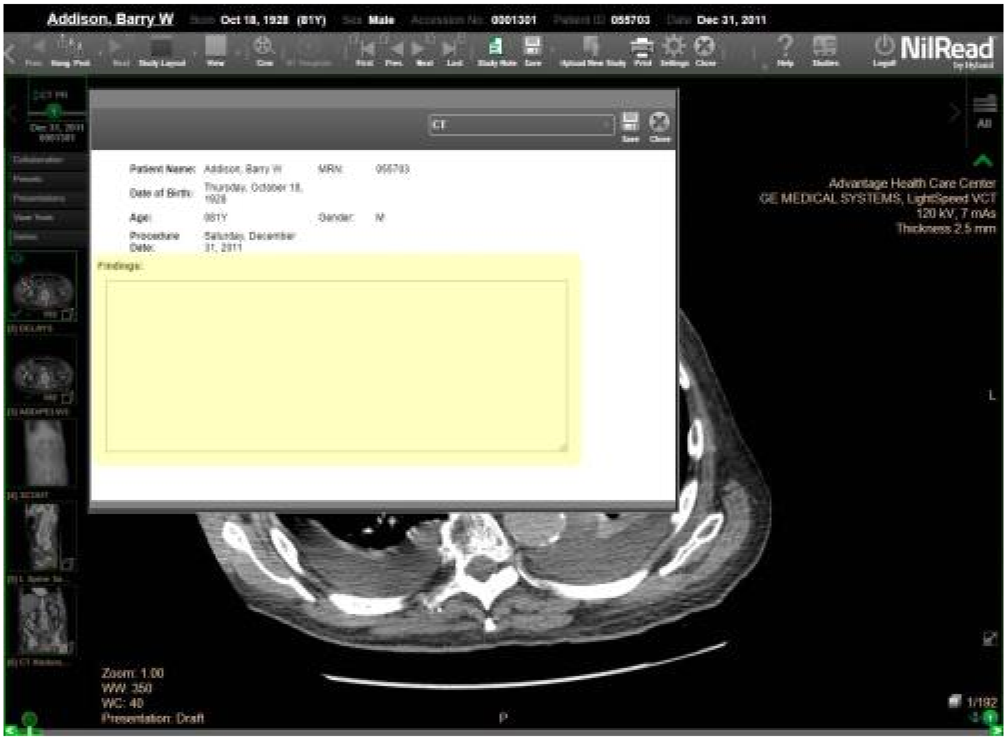
You can add notes as you are reviewing a study. These notes are available until you close the study.

You can also save the notes as a report. The report can be accessed the same way as other reports (on the patient timeline and in the Patient Directory).

1. Select **Study Note** (toolbar). A new window appears.
2. Select a template. If there is only one applicable template for the study, it is applied automatically.

> **Note**
> For details on creating templates, see **Manage study note templates**.

3. Enter your comments in the **Findings** area. You can leave the window open as you work with the study. To move the window to a different location on the screen, drag the title bar.



4. To create a report, select **Save**, then select **Close**.
5. If you do not want to create a report, select **Close**.

Apply presets

Use a preset to visualize different aspects of a study. For example, a CT study could include a pre-set to visualize vessels or a preset to visualize bones. The study view, modality and rendering mode determine what presets are available.

- **2D** Presets can change window level.
- **MPR** Presets can change rendering mode and opacity.
- **3D** Presets can change rendering mode and opacity.
- **Sculpting** Presets can change rendering mode and opacity.

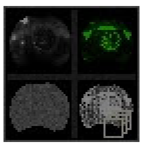
When you apply a preset, any changes you have made to an image will be removed (rotation, annotations, etc.). Any changes you make to a preset are not saved.

1. Select **Presets** (side panel). The presets available for the study are shown below the side panel.
2. Select a preset thumbnail.

For details on modifying presets, see **Change window level presets**.

Create a series with all images

NilRead can automatically create a “virtual series” that contains all images in a study in the order they were acquired. The virtual series is added to the side panel and the series icon shows four images side-by-side. For example:



When you hover over the series, the description is **All images**.

You can control whether virtual series are created automatically. You can also choose whether virtual series are created only for studies containing a specific modality.

1. Select **Settings**.
2. Under **Preferences**, select **Modality Preferences**.
3. Enter the following information:
   - **Modality** Select the modality for which you want to set the virtual series preference.
   - **Virtual Series** Select **Yes** to automatically create virtual series for the modality you selected. Select **No** if you do not want to create virtual series for the modality you selected.
4. Select **Save**.

View stereometric images

If a study contains stereometric images, NilRead automatically creates a series containing all stereometric pairs of images in the study. The series is added to the side panel and the series icon shows two images side-by-side. For example: