

Image Exchange User Guide

1. Introduction and Overview

1.1 Image Exchange

Image Exchange allows organizations to share their radiology and cardiology imaging studies, and for those images to be viewed by users in full diagnostic quality through HIE Portal or InContext. This document serves as a general user guide to help navigate Imaging Access.

Please contact your HIE Account Manager if your organization would like more information about sharing images. Our imaging exchange service allows for:

- **Improved patient care and treatment outcomes:** Faster access to images frees up time and attention for patients
- **Reduced costs:** No need for physical CD distribution and storage
- **Improved Patient Safety:** Reduces the need for repeat scans
- **Enhance Collaboration and Communication:** Expands the network of those who can virtually share images

1.2 Key Features

- View high-resolution medical images in full DICOM quality
- Ability to measure, zoom, collaborate, flip, revert, and rotate imaging studies, allowing for
- Ability for credentialed sites and users to transfer image studies to PACs

1.3 Access and Permissions

To view images, users must have access to see clinical information in the HIE Portal or InContext. If you need access, please contact your organization's HIE Admin. Please reach out to your Account Manager for more information about sharing your organization's images.

2. Product Functionality

This section outlines the step-by-step process for viewing images in the HIE Portal and the InContext App.

2.1 Navigate to Your Patient

Below are the steps to patient search in the HIE Portal:

1. Log into HIE Portal
2. Search for your patient
3. Select Clinical Information

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Patient Search

First Name *
anna

Last Name *
cadence

Date of Birth *
11/16/1981

Gender *
▼

SSN

Reset Search

Results

First Name	Last Name	Date of Birth	Gender	Address	Match Score
Anna	Cadence	11/16/1981	Female	1021 Main St., Columbia, MD	117 - probable

Select App

- Clinical Information
- Referrals

Below are the steps to patient search in InContext:

1. Log into your EHR. Launch InContext
2. Select the best-matched patient

2.2 View Imaging Reports and Corresponding Images

Below are the steps to view Imaging Reports and corresponding images

4. Once on the Clinical Information tab, navigate to the Radiology subtab within Health Records.

Health Records

ALL LABORATORY **RADIOLOGY** CLINICAL NOTES

Date Collected (ET) ↓	Source	Category	Description	Provider
2023-02-14	Adventist Healthcare White Oak Medical Center	Radiology	XR Chest 1 View	Naicisyhp6 Znaicisyhp6
2023-02-01	Adventist HealthCare Shady Grove Medical Center	Radiology	XR Chest 1 View	Naicisyhp6 Znaicisyhp6
2022-05-18	Danbury Hospital	Radiology	XR Chest 2 Views	Jose Mendez
2022-05-18	Danbury Hospital	Radiology	XR Chest 2 Views	Jose Mendez
2022-05-18	Danbury Hospital	Radiology	XR Chest 2 Views	Jose Mendez
2022-05-09	American Radiology Services	Radiology	TEST PDF FOR INT14528 WITHOUT IMAGING STUDY	REBECCA KAUFMAN
2022-05-09	Holy Cross Hospital	Radiology	TEST PDF FOR INT14528	REBECCA KAUFMAN
2019-04-16	Adventist HealthCare Shady Grove Medical Center	Radiology	CTA Chest w/ + w/o Contrast	Aaron Adler
2019-02-01	Adventist HealthCare Shady Grove Medical Center	Radiology	XR Ankle Complete Right	Agyapong
2018-03-15	Adventist HealthCare Shady Grove Medical Center	Radiology	XR Chest 1 View	NAICISYHP6 Znaicisyhp6

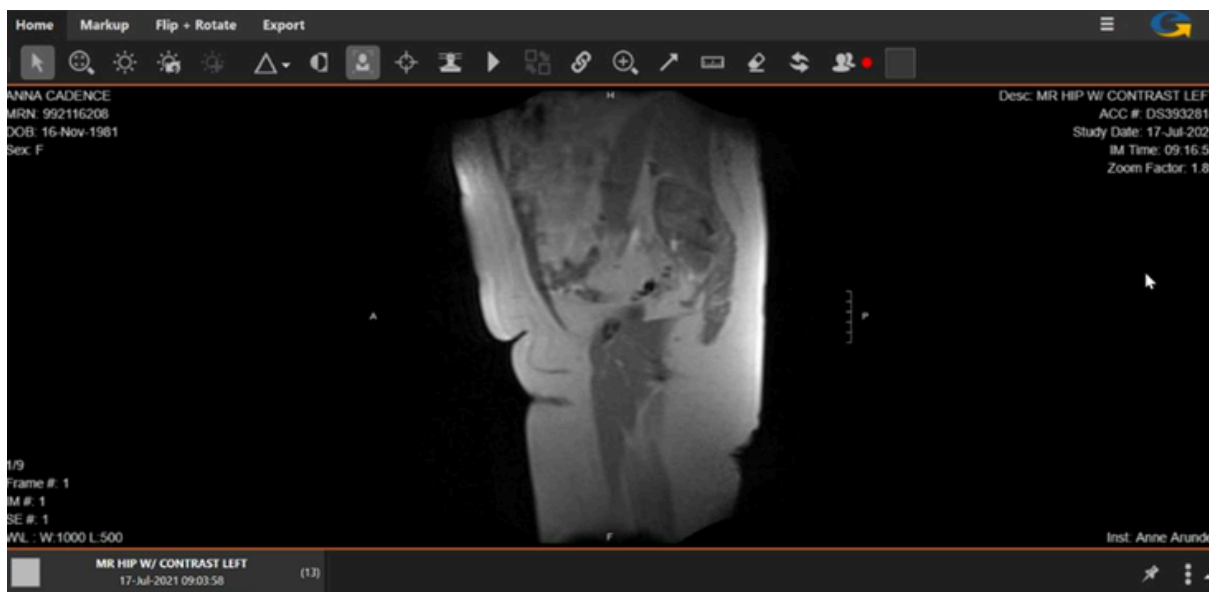
Rows per page: 25 1-10 of 10

5. This will display all reports associated with the identified patient. To open a report, click anywhere on the row of the report you would like to view. Note that images without an associated report will not display in this view. Please navigate to the Imaging Worklist to see all images associated with the selected patient (see Section 2.3).

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- To open an image from the Report view, click on the camera icon. A new window will open with the image using eHealthViewer®. Scroll with your mouse to view all frames of the imaging study.



2.3 Navigate to the Imaging Worklist

- Click on the Imaging Worklist button. The imaging worklist window will pop up and list every image available for the selected patient.

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HEALTH RECORDS

STRUCTURED DOCUMENTS

ENCOUNTERS

PROBLEMS

IMMUNIZATIONS

ALLERGIES

VITALS

PROCEDURES

ALL

LABORATORY

RADIOLOGY

CLINICAL NOTES

Health Records


ANNA CADENCE
DOB: 11/16/1981

HIE Imaging Worklist
Transfer to PACS
Transfer History

Available Studies for This Patient

	Status	MRN
☐	 Load	992116208
☐		P893015
☐	 Load	M0008432512
☐	 Load	IX_A616
☐	 Load	JH97537894
☐	 Load	992116208
☐	 Load	992116208
☐	 Load	3770002883
☐	 Load	JH97537894
☐	 Load	JH97537894

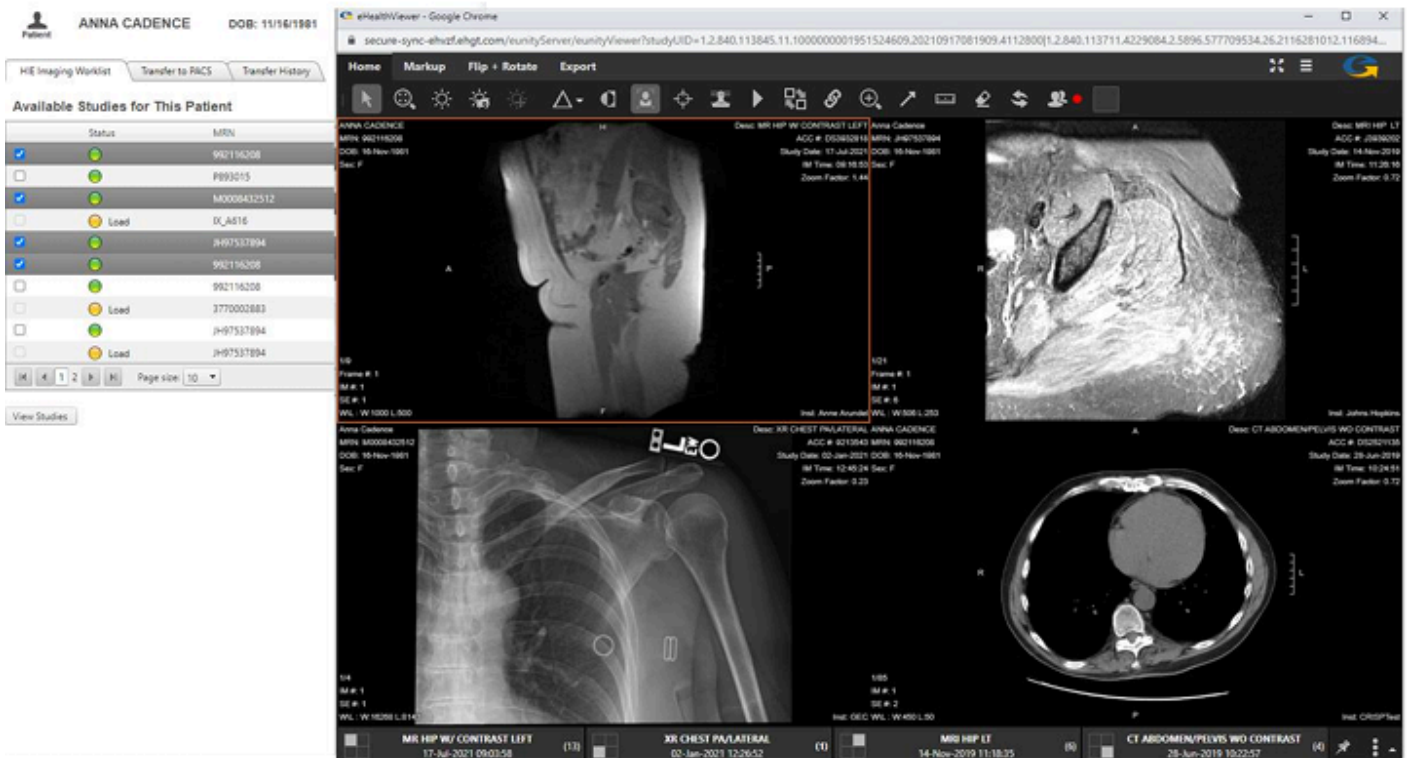


1
2


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8. Select the desired study in the checkbox to the left.
9. Click **"View Studies"** to view selected studies. Select up to four images in the Imaging Worklist to view and compare for a single patient.
 - a. **Green** identifies imaging studies available immediately.
 - b. **Yellow** indicates the image is not readily available and will need additional time to load. Click on "load" and wait for the image to render. It will take seconds to minutes, depending on the size and age of the imaging study. Once this is successfully loaded, it will be readily available (green) for the next 90 days for every user to view.

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10. The Imaging Worklist is also filterable. Select the Show Filters button (shown in the screenshot below) to show each filterable field. Search for specific locations, study dates, study descriptions, or modalities to filter the Imaging Worklist to show available studies that are inclusive of the search term. Input the search term and press Enter to bring up results. Remove the filter by removing the search term and pressing Enter.

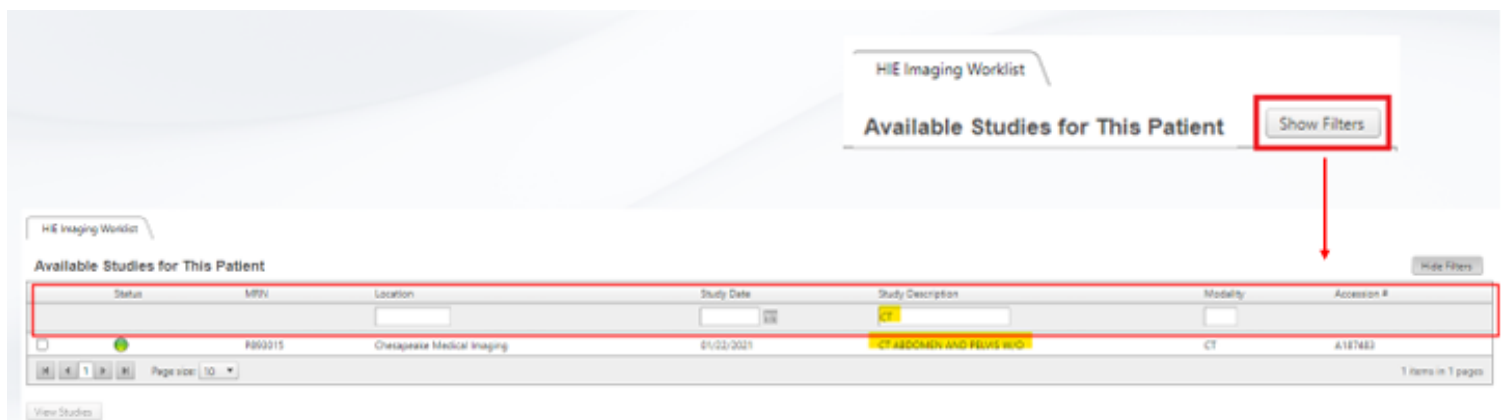


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2.4 eHealthViewer® Features

The screen that displays the images is the eHealthViewer®. This viewer at the top of the screen has a full toolbar of valuable tools.

 Select the **Help** icon in the upper right corner for additional information and assistance. Not all functions depicted in the Help screens will be available on the eHealthViewer user interface.

	Fullscreen: Select this icon in the upper right corner of the display, to enable full screen viewing.		Cine: Allows a series to be displayed like a movie. The speed and subset of images displayed may also be adjusted.
	Navigate: The Cursor tool allows users to enter image paging mode.		Linear Measurement: Provides the ability to make length measurements.
	Zoom/Pan: The mouse wheel or other scrolling tool permits zooming in and out. Hold the left mouse button to pan the image.		Angle Measurement: Allows for the measurement of angles.
	Window/Level: The Window/Level tool changes window width and level center (image contrast and brightness).		Ellipse ROI Tool: Selects an elliptical region and provides a variety of measurement characteristics.
	Invert Brightness: This tool inverts the polarity of an image (black -> white, white -> black).		Freeform ROI/Doppler Envelope: Selects a freeform region and provides a variety of measurement characteristics including Doppler Envelope.
	Flip: Flips an image on its vertical axis (left-to-right).		Cobb Angle Measurement: Enables capabilities such as measuring spinal curve progression to quantify scoliosis.
	Rotate: Rotates an image 90 degrees clockwise or counterclockwise.		Magnifying Glass: Magnifies an area of an image without markups and overlays. You can have up to 4 magnifying glasses open at one time.
	Toggle Demographics: Toggles the display of patient and study-related meta data ON and OFF.		Eraser: Allows the user to select and erase measurements and markup.
	Triangulation: Displays an overlay on a corresponding point on another series in a different plane. Hold and drag to reposition.		Layout: Allows the user to define how images, series, and studies are presented in the viewing windows.
	Toggle Reference Lines: Toggles Scout/Reference lines on and off.		Revert to Original: Allows the user to reset a series of images to their original state.
	Link Series: Enables common operations (Navigate, Window/Level, Zoom/Pan) to be performed on a group of series. Adjusts automatically to anatomical position.		Collaboration (Share This Session): Users viewing same patient exam(s) can collaborate in real-time with one-click.

Note: If you initially receive a message that your browser has blocked pop-ups from your HIE's server location, change your desktop or mobile browser setting to "always allow pop-ups for this site"

Real-Time Image Collaboration is a highly valuable tool located in the toolbar Immediate consultations with any caregiver in the HIE community

- One-click to initiate a collaboration session
- Full access to real-time image manipulation for all collaborators
- Standard feature is accessible for all eHealthViewer® users

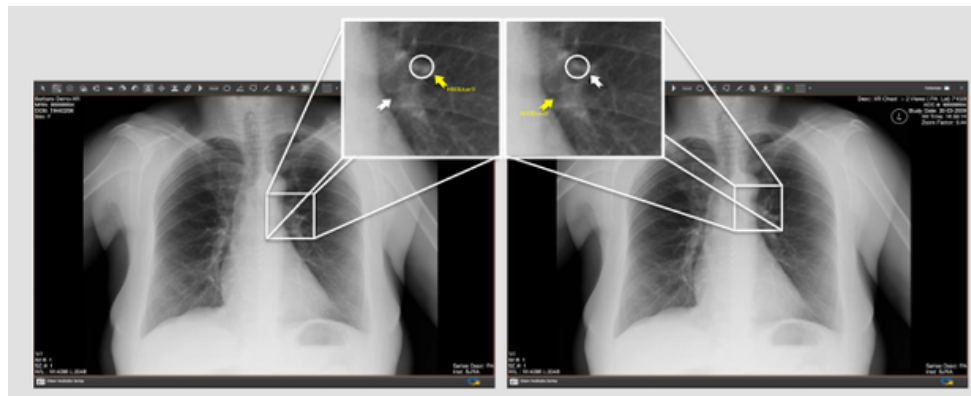


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2.5 Transfer to PACS (TTP)

Transfer to PACS (TTP) allows users to download external images from the Imaging Worklist to their local PACS. To access this, a user's organization must be sharing images with the HIE and be both set up/credentialed for access by their PACS Administrator. Please contact your organization's PACS Administrator for access. PACs administrator should contact the Technical User Support team with the following information and request that the user be given TTP access:

- E-mail address of the user who would like access
- Organization's Name
- EMR Username if applicable

HIE Imaging Worklist		Transfer to PACS	Transfer Hist
Transfer Studies to PACS			
	Status	MRN	Location
☒	●	992116208	Anne Arundel Medical Ce
☐	●	P893015	Chesapeake Medical Ima
☐	●	M0008432512	Doctors Community Hos
☐	●	IX_A616	UPMC Western Maryland
☐	●	JH97537894	Johns Hopkins
☐	●	992116208	Anne Arundel Medical Ce
☐	●	992116208	Anne Arundel Medical Ce
☐	●	JH97537894	Johns Hopkins
☐	●	JH97537894	Johns Hopkins
☐	●	JH97537894	Johns Hopkins

Note: Upon transfer, the Medical Record Number (MRN) will automatically be updated to match the patient's MRN in a user's system. However, if needed, users can also change the MRN prior to transferring the image, following these steps:

1. Select the pencil icon to open a drop-down menu to change either the MRN or the Accession Number.
2. Once edited, press the green check to save the change, then transfer.

This may be especially helpful in cases where you have a new patient with prior external images that you wish to transfer, but have not yet sent any of the patient's records to the HIE or updated your patient panel to include the new patient.

☐	●	456	Holy Cross Hospital	08/12/2018	XR HIP COMPL 2+V LT	CR	58503024	
☐	●	456	Holy Cross Hospital	08/12/2018	XR HIP COMPL 2+V LT	CR	58503024	

Specify new values for the destination PACS :

MRN: Accession Number: ✓ ✗

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3. Use Cases

- As a specialist, I have the ability to view all known images for a new patient and compare images across all connected facilities.
- As a care team member in the ER, when a patient is brought in with trauma to the back or head, I have the ability to view images conducted at an external facility, to understand baseline anatomy, and assess the impact of the trauma, in order to make an appropriate treatment decision.
- As a PACS Administrator, Radiology Technician, Medical Records Specialist, or Film Librarian, I have the ability to query patients and download images to my local archives that were conducted at all external connected facilities, and to prep in advance of an outpatient appointment.

4. Troubleshooting

Q: Why am I receiving a “Study Not Found” error?



A: This usually indicates that the connection to the site that took the image is down or we are not able to find the image on the source site PACS. Please contact the [HIE Technical User Support \(TUS\) team](#) and provide information on the study in question:

- Patient Name
- Patient Date of Birth
- Modality of the image (CT, XR, Mammo, etc.)
- The site the image was taken at and the date the image was taken

Q: Why am I receiving the error message – “This is taking an unusually long time. The PACS may be slow to respond or offline”?

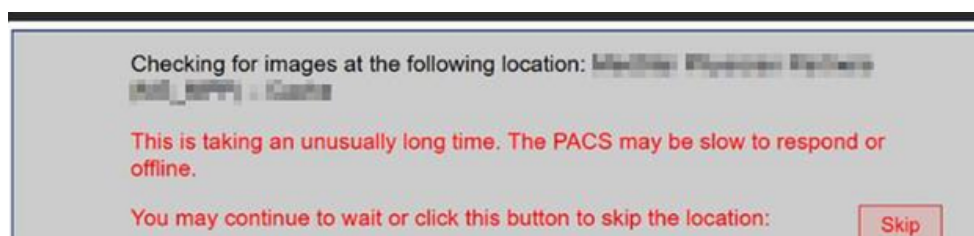
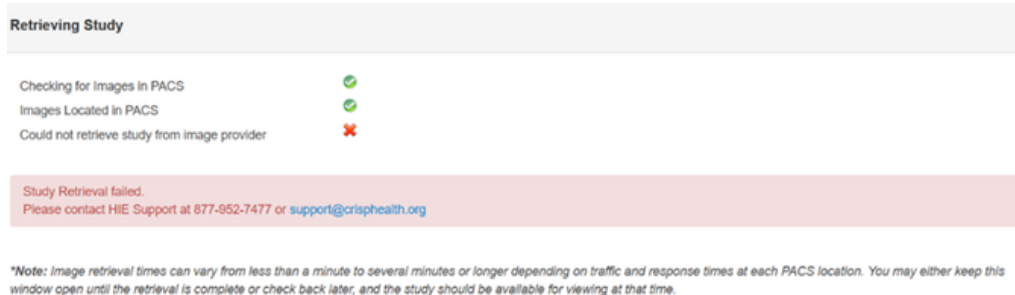


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A: Please wait a few minutes to see if the images from the site load. Sometimes, with slower connections, it takes a bit longer to load all the images for a patient. If the images are still not showing in the Imaging Worklist, please contact the [HIE Technical User Support \(TUS\) team](#) and provide information on the study in question:

- Patient Name
- Patient Date of Birth
- Modality of the image (CT, XR, Mammo, etc.)
- The site the image was taken at and the date the image was taken

Q: Why is it taking a long time for my image to load? Why am I receiving a “Retrieving Study” Error?



A: Please wait at least 5 – 10 minutes before retrying because larger size modalities can take some time to load/transfer (ex. Mammography). If the image still does not load, try opening the Imaging Worklist and check whether the image is cached (a green circle next to the image). If the circle is not cached (the yellow circle next to the image), please click the load button next to the circle and wait for the image to be cached. Once the image is cached, it should be viewable. If the image is still not able to be seen or transferred, please contact the [HIE Technical User Support \(TUS\) team](#) and provide information on the study in question:

- Patient Name
- Patient Date of Birth
- Modality of the image (CT, XR, Mammo, etc.)
- The site the image was taken at and the date the image was taken

Q: Why can't I see the Transfer to PACS (TTP) tab in the Imaging worklist?

A: You may not have permission to TTP. Please check with your PACS Administrator to see whether they have requested that you be added as a TTP user. If this has not been done, please ask your PACS administrator to contact the TUS team requesting TTP Access with the following information:

- E-mail address of the user who would like access
- Organization's Name
- EMR Username if applicable

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5. Appendix

Define key terms, acronyms, product language, and concepts referenced throughout the user guide.

- **Report-Level viewing:** Reports can be accessed under “Health Records” -> “Radiology”. The corresponding image may be accessed by clicking on the camera icon to the left of the “Date” column. A user may click the desired report to view it. The user may also navigate to the related image by clicking the camera icon in the top right corner of the report screen.
- **Imaging Worklist:** Can be accessed in the top right corner of the “radiology” tab. This will open a window with a list of all images available for the selected patient.
- **Transfer to PACS (TTP):** Credentialed organizations and users may have the ability to download full DICOM-quality images to their local PACs.
- **eHealthViewer®:** The pop-up viewer in which all images are viewed in the image exchange tool.