

# Release Notes

## eRAD RIS Version 2 Build 45.1

Build	Patch	UI Version	Core Version	WS Version	DB Version	Notes
45.1		2.45.1.0.30774(3GB)	2.45.0.0.26107	2.45.1.0.30774	2.45.1.0.30738	Gui.zip, Web Service, DB, SQLReporting, Questionnaire, Citrix support

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## **1. Purpose**

This document describes some of the new features and changes implemented in eRAD RIS in build 2.45.1

Not every feature will be described in this document. Typically only features which can be visually demonstrated to the user are outlined in this document.

## **2. Intended Audience**

This document is created by the eRAD RIS Development/Commercialization team for customers of eRAD RIS.

## **3. Installing/Accessing the Application**

The installation guide for the eRAD RIS client have been posted to the RadNet Wiki page at <http://mdbal01rdtweb/Wiki/>

Under the RIS menu click on the rRIS page. The credentials to access the page are:

Username: rRIS

Password: Summerside

If you experience difficulties accessing the application please contact Darcy Noye with the PEI RIS Development Team.

## 4. New Settings

### 4.1. New access strings

Setting	Default	Purpose
Clinical.AdditionalData	None	Controls access to the Additional Data grid on the Exam tab and the Exam Details tab
Clinical.EditExternalMRN	None	Allows editing of external MRN in the MRN grid on the Patient tab.
Clinical.EditMRN	None	Allows editing of MRN in the MRN grid on the Patient tab.
Clinical.EditPatientFlags	None	Controls access to assign patient flags
Clinical.EditPatientFlagsNotes	None	Controls access to assign notes to the patient flags
Clinical.FormsAndLabels.AllowSaveAsAttachment	None	Allow user to save a form or label as an attachment from the Print Forms window.
<del>Clinical.ReportingEditor</del>	N/A	This access string was obsolete and has been removed. (replaced with Clinical.ReportingTranscription)
Clinical.ReportingTranscription	None	Controls access to the Editor's Create/Edit Report Screen
Clinical.ResendDictationForRecognition	None	Enables access to the resend dictation for recognition context menu action.
Clinical.Schedule.SaveAsOrder	Full	Controls access to the Save As Order/Schedule Later button on Schedule/Reschedule screen, as well as Schedule Later button on Reschedule Reason dialog
Config.LookupEditor.DictationArchiveLocation	None	Controls access to the lookup table for the Dictation Archive Location
Config.LookupEditor.ExternalReportingSystem	None	Controls access to the External Reporting System lookup table located under the System directory
Config.LookupEditor.Finding	None	Controls access to the Finding lookup table located under the Procedure directory.
Config.LookupEditor.ImagingCenter	None	Controls access to the Image Center lookup table located under the System directory. These are displayed on the patient and referring portal
Config.LookupEditor.LegacyReportArchive	None	lookup table access for the Legacy Report Archive
Config.LookupEditor.MarketingDomains	None	lookup table access for Marketing Domains to be used for site groups
Config.LookupEditor.PatientFlag	None	lookup table access for PatientFlag located under the General directory
Config.LookupEditor.PreInstructionType	None	lookup table access for Prep Instruction Type located under the Procedure directory
Config.LookupEditor.ProcedurePicker	None	lookup table access for Patient Portal Procedure Picker configuration
<del>Config.LookupEditor.Questionnaire</del>	N/A	This access string was obsolete and has been removed
Config.LookupEditor.ReadingGroup	None	lookup table access for Reading Group located under the Procedure directory
Config.LookupEditor.StudyExtraInfo	None	Lookup table access for Study Extra Info located under the System directory
Config.LookupEditor.WorkUnit	None	lookup table access for Work Unit located under the Procedure directory
Config.QuestionnaireEditor	None	Controls access to the browser-based Questionnaire Editor.

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Flag.ExamStat	N/A	This access string was obsolete and has been removed. (was replaced by Flag.StatExam)
Flag.LinkedStudy	Full	Access to see the flag for Primary Linked Study
Flag.PrimaryLinkedStudy	Full	Access to see the flag for Primary Linked Study
Flag.ReadStat	N/A	This access string was obsolete and has been removed. (was replaced by Flag.StatRead)
Reporting.UnprotectDataFields	None	Controls access to the Unprotect Fields button on the reporting screen
View.FindingsFollowup	None	Access to see the main menu item "View/Findings Followup" (on dictation screens)
View.Portals	None	Access to see the main menu item "View/Portals" (on dictation screens)
View.ReportAssistant	None	Access to see the main menu item "View/Report Assistant" (on dictation screens)
WL.PatientFolder	Full	Controls access to the Patient Folder worklist context menu item.
WL.PendingBiopsyResult	None	WL access for Pending Biopsy Result worklist under Administration menu
WL.Rad.FindingFollowup	None	WL access for Finding Followup worklist under Radiologist menu
WL.Rad.PendingBiopsy	None	WL access for Pending Biopsy worklist under Radiologist menu
WL.Rad.PendingBiopsyAll	None	WL access for Pending Biopsy All worklist under Radiologist menu
WLNotification.PendingBiopsyNotify	Full	Enables ability to show worklist driven pending biopsy notifications

## 4.2. New system configuration settings

DefaultIssuerGeneratesPatientID	True	Determines the default issuer of patient ID will generate patient IDs in RIS
KillPDFViewerAfterLegacyReport	True	Enables RIS to try to 'kill' or close the PDF Viewer after opening legacy report in a new instance of the PDF Viewer from the reporting screen.
KillPDFViewerBeforeLegacyReport	True	Enables RIS to try to 'kill' or close the PDF Viewer before opening legacy report in a new instance of the PDF Viewer.
PatientPortalImageHoldPeriodDisplayedDays	5	The number of days from the time the study is performed to the date that the patient portal will say that it will be able to see the images.
PatientPortalReportHoldPeriodDisplayedDays	5	The number of days from the time a report is signed to the date that the patient portal will say that it will become available.
PortalAddendumReportMessage	This exam does not have a report because it was not requested by your referring provider. Please contact your referring provider for your results.	The desired message to display to the patient when the study has an addendum assigned to it, and has not been passed the new Hold back period.
PortalImagesHoldBackMessage	Images are currently unavailable. Estimated availability is after {PatientPortalImageHoldPeriodDisplayedDays(dddd, MMM dd, yyyy)}	The desired message to display to the patient when the Images are not available to display due to the hold back period.
PortalImageUnAvailableMessage	Images are currently unavailable. Please Get Help to request images.	The desired message to display to the patient when the Images are not available due to the PACS server unavailable.
PortalIncompleteStatusReportUnavailableMessage	This exam is currently {portal_status_code}. No report is available for this exam.	The desired message to display to the patient when the report is not available, due to the fact the study is not complete
PortalLocationLayoutFormatString	{description}	Desired layout for site and practice drop down fields in the Patient Portal ex. {description}
PortalReportHoldBackMessage	This report is currently unavailable. Estimated availability is after {PatientPortalReportHoldPeriodDisplayedDays(dddd, MMM dd, yyyy)}	The desired message to display to the patient when the report is not available to display due to the hold back period.
PortalReportUnAvailableMessage	No report is available for this exam.	The desired message to display to the patient when the report is not available due to report server unavailable, or no report

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		configured.
PortalTechOnlyNoReportMessage	This exam does not have a report because it was not requested by your referring provider. Please contact your referring provider for your results.	The desired message to display to the patient when the study is completed as Tech Only and there would not be any report available.
RADARMessagePHIReminderText	RADAR Quick Message is not a secure method of communication. Patient health information (PHI) must not be included in this message. All messages sent using RADAR Quick Message must conform to established health privacy rules for unsecured communications.	Defines the PHI warning string that will be displayed on RADAR Quick Message dialog screen.
WordViewerPath		Path to directory where Word Viewer is installed. Used for MS Word legacy reports, path must include EXE name. If left empty, RIS will try to open WordViewer.exe and assume it is available in the current system path.

### 4.3. Changes to RIS.exe.config file

The section <listeners> in the ris.exe.config file has been changed in this release. Below you will see the before and after. The changes are shown **highlighted in green**.

Before	After
<pre>&lt;appSettings&gt;   &lt;add key="defaultEndPointName" value="NetTcpBinding_IStudyService" /&gt;   &lt;add key="ClientSettingsProvider.ServiceUri" value="" /&gt;   &lt;add key="LookupTableTimeToLiveInMinutes" value="60"/&gt;   &lt;add key="ShouldCloseViewSessionOnThread" value="true"/&gt;   &lt;add key="EnableHighPriorityLookupStrategy" value="true"/&gt;</pre>	<pre>&lt;appSettings&gt;   &lt;add key="defaultEndPointName" value="NetTcpBinding_IStudyService" /&gt;   &lt;add key="ClientSettingsProvider.ServiceUri" value="" /&gt;   &lt;add key="LookupTableTimeToLiveInMinutes" value="60"/&gt;   &lt;add key="ShouldCloseViewSessionOnThread" value="true"/&gt;   &lt;add key="EnableHighPriorityLookupStrategy" value="true"/&gt;   &lt;add key="CmdLineArgs" value="" /&gt;</pre>

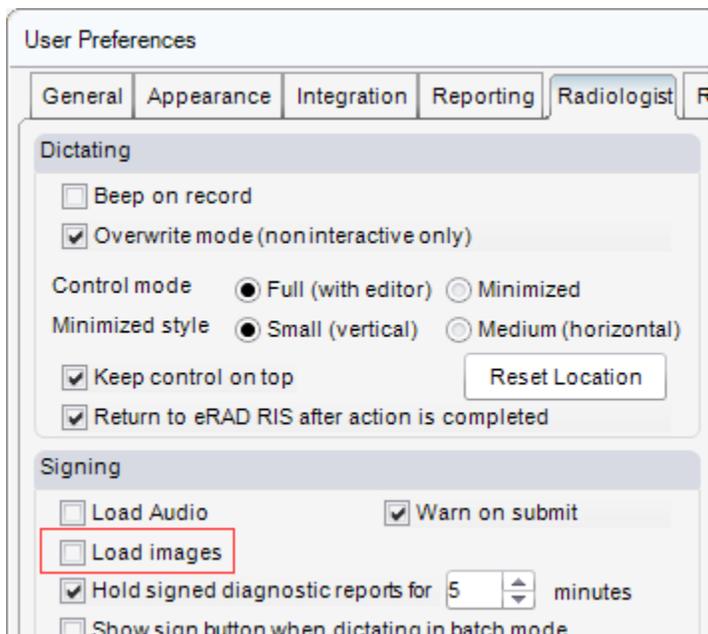
## 5. New Features and Enhancements

### Primary User: Radiologist

#### 07293 Automatically open images when signing (user preference)

When a radiologist signs reports (from the pending signature worklist primarily) the images in PACS are not automatically loaded. There is a manual load images button that they can use, but this has to be clicked for each study. There is a desire to have the images automatically load as they do when dictating a report. This would have to be a user preference as not all radiologists will want this feature.

The RIS now has a new user preference in the radiologist tab signing area called Load Images. When set the RIS will load images automatically when opening the study in the Sign Reports window, the same as it does when dictating a study.



*User preferences showing the load images option*

### **08351 Linked Reports - Simple linked reports (phase 1)**

There is an industry need for the RIS to support having multiple individual studies performed, but to be read and reported as a single entity from the radiologist's perspective. Since this is a large undertaking, the development team has broken this up into phases, with 45.1 containing the first phase.

To support this, the RIS development team has implemented a simple 'phase 1' of linked reporting. In this simple model, linking is limited to studies in a procedure plan that is predefined to be linked (aka 'reported together'). There is no support for manual linking and unlinking studies for phase 1. The procedure plan table already has a "report\_together\_flag" which determines if studies should have a single linked report. If the procedure plan is set to report together then one procedure will also need to be set as the primary study. The primary study will be the study that will technically be reported on. The other (secondary) studies in the procedure plan will be linked to the primary.

The ordering, scheduling and registration workflows are unchanged for linked studies. The tech work flow is only changed in one way, when the tech sets an assigned radiologist on one study; the system applies it to all linked studies.

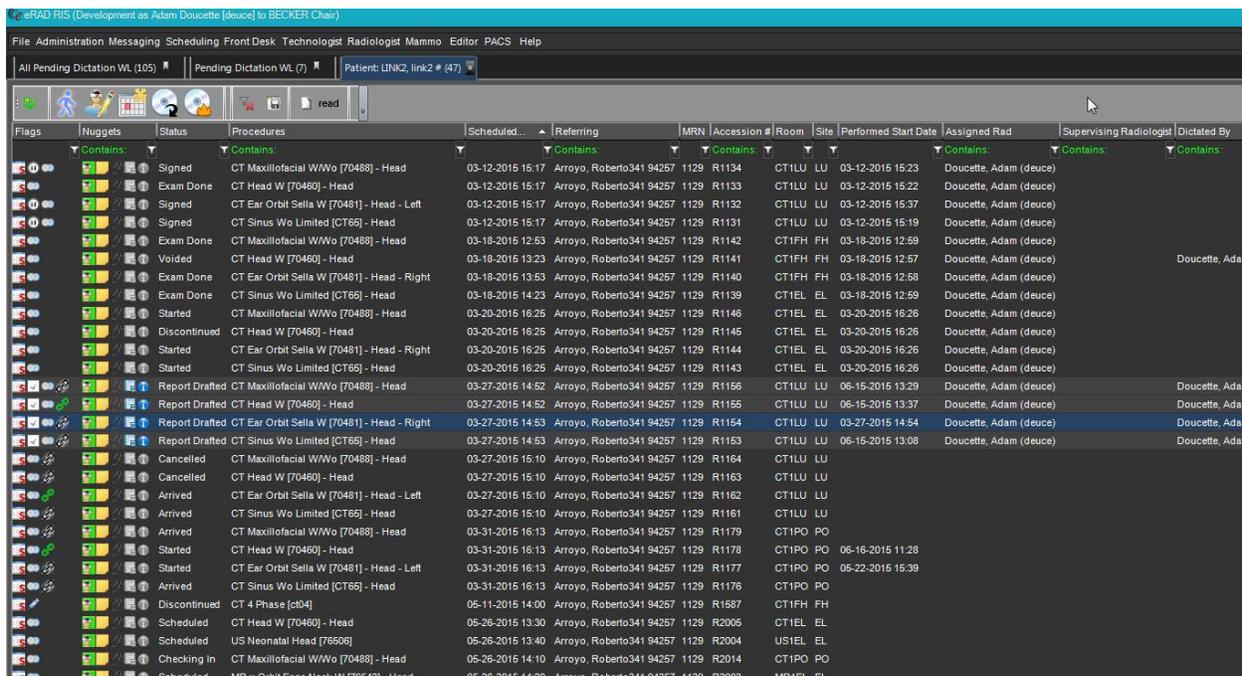
Exams will not show on the 'My Pending Dictation worklist' until all linked studies are PACS corrected and exam done. Then once these conditions are met, RIS shows the primary study on this work list. All of the "my" radiologist and transcriptionist work lists work the same; they only show the primary study.

Unlike the 'My Pending Dictation worklist', the 'All Pending Dictation worklist' will display all linked studies, as individual studies as soon as they are in the status of 'Exam Done' and are PACS corrected. However, if all the 'linked' studies have not reached this state, the studies may not be opened to start dictating. The 'All' worklists show all linked studies.

Opening any linked study in the radiologist or transcriptionist screen will lock all linked studies and will open the primary study regardless of exam selected to be actioned on. Since the primary study is the item technically opened, you will see the templates and macros for the primary.

Study status updates will happen on all studies once the reporting work flow stage has begun. So when the primary is dictated or signed, this status is reflected on the secondary studies as well. Also the QA and Problem flags are reflected on all studies.

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Patient folder showing worklist icons and highlighting

There are various impacts to existing workflows which are described here:

## PACS integration:

PACS will load the primary study as normal, and will load the linked studies as priors. PACS will load only the primary studies relevancy based priors, not based on all linked studies.

## Quality Review Distribution:

QA distribution treats linked studies as a single study.

## Delete Dictation and Report:

Delete dictation and report will delete the report/dictation and reset all linked studies back to exam done.

## Reset/Open Skipped Rows:

Reset open skipped rows will not have to worry about primary studies, as the rad screen will not allow non-primaries to be opened.

## XML Drop Files:

XML files are written using the primary studies data

Rad and MT Daily Stats

Stats are calculated based on reports actioned upon, not studies. So a linked report of 4 studies is counted as 1.

### **Auditing:**

We are auditing the direct actions taken on a single study key and including the linked\_id in the audit trail which provides the link to the primary study.

### **Document Distribution:**

Will not distribute duplicate reports of the linked exams

### **Canceling the Primary study:**

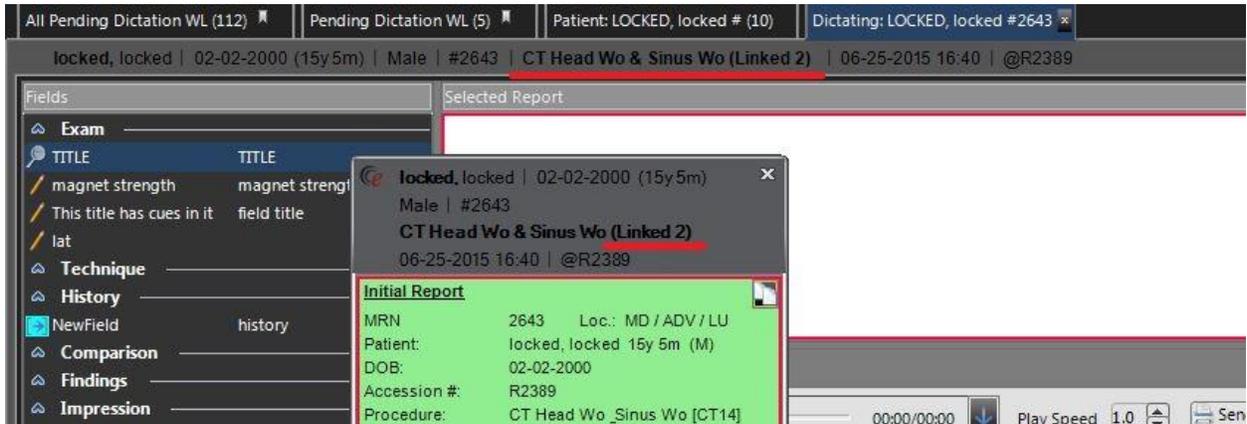
If the primary study is cancelled or cancelled due to technical repeat, then the RIS breaks the link. This means the linked ID is set to 0 on all studies and they become their own primary to be reported individually

### **Report History/Preview Report:**

Even when opening a secondary study and invoking these features, the primary report will be displayed and expected.

**10766 Linked Reports - Show linked information in the title bar of reporting window**

When opening a linked study in the reporting window the RIS need to clearly inform the radiologist of the fact that there are multiple studies in this collection to be read. To do so, the RIS will show the word ‘Linked’ and the number of studies linked in the title bar after the procedure description.



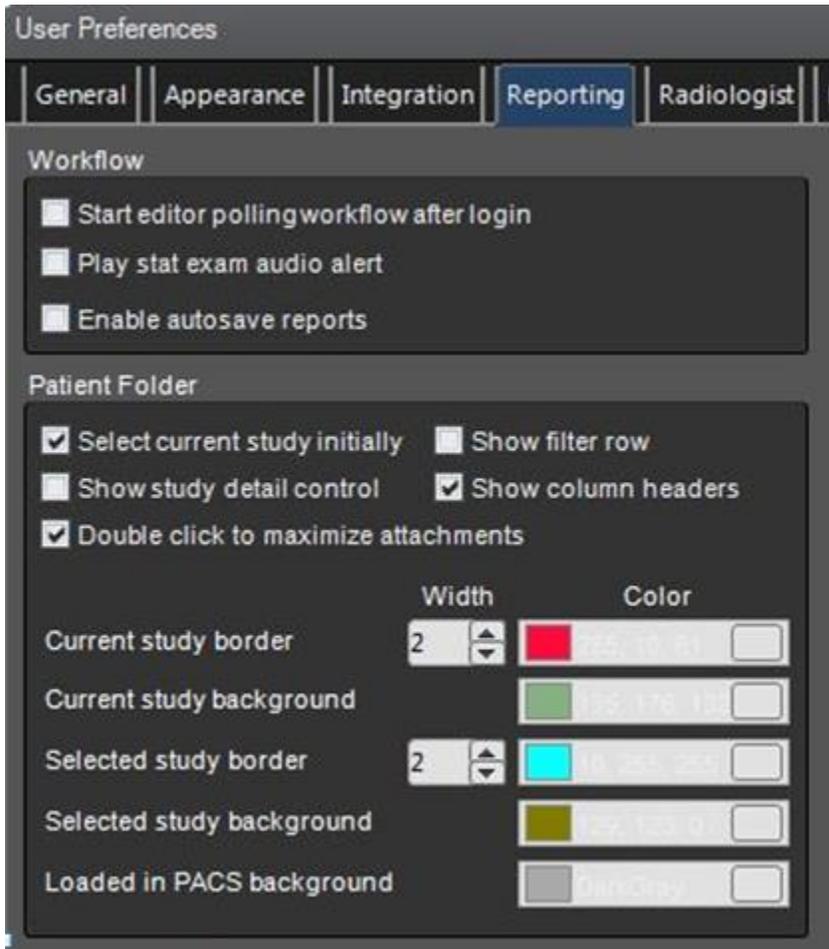
*Radiologist window showing a linked collection with 2 linked studies.*

**10597 Linked Reports - Display the current study linked background color in patient folder**

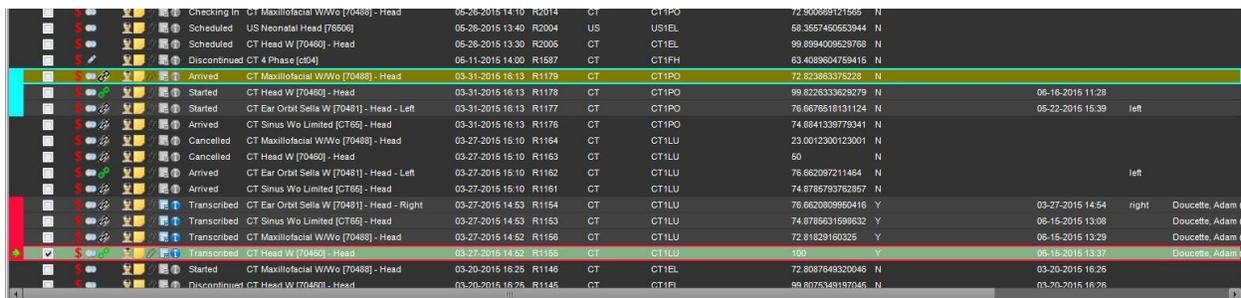
In the patient folder, the RIS needs to visually indicate studies which are linked together. To do so, the RIS now features an icon (a piece of chain) to indicate the studies are linked. To show which ones are linked, the RIS will also show the linked studies with a background color of pink in light mode, (and grey in dark mode) when any study of the linked collection is selected. In this manner, when the user selects a study, they get the visual feedback to tell them there is more than one study attached to the study they have just selected.

In the radiologist's mini-patient folder in the reporting window, the RIS provides similar but enhanced functionality. This patient folder has existing color enhancements known as 'current study border' and 'selected study border'. There is also a column called the 'main study indicator' which shows the current study. The main study indicator column will take on the background color of the current study border color and the column next to the prior study will take on the background color of the selected study border color for the selected.

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Existing user preference screen showing the red and teal colors being used by this user.



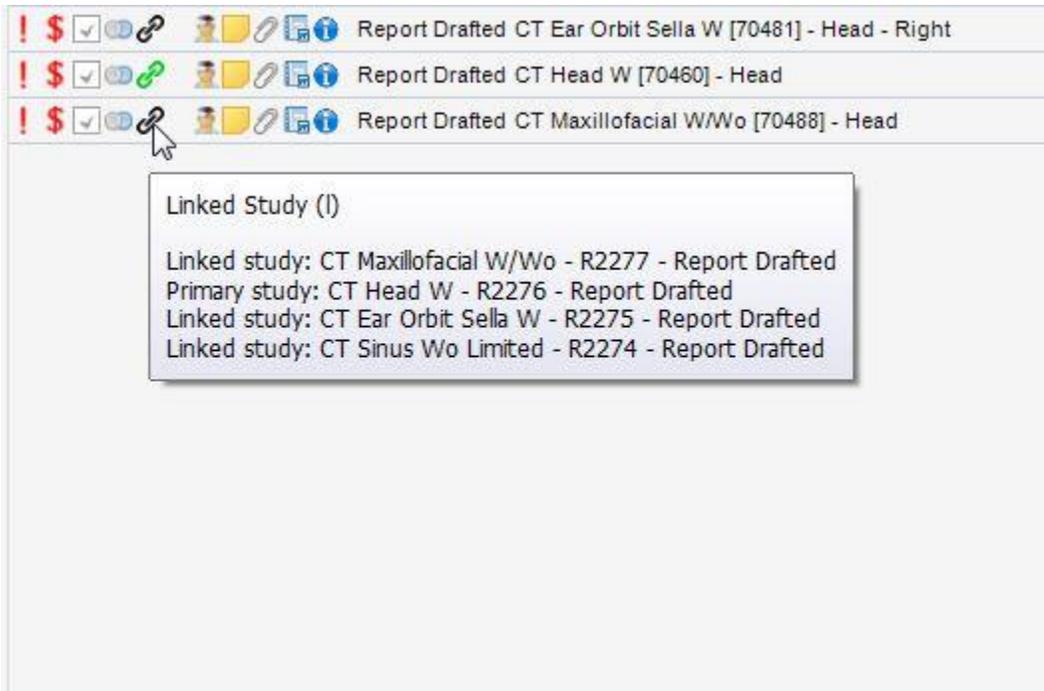
Patient folder showing the color in the Main Study Indicator column.

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**10640 Linked Reports - Create worklist icon and tool tip to display linked information**

There is a need to show a visual flag and information on various worklists so that a user has detailed information about linked studies.

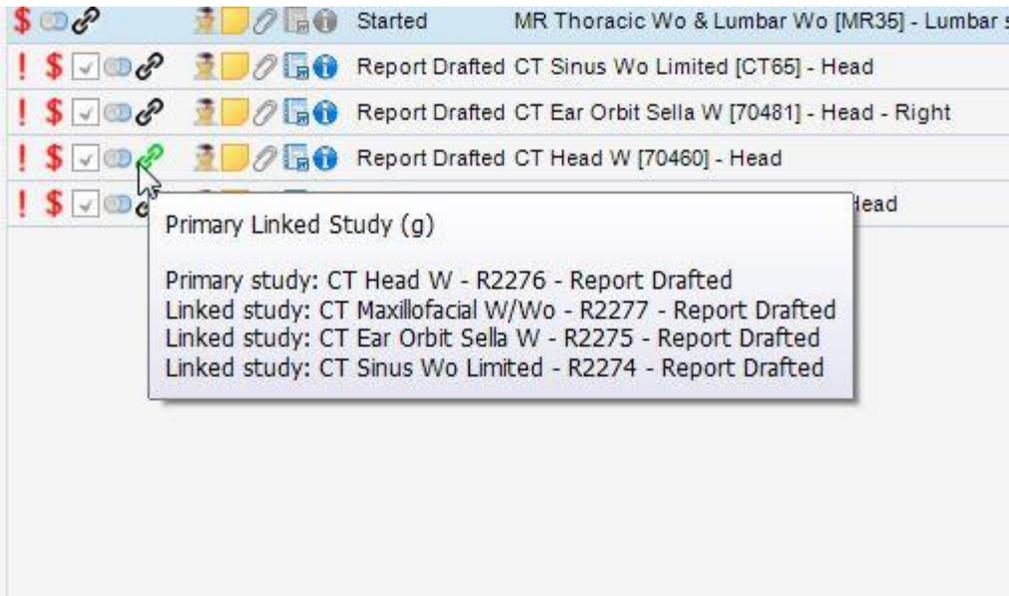
There is now a flag on several worklists that shows a status about the linked studies. The primary linked study is shown as a green link of chain, while the secondary studies are shown as black links of chain. There is also a tool tip which shows detailed information about all the studies in the linked collection. The tooltip will display all the studies in the linked collection starting with the currently study that the mouse is pointing at, then the primary linked study, followed by the remaining secondary studies. The tooltip will display if they are primary or just linked and display their procedure description, accession number and status.



*Linked study tooltip when the mouse has hovered over a secondary study*

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*Linked study tooltip when the mouse has hovered over the primary study*

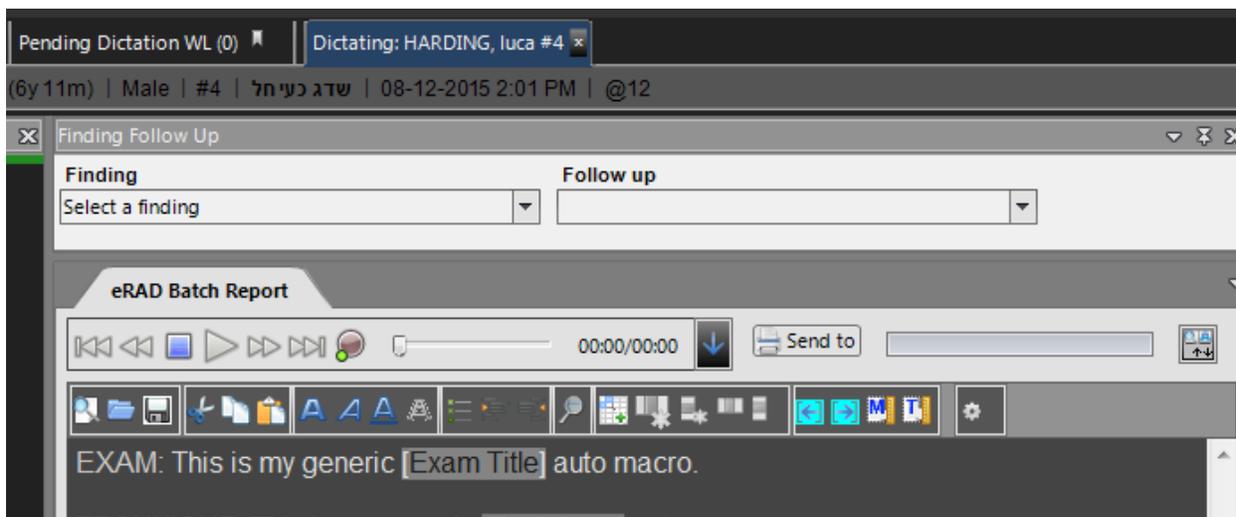
### 08360 Create 'Finding Follow Up' workflow

Includes sub-features:

- 10802 Ability to configure mandatory finding follow up procedures
- 10803 Ability to configure finding a follow up options
- 11549 Management report

There is an industry requirement (initially from Israel) to have a radiologist enter a finding (positive or negative) on certain studies. If the finding is positive, then additional follow up is required. The finding and the follow up should be entered during dictation or transcription of the study. The follow up options need to have a configurable time frame associated with each option. Any studies that require follow up must be placed onto a worklist for someone to review and resolve.

There is now a new panel in the radiologist/transcriptionist window called 'Finding Follow Up'. This window will only appear when the study (procedure code) being read is enabled for the follow up workflow.



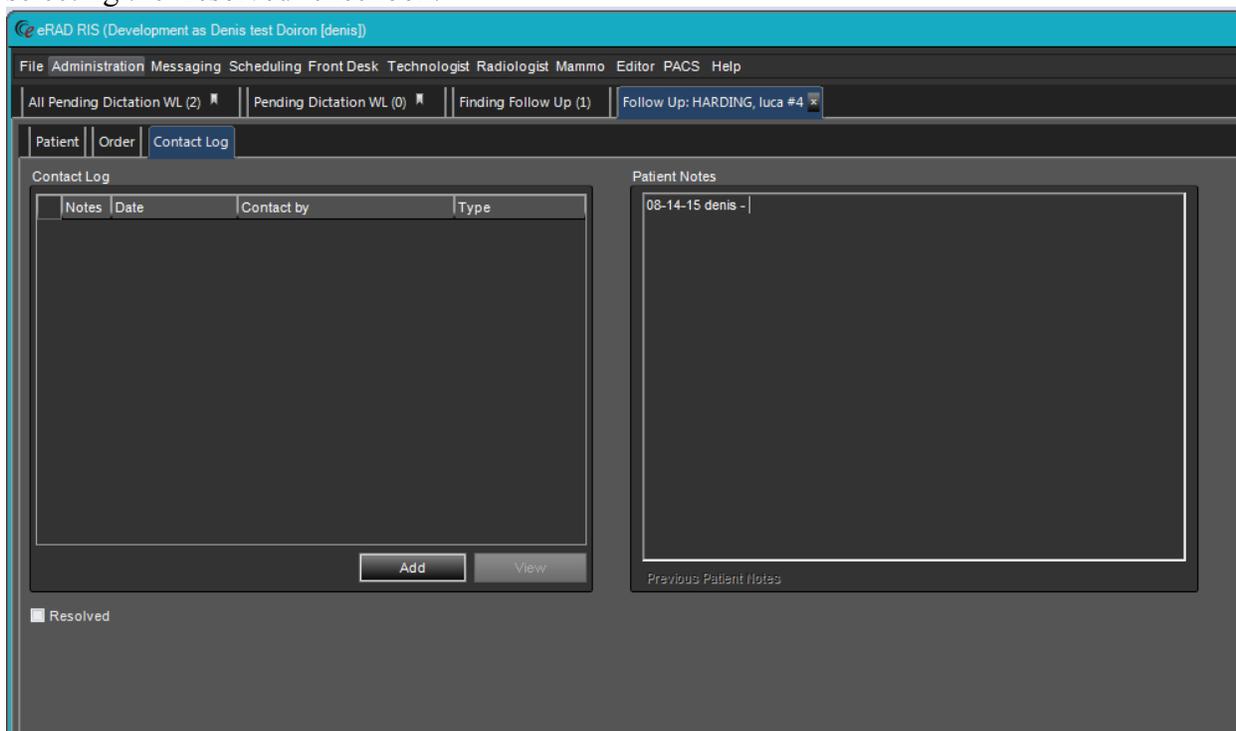
*Radiologist window showing 'Finding Follow Up' tool window.*

If a finding is required for that study, the radiologist will not be able to sign the report until the drop down is populated. However, the radiologist can send the report to transcription, and the transcriptionist can populate the value based on the dictation.

The options available in the finding drop down are populated from entries in the “Finding” lookup table which describes the finding options and the associated follow up options, which are stored in the existing “recommendation” lookup. Each findings option can be linked to many follow up options.

The follow up time frame is stored at the follow up option (recommendation) lookup in the follow up days field.

When the radiologist selects a follow up option the “follow up days” value will determine if it shows on the “Finding Follow Up WL” after signing the report. If the follow up option “follow up days” value is empty then it will not go to the “Finding Follow Up WL”. From this “Finding Follow Up WL” the follow up can be resolved by right clicking and selecting “Remove Follow Up Required Flag” or by opening the “Follow Up” screen shown below and selecting the ‘resolved’ checkbox.



*Follow up contact log*

From the Follow Up screen the user has access to the contact log and the patient notes as well as the Patient and Order data. If the user completes a contact log entry it will increase the contact attempts counter on the worklist. If the user checks the resolved option then the study will be removed from the worklist.

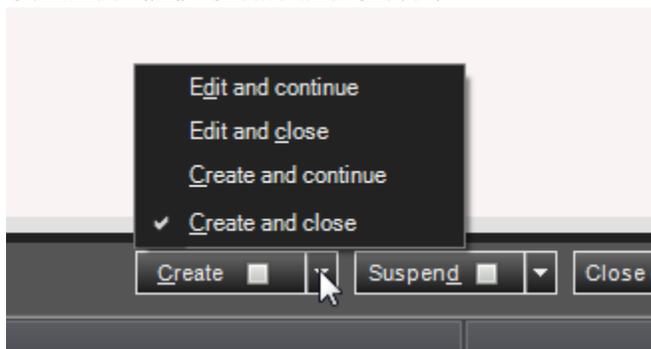
From patient folder the users can “Set Follow Up Required” flag on a study from the context menu, which will place the study to the Follow Up Required worklist.

**09371 Ability for users to create diagnostic report prior to radiologist**

eRAD RIS creates the radiologist report when the radiologist opens the Dictation screen. There have been frequent customer requests for the ability for a technologist (or transcriptionist) to be able to create the initial report in order to pre-populate some data (or the entire report) and then send the report to the Pending Dictation worklist, or the Pending Signature worklist for the radiologist to complete.

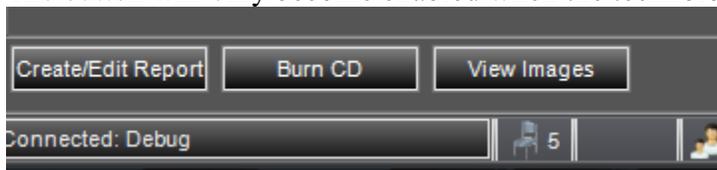
To support this, the “Create/Edit” context menu item (which already existed on the transcription worklist but was limited to studies that already had a report created by the radiologist) has been altered so that it will be enabled on studies that in ‘Exam Done’ status. Now, if the report does not already exist, this menu item will create the empty report.

There are also two new drop down button options on the “Create/Edit” screen called ‘Create and Continue’ and ‘Create and Close’.



*New button options attached to the Create button*

A “Create/Edit Report” button has also been added to the technologist “Perform Exam” window. The button will only become enabled when the technologist has ‘Completed’ the study.



*Technologist screen showing the new Create/Edit Report button*

Clicking the button will open a Create/Edit Report screen and the technologist can then view and enter data into the diagnostic report.

In all these cases, the RIS will load the report templates based on the organization structure as there is no ‘Dictating Radiologist’ at that time in the workflow.

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The RIS will not enforce populating BI-RADS drop downs when editors create only, nor will it enforce populating Finding Follow up drop downs when editors create only.

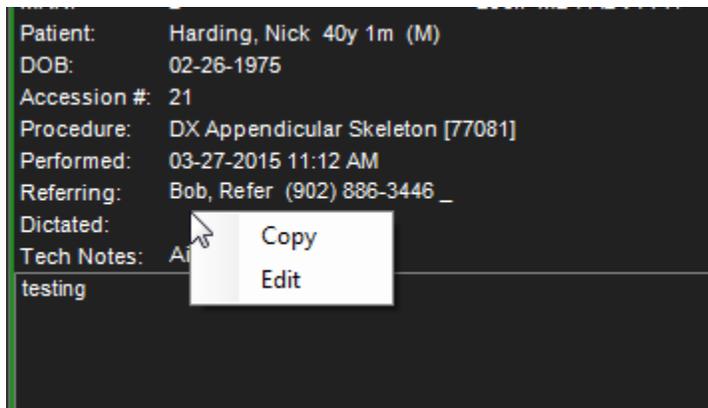
There is a new audit even called Report Created (UI\_ReportCreated) - which will show as “Report Created” in the audit history.



Date	Action	Description	User	Accession #	Order #	Status	Procedure
04-01-2015 1:03 PM	Report Created	Study updated	Harding, Clifton (hardingc)	15	15	Exam Done	CT 3 Phase

*Audit history viewer showing the new audit event*

The RIS will allow the editor to assign to a radiologist when creating or editing the report. This will enable the editor to set the dictating radiologist so it will show on their pending signature worklist. Prior to this change, the summary panel wouldn't show the dictating radiologist if it was empty, but now it shows a blank space and will allow the user to right click and assign a radiologist. This assignment will just be the dictating radiologist and will not populate the dictated date.



*Summary panel showing the blank space where the dictating radiologist would be*

The dictated date (if not yet set) will be populated when the radiologist signs the report.

When the ‘Edit and Close/Continue’ option is clicked and if the dictating radiologist is not set and the assigned radiologist is not set the RIS will set the dictating radiologist field to be the same as the assigned radiologist. This will allow users in the tech screen to assign to a radiologist as they always did, then create the report and have it show on the pending signature worklist.

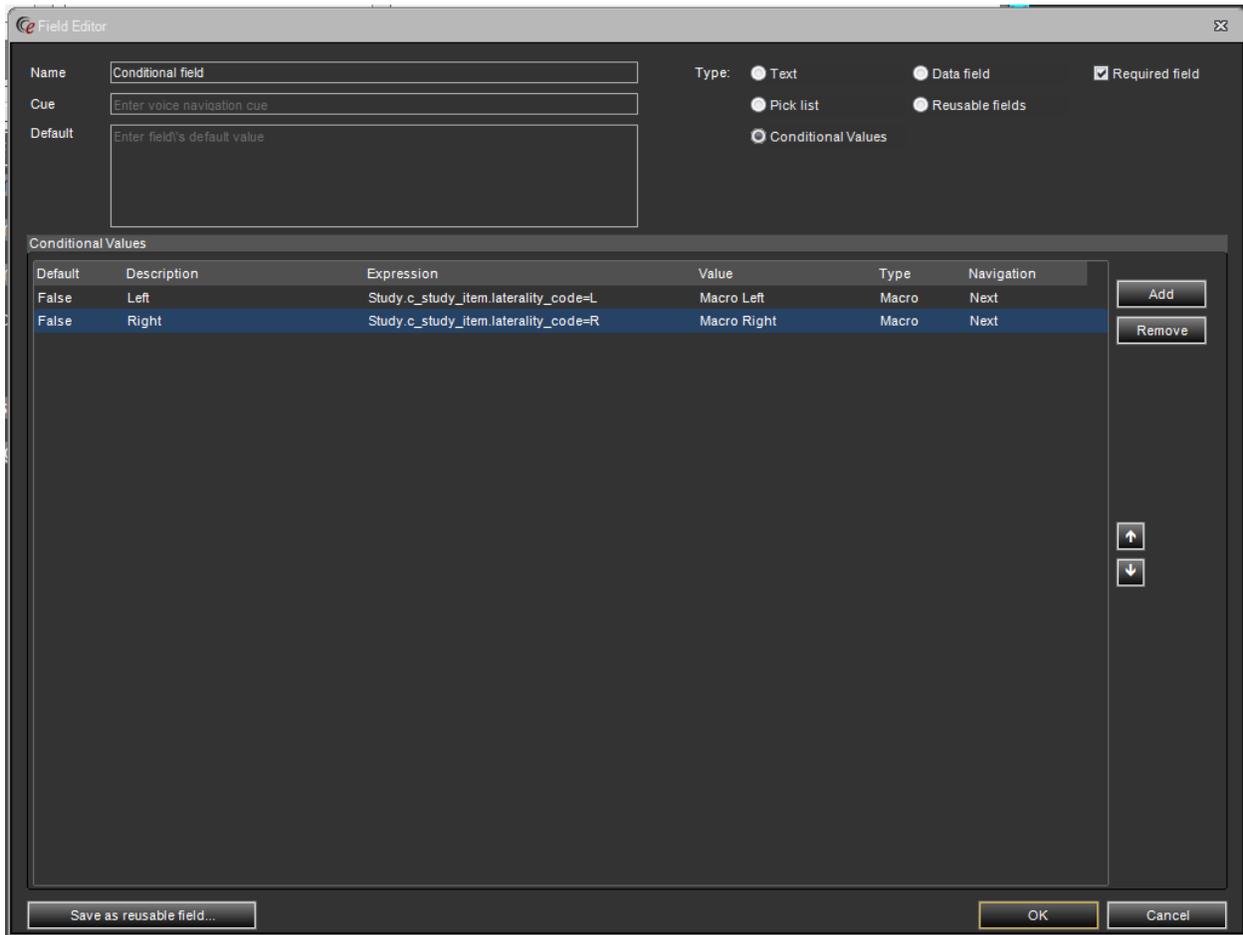
When ‘Edit and Close/Continue’ is clicked and the dictating radiologist is not set and assigned radiologist is not set the RIS will prompt the user for dictating radiologist selection. Without this selection it will not show on a radiologists pending signature worklist. Canceling this dialog is

allowed and the study will fall to the ‘All Pending Signature worklist’ with the current user as the dictating radiologist. This was pre-existing logic in eRAD RIS when sending for signature and there was no dictating radiologist.

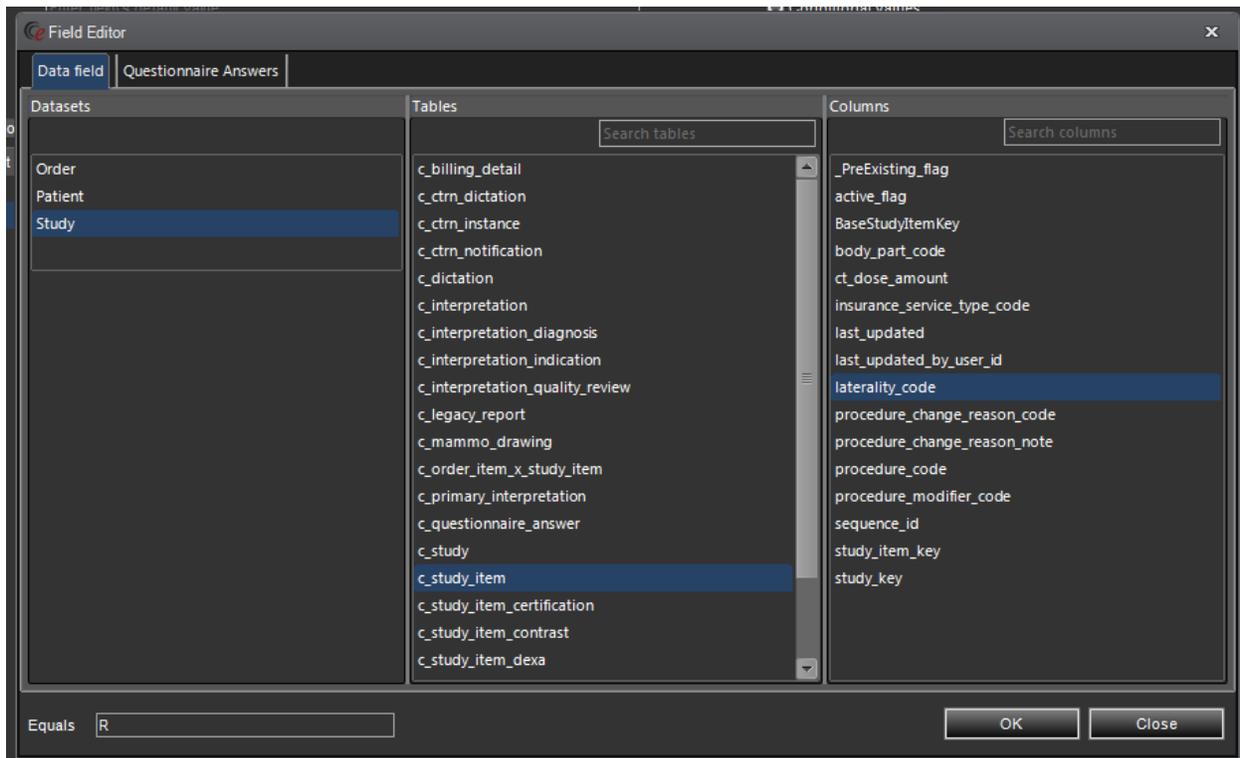
### **11205 Conditional Fields for Structured Reporting (Phase 1)**

The general industry direction is to provide some form of structured reporting capability in eRAD RIS. This will require many sub-features which will be developed over the coming months. The first feature required is a conditional field which could check a simple logical condition and then automatically populate the report with a specific text or macro. This condition would be based on a data field or questionnaire field being equal to a specified value.

To provide this capability, there is now a new option type in the template macro field editor called `Conditional Values`. When the expression is double clicked to enter edit mode, the advanced data field popup will appear. The advanced data field popup in this case has a “Equals” textbox in the bottom left. When the mapped data field is equal to the value assigned, then its text or macro will get inserted. When no conditions are met, then the default condition will be used, if there are none then the field will stay empty. When multiple conditions are met, the first one will be used.



*The field editor showing a conditional field set up on laterality code*



*The advanced field editor popup with the new “Equals” text box.*

The conditional fields will populate when the template is inserted. To repopulate them the template needs to be re-inserted, but then all changes to the report would be lost.

### Outstanding Issues

If a conditional field is populated with a macro that contains tables or fields, the original field is deleted, because the RIS can't embed fields or tables in fields. What this means is that in order to repopulate the conditional field based on data changes, the entire template needs to be reloaded, which would lose the user's changes to the report. Phase 2 will aim to remedy this limitation

### **10488 Legacy Report Viewer - PDF viewer should be managed by RIS**

A customer has requested that the PDF viewer for legacy reports should allow only a single report to be viewed at a time. In other words, it should automatically close the legacy report when a new patient is opened to prevent any possibility of confusion. Since some customers prefer the existing workflow, this must be a configuration option.

The RIS now contains an integrated PDF viewer that supports viewing and printing of PDFs, as well as automated closing from the RIS. There are two new configuration settings:

#### **KillPDFViewerBeforeLegacyReport**

(value = bool) True enables RIS to try to 'kill' or close the PDF Viewer before opening legacy report in a new instance of the PDF Viewer.

Default TRUE

#### **KillPDFViewerAfterLegacyReport**

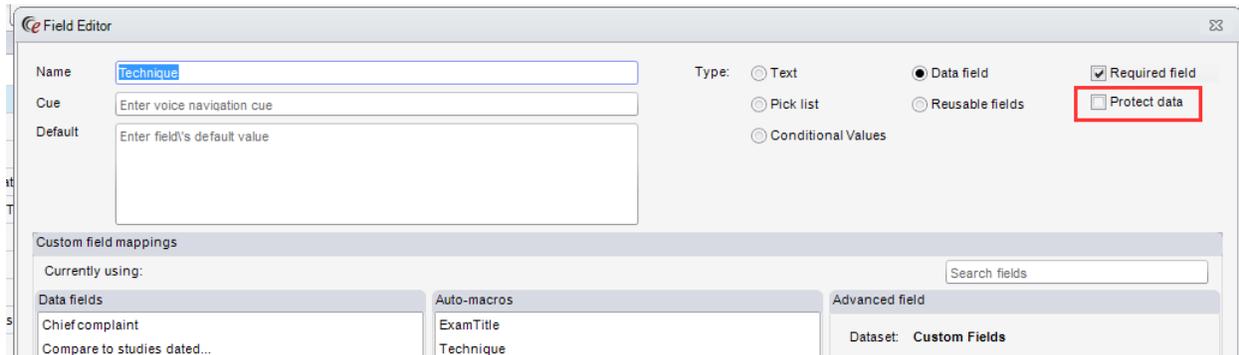
(value = bool) True enables RIS to try to 'kill' or close the PDF Viewer after opening legacy report in a new instance of the PDF Viewer from the reporting screen.

Default TRUE

**10572 Ability to protect a field element in the eRAD report editor**

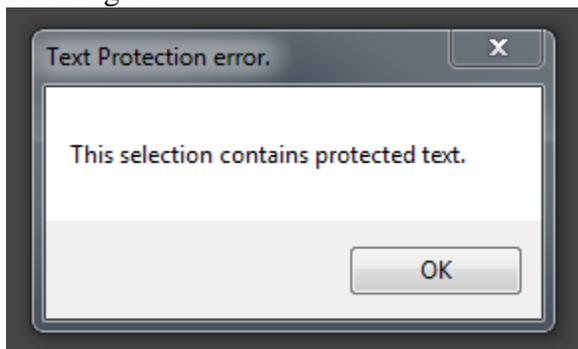
The RIS has the ability to populate diagnostic reports with data from the RIS database. These elements are visually editable by the user, but by design the modification to the data is not saved back to the database field that it came from. Since this may lead to confusion that data should be saved, and since some customers desire this data to be locked down, the RIS should provide a configuration so that this data can be protected from being altered.

The Field Editor tool now includes a checkbox called ‘Protect data’. This only applies to data fields and advanced fields.



*Field Editor showing new Protect Data option*

When the checkbox is selected, there is a visual font change to show that the field is protected. If the user attempts to modify the text inside this block, the computer will make a “ding” sound. If the user attempts to make a modification to the report by selecting a range of text that includes a protected block, a message box will be displayed saying “This selection contains protected text”. This message box is not created by the RIS, so unfortunately the text and behaviour cannot be changed.

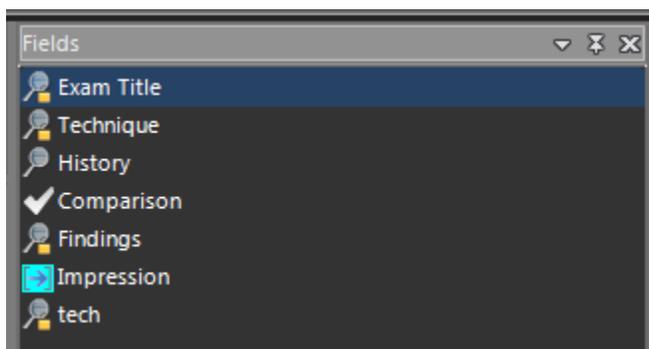


The user can unprotect all fields (this is from existing functionality). This can be accomplished only if the user has FULL access to the “Reporting.UnprotectDataFields” access string. When fields are protected in the report, a button will appear in the report editor’s toolbar next to the field navigation buttons. The button will only be visible when fields are protected, once the button is clicked to unprotect fields, all fields will be unprotected and the button will disappear. If the user undoes this action, the button will reappear once all the fields are protected again (multiple undos would be required for multiple protected fields).



*Reporting window showing the locked field indicator*

When fields are protected, they will show up in the report field controls with a small lock on the field icon. This icon will stay there even if the user unprotects them. The lock represents the field’s property as defined in the field item editor.



*Fields tool window showing the type along with the small lock indicator*

### **9630 Integrate with GE Universal viewer**

A customer has requested the ability to integrate the RIS client to the GE Universal Viewer for the radiologist reading environment. This is similar to the integrations that already exist between the eRAD RIS client and eRAD PACS, GE PACS IW, Carestream PACS, and Hologic.

The eRAD RIS client can now be configured to connect to a UV server. The workstation must have the UV PACS client installed on it. Users can launch view sessions, close view sessions, and append new studies into the existing view sessions. Logins are handled in a manner similar to the other PACS integrations in that the first attempt to launch images attempts to log in with the credentials used for eRAD RIS. If this fails the user will be prompted for different credentials.

The integration is based on the performed study instance uid, so an HL7 feed needs to be set up in order to get this information from the PACS to the RIS.

How to enable the feature:

Install the UV PACS viewer on the workstation by logging to the server with Internet Explorer in compatibility mode and installing the viewer.

Configure a UV PACS server in the PACS Server lookup table in RIS. The PACS Server type must be UV and the url field must be filled with the ip or hostname of the server.

Either configure a practice in RIS to use this server or on login use the PACS menu to override the default selection.

### **Biopsy Workflow**

There is a need for a biopsy workflow for Israel that is different than the existing US –based workflow.

The basic workflow is as follows, with additional details in the larger section below:

- A study is configured to require a biopsy
- When that study is received in reception, it is automatically added to a ‘Pending Biopsy’ worklist for the radiologist to perform
- A notification is sent to the radiologist that the study is ready for the biopsy procedure
- The radiologist performs the biopsy and documents the procedure.
- The radiologist annotates an image with locations of biopsy samples and FLN icons
- A ‘Procedure Report’ is created that includes pertinent details of the biopsy as well as the drawing.
- The procedure report is stored as an attached image to the study
- Downstream systems are notified of the completed biopsy procedure via an interface
- The study is added to a ‘Pending Biopsy Results’ worklist
- When the biopsy results are received, the same study is released from the pending worklist – or can be manually released
- The study appears on the (my) ‘Pending Dictation’ Worklist
- The remainder of the workflow is as per normal diagnostic reporting workflow.

**11076 Biopsy Workflow - Ability to Flag a Procedure as a Biopsy**

The RIS now contains a new biopsy workflow. In order to know when to enable this workflow, there needs to be a way to associate the procedure to the workflow.

A new column called 'Biopsy Enabled Flag' has been added to the Procedure Code lookup table with a default value of 'N'. Procedure codes that are required to be sent to the Pending Biopsy workflow will have to have the Biopsy Enabled Flag set to 'Y'.

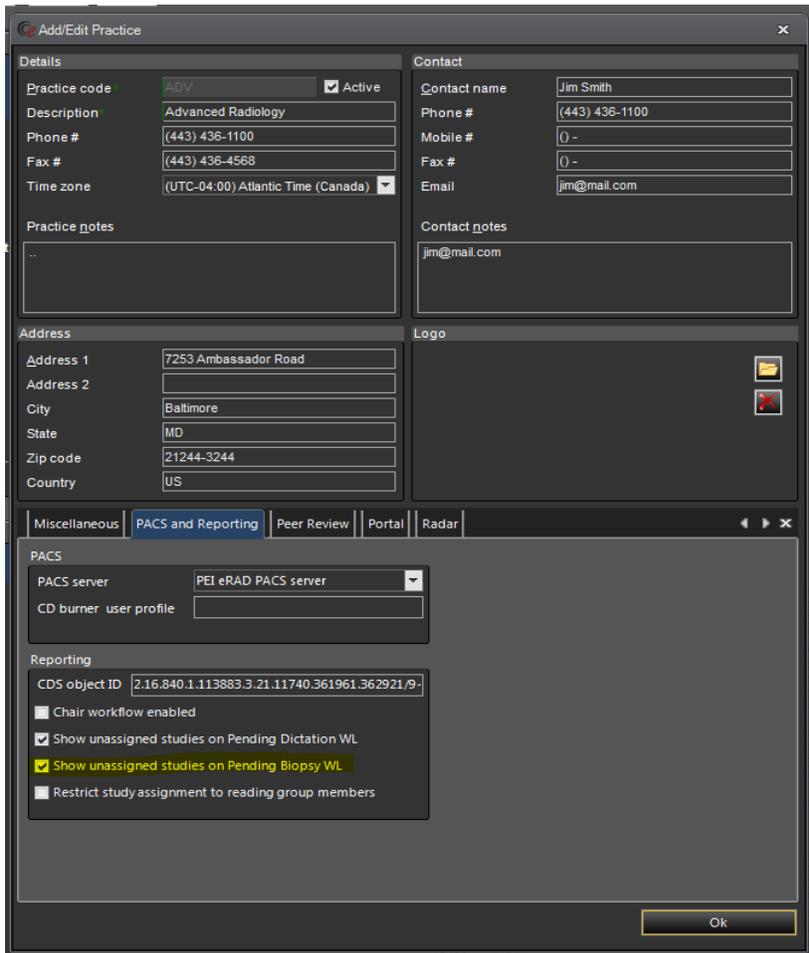
### **11077 Biopsy Workflow - Create Pending Biopsy and All Pending Biopsy Worklists**

In order to begin the biopsy process, there needs to be a worklist for the radiologist who performs the biopsy procedure. Therefore, the RIS requires a (my) 'Pending Biopsy' worklist. A senior staff radiologist will also require an 'All Pending Biopsy' worklist.

These worklists have been created and are based on the same statuses as the Technologist WL (Arrived, CheckingIn, Started). The radiologist's (my) Pending Biopsy WL is filtered based on the assigned radiologist. The "Perform Exam" screen will be used by the Radiologist to action the pending biopsies. The pending biopsy work list will show studies in Arrived or Started status that have a procedure code that has the biopsy enabled flag set to 'Y'.

Note:

In the same manner as the (my) Pending Dictation worklist, it is possible to show un-assigned studies on the 'my' pending biopsy worklist. To enable this setting, the following checkbox should be enabled at the practice level:



Practice maintenance screen showing the new unassigned studies option

**Access Strings:**

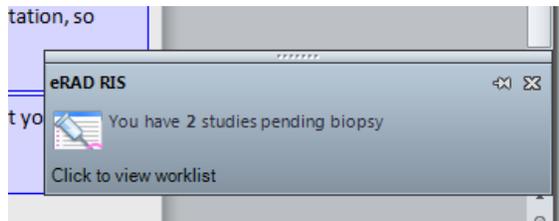
WL.Rad.PendingBiopsyAll – FULL shows the worklist

WL.Rad.PendingBiopsy – FULL shows the worklist

### 11078 Biopsy Workflow - Notify a radiologist of an assigned pending biopsy

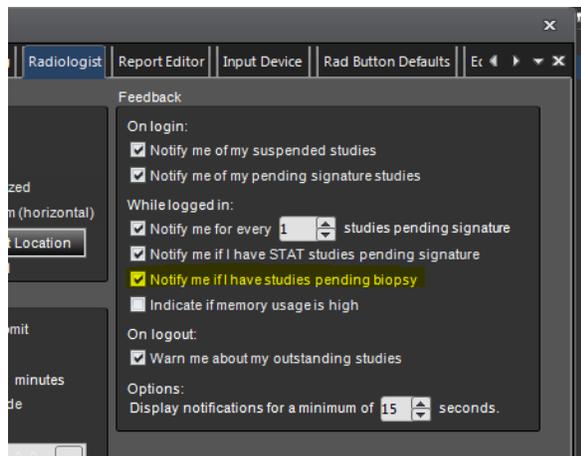
When a radiologist is assigned a biopsy request, he or she will need to be notified.

eRAD RIS now supports a new notification pop-up that will appear for the radiologist when they have a study assigned to them that requires a biopsy.



*Example of a biopsy notification*

There is a user preference that allows the user to turn off this notification.



*The user preference screen showing the new notification option*

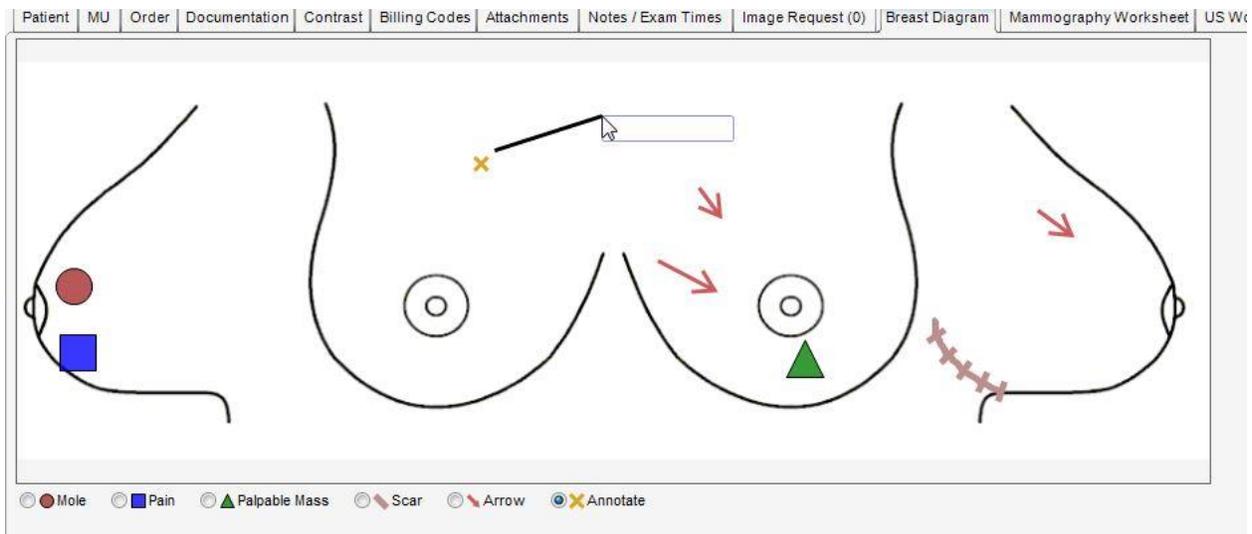
Access strings:

WLNotification.PendingBiopsyNotify” – Default FULL – If set, the notification can appear to the user.

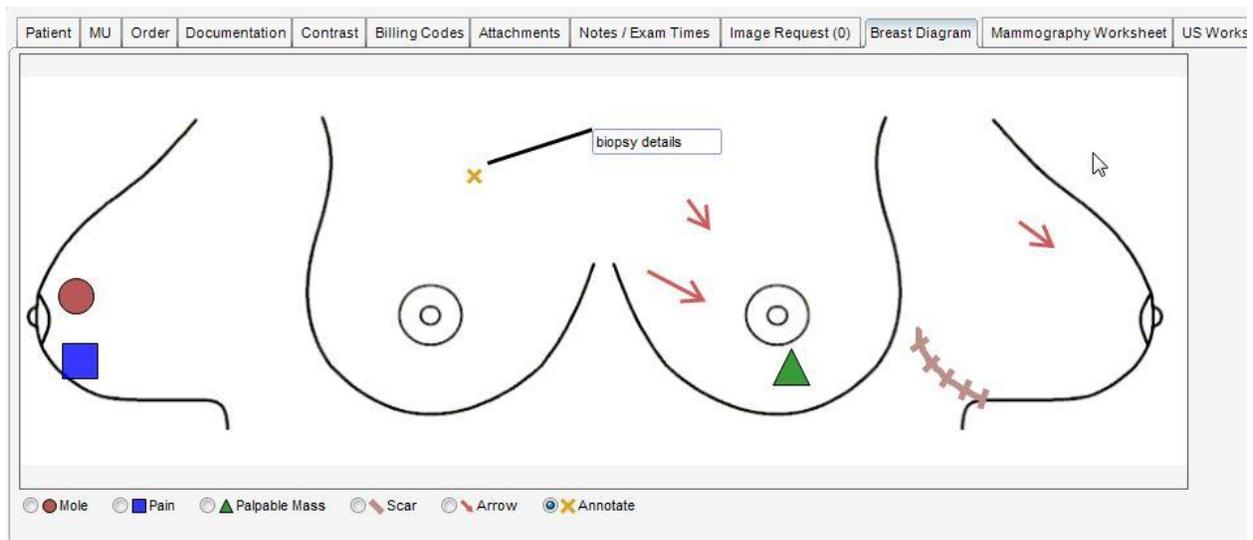
**11079 Biopsy Workflow – Drawing tool – Add tool to show biopsy locations (annotation tool)**

The RIS drawing tool needs to be expanded to include a new tool type which will be used primarily to show the location of a biopsy sample. It is desirable to make this a ‘call-out’ type tool so that a custom label can be added to each call out, therefore making this tool useful for many other purposes.

eRAD RIS’s drawing tool now contains a new tool called ‘Annotate’. When selected, the mouse is used to select a starting location for the annotation. Consider this to be the actual location of the biopsy sample in this case, and consider it to act like a ‘line’ feature in many drawing programs. The user will click down with the left mouse button at the location of the biopsy, and while holding down the left button, will drag the mouse to a new location where the annotation text can be entered. When the user releases the mouse button, the RIS will open a text field where the user can key in the value for the annotation. To delete an annotation, right click on the annotation and select the ‘Delete’ option.



*Drawing window showing an annotation tool. The user has selected a starting location and is dragging the mouse to a location for the annotation label*



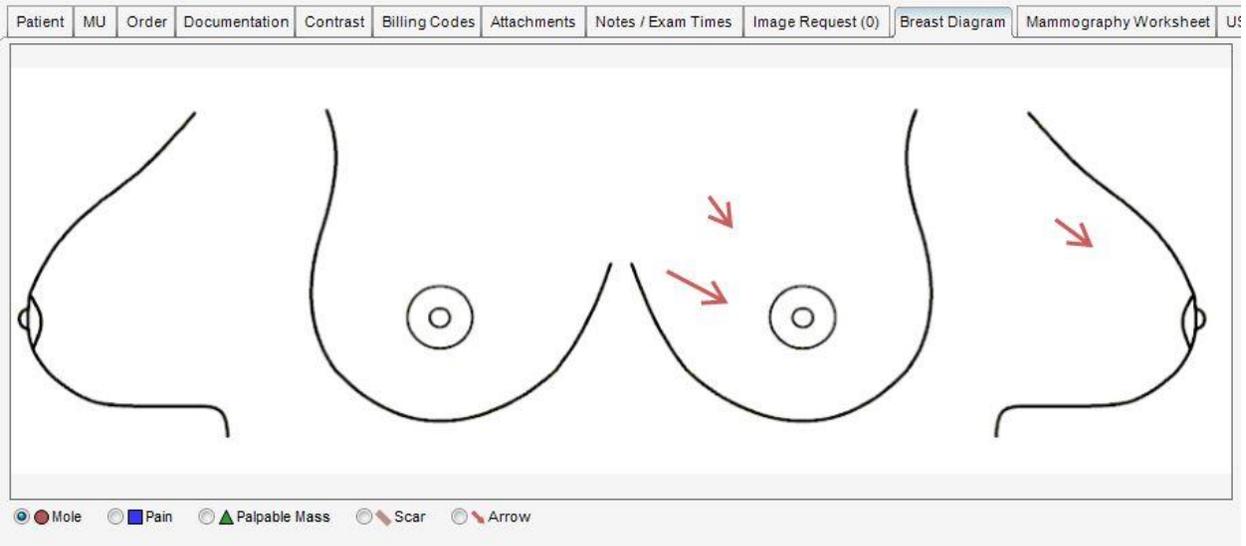
*Drawing window showing an annotation tool. The user has released the mouse button allowing text to be entered for the label*

To delete an annotation, right-click on the starting point of the annotation and select 'Delete' from the context menu.

**11184 Biopsy Workflow - Drawing tool - Add tool for arrow (FNL tool)**

The RIS drawing tool needs to be expanded to include a new tool type resembling an arrow which will be used to represent FNL (fine needle localization).

A new tool has been added called ‘Arrow’. To draw an arrow, select the tool type, then click on the image with the left mouse button and while holding down the button drag the mouse to another location. When the mouse button is released, an arrow will be drawn. To delete an arrow, right click on the arrow, and select the ‘Delete’ option.



*Drawing window showing an FNL (arrow) tool. The user has selected a starting point and dragged the mouse to an end point and released the mouse button. The user has done this 3 times.*

### **11083 Biopsy Workflow – Generate a Biopsy Procedure Report (framework)**

When the biopsy procedure is marked as completed by a radiologist, a Biopsy Procedure Report is required to be created, printed, stored to the patient’s attached images and an XML version needs to be transmitted to an external system. This report must also include the drawing from the drawing tool, along with answers from the questionnaire framework.

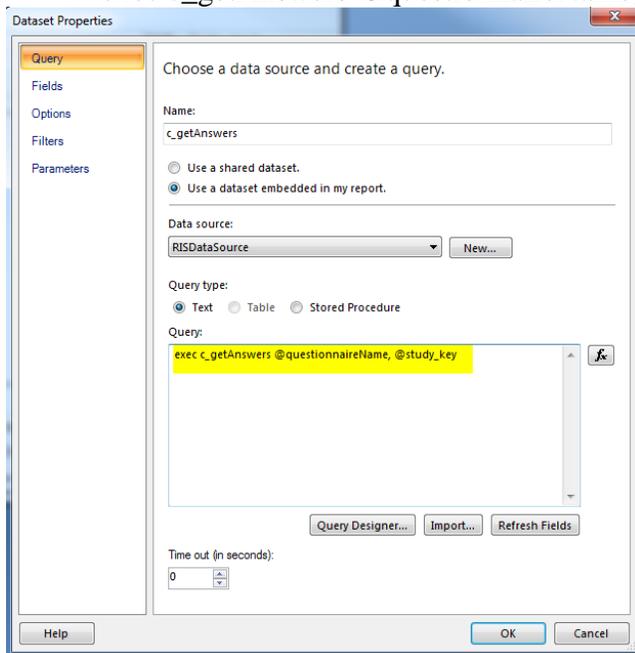
eRAD RIS will generate this report using the existing forms/labels feature. A sample report was created so that service personnel could see how to pull questionnaire answers (the biopsy data entered by the radiologist is stored in these answers) and the drawing into this form.

#### **How to create the Procedure Report form:**

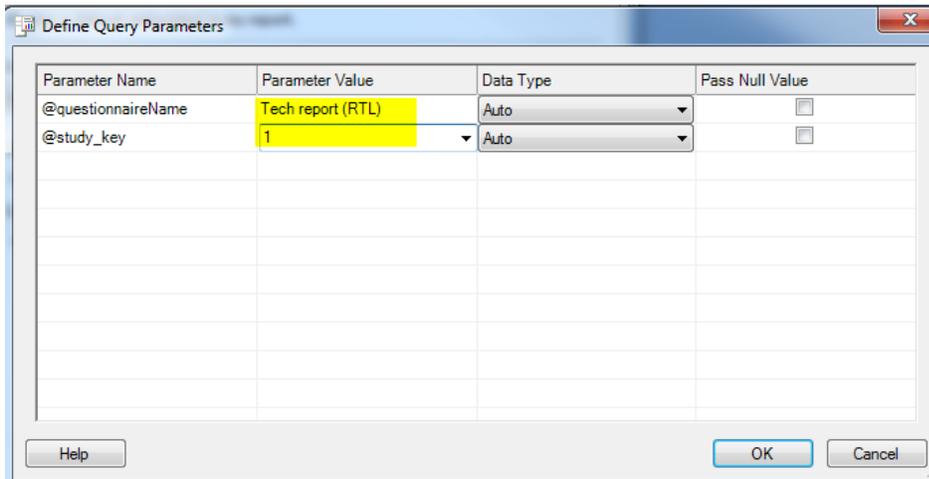
**This is a more involved setup, usually involving the assistance of eRAD support personnel. For assistance, please contact eRAD Support and reference feature 11083**

In report builder create a dataset. Set the data source to RISDataSource. Set the query type to Text. Set the query as shown

`exec c_getAnswers @questionnaireName, @study_key`

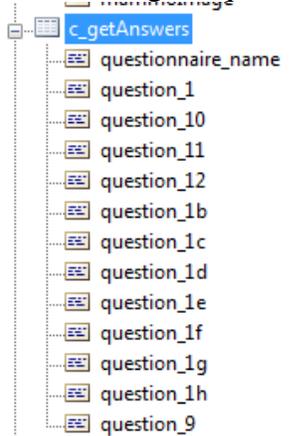


Click the Refresh Fields button, and if prompted enter your sql connection information. You will be prompted with the Define Query Parameters window. You will enter the name of the Questionnaire and any study key.



The dataset should populate with a list of all the question short names from the questionnaire like this:

Note: In this example question\_1 through question\_12 are the short names for the questions in the sample questionnaire I referenced. This is why it is helpful to have more meaningful names when creating the questionnaire short names for mapping the data into a SSRS report.



Notice that adding that stored procedure creates 2 report parameters if they did not already exist.

- @questionnaireName,
- @study\_key

Notice that the Study\_key parameter is what drives the form from the worklist.

**How to include the drawing tool image:**

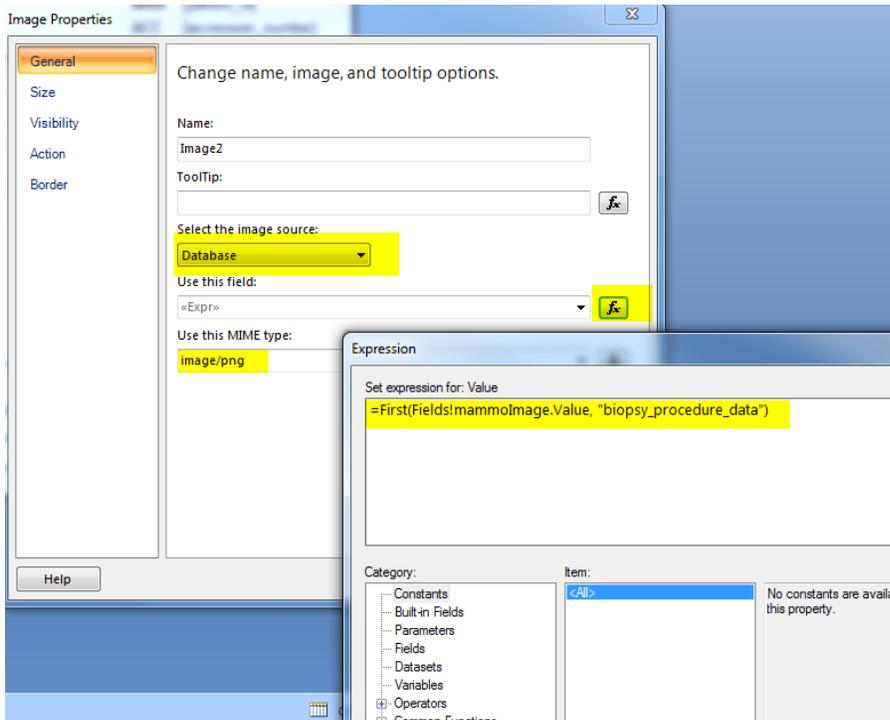
To pull the biopsy image into the form, join the image\_data from the into the c\_mammo\_drawing table into your query.

Example:

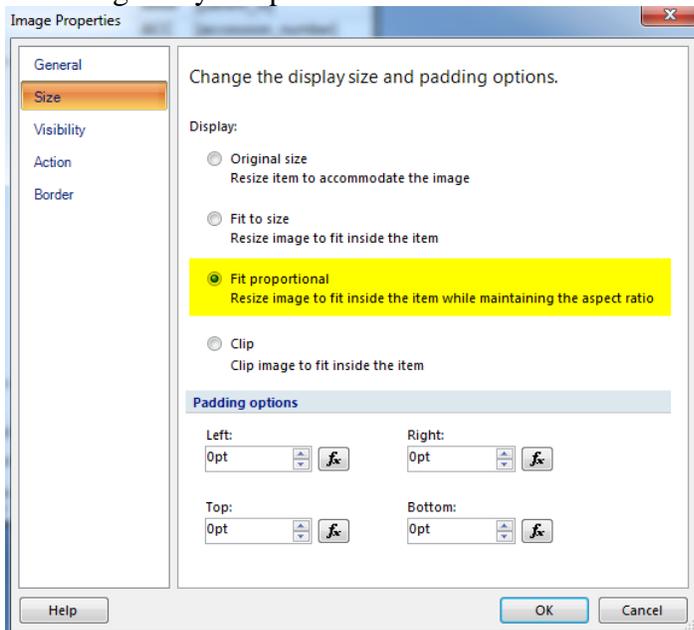
```
select
    <your patient, study, order or whatever other information you need would be here>
    ,md.image_data as mammoImage
from
    c_study s
    inner join c_patient p on s.patient_key=p.patient_key
    left join c_mammo_drawing md on s.study_key=md.study_key
where
    s.study_key = @study_key
```

In SSRS report builder put an image where you want it on the form and add information as follows:

- **Select the image source:** Need to be Database
- **Use this field:** Using the little fx (functional expression) button to select the image field from your dataset. In this example I called my dataset biopsy\_procedure\_data and pulled the field I aliased as mammoImage
- **Use this MIME type:** I selected image/png but you can use what you prefer.



You might want to set the Size properties to what suits your needs. best, but I just used the following in my sample.



### **11082 Biopsy Workflow – Ability to collect custom Biopsy Data**

During the performing of the biopsy procedure, there is specific data that will have to be collected and entered by the performing radiologist (examples include Modality Type, Study, Pathology Type, Left or Right Breast, Biopsy Location, Color of Specimen Container, BIRAD, etc) In order to provide future enhancement opportunity and not hard-code this single solution, it is desirable to use the conditional tab framework to collect this information, but some enhancements to this framework are required. The Conditional Tab editor needs to include body part and biopsy enabled flag. The RIS will also need to produce a ‘Procedure Report’ when the biopsy has been performed.

The questionnaire framework will now evaluate the biopsy and body part fields when determining when to display a questionnaire.

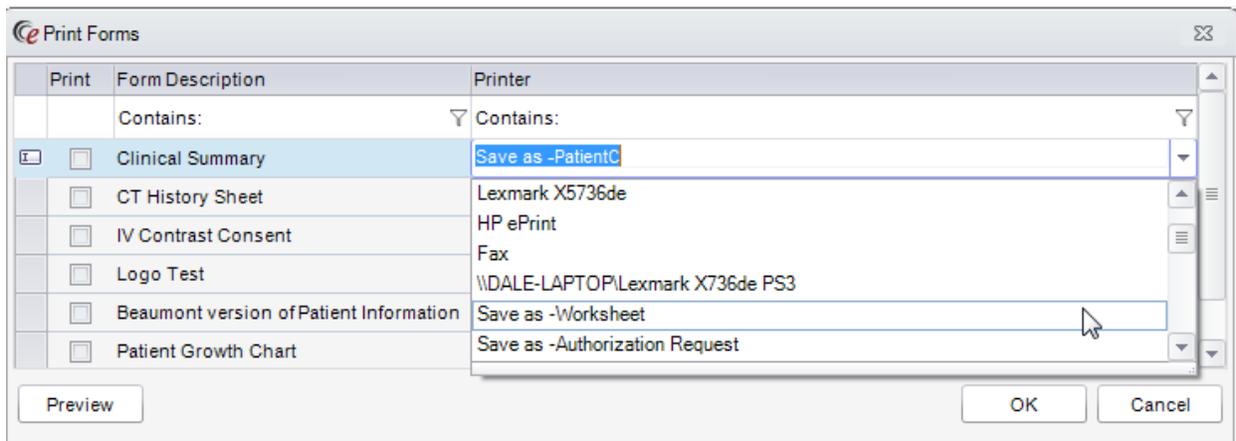
The forms and labels editor was modified to support filter criteria that includes Body Part and Biopsy flag. A “companion form” can be created to present the information from the questionnaire, with criteria that specify that the form should be printed whenever the “tech completes the exam” (which is actually the radiologist completing the biopsy procedure)

### **11271 Biopsy Workflow - Ability to save a form directly to the patient folder**

When the biopsy procedure report is created, the user must save it to the patient folder. eRAD RIS needs to support creating a form and saving it directly to the patient folder.

The Print Forms dialog (which can be configured to automatically launch at many points in the workflow) normally contains a list of printers where the document can be printed. This has been enhanced to also contain links to save an image of the document directly to the patient folder. It will appear in the list of printers and ‘Save as’ and a scanned document type. When selected, the RIS will render the report as an image (using multiple pages if necessary) and store the image as a scan document visible from the patient folder. As per normal RIS functionality, once a destination is selected, the RIS will remember this destination, so the user only has to make this selection once.

If more than one copy of the same document is required (for example, in the requested biopsy workflow there has to be a printed copy of the document as well as the document attached to the patient folder) simply configure the document to appear twice in this dialog by having 2 identical forms created.



*The print forms dialog showing the ability to save the document to the patient folder as a ‘worksheet’ type.*

Access strings:

Clinical.FormsAndLabels.AllowSaveAsAttachment

**11084 Biopsy Workflow - Track biopsies that are awaiting results**

As biopsy procedures are completed by the radiologist in RIS and sent to a lab for pathology, there needs to be a means to track that the biopsy has been sent to an external system and is awaiting results.

To accomplish this, a new worklist called Pending Biopsy Result WL has been added to the Administration menu in eRAD RIS. As biopsy procedures are marked as complete by the radiologist, the study will appear on this Pending Biopsy Result worklist. The study will remain on this worklist until the pending\_biopsy\_result\_flag (accessible via the RIS interface) is set to ‘N’. Once the interface message is received, the study will be removed from the Pending Biopsy Result WL and a radiologist can now dictate on it from the Pending Dictation worklist.

Should the interface not exist, a user can manually remove a study from the Pending Biopsy Result WL by right clicking and selecting ‘Remove Pending Biopsy Result Flag’.

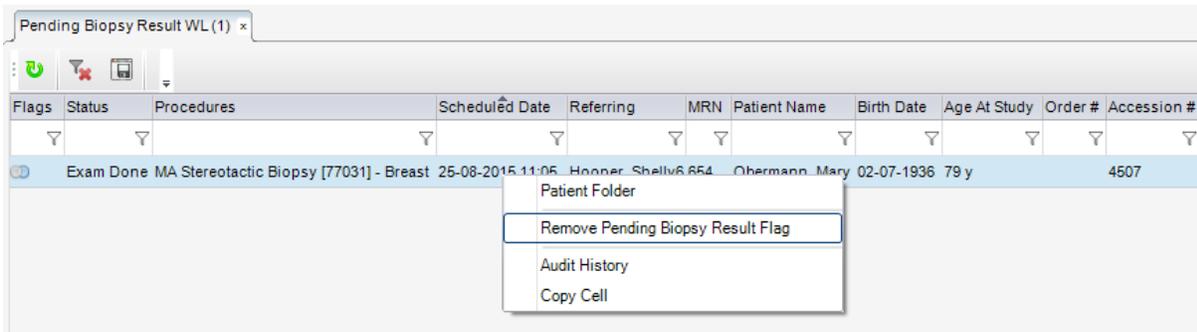
Access strings:  
 WL.PendingBiopsyResult

Flags	Nuggets	Status	Procedures	Pending Biopsy Result	Scheduled Date	Referring	MRN	Accession #	Room	Site	Performed Start Date
		Exam Done	MA Stereotactic Biopsy [77031] - Breast	✓	25-08-2015 11:05	Hooper, Shelly6	38054 654	4507	MA1LU	LU	25-08-2015 11:04
		Cancelled	MA Stereotactic Biopsy [77031] - Breast		25-08-2015 09:40	Hooper, Shelly6	38054 654	4506	MA1LU	LU	
		Exam Done	MA Stereotactic Biopsy [77031] - Breast		20-08-2015 13:32	Hooper, Shelly6	38054 654	4425	MA1LU	LU	20-08-2015 13:34
		Arrived	CT Chest W [71260] - Chest		18-08-2015 15:20	Hooper, Shelly6	38054 654	4490	CT1PO	PO	
		Arrived	CT Chest W [71260] - Chest		18-08-2015 15:00	Hooper, Shelly6	38054 654	4489	CT1PO	PO	
		Started	CTA Chest W/Wo [71275] - Chest		13-08-2015 15:30	Hooper, Shelly6	38054 654	4418	CT1LU	LU	13-08-2015 10:26
		Started	CT Chest W/Wo [71270] - Chest		13-08-2015 15:00	Hooper, Shelly6	38054 654	4419	CT1LU	LU	13-08-2015 10:26
		Started	CT Chest W [71260] - Chest		13-08-2015 14:15	Hooper, Shelly6	38054 654	4420	CT1LU	LU	13-08-2015 10:26
		Scheduled	MA Stereotactic Biopsy [77031] - Breast		13-08-2015 13:55	Hooper, Shelly6	38054 654	4422	MA1LU	LU	
		Exam Done	MA Stereotactic Biopsy [77031] - Breast		13-08-2015 07:45	Hooper, Shelly6	38054 654	4413	MA1LU	LU	13-08-2015 14:02
		Exam Done	MA Stereotactic Biopsy [77031] - Breast		12-08-2015 16:25	Hooper, Shelly6	38054 654	4414	MA1LU	LU	12-08-2015 16:26

*The patient folder showing the Pending Biopsy Result Flag on the Patient Folder*

## RADNET Inc. – eRAD RIS Release Notes

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The screenshot shows a web-based interface for a 'Pending Biopsy Result' worklist. The table has columns for Flags, Status, Procedures, Scheduled Date, Referring, MRN, Patient Name, Birth Date, Age At Study, Order #, and Accession #. A single row is highlighted, and a context menu is displayed over it.

Flags	Status	Procedures	Scheduled Date	Referring	MRN	Patient Name	Birth Date	Age At Study	Order #	Accession #
		Exam Done MA Stereotactic Biopsy [77031] - Breast	25-08-2015 11:05	Hooper, Shellv	6654	Obermann, Mary	02-07-1936	79 y		4507

- Patient Folder
- Remove Pending Biopsy Result Flag
- Audit History
- Copy Cell

*The Pending Biopsy Result worklist showing the right-click context menu to manually remove the pending flag*

## **Mammography**

### **9255 Support BIRADS 4a,4b,4c (non-USA sites only)**

Currently eRAD RIS supports only 'BIRADS 4', and utilizes the recommendation code to distinguish between 4a, 4b, 4c. A non-US customer wants the BIRADS drop down to directly support the categorization of 4a, 4b, 4c.

To support this request, the RIS has been modified to support the additional BIRADS codes. This change technically allows any of the 0-6 BIRAD codes to be extended in the BIRADS table.

## Front Desk

### 8355 Validation on manually entered MRN

All residents of Israel have an Israeli National ID. This is utilized as the MRN in RIS. All National IDs are required to pass a validation referred to as the Luhn Algorithm also known as Mod 10. The RIS must validate the MRN when entered into the system.

To support this, the RIS now has a simple validation framework for MRN's associated to the issuer. Currently there are two validation types supported, but the framework allows for additional types to be added in the future. The two identity validation types supported today are:

- Mod10 – This validation type will accept (pass) a MRN value through the Mod 10 algorithm and determine if it passes or fails.
- Mod10PrePad – This validation type will pass an MRN value through the Mod 10 algorithm and determine if it passes or fails. It will also pad zeros to the left of the number if it passes validation but is less than the appropriate amount of characters. The appropriate amount of characters is determined by the total amount of characters defined in the Mask for the issuer.

The Patient MRN grid has been enhanced to check for identity validation for the Issuer if configured in the Issuer lookup table. If identity validation fails, an error will be shown to the user which will prevent him or her from saving the MRN.

If identity validation passes but the MRN value is required to be padded with zeros, the appropriate number of zeros will be added to the left of the MRN value.

The screenshot shows a 'General Information' window with the following fields: Prefix (dropdown), First (Ron), Last (Hextal), Middle (empty), Suffix (dropdown), Birth place (empty), Father's name (Elvis), Sex (Male), DOB (10-10-1980), and age (34y 9m). There are checkboxes for Deceased, Claustrophobic, Arbitration signed, and Verified ID, and an eRx button. On the right, a table shows Issuer MRN Active status:

Issuer	MRN	Active
system	12	<input checked="" type="checkbox"/>
National ID	543700421	<input checked="" type="checkbox"/>

Below the table is a link: [Click here to add a new row](#)

*General information window showing valid 9 character National ID*

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The screenshot shows the 'General Information' window in the eRAD RIS system. The window contains several input fields for patient information, including Prefix, First name (Ron), Last name (Hextall), Middle, Suffix, Sex (Male), DOB (10-10-1980), Birth place, and Father's name. There are also checkboxes for 'Deceased', 'Claustrophobic', and 'Arbitration signed'. A table on the right shows the 'National ID' field with the value '543700422' and a 'Click here to add a new row' link. An error dialog box is overlaid on the window, displaying the following text: 'The following errors must be corrected: Identity validation failed for NationalID, HMO is required, Special accommodation is required.' The dialog box has an 'OK' button.

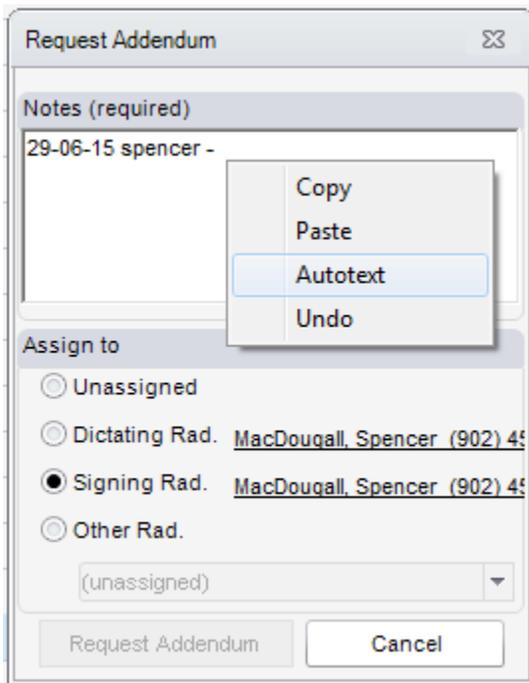
Issuer	MRN	Active
system	12	<input checked="" type="checkbox"/>
National ID	543700422	<input checked="" type="checkbox"/>

*General information window and error dialog showing invalid ID*

### **10534 Support Configurable Autotext for Addendum Notes**

A customer has requested that both the Request Addendum and the Reject Addendum forms in the Radiologist workflow support values driven from a lookup rather than just free text.

In build 45.0, the RIS introduced a new feature called Autotext for log controls. To solve this new customer request, these two addendum fields have been updated to support the autotext control. Now the user can right-click on the note area to invoke the autotext feature. As per the existing autotext feature, these text controls can be configured to support free text, a combination of free text and autotext, or purely autotext.



*Request addendum screen showing the right-click autotext option*

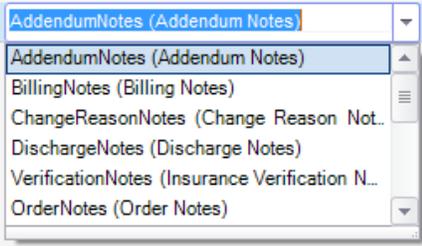
How to enable this feature:

To enable this feature a new log control code has been added to the Autotext lookup called “Addendum notes”. The administrator can configure autotexts to be associated with this category and will therefore display in these dialogs.

## RADNET Inc. – eRAD RIS Release Notes

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Description	Language Content	Log Control Code	Disp
Contains:	Contains:	Contains:	Equ
Click here to add a new row			
Autotext2	Second option for order notes	OrderNotes (Order Notes)	1
Autotext1	This is autotext for Order Notes	AddendumNotes (Addendum Notes)	1



*Autotext configuration screen showing the new Addendum Notes option*

## **Scheduler/Front Desk**

### **10623 Need to have ‘Source of Order’ as a user-editable field instead of ‘Visited At’**

For a specific customer, studies are scheduled in an external CRM system and will not have a ‘visited at’ populated with the referring physician. The interface will automatically populate a ‘source of order’ field, and this is how the RIS and its attached system will know where to direct the diagnostic report. Walk-in patients (and VIP's) are directly scheduled in eRAD RIS, therefore the scheduler/receptionist needs to be able to store/edit the ‘source of order’ so that the RIS knows where to direct the diagnostic report (which is their case is called an HMO). Therefore, it must be possible to edit the ‘source of order’ in a field within the RIS.

To resolve this need, there is now an ordering organization lookup table, and under the appropriate conditions, this is shown in place of the ‘Visited at’ in the Referring Details of the order tab.

The image shows a screenshot of a software window titled "Referring Details". It contains three main sections: "Referring" with a dropdown menu and a search icon, "HMO" with a dropdown menu, and "Img notes" with a text area and a scroll bar.

*Referring Details window showing the source of order field.*

How to enable this feature:

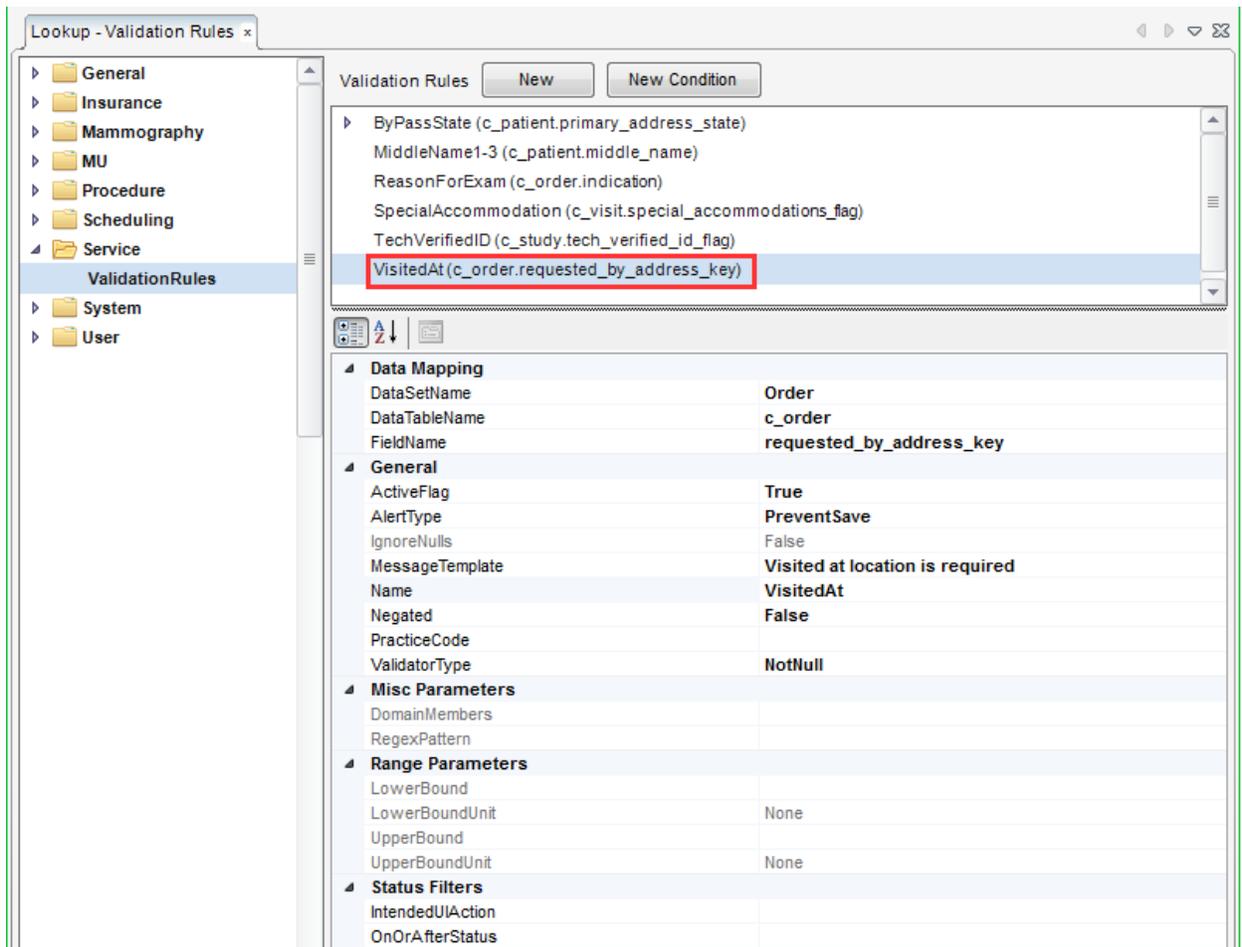
To enable the ‘HMO’ field, set the following access string to FULL

Custom.Visibility.Data.Order.c\_orderRow.ordering\_organization\_code

To disable the ‘Visited at’ field set the following access string to NONE

Custom.Visibility.Data.Order.c\_orderRow.requested\_by\_address\_key

Outside of this feature (but helpful to mention it here) you will also need to disable the required field for the ‘Visited At’



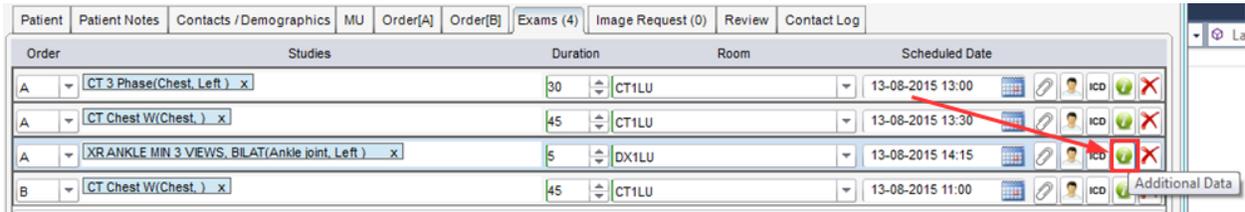
*Validation Rules lookup editor showing the rule which disables the Visited At required field*

## Scheduler and Technologists

### 10843 - Provide Viewer/editor for ‘Study Extra Info’

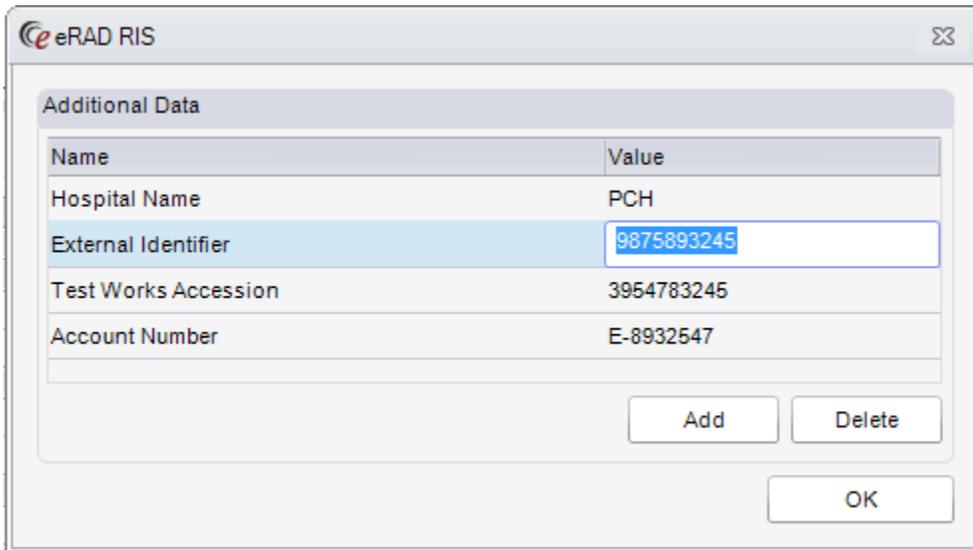
To support dynamic data fields which may be send to eRAD RIS from an external system, the RIS has a special data table known as ‘study\_extra\_info’. While some of these fields are used simply to pass data between systems, there are occasions where the user may need to view and/or add/edit/remove this information.

To allow the viewing and editing, a new button was added to the procedure picker row as shown below:



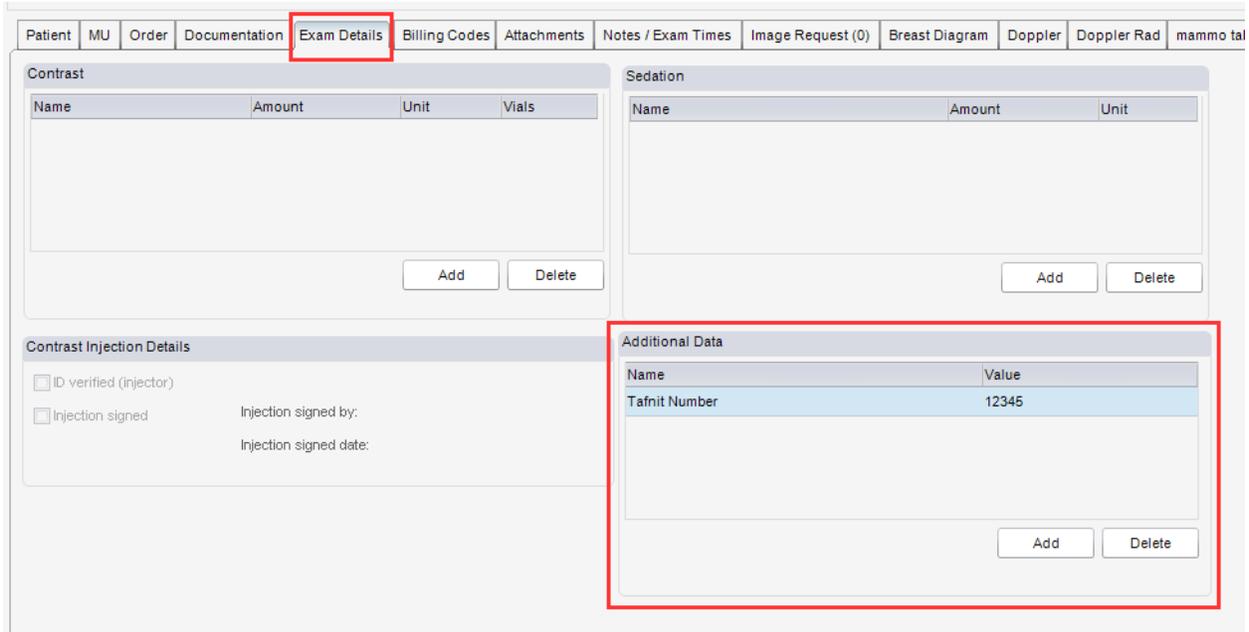
*Procedure selection screen showing the Additional Data button*

Clicking this button will open the study extra info grid.



*Additional Data popup screen showing the ability to edit a field*

To view or edit the addition data from other roles (ie: the Perform Exam and the View/Edit screens) an ‘Additional Data’ grid has been added to the Exam Details tab. Note that this tab used to be called ‘Contrast’, but its purpose has grown beyond just recording contrast.



*Tech screen showing the Exam Details tab and showing the additional data grid*

**Access strings:**

To control access to these fields both for viewing and the ability to edit, each row in the Additional Data (Study Extra Info lookup table) can be linked to an Access String using the following custom format:

“Custom.Visibility.AdditionalData.[field name]”

For example, the Study Extra Info field for ‘ExternalIdentifier’ will have an associated access String of Custom.Visibility.AdditionalData.ExternalIdentifier.

If no custom Access String is added for the Study Extra Info Code, then the system will automatically grant Full rights.

If a particular User Group requires read-only access to ExternalIdentifier, this can be configured in the User Group Permission Lookup table by selecting the group and specifying the Custom.Visibility.AdditionalData.ExternalIdentifier as read-only.

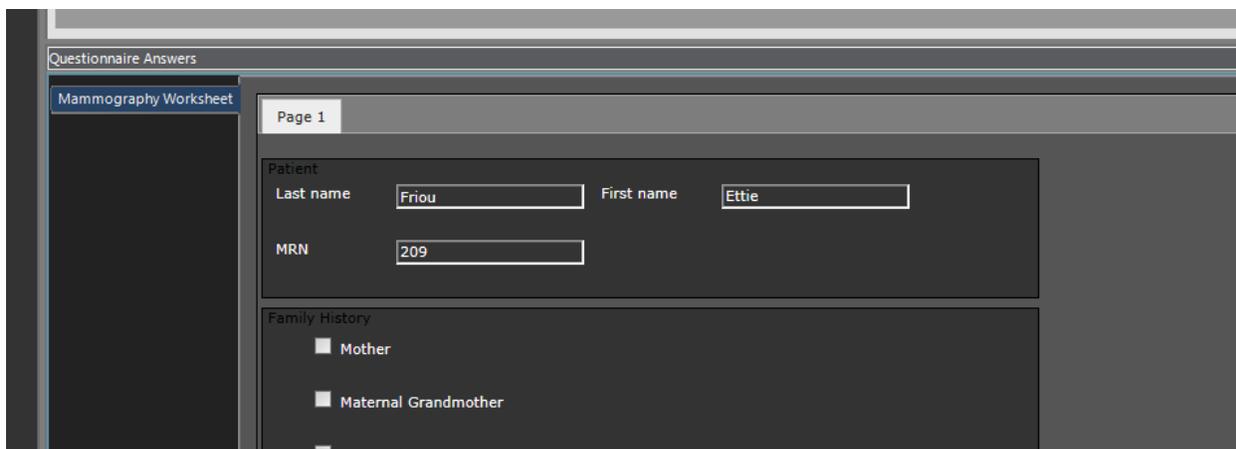
The Additional Data grid allows the user to view, modify, add, and delete entries in the c\_study\_extra\_info data table based on the permission framework outlined above. A user must have Full rights in order to add, delete, or edit an entry.

## All users

### 10700 Questionnaire - Display questionnaire answers in the reporting screen

The new questionnaire (digital forms) feature allows for a customer to create custom questions and store the answers electronically. Radiologists and transcriptionists need a read-only ability to review these answers.

eRAD RIS now contains a new tool window in the reporting screen called ‘Questionnaire Answers’. This window can be opened via the View Menu while the reporting screens are open. This new tool window can be docked and saved in the current layout the same as all tool windows. This new tool window will display questionnaires of type “General”. (See feature #11008 for more details on conditional tab types). If more than one questionnaire is applicable to a study then each will show as a tab within the viewing window. The screen capture below shows a single Mammography Worksheet questionnaire with a single page of questions and answers.



*Radiologist screen showing the Questionnaire Answers tool window containing a single questionnaire and it's answers*

Access String:

View.QuestionnaireAnswers - used to control if the user can see the tool window

### 10819 Questionnaire - Allow certain questions to be marked required

The eRAD RIS questionnaire framework does not currently have a mechanism to enforce when questions are to be answered. The system should permit a question to be marked as required. It must bypass the required check if the question is not visible.

The RIS Admin can now designate questions as required in the questionnaire editor. When the questionnaire is being filled out, required fields are highlighted in red.

Dog's name

*Example question that is required showing the red highlight*

Once the question is answered, the highlight is changed to green to indicate that it is still required, but answered.

Dog's name

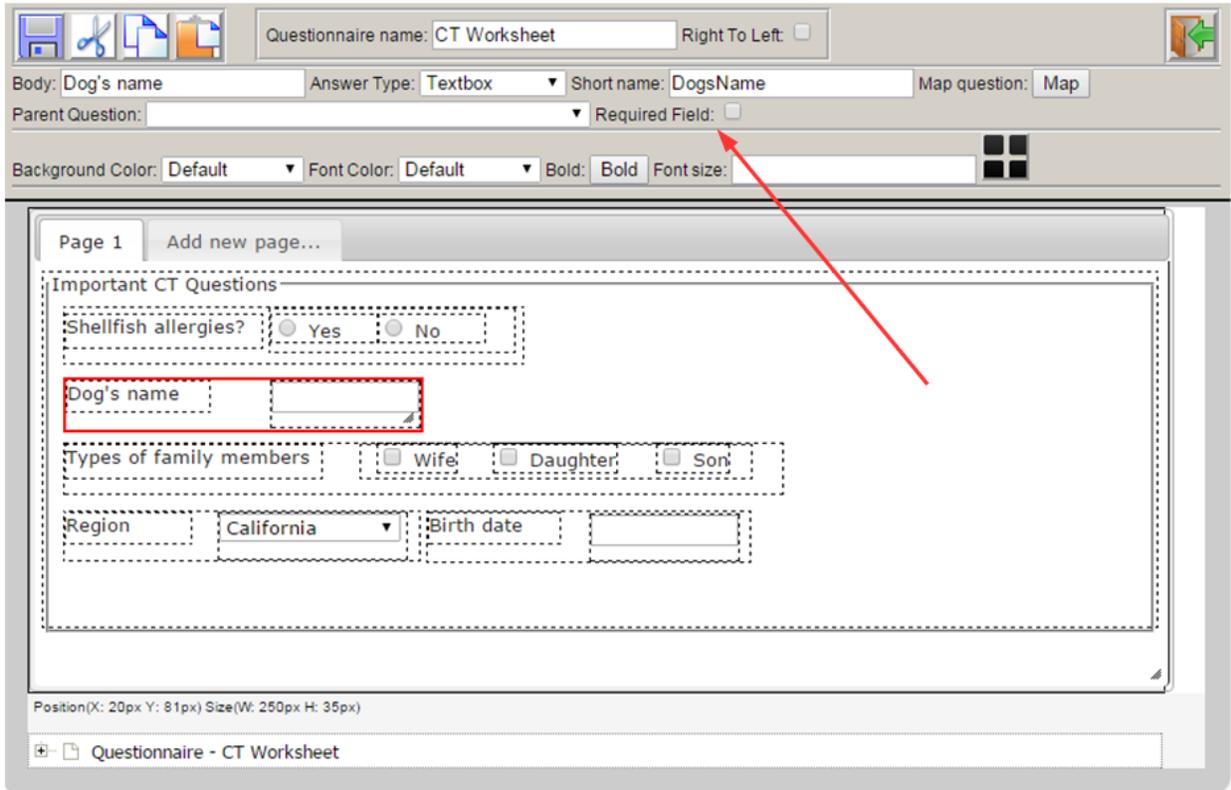
*Example question that is required and has been populated*

When the user attempts to save, required questions with no answers will have a red exclamation mark appear beside them and a message will appear to remind the user to answer the question(s).

The screenshot shows a web form titled "Page 1" with the section "Important CT Questions". It contains several fields: "Shellfish allergies?" with radio buttons for "Yes" (selected) and "No"; "Dog's name" with a red exclamation mark and a red border around the empty text box; "Types of family members" with checkboxes for "Wife", "Daughter", and "Son"; "Region" with a dropdown menu set to "California"; and "Birth date" with a text box containing "06/16/1967". A modal dialog box titled "Missing Answers" is overlaid on the form, displaying the message "Required fields must be populated." and an "Ok" button.

How to enable this feature:

To make a question required, select the question in the questionnaire editor. Once selected, the toolbar will show a checkbox for 'Required Field'.

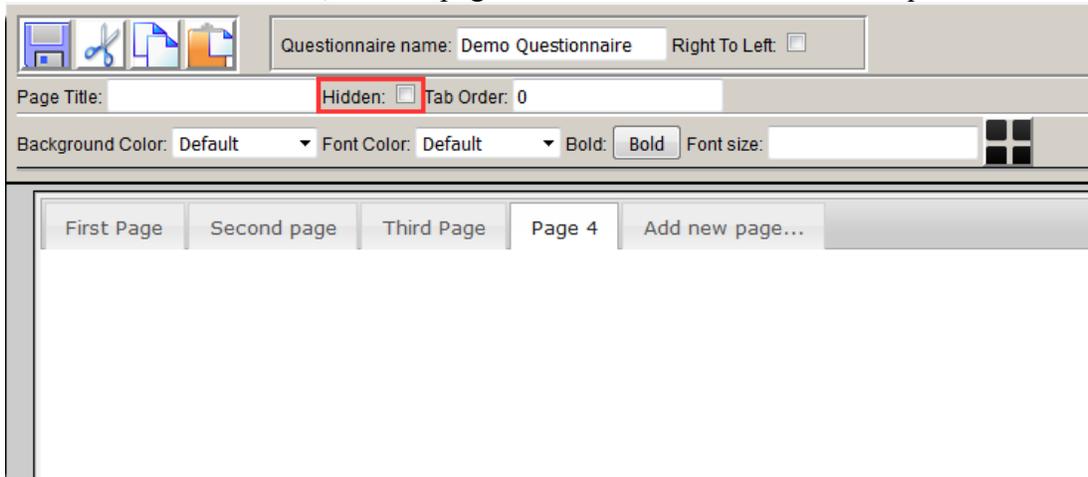


*Questionnaire editor showing the new required field checkbox*

### **10849 Questionnaire - Ability to hide a page at runtime**

eRAD RIS can use the questionnaire framework to populate fields in the diagnostic report. Typically these expressions will be added to one or more tab pages that will be visible when designing, but should not be visible when the user opens the questionnaire. Therefore, the RIS needs to be able to hide these pages automatically.

To address this need, each tab page in the questionnaire designer now has a checkbox called 'hidden'. When selected, this tab page will not be available when the questionnaire is displayed.

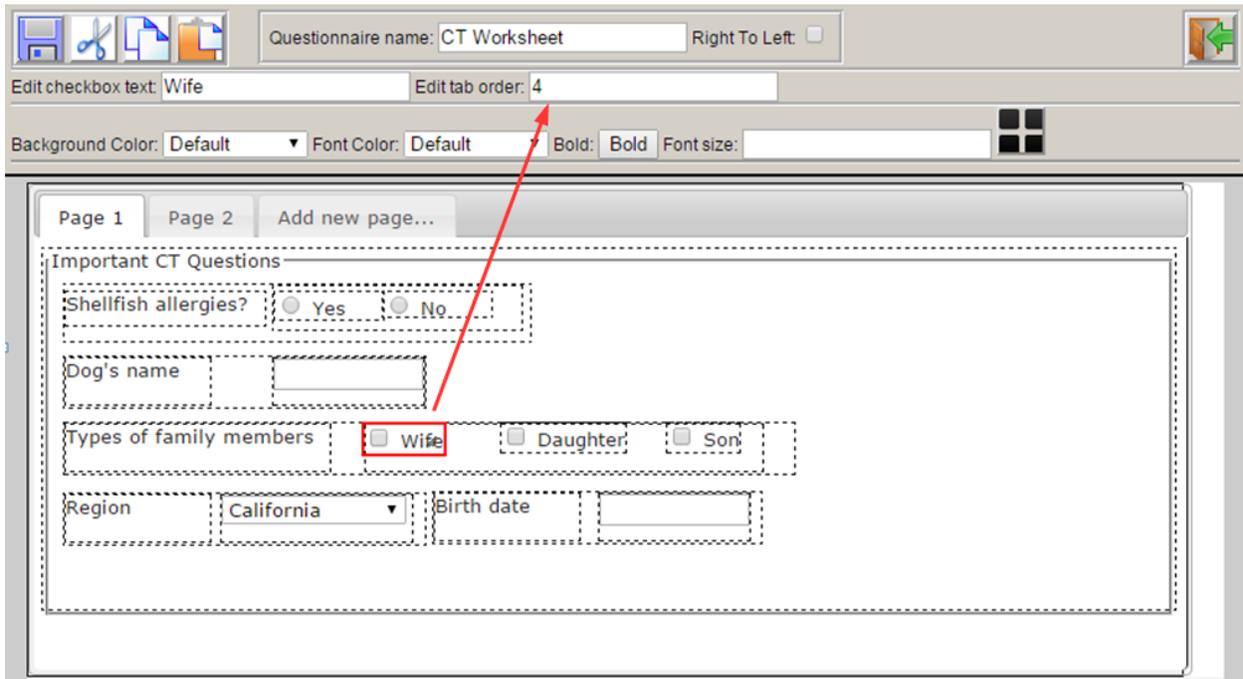


*Questionnaire editor showing the new Hidden checkbox*

**10991 Questionnaire - Tab Order should be configurable**

Initially the questionnaire editor automatically assigned the tab order in the same order as the question was created. However when editing questionnaire, there needs to be a way for the administrator to alter this tab order.

The questionnaire editor now allows the RIS Administrator to alter the tab order of the questions on the page. When editing a questionnaire, selecting an answer element will show a new text field on the toolbar called 'Edit tab order'. Tab order should be set to a sequence to allow the user to tab in that same sequence.



**11000 Questionnaire - Support dark theme**

eRAD RIS supports a dark mode theme (primarily for the radiologist) and when viewing a questionnaire in this mode the RIS should automatically display these questions and answers in this same dark mode.

**11008 Questionnaire - Ability to specify a type of tab**

The questionnaires will currently display to all users when the display criteria matches. However, some questionnaires will only be displayed to the radiologist for example. RIS needs to support a tab type which will help guide if the questionnaire is shown in a particular condition.

To support this need, the RIS now includes a ‘Tab Type’ in the conditional tab lookup editor. The values are currently only ‘General’ and ‘Radiologist’. Control over which type is displayed is currently hard-coded into various screens in the RIS.

How to enable this feature:

Active	Display Order	Conditional Tab Type
Cont	Equals:	Contains:
Y		1
Y		1
Y		1 General
N		1 Radiologist
Y		1

**11402 Display "Radiologist" type questionnaires and update a corresponding diagnostic report (Report Assistant)**

eRAD RIS requires a new tool window to display "Radiologist" type conditional tabs (questionnaires). This new tool window will allow users to enter and update questionnaire data and save. Upon saving the questionnaire data, a corresponding diagnostic report can update based on this input. This will allow for simple diagnostic report building using the questionnaire framework.

The new tool window is called 'Report Assistant'. It is available to anyone inside the reporting screens if they have the appropriate permission. The window includes a 'Save' button. After the save is selected the RIS will re-insert the default template into the report editor which can incorporate Users should be aware when using this workflow any changes made to the diagnostic report prior to clicking the save button in the Report Assist tool will be overwritten by the default template and all fields will be evaluated again.

Access strings:

View.ReportAssistant

### 11061 Questionnaire - Support cascading dropdowns

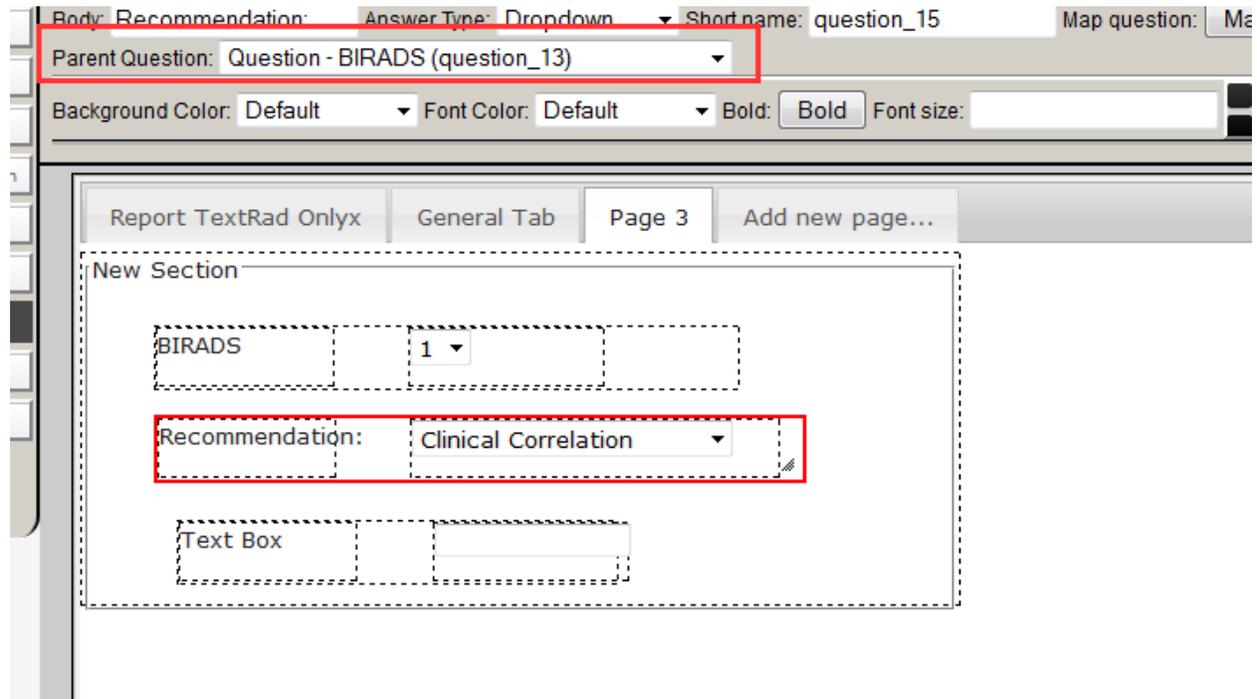
The questionnaire framework currently does not support cascading dropdowns. These dropdowns should have options that are based on a previously selected value from another drop down.

Example: You want to make a drop down list of ‘recommendations’ but that list of options will vary depending on the value is a previously selected drop down.

To resolve this issue, the questionnaire framework has been updated to support cascading values.

How to configure this feature:

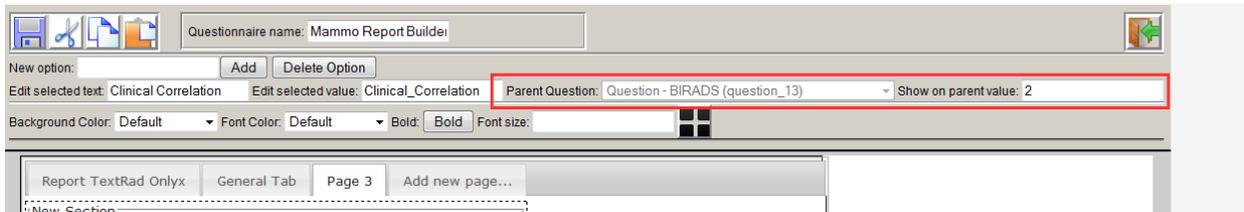
To configure a cascading drop down, select the child drop down field. This will enable a toolbar option called ‘Parent Question’.



*Questionnaire editor screen showing the parent question field*

The parent question field is a dropdown that will show a list of all questions in the current questionnaire. Select the appropriate parent question.

Next, add or select an existing option and set the value for when this dropdown option should show.



*Questionnaire editor showing the parent question and the value for the cascade*

If the parent's value matches the dropdown show value it will display otherwise it will be hidden.

If no options are set to display for a specific parent value then the dropdown will be empty with no options available.

The system will automatically select the first option in the drop down list when the parent's value is changed.

### 11417 Questionnaire – Support a type-ahead control that links to personnel and medication lookup tables

The eRAD RIS questionnaire builder needs a drop down list option that links to personnel and medication.

Textbox answer types can now be linked to either personnel or medication from RIS. While it might have been nice to link to any lookup table, that will require a larger framework change so for now only these two lookup tables can be supported.

When the user begins typing in a specially configured text box, a query is executed to retrieve up to 10 suggestions that match. When the user tabs out of the text box, the RIS will save the text they have entered if it is a valid item from the list, or select the first suggestion on the list if it was a partial match (e.g. the user entered Wheel for a last name and the closest suggestion was for Wheeler), or the RIS will clear out the item if there were no suggestions (e.g. if the user entered Wheelz and there were no items that had a word that started with wheelz, the RIS would null out the entry.)



*A questionnaire showing the type-ahead for a name*

#### Personnel:

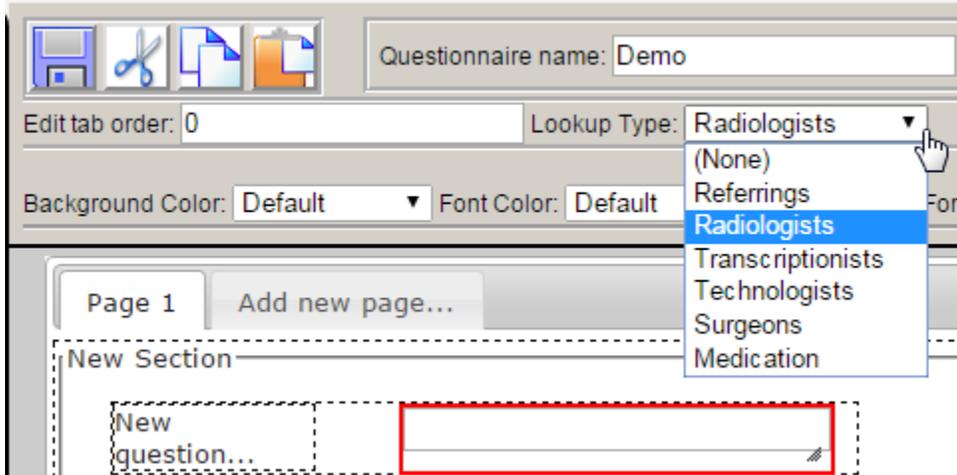
The list of personnel types is currently set to radiologist, referrals, transcriptionists, technologists, and surgeons. The personnel searches all search first name and last name in the same way, but they do a role search (e.g. radiologist\_flag = 'Y', technologist\_flag = 'Y', etc) as well. If only one word has been entered, the RIS assumes it is a last name. If the RIS finds less than 10 matches on last name, it also search the first name field. If two words are entered, the RIS checks for the existence of a comma and if found, the search assumes lastName, firstName otherwise firstName followed by lastName.

### Medication:

Medication search built in a generic way where the RIS searches the description field and returns the description and the primary key.

How to configure this feature:

In the questionnaire editor, when you select a control of type textbox answer, you will now get a lookup type option on the toolbar. Select the appropriate type of resource to search.



*Questionnaire editor showing the LookupType option when a textbox answer is selected in the questionnaire editor*

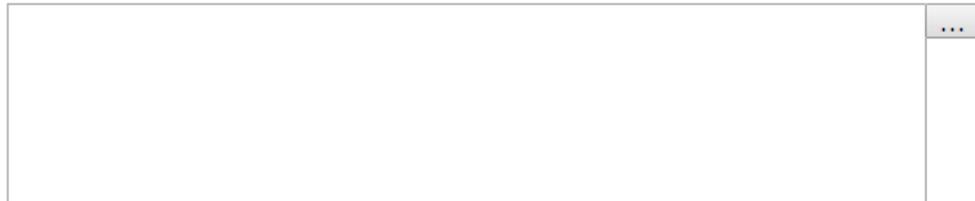
**11172 Questionnaire – Autotext pick list for text controls**

The questionnaire framework needs to support an ‘autotext’ style control, where the user can select one or more values from a list of acceptable values.

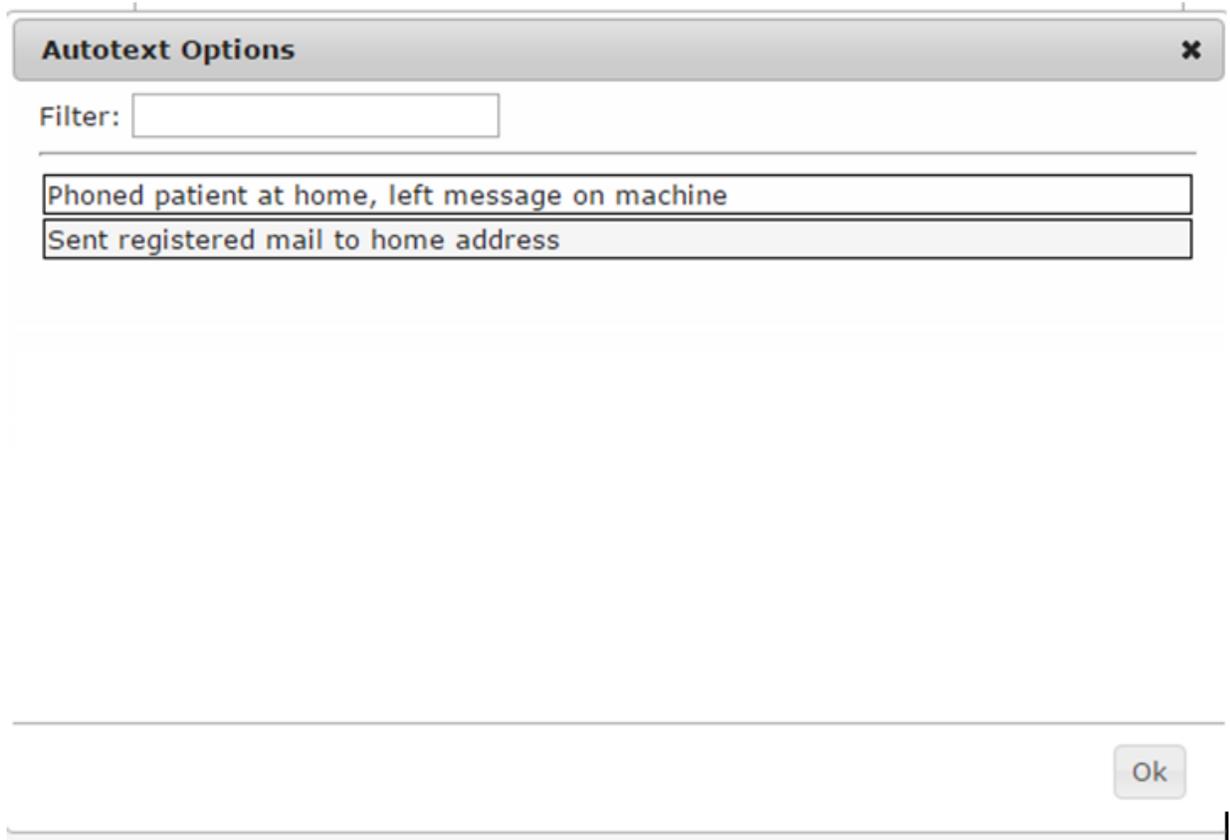
eRAD RIS now supports an Autotext style control inside the questionnaire framework. This allows a user to select a value from a drop down list. In addition, the control will allow one or more items to be selected from the list, which will therefore concatenate the selected text

The questionnaire control will appear as a text area with an ellipse button [...] When selected, the autotext control will appear

Order Notes



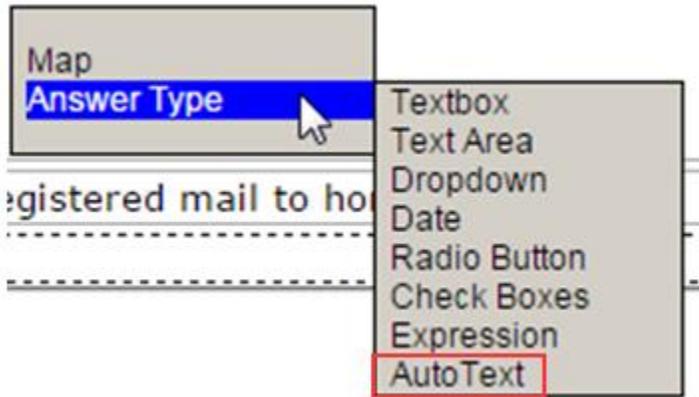
*Example of a text field in a questionnaire with the ellipse button shown*



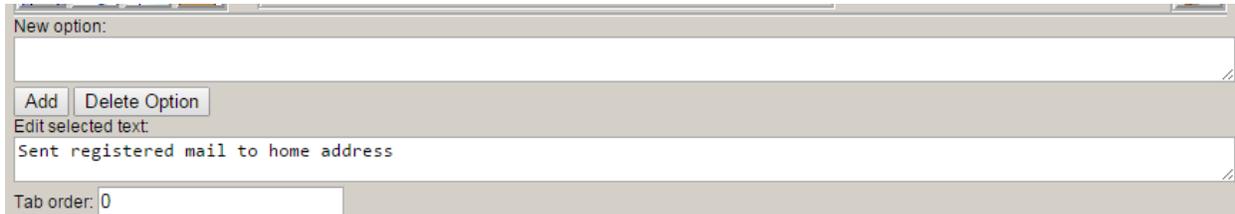
*Example of an autotext inside of the questionnaire framework after the ellipse button is pressed*

How to configure this feature:

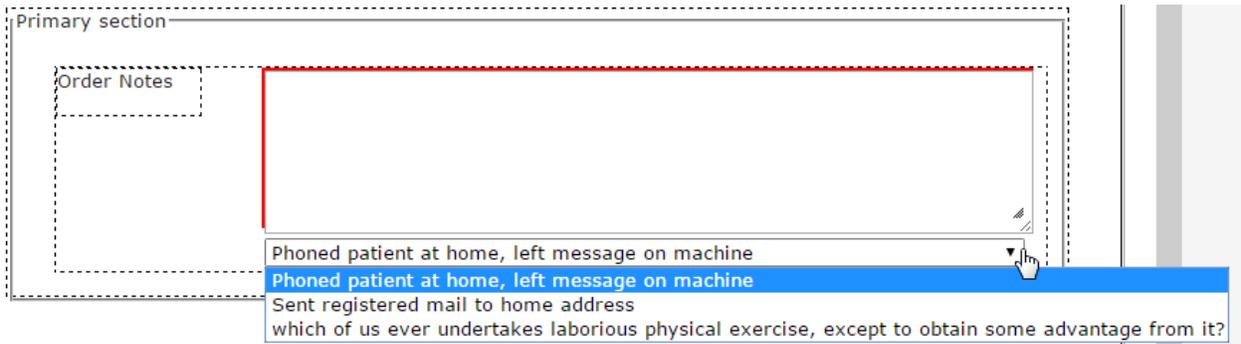
To configure a question to use the autotext control, select the Answer Type option and set the value to 'AutoText'



*Questionnaire editor showing the selection of the Auto Text option*



*Questionnaire editor showing the addition of autotext values*



*Questionnaire Editor showing the multiple autotext values*

### 11242 Questionnaire - Ability to show/hide pages

In the existing Questionnaire editor, the user has ability to show/hide pages from "Manage Rules". However, this only shows/hides the contents of that page. It is preferable to hide the entire tab.

Now, when the page contents are hidden by a ruleset, the page tab itself is also hidden.

Example:

Page 1

Important CT Questions

Shellfish allergies?  Yes  No

Dog's name

Types of family members  Wife  Daughter  Son

Region  Birth date

*Questionnaire showing only one tab. A ruleset is in place to show a second page if the dog's name is Toto.*

Page 1 Page 2

Important CT Questions

Shellfish allergies?  Yes  No

Dog's name

Types of family members  Wife  Daughter  Son

Region  Birth date

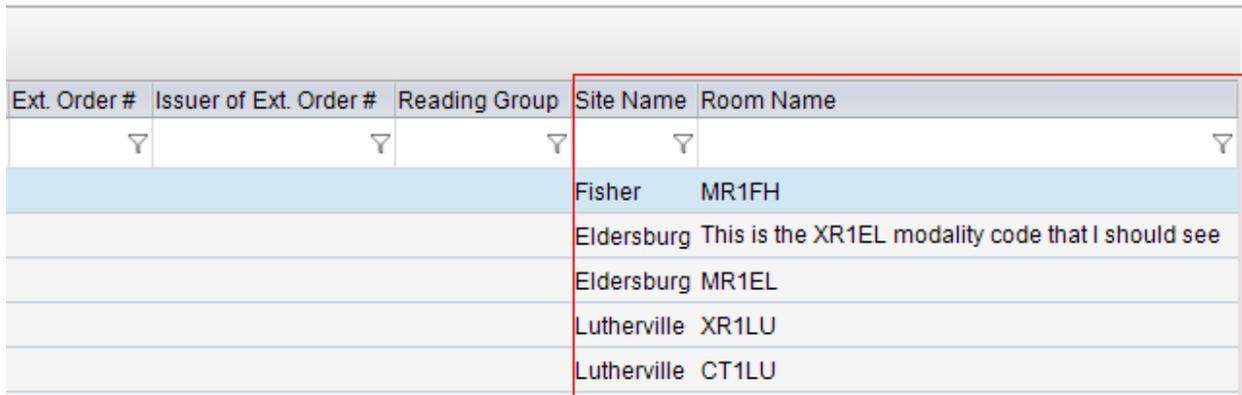
*Questionnaire showing the second tab when a value was entered to match the ruleset.*



**10765 - Worklists - Need site description and room description in most worklists**

Currently, eRAD RIS displays site code and room code (sometimes referred to as modality code) in many worklists. This code value is not always meaningful. A customer has requested the ability to display the site name and the room name in any worklist that currently shows site code and room code.

To resolve this, there are now two new columns for site name and room name.



Ext. Order #	Issuer of Ext. Order #	Reading Group	Site Name	Room Name
			Fisher	MR1FH
			Eldersburg	This is the XR1EL modality code that I should see
			Eldersburg	MR1EL
			Lutherville	XR1LU
			Lutherville	CT1LU

*A general worklist showing the two new columns*

## **Infrastructure**

### **8356 Support of non “system” issuer of IDs**

The RIS currently expects the main MRN for a patient to be what we refer to as the ‘System’ issuer which is typically generated by the RIS. The RIS support other ‘non-system’ issuers for alternate ID’s, and these can be EMR’s ID’s for patients. The RIS currently has functionality that if it does not have a ‘system’ ID for the patient, then it expect the user to manually match this patient to a ‘system’ ID. In the case where a customer has a national MRN of some kind, the RIS should not expect this matching to occur, and must accept a manually entered MRN as the main MRN for the patient.

The support this, the RIS has now has a new model for supporting issuers. There is a ‘primary’ issuer (a RIS MRN, or a national ID, or a passport number for example) and a ‘secondary’ issuer (an EMR issuer for example which must be matched to a primary issuer). A primary issuer does not have to be matched to primary issuer, but a secondary issuer does – Therefore EMR type MRN’s must still be matched to the primary. The RIS can support multiple primary type issuers, such as national ID’s, passport numbers etc. There is a configuration setting for “DefaultIssuerOfPatientID” which determines which issuer generates the MRN if the patient is created directly in the RIS.

The RIS also has a new configuration setting to determine if the RIS should automatically generate an MRN for a new patient, or if it should allow the user to key in an MRN. This configuration setting is “DefaultIssuerGeneratesPatientID.” The default value for this configuration setting is TRUE which means the existing functionality of RIS generating an ID for a new patient is still in place. However, if DefaultIssuerGeneratesPatientID is FALSE then RIS does not generate an MRNs and patients do not need a default issuer just an issuer that is primary, thus avoiding the need to match EMR patients to internal patients.

As a side note, the DefaultIssuerOfPatientID value now must be in the l\_issuer table and should be set to have the primary\_issuer\_flag column set to Y.

Primary issuers are shown in the MRN grid with word [primary] appended to the end of their name.

Issuer	MRN	Active
system [primary]	10415	<input checked="" type="checkbox"/>
		<input type="checkbox"/>

*MRN grid showing the Primary issuer*

### **9562 Support a Secondary Reporting Database**

Customers have requested a secondary database instance to use for management reporting so that there will be no impact to the production database if someone runs a large report during working hours.

There can now be a second SSRS reporting data source configured to point to the secondary database. Appropriate reports that don't require real time data will use that data source and thereby hit the secondary database. Configuration must be done by eRAD support personnel.

### 11161 Support command line options for RIS client application via the config file

In the current version of eRAD RIS, command line options (such as the language selector or the single sign on option) would need to be configured in the shortcut on every workstation and would be lost when a new core install is done. It is desirable to have the a mechanism to globally deploy these command line option

To resolve this need, eRAD RIS now allows administrators to set command line options for all users of the system in the client configuration file.

How to implement this feature:

To implement this option add the command lines you wish to use to the ris.exe.config file in the appSettings node and add a key for value of the CmdLineArgs setting.

```
<appSettings>
  <add key="defaultEndPointName" value="NetTcpBindin
  <add key="ClientSettingsProvider.ServiceUri" value
  <add key="LookupTableTimeToLiveInMinutes" value="6
  <add key="ShouldCloseViewSessionOnThread" value="t
  <add key="EnableHighPriorityLookupStrategy" value=
  <add key="CmdLineArgs" value="" />
  <!--<add key="RowLevelCacheDataSetNamesCSV" value=
  <!-- <add key="MModalDataTransferValue" value="0"/
</appSettings>
```

*Example of ris.exe.config file showing the cmdlineargs key*

**10603 Add SLA field to the procedure group table**

A customer has requested a management report that will indicate the turnaround time of a study compared against the agreed upon service level (SLA). Each procedure group can have a different service level.

In order to produce this report, the RIS now has a numeric column added to the procedure group table, where the administrator can enter the expected service level. The management report (being written separately by ELAD) will reference this value to produce this report. The report will be a site level report, not a globally released report

**8764 - Insurance Eligibility – Support ‘or’ logic for the medical group string**

The RIS has the ability to use the eligibility special conditions to display a warning when the return does not contain the appropriate medical group string. The RIS has been enhanced in this release to also support <and> and <or> conditions such that more advanced rules can be created on the returned string.

Administrators should be able to create a rule that only fires if the return does not contain "prospect" and does not contain "NUESTRA" also RIS should support the the <OR> operator such as:

Prospect <OR> NUESTRA

This would fire a warning if the return contained Prospect or if the return contains NUESTRA.

## **Interface updates**

### **11522 – New Action needed to submit an order without automatically generating a scanned document**

A new main action of HL7\_OrderRequested has been created which does not attempt to create a scanned document version of the submitted order

### **8331 – Ability to update RIS procedure code tables via an interface**

A stored procedure has been created that will import procedure codes into the RIS. It will perform the following actions:

1. Inserts all new records from the CSV file into the procedure table with the following defaults:
  - a. Last updated date with the current date time the procedure was processed
  - b. Last updated by user id is stamped as ‘tafnit-‘ & date of processing
  - c. Active is set to Y
  - d. Display order set to 1
2. Deactivates any RIS procedure codes that are in the RIS table but no longer in the file.
  - a. This also updates the last updated date and last updated by user id.
3. Updates any changed information in the procedure description, alternate description in the RIS to match what is in the source file. \*Including changes in case sensitivity.

### **11153 – Create an Action Queue history table**

A new table was created (c\_action\_queue\_history) that stores a copy of certain fields from the c\_action\_queue table as each item is removed from the queue. This way the RIS has a history of these messages.



## **Management reports updates**

### **11154 Questionnaire mapping report**

A new report has been created called Questionnaire Data Dictionary under Management Reports \ Maintenance. The report allows you to select from a list of the active questionnaires in RIS, and return the Questions for each questionnaire selected. Fields pulled into the report include the Question Short Name, Question Body, Question Guid and page # all grouped together by the Questionnaire.

### **9213 Linked report management report**

The linked report feature essentially allows the radiologist to create a single report from multiple studies. The following management reports were updated with a column called ‘Linked Counts’ to show the additional studies which were technically read but did not result in a diagnostic report. For example, if the radiologist completed a single report, but it consisted of 3 studies, the report count would be 1, but the linked count would be 2 indicating that the radiologist technically reviewed 3 studies.

- Dictations by User
- Radiologist Dictation Activity by Date
- Radiologist Productivity by User – Mammo
- Radiologist Signing Activity

### **10416 Referring details report**

The RIS now includes a new report called Referring Physician Details. This report displays the exams requested by a physician within the dates selected based on date of service. The report is

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grouped by date the physicians' requested the study.

## Referring Physician Details

Date Range: 01-23-2015 - 07-23-2015

Physician name searched on: yeo, da

Physician selected: Yeo, Dale E ID:1051

Description: This report displays the exams requested by a physician within the dates selected based on date of service. The report is grouped by date the physicians' requested the study.

Request Date	Accession	Patient	Scheduled Date	Status	
04-30-2015					1
	3375	[REDACTED]	05-01-2015 07:45 AM	Scheduled	
		"CT Chest W [CT51] - Chest			
05-11-2015					9
	3379	[REDACTED]	05-11-2015 10:59 AM	ExamDone	
		CT 3 Phase [CT13]			
	3378	[REDACTED]	05-11-2015 10:59 AM	ExamDone	
		CT Abdomen Wo [74150] - Abdomen			
	3383	[REDACTED]	05-11-2015 11:35 AM	Signed1	
		CT Chest W [71260] - Chest			
	3382	[REDACTED]	05-11-2015 01:35 PM	Signed1	
		CT 3 Phase [CT13]			
	3381	[REDACTED]	05-11-2015 03:35 PM	Signed1	
		CT Abdomen Wo [74150] - Abdomen			
	3384	[REDACTED]	05-11-2015 03:50 PM	Signed1	
		CT Abdomen Wo [74150] - Abdomen			
	3385	[REDACTED]	05-11-2015 01:50 PM	Signed1	
		CT 3 Phase [CT13]			
	3386	[REDACTED]	05-11-2015 11:50 AM	Signed1	
		CT Chest W [71260] - Chest			
	3380	[REDACTED]	05-11-2015 10:59 AM	Dictated	
		CT Chest W [71260] - Chest			
<b>Total</b>					<b>10</b>

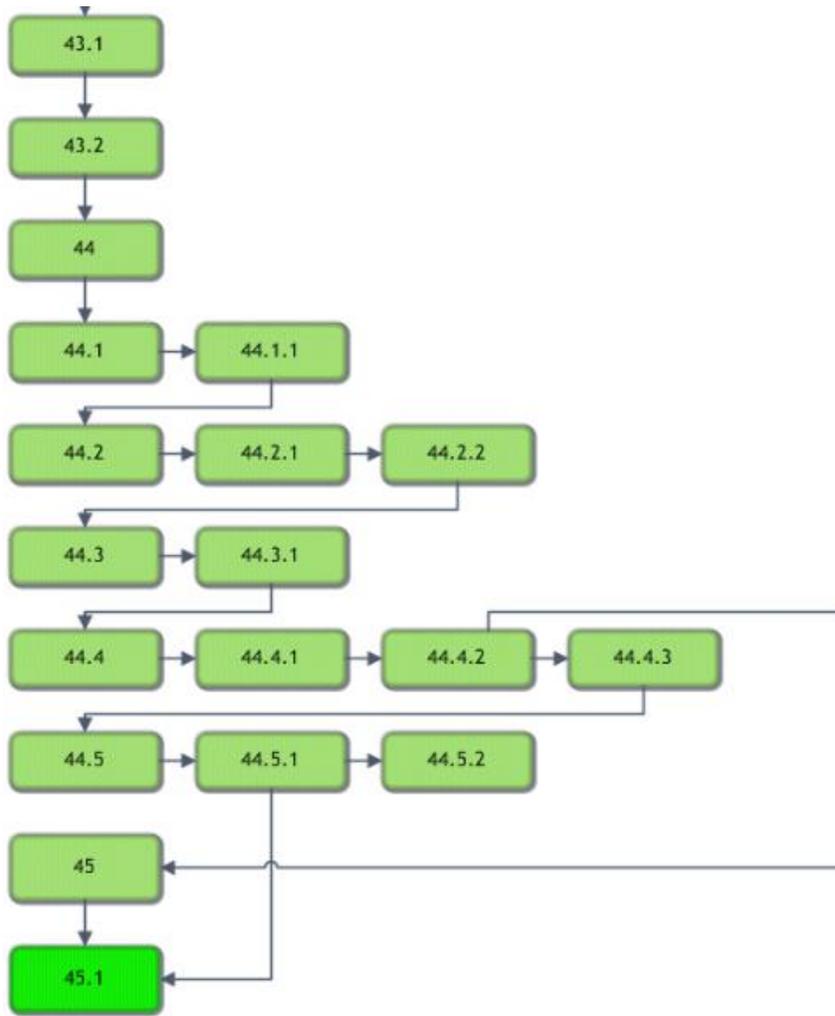
Referring Physician Details

Confidential and Proprietary  
Page 1 of 1

Date Run: 7/23/2015 3:21 PM  
RMIS\dale

*Example of the Referring Physician Details report*

## 6. Code Stream



### Legend:

Light Green = Released software

Gray = Will not be released

Bright Green = Current Release

## 7. RIS Release Version Numbers

Build	Patch	UI Version	Core Version	WS Version	DB Version	Notes
43	-	2.43.0.0.23715(3GB)	2.43.0.0.23171	2.43.0.0.23715	2.43.0.0.23743	Full Version Release
43	1	2.43.0.1.23798(3GB)	2.43.0.0.23171	2.43.0.1.23798	2.43.0.1.23770	GUI.zip, Web Service, DB updates
43	2	2.43.0.2.24017(3GB)	2.43.0.0.23171	2.43.0.2.24017	2.43.0.2.24023	GUI.zip, Web Service, DB updates and Management Report Deployment
43	3	2.43.0.3.24298(3GB)	2.43.0.0.23171	2.43.0.3.24298	2.43.0.3.24283	GUI.zip, Web Service, DB updates and Management Report Deployment
43	3.1	2.43.0.3.24450(3GB)	2.43.0.0.23171	2.43.0.3.24298	2.43.0.3.24421	GUI.zip, and DB updates
43	3.2	2.43.0.3.24450(3GB)	2.43.0.0.23171	2.43.0.3.24298	2.43.0.3.24421a	DB updates
43	4	2.43.0.4.24447(3GB)	2.43.0.0.23171	2.43.0.4.24447	2.43.0.4.24442	GUI.zip, Web Service, DB updates and Management Report Deployment
43	5	2.43.0.4.24632(3GB)	2.43.0.0.23171	2.43.0.4.24632	2.43.0.4.24560	GUI.zip, Web Service and DB updates
43	6	2.43.0.4.24(3GB)	2.43.0.0.23171	2.43.0.4.24	2.43.0.4.24	GUI.zip, Web Service and DB updates
43	6.1	2.43.0.6.24937(3GB)	2.43.0.0.23171	2.43.0.6.24937	2.43.0.6.24914	GUI.zip, Web Service
43	6.2	2.43.0.6.24970(3GB)	2.43.0.0.23171	2.43.0.6.24970	2.43.0.6.24914	GUI.zip, Web Service
43	7	2.43.0.7.25258(3GB)	2.43.0.0.23171	2.43.0.7.25258	2.43.0.7.25226	GUI.zip, Web Service, DB updates and Management Report Deployment
43	8	2.43.0.8.25440(3GB)	2.43.0.0.23171	2.43.0.8.25440	2.43.0.8.25425	GUI.zip, Web Service, DB updates and Management Report Deployment
43	9	2.43.0.9.25477(3GB)	2.43.0.0.23171	2.43.0.9.25477	2.43.0.8.25425	GUI.zip and Web Service
43	10	2.43.0.9.25477(3GB)	2.43.0.0.23171	2.43.0.10.25477	2.43.0.8.25425	Web Service
43	11	2.43.0.11.25512(3GB)	2.43.0.0.23171	2.43.0.11.25512	2.43.0.8.25425	GUI.zip and Web Service
43	12	2.43.0.12.25554(3GB)	2.43.0.0.23171	2.43.0.12.25554	2.43.0.12.25536	GUI.zip Web Service and DB Updates
43	13	2.43.0.12.25610(3GB)	2.43.0.0.23171	2.43.0.12.25610	2.43.0.12.25536	GUI.zip and Web Service
43	14	2.43.0.14.25644(3GB)	2.43.0.0.23171	2.43.0.13.25610	2.43.0.12.25536	GUI.zip
43.1	-	2.43.1.0.25850(3GB)	2.43.0.0.23171	2.43.1.0.25850	2.43.1.0.25771	GUI.zip Web Service and DB Updates
43.2	-	2.43.2.0.26864(3GB)	2.43.0.0.23171	2.43.2.0.26864	2.43.1.0.25771	GUI.zip and Web Service
44	-	2.44.0.0.26570(3GB)	2.44.0.0.26405	2.44.0.0.26570	2.44.0.0.26475	Full Version Release
44.1	-	2.44.1.0.26984(3GB)	2.44.0.0.26405	2.44.1.0.26984	2.44.1.0.26906	Gui.zip, Web Service, and DB
44.1	1	2.44.1.1.27093(3GB)	2.44.0.0.26405	2.44.1.0.26984	2.44.1.0.26906	Gui.zip
44.4	2	2.44.4.2.29327(3GB)	2.44.0.0.26405	2.44.4.2.29327	2.44.4.0.28676	Gui.zip and Web Server
45	-	2.45.0.0.29559(3GB)	2.45.0.0.26107	2.45.0.0.29559	2.45.0.0.29558	Full Version Release
45.1		2.45.1.0.30774(3GB)	2.45.0.0.26107	2.45.1.0.30774	2.45.1.0.30738	Gui.zip, Web Service, DB, SQLReporting, Questionnaire, Citrix support

## 8. Resolved Defects

Bugs, suggested features and support issues resolved in build 2.45.1. The extract is taken from Redmine bug tracking system and only displays defects resolved in 2.45.1.

Bug #	Priority	Category	Subject
10668	Normal	Access strings	Remove redundant access strings: Flag.ExamStat and Flag.ReadStat
11149	Normal	Access strings	Clinical.ReportingEditor is redundant - should be Clinical.ReportingTranscription
7788	Normal	Admin-Other	Multiple lookups are missing a default display order value
10733	Low	Admin-Other	Creating a reading group - Hover text for an error is incorrect
10740	Normal	Admin-Other	Reading Groups- Changes to assigned/unassigned Users and Procedures is not updating the Last Updated field
10792	Normal	Admin-Other	When saving a scheduling availability template, the template selection should remain on that template and not reset to first template
10976	Low	Admin-Other	Tab order in Carrier Search is not in order
10839	Low	Appointment book	Appointment Book - Message loop on closing Reschedule window with x instead of close if maximum open tabs feature is set to 1
11035	Normal	Appointment book	Dragging appointment to new time slot in appointment book throws "Input string was not in a correct format" error
11045	Normal	CD Burning	CD Burning - When there are multiple studyInstanceUID's may result in error message regarding additional images
11380	Normal	Confirmation	The Confirmation Status lookup table has a column called confirm_by_default_flag that has no implementation
10583	Normal	Connect Portal 4.x	Secure Messaging - Subject line should limit the number of characters to the database field size
10778	Normal	Connect Referring Portal 3.x	Webapi interface for 'diagnosticreport' throws an exceptions when "visited at" is null

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11022	Normal	Connect Referring Portal 3.x	Add merge_to_person_key to the l_person API for the Connect 3.x interface
11571	Normal	DB	Questionnaire - Can't copy/paste in questionnaire editor toolbar text fields
11559	Normal	DB	Add indexes to increase RIS performance
5740	Normal	Embedded Reporting	Reporting - SnapInsertToTimeStamps causing editing issues for some users
5985	Normal	Embedded Reporting	Reporting - A colon in the section title will cause report rendering issues.
8029	Normal	Embedded Reporting	Input/output device selection not sticking for MModal users
10885	High	Embedded Reporting	eRAD Report Editor – Clicking + drag dropping within template editor is causing intermittent duplication of text issues.
10912	High	EMR	New MRN grid needs to support EMR MRN's
9216	Normal	Insurance Eligibility	Insurance Eligibility - Remaining Copay is incorrectly taken as co-payment amount
10784	Normal	Interfaces	Action Container should not contain c_primary_interpretation node.
10858	Normal	Interfaces	Validation Framework – Event viewer records an error when there is a null value condition.
11246	Normal	Interfaces	Scan Documents via the interface append pages instead of replacing the whole document
11255	Normal	Interfaces	Patient demographics matching fails if birth_date is not in message
11080	Normal	Legacy Reports	Viewing a legacy report in WORD format does not work from the WL right click, report - print preview.
10897	High	Linked Reporting	Linked Reports - linked_id column should be default of null instead of 0
10856	Normal	Localization	Reporting - (Hebrew RIS) Copy button on Reporting panes includes \t character

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10981	Normal	Localization	Custom Fields for Contrast and Sedation not localized
10992	Normal	Localization	Localization – collection of small items to localize
10997	Normal	Localization	Part of Admin Config is localized when it shouldn't be.
11081	Normal	Localization	Problem with Report History Data Nugget
11142	Normal	Localization	De-localize conditional formatting window
9263	Normal	Mgt - Report - Custom	Move Radnet only reports from the installer to treat them as custom reports.
11168	Normal	Mgt - Report - Custom	Radiologist dashboard
7743	Normal	Mgt Reports	Mammo Annual Radiologist Summary - report details should be sorted by month
9615	Low	Mgt Reports	Mgt Rpt - Referring Physician List - couple of suggestions for easier viewing
11240	Normal	Mgt Reports	Mgt Reports - Error on selecting multiple Practices (2 Insurance Eligibility Reports)
10900	Normal	PACS (Non - eRAD) Integration	When launching RIS via Citrix, the default for PACS is Hologic
11034	Normal	Patient Search	Patient search – Search for 'other variations' needs to be configurable
9475	Normal	Person Management	Personnel - Selecting the dropdown area of a text box can cause the focus to change to another text box
10775	Normal	Person Management	Personnel - Modifying 'Additional resources' doesn't recognize changes after initial save
10867	Normal	Person Management	Unknown NPI Flag - NPI field is not disabled when opening a Referring Physician with Unknown NPI checked
11181	Normal	Person Management	Personnel Merge - Error when source/destination person doesn't have an active RIS account

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10936	Normal	Portal Viewer	Permission Clinical.PortalLauncher doesn't apply to radiology view menu
10813	Normal	Questionnaire	Questionnaire - Rulesets are evaluated in design mode
10820	Normal	Questionnaire	Questionnaire - Unable to remove dates in a date field.
10825	Normal	Questionnaire	Questionnaire - Hidden answers are saved as though they were visible
10836	Normal	Questionnaire	Questionnaire - Unable to save blank/null entries for dropdowns that are tied to DB fields
10844	High	Questionnaire	Questionnaire - Hebrew questionnaires opened in a browser RTL issue with Save/Finish/Next Page/Previous Page buttons
10846	High	Questionnaire	Questionnaire - Checkboxes cannot save Y and N values
11065	Normal	Questionnaire	Questionnaire Editor - Rules that uses greater than/lesser than don't work properly against numeric values
11068	Normal	Questionnaire	Questionnaire - RIS populated date fields calendar control doesn't open to the correct date
11073	Normal	Questionnaire	Questionnaire - Tab title allows for more than 30 characters in RIS (throws error at run time)
11074	High	Questionnaire	Questionnaire - On Register/Perform Exam, only questionnaires for the study initially opened are shown
11257	Normal	Questionnaire	Questionnaire - Drop down list cannot be sized
11272	Normal	Questionnaire	Questionnaire - Newly added sections/questions render improperly until resized.
11290	Normal	Questionnaire	Questionnaire - Focus is jumping to tree view when clicking questions in the Questionnaire Editor
11057	Normal	RADAR	Quick RADAR Message - Curly Brackets cannot be entered in message (throws error).
11250	Normal	RADAR	Quick RADAR Message - To: field is too small

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11284	Normal	RADAR	Quick RADAR Message - SMS messages won't send when over 160 characters
8561	Normal	Radiology Reporting	Report Fields Control - Update field control when fields are modified in the report
9420	Normal	Radiology Reporting	Reading group and linked reporting need to come together.
9642	Normal	Radiology Reporting	Custom fields for time are not working
9709	Normal	Radiology Reporting	Template/macro editor - field editor - the data fields should be alphabetic order.
10395	Normal	Radiology Reporting	Action Buttons on reporting screen still respond to shortcuts even when they are not visible
10513	Normal	Radiology Reporting	eRAD Report Editor - Entries made in M*Modal text expander
10530	High	Radiology Reporting	When permission is not granted to create new templates or macros, user is able to add, edit, delete fields in the template via the preview window.
10563	Low	Radiology Reporting	Macro/Template Editing - Creating template from with auto-macro fields will inconsistency
10575	High	Radiology Reporting	Text Expander - adding a new value only saves for the session, log out and back into RIS, value is not saved.
10670	Normal	Radiology Reporting	ERAD Editor - when you edit an existing macro, can easily edit a field when you meant to create a new field.
10685	Normal	Radiology Reporting	Template/Macro Lookup - context menu export templates defaults file type to cda (xml)
10686	Normal	Radiology Reporting	Template/Macro Lookup - context menu option Export List to Excel is not working
10823	Normal	Radiology Reporting	Similar Display of Preferred Radiologist and Assigned Radiologist Needed
10829	Normal	Radiology Reporting	Polling queue next workflow will try to open interpretation types that the user doesn't have access to
10887	Normal	Radiology Reporting	Dictation files save to external location, when they cannot be found in the Gui the Load Audio button is displayed once then the dictation controls are accessible

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10896	Normal	Radiology Reporting	Open Patient Tab limitation setting is exceeded when Reuse Reporting Screen is checked.
10918	Normal	Radiology Reporting	When in the dictation window and using the Next - Previous navigation, hover icon says 'Previous field' regardless if using Next or Previous
10920	Normal	Radiology Reporting	Next - Previous navigation - keyboard action- Selecting Previous field or section causes an error when using eRAD editor.
10924	Normal	Radiology Reporting	Addendum request's assign to rad dropdown does not show *Preferred rads
10926	Normal	Radiology Reporting	New Reading Group lookup table is missing access string
10993	Normal	Radiology Reporting	Reporting - M*Modal Recognizer not updating
11001	Normal	Radiology Reporting	Birads picker validation issue with localization
11051	Normal	Radiology Reporting	Picklist - when the option is a macro the navigation doesn't work.
11053	Normal	Radiology Reporting	In the report , the Scanner value in the technique field should be populated from something other than Report Description column if that column is blank
11054	Normal	Radiology Reporting	Opening the TemplateMacro lookup editor will display an additional column 'Macro Type'
11276	Normal	Radiology Reporting	Make the wordviewer executable name/path configurable in sysconfig
11300	Normal	Radiology Reporting	Pending dictation WL, when you skip and continue if the Interpretation type is blank the study will not open in dictation window
10891	Normal	Reception	inappropriate error occurring when trying to split orders on registration for an already scheduled study
7071	Low	Scheduling	Scheduling - Scroll Wheel on mouse does not work in search results grid
10491	Normal	Scheduling	There needs to be an access string to disable the 'save as order' button
10653	Normal	Scheduling	Date at top of Details date grid can display a different date than the selected Scheduled Date/time

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10868	Normal	Scheduling	Cannot remove phone number with PhoneNumberFormatDisabled=True
10889	Normal	Scheduling	System Config ShowDOBCalendar=False doesn't apply to IVT window
10894	Normal	Scheduling	Preferred Site incorrect on Scheduling site change
11158	Normal	Technologist	Null object exception when trying to perform exam
2661	Normal	Thick Client GUI	Template Macro Editor - Double click template or macro
8063	Normal	Thick Client GUI	Barcode Scanner - Message "Unable to initialize Motorola Barcode Scanner" should not be displayed in left bottom corner if user is not using barcode scanner.
10927	Normal	Thick Client GUI	Motorola barcode scanner error in application log
11298	Normal	Thick Client GUI	Unexpected error "splitbutton base : enable check" when opening a study in any QA WL
10811	Low	UI Look and feel	Cosmetic fixes needed for scheduling calendar
10917	Normal	UI Look and feel	Technologist verified ID is required but not showing any indication that is it.
11012	Normal	UI Look and feel	Labels in Register Multiple Studies window are misaligned
11023	Normal	UI Look and feel	Register multiple studies window has some problems
11024	Normal	UI Look and feel	Arrive date check window has alignment and wording problems
11220	Normal	UI Look and feel	Completing a Personnel Merge changes all Yes/No/Cancel prompts to Yes/Cancel/Cancel
11269	Normal	UI Look and feel	MainStudyIndicator column added when loading worklist views in patient folder.
10753	Normal	visibility framework	Visibility Framework - Need a way to hide State field on Image Request window

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10864	Normal	visibility framework	Visibility Framework - some fields cannot be set to ReadOnly on Reschedule window
10865	Normal	visibility framework	Custom Access String - Not being able to hide fields on Walk-In>Existing Orders
10879	Normal	visibility framework	Visibility Framework - Including a study on Perform Exam re-enables read-only fields on Documentation tab
10882	Normal	visibility framework	Visibility Framework - Most fields cannot be set to read-only on Contacts/Demographics tab
10706	Low	Walk-In	Walk-In - Selecting order from Existing Orders window doesn't automatically fill date/time on Exams
10419	Normal	Worklists	Worklists - Columns not populated on the signed by date worklist.
10859	Low	Worklists	Reading Group column needs to be added to the All Peer Review Pending Action WL
11038	Normal	Worklists	Null object reference when hovering over flags column in IVT WL
8425	Normal		Insurance Eligibility - Deductible issue when service section has a total deductible of zero but no remaining deductible is specified.
10908	Normal		Management report icon showing as Radnet R logo, rather than eRAD 'e' logo
10916	Normal		Rename column in modality lookup to avoid confusion
11019	Normal		Error on Reschedule with Insurance Eligibility
11239	Normal		Word Legacy reports - context menu from worklist tries to treat file as PDF

## 9. Known Limitations

The following are bugs, suggested features and support issues found in build 2.45.1. Bugs reported in previous versions are not repeated here.

#	Status	Priority	Subject
11702	New	Normal	"Set Follow Up Required Flag" is not always sending study to Finding Follow Up WL
11703	New	Low	Amount to Collect field on Order tab missing currency sign (\$)
11708	New	Normal	Amount to collect field shows 4 decimal places in some cases
11712	New	Normal	Amount to collect on Self-Pay cannot be modified in some cases
11364	New	Low	An exam is aborted in perform exam window. Status changes to 'discontinued', no Mirth message sent. Order is still in PACS WL.
11584	New	Normal	Auto macros that start with a field must have a space before the field otherwise 'create template from report' doesn't work correctly
11701	New	Normal	Biopsy - Missing access strings for Remove and set pending biopsy result
11664	New	Normal	Biopsy – 'Set Pending Biopsy Result Flag' and 'Remove Pending Biopsy Result Flag' are not localized
11401	New	Low	Drawing tool – Drawing object can be partially outside of visible area
11524	New	Low	Drawing tool - context menu available when image option not selected
11694	New	Normal	Citrix - installer missing the telerik files
11692	New	Normal	Citrix - log files should have more detail
11491	New	Normal	Conditional fields navigation setting is not working
11493	New	Normal	Conditional fields not working in M*Modal
11529	New	High	Contrast - Leaving contrast/sedation amount/units blank on multi-study order can cause false validation fails
11508	New	Low	CT dose required - If you open a study where the ct dose was not required at time of performing exam , you cannot save unless this value is entered.
11650	New	Normal	Data Exception while trying to Reschedule from the Reception WL
11494	New	Normal	Delimiter for questionnaire answers and not localized.
11570	New	Normal	Dictation field in Summary Panel in dictation window copy option throws error
11480	New	Normal	Edit and create menu items for the Edit button should be more descriptive.
11729	New	Normal	EMR on primary issuer setup not taken into account
11507	New	Low	Error changing primary study flag after it has already been set
11327	New	Normal	Intermittent error closing User Preferences
11540	New	Low	Error on adding new row on MRN grid for unlinked patient
11709	New	Normal	Field meta data is not being saved when pasting into report template with no fields
11609	New	Normal	Finding Follow Up - Missing language item for finding code in the finding

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			follow up worklist
11660	New	Normal	Findings - if procedure 'findings required flag' is set to N, the context menu item (Set Required Followup Flag) in patient folder, should not be visible
11714	New	Low	Getting casting error when saving View/Edit with no patient gender
11363	New	Normal	Height/Weight not required while going through Existing Orders prompt
11629	New	Normal	Image Request WL requires new "name" equivalents columns with description
11587	New	Normal	In dictation window, the 'find' option doesn't find a word if it only exists in a field
11473	New	Normal	In the editor window, the shortcut CTRL+ALT+S should be changed because the action button has been renamed from 'transcribe' to 'edit'
11675	New	Low	Indication required but could not add an indication.
11541	New	Normal	Linking EMR patient to RIS patient hides system issuer (just a visual glitch)
11383	New	Low	M*Modal - Remove subsection tool bar option in the report editor
11726	New	Normal	Management Report - Editor Activity report is not returning results
11724	New	Normal	Management Report - Radiologist Signing Activity report filters
11744	New	High	Memory Leak In GridFlagCellElement
11742	New	Urgent	MemoryLeak in QuestionnaireAnswersView control for radiologist screen
11700	New	Normal	Missing access strings for setting/removing Follow Up Required Flag
11718	New	Low	MModal - when creating a template from report where the template has multiple auto macros of the same type, numbering of the auto macros fields in new template is backwards.
11591	New	Normal	MModal - create a template from report - auto macros are not working correctly.
11715	New	Normal	MModal - when creating a template from report the auto macro doesn't work correctly
11504	New	Normal	MModal - When opening an older template in template editor via dictation window, get error "Index was outside of the bounds of the array"
11676	New	Normal	MRN - Issuer dropdown filtering out valid entries
11295	New	High	Multi-Orders don't display correctly on opening Register
11737	New	Low	No visual cursor on Access String lookup table
11538	New	Low	Patient flags not usable in dark mode
11016	New	Low	Patient folder control has a white background in light mode instead of grey
11357	New	Low	Patient information was updated in registration window but MIRTH message was not sent to PACS with updated information
11683	New	Low	Personnel - Modifying pre-saved address followed by Edit>Cancel reverts changes
11391	New	Low	Policy subscriber description needs to be edited within prompt for matching policies.

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11515	New	High	Portal Launcher - Unable to remove a rule once saved
11483	New	Normal	Protected Field - Although you cannot insert macros into protected fields, the behavior could be better
11567	New	Normal	Questionnaire - Date fields require perfect formatting when manually typing in dates
11302	New	Low	Questionnaire - Display Order on conditional tab should be aligned to left
10999	New	Low	Questionnaire - Document outline will not reflect tab page order changes
11578	New	Low	Questionnaire - Expressions only updating on events
11686	New	Low	Questionnaire - Localization of "Required!" hover text
11661	New	High	Questionnaire - Mapped date fields problems with dd/MM/yyyy format
11404	New	Low	Questionnaire - Problem hiding first page through rules
11678	New	Normal	Questionnaire - Required field message doesn't appear when user is on a different tab
11682	New	Low	Questionnaire - Required fields exclamation mark not consistent
11580	New	Low	Questionnaire - Stand-alone textboxes have the Lookup Type dropdown shown
11398	New	Normal	Questionnaire - Tabbing to checkboxes/radio buttons doesn't highlight them
11593	New	Low	Questionnaire - Type-Ahead alter images/textboxes by 1 pixel
11561	New	Low	Questionnaire Answers - Users can close individual questionnaires tabs
11592	New	High	Questionnaire Answers - Pane isn't read-only in radiologist window
11625	New	Low	Questionnaire Editor - Creating Rule with Condition "Has answer" prompts for "Value:"
11411	New	Normal	Questionnaire Editor - Duplicate Short Names created on copy/pasting sections
11674	New	Normal	Questionnaire Editor - Rules for date fields on calculated dates problem with dd/MM/yyyy
11627	New	Normal	Questionnaire Editor - Rules on Autotext controls don't work
11396	New	Normal	Questionnaire Editor assigns duplicate tab title after a page is deleted
11668	New	Low	Questionnaire Type-Ahead Textbox for Medication returning results with garbage text entered
11696	New	Normal	Radio buttons may still save an answer when hidden due to a rule on a questionnaire
11739	New	Normal	Releasing a report sets an unnecessary 2 minute lock
11717	New	Normal	Remove Follow Up Required Flag - spelling mistake in context menu
11499	New	Normal	Report Assistant - no scroll bars
11565	New	Low	Reporting - Create/Edit Report from Tech window shouldn't include 'and Continue' buttons
11589	New	Low	Reporting - Extra space in BI-RADS required message
11315	New	Low	Reporting - waiting on selected report when there is no selected report (mouse pointer with spinning wheel)

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11719	New	Low	Responsible Party - ID Issuer dropdown now includes primary issuers
11527	New	Low	Scantype lookup doesn't allow empty Keyboard shortcut if other scantypes don't have assigned keyboard shortcut
11731	New	Low	Scheduling - Emergency Contact showing as required on Registration
11384	New	Normal	Shortcut CTRL+SHIFT+R - return to report tab not working
11573	New	Normal	Shortcut keys for 'Create and Continue' and 'Create and close' required for the reporting editor
11479	New	Normal	Should be using the templates and the macros of the assigned radiologist.
11475	New	Low	Tab order need adjusting for Referring Physician Details report
11488	New	Low	Tech creating a report from the Perform exam window, the audit log shows the incorrect status if a modification is made in the perform exam window after submitting the report.
11521	New	High	Template editor - Assignments - Modality type, Procedures or Users Windows - Hitting the Cancel button actually saves the changes
11617	New	Normal	Template/Macro lookup editor, search option not retrieving results.
11426	New	Low	Text expander - order of items is different depending if you are in eRAD or MModal reporting mode.
11656	New	Low	validation message for missing dates on the manage rules screen may be shown twice
11611	New	Normal	View PDF legacy reports in Reporting window
11560	New	High	Walk-In - Error on splitting orders after Checking In
11481	New	Normal	Warning or workflow restriction should be put in place based on reporting mode used
11353	New	Low	When an Appointment is scheduled, then cancelled but will schedule later, then cancelled altogether, it still remains on the PACS WL.
11505	New	Low	When importing a template in the template\macro editor, get an error if the practice and base template values are not selected prior to the import.