

User Release Notes

for eRAD RIS
Version 1
Build 39

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1. Purpose

This document describes some of the new features and changes implemented in eRAD RIS as of the end of Sprint 39. This version of eRAD RIS is referred to as Build 1.3.39.

Only features which can be visually demonstrated to the user will be outlined in this document.

2. Intended Audience

This document is created by the RIS Development team for the RadNet RIS management team.

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

Please note that Build 1.39 is considered a new core release of the application and will require a reinstallation of eRAD RIS. This is accomplished by navigating to the eRAD RIS shared installation drive and running the CoreInstall.bat file (ex: I:\RISDeployment\CoreInstall.bat)

If you experience difficulties accessing the application please do not hesitate to contact Darcy Noye with the PEI RIS Development Team.

4. New Access Strings and Configuration Settings

Setting Placeholder	Setting	Default	Controls Access to
Access string / User Group Permission tables	Clinical.Schedule.SplittingOrders	none	Controls access to split an order in the registration window
rRISServices.exe.config	<serviceThrottling maxConcurrentCalls="2000" maxConcurrentSessions="4000" maxConcurrentInstances="4000"	Was 100, 50, and 50. Will now be 2000, 4000 and 4000	This is a pre-existing setting that controls the amount of concurrent users. The previous values were 50, 100, and 100 consecutively.
Access string / User Group Permission tables	Clinical.ImportCD	None	Controls access to Import CD option from patient folder.
SystemConfig table	PACSCacheDelimiter	^	Determines the delimiter to be used to separate user ids in the PACS cache field
SystemConfig table	PACSCacheServer		Determines the PACS work list server used for setting and retrieving the cache field
SystemConfig table	PACSCacheField	UDF7	Determines the field used in the PACS to indicate that the study should be cached
SystemConfig table	PACSCachingEnabled	False	Number of studies allowable to cache per user
SystemConfig table	PACSMaxNumCachedStudies	5	Determines if the PACS image caching functionality is enabled
SystemConfig table	PACSCacheFieldLength	32	Indicates the expected length of the PACS Cache field in the PACS database
Access string / User Group Permission tables	Clinical.CacheStudy	None	Allows the user to manually add a study to

			the cache
Access string / User Group Permission tables	Clinical.RISAdminChangeStatus	None	allows a RIS administrator to make changes to the status of an exam that might not be possible otherwise
Access string / User Group Permission tables	Config.LookupEditor.ScanDocumentArchiveLocation	None	Controls access to the lookup table under the Configure menu item
SystemConfig table	ScanDocumentMaxSizeInDB	2147483647	The maximum size in GB that the system will persist scans documents directly in the db. When this value is exceeded the archive process will begin (at its next run time interval) to move scan documents to the archive.
SystemConfig table	ScanDocumentMinSizeInDB	2147483647	When scan document archiving is initiated, this is the minimum size in GB that the system will reduce the amount of scans documents that are persist directly in the db.
SystemConfig table	ScanDocumentArchiveCurrent Location		The archive location where the archive process will move scan documents to. The value must match a value in the l_scan_document_archive lookup table.
SystemConfig table	ScanDocumentArchiveStartTime	00:00:00	The time of day in hh:mi format (24 hour) that the scan document archive process can wake up.
SystemConfig table	ScanDocumentArchiveStopTime	00:00:00	The time of day in hh:mi format (24 hour) that the scan document archive

			process must stop. Does not have to be greater <u>greater</u> If less than ScanDocumentArchiveStartTime <u>then the process will continue to the next day until the time is reached.</u>
SystemConfig table	ScanDocumentArchiveDaysOfTheWeek	0,1,2,3,4,5,6	<p>A comma separated list of days that the archive process will wake up to see if there is work. The list contains numbers representing the day number within the week, where:</p> <p>0 is Sunday 1 is Monday 2 is Tuesday 3 is Wednesday 4 is Thursday, 5 is Friday 6 is Saturday</p> <p>For example, a value of 0,1,2,3,4,5,6 means that the archive process will run every day of the week.</p>
	ScanDocumentArchiveServerNames		A comma separated list of server names that are allowed to run the archive service.
	ScanDocumentArchiveMaxThreads	6	The maximum number of thread the scan document archive process can use within one process.

5. New Features and Enhancements

Mammo – Ignored Reminder Removal from Mammo Letters Work List

The Mammo Letters WL contains the letters to be sent to patients that have upcoming or missed exam dates for follow up mammo exams. We can generate up to 3 reminder letters that will appear on the Mammo Letters WL from a pre-configured time. When the last letter is generated and a follow up order is not scheduled, we then create an Ignored Reminder on the WL when 60 days has passed since the last letter was generated.

The issue we had with the ignored reminder is that if the follow up was scheduled as a new appointment and not from the follow up order itself, we had no way of removing the ignored reminder from the Mammo Letters WL.

We have added a new System Configuration variable:

IgnoredRemindersMaxDays with a default value of 7 days. This value can be changed to the practices desired time in day's length. The **IgnoredRemindersMaxDays** allows the practice to set the amount of days the ignored reminder will remain on the Mammo Letters WL after the reminder was generated.

We have added a second System Configuration variable:

IgnoredRemindersStartDays with a default of 60 days. This will allow the practice to configure the time in days that an ignored reminder is generated after the last letter was created.

Example – A the third and final reminder letter was generated 30 days past the target exam date. Using the default value for **IgnoredRemindersStartDays**, the ignored reminder will be created 60 days past the last letter generation date. The ignored reminder will remain on the WL until the **IgnoredRemindersMaxDays** configured value is met, with 7 days being the default. Then the ignored reminder is removed from the WL.

System Config Code	Value	Default	Description
IgnoredRemindersMaxDays	20	7	(value = int) The maximum days for the ignored reminders to sit on the mammo letter queue. Default is 7 days from last letter.
IgnoredRemindersStartDays	60	60	(value = int) The number of days since the last letter date for the letter to be considered an ignored reminder on the mammo letter queue. Default is 60 days from last letter.
LabWorklistWindowInDays	14	14	(value = int) Number of days to show on the LabWork Needed Worklist
LayLetterBIRAD0Default	/QE Curren...		(value = path and name) The path and name of the SQLServer Report Server file.
LayLetterBIRAD1Default	/QE Curren...		(value = path and name) The path and name of the SQLServer Report Server file.
LayLetterBIRAD2Default	/QE Curren...		(value = path and name) The path and name of the SQLServer Report Server file.
LayLetterBIRAD3Default	/QE Curren...		(value = path and name) The path and name of the SQLServer Report Server file.
LayLetterBIRAD4Default	/QE Curren...		(value = path and name) The path and name of the SQLServer Report Server file.
LayLetterBIRAD5Default	/QE Curren...		(value = path and name) The path and name of the SQLServer Report Server file.
LayLetterBIRAD6Default	/QE Curren...		(value = path and name) The path and name of the SQLServer Report Server file.
LockDurationInMinutes	3	5	(value = int) The time in minutes that lock will be held on an order/study
MaleGenderCode	M	M	the code for the male gender, may be used to conditionally require data e.g. last menstrual period
MammoCallBackDefault1	/QE Curren...		(value = path and name) The path and name of the SQLServer Report Server file.
MammoCallBackDefault2	/QE Curren...		(value = path and name) The path and name of the SQLServer Report Server file.

Figure 5.1 – New system configuration settings in SystemConfig table

Retrieve Locked by User Name

Today in eRAD RIS we don't let locked or taken time slots to appear in the scheduled search grid in the new appointment window. Users do still have the option to select the time from the Appointment Book, from the Scheduled Date control from the procedure picker row on the Schedule tab and also from the Calendar window also access from the procedure picker row.

If the time selected is currently locked by another user, we will try to obtain the user and person information.

'Duration'	This time slot has been taken by Andrew Waite (andrew).
'Room'	This time slot has been taken by Andrew Waite (andrew).
'Scheduled Date'	This time slot has been taken by Andrew Waite (andrew).

Figure 5.2 – Locked time block user name and person information information

If the person information is not obtainable, we will display at the very least the user name.

'Duration'	This time slot has been taken by andrew.
'Room'	This time slot has been taken by andrew.
'Scheduled Date'	This time slot has been taken by andrew.

Figure 5.3 – Locked time block user name only

Carrier Information from Insurance Policy Grid

To assist users in easily obtaining the insurance carrier contact information we have added a context menu to the Insurance Policies grid located on the order tab of most data windows.

When the carrier name is present in the Insurance Policies grid, a right click on the carrier row displays a new menu option of Carrier Details.

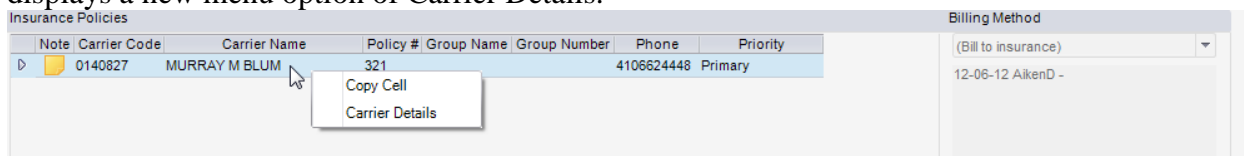


Figure 5.4 – Access to Carrier Details from Insurance Policies grid

Selecting the Carrier Details option from the menu provided will open the Carrier Details window with available contact information.

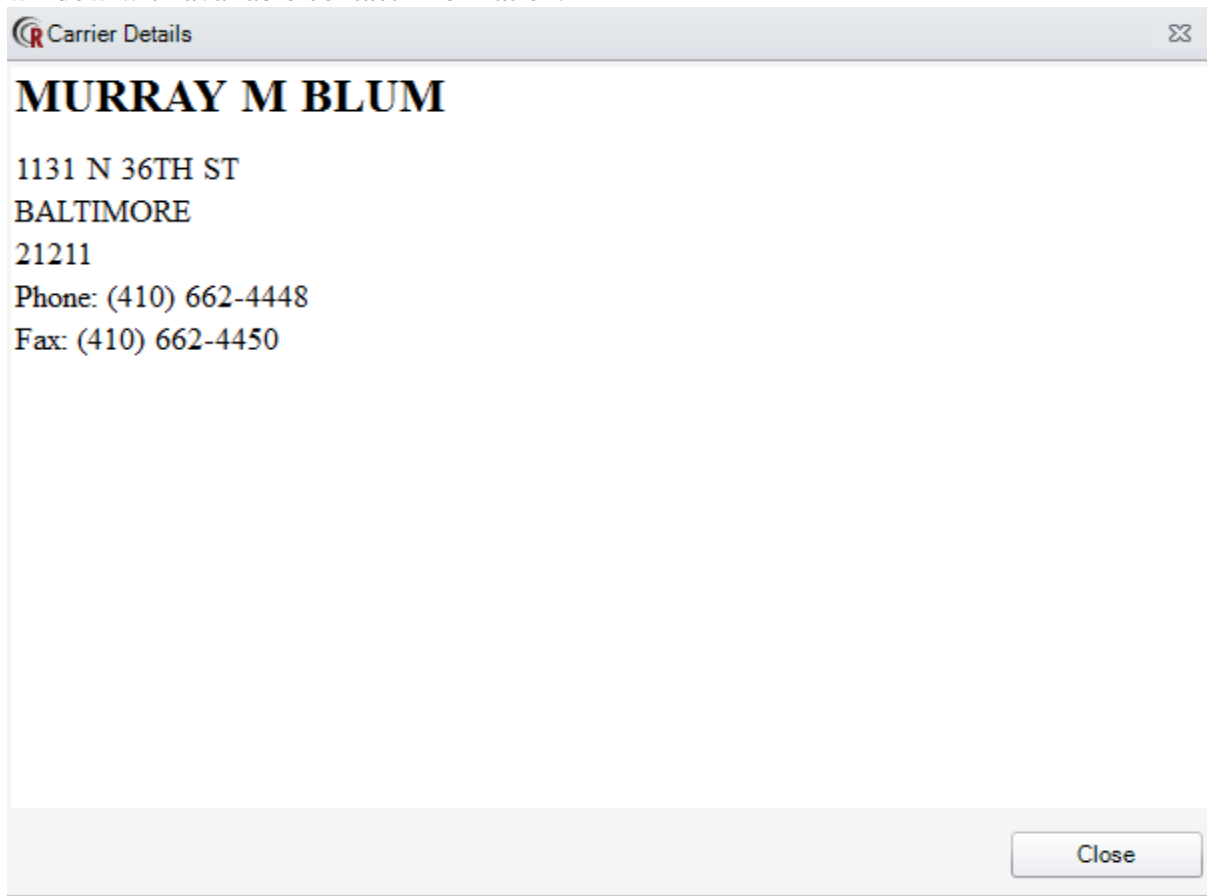


Figure 5.5– Carrier Details information.

Ability to Split Studies on Existing Order

Previous to this build, the ability to create separate orders within a single booking was possible, but once the studies were scheduled, they could not be divided into separate orders. In build 39, it is now possible to complete this task in the registration window.

The screenshot shows the 'Registration' window for patient 'Hugh Dough # 12807'. The 'Exams (2)' tab is active, displaying a table of scheduled studies:

Order	Studies	Duration	Room	Scheduled Date
A	XR Foot 2 Views, Bil... x	5	DX1LU	12-21-2012 5:00 PM
A	XR RIBS 3 VIEWS, BL... x	5	DX1LU	12-21-2012 5:05 PM

A dropdown menu is open for the 'Order' column of the second study, showing options 'A' and 'New...'. Below the table is a link that says 'Click here to add another study'.

Figure 5.6 – Splitting studies to separate orders.

When New... is chosen the behaviour is the same as when scheduling a new appointment. Another order tab appears in which the required details must be completed and the Order tabs become Order[A] and Order[B], etc...

The screenshot shows the 'Registration' window with the 'Order[B]' tab active. The 'Chief Complaint' field is empty. The 'Referring Details' section contains the following fields:

- Referring * (dropdown menu)
- Visited at * (dropdown menu)
- Img notes (text area)

The 'CC Physi' and 'Visit Lo' fields are also visible on the right side of the form.

Figure 5.7 – New order tab

Access to this feature is available as long as the user has permissions with a new access string `Clinical.Schedule.SplittingOrders`

There is a restriction in place to prevent a study from being removed when there is only one remaining pre-existing study in an order. This is to prevent an order from being orphaned back to the Order to Schedule WL.

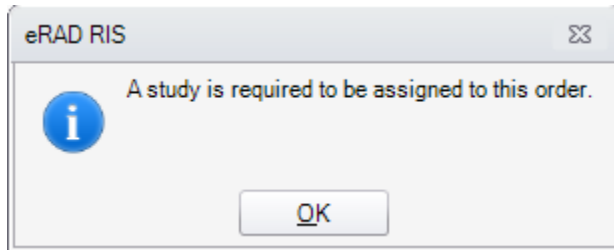


Figure 5.8 – Message prompt from trying to remove all studies

When a study is switched between orders, all the original order item and study item will remain the same and only the required order key will be updated.

CD Import

We needed a way to import studies into RIS so that the accession number matches what is in PACS. The real need is so we have the information in RIS for the Patient Folder and that the RADs can see those studies in the relevance logic so that the correct prior exams get loaded.

CD Import has been added in the patient search window. Once you have the correct patient in the search results window, select the new context menu (right click) option “Import from CD”

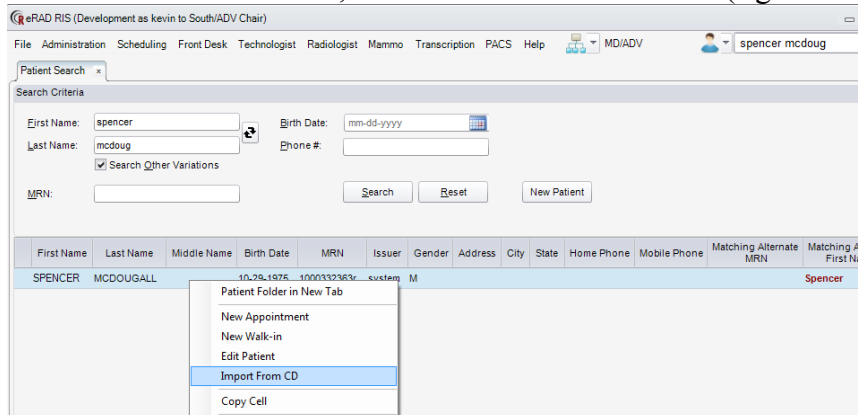


Figure 5.9 – Patient Search context menu option Import from CD

This will open the Import from CD window. If there is only one patient on the CD, this patient will be defaulted and the Patient to import list box will be disabled. Alternatively, if there is more than one, the list box will be enabled. Once the procedure is matched with the details in the description field, the modality will be auto populated, but can be changed if needed. Body part and laterality are optional. The Site field is required, and tech notes can be added.

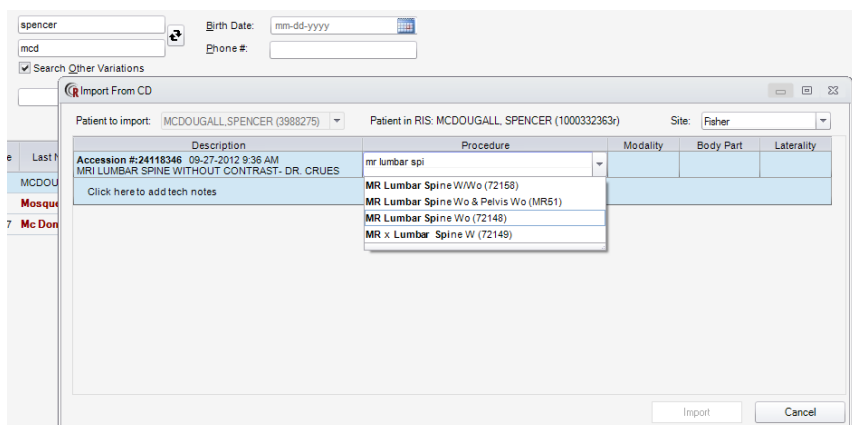


Figure 5.10 – Import from CD window

When the procedure, modality, body part, etc... has been selected, the user can proceed to select the import button.

Description	Procedure	Modality	Body Part	Laterality
Accession #: 24118346 09-27-2012 9:36 AM MRI LUMBAR SPINE WITHOUT CONTRAST- DR. CRUES	MR Lumbar Spine Wo (72148)	MR		

Figure 5.11 – Import from CD window, ready to import!

After clicking import, the status area in the bottom left will display “Started Importing into PACS”, and the progress bar will appear giving the user a visual indicator of how much of the import has been completed.

First Name	Last Name	Middle Name	Birth Date	MRN	Issuer	Gender	Address	City	State	Home Phone
SPENCER	MCDUGALL		10-29-1975	1000332363r	system	M				
Spencer	Mosqueda	Lashawnda	09-23-1950	1000073422	system	F	3 KENWOOD ROAD	BROOKLYNN PARK	WV	(555) 409-1212
Spencer147	Mc Donald	07138	03-14-1983	T.47732	system	M	801 Green Second Way	Baton Rouge	Montana	

Figure 5.12 – Import started, showing progress bar and message in status area

If you try to logoff, exit or if you try to import again you get a message similar to the following.

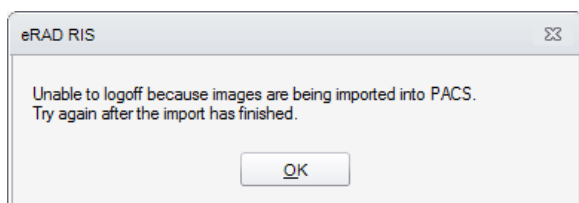


Figure 5.13 – Message prompt displayed when import hasn't finished

When the PACS import is complete the user will get a popup and status message as shown in the following. If there was an error the popup would be an exception message box with the e.Message and e.Exception accessible via the show details button along with a failed to import message in the status area. In the example below the status area is displaying Finished importing into PACS.

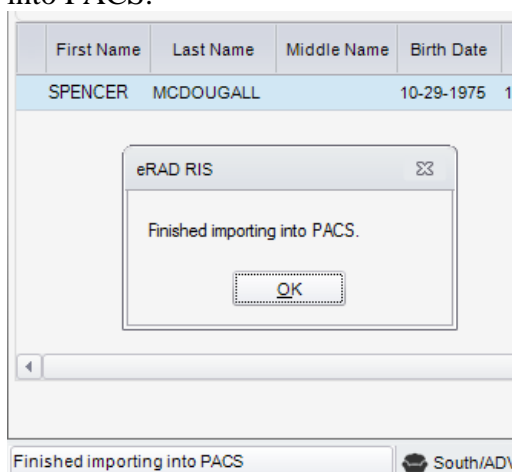


Figure 5.14 – Import finished

When the study is imported into RIS you can edit the study via the “View Edit Screen” from the Patient History work list. The exam will have the status of “ExamDoneTechOnly”. ExamDoneTechOnly is a final status, for when we don't have the professional services data such as Dictation, CDA, Signed By, etc.

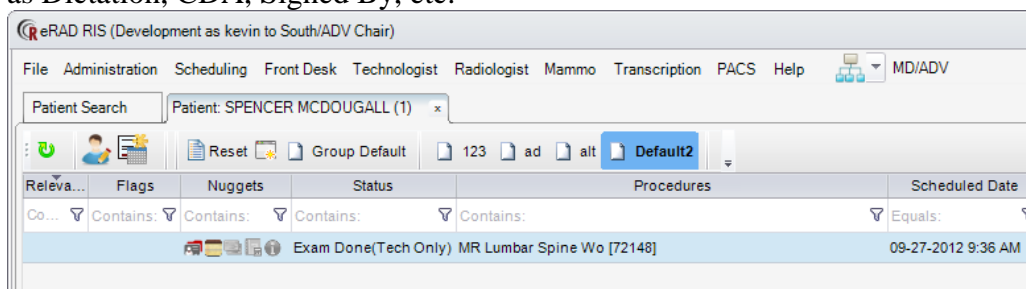


Figure 5.15 – Patient history WL displaying imported study

If for some reason the study was loaded in RIS, but the upload of images to PACS was not completed, when they open up the “Import From CD” dialog they would get the following prompt with the procedure already matched. Clicking Import would only import the study on the PACS as there would be nothing to do on the RIS.

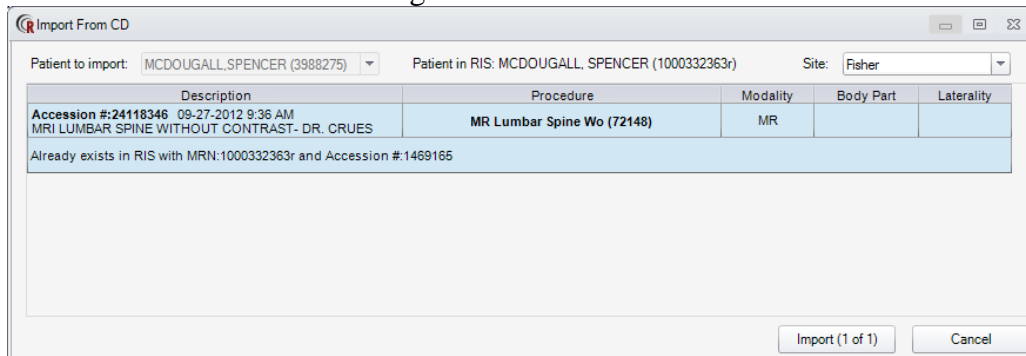


Figure 5.16 – Study has already been imported to RIS but not PACS

As mentioned earlier, the site to upload the images to must be selected. Each site can be configured to have a child PACS server. Displayed below the Site is accessed from the Organization lookup editor. Edit the site and enter the Child server for this particular site.

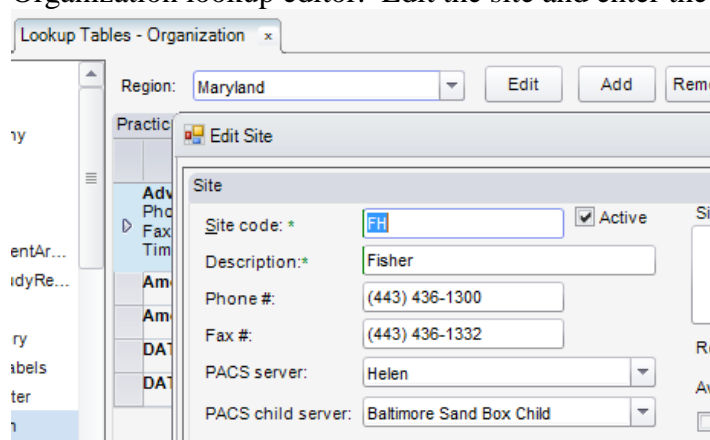


Figure 5.17 – Organization lookup, Site with PACS child server configured

The PACS child server is configured in the PACSServer lookup table.

Lookup Tables - PACSServer								
Pacs Server Code	Description	Protocol	Url	Port	Display Order	Pacs Ae Title	Active	
Contains: ▼	Contains: ▼	Contains: ▼	Contains: ▼	Equals: ▼	Equals: ▼	Contains: ▼	Contains: ▼	
BaltSandBoxChild	Baltimore Sand Box Child dicom	10.120.0.151	104	1	PBUILDER	Y		
helen	Helen	http	helen.erad.com 80	1		Y		
test151	test151	http	10.120.0.151 80	1		Y		

Figure 5.18 – PACSServer lookup table with child server configured

Configuration required importing images to a child PACS server include:

- 1) IP
- 2) Port
- 3) PACS_AE_TITLE
- 4) Protocol (dicom)

The Import CD feature uses the dummy outside modality codes, which are required for creating an OutsideRead. If the outside modalities have not been configured the user will get prompted with a message explaining the missing entries. These messages are similar to the messages they would see if the system wasn't configured and they attempted to open the Outside Read screen.

To control access to the Import CD feature the access string "Clinical.ImportCD" has been added with default permission set to "None". In order for users to have access to this feature one of their user groups will need full access rights. If their rights are set to "ReadOnly" they will be able to open the "Import from CD" popup but will not have permission to actually perform the import.

The "Import from CD" action first searches for any CD with a "DICOMDIR" in its root folder. If it finds one that CD is used in the import. If it can't find one it then searches for a removable media such as a USB drive that has a "DICOMDIR" in its root folder and if it finds one of those uses that for the import. If it can't find any DICOM image source then it prompts the user with the option of manually select a DICOMDIR.

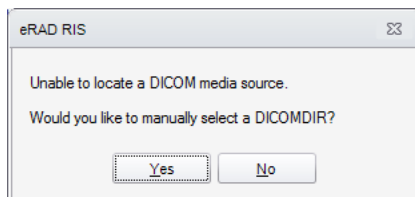


Figure 5.19 – Message prompt for DICOM media source not located

PACS Image Caching

In order to speed up the loading of images on the PACS we need to cache the images on the Rad's workstation prior to their opening the study. The PACS currently has a 'prefetch' worklist that is configurable per user or workstation. This works by the PACS viewer running a task every 5 minutes (configurable) to query for the logged in user's prefetch worklist from the prefetch server(configurable). The studies that show up on this worklist are cached to the workstation.

PACS has 10 user defined fields of various lengths in its database. The approach is to use one of these fields to set up the users' prefetch work lists and to have the RIS populate this value appropriately for the user(s) that want to cache a particular study. This is configurable via the *PACSCacheField* system configuration setting.

It was determined that UDF2 is available and meets the necessary length. It is 32 characters long which will allow us to prefetch a study for on average 3 users. The average length of a user id is 7 characters but we also need to put in starting and ending delimiter characters to prevent problems when one user id is encompassed within another. This delimiter character is configurable via the new *PACSCacheDelimiter* system configuration setting.

Example: Users *stu* and *stuart* would be inserted into the UDF2 field as ^stu^ and ^stuart^. The RIS will retrieve the value of the UDF for each study it wants to cache prior to setting the value so it can determine if other users have already requested the study to be cached.

Example: if we are using UDF2 and its value for accession number 123 is empty the user *stuart* we would set the value of UDF2 to ^stuart^. If user *clifton* then requested that study be cached, the RIS would retrieve the UDF2 value and after seeing that *stuart* already requested it would set the value to ^stuart^^clifton^.

The PACS viewer can only specify one server for querying its prefetch worklist. The RIS now also has one system configuration setting for which server it will use to query/set its cache requests. This is defined in the *PACSCacheServer* system configuration setting.

The RIS client determines what primary studies are to be cached and passes a list of these study keys to the core WCF service. The WCF Service calculates the relevant priors using the same logic the client will use during the open call to the viewer. All primary and relevant studies are then set to be cached in the PACS database.

A *c_study_prefetch_log* table has been added to the RIS database to capture events surrounding this cache framework. Any time a study cache is attempted, an entry is created in this table

indicating the RIS and PACS user ids for the request, the primary study, the study being cached, and a note describing the value of the UDF field in the PACS database or some other information about the event.

Usage:

Studies can be cached either by a manual selection by the user from a right-click option or automatically based on the next available study on their worklist. Both of these approaches apply **ONLY** to the Pending Dictation worklist.

The automatic caching will take place on every refresh of the worklist after the initial open. This is in order to give the Rad time to sort and filter their worklist appropriately before we start caching studies they have no interest in.

The manual selection involves right-clicking on a study or set of studies using multiple section and selecting *Cache Study*. This is controlled by the access string ***Clinical.CacheStudy***.

Setup Steps:

- 1) Configure RIS as “trusted” on the PACS worklist server:

All communication to the PACS server runs through the RIS server. In order for that communication to be possible, the RIS server must be registered with the PACS as a trusted server. This is done by ssh'ing into the PACS worklist server and editing */home/medsrv/var/iface/access.cfg* to enter in a line like:

```
10.120.0.152 = “LASBQDEFORTH”
```

Where the first value is the IP of the RIS server and the second is the permissions assigned to it. The above string gives full access.

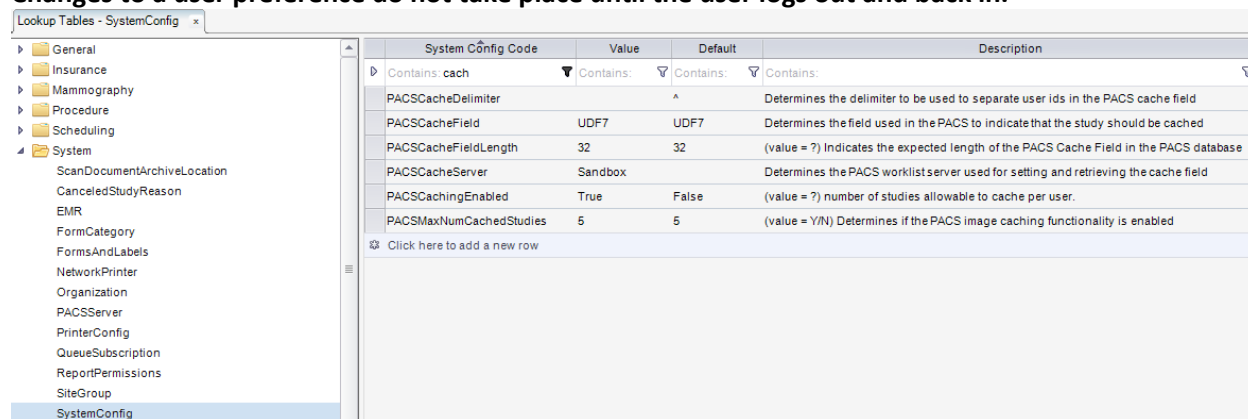
- 2) Configure RIS to use the PACS worklist server for caching:
 - a. If the worklist server does not exist in the *l_pacs_server* table, add it.
 - b. Set the ***PACSCacheServer*** system config setting to the *pacs_server_code* value of the worklist server in the *l_pacs_server* table.
- 3) Set ***PACSCacheField*** to appropriate UDF field for the installation. Example is to use UDF2.
- 4) Set ***PACSCacheDelimiter*** to appropriate value. The default is ^, but that may have to change if it is found to cause problems with HL7.

- 5) Set PACSCachingEnabled to true. This is false by default.
- 6) For users that need to cache, set the User preference for “number of studies to cache” on the Integration tab of the User Preferences dialog to a number between zero and the value of *PACSMaXNumCachedStudies*. I’d suggest 3, maybe.

Reminder:

Changes to a system configuration setting do not take place until the service is restarted.

Changes to a user preference do not take place until the user logs out and back in.

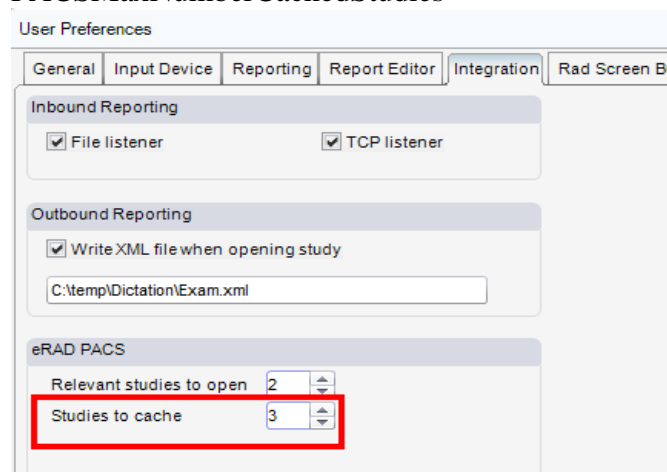


The screenshot shows the 'SystemConfig' dialog box with a tree view on the left and a table on the right. The tree view has 'System' expanded, showing various settings like 'ScanDocumentArchiveLocation', 'CanceledStudyReason', 'EMR', 'FormCategory', 'FormsAndLabels', 'NetworkPrinter', 'Organization', 'PACSServer', 'PrinterConfig', 'QueueSubscription', 'ReportPermissions', 'SiteGroup', and 'SystemConfig'. The table on the right lists system configuration codes, their values, defaults, and descriptions.

System Config Code	Value	Default	Description
Contains: cach	Contains:	Contains:	Contains:
PACSCacheDelimiter	^	^	Determines the delimiter to be used to separate user ids in the PACS cache field
PACSCacheField	UDF7	UDF7	Determines the field used in the PACS to indicate that the study should be cached
PACSCacheFieldLength	32	32	(value = ?) Indicates the expected length of the PACS Cache Field in the PACS database
PACSCacheServer	Sandbox		Determines the PACS worklist server used for setting and retrieving the cache field
PACSCachingEnabled	True	False	(value = ?) number of studies allowable to cache per user.
PACSMaXNumCachedStudies	5	5	(value = Y/N) Determines if the PACS image caching functionality is enabled

Figure 5.20 – New system configuration settings for PACS Image Caching

There is also a new User Preference called “Studies to cache”. The value for Studies to cache cannot be greater than the value for the system configuration setting PACSMaXNumCachedStudies



The screenshot shows the 'User Preferences' dialog box with the 'Integration' tab selected. The 'eRAD PACS' section contains two settings: 'Relevant studies to open' with a value of 2 and 'Studies to cache' with a value of 3. The 'Studies to cache' setting is highlighted with a red rectangle.

Figure 5.21 – User Preference Studies to cache

Reporting – Enhancements to Navigation

Earlier versions of RIS had a hard coded set of expected status transitions – e.g. an exam could move from Scheduled to Cancelled, but not from Cancelled back to Scheduled. In some cases operations found that they needed to change the status of an exam, but RIS would not allow the exam to move to the desired status. Whenever RIS would not allow a particular transition from one status to another, a RIS Administrator or tech support provider would e-mail R&D and request that the data be updated in the database using SQL.

We added a new database table, s_status_transition, which will be maintained by R&D.

We added a new web method that provides a summary of the current exam (to reduce the likelihood of errors) and returns a list of statuses believed to be appropriate for an exam in a given status.

We added a web method to change the status for a specified study to a new status.

Added a new menu item to the context menu on patient folder, Manual Status Update...

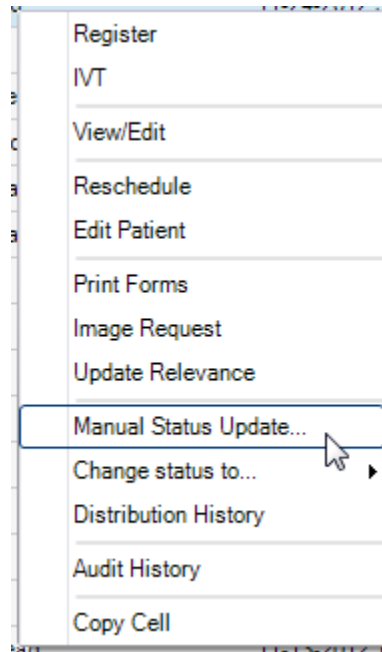
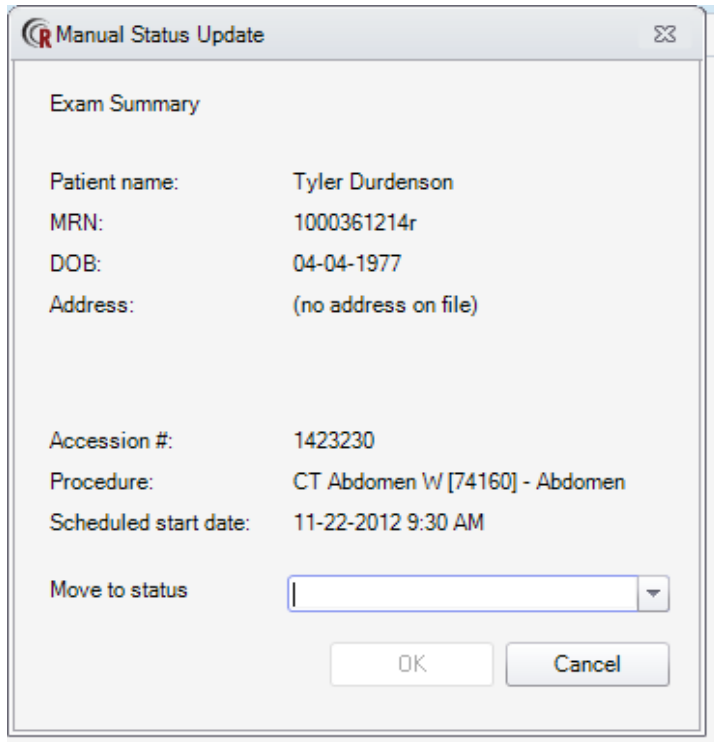


Figure 5.22 – Manual Status Update context menu option available in Patient History

The above context menu option is controlled by a new access string “Clinical.RISAdminChangeStatus” permission and is defaulted to None.

The Manual Status Update dialog shows the patient name, MRN, birth date, Address (if known), the current accession #, procedure description and the scheduled start date.



Manual Status Update

Exam Summary

Patient name: Tyler Durdenson
MRN: 1000361214r
DOB: 04-04-1977
Address: (no address on file)

Accession #: 1423230
Procedure: CT Abdomen W [74160] - Abdomen
Scheduled start date: 11-22-2012 9:30 AM

Move to status

OK Cancel

Figure 5.23 – Manual Status Update window

The “Move to status” drop down list is populated based on the list of “destination_status_code”s that are present in the s_status_transition table for the “source_status_code” (i.e. current status) of a given exam.

The OK button will remain disabled until the user makes a choice from the list.

After the user makes a selection and presses OK, the prompt below appears. If the user clicks “Yes”, RIS will attempt to acquire a lock on the current order, and if successful, it will request the status update

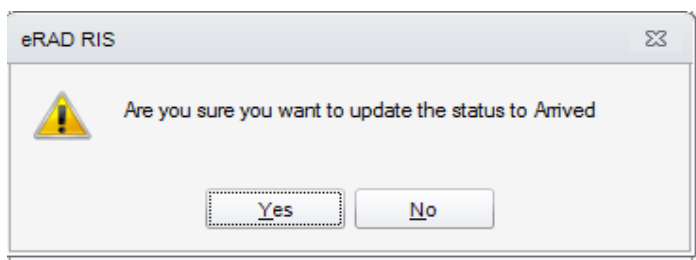


Figure 5.24 – Confirmation prompt

The audit logs show the date, an appropriate action, the user who took the action and the changes that took place during the manual status update:

Patient: Shawna Givens (2)
Audit (Shawna Givens) x

Filters

☐ Patient
☐ Order
☒ Study
☐ Include retrievals

	Date	Action	Description	User	Accession #	Order #	Status
	Equals: ▾	Contains: ▾	Contains: ▾	Contains: ▾	Contains: ▾	Contains: ▾	Contains: ▾
▶	11-22-2012 12:52 PM	Study scheduled	Study updated	Darcy Aiken (darcy)	1423234	3697172	Scheduled
	11-22-2012 12:51 PM	Study cancelled	Study updated	Darcy Aiken (darcy)	1423234	3697172	Cancelled
	11-22-2012 12:44 PM	Study scheduled	Study updated	Darcy Aiken (darcy)	1423234	3697172	Scheduled
	11-22-2012 12:44 PM	Study scheduled	Order updated	Darcy Aiken (darcy)		3697172	Ordered
	11-22-2012 12:44 PM	Study scheduled	Visit updated	Darcy Aiken (darcy)			
	11-22-2012 12:44 PM	Study scheduled	Patient updated	Darcy Aiken (darcy)			

Event Time: 11-22-2012 12:52:14.012 PM

Changed c_study

status_code:

'Scheduled' (was 'Cancelled')

cancelled_by_user_id:

'nothing' (was 'darcy')

cancelled_date:

'nothing' (was '11/22/2012 11:51:53 AM -05:00')

allocate_booking_time_flag:

'Y' (was 'N')

cancelled_reason_code:

'nothing' (was 'ACNOSHOW')

Figure 5.25 – Audit log

The “Action” in the audit logs is determined by the s_status_transition table’s “main_action” column. If there is no main_action specified, the main_action will default to “UI_StudyUpdated”.

Special Handling of Statuses on the Server

In addition to the special case exceptions below, we explicitly set the status to the status requested by the RIS Admin, and then we fire all the business rules associated with the UI_MainAction that is configured for a given status transition. (e.g. if the action is UI_StudyScheduled, the business logic may dictate that scheduled_by_user_id reflect the current user’s user ID)

Moving From	Moving To	Additional Steps Taken
Cancelled		Clear out cancelled by user id Clear out cancellation date Set Allocate booking flag to Y Set reschedule_flag to N
ExamDoneTechOnly		Set Tech Only Flag to N
Discontinued		Set discontinued by user id null Set discontinued date null Set aborted reason code null
	Cancelled	Set allocate booking flag to N
	ExamDoneTechOnly	Set Tech Only Flag to Y

Table 5.1 – Status changes “From” and “To” showing additional steps taken

This has been addressed at individual installs through configuration changes after-the-fact. The issue was identified and checked-in in May, but the config changes were not documented and thus not pushed out in the normal way. Individual installs have been spot checked for the appropriate settings.

```
<serviceThrottling
    maxConcurrentCalls="2000"
    maxConcurrentSessions="4000"
    maxConcurrentInstances="4000"
/>
```

Figure 5.26 – rRISService.exe.config file update (changes in value

We believe 2000, 4000, 4000 is appropriate for up to 650 concurrent users. These numbers could be set higher if needed.

Reporting – Report History availability

The radiologists have always been able to review a dictation and previous reports via the Report History window that was available from with the reporting window. Access to this window has been added to the context menu of the Patient History work list window, transcription work lists and also to radiologist work lists. Access for this menu option is the from the access string **Clinical.ReportHistory**.

Reporting – Default Layout Views for Reporting Window

In prior versions of eRAD RIS, the user could have 2 different views saved. There was one for the dictation reporting window and one for the signing reporting window. In build 39 we have added some default “canned” layout views that are always accessible.

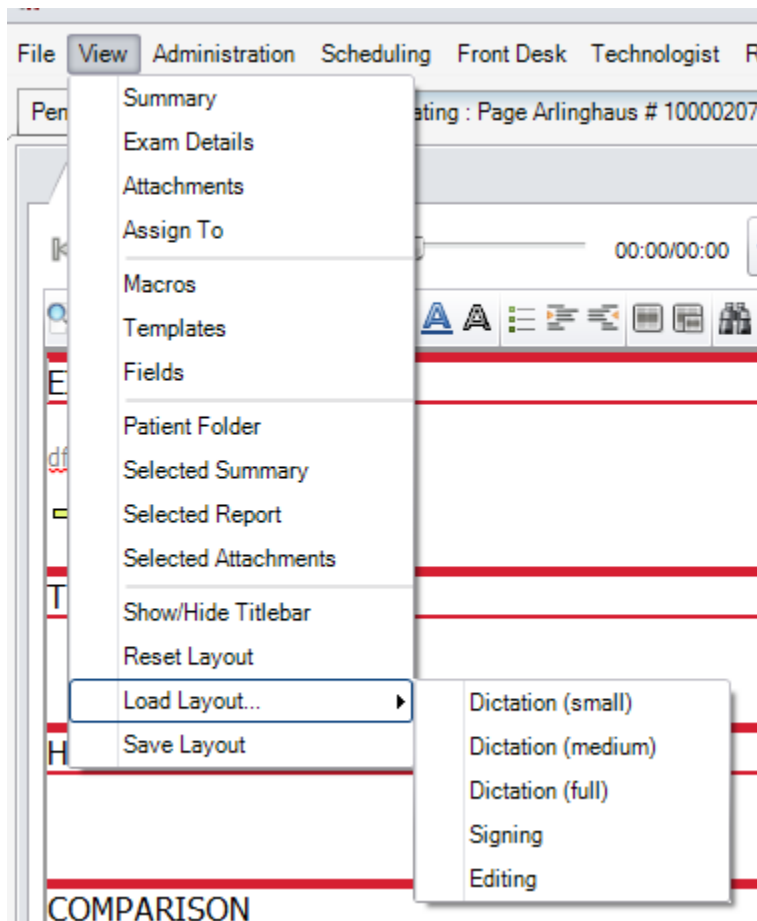


Figure 5.26 – Default canned layout views

The default “canned” layouts are static; meaning the configuration of the layout cannot be changed and saved as the default. The user may still have their own custom saved layout, can save one of the default views as their layout, but they cannot make changes to default layouts, save and expect it load the next time a default is selected from the Load Layout... submenu.

Reporting – Playback Highlighter Color

Transcription wanted to be able to change the playback color in the reporting window. When playing back a dictation, the color is the standard blue color. If the playback and the cursor position are disconnected, meaning they are editing a different position of the report, but still listening to the dictation, the color can now be different. A new color option has been added to the Editor Appearance window.

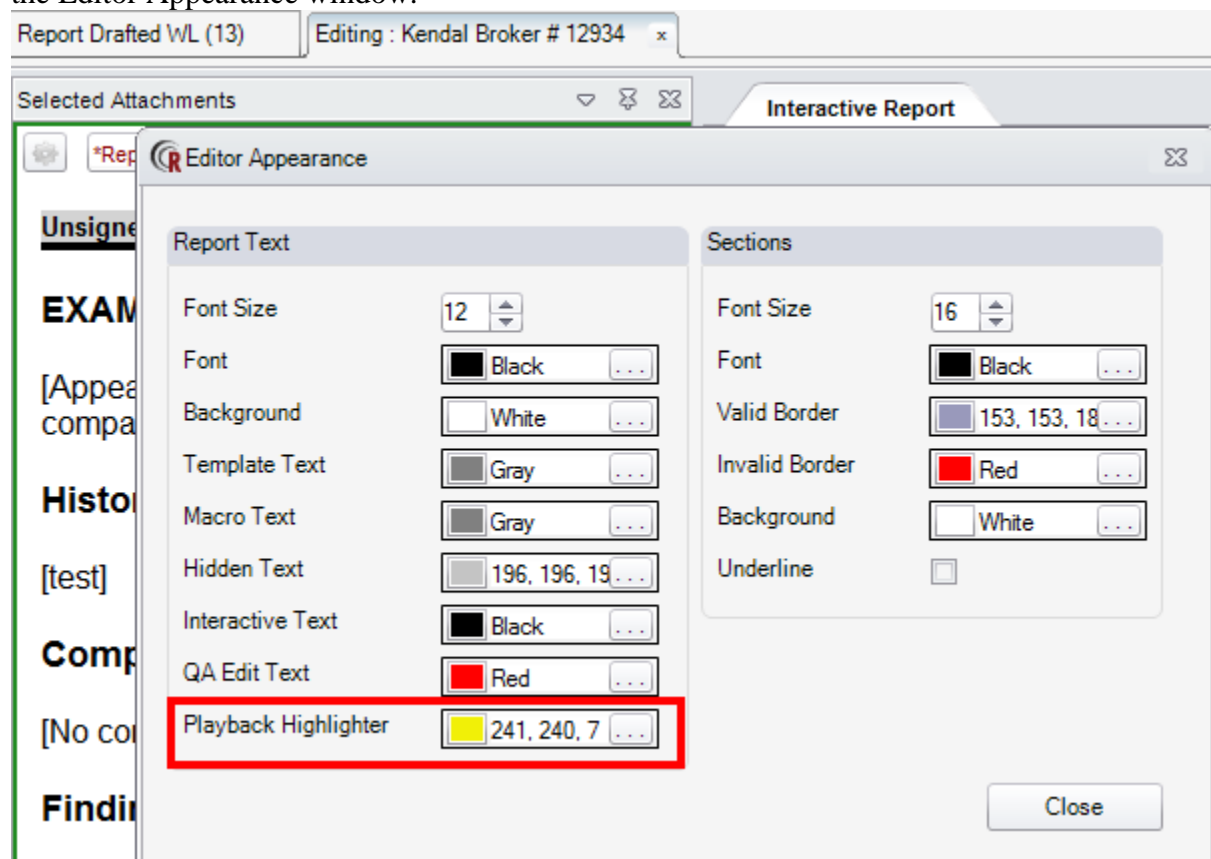


Figure 5.27 – Playback Highlighter color preference option

Reporting – Field Tool Window

A new tool window (or data pane) has been introduced in Build 39. The Fields tool window will allow the user to see the sections and fields plus and field cues in the current report template loaded in the reporting editor.

The Fields tool window helps the radiologist to easily determine what the next field and field cue may be. The cue is the word or term used to navigate to a particular field. For example: There may be a single field in the History section and the cue for that field may be “History colon”. This will move the cursor position to this field and allow the radiologist to dictate the history for this report.

In the example below you can see the cursor position is in the comparison field, and in the Fields tool window, comparison is highlighted indicating this is the current position in the report. In the second column you see the cues for the individual fields within the report. Lastly, the Fields window can also be used to navigate to a particular field in the report. For example, selecting the impression field in the Fields tool window will put focus on the impression field in the report. If the section title is selected in the Fields tool window it will put the cursor position at the start of that section.

As with the other tool windows, the Fields tool window can be docked, floating, or tabbed. We anticipate that this window will be floated away from the reporting window and used a navigation tool so the report editor is not the main focus.

There is a limitation if a section or field is deleted from the report, the Fields tool window will not dynamically update. If this section or field is selected from the Fields tool window, the user will receive a message that it could not be found, and then it will be removed from the view.

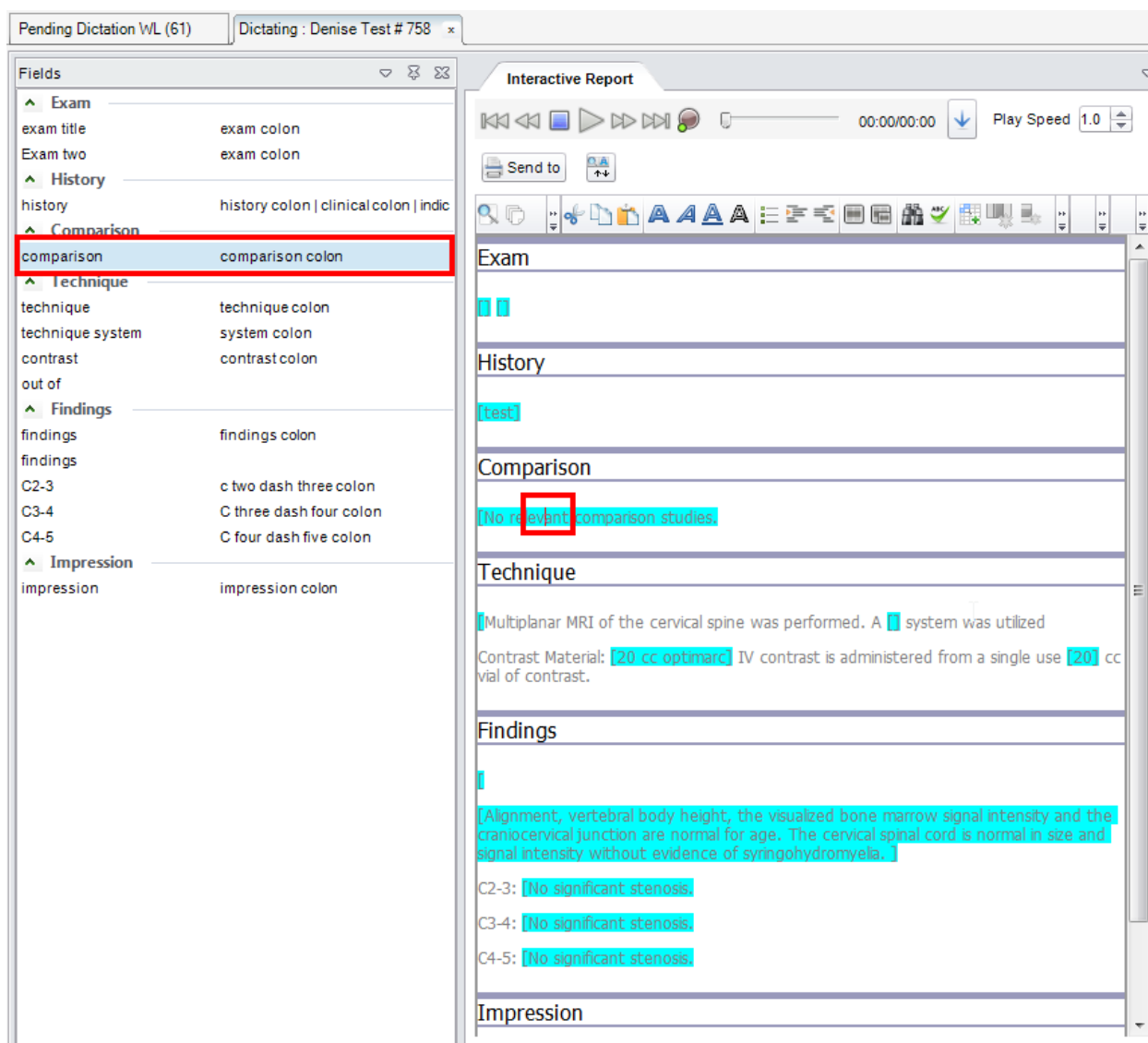


Figure 5.28 – Field tool window

Reporting – Mute Playback on Rewind and Fast Forward

Transcription has requested the ability to mute the playback sound when rewinding or fast forwarding a dictation. We have taken 2 steps for this request.

1. We have made the default to be no sound on playback when rewinding and fast forwarding a dictation
2. We have added a new user preference titled “Enable rewind / fast forward play-back”. Selecting this option will allow for the sound to be enabled when rewinding and fast forwarding.

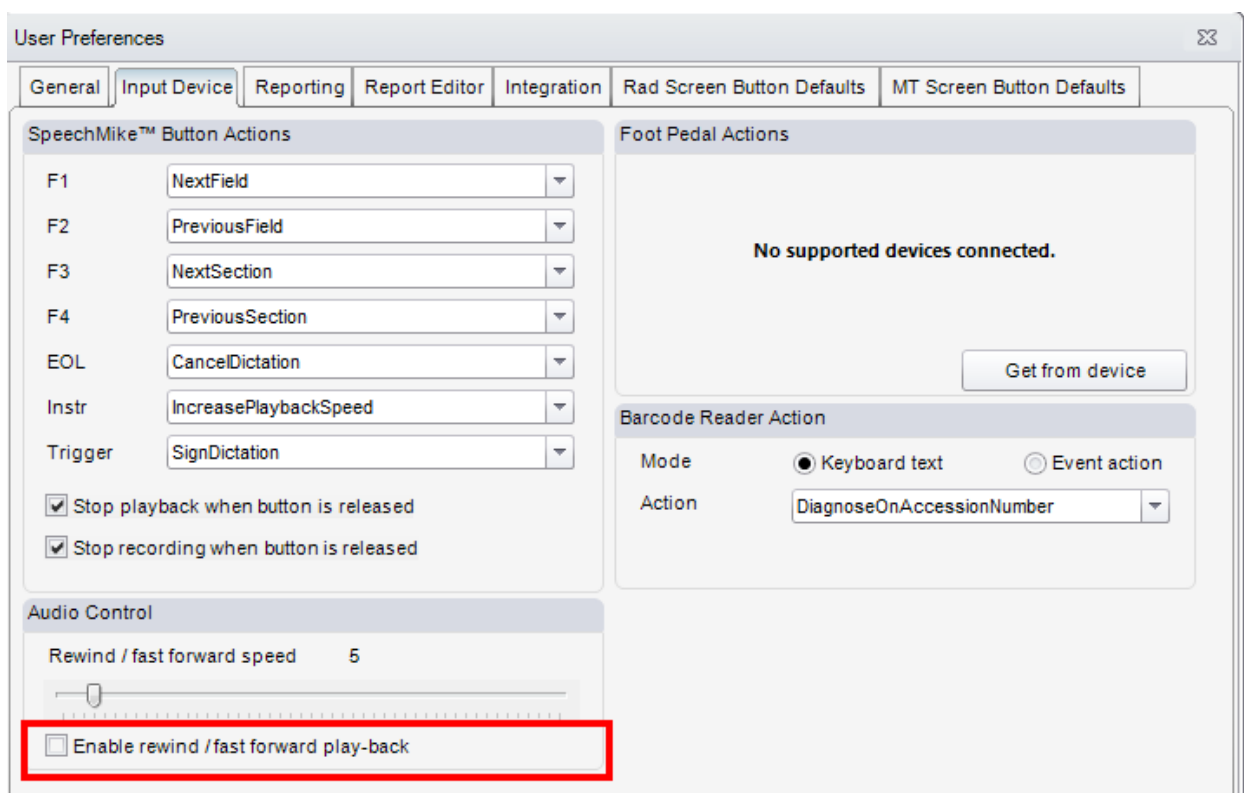


Figure 5.29 – User preference “Enable rewind / fast forward play-back

Reporting – Auto reposition of minimized dictation window

When using the minimized dictation window and the monitor configuration changes (going from 4-3 monitors in use) the dictation control would not automatically realign with active monitors. Although the control was still active, it could not be found. We has a manual reset of the dictation control, but in this build the dictation control will now auto align with the active monitor configuration.

We are now checking to see if the dictation control is completely visible within a screen, if it is not we reset it's position to 0,0 on monitor 1.

Reporting – Patient History Enhancements

We were tasked with creating a robust full featured patient folder that is launched and managed from within the RIS.

There were several areas that needed to be completed to enhance and complete the patient folder. There are several user preferences, new panes, new controls and views in the patient folder. Below we will describe each and provide some examples on how to set the patient folder up in a real environment.

Selected Report Panel

We added a selected report pane that can be opened and docked as the user requires. This selected report pane will show a read only HTML rendered version of the selected row in the patient folder. The pane can be shown by opening from the View>Selected Report option from the main menu. When the user preference “Select current study initially” is checked we will open the current study in the selected report pane. If this preference is not checked it will show the next relevant study in the patient folder and display that report.

Note that the report viewer will now show the entire report with the latest addendum at the top. Also who signed the report or if it is “unsigned”.

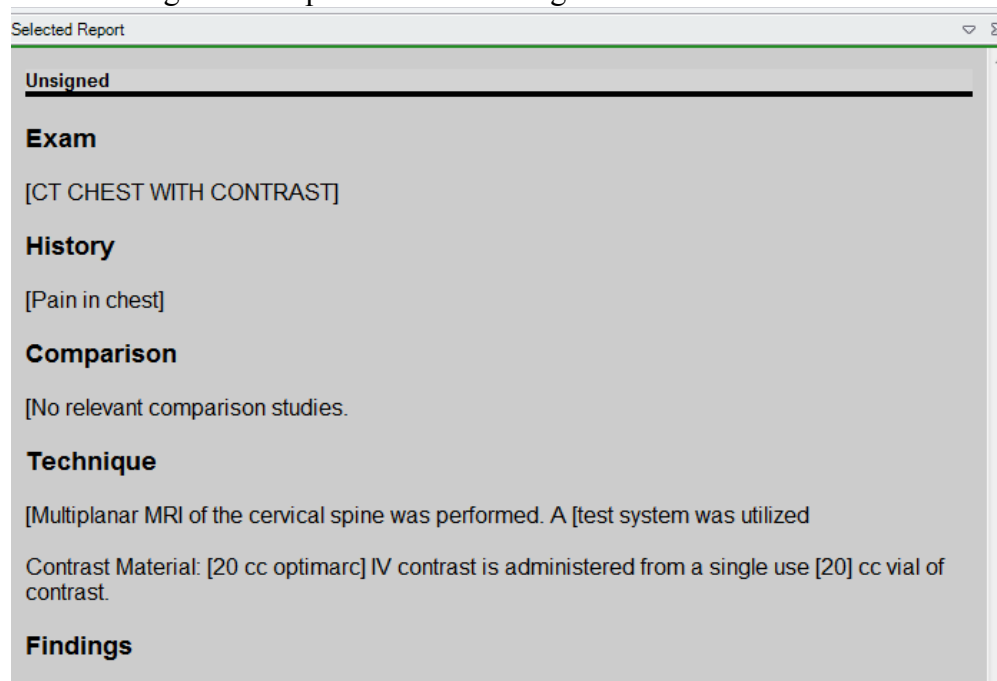


Figure 5.30 – Selected Report tool window

If the report was imported or is deemed a legacy report we provide a button in the report viewer that the user can click to open a PDF.

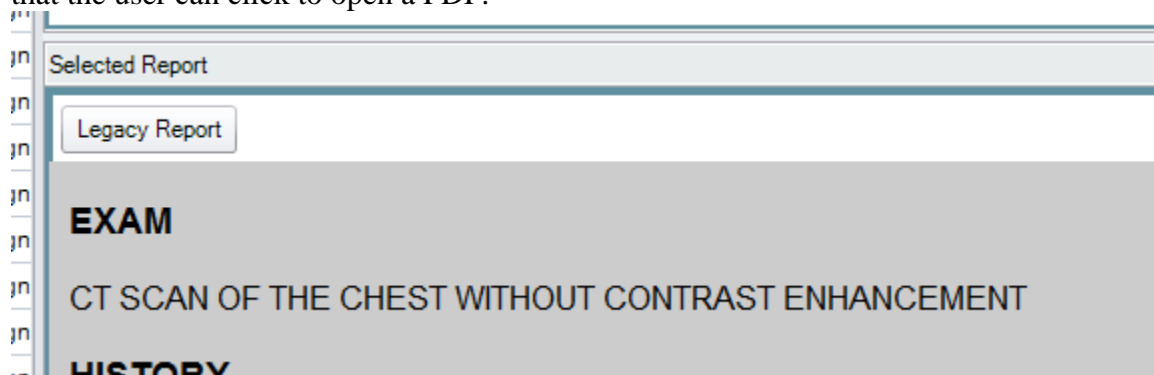


Figure 5.31 – Selected Report tool window for a legacy report

Selected Summary

We added a “Selected Summary” pane that will provide details about the selected study. This pane is opened and access from the View>Selected Summary option. Just like all panes it can be docked and the layout saved as desired. Note that this summary will change based on the selected study. It is essentially the same control as the summary pane that existed previously but it changes with the selected row.

Referring, tech, dictated by, signed by and transcribed by users will show if the values are populated in the DB. They are hyperlinks and upon clicking will open the details for each person. The details screen could use some work.

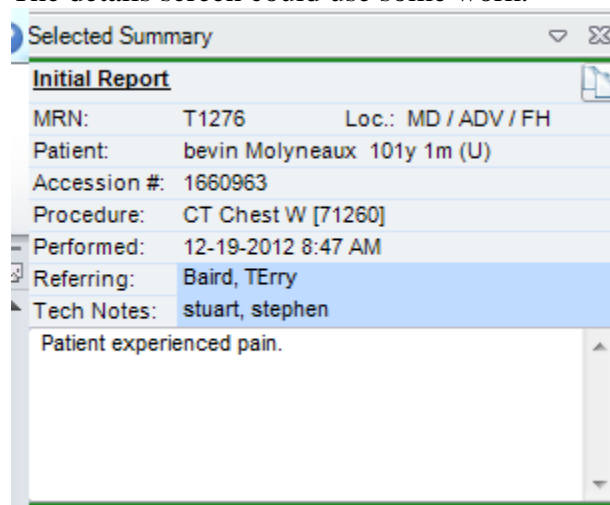


Figure 5.32 – Selected Summary tool window

MRN:	T1276	Loc.: MD / ADV / OUT
Patient:	bevin Molyneaux 101y 1m (U)	
Accession #:	1064975	
Procedure:	CT 3 Phase [CT13]	
Performed:	10-18-2011 12:00 PM	
Referring:	Molyneaux, Kevin (902) 439-4503	
Dictated:	Harding, Clifton	
Transcribed:	Harding, Clifton	
Signed:	Harding, Clifton	
Tech Notes:	Tech, Outside Read	

test
Figure 5.33 – Selected Summary displaying all hyperlinked fields

Document Viewers (Selected Attachments and Attachments)

There is a separate sprint document created to outline the robust features and changes made to the document viewer I won't bother getting too deep on the feature set here. See section Attachment Viewer Enhancement for Patient Folder later in this document.

A document viewer was added as a pane called "Selected Attachments". This can be accessed from the View>Selected Attachments menu option. This particular pane will show scanned documents as per the selected study in the patient folder.

A document viewer was added as a pane called "Attachments". This can be accessed from the View> Attachments menu option. Unlike the "Selected Attachments" this pane will only show the current study.

Both panes support all pane functionality. (saving layout, color, size, state).

Based on the user preference it is possible both viewers can show the same attachments. If you have your "Select current study initially" checked we populate "Selected Attachments" with the current studies attachments. We also populate "Attachments" with the current study attachments. If this is your workflow, and you are lucky enough to have the real estate to show both panes, it will be better to uncheck the user preference which will select the next most relevant study in the patient folder. This would allow viewing of the current attachments and the most relevant at attachments simultaneously.

User preferences

There were several user preferences added to enable the Patient Folder workflow.

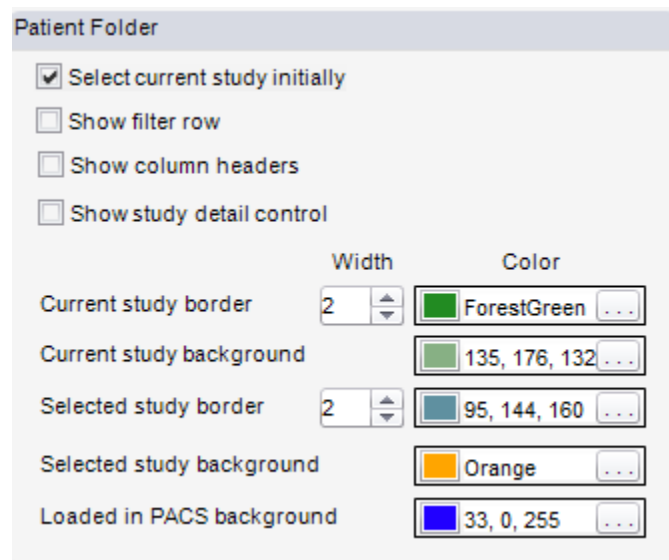


Figure 5.34 – Patient Folder user preferences

Select current study initially

This setting will select the current study when opening the patient folder. This will make all of the “selected” type panes populate with the current study data.

Unchecking this will automatically figure which study is the next relevant in the folder and select that one. Thus populating the “selected” panes with the most relevant study data.

Show filter row and Show column headers

These settings will be the defaults when opening the patient folder. They can be toggled in the patient folder by clicking the icons outlined below. Neither the filter row or column headers are showing below.

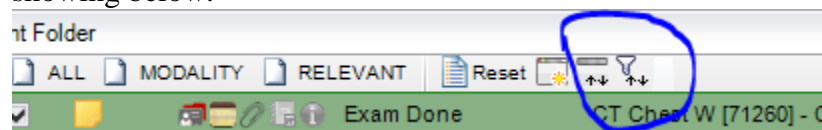


Figure 5.35 – “Show” options for patient folder

Toggle the filter and column headers to turn them both on below. This feature will come in handy when setting up specific radiologist views.

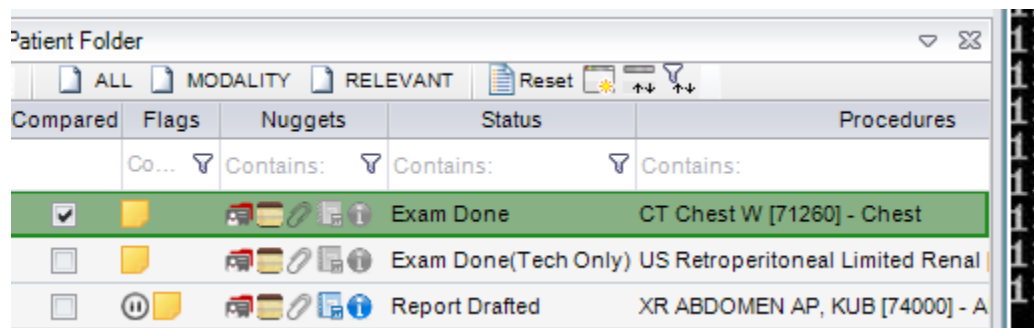


Figure 5.36 – Patient folder with filter and bar and column headers displayed

Show study detail control

When checked the new study detail control will appear in the patient folder list. Notice in the above screen shot that we don't have the control. If you select this option and reopen the same study it will present in the work list. Note that this is just a starting point and now that you have added the control you can remove whatever (likely) all that you desire. Once the modifications to the columns have been made you can save a new view or overwrite it.

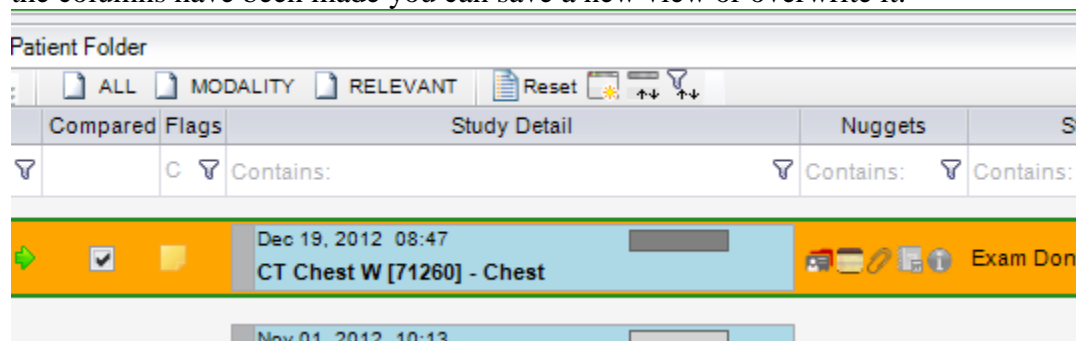


Figure 5.37 – Show study detail

In the figure below, the columns have been modified to include the “current study indicator” (green arrow on the left) and the study detail control only. Saved the view...

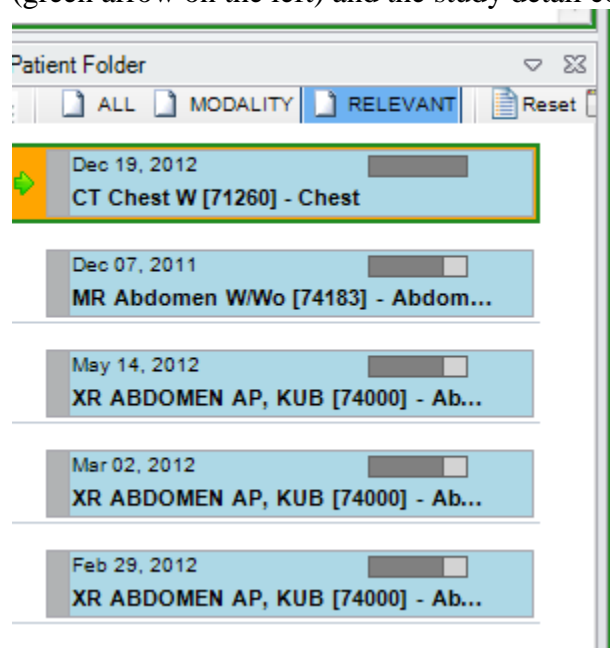


Figure 5.38 – View created to show only current study indicator and study detail control

The study detail has several elements worth discussing. Follow along with the figure below with the number list following.

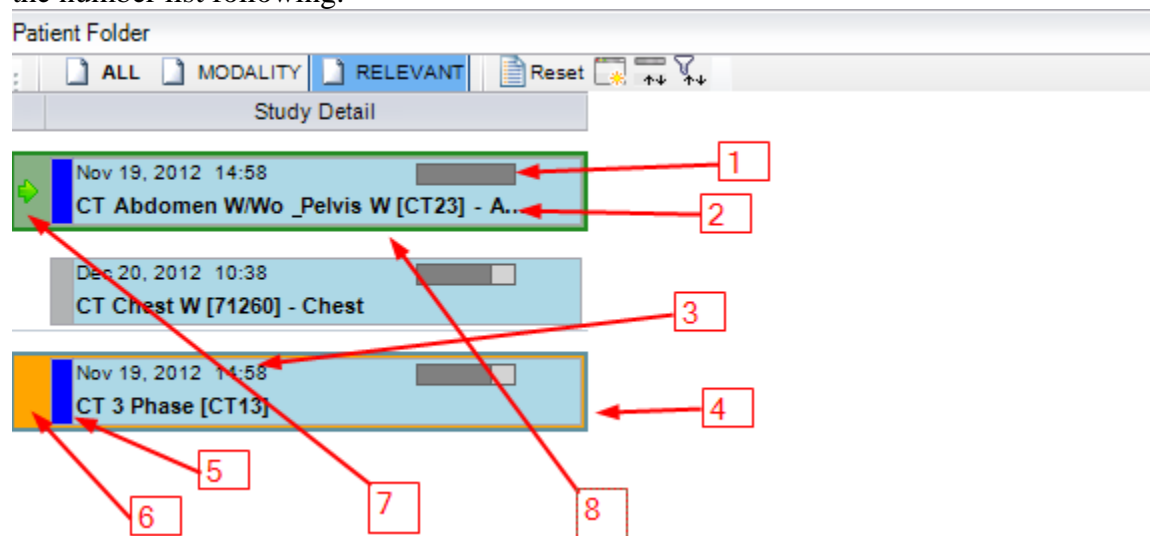
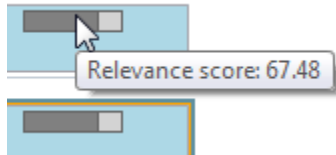


Figure 5.39 – Patient folder explanations to follow

1. Relevance bar. Incrementing in 25% chunks. Hover over the bar will display a tooltip indicating the true relevance score.



2. Procedure description as per worklist display.
3. Date and time of when the exam was performed. If the exam hasn't been performed yet we will put the scheduled date and time instead.
4. Selected border color as per user preference
5. Loaded in PACS color in the detail control. We only change the color for loaded studies.
6. Selected background color as per user preferences
7. Current background color as per user preferences
8. Current border color as per user preferences

The figure below is showing the current study indicator column. When this column is removed we indicate the current study with an earmark in the study detail control.

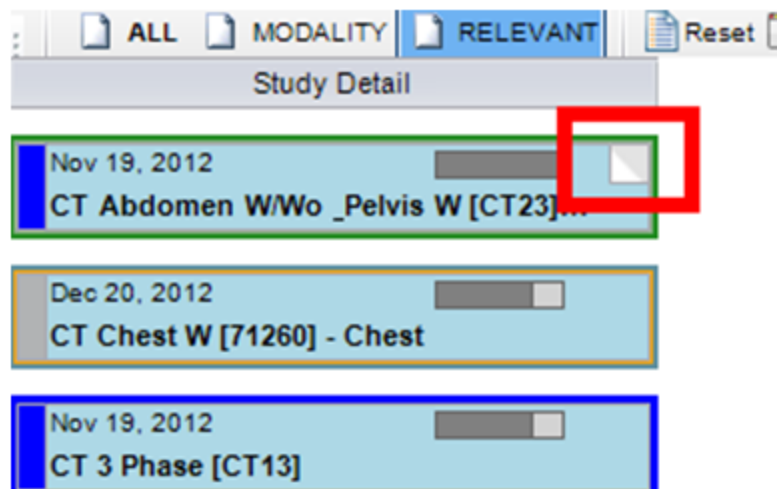


Figure 5.40 – Displaying earmark

Current study border and Current study background

This will set the colors respectively for the current study. Separate document is created for this functionality.

Selected study border and background colors

This will set the colors respectively for the selected study. Separate document is created for this functionality.

Loaded in PACS background

This setting controls the background color when the study is successfully loaded in PACS. We will load the current study always and all of the relevant priors set in the user preferences. If “0” was set in user preferences then only the current study should load in PACS. If “2” priors were set in user preferences we will load the current and two additional relevant priors. Image below shows we only loaded one study in PACS. Double clicking on a study not loaded in PACS will load it and update the patient folder appropriately to indicate the loading has occurred.

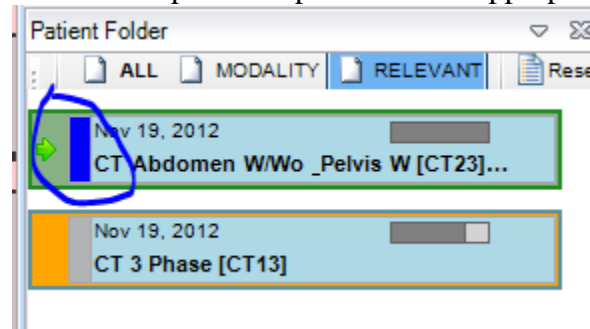


Figure 5.41 – Top study loaded in PACS

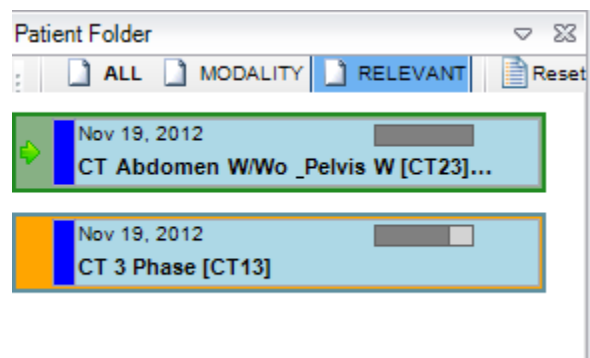


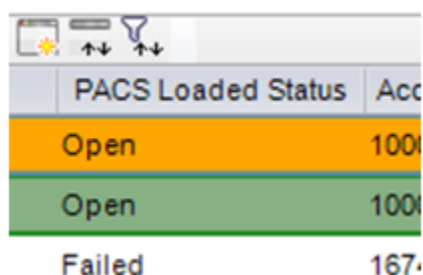
Figure 5.42 – Second study selected

There is a new column added to the patient history control called PACS Loaded Status. This new column can have the following values:

OPEN – simply loaded and open in PACS for viewing

FAILED – could not open or find the study in PACS

ARCHIVE – found the study but it is in archive somewhere



PACS Loaded Status	Acc
Open	100
Open	100
Failed	167

Figure 5.43 – PACS Loaded Status column added to Patient History control

ALL, MODALITY and RELEVANT views

Although views are completely configurable we anticipate users will setup three group views.

ALL – will show all of the patients studies. Nothing special about this view and it can be setup however the users prefer to see the list. Users may prefer this list to be more grid-like similar to our worklists instead of showing the study detail control.

MODALITY – this is a new special view created and will show only studies performed on the same modality type as the current study. This is special as we have to calculate what modality type the current study is and then apply a filter descriptor that limits only this modality type. It is done in code and is triggered by the name of the view. The name must be “MODALITY” case insensitive.

RELEVANT – this view will show all relevant studies. So anything with a “Y” in the relevant flag. Keep in mind that we may have a relevant score but not the relevant flag depending on the rulesets.

Reporting – Attachment Viewer Enhancements for Patient Folder

We need to make the doc viewer simpler to navigate and when shown in a data nugget we need more advanced features such as:

- Panning (click and drag)
- Zooming with scroll wheel
- Click Next/Previous with arrow (hot spots) on the images
- User configurable exclude document types
- In tool bar at the top additional information including total page count
- Buttons at the top for flipping directly to preferred document types (showing count)
- All documents in the same book, such that clicking next, next , next goes through all document pages.
- Rendering of diagnostic report type in attachment viewer
- Enable rotate/flip buttons in attachment viewer (diagnose)
- Add Invert Colors button

Zoom is now possible via the mouse scroll wheel, magnifying buttons, or via the '+'/'-' keyboard keys. When zoomed clicking the mouse on the image and dragging will pan the image.

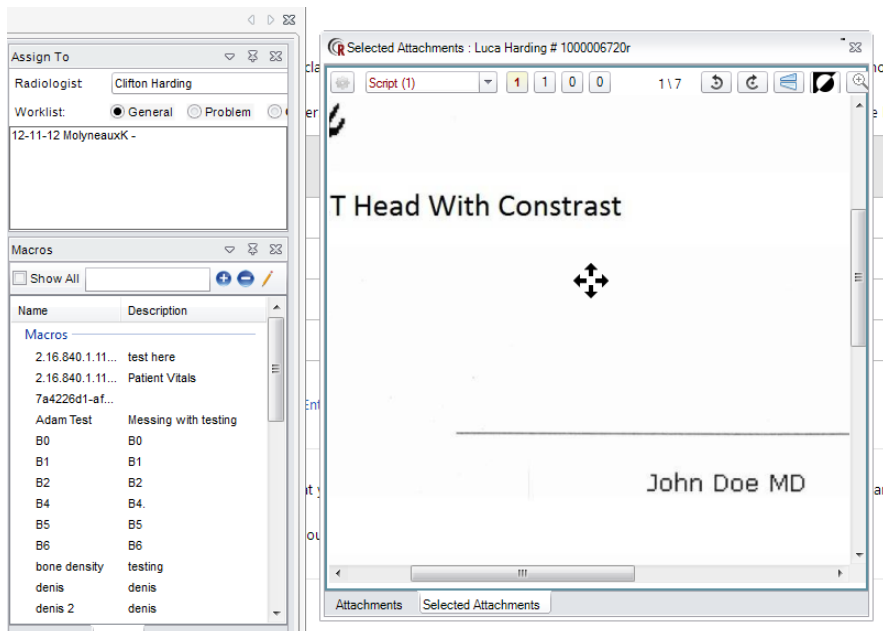


Figure 5.44 – Zoomed in image and panning feature

The user can move to the next image or the previous image by hovering the mouse over the left or right area of the image. A single click anywhere in the left or right area will navigate to the next or pervious image (user doesn't have to click directly on the arrow icon). When the user is in the area which is active for next/previous clicking, the arrow image will paint in darker and the mouse cursor changes to a next or previous arrow.

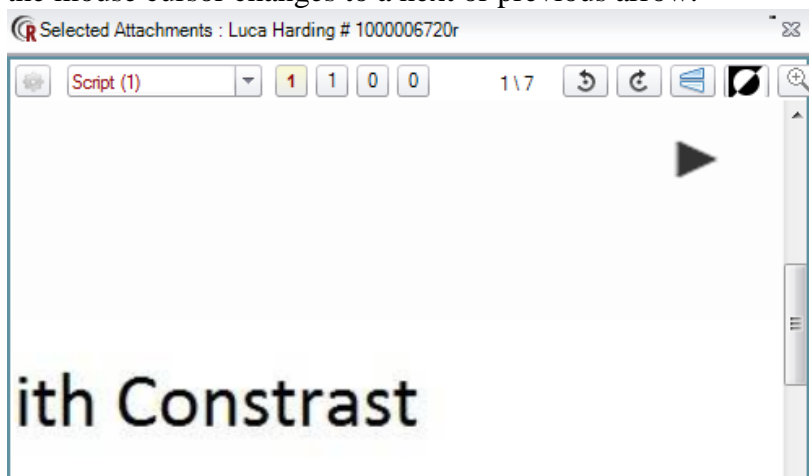


Figure 5.45 – Next image control

The top left icon in the attachments viewer (in the attachment data nugget or diagnose) is used to configure the users preferences as shown in the following screen shot. The user can uncheck a document type so that it will never show. This is useful if a Rad never wants to see a patients drivers licence. Also they can change the order in which the documents appear.

The first four document types are mapped to the numbered buttons at the top of the screen. Hovering over one of those numbered buttons will provide a tooltip explaining the document type it represents. The number refers to the total number of pages for that document type. In the following screen shot there is 1 page for the Script, 1 page for the *Report and zero pages for Unclassified and Demo document types. A fifth button will appear if there are other document types.

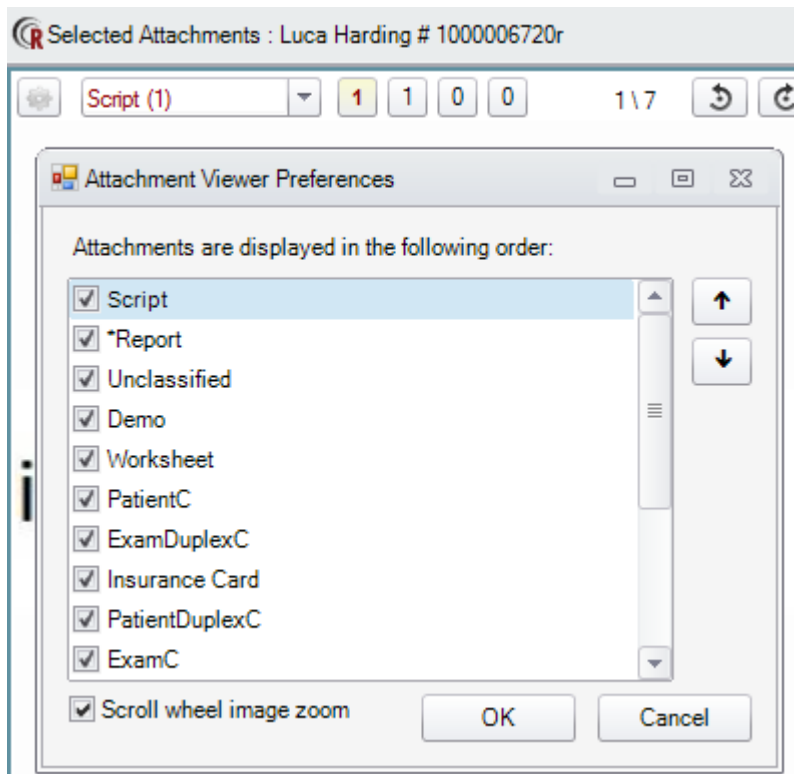


Figure 5.46 – Attachment Viewer Preferences

*Report, refers to the actual report, although we don't scan in the report and it technically isn't a scanned attachment. If available a '1' will show in the second button (based on the above configuration) and clicking on that will display the report in the attachments screen. The report, because it isn't a scanned image, displays as a Web Page with selectable text but in the same attachment viewer so that the rad doesn't have to float separate windows for viewing both attachments and reports. *Report is a special attachment type code that can't be re-used via administration for another scan document type code.

The data nugget version of the attachments viewer didn't display the rotate and flip icons, previously these were only visible during the process of acquiring scans/attachments. The "Invert Colors" icon is new in this build. The "Invert Colors" button inverts the white to black and black to white and is automatically invoked in the Rad screens if the user has configured the background of that data pane to dark and the foreground to light.

Selected Attachments : Luca Harding # 1000006720r

Worksheet (5) 1 1 0 0 417

CT/MRI TECH NOTES
 Diagnostic Radiological Imaging
 75 Scripps Drive, Suite 100, Sacramento, CA 95825 Tel: (916) 921-1390 Fax: (916) 921-1890

Date of service: _____ Patient MRN #: _____

Patient Name: _____
 Last name First name

1. *Patient History Please provide as much detail as possible: _____

2. How long has this problem/symptom(s) existed? _____

3. Have you had prior surgery or an operation of any kind pertaining to this visit(surgery)? ☐ No ☐ Yes
 If yes, explain: _____

4. Date of patient's next appt. with referring physician: _____

5. Do you have a follow up appt. with a specialist? ☐ No ☐ Yes Name of Specialist: _____

6. Have you seen a specialist in the past? ☐ No ☐ Yes Name of Specialist: _____

7. Contrast? ☐ Yes ☐ No Dyeage Amount: _____

8. Sedated? ☐ Yes ☐ No Dyeage Amount: _____

9. Prior images? ☐ Yes ☐ No Circle type: MRI CT US X-Ray Nuclear Medicine Other: _____

Exam: Facility Name & Address that the exam was performed at: _____

Ordered: ☐ Yes ☐ No Report attached? ☐ Yes ☐ No
 REMEMBER TO INCLUDE ALL PRIOR DRJ REPORTS AND FAX TO DR. STROME

Diagram showing anterior and posterior views of a human figure with labels for RIGHT, LEFT, and RIGHT.

Attachments Selected Attachments

Figure 5.47 – Data nugget attachment viewer

There are three places where these changes will be visible:

1. Data Nuggets from patient history
2. Data Panes in the Rad Screens for both ‘Attachments’ and ‘Selected Attachments’
3. In the Attachment Viewer when scanning or reviewing scanned documents from screens such as View Edit. For example, screen: “View Edit”, tab: “Attachments”, double clicking on an attachments row will display the “Attachments Viewer”, which has the next, previous page, zoom and panning enhancements.

Reporting – Tool Window Borders

With the recent changes to the Patient History control we needed a method to show if the details being displayed in tool windows such as selected summary and selected attachments were for the current study or for another selected study.

We decided we would go with drawing a border around the tool windows in different colors, one color for tool windows showing current data, and another color for the ones showing prior data. These colors are also used to draw a border around the applicable row in the patient history tool window.

Currently these are the toolwindows that are configure to show borders:

- Summary
- Selected Summary
- Attachments
- Selected Attachments
- Selected Report
- Exam Details

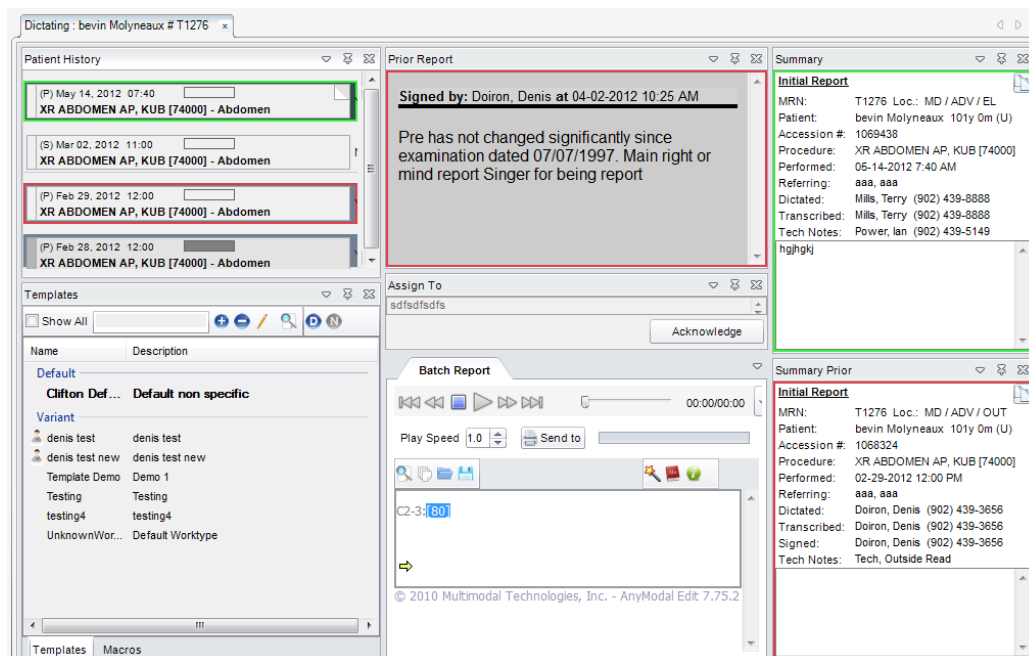


Figure 5.48 – Reporting window displaying colored boarders

These colors are user selectable along with the width of the borders in question. This is accessed through user preferences and is on the “Reporting” tab. The changes will take effect the next time the tool window is drawn.

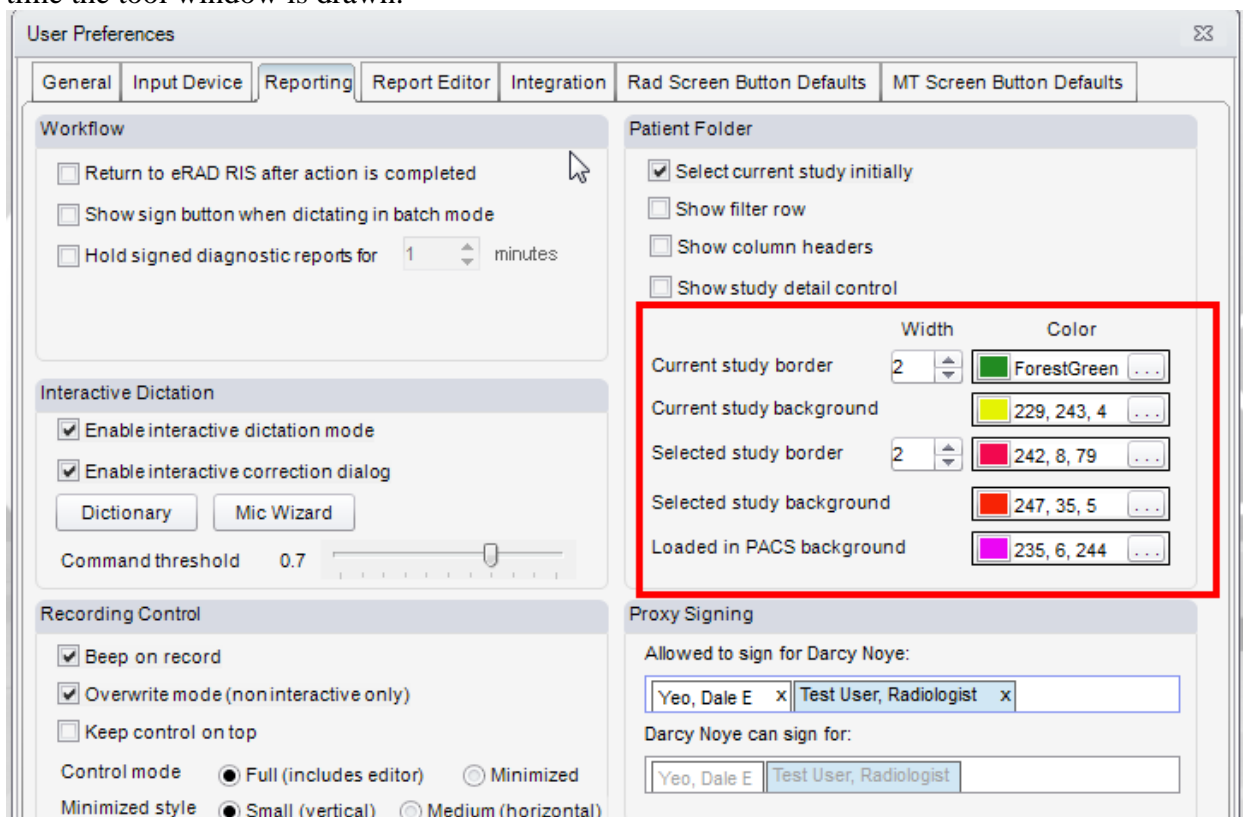


Figure 5.49 – User preferences for boarder width and color

The border on the patient history row will follow the width when it's between 0 and 4. When it's higher than 4 it will use 4, as anything higher doesn't work well in the patient history rows. The tool windows will use the exact width specified by the user preference.

If the user doesn't want to see these borders they can be turned off by setting the width to 0.

Reporting – Patient Folder Back color Preferences

As mentioned earlier in this document the background color can be set in the Patient History control to display which study is currently selected

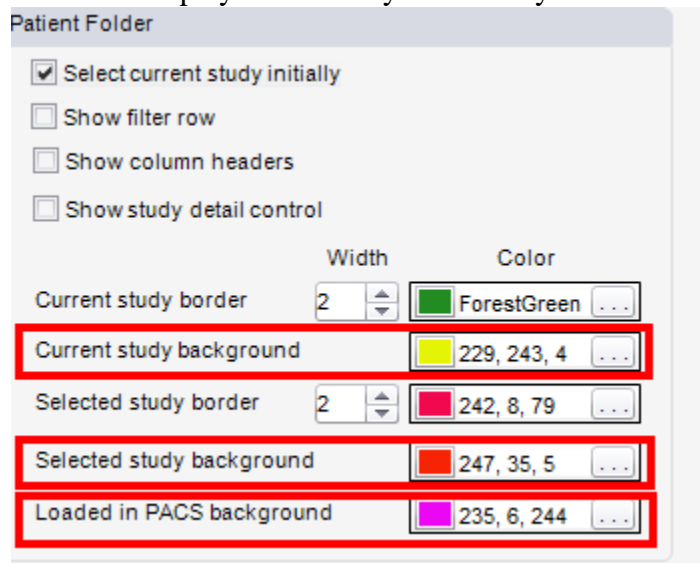


Figure 5.50 – User preferences to set background study colors

Looking at the background colors above, you can see in the figure below how this would look to the user. I used colors to be sure to stand out.

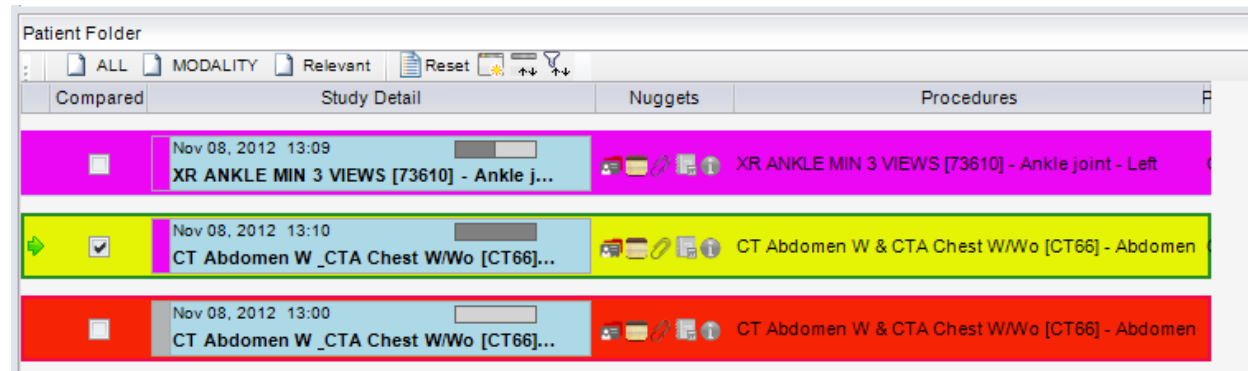


Figure 5.51 – Patient history control in reporting window

Notice that only two of the studies are loaded in the PACS. The red row is not, we know this because of the grey color next to the study detail control where the other 2 are purple.

Meaningful Use - Scorecard Rollup Tables

This feature will be completed over two builds 39 and 40. Phase 1 is completed in Build 39(Automated Measures). To resolve we added a new table `c_mu_automated_measure_history` which will be used to store automated measures for each patient, a Radiologist signs off on a report, at the specific practice for a specific reporting period(in Years). This table will be used by the mu scorecard report to show users a snap shot of the site with regards to mu. This table will get populated by the new stored procedure `c_mu_SetAutomatedMeasures` which will receives updates from a nightly job which will called `c_ProcessPostEvents`. This job checks the `c_study_post_processing` (this is a new table that gets populated by a new trigger on the `c_action` table storing action from within rRIS). Note studies will receive updates via the trigger even before the study is signed off but mu statistics will not get accounted for until the study is signed off. There is a new column added on the `c_study` table that will stamp the last time the mu measure was calculated(`mu_automated_measures_last_updated`). The reporting period in this table will be for scheduled exams between Oct. 1 2012 to Dec. 31 2012 signed off by a Rad for Year 1 and then Jan. 1 to Dec. 31 for each year after 2012.

Data Migration will have to take place on the `c_mu_automated_measure_history` to backfill all scheduled exams between Oct 1 and Dec 31 that have been signed off by a Rad.

We modified the existing management Report (MU Scorecard this will be completed in B40) which will eventually replace the existing MU Scorecard Report calling data from the new rollup tables. To better retrieve Automated Measure % on this report we created a new table “`s_mu_measures`” which will be used to store the MU Automated Measures and their appropriate Measure %’s for each Meaningful Use Stage. (stage 1 is accurate will modify stage 2 when requirements released).

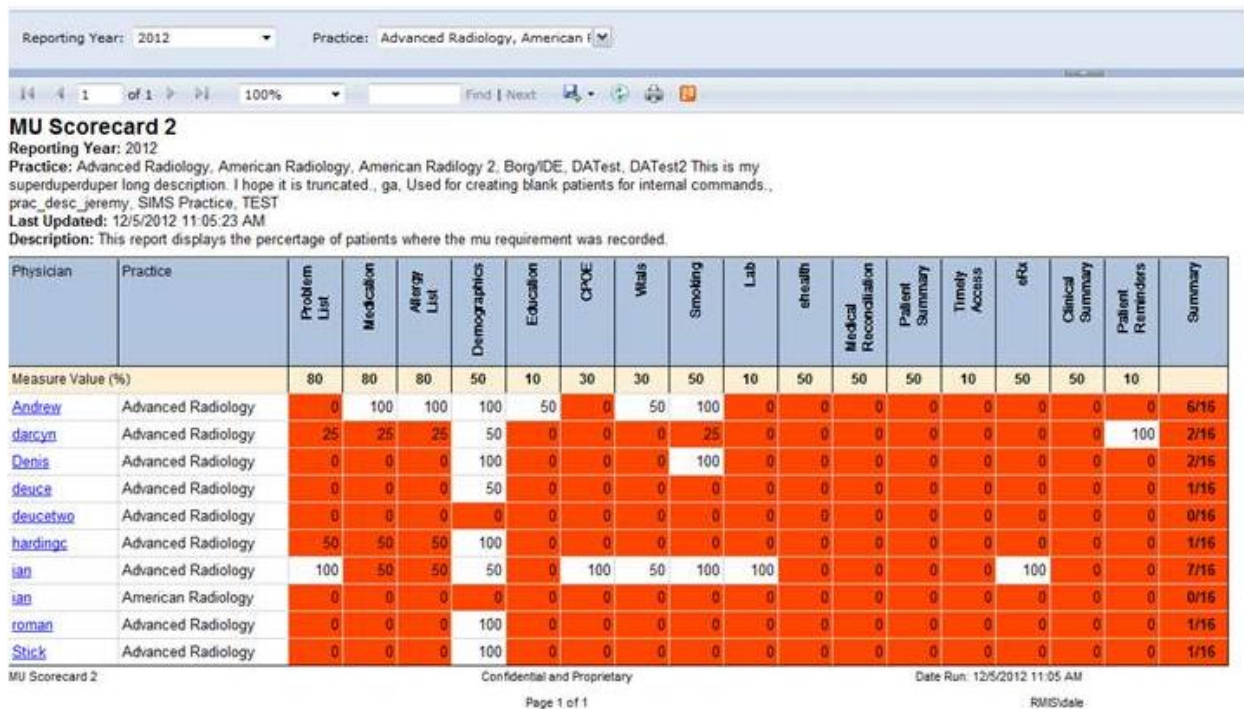


Figure 5.52 – MU Scorecard 2

Meaningful Use – Smoking Status Phase 2

A new column (snomed_ct_id) has been added to the existing smoking dataset. The l_smoking_status table we added the two new rows for “Heavy tobacco smoker” and “Light tobacco smoker”.

Only administrators should see the Smoking Status lookup. To prevent non admins from changing these values we have an access string that prevents these users from seeing the lookups...”Config.LookupEditor.SmokingStatus”

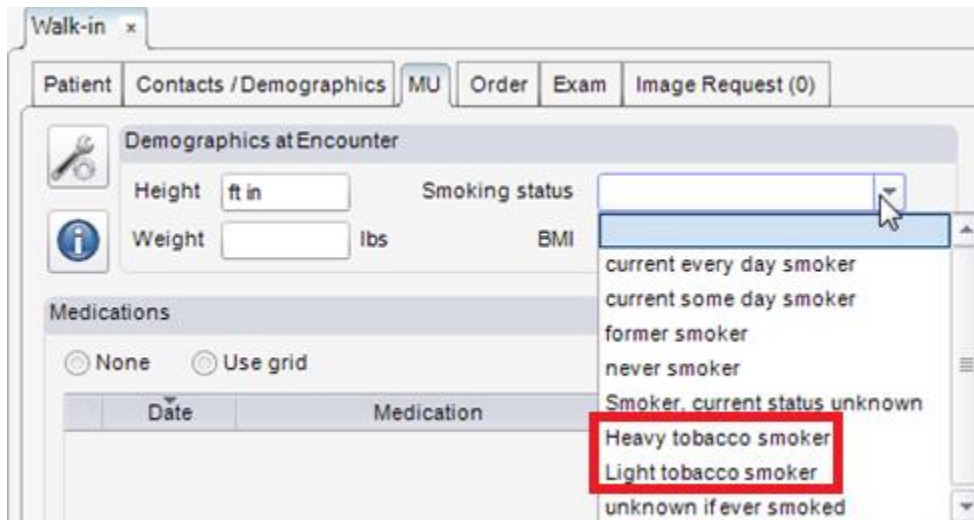


Figure 5.53 – New smoking statuses

Scan Document Archive

Scan documents are used extensively by the RIS to capture requisitions, worksheet, waivers, etc. These scan documents occupy a significant amount of space in the db. There are some real benefits to storing the scan document in the db, at least initially, but there are some real concerns with db size. It is estimated that for every million exams we would need 1 TB for scan documents. The db backup time becomes longer as the db gets larger. In the event of equipment failure, disaster, etc. we may need to restore the db. A db recovery time ideally should be relatively short. With large db a short recovery time becomes difficult and expensive to implement.

We have added a new lookup table “ScanDocumentArchiveLocation” with access controlled by a new access string “Config.LookupEditor.ScanDocumentArchiveLocation”

Scan Document Archive Code	Description	Path	Display Order	Active
PEIDEV1_1	Scan Archive 1	\\peidev1\DS\ScanDocumentArchive\RIS_Dev	1	Y

Figure 5.54 – ScanDocumentArchiveLocation lookup

1 scan document archive
Lookup Table of possible scan document archive locations.

Name	Data type	Max Length	Default	Allow Nulls	Identity
scan_document_archive_code (PK) The abbreviated, or short name for this archive code. Used as a natural key in referenced tables.	varchar	20			
description The description for this archive path.	varchar	500		x	
path The path to where this archive location refers to. This path must be accessible to all eRISServices.	varchar	1000			
active_flag (Y/N) Used to indicate if this row can be referenced in the future.	char	1	'Y'		
display_order Used to indicate where the sort order position for this row when it appears in a dw combo box, or a list box.	int	4			
last_updated The date and time that this row was last updated.	datetimeoffset	10			
last_updated_by_user_id The user id of the person who last updated this row.	varchar	100			

Figure 5.55 – Scan document archive db values

Reading scan document from archive:

A scan document will exist in the db if its archive_dirty_flag = “Y”. All new scan documents add to the db have this flag set to “Y”. If this flag is set to “N” it means that the scan document has been moved from the db to a scan document archive. If this is the case, then the system will read the scan document from the archive. This is all transparent to the user. If the scan document is not accessible, a message will be presented to the user indicating that this “page is not available”.

New columns for scan document page table

c_scan_document_page

Contains the images of the documents for the scan type

Name	Data type	Max Length	Default	Allow Nulls	Identity
rowguid A unique identifier for this used by SQL Server FileStream feature.	uniqueidentifier	16	newid()		
scan_document_page_key (PK) Primary Key, autogenerated, internal use only.	int	4			x
scan_document_key (FK) Identifies the scan document that this images belong to. (see c_scan_document scan_document_key)	int	4			
page_number The page number of the scanned document	int	4			
front_face An image of the front side of the scan document	varbinary	-1		x	
last_updated The date and time that this row was last updated.	datetimeoffset	10			
last_updated_by_user_id The user id of the person who last updated this row.	varchar	100			
size The size in kilobytes of the image.	int	4			
archive_code (FK) Identifies the path information for the scan document. (see l_scan_document_archive scan_document_archive_code)	varchar	20		x	
archive_datetime Identifies when this image was archived.	datetimeoffset	10		x	
archive_path The path within the archive to where this scan document is archived.	varchar	300		x	
archive_dirty_flag If yes we need to archive or re-archive the page	char	1	'Y'		

Figure 5.56 – Scan document page possible data values

There also new system configuration settings to go with the new access string. The table shows the new settings and descriptions of each.

ScanDocumentMaxSizeInDB	The maximum size in GB that the system will persist scans documents directly in the db. When this value is exceeded the archive process will begin (at its next run time interval) to move scan documents to the archive.
ScanDocumentMinSizeInDB	When scan document archiving is initiated, this is the minimum size in GB that the system will reduce the amount of scans documents that are persist directly in the db.
ScanDocumentArchiveCurrentLocation	The archive location where the archive process will move scan documents to. The value must match a value in the l_scan_document_archive lookup table.
ScanDocumentArchiveStartTime	The time of day in hh:mi format (24 hour) that the scan document archive process can wake up.
ScanDocumentArchiveStopTime	The time of day in hh:mi format (24 hour) that the scan document archive process must stop. Does not have to be greater greater If less than ScanDocumentArchiveStartTime then the process will continue to the next day until the time is reached.
ScanDocumentArchiveDaysOfTheWeek	A comma separated list of days that the archive process will wake up to see if there is work. The list is contains numbers representing the day number within the week, where:

	0 is Sunday 1 is Monday 2 is Tuesday 3 is Wednesday 4 is Thursday, 5 is Friday 6 is Saturday For example, a value of 0,1,2,3,4,5,6 means that the archive process will run every day of the week.
ScanDocumentArchiveServerNames	A comma separated list of server names that are allowed to run the archive service.
ScanDocumentArchiveMaxThreads	The maximum number of thread the scan document archive process can use within one process.

Table 5.2 – Scan document archive system configuration settings

When writing to the archive:

The archive process must be scalable. It should be able to run on multiple archive process, possibly running on many services.

Moving scan documents to the archive should be done by oldest first.

The archive process will calculate the value of the c_scan_document_page.archive_path based on the last_updated date of the scan_document_page row using

“\yyyy\mm\dd\hh\{scan_document_page_key}.jpg, where yyyy is the year, mm is the month ~~and~~, dd is the day and hh is the hour from the last_updated date.

If a scan document is retrieved from the archive and if and only if it is updated by the user (cropped, rotated, etc), the scan document will be persisted to the db again. When this scan document gets moved to the archive again, the archive process will delete the original file in the archive, then update archive_path based on the new value of the last_updated, then write the file to the new archive location.

Once the document is successfully written to and verified from the archive document we would clear it from the db.

IMPLEMENTATION ADDITIONS TO THE DESIGN

All configuration values changes take effect within 30 seconds after saving the change.

Processing starts once the MaxSizeInDB, Start/Stop Time and day of week conditions are met. After the MinSizeInDB is reached processing will stop. If the scan document allocation does go above the MaxSizeInDB in the same archive start/stop window, the archive process will resume archiving. If the RIS service is restarted or if a configuration value for archiving is changed the conditions will be tested and if archiving is necessary processing will also start again.

Management Report – Daily Summary Report

We modified all queries on this report to allow the user the ability to filter the report by one or more site(s). Also, on each report within the report we added another group level for “site_code” so now each report will be broken up by totals based on what took place at the individual site.

Daily Summary Report

Practice: American Radiology Services

Site: Annapolis Bel Air

Date Range: 11-19-2012

Total Exams Performed		Average Wait Time		Total Exams Cancelled	
Site Procedure Group Accession#	Total	Site Procedure Group Accession#	Total	Site Reason Accession#	Total
<input type="checkbox"/> Annapolis	52	<input type="checkbox"/> Annapolis	11	<input type="checkbox"/> Annapolis	22
<input type="checkbox"/> Bel Air	7	<input type="checkbox"/> Bel Air	11	<input type="checkbox"/> Bel Air	11
Total	59	Total Average Wait Time	11	Total	33

Total Exams Created		Orders to be Scheduled		Reports Queue	
Site Scheduled Exams Accession#	Total	Site Status Accession#	Total	Site Reports	Total
<input type="checkbox"/> Annapolis	16	<input type="checkbox"/> Annapolis	78	<input type="checkbox"/> Annapolis	21
<input type="checkbox"/> Bel Air	7	<input type="checkbox"/> Bel Air	71	<input type="checkbox"/> Bel Air	9
Total	23	Total	149	Total	30

Over The Counter Collections		Top 5 Primary Payers on Performed Exams		Fax Report	
Site Payment Method	Total	Site Carrier	Total	InProgress	6
<input type="checkbox"/> Annapolis	\$190.00	<input type="checkbox"/> Annapolis	51	Hold	1
Total	\$190.00	<input type="checkbox"/> Bel Air	7	Error	17
		Total	58	Completed	559
				Pending	7
				Total	590

Figure 5.57 – Daily Summary Report

Management Report – Biopsy Results Pending

Created new report under the operations deployment Biopsy Results Pending Letter as well as a sample form with the same name. To identify there is a column on the c_study for mammo_fup_required_flag and the report\letter will be looking for a value of 'Y'.

Screenshot: The form and report both have the same look. Difference is the parameters passed to the letter are more refined to the patient and exam where the report pulls all exams in the specified range that meet the criteria.

Parameters for report:

Practice(s), Site(s), and Date range based on scheduled date

Data references

- mammo_dataset
- l_practice
- l_site

Parameters for letter

- Study_key

Data references

- mammo_dataset (for the study selected)

Advanced Radiology 193 Stoner Avenue Suite 200 Westminster, MD 21157	
 John A Demo	
RE: Marcy25 04918 Scott Medical Record Number: T.3475	Date of Birth: July 19, 1997 Date of Study: February 06, 2012
 Dear: John A Demo	
Our records indicate that the above patient had an abnormal or indeterminate breast imaging study at Advanced Radiology. Per the Mammography Quality Standards Act, we must attempt to correlate breast imaging findings with surgical results.	
Please take a few moments to fill out the information below and return it along with any biopsy reports.	
 FOLLOW-UP MAMMOGRAPHY DATA	
<input type="checkbox"/> Patient underwent cyst aspiration	
<input type="checkbox"/> Patient underwent biopsy (Please send results)	
<input type="checkbox"/> Positive (Please send results)	
<input type="checkbox"/> Negative (Please send results)	
<input type="checkbox"/> Referred to surgeon	
<input type="checkbox"/> Surgeon's Name _____	
<input type="checkbox"/> Follow-up mammogram (date) _____	
<input type="checkbox"/> We are unable to provide additional information.	
 Please fax to (443) 436-1332 or mail to: Advanced Radiology 193 Stoner Avenue Suite 200 Westminster, MD 21157 Attn: mammo tracking	
 Sincerely	
Fisher	
Biopsy Results Pending Letter	****RadNet - Confidential and Proprietary****
Print Date: 11/21/2012	

Figure 5.58 – Biopsy Results Pending Report

Management Report – Chief Complaint Audit Enhancement

The “location” (sites) parameter has been added to this report for filtering.

Practice(s): Site(s)
From: To:
1 of 1 100% Find | Next

Chief Complaint Audit

Practice(s): Advanced Radiology
Site(s): Eldersburg, Fisher, Lutherville, PowerVille
Date: 11/21/2012
Description: This report displays a list of the chief complaints identified on exams based on the date of service falling between the dates selected.

Patient Name	Status	Scheduled By	Arrived By
Advanced Radiology			1528
▣ Eldersburg			358
▣ 11-21-2012			358
██████████	Arrived		merlin
Accession #: ██████████			
Procedure(s): AMCT INJECTION SPINE [AMCTINJSPINE]			
Chief Complaint: bilateral l4 nrb			
██████████	Arrived		merlin
Accession #: ██████████			
Procedure(s): AMCT INJECTION SPINE [AMCTINJSPINE]			
Chief Complaint: bilateral l4 nrb			

Figure 5.59 – Chief Complaint Audit Report

Management Report – Daily Schedule Add Ons

Description: This report displays the details for exams scheduled on the specified date for the practice, site(s) and scanners selected. As well it filters to pull exams that were added after or including to the specified "added after" date and time.

Parameters:

Scheduled Date (one only), Practice, Site, Scanners and Added after (created date)

Data references:

scheduledappointments_dataset

l_practice

l_site

l_modality

Daily Schedule Add Ons

Practice: Advanced Radiology

Site(s): Eldersburg, Fisher, Lutherville, OutsideMed, PowerVille

Date: 11/27/2012

Scanner(s): CT1EL, CT1FH, CT1LU, CT1PO, CTModality, DE1EL, DE1FH, DX1LU, MA1EL, MA1FH, MA1LU, MA2FH, MA3FH, MR1EL, MR1FH, MR1LU, MR3T, NM1FH, NM2FH, PT1FH, rp, US1EL, US1FH, US1LU, US2EL, US2FH, US2LU, US3FH, XR1EL, XR1FH, XR1LU, XR2FH

Description: This report displays the details for exams scheduled on the specified date for the practice, site(s) and scanners selected. As well it filters to pull exams that were added after or including to the specified "added after" date and time.

Scanner	Time Sched	Patient Name	MRN#	DOB	Exam(s)
CT1LU	3:41 PM		1000407160r	1/7/1991	E&M New Patient [EM01] Body Part\Lat:
		Home Phone:	Age: 21 years	Referring: Power, Ian	
		Cell Phone:		Copay:	
		Current Exam Status: Signed1	Enc #: 322647099		Acc #: 1469169
		Insurance: No Insurance	Insurance:		
		Scheduler Notes:			
		Chief Complaint: Test			
		Alternate MRN's: 999888777555a, 112455687x			
Added to schedule: 27-Nov-2012 02:42 PM by ian					

Figure 5.60 – Daily Schedule Add Ons report

Management Report – ICM Dashboard Enhancements

Add location (site) to the dashboard.

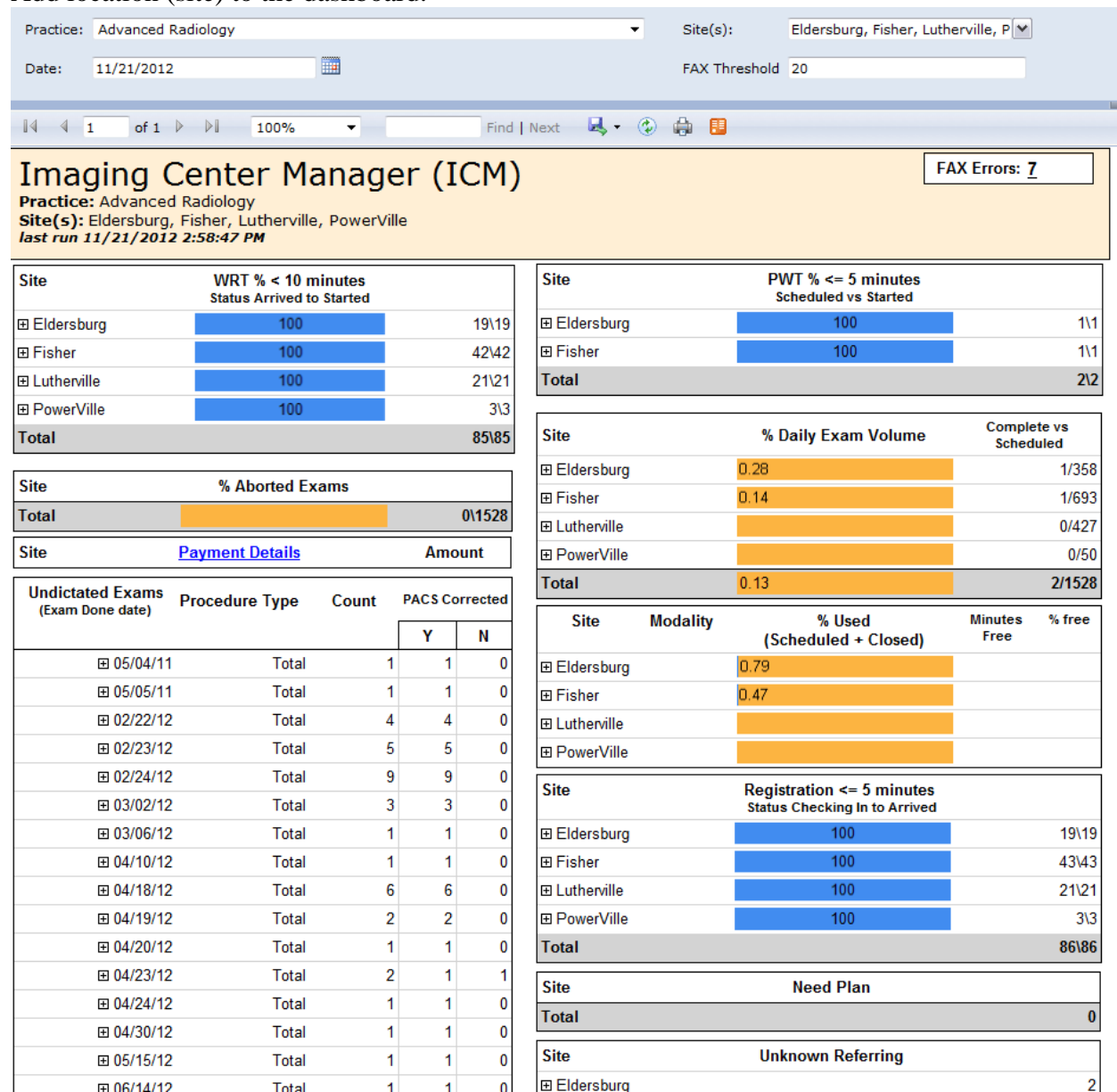


Figure 5.61 – ICM Dashboard Report

Management Report – Image Request History

This report displays the history of Image Requests where requests fall between the specified dates for the selected practices and locations.

Parameters:

Practice, Site, and Date range based on requested date

Data references:

- c_vw_image_request_worklist
- l_practice
- l_site
- request_status

Image Request History

Practice: Advanced Radiology

Site(s): Eldersburg, Fisher, Lutherville, PowerVille

Date Range: 9/23/2012 - 11/23/2012

Description: This report displays the history of Image Requests where requests fall between the specified dates for the selected practices and locations.

Requested Date	Completed by	Completed Date	Request Type	Requested By	Image Medium	Delivery Method	Status	MRN	Accession #
Advanced Radiology									11
Eldersburg									3
11-21-2012									3
Fisher									5
11-08-2012									2
			Other	test	CD	Courier	Pending	1000007857r	1072084
			Other	test	CD	Courier	Pending	1000007857r	1072084
11-06-2012									2
11-02-2012									1
Lutherville									3
11-22-2012									3
Total Requests:									11
Image Request History									
Confidential and Proprietary									
Page 1 of 1									
Date Run: 11/23/2012 10:06 AM									
RMISdale									

Figure 5.62 – Image request history

Management Report – IVT User Activity

This report displays the counts # of patients IVT activity has been logged by users within the selected sites/practice. Report is tracking any edits user(s) have made to study verification and pre-certification notes.

Parameters:

Practice, Site, and Date range based on audit log last_updated date

Data references:

- c_mgmt_IVT_activity
- l_practice
- l_site
- users in practice

IVT User Activity

Practice: Advanced Radiology

Site(s): Eldersburg, Fisher, Lutherville, PowerVile

Date Range: 10/21/2012 - 11/21/2012

Description: This report displays the counts # of patients IVT activity has been logged by users within the selected sites/practice. Report is tracking any edits user(s) have made to study verification and pre-certification notes.

Date / Practice / Site - User	MRN	Patient Name	Accession #
<input type="checkbox"/> 11-13-2012	3		
<input type="checkbox"/> ADV	3		
<input type="checkbox"/> FH	2		
<input type="checkbox"/> dale	2		
Notes made on: e329cd1e-2fb6-4191-b7eb-2478933d4bcb	TEST_SaveCompleteStudy dale	1060653	
Notes made on: e9b52584-cc21-44a4-9093-5fc1296b3f61	TEST_SaveCompleteStudy dale	1060610	
<input type="checkbox"/> LU	1		
Total Patients:	3		

IVT User Activity

Confidential and Proprietary

Date Run: 11/21/2012 2:07 PM

Page 1 of 1

RMIS\dale

Figure 5.63 – IVT User Activity report

Management Report – MQSA Outcome Report

This report displays outcome results for BIRAD 4 and BIRAD 5 exams. All Exams are Signed exams.

Report parameters are:

- Practice
- Site(s)
- Date Range
- Signing Radiologist
- Procedure Codes

Description: This report displays outcome results for BIRAD 4 and BIRAD 5 exams. All Exams are Signed exams.

Signing Radiologist	# Studies	# Benign (+)	# Malignant (-)	No Biopsy on file	% (+)	% (-)	% NA
☐ Darcy j233456 Aiken	1	1	0	0	100.00 %	0.00 %	0.00 %
☐ Darcy T Noye	15	11	3	1	73.33 %	20.00 %	6.67 %
☐ Stick da Powell	1	0	1	0	0.00 %	100.00 %	0.00 %
Total:	17	12	4	1	70.59 %	23.53 %	5.88 %

Figure 5.64 – MQSA Outcome Report

Management Report – NM Therapy Patient Listing

New report under the operations deployment

Parameters:

Practice, Site, and Date range based on scheduled date

Data references:

- NM_I131_dataset
- l_practice
- l_site

NM Therapy Patient Listing

Practice: Highway Imaging Associates, Pinnacle Diagnostic Radiology

Site(s): Flatbush Ave, 49th Street, New Kirk Ave

Date Range: 10/1/2012 - 12/31/2012

Description: This report shows all exams within the specified parameters where the procedure description contains I-131.

Scheduled	Patient Name	MRN #	DOB	Encounter ID
10-17-2012			03-07-1957	
Exam: NM I-131 Whole Body Scan [78018] - Body Status: Signed1			Location: Flatbush Ave	
Referring:				
10-19-2012			03-07-1957	
Exam: NM I-131 Therapy For Cancer [79005C] Status: Signed1			Location: Flatbush Ave	
Referring:				
10-26-2012			03-07-1957	
Exam: NM I-131 Whole Body Scan [78018] - Body Status: Signed1			Location: Flatbush Ave	
Referring:				

Figure 5.65 – NM Therapy Patient Listing

Management Report – Patients Without Insurance

Parameters:

Practice(s), Site(s) and date range (appointment date)

Data references:

- patientsWithoutInsurance
- l_practice
- l_site

Practice(s): Advanced Radiology Site(s) Eldersburg, Fisher, Lutherville, P

From: 11/21/2012 To: 11/21/2012

1 of 1 100% Find | Next

Patients Without Insurance

Practice: Advanced Radiology
 Site(s): Eldersburg, Fisher, Lutherville, PowerVille
 Date: 11-21-2012
 Description: This report lists the exams where no insurance was identified for the selected practice(s), site(s), and date range.

Appointment Date	Patient	MRN	Procedure Code	Procedure Description	Appt Time
11-21-2012	Rowan Ball	1000345678r	74183	MR Abdomen W/Wo [74183] - Abdomen	10:00 AM
	Site: Eldersburg	Modality:	MR1EL		
	Chief Complaint: Test				
	Order Notes:				

Count: 1

Patients Without Insurance Confidential and Proprietary Date Run: 11/21/2012 10:45 AM

Page 1 of 1 RMISdale

Figure 5.66 – Patients without insurance report

Management Report – Radiologist Dashboard Enhancement

Added control for for completed exams.

Screenshot:

New control is called Completed Exams – 7 Day Trend

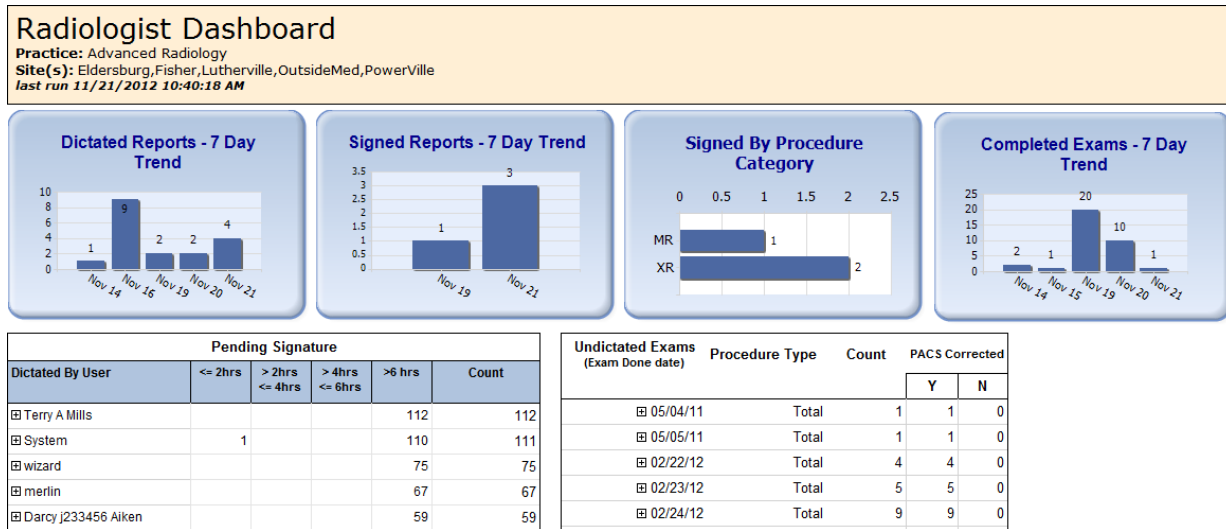


Figure 5.67 - Radiologist Dashboard Enhancement

Management Report – Referrals by Physician List

This report shows what activity by physician and procedure types. ****including all statuses except cancelled and discontinued.**

Report parameters are:

- Practice
- Site(s)
- Date Range
- Modality Types

Referrals by Physician Patient List

Practice: Highway Imaging Associates,Pinnacle Diagnostic Radiology

Site(s): Becker,Flatbush Ave,49th Street,New Kirk Ave,Petrosova

Date Range: 12-01-2012 to 12-03-2012

Description: This report shows what activity by physician and procedure types. ****including all statuses except cancelled and discontinued.**

Referring Physician	MRN	Patient Name	Procedure Type	Procedures	Modality
<input type="checkbox"/> [REDACTED]	1				
	[REDACTED]	[REDACTED]	MR	MR Cervical Spine WO [72141] - Cervical spine	FLMR1 - Flatbush Ave MR Rm 1
<input checked="" type="checkbox"/> [REDACTED]	1				
<input checked="" type="checkbox"/> [REDACTED]	1				
<input checked="" type="checkbox"/> [REDACTED]	1				

Figure 5.68 - Referrals by Physician List

Management Report – RTAT Detail Mammo

Created new report under the operations deployment called RTAT Detail Mammo.

Parameters for report:

Procedure group where the mammo type code is not null, and Date range based on signed date

Data references:

- rtat_dataset
- l_procedure_group_dataset

RTAT Detail Mammo

Date Range: 11/16/2012 - 11/22/2012

Procedure Group(s): Mammography

Excluding exams signed on weekends

Radiologist: Pending Dictation - Pending Transcription (% of reports completed in < 3 hours)		
Week Ending	ARS	# Signed Exams
⊞ 11/16/2012	44.98 %	269
⊞ 11/23/2012	36.71 %	1,038
Total	38.41 %	1,307

Transcriptionist: Pending Transcription - Pending Signature (% of reports completed in < 3 hours)		
Week Ending	ARS	# Signed Exams
⊞ 11/16/2012	97.77 %	269
⊞ 11/23/2012	99.04 %	1,038
Total	98.78 %	1,307

Radiologist: Pending Signature - Signed (% of reports completed in < 2 hours)		
Week Ending	ARS	# Signed Exams
⊞ 11/16/2012	79.93 %	269
⊞ 11/23/2012	88.44 %	1,038
Total	86.69 %	1,307

Figure 5.69 – RTAT Detail Mammo report

Management Report – Technologist Unfinished Exams

Report to identify exams that have been left uncompleted on the technologist work list for a given date range based on appointment date and status of arrived, started or suspended.

Parameters:

Practice, Site, and Date range based on scheduled date

Data references:

- techUnfinishedExams_dataset
- l_practice
- l_site

Technologist Unfinished Exams

Practice: American Radiology Services

Site(s): Annapolis, Bel Air, Bel Air PET/CT, Clinical Associates, Calvert Medical Imaging Center, Frederick Ortho III, Frederick Ortho II, Frederick, Fleet Street, Glen Burnie, Howard County, Knoll North, Owings Mills, Owings Mills Women's Center, Quarry Lake, Timonium Crossings, Texas Station, Waldorf

Date Range: 11/13/2012 - 11/20/2012

Description: This report lists the exams currently in status started, arrived and suspended between the dates specified for the selected practice(s), site(s).

Date	Patient	MRN	Accession	Procedure Code	Procedure Description	Appt Time
11-16-2012						Count: 1
	[REDACTED]	[REDACTED]		MR104	MR Brain and Pituitary W WO [MR104] - Head	08:30 AM
	Site: Waldorf	Modality:	WDMR1 - WALDORF MR 1.0			
	Status: Started-Suspended	User:	[REDACTED]			
11-19-2012						Count: 4
	[REDACTED]	[REDACTED]		76705	US Abdomen Limited [76705] - Abdomen	11:00 AM
	Site: Waldorf	Modality:	WDUS1 - WALDORF US 1			
	Status: Arrived	User:	[REDACTED]			
	[REDACTED]	[REDACTED]		76645HOLD	US Breast Hold Code [76645HOLD] - Breast	11:30 AM
	Site: Owings Mills Women's Center	Modality:	OMWCUS1 - OWINGS MILLS WOMENS CENTER US1			
	Status: Arrived	User:	[REDACTED]			
	[REDACTED]	[REDACTED]		71250	CT Chest WO [71250] - Chest	01:00 PM
	Site: Owings Mills	Modality:	OMCT1 - OWINGS MILLS CT 64			
	Status: Started	User:	[REDACTED]			
	[REDACTED]	[REDACTED]		76645HOLD	US Breast Hold Code [76645HOLD] - Breast	03:00 PM
	Site: Owings Mills Women's Center	Modality:	OMWCUS1 - OWINGS MILLS WOMENS CENTER US1			
	Status: Started	User:	[REDACTED]			

Figure 5.70 – Technologist Unfinished Exams

Management Report – West Coast Transcription Dashboard

Created new dashboard report called West Coast Transcription Dashboard. Only difference is represented in the first table of the dashboard called Exam Done to Signed Turnaround Times (in Hrs).

These calculations calculate hrs difference regardless of hrs of operations.

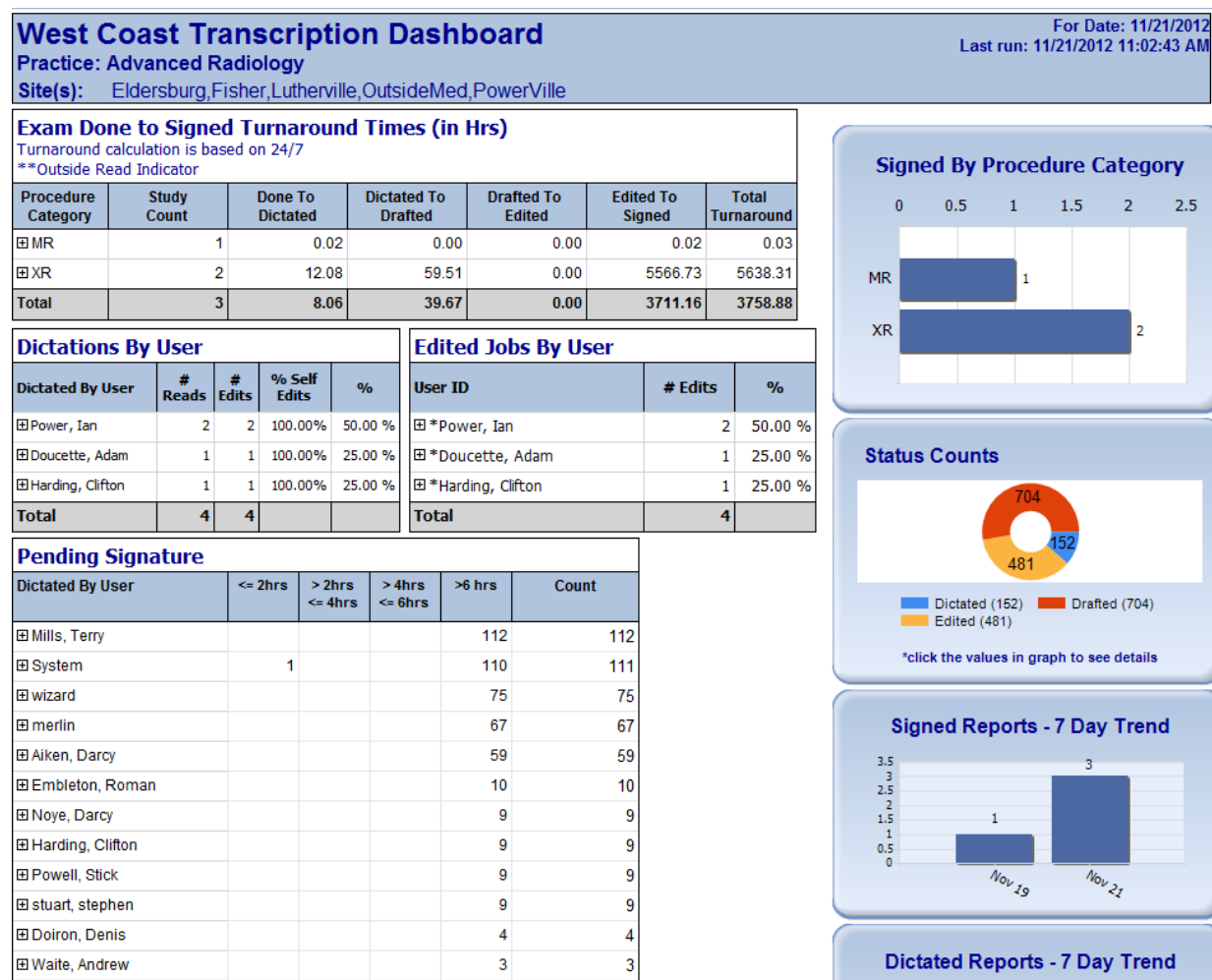


Figure 5.71 – West Coast Transcription Dashboard report

As part of this change we also enhanced the accession milestone times subreport to contain both tables as the accession milestone report is used on both coasts and referenced on several reports. Creating a West Coast version would make updating all referencing reports a major activity.

Accession Milestone Times

Patient: [REDACTED]

Current Exam Status: **Signed1**

Site: Lutherville

Accession #	Procedure Category	Procedure Description			
1407693	XR	XR ABDOMEN AP, KUB [74000] - Abdomen			

Exam Milestone Times					
Order Date	Scheduled Date	Checking In Date	Arrival Date	Started Date	Performed End Date
11/21/2012 6:57 AM	11/20/2012 7:45 AM	11/21/2012 6:59 AM	11/21/2012 6:59 AM	11/20/2012 6:59 AM	11/20/2012 6:59 AM
ian	ian	ian	ian	ian	

Report Milestone Times				
Version	Dictated date	Drafted Date	Edited Date	Signed Date
Original	11/21/2012 7:00 AM	11/21/2012 7:02 AM	11/21/2012 7:02 AM	11/21/2012 7:28 AM
	ian		ian	ian

Turnaround Times (in Hrs)				
<i>**calculated at 8:00-6:00 Mon-Fri</i>				
Done To Dictated	Dictated To Drafted	Drafted To Edited	Edited To Signed	Done To Signed
10.00	0.00	0.00	0.00	10.00

Turnaround Times (in Hrs)				
<i>**calculated at 24 / 7</i>				
Done To Dictated	Dictated To Drafted	Drafted To Edited	Edited To Signed	Done To Signed
24.02	0.03	0.00	0.43	24.48

Figure 5.72 – Accession Milestone Times subreport

6. RIS Release Version Numbers

Build	Patch	UI Version	Core Version	WS Version	DB Version	Notes
37	-	1.2.37.12843	1.2.37.12782	1.2.37.12843	1.2.37.12843	
37	1	1.2.37.13040	1.2.37.13040	1.2.37.13039	1.2.37.13003	
37	2	1.2.37.13069	1.2.37.13040	1.2.37.13069	1.2.37.13003	
37	3	1.2.37.13069	1.2.37.13040	1.2.37.13069	1.2.37.13003	Just WebAPI updated, no version changes
37	4	1.2.37.13171	1.2.37.13040	1.2.37.13165	1.2.37.13171	
37	5	1.2.37.13347	1.2.37.13040	1.2.37.12979	1.2.37.12979	Bug was discovered with version numbers, this is why it appears we went backwards in the version number but we really did not.
37	6	1.2.37.13665	1.2.37.13040	1.2.37.13580	1.2.37.12979	
37	7	1.2.37.13807	1.2.37.13040	1.2.37.13799	1.2.37.13807	
37	8	1.2.37.13807	1.2.37.13040	1.2.37.13827	1.2.37.13807	
37	9	1.2.37.13807	1.2.37.13040	1.2.37.13839	1.2.37.13807	
37	10	1.2.37.13895	1.2.37.13040	1.2.37.13895	1.2.37.13895	
37	11	1.2.37.14161	1.2.37.13040	1.2.37.14161	1.2.37.14161	
37	12	1.2.37.14267	1.2.37.13040	1.2.37.14161	1.2.37.14267	
37	13	1.2.37.14326	1.2.37.13040	1.2.37.14326	1.2.37.14326	
38	-	1.2.38.14486	1.2.38.14486	1.2.38.14486	1.2.38.14486	
38	1	1.2.38.14748	1.2.38.14748	1.2.38.14748	1.2.38.14748	
38	2	1.2.38.15182	1.2.38.14748	1.2.38.14748	1.2.38.14748	
38	3	1.2.38.15251	1.2.38.14748	1.2.38.14748	1.2.38.14748	
38	4	1.2.38.15327	1.2.38.14748	1.2.38.15290	1.2.38.14748	
39	-	1.3.39.	1.3.39.	1.3.39.	1.3.39.	

7. Resolved Defects

Bugs Suggested Features and Support Issues resolved in build 1.39. The extract is taken from Redmine bug tracking system and only displays defects resolved in 1.39.

Bug #	Tracker	Priority	Subject	Category	Found Version
2758	Bug	Immediate	Scanning - Errors with colour and duplex settings	Thick Client GUI	1.38
2662	Bug	Urgent	billing file missing GT1 segments for outside read study		1.37
2457	Bug	Urgent	upgrade scripts take too long to run with large databases.	Web Services/DB	1.38
2156	Bug	Urgent	Webservices - UI_StudyStarted_StudyUpdated (wrong study key in clob vs StudyContainer)	Thick Client GUI	37.13
2145	Bug	Urgent	Over Book Reason - Not logged to the Audit history	Thick Client GUI	37.13
2082	Bug	Urgent	From River Ranch: When you have 2 orders for the same patient and you 'view / edit' one of the orders and change the referring, the change is applied to both orders on that day.	Thick Client GUI	37.11
2724	Bug	High	attachment viewer shows out of date / stale results	Thin Client GUI	1.38
2354	Bug	High	Data nugget alignment and backcolor issue	Thick Client GUI	1.38
2348	Bug	High	Billing exception can be cleared before all notes cleared	Thick Client GUI	1.2.38.14486
2335	Bug	High	audit history does not display scrollbar when required	Thick Client GUI	1.38.0

2287	Bug	High	Order notes are not preserved when rescheduling		1.38
2234	Bug	High	ReSchedule - (schedule later) required laterality,, not checked		37.13
2233	Bug	High	Re-Schedule (Schedule Later) does not save added procedures.		37.13
2225	Bug	High	View / Edit -> Billing codes tab - showing billing codes for NOT active study items	Thick Client GUI	37.13
2223	Bug	High	Reconcile Unknown Insurance Carrier --> Foreign Key error	Thick Client GUI	37.13
2209	Bug	High	All QA studies WL missing	Thick Client GUI	1.2.38
2208	Bug	High	Registration --> Save prompts a check to validate Scheduled Date	Thick Client GUI	37.13
2172	Bug	High	changing the insurance does not cause the precert rules to run		1.2.37
2144	Bug	High	Precert Status - "Not Required" does not get logged to the database	Thick Client GUI	37.13
2128	Bug	High	River Ranch - modality availability check is not running upon pressing 'schedule'	Thick Client GUI	37.12
2118	Bug	High	River Ranch - Tech worklist is showing multiple studies flag even if one of those studies is in 'cancelled' status.	Thick Client GUI	37.12

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2114	Bug	High	Status changes initiated from an open screen in RIS can overwrite a status update from HL/7	Web Services/DB	1.37.12
2048	Bug	High	Tech - Error Completing exam	Thick Client GUI	37.11
2035	Bug	High	Appointment book.. some appointments do not show tome of exam		37.1
2030	Bug	High	Delete -Personnel		37.1
2000	Bug	High	Transportation required flag - when populated in order, then re-opened for View / Edit, user no longer sees check in box	Thick Client GUI	1.1.2.37
1960	Bug	High	Column size for Referring ImagingNotes, SpecialtyNotes	Thick Client GUI	1.37
1924	Bug	High	rRISServices deployed with throttling turned on leading to poor performance	Thick Client GUI	1.37.13858
1862	Bug	High	If modality code has trailing space in code name, scheduled appointments will not show on appointment book	Web Services/DB	1.1.2.37.13807
1829	Bug	High	Memory leak introduced in B38, needs to be fixed.	Thick Client GUI	1.38
1537	Bug	High	When entering outside read info, if you put 'asf' into the study data panel, and you click outside the panel RIS throws a loop of the same error, and you cannot get out of it.	Thick Client GUI	1.2.37.12724

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1116	Bug	High	Procedure can be scheduled when laterality is required but not selected	Thin Client GUI	1.35
2705	Bug	Normal	Automated Measures eHealth calculation	Thick Client GUI	1.38
2696	Bug	Normal	forms not generated when arriving patient after changing procedure	Thick Client GUI	1.37
2653	Bug	Normal	PACS integration is passing showstudyinfo=Y even if config setting is turned off	Thick Client GUI	1.37
2525	Bug	Normal	Appointment book drag and drop time not working	Thick Client GUI	1.38.002
2497	Bug	Normal	Management Report - Referrals by Physician	Mgt Reports	1.38
2495	Bug	Normal	ris hangs on registration save	Thick Client GUI	38.15138
2472	Bug	Normal	Management Reports - Transcription Dashboard issue with external reports	Mgt Reports	1.38
2468	Bug	Normal	User Preference - opens on wrong tab		1.38
2466	Bug	Normal	Management Report - Payments Received	Mgt Reports	1.37
2464	Bug	Normal	Reporting - Radiologist resource is required to dictate	Thick Client GUI	1.37
2463	Bug	Normal	Mammo - Annual reports freeze	Mgt Reports	38
2462	Bug	Normal	c_Calculate_BMI error when weight has a decimal	Mgt Reports	1.37
2458	Bug	Normal	Mgmt Report - Room Utilization	Mgt Reports	1.37
2456	Bug	Normal	User Preference - clean up task to remove ":" from labels with controls beside them	Thick Client GUI	1.37

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2452	Bug	Normal	audit history for tech workflow reflects the status of the exam prior to the status change	Thick Client GUI	1.38
2447	Bug	Normal	right click - Cancel Study does not release lock after cancelling study	Thick Client GUI	1.38
2446	Bug	Normal	FT1.4 date not as expected in billing file.	Web Services/DB	1.35
2442	Bug	Normal	Reporting - next previous field navigation with command bar buttons	Thick Client GUI	1.38
2440	Bug	Normal	Reporting - document model information dialog	Thick Client GUI	1.38
2439	Bug	Normal	Reporting - interactive tool options available in the editor	Thick Client GUI	1.38
2438	Bug	Normal	Color pickers in user preferences	Thick Client GUI	1.38
2437	Bug	Normal	MU Error timely_access_date	Thick Client GUI	1.38
2435	Bug	Normal	Reporting - Addendum message box cleanup	Thick Client GUI	1.37
2433	Bug	Normal	Scan Documents, documents should be renamed to "Attachements".	Thick Client GUI	38
2417	Bug	Normal	Resolve Problem : Problem set by not setting properly	Thick Client GUI	1.37
2413	Bug	Normal	Management Report - Transcription Dashboard	Mgt Reports	1.38
2411	Bug	Normal	Mgmt Report - Room Utilization	Mgt Reports	1.37
2410	Bug	Normal	This row has been removed when using the up/down arrows on keyboard from the personnell editor person grid		1.38

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2381	Bug	Normal	Reporting Layout gets config file every time from DB	Thick Client GUI	1.38
2380	Bug	Normal	Patient Folder - Issues with floating toolwindows	Thick Client GUI	1.38
2373	Bug	Normal	Tool Window Focussing Issue	Thick Client GUI	1.38
2352	Bug	Normal	Patient Folder - rename view menu and corresponding tool windows.	Thick Client GUI	1.38
2338	Bug	Normal	Reset Open Skipped Rows Window/Menu Clean up		1.38
2325	Bug	Normal	(intermittent) Null Reference error in scheduling after picking a timeslot that has a hold	Thick Client GUI	1.37
2322	Bug	Normal	Change existing insurance to a new insurance, follows rules applied to original insurance.	Thick Client GUI	1.38
2318	Bug	Normal	confirmation for multiple orders shows verbiage for registration, not confirmation	Thick Client GUI	1.38
2312	Bug	Normal	Management Reports - RTAT Detail	Mgt Reports	1.37
2309	Bug	Normal	error on getdata/display data -- invalid cast exception on open of confirmation exception	Thick Client GUI	1.38
2293	Bug	Normal	Reporting - Two release report context menu items	Thick Client GUI	1.38
2282	Bug	Normal	Mgmt Report Sales Marketing Dashboard	Mgt Reports	1.38
2281	Bug	Normal	Bill To Types - dropdown displays inactive items	Thick Client GUI	v37.13
2275	Bug	Normal	Reporting - interactive popup mixed case	Thick Client GUI	1.38

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2245	Bug	Normal	Stored function c_getcontrastrequiredflag is using a cursor and does need to.	Web Services/DB	1.38
2244	Bug	Normal	userid's case sensitive for domain logins	Web Services/DB	1.38
2238	Bug	Normal	Management Report Deployment - timeout	Mgt Reports	1.38
2235	Bug	Normal	Inactivity message showing at inappropriate time	Thick Client GUI	1.2.38.14486
2232	Bug	Normal	IVT worklist not loading / refreshing ... constraint violation not presented to user (or not reported by user)	Thick Client GUI	1.37.13
2227	Bug	Normal	Sales Dashboard	Mgt Reports	1.37
2224	Bug	Normal	Dx Templates - Deliver to address	Mgt Reports	1.37.13
2218	Bug	Normal	Sales Reports ARS - performance Problems	Mgt Reports	1.37
2214	Bug	Normal	Image request with scheduled study tab show (0) in registration window	Thick Client GUI	1.2.38.14443
2200	Bug	Normal	Reporting - Reset/Open Skipped Rows	Thick Client GUI	1.38
2189	Bug	Normal	Management Reports - Special Accommodations	Mgt Reports	1.37
2185	Bug	Normal	eRx - Practice Zip Code Invalid characters	Thick Client GUI	1.38.14426
2177	Bug	Normal	Management Reports - update parameter to initialize to single day of yesterday	Mgt Reports	1.38.14391
2176	Bug	Normal	Error on fast clicking schedule button	Thick Client GUI	1.2.38.14391

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2159	Bug	Normal	QA Work flow - Reports verified are sent to Signed, Pending Release WL again	Thick Client GUI	1.2.38.14350
2150	Bug	Normal	Audit log displaying user who released report as UI_ReportSigned	Admin Tools	1.2.38.14350
2149	Bug	Normal	Lookup Editor - Image Uploader	Thick Client GUI	1.38
2137	Bug	Normal	Reporting - Skip and continue external reports loop	Thick Client GUI	1.2.38.14327
2130	Bug	Normal	Typo - Attachement Viewer	Thick Client GUI	1.37.
2112	Bug	Normal	Management Report - Referrals by Physician	Mgt Reports	1.37.12
2108	Bug	Normal	Referring Physician Volume Report	Mgt Reports	1.37.12
2099	Bug	Normal	can't clear selection of dataset when creating an auto macro	Thick Client GUI	1.1.2.38.14294
2056	Bug	Normal	Reporting - Dictatoin control (minimized) not visible if saved on multiple monitor configurations	Thick Client GUI	1.37
2039	Bug	Normal	Print preview of Dx Report within transcription window when multiple addendums	Mgt Reports	1.38
2037	Bug	Normal	CDS Manager Service attempting to update signed studies.	Web Services/DB	1.37
2022	Bug	Normal	Reporting - Assign To problem when radiologist doesn't exist.	Thick Client GUI	1.37
1996	Bug	Normal	Reporting - VR2 environment single spacing between sentences on report rendering.	Mgt Reports	1.37

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1796	Bug	Normal	Reporting - CdsInteractive Text Color	Thick Client GUI	1.38
1569	Bug	Normal	schedule later does not save procedures that haven't been committed yet	Thick Client GUI	1.2.37.12782
1373	Bug	Normal	Minimize Dictation - When doing WPR "000" Submit buttun text not legible	Thick Client GUI	1.36
1254	Bug	Normal	Shortcut keys are not working from floating panes	Thick Client GUI	1.36.10931
1139	Bug	Normal	When running MT polling workflow, lock is not being released	Thick Client GUI	35.10273
1129	Bug	Normal	Access to Diagnose / dictate window	Thick Client GUI	1.35
965	Bug	Normal	Dictate Screen does not lock after period of inactivity	Thick Client GUI	1.35
917	Bug	Normal	Minimizing application by moving another application over top of RIS throws error	Thick Client GUI	1.34
909	Bug	Normal	First time launch of a study does not find the image	Thick Client GUI	1.34
876	Bug	Normal	Error accessing transcribed records	Thick Client GUI	1.32
2723	Bug	Low	tooltip "fit to width" appears over zoom in and zoom out buttons on scan doc attachment viewer	Thick Client GUI	1.38
2106	Bug	Low	Lookup Editor - TemplateMacro Should have Double click functionality	Thick Client GUI	1.38.14294
2105	Bug	Low	Lookup Editor -TemplateMacro	Thick Client GUI	1.38.14294
2088	Bug	Low	Macro Editor - Tab Order needs to be reveiwed	Admin Tools	1.1.2.38.14194

1853	Bug	Low	QualityReviewDistribution is not listed alphabetically in General menu	Admin Tools	1.1.2.38.13809
1769	Bug	Low	Reporting - Selecting "Show All" templates can change the default selected	Thick Client GUI	1.1.2.37.13580
1678	Bug	Low	GUI - Macro + Template editor.. base templates field does not display in min resolution	Thick Client GUI	1.2.37.13040
1612	Bug	Low	Locking - message box modifictaions perhaps	Thick Client GUI	1.37
1485	Bug	Low	On the Input tab of the Preferences screen there is a Label that can't be read	Thick Client GUI	1.37
1113	Bug	Low	Lang item for rRIS to system try need to be updated.	Thick Client GUI	1.35
670	Bug	Low	Diagnose > Report preview can be opened multiple times	Thick Client GUI	1.25

8. Known Limitations

The following are Bugs Suggested Features and Support Issues found in build 1.39. This build is the current QE build and testing is ongoing. The list may increase in size. This document will not be updated or re-released.

#	Status	Priority	Subject	Resolved Build
2775	New	High	Mammo letter config lookup active column values incorrect	
2727	New	High	PACS errors flipping between open dictate windows	
2699	Resolved	High	Inserting template is navigating all fields twice	40
2532	New	High	access to changing the access strings needs to read only.	
2478	Resolved	High	Title bar color does not change if Practice is set to transparent	40
2782	Resolved	Normal	ICM Dashboard - Need plan and Unknown Referring returning no results	40
2777	New	Normal	Appointment book - double click on open time	
2761	Resolved	Normal	Sales Mgmt Reports - 6 and 13 Mth Variance Data	
2759	New	Normal	Distribution WL - Message box should display in the center of the screen	
2757	New	Normal	Problem with doing multiple Verify Externals in a row.	
2754	New	Normal	Patient Folder context menu for Report History	

2752	Resolved	Normal	Patient Merge: ShowID Button does not auto select thumbnail	40
2750	New	Normal	Reporting - Select command does not work for words that are at the start or end of a field	
2747	Resolved	Normal	Reporting - Fields Navigator - Previous section does not highlight position in Fields tool window	40
2746	Resolved	Normal	Organization Picker Problem	40
2744	New	Normal	null exception when attempting to show/hide titlebars on report document	
2743	New	Normal	Personnel Editor - Tab/NewLine issues in notes fields	
2741	Resolved	Normal	Lookup Editor - Column Header Alignment is Messed up.	40
2737	New	Normal	Patient Folder - multiselect is true and it should be false	
2734	New	Normal	Reporting - Floating data panes do not stay on top	
2728	New	Normal	Study locked in PACS message on initial load	
2713	Resolved	Normal	Report History tab name	40
2695	New	Normal	parameter not specified error in preview report for tables	
2690	New	Normal	Show/Hide Titlebar issue	
2683	New	Normal	Patient folder > Study detail column color bleeds outside of row	

2677	New	Normal	Create Report from Reset Open skipped rows	
2676	New	Normal	Reset open skipped rows - If you dictate and save, it does not remove skipped row from list	
2672	New	Normal	Appointment book cannot obtain lock error	
2661	New	Normal	Template Macro Editor - Double click template or macro	
2660	New	Normal	Template Macro Editor - Adv Assignment - user not defaulting	
2648	New	Normal	Reporting - Attachments are not realigned when the data pane is resized	
2647	New	Normal	Reproting window - can't save layout to default Attachments tab	
2646	New	Normal	Reporting - field navigator using section headers are not navigating if report contains 0 fields	
2645	New	Normal	Overbook Reason title change	
2643	New	Normal	Multiple loads of Selection Aware controls	
2641	New	Normal	Duplicating report fields	
2637	New	Normal	Next field command selecting multiple fields	
2635	New	Normal	Unchecking No Longer Menstruating doesnt enable pregnancy fields	
2632	New	Normal	Perform Exam window doesnt update with changes made in another window	

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2630	In Progress	Normal	PACS - Close call could fail if user has been logged off	
2628	New	Normal	Reporting screen not drawing in, if user make worklists active	
2568	In Progress	Normal	View menu disappears	
2561	New	Normal	reception WL retrieval time is slow	
2540	New	Normal	scan document association	
2536	New	Normal	Report Permissions,	
2534	New	Normal	Mammo followup - Newly entered data does not carry forward	
2533	New	Normal	Scheduling order from follow up mammo work list doesnt return to work list	
2515	Resolved	Normal	Create/Edit Report not in context menu in Problem WL	40
2513	Resolved	Normal	Create Edit Report missing from context on Pending Review WL	40
2512	Resolved	Normal	Verify Edits context missing on Edits Pending QA WL	40
2511	New	Normal	size and location information is not saved when client is close while minimized	
2509	Resolved	Normal	Create/Edit Report not in context menu in Report Drafted WL	40
2493	New	Normal	Management Report - RTAT Summary Poor Performance	
2751	New	Low	Object overlap on Order tab	

2749	Resolved	Low	Reporting - Fields Navigator - Selecting section before field changes cursor selection	40
2729	New	Low	Able to bring up two menus at once	
2679	New	Low	CDS Management Console	
2664	New	Low	Billing Exception - Post button	
2658	New	Low	Stored function c_getcontrastrequiredflag could return wrong value if multiple study items exist	
2652	New	Low	administration -> management report screen doesn't show any folders if permissions aren't configured	
2535	New	Low	Region, unable to deactivate	