

User Release Notes

for eRAD RIS
Version 2
Build 45

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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 44 and subsequent server releases. This version of eRAD RIS is referred to as Build 2.45

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 2.45 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 45

Setting Placeholder	Setting	Default	Purpose / Controls Access to
Access string / User Group Permission tables	Clinical.AuditHistory.ShowReportPeerReviewed	None	Allows the user to see when reports were peer reviewed in the audit history
Access string / User Group Permission tables	Clinical.ChangeStatusCancelTechRepReqd	None	Controls access to the context menu option Change Status CancelTechRepReqd
Access string / User Group Permission tables	Clinical.ContrastTimer	None	Enables the user to start and reset the contrast timer on the Technologist WL
Access string / User Group Permission tables	Clinical.ExportIsraelMinistryOfHealth	None	Controls access to the menu item to export the XML for the Israeli Ministry of Health
Access string / User Group Permission tables	Clinical.PortalLauncher	None	Controls access to the context menu for the Portal Integration Window
Access string / User Group Permission tables	Clinical.QuickRadarMessage	None	Controls access to the context menu for the quick RADAR message feature
Access string / User Group Permission tables	Clinical.RadarMessage	None	Controls access to the context menu for the RADAR message feature
Access string / User Group Permission tables	Clinical.ReportEditor.AdvancedMenu	None	Enables access to the advanced menu in the eRAD report editor
Access string / User Group Permission tables	Clinical.VerifyReport	None	Controls access to the Verify Report button on the context menu on work lists
Access string / User Group Permission tables	Config.AllowEradReportingIntegration	None	Allows users access to turning on eRAD reporting workflow for themselves or other users if the current user has admin access
Access string / User Group Permission tables	Config.AllowExternalReportingIntegration	None	Allows users access to turning on External reporting workflow for themselves or

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			other users if the current user has admin access
Access string / User Group Permission tables	Config.AllowMModalReportingIntegration Replaces Config.AllowMModalConfig	Full	Allows users access to turning on M*Modal reporting workflow for themselves or other users if the current user has admin access
Access string / User Group Permission tables	Config.AllowPowerScribeReportingIntegration Replaces Config.AllowPowerScribeConfig	None	Allows users access to turning on PowerScribe reporting workflow for themselves or other users if the current user has admin access
Access string / User Group Permission tables	Config.LookupEditor.AccessString.AllowedToChangeDefaults	None	Controls access to editing the default access level code on access strings
Access string / User Group Permission tables	Config.LookupEditor.AccessString.CustomAccessStrings	None	Full access enables the user to add, edit and delete custom access strings
Access string / User Group Permission tables	Config.LookupEditor.AdditionalResource	None	lookup table access for Additional Resources
Access string / User Group Permission tables	Config.LookupEditor.AuditHistory	None	Allows the user to see the audit log for configuration changes.
Access string / User Group Permission tables	Config.LookupEditor.Autotext	None	lookup table access for Autotext
Access string / User Group Permission tables	Config.LookupEditor.BrowserConfig	None	Controls access to the Lookup Editor for the BrowserConfiguration used by the Portal Integration Window
Access string / User Group Permission tables	Config.LookupEditor.LogControl	None	lookup table access for Log Control
Access string / User Group Permission tables	Config.LookupEditor.OrderingOrganization	None	lookup table access for Ordering Organization

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Access string / User Group Permission tables	Config.LookupEditor.OverbookReason	None	lookup table access for Overbook Reason
Access string / User Group Permission tables	Config.LookupEditor.SystemMessage	None	Lookup table access for the System Messages currently used for Portal
Access string / User Group Permission tables	Config.LookupEditor.ValidationRules	None	lookup table access for ValidationRules
Access string / User Group Permission tables	Menu.File.UserPreferences	Full	Enables access to the User Preference menu option on the File menu.
Access string / User Group Permission tables	Portal.MIM	None	Allows access to the MIM section form the referring portal.
Access string / User Group Permission tables	Portal.PACS	None	Allows access to the PACS section form the referring portal.
Access string / User Group Permission tables	Portal.Referring	None	Allows access to the Referring Portal
Access string / User Group Permission tables	Portal.Referring.Admin	None	Allows access to the Referring Portal Administration Login
SystemConfig lookup	AllowedReportingIntegrationTypes	15	(value = sum of desired types where External = 1, MModal = 2, PS360 = 4 and eRAD = 8) Determines which reporting integration types are allowed on this system. The default equals all reporting modes as 1+2+4+8=15
SystemConfig lookup	DateFormat	MM-dd-yyyy	(value = string) The date format (i.e. MM-dd-yyyy). Only numeric dates are supported.
SystemConfig lookup	DaysToKeepClientErrorLog	60	(value = int) The number of days to keep an error log after

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			it has been generated.
SystemConfig lookup	DefaultAlternateMRNMask	AAAAAAAAAA	(value = string) Default mask for alternate MRNs. Mask rules: # = number only, A = alphanumeric and L = alpha only.
SystemConfig lookup	DictationArchiveCurrentLocation	N/A	DictationArchiveCurrentLocation
SystemConfig lookup	DictationArchiveDaysOfTheWeek	0,1,2,3,4,5,6	(value = string) A comma separated list of days that the dictation archive process will wake up to see if there is work. The list 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.
SystemConfig lookup	DictationArchiveMaxThreads	6	(value = int) The maximum number of thread the dictation archive process can use within one process. Default is 6.
SystemConfig lookup	DictationArchiveServerNames	N/A	(value = string) A comma separated list of server names that are allowed to run the dictation archive service.
SystemConfig lookup	DictationArchiveStartTime	00:00:00	(value = time) The time of day in hh:mi format (24 hour) that the dictation archive process can wake up.
SystemConfig lookup	DictationArchiveStopTime	00:00:00	(value = time) The time of day in hh:mi format (24 hour) that the dictation archive process must stop. Does not have to be greater than DictationArchiveStartTime then the process will continue to the next day until the time is reached.

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SystemConfig lookup			(value = int) The maximum size in GB that the system will persist dictation directly in the db. When this value is exceeded the dictation archive process will begin (at its next run time interval) to move audio files to the archive.
	DictationMaxSizeInDB	2147483647	
SystemConfig lookup			(value = int) When dictation archiving is initiated, this is the minimum size in GB that the system will reduce the amount of dictations that are persist directly in the db.
	DictationMinSizeInDB	2147483647	
SystemConfig lookup			(value = bool) True to force user to select a zip code for signing
	EnforceZipcodeSelection	False	
SystemConfig lookup			(value = int) The Person key that will be used when sending secure messages for a non-user messaging instance, i.e. new account setup.
	GenericIncomingMessagePersonKey	-1	
SystemConfig lookup			(value = int) 1 - Imperial (Height - ft in / Weight - lbs), 2 - Metric (Height - cm / Weight - kg)
	HeightAndWeightFormat	1	
SystemConfig lookup			(value = DateTime yyyy-MM-dd) Date to define when to enable checking if height is required when scheduling or arriving the patient
	HeightRequiredEffectiveDate	1999-01-01	
SystemConfig lookup			(value = bool) True enables RIS to try to 'kill' or close the Word Viewer after opening legacy report in a new instance of the Word Viewer from the reporting screen.
	KillWordViewerAfterLegacyReport	True	
SystemConfig lookup			(value = bool) True enables RIS to try to 'kill' or close the Word Viewer before opening legacy report in a new instance of the Word Viewer.
	KillWordViewerBeforeLegacyReport	True	
SystemConfig lookup			URL that will be used for MIM image viewing
	MIMS_URL	N/A	

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SystemConfig lookup	OrderLevelLocking	False	(value = bool) True to lock the entire order at once
SystemConfig lookup	OverbookReasonFormat	1	(value = int) 1 - free text only, 2 - OverbookReason lookup only, or 3 - both free text and the OverbookReason lookup.
SystemConfig lookup	PhoneNumberFormatDisabled	False	(value = bool) True to disable the phone number format mask
SystemConfig lookup	PortalHelpRequestMessageGroup	N/A	The message group that Help request would be sent too. If no message group is defined then just email will be sent to the configured Portal's send to email address.
SystemConfig lookup	PortalImageMigrationToolUrl	N/A	(value = string) URL to custom migration tool for PACS Images.
SystemConfig lookup	PortalLauncherEnforceTimeoutInReportingScreen	True	(value = bool) Whether the PortalLauncherSessionTimeout is enforced when the Portal Launcher is open in the reporting screen
SystemConfig lookup	PortalLauncherSessionTimeout	20	(value = int) The amount of time, in minutes from when the Portal Launcher is opened until it automatically closes. -1 = infinite
SystemConfig lookup	PortalLauncherTabLocation	Left	(value = string) Possible values - Left, Right, Top, Bottom. Sets the location of the tabs in the portal launcher window.
SystemConfig lookup	PortalNewAccountRequestMessageGroup	N/A	The message group that New Account requests would be sent too. If no message group is defined then just email will be sent to the configured Portal's send to email address.
SystemConfig lookup	ReferringPortalDefaultExamTabCriteria	[{"name":"Completed","filter_criteria":{"DayRange":"90","progress_status":["Completed"]},"sort_criteria":{"patient_name":"ASC"},"display_order":1}, {"name":"Scheduled","filter_	(value = string) JSON value to define default filter tab view criteria for the referring portal exams tab.

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		criteria":{"DayRange":"90", "progress_status":["Scheduled"]}, "sort_criteria":{"patient_name":"ASC"}, "display_order":2}, {"name":"InProgress", "filter_criteria":{"DayRange":"90", "progress_status":["InProgress"]}, "sort_criteria":{"patient_name":"ASC"}, "display_order":3}]	
SystemConfig lookup	ReferringPortalDefaultOrderTabCriteria	[{"name":"Orders", "filter_criteria":{"DayRange":"7"}, "sort_criteria":{"patient_name":"ASC"}, "display_order":1}, {"name":"Under Review", "filter_criteria":{"DayRange":"90", "um_status":["MDReview", "NurseReview"]}, "sort_criteria":{"patient_name":"ASC"}, "display_order":2}, {"name":"Drafted", "filter_criteria":{"DayRange":"7", "um_status":["Received"]}, "sort_criteria":{"patient_name":"ASC"}, "system_criteria":{"RowCounter":"true", "RowCounterClass":"gray"}, "display_order":5}]	(value = string) JSON value to define default filter tab view criteria for the referring portal orders tab.
SystemConfig lookup	RegistrationRequiresSubscriberDOB	False	(value = true/false) True will require the subscriber's date of birth to be entered prior to arriving.
SystemConfig lookup	RISOutputFilePath	%ApplicationStartup %	(value = string) Path to directory where RIS will write output files.
SystemConfig lookup	ShowDOBCalendar	False	(value = bool) True shows the calendar selection control on Date Of Birth.
SystemConfig lookup	StartOfWeek	1	(value = int) numeric value of the first day of the work week: 0=Sunday...6=Saturday
SystemConfig lookup	TimeFormat	h:mm tt	(value = string) The time format (i.e. h:mm tt)
SystemConfig lookup	UMExpirationDays	90	(value = int) The number of days until an authorization expires.

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SystemConfig lookup	WalkinAddMinutes	0	(value = int) The amount of time in minutes to add to the scheduled start time for a walk in study.
SystemConfig lookup	WeekEndDays	0,6	Comma delimited list of the days of the normal weekend: 0=Sunday...6=Saturday
SystemConfig lookup	WeightRequiredEffectiveDate	1999-01-01	(value = DateTime yyyy-MM-dd) Date to define when to enable checking if weight is required when scheduling or arriving the patient
SystemConfig lookup	WorkWeekDays	1,2,3,4,5	Comma delimited list of the days of the normal work week: 0=Sunday...6=Saturday
SystemConfig lookup	ZipCodeCharacterMax	5	(value = int) Number of characters needed for zip code validation.
SystemConfig lookup	ZipCodeToAddressAutoFill	True	(value = bool) True to have address fields auto-filled when entering a zip code.
Applicationsetti ngs.config	ExternalInterfacePlugin	None	This setting contains the name of the plugin to use for sending messages out to an external system. See feature External Web Services Infrastructure for more information
Applicationsetti ngs.config	QueueItemReserveTime	25000	This setting determines how long the Wedge will reserve a queue item.
Applicationsetti ngs.config	DDEQueueItemReserveTime	25000	This setting determines how long the DDE will reserve a queue item.
Applicationsetti ngs.config	StartExternalInterfaceService	False	When set to True, this setting will enable the External Interface Web services. See feature External Web Services Infrastructure for more information
services.config	<service behaviorConfiguration="rRISBehaviorWithDebug" name="WCFSservice.ServiceImplementation.ExternalInterfaceServ	"http://localhost:7100/rRIS" />	Used with External Web Services Infrastructure. The server_name (localhost)

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	<pre> ice"> <clear /> <endpoint address="wsI" binding="wsHttpBinding" bindingConfiguration="wsIBinding" name="wsI" bindingNamespace="http://www.radnet.com/PEI/RIS/ExternalInterfaceService" contract="WCFService.ServiceContract.IExternalInterfaceService" listenUriMode="Explicit"> </endpoint> <host> <baseAddresses> <add baseAddress="http://localhost:7100/rRIS" /> </baseAddresses> </host> </service> </pre>		<p>is determined by the host that is running the service. The port (7100) is determined by the endpoint configuration in the services.config configuration file.</p> <p>See feature External Web Services Infrastructure for more information</p>
<p>rRISServices.exe.config</p> <p>rRISServicesx64.exe.config</p>	<pre> <binding name="wsIBinding" maxReceivedMessageSize="5000000"> <security mode="None"/> </binding> </pre>	<p>None</p>	<p>Setting added under the wsHttpBinding node</p> <p>See feature External Web Services Infrastructure for more information</p>
<p>rRISServices.exe.config</p> <p>rRISServicesx64.exe.config</p>	<pre> </behavior> <behavior name="rRISBehaviorWithDebug"> <serviceMetadata httpGetEnabled="true" httpsGetEnabled="true" policyVersion="Policy15"/> <serviceDebug httpsHelpPageEnabled="true" httpHelpPageEnabled="true" includeExceptionDetailInFaults="true"/> <serviceCredentials> <serviceCertificate findValue="PEIDEV1" storeLocation="LocalMachine" storeName="My" x509FindType="FindBySubjectName"/> </pre>		<p>Setting added under serviceBehaviours node.</p> <p>See feature External Web Services Infrastructure for more information</p>

	<pre> <userNameAuthentication userNamePasswordValidationMode ="Custom" customUserNamePasswordValidato rType="WCFService.MyUserNamePa sswordValidator, WCFService"/> </serviceCredentials> <serviceThrottling maxConcurrentCalls="3000" maxConcurrentSessions="5000" maxConcurrentInstances="5000"/ > </behavior> </pre>		
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Changes to RIS.exe.config file

The section <listeners> in the ris.exe.config file has been changed in this release. Below you will see the before and after. **Text highlight green** in the “after” displays the changes.

Before	After
<pre> rollFileExistsBehavior="Increment" rollInterval="Hour" header="" footer="" fileName="verbose_log/trace.log" formatter="SimpleTextFormatter" /> </listeners> </pre>	<pre> rollFileExistsBehavior="Increment" rollInterval="Hour" header="" footer="" fileName=" verbose_log/trace.log" formatter="SimpleTextFormatter" /> </listeners> </pre>

5. New Features and Enhancements

Language Localization and Right to Left Language Support

A framework has been constructed to allow other languages to be displayed and utilized in eRAD RIS. This framework consists mostly of a Microsoft standard resource file approach, however the decision was made to not simply use this framework verbatim, as under that model, each screen within RIS would have its own resource file leading to massive repetitiveness (and therefore inconsistency).

Therefore, the core of eRAD RIS application uses a single resource file called LANG.Resx. The deployment of this resource file is performed by the native Microsoft framework.

The first localization language is Hebrew. With this we are also supporting right to left language. All of the user based screens in eRAD RIS.

The configuration screens have not been localized.

Capture and Display Primary and Alternate Patient Names

The Patient tab can display two new fields extended on the patients first and last names. These new fields can be hidden by adding custom access strings

The screenshot shows the 'Patient' tab in the eRAD RIS system. The 'General Information' section contains fields for 'First', 'Last', and 'Middle' names. Two additional fields, 'First (Alternate)' and 'Last (Alternate)', are highlighted with a red box. Other fields include 'Sex', 'DOB', 'Birth place', and 'Father's name'. The 'Contact Information' section includes 'Address 1', 'Address 2', 'City', 'State', 'Zip', 'Country', 'Email', 'Home phone', 'Work phone', and 'Cell phone'. The 'Patient Origin' section includes 'Preferred language', 'Education level', 'Religion', 'Ethnicity', and 'Race'. The 'Family History' section includes a table with columns for 'Relationship', 'Family History', 'Age At Diagnosis', and 'Age At Death'.

Figure 5.1 – Alternate Patient First and Last name fields

To remove this field from view on the patient tab, Service Personnel would need to create a customer access string.

An example would be having the Patients first and last names displayed in a native language, such as Hebrew, and the alternate first and last names displaying the English names (or vice versa)

Patient Search for Hebrew and English Patient Names

With data entered in the First and Last name fields, as well as data entered in the Alternate First and Last name fields we can use the Patient Search window to locate the patient using either of the names.

Upon searching for a patient, the new alternate name data will be shown in the existing alternate name columns. This column will display any historical names as well as the new alternate names (as historical alternate names).

The screenshot shows a 'Patient Search' window with the following search criteria:

- First Name: Robert
- Last Name: Cohen
- Birth Date: dd/MM/yyyy
- Phone #: (empty)
- MRN: (empty)
- Search Other Variations:

Buttons: Search, Reset, New Pt + Apt (dropdown)

First Name	Last Name	Middle Name	Birth Date	MRN	Issuer	Gender	Address	City	State	Home Phone	Mobile Phone	Matching Alternate MRN	Matching Alternate First Name	Matching Alternate Last Name
רוביט	כהן		05/05/1972	26800PE	system	M							Robert	Cohen

Figure 5.2 – Patient Search displaying both Hebrew and English names

In this screen capture the alternate name is the English name. When searching on the English name it displays under that column. The Hebrew name will display in the First and Last name fields.

Capture and Display Patients Fathers Name

In Israel, the father's name is used to reconfirm that the staff has the appropriate patient. The RIS must be able to capture and display the patient's father's name for reception and technologist roles

The field displayed below has been added to the Patient tab.

The screenshot shows a web interface for a patient record. At the top, there is a search bar containing 'Schedule Order: , yossi #26190PE *'. Below this is a navigation bar with tabs: Patient, Patient Notes, Contacts / Demographics, Order, MU, Schedule, Image Request (0), Billing Codes, and Review. The 'Patient' tab is selected. The main content area is titled 'General Information' and contains several input fields: Prefix (dropdown), First (text, value 'yossi'), Last (text), Middle (text), Suffix (dropdown), Sex (dropdown), DOB (text, format 'dd-MM-yyyy'), Birth place (text), and Father's name (text, highlighted with a red border). At the bottom, there are checkboxes for 'Deceased' and 'Claustrophobic'.

Figure 5.3 – Father's Name field on Patient tab

The field is enabled by default. To remove this field from view on the patient tab, Service Personnel would need to create a customer access string.

NOTE: creating custom access strings is new in Build 45. See feature in this document for more information

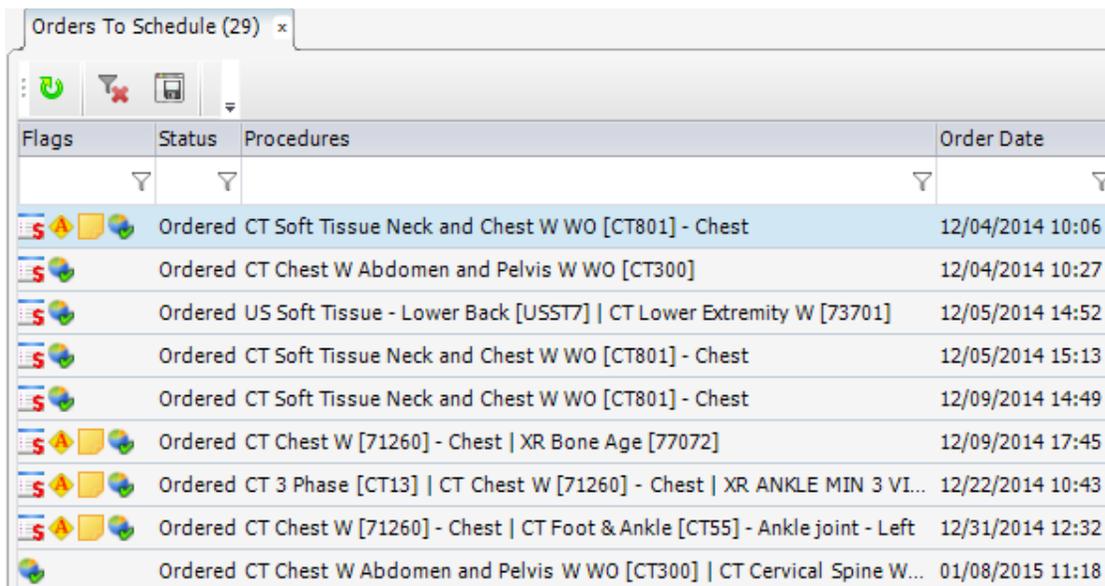
Support Configurable Date Format

eRAD RIS currently utilizes a hardcoded date format of “MM-dd-yyyy” throughout the application. Not all customers want to utilize this format, therefore it needs to be configurable.

A new system configuration setting of “**DateFormat**” has been added and has a default value of “MM-dd-yyyy”.

The DateFormat setting allows the system to be configured to use a specific date format.

For example if the customer would like slashes instead of dashes, DateFormat can be set to “MM/dd/yyyy”. **Please note that only numeric date formats are supported at this time. The format of dd/MMM/yyyy for example is not a valid date format that is supported in eRAD RIS.**



Flags	Status	Procedures	Order Date
S	Ordered	CT Soft Tissue Neck and Chest W WO [CT801] - Chest	12/04/2014 10:06
S	Ordered	CT Chest W Abdomen and Pelvis W WO [CT300]	12/04/2014 10:27
S	Ordered	US Soft Tissue - Lower Back [US5T7] CT Lower Extremity W [73701]	12/05/2014 14:52
S	Ordered	CT Soft Tissue Neck and Chest W WO [CT801] - Chest	12/05/2014 15:13
S	Ordered	CT Soft Tissue Neck and Chest W WO [CT801] - Chest	12/09/2014 14:49
S	Ordered	CT Chest W [71260] - Chest XR Bone Age [77072]	12/09/2014 17:45
S	Ordered	CT 3 Phase [CT13] CT Chest W [71260] - Chest XR ANKLE MIN 3 VI...	12/22/2014 10:43
S	Ordered	CT Chest W [71260] - Chest CT Foot & Ankle [CT55] - Ankle joint - Left	12/31/2014 12:32
	Ordered	CT Chest W Abdomen and Pelvis W WO [CT300] CT Cervical Spine W...	01/08/2015 11:18

Figure 5.4 – Example of date format with slashes instead of dashes on work list

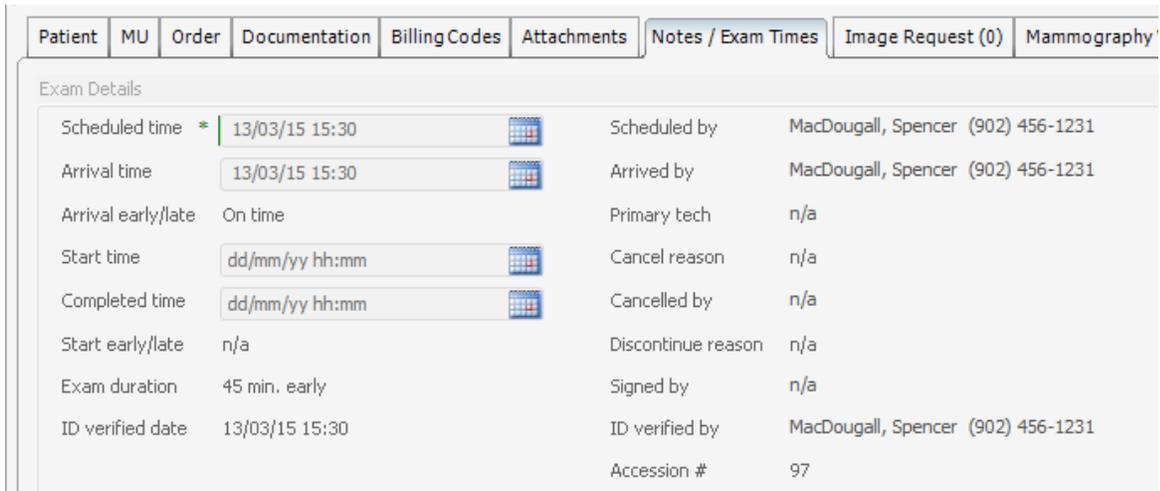


Figure 5.5 – Example of slashes instead of dashes on data window

It is also recommended that the DateFormat configuration value matches the short date format set on the client's workstation. The user will be promoted after login if the values do not match.

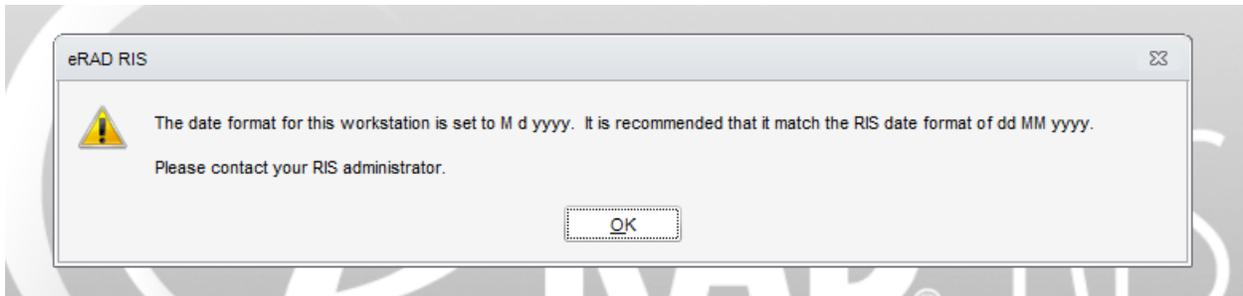


Figure 5.6 – Message on login of conflicting regional date format and system Configuration setting DateFormat

Support 24 Hour Time Format

Not all customers use the 12 hour clock as a standard. Therefore eRAD RIS is also required to display time in a 24 hour format.

A new System Configuration value of “**TimeFormat**” has been added to the system with a default value of h:mm tt. All times that are displayed in the system (data forms, worklists, appointment book, etc.) will be based on this configuration value.

The TimeFormat setting allows the system to be configured to use a specific time format. The default value is “h:mm tt”. If the customer would like times displayed in a 24 hour format, the TimeFormat setting can be changed to “HH:mm”. If the customer wants the 12 hour format but would like to include the leading zero, the TimeFormat setting can be changed to “hh:mm tt”.

Flags	Status	Procedures	Order Date	Referring	First Name	Last Name
	Ordered	CT Foot & Ankle [CT55] - Ankle joint - Left	02-05-2015 15:54	Smith, Alfons	Sheila	Fair
	Ordered	FL Arthrogram Ankle MR [FL 7] - Ankle joint	02-05-2015 15:22	Ali, William	Julia	Bivens
	Ordered	CT Chest W [71260] - Chest	02-04-2015 11:22	Williams, Alexis Jeff		Carter
	Ordered	CT Chest W [71260] - Chest	02-02-2015 15:32	Smith, Alfons	Zack	Smith
	Ordered	CT Chest W [71260] - Chest CT 3 Phase [CT13]	02-02-2015 15:05	Smith, Alfons	Zack	Smith
	Ordered	CT Ankle Arthrogram [CT31] - Ankle joint - Left	02-02-2015 14:44	Smith, Alfons	Zack	Smith
	Ordered	CT Ankle Arthrogram [CT31] - Ankle joint - Left	02-02-2015 12:50	Smith, Alfons	Zack	Smith
	Ordered	CT Chest W [71260] - Chest	02-02-2015 11:45	Williams, Alexis Jeff		Carter
	Ordered	MR Ankle Arthrogram [MR61] - Ankle joint	02-02-2015 11:40	Williams, Alexis Jeff		Carter
	Ordered	MR Ankle Arthrogram [MR61] - Ankle joint	02-02-2015 11:37	Williams, Alexis Jeff		Carter

Figure 5.7 – Work list using 24 hour time format

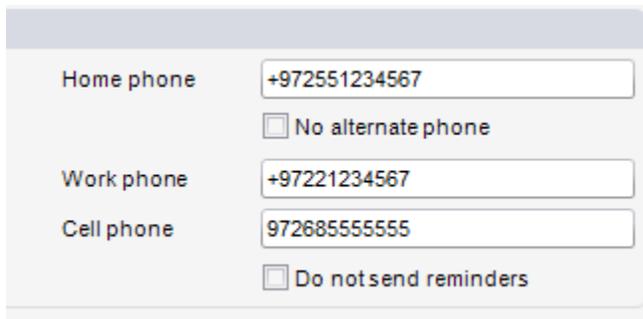
Exam Details			
Scheduled time *	01-28-2015 15:30	Scheduled by	MacDougall, Spencer (902) 456-1231
Arrival time	01-28-2015 15:30	Arrived by	MacDougall, Spencer (902) 456-1231
Arrival early/late	On time	Primary tech	Aiken, Darcy
Start time	02-04-2015 15:28	Cancel Reason	n/a
Completed time	02-04-2015 15:28	Cancelled By	n/a
Start early/late	167 hours 58 minutes late	Discontinue Reason	n/a
Exam duration	10 min. early	Signed by	n/a
		Accession #	27

Figure 5.8 – Data window using 24 hour time format

Support International Phone Numbers

eRAD RIS is designed to use a phone mask format of (###) ###-#### #####. This format is not acceptable for international customers. There is a requirement to allow the system to be configured to bypass the phone number mask.

A New System Configuration setting of “**PhoneNumberFormatDisabled**” with a default of false has been added to eRAD RIS. If the PhoneNumberFormatDisabled is set to true, the system will ignore the phone number mask and allow the user to enter up to 20 numeric characters. The validation that requires a phone number filed to be at least 10 characters also gets removed when the PhoneNumberFormatDisabled is set to true.



The screenshot shows a user profile form with the following fields and values:

Home phone	+972551234567
	<input type="checkbox"/> No alternate phone
Work phone	+97221234567
Cell phone	97268555555
	<input type="checkbox"/> Do not send reminders

Figure 5.9 – Phone number mask removed

Support Metric Height and Weight

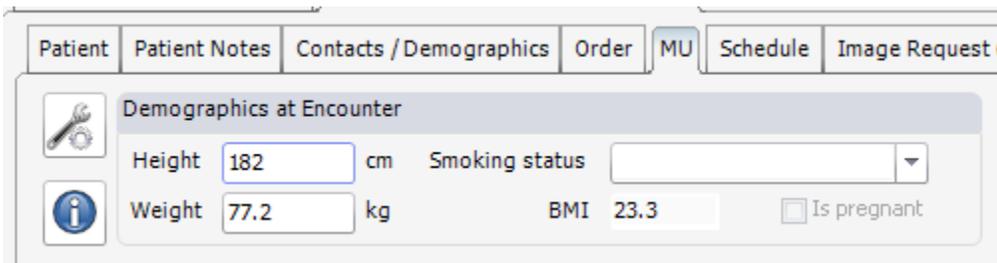
eRAD RIS is currently hardcoded to the US standard of feet and inches for height and pounds for weight. The system must support both metric and imperial height and weight formats.

A new System Configuration setting of “**HeightAndWeightFormat**” has been added with a default value of 1.

HeightAndWeightFormat can be set to 1 for Imperial or 2 for Metric.

1. Imperial (Height - ft in / Weight - lbs)
2. Metric (Height - cm / Weight - kg)

The HeightAndWeightFormat will display the patient demographics at encounter in Imperial or Metric formats.



The screenshot shows a software interface with a navigation bar at the top containing tabs: Patient, Patient Notes, Contacts / Demographics, Order, MU, Schedule, and Image Request. Below the navigation bar is a section titled 'Demographics at Encounter' with a gear icon on the left. The form contains the following fields: Height (182 cm), Weight (77.2 kg), Smoking status (dropdown menu), BMI (23.3), and Is pregnant (checkbox).

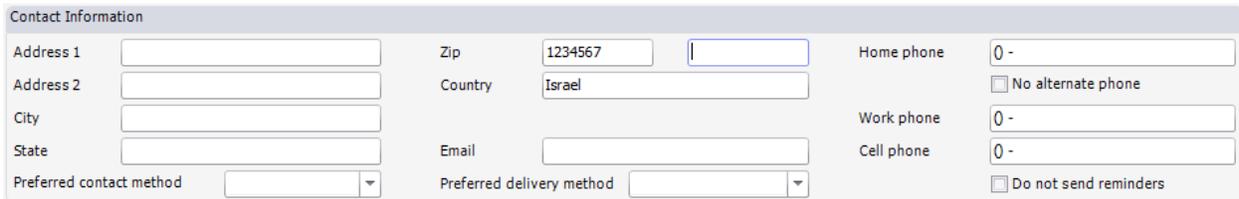
Figure 5.10 – Height and weight displayed in metric

Zip Code (Postal Code) changes

Two new System Configuration settings have been added to allow for different lengths of postal codes.

The first setting of “**ZipCodeCharacterMax**” has been added with a default value of 5. This setting controls the number of characters required for validation.

The second new setting is “**ZipCodeToAddressAutoFill**” which has a default value of True. When set to False, the State and Country fields will not auto-populate.



The screenshot shows a 'Contact Information' form with the following fields and values:

Address 1	<input type="text"/>	Zip	1234567 <input type="text"/>	Home phone	0 - <input type="text"/>
Address 2	<input type="text"/>	Country	Israel		<input type="checkbox"/> No alternate phone
City	<input type="text"/>			Work phone	0 - <input type="text"/>
State	<input type="text"/>	Email	<input type="text"/>	Cell phone	0 - <input type="text"/>
Preferred contact method	<input type="text"/>	Preferred delivery method	<input type="text"/>		<input type="checkbox"/> Do not send reminders

Figure 5.11 – Zip code field allowing more than 5 characters

Limit the Number of Open Patient Tabs via User Groups

A new column has been added to the User Group lookup table. The column of Maximum Open Patient Tabs will determine how many patient tabs are permitted to be opened for a user that belongs to the User Group.

Group Name	Description	Display Order	Maximum Open Tabs	Maximum Open Patient Tabs	Display In Portal Flag	Portal Display Name
Contains:	Contains:	Equals:	Equals:	Equals:	Contains:	Contains:
Click here to add a new row						
MammoTech	Mammo Technician	13	20	1	N	
SchedulingAdmin	Scheduling Admin	8	20	20	N	
Technologist	Technologist	3	20	1	N	
Radiologist	Radiologist	6	45	20	N	
Administrator	Administrator	4	20	20	N	

Figure 5.12 – UserGroup lookup table displaying new column Maximum Open Patient Tabs

If a user attempts to open more than their allowable amount of patient tabs, they will receive a message informing they must close one before they can proceed.

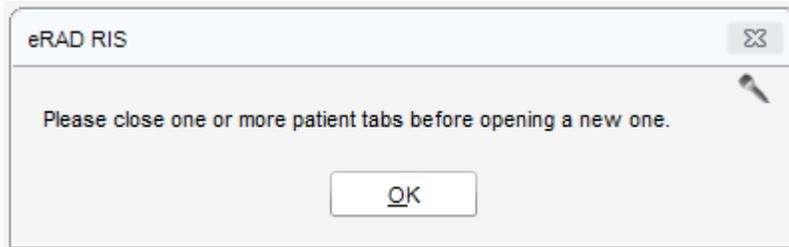


Figure 5.13 – Informative message if attempt to open more than allowed patient tabs

If the user belongs to multiple user groups, the user group with the larger value for Maximum Open Patient Tabs will be used. For example, looking at the User Group figure above, if the user belongs to both the Technologist and Administrator User Groups they will be permitted to have 20 patient tabs open.

Order Level Locking

In Build 42 eRAD RIS introduced Non Order Level Locking. In Build 45 eRAD RIS will again support order level locking.

Order level locking will be controlled by a new system configuration setting of “**OrderLevelLocking**” which has a default of False to maintain our existing screen based strategy or True to lock the entire order

The Radiologist work lists have been modified so that they were no longer looking for locks that end with the word Report. Without this change, the locked by column was always null.

When a user attempts to open a locked order they will be given the option to open in read only mode or simply close. There is also an option to break lock, which is permission based so it can be available to administrators only.

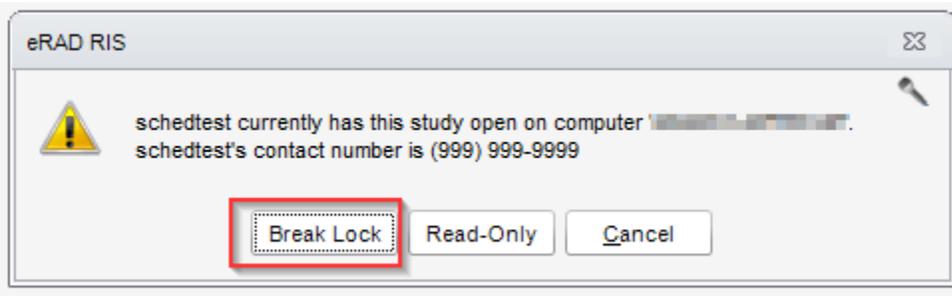


Figure 5.14 – Locking message. The Break Lock button is permission based

Ability to Hide Controls and Data Fields

We have many fields in eRAD RIS which are not relevant to all customers. We have an existing pattern in eRAD RIS for controlling access via access strings. We have included the ability to create custom access strings to show/hide.

This is for the **SERVICE** team only. We have constructed a dynamic access string pattern which will behave in the following manner: Some access strings can now be created by the service team. Based on a predictable known naming convention, the access string will be able to control access to elements without custom code being added to eRAD RIS. At this point, the framework supports 2 patterns – one to control data capture/display elements (ie, fields) and another to control the visibility of an entire tab.

System owned access strings will not be editable in the look up editor, only custom access strings.

Data Fields

For these access strings, the acceptable values are:

- FULL (can read and write)
- DISABLED/READONLY (visible, but greyed-out and cannot be modified)
- NONE (not visible)

We do not implement a true ‘READONLY’ at this time (which would be a non-greyed out control that is not editable). We felt it was not clear to the user that they could not modify the field, as it appears the same as a FULL access field.

Tabs

As mentioned, tabs can also be hidden from view. A custom access string can be created by Service Personnel.

For Tab access strings the following values are acceptable.

- FULL (tab is visible and user can click on it)
- DISABLED/READONLY/NONE (tab is not visible)

Legacy Reports Opening in Microsoft Word Viewer

The system now supports listing a file type in the c_legacy_report table. If the file type is WORD then the system will load the legacy reports in the Microsoft Word Viewer. The files are served to eRAD RIS application from the web service and are saved in a temporary location, similar to existing PDF legacy report functionality.

eRAD RIS will delete the temp file when Microsoft Word Viewer is closed by the user.

If the user leaves the Microsoft Word Viewer open, then when eRAD RIS closes, the viewer will be force killed (this is required to remove the file lock) and the temporary file will be deleted. The Microsoft Word Viewer is read only.

There are two new System Configuration settings for this feature.

“**KillWordViewerBeforeLegacyReport**” with a default value of True. True enables RIS to try to 'kill' or close the Word Viewer before opening legacy report in a new instance of the Word Viewer.

“**KillWordViewerAfterLegacyReport**” with a default value of True. True enables RIS to try to 'kill' or close the Word Viewer after opening legacy report in a new instance of the Word Viewer from the reporting screen.

Support Domain Single Sign On

User will launch RIS with a new command line switch /SSO to invoke single sign on. When a user logs onto their workstation, selecting the eRAD RIS icon from the desktop will automatically log that person in.

This of course only works with Domain users. If the user account created in eRAD RIS and is using eRAD RIS authentication SSO will not work.

There are also a few features within eRAD RIS that doesn't support SSO.

Credential Swap, UI Locking and Logout as they aren't compatible with the SSO model. Also PACS integration will be an issue as we don't have the client's username and password to pass to the PACS server so a user who wishes to launch the PACS viewer will be forced to login the first time.

The user preference for UI locking will be disabled

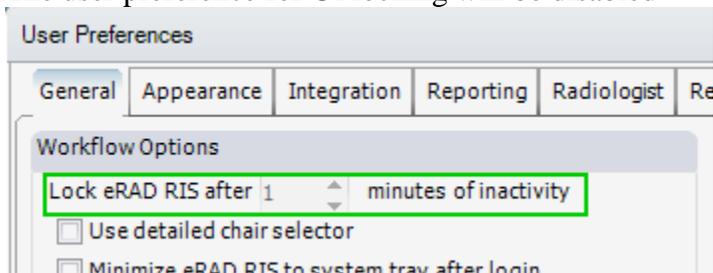


Figure 5.15 – User preference disabled because of Single Sign On

Configurable Client File Storage Paths

In previous versions most files were written to the directory in which the application was running from, which was the users profile directory. With the support of Citrix, we will need to have the ability to write the files configurable.

A new System Configuration setting of “**RISOutputFilePath**” has been added with a default value of %ApplicationStartup%.

RIS now uses this path and then tags it with a folder that matches the current users username and writes output files in that location instead of just in the current start up folder

This value supports a few values that act like environment variables. Here are the available variables you can use instead of an actual path:

%ApplicationData%	= "C:\\Users\\\$user_account\\AppData\\Roaming"
%LocalApplicationData%	= "C:\\Users\\\$user_account\\AppData\\Local"
%CommonApplicationData%	= "C:\\ProgramData"
%MyDocuments%	= "C:\\Users\\\$user_account\\Documents"
%DesktopDirectory%	= "C:\\Users\\\$user_account\\Desktop"
%ApplicationStartup%	= current value AKA RIS's runtime location

The value can also be just a path like “C:\\some\\folder\\location”.

The actual path where the files will be written can have a folder added to it that contains the current logged in username (RIS username). You would add another value to your path: %UserName%.

Let's imagine the current logged in user's username is 'TestUser' and the RISOutputFilePath is set to “C:\\some\\folder\\location%UserName%”. The resulting file location will be “**C:\\some\\folder\\location\\TestUser**”.

RIS will test the path on login. If it cannot write and delete a test file in this location the follow error:

“Error with output file path” + exception message.

Portal Launcher

Customers require integrations with several portals from within RIS. These various portals require us to be able to pass over various pieces of data in the URL as well as to perform validation on whether a given portal is available for a study/order.

Users now have the option from the Patient folder to launch the portal viewer. A new window in the RIS that contains a tab for each configured portal. The viewer automatically passes data regarding the Patient/Study/Order to the portal via the URL. The portal viewer is also available via a Tool window – for the radiologists.

This feature has 3 new System Configuration settings and 2 new Access Strings:

System Config settings

PortalLauncherSessionTimeout – Amount of time in minutes before the Portal Launcher window will close automatically. Default: 20

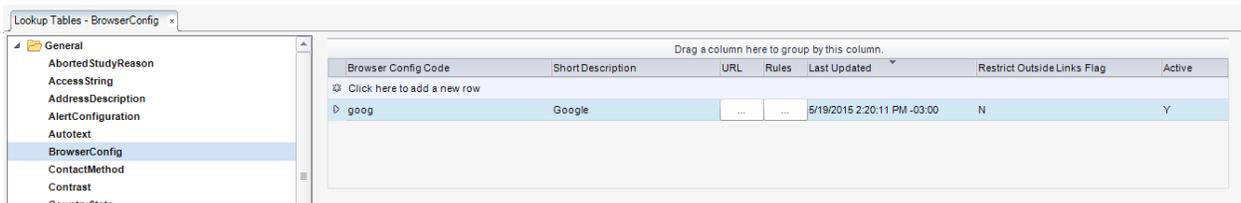
PortalLauncherEnforceTimeoutInReportingScreen - Whether or not any configured timeout will apply when the portal window is open in the reporting screen. Default: True

PortalLauncherTabLocation – Sets location of tabs in portal launcher. Default: Left

Access Strings

Config.LookupEditor.BrowserConfig – Controls access to the BrowserConfig Lookup Editor

Clinical.PortalLauncher – Controls the ability to launch the portal viewer from the patient folder and the radiologist tool windows.



Browser Config Code	ShortDescription	URL	Rules	Last Updated	Restrict OutsideLinks Flag	Active
goog	Google	5/19/2015 2:20:11 PM -03:00	N	Y

Figure 5.16 – BrowserConfig lookup table

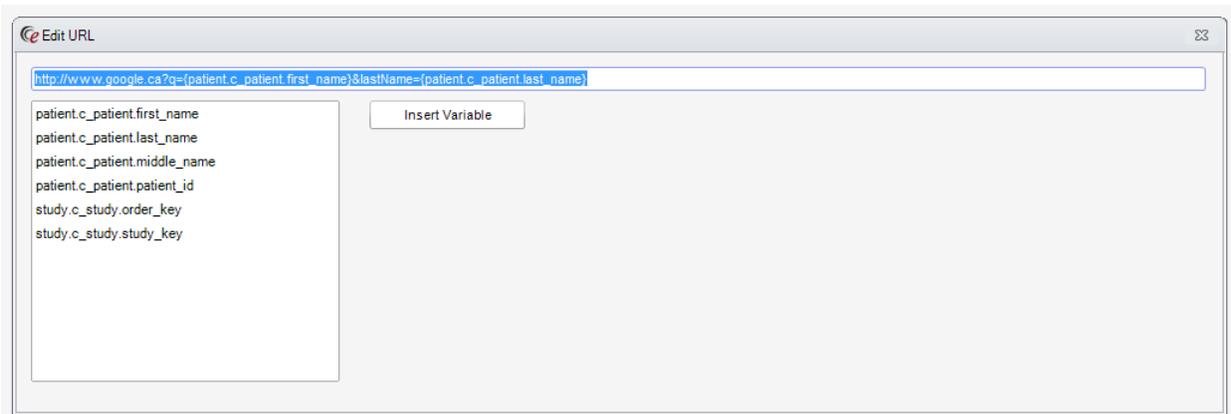


Figure 5.17 – Window opened from URL button

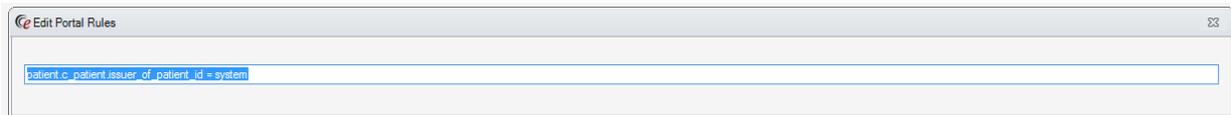
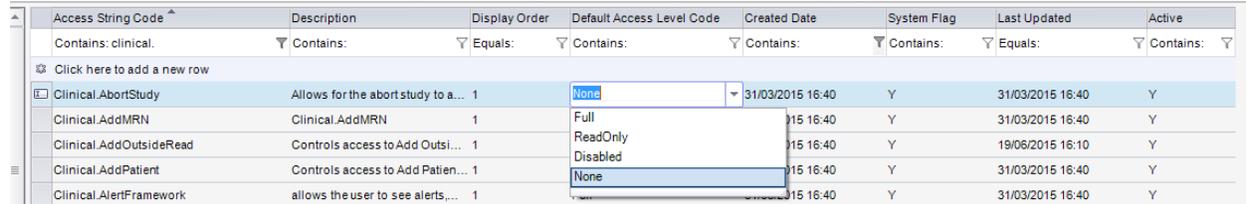


Figure 5.18 – Editor Portal rules window

Configurable Default Value on Access String table

The default level of access on the Access String table has been locked down for quite some time.

In Build 45, the Default Access Level Code is once again available. A user can change the default value of the access string and keep it that way after every upgrade.



Access String Code	Description	Display Order	Default Access Level Code	Created Date	System Flag	Last Updated	Active
Contains: clinical.	Contains:	Equals:	Contains:	Contains:	Contains:	Equals:	Contains:
Click here to add a new row							
Clinical.AbortStudy	Allows for the abort study to a...	1	None	31/03/2015 16:40	Y	31/03/2015 16:40	Y
Clinical.AddMRN	Clinical.AddMRN	1	Full	15 16:40	Y	31/03/2015 16:40	Y
Clinical.AddOutsideRead	Controls access to Add Outsi...	1	ReadOnly	15 16:40	Y	19/06/2015 16:10	Y
Clinical.AddPatient	Controls access to Add Patien...	1	Disabled	15 16:40	Y	31/03/2015 16:40	Y
Clinical.AlertFramework	allows the user to see alerts...	1	None	15 16:40	Y	31/03/2015 16:40	Y

Figure 5.19 – Ability to change the Default Access Level Code value

The ability to change the Default Access Level Code is controlled by the access string “**Config.lookupeditor.AccessString.AllowedToChangeDefaults**” which has a default value of None. If FULL the user can edit the default values for access strings.

Configurable Weekday, Weekend and Start of Week Values

In eRAD RIS today the work week is Monday-Friday, weekends are Saturday and Sunday. The work week starts on Monday. In Israel to support Hebrew localization, the work week starts on Sunday thru Thursday and the weekend is Friday and Saturday. We needed a method to change these values.

Three new system configuration settings have been added to control this behaviour. The days are numbered as such: 0=Sunday, 1=Monday, 2=Tuesday, 3=Wednesday, 4=Thursday, 5=Friday and 6=Saturday

“**WorkWeekDays**” which has a default of 1,2,3,4,5, will determine the days of the work week

“**WeekEndDays**” which has a default of 0,6 will determine the days of the weekend

“**StartOfWeek**” with a default value of 1 will determine the first day of the week.

WorkWeekDays and WeekEndDays will determine how to apply the repeating restrictions and closures in the availability template.

StartOfWeek will determine the first day listed for Time Ranges in the Availability Template

Time Ranges:							
Monday			Tuesday				
Start	End	Reservation	Start	End	Reservation	Start	End
✳ Click here to add a new row			✳ Click here to add a new row			✳ C	
8:00 AM	2:00 PM		8:00 AM	7:00 PM		8:	

Figure 5.20 – StartOfWeek = 1 so Monday is the first day listed

Time Ranges:							
Sunday			Monday				
Start	End	Reservation	Start	End	Reservation	Start	End
✳ Click here to add a new row			✳ Click here to add a new row			✳ Click	
8:00 AM	5:00 PM		8:00 AM	2:00 PM		8:00	

Figure 5.21 – StartOfWeek = 0 so Sunday is the first day listed

It will also determine the first day listed in the Day and time search options on the Schedule tab

The screenshot shows a 'Day and time options' form. Under 'Day and time options', there is a list of days from Monday to Sunday, each with a checked checkbox. 'Monday' is highlighted in blue. To the right of the list, the text 'Monday' is displayed. Below the list, the text 'Earliest' is followed by a text box containing '07:00'. Below that, the text 'Latest' is followed by a text box containing '22:00'. Under the 'Search Range' section, 'Start Date' is '29/06/2015' and 'End Date' is '05/07/2015'. At the bottom, there are left and right arrow buttons, a 'Search' button, and another right arrow button.

Figure 5.22 – StartOfWeek = 1 Monday is the first day listed

The screenshot shows a 'Day and time options' form. Under 'Day and time options', there is a list of days from Sunday to Saturday, each with a checked checkbox. 'Sunday' is highlighted in blue. To the right of the list, the text 'Sunday' is displayed. Below the list, the text 'Earliest' is followed by a text box containing '07:00'. Below that, the text 'Latest' is followed by a text box containing '22:00'. Under the 'Search Range' section, 'Start Date' is '29/06/2015' and 'End Date' is '05/07/2015'. At the bottom, there are left and right arrow buttons, a 'Search' button, and another right arrow button.

Figure 5.23 – StartOfWeek = 0 so Sunday is the first day listed

Resource Type Changes in Personnel Editor

A new lookup table titled AdditionalResource has been added under the User folder on the Administration>Configure menu. The AdditionalResource access is controlled by new access string of “**Config.LookupEditor.AdditionalResource**” that has a default access level of Full.

The lookup table columns are Additional Resource Code, Description, Display Order, Last Updated and Active. The codes added to this table will then be available in a new field in the Personnel table under the Resource tab. This field is a multi-type ahead control that allows the person to belong to multiple resource groups.

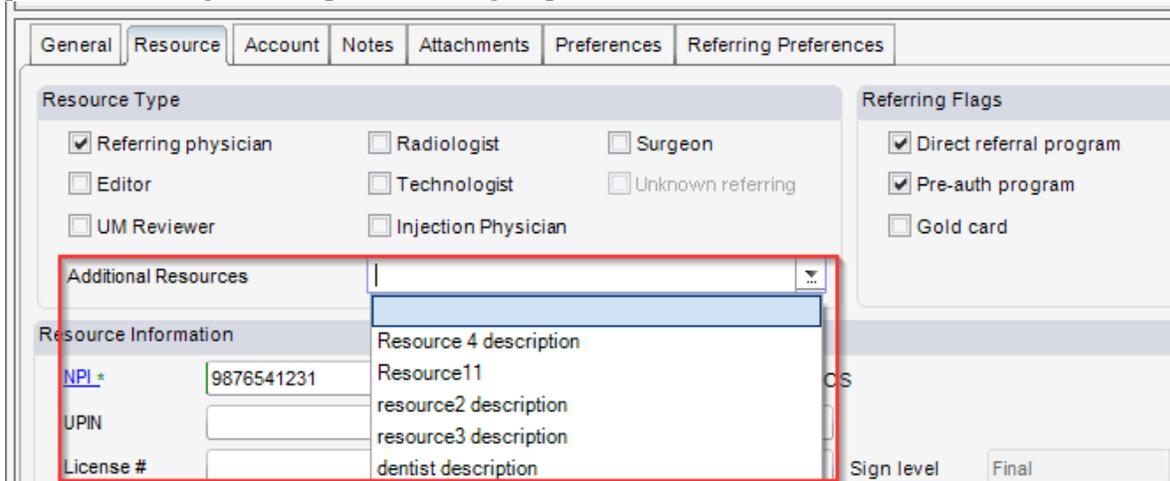


Figure 5.24 – Additional Resources field in Personnel Editor

Also a new Resource Type has been added. The Injection Physician checkbox option is available.



Figure 5.25 – Injection Physician Resources field in Personnel Editor

This will also be a Type option in the Internal Person Search window and display in the Resource Details column.

Patient Search – Search by License

The patient search window now allows the user to search by the Physician License #.

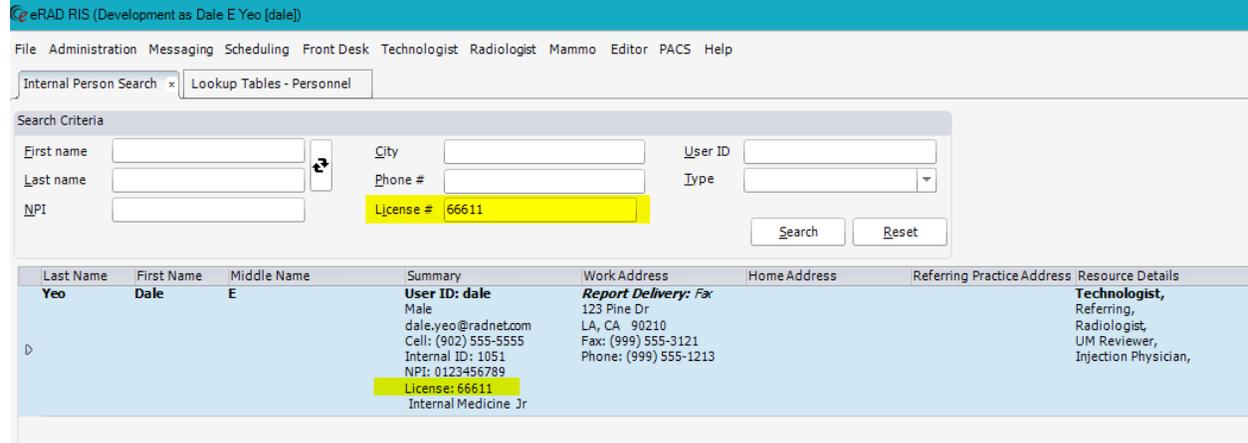


Figure 5.26 – License # search option

The License field being referenced in the search is based on the highlighted field in the screenshot below from the personnel editor.

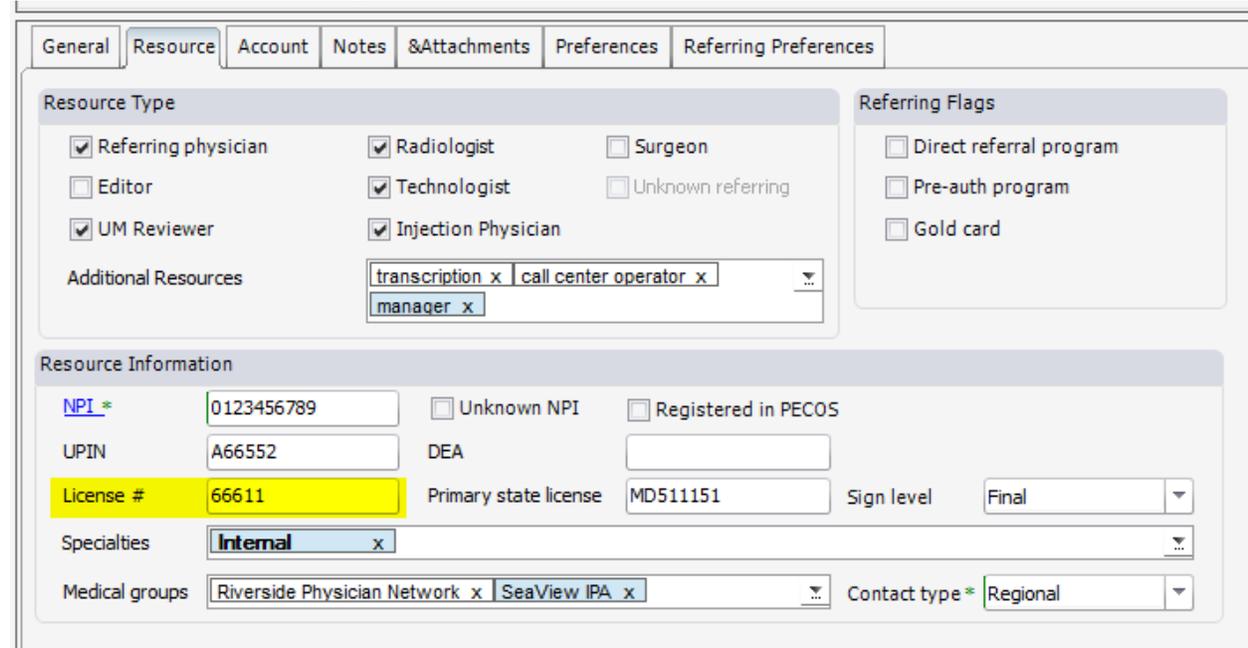


Figure 5.27 – License # field in Personnel Editor

Personnel Editor Message on Referring Address

Although the screen will not delete an address that is already in use, to be standard it should prompt "Are you sure you want to remove this address" before proceeding.

A confirmation message "Are you sure you want to remove this address?" has been added when the Remove button is selected with an address selected in the Contact Information section of the General tab.

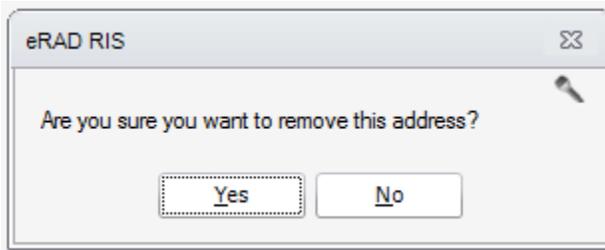


Figure 5.28 – Confirmation message choosing to remove address from Personnel Editor.

Site Lookup Table Changes

In previous versions the Organization>Site window has been refactored. The look and feel is now the same as the Practice window.

It has the same functionality as before, except we now have data grouped in a tab page as shown in the following:

The screenshot shows a software window titled "Add/Edit Site". It features a "Details" section with various input fields and checkboxes. The "Address" section is currently selected, showing a tabbed interface with "Address" as the active tab. The "Address" tab contains several input fields for site information.

Field	Value
Site code *	EL
Description*	Eldersburg
Phone #	4434367100
Fax #	4434367132
Discproducer path	V:\
PACS child server	PEI Child PACS 2
Site notes	From Baltimore area- From 695- North take 795-North. Stay on 795 towards the Westminster Route 140-West split. Take exit to Route 91 and make a left at the intersection. This road leads to a dead end at Route 32. Make a left and
Report template path	
Availability template	93
Mammography tracking enabled	<input checked="" type="checkbox"/>
Disable BI_RADS controls	<input type="checkbox"/>
Outside read location	<input type="checkbox"/>
Insurance required	<input type="checkbox"/>
MU required	<input checked="" type="checkbox"/>
Address 1	1430 Progress Way
Address 2	Suite 108
City	Eldersburg
State	MD
Zip code	21784
Country	

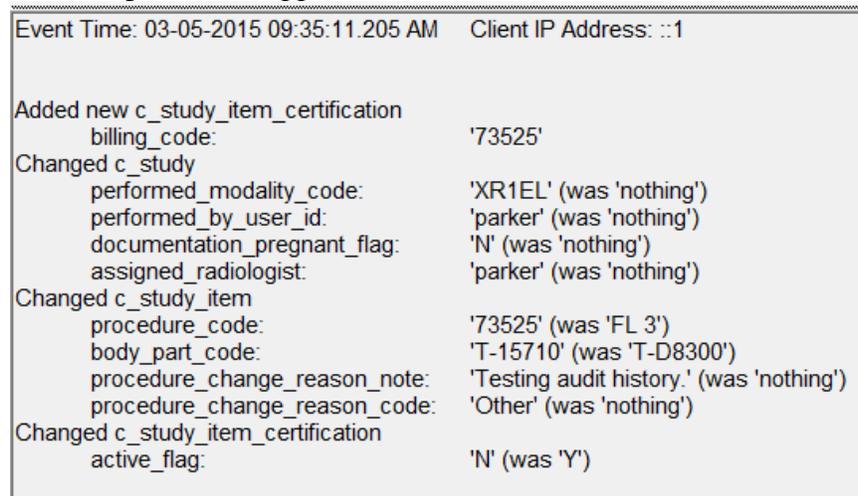
Figure 5.29 – New look Site window

Audit History Updates

Additional logging will be displayed in the Audit History. All added and changed values for the following tables and fields.

c_order_item.procedure_code
c_study.scheduled_modality_code
c_study.scheduled_start_date
c_study_item.procedure_code
c_study_item_certification.billing_code

An example of the logged events



Event Time: 03-05-2015 09:35:11.205 AM		Client IP Address: ::1	
Added new c_study_item_certification			
billing_code:		'73525'	
Changed c_study			
performed_modality_code:		'XR1EL' (was 'nothing')	
performed_by_user_id:		'parker' (was 'nothing')	
documentation_pregnant_flag:		'N' (was 'nothing')	
assigned_radiologist:		'parker' (was 'nothing')	
Changed c_study_item			
procedure_code:		'73525' (was 'FL 3')	
body_part_code:		'T-15710' (was 'T-D8300')	
procedure_change_reason_note:		'Testing audit history.' (was 'nothing')	
procedure_change_reason_code:		'Other' (was 'nothing')	
Changed c_study_item_certification			
active_flag:		'N' (was 'Y')	

Figure 5.30 – Audit history additional logging events

The splitter bar between the audit event list and the details of the event will now remember the last position the user placed it. Looking at the screenshot below you can see the splitter bar has been raised from its initial position. The next time this user opens the Audit History window the splitter bar will be in the same position, saving the user time to adjust.

Filters
 Patient
 Order
 Study
 Include retrievals

Date	Action	Description	User
Equals: ▾	Contains: ▾	Contains: ▾	Contains: ▾
23/06/2015 10:39	Patient Merged	Patient ID: 26639PE merged into Patient ID: 26641PE	Noye, Dar
23/06/2015 10:32	Study scheduled	Study updated	Noye, Dar
23/06/2015 10:32	Study scheduled	Order updated	Noye, Dar
23/06/2015 10:32	Study scheduled	Visit updated	Noye, Dar
23/06/2015 10:32	Study scheduled	Patient updated	Noye, Dar
23/06/2015 10:30	Study scheduled	Patient updated	Noye, Dar

Event Time: 23/06/2015 10:32:16.530 Client IP Address: 10.100.16.181

Added new c_study
 scheduled_modality_code: 'XR1EL'
 scheduled_start_date: '6/23/2015 10:35:00 AM -03:00'

Added new c_study_item
 procedure_code: '73070'

Added new c_study_item_certification
 billing_code: '73070'

Figure 5.31 – Splitter Bar keeps last position in Audit History window.

Audit History Logging and Retrieval of Lookup Tables

We have added an Audit History context menu option from the Administration->Configuration screen. An authorized user can now right click on a lookup table (e.g. SystemConfig) and then choose Audit History and see a list of all of the audited changes that were made. This is controlled by the access string “**Config.LookupEditor.AuditHistory**” which has a default of None.

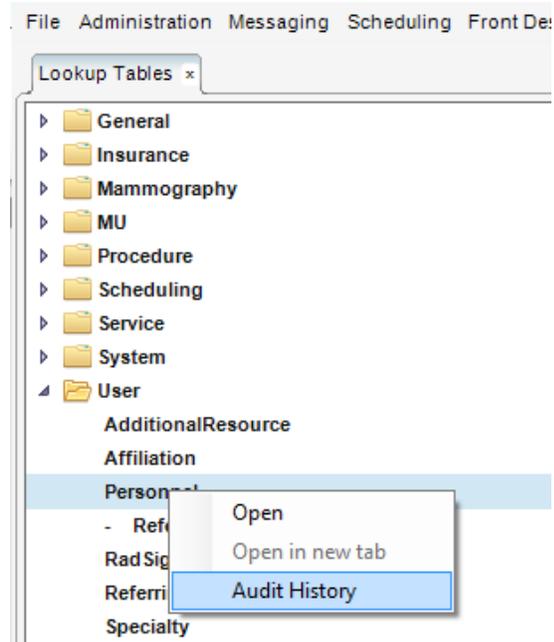


Figure 5.32 – Audit History on Lookup Table

The Audit History shows an ordered list of all changes that were made in a specific date range (including the date and the user ID), and when the user clicks an entry on the list, the bottom portion of the screen will display a list of the rows that were modified (added, deleted, or changed) including the before and after versions of the information in the case of modified rows.

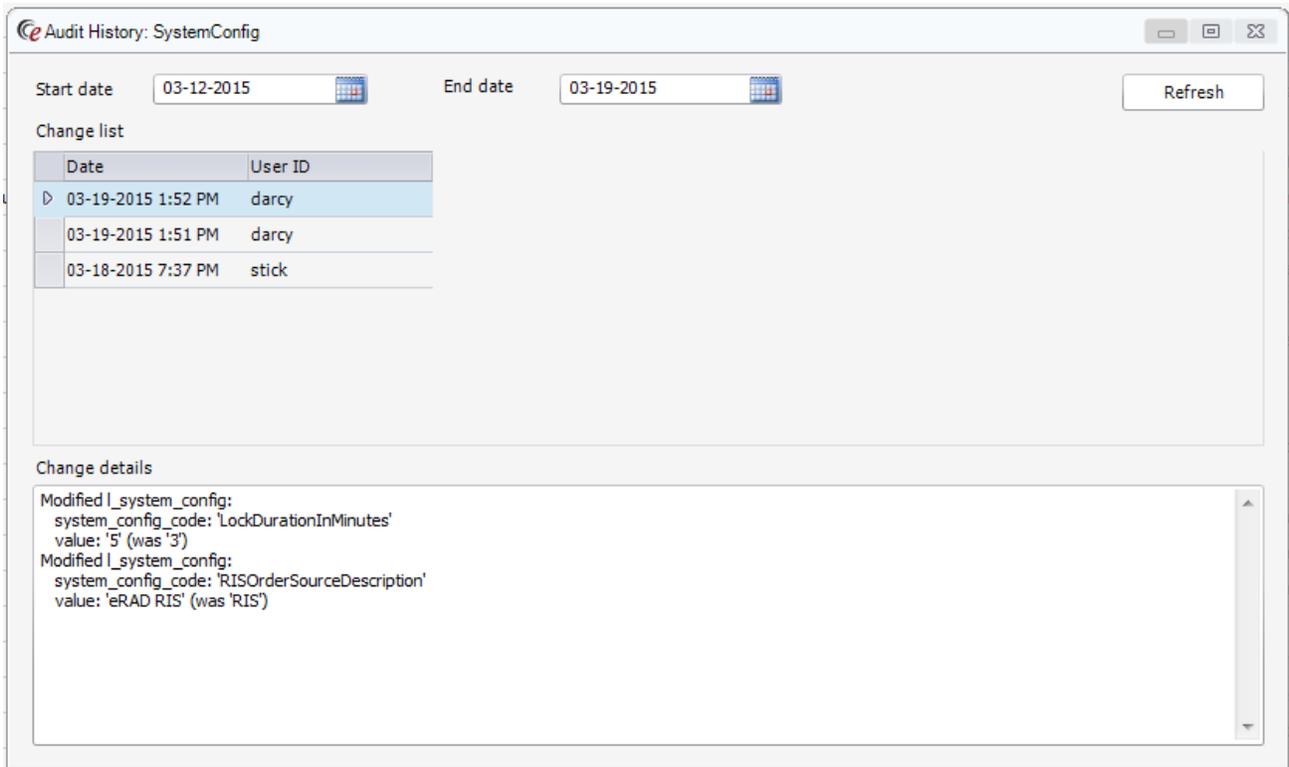


Figure 5.33 – Audit History showing SystemConfig changes

Any modified row will show the row's primary key identifier. Any rows that include a user, person, or user group identifier should also include additional information to clarify which user, person or group is being described.

Required Fields Configurability

A new lookup table has been added under the Service folder of the Lookup tables directory. This new lookups access is controlled by access string Config.LookupEditor.ValidationRules that has a default access level of None. As the parent folder suggests, the validation rules should be applied by Service Personnel.

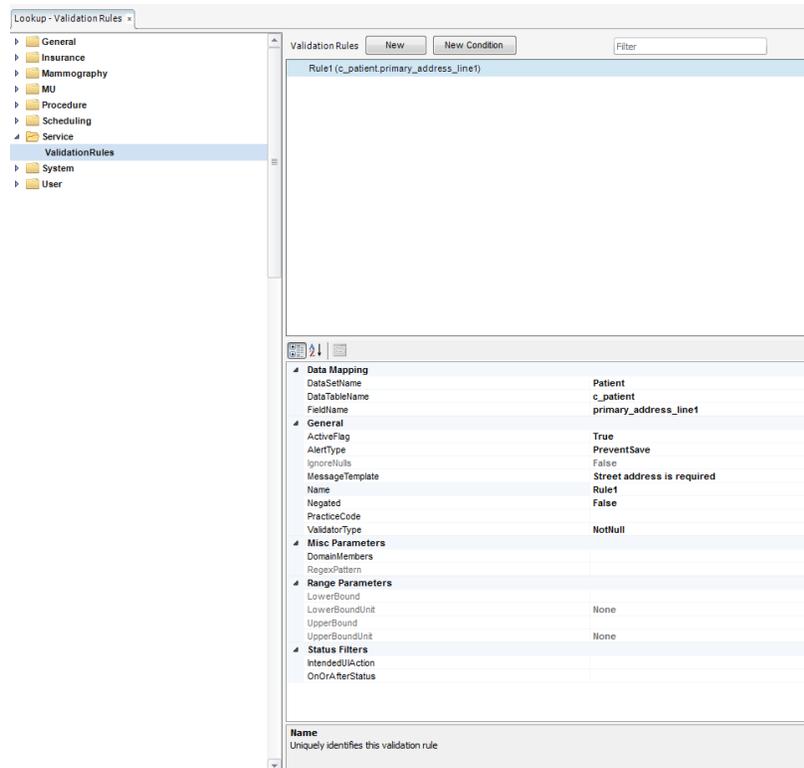


Figure 5.34 – ValidationRules lookup table

The topmost portion of the editor provides a “New” button for creating new rules, a “New Condition” button that allows conditional logic to be attached to a rule (e.g. require e-mail address ONLY if preferred delivery method is e-mail), and a filter for searching through the existing rules by name or table/fieldname.

To indicate a field is required, launch the validation rules editor and follow the steps below:

1. Click the “New” button to create a new rule. This will create a new row in the top level panel with a generic name (e.g. Rule2), and the bottom portion of the screen will display a grid of properties that allow the rule to be configured.

2. Under the “Data Mapping” category, use the drop down boxes to set the DataSet name, DataTableName, and FieldName to indicate which field should be required (e.g. DataSet: Patient, DataTable: c_patient, FieldName: primary_address_line1)
3. Optionally enter a practice, intended UI Action (these correspond to actions in RIS like UI_PatientArrived), and/or OnOrAfterStatus and then Save the changes.

Note – in order for the RIS client to begin enforcing the new validation rules, you must either log out of RIS or choose Help -> Refresh Configuration.

Note that when a screen is loaded that has controls mapped to fields that are required; they should have a red bar painted on the margin of the control to indicate that they are mandatory.



Figure 5.35 – Address 1 field is now required based on a rule created

Validation Rule Properties

Data Mapping Properties

1. DataSetName – identifies the dataset that contains the table/column to be validated. The editor currently provides a drop down list with the following values: Patient, Visit, Order, and Study. This field is required for all validation rules
2. DataTableName – identifies the table that contains the column to be validated. The editor provides a list of all tables in the DataSet with the name specified in “DataSetName”. This field is required for all validation rules
3. FieldName – identifies the column to be validated. This field is required for all validation rules.

General Mapping Properties

1. ActiveFlag – identifies whether this rule is enabled. A rule or condition with ActiveFlag = False will be ignored by the validation framework. This field defaults to true.
2. AlertType – Specifies the result of the validation. The editor has a dropdown list that currently contains two values: Warning, or PreventSave. The evaluation of the rules is the same in either case, but the failure to pass validation is handled differently. As the name suggests, PreventSave is a hard-stop that will prevent the user from proceeding until the data is fixed. A warning will simply display a message to the user to draw their

attention to a potential problem. The warning will only be displayed one time for the lifetime of the screen/data the user has open.

3. IgnoreNulls – indicates whether the validation rule should bypass fields that are null. E.g. we may want a rule that will allow null for an e-mail address, but if one is provided, we should verify that it matches a specific pattern. This defaults to false for a “NotNull” ValidatorType but true for all others.
4. MessageTemplate – the message that will be displayed if validation fails. Note that this message will not be used for “NotNull” validators, the Required Fields framework displays its own message e.g. “Address 1. Is required”. Note that MessageTemplate does not apply to “Conditions”, the parent validation rule’s MessageTemplate will be used instead. If no MessageTemplate is specified, the defaults provided by the Enterprise Library will be used (this may not be desirable). If the message template includes “{0}”, the “{0}” will be replaced with the value that was validated.
5. Name – unique identifier for a validation rule, the value entered is presented in the top panel of the screen and is searchable using the Filter control. The editor will provide a default value e.g. Rule1. This field is required.
6. Negated – if true, this indicates that the rule should prevent matching values e.g. if a DomainValidator is used with DomainMembers {“a”, “b”, “c”}, then the rule will only allow values of “a”, “b”, or “c”. If the Negated property is set to true, in this case the values of “a”, “b”, and “c” would all be unacceptable.
7. PracticeCode – optionally identifies the practice to which the rule applies. If not specified the rule will apply to all practices (this is the default). If the current exam/patient data is associated with a particular practice, we will filter based on that practice. When a screen opens without exam context (e.g. New Patient), we will apply the rules based on the current practice indicated by the “OrgPicker” in RIS.
8. ValidatorType - the following types of Validators are now supported:
 - a. NotNull – indicates that the field is required
 - b. RangeValidator – indicates that the field should fall within the numeric range specified
 - c. DomainValidator – indicates that the field should belong to a list of values (e.g. “Baby”, “Toddler”, “Child”)
 - d. StringLengthValidator – indicates that the fields should be alphanumeric text with a length between a specified range
 - e. RegexValidator – indicates that the fields should match a regular expression pattern, e.g. `\b[A-Z0-9._%+-]+@[A-Z0-9.-]+\.[A-Z]{2,4}\b` is an e-

mail address DateTimeRangeValidator – indicates that the fields should fall within a specific range e.g. 01/01/1970 – 01/01/1999. Note that we are using a case insensitive version of the RegexValidator.

- f. DateTimeRangeValidator – indicates that the fields should fall within a specific range e.g. 01/01/1970 – 01/01/1999
- g. RelativeDateTimeValidator – indicates that the fields should fall within a specified range relative to the current date/time e.g a birth date could have a lower bound of -120 years and an upper bound of -18 years to enforce the rule that a patient had to be at least 18 years old

Misc Parameters

- 1. DomainMembers – used to specify a list of acceptable values. If Negated is true these values will be prohibited instead. This is required for a DomainValidator.
- 2. RegexPattern – Identifies the regular expression to be used for a RegexValidator. This is required for a RegexValidator.

Range Parameters

LowerBound – Identifies the minimum value in the acceptable range. This could be a numeric value in the case of a RangeValidator or StringLengthValidator, but must be a DateTime in the case of a DateTimeRangeValidator or RelativeDateTimeValidator. This field is required for a RangeValidator, a StringLengthValidator, a DateTimeRangeValidator, or a RelativeDateTimeValidator.

UpperBound – Identifies the maximum value in the acceptable range. See LowerBound for additional notes.

LowerBoundUnit – Identifies the unit of time for the lower bound (e.g. second, minute, hour, day, year). This is required for a RelativeDateTimeValidator.

UpperBoundUnit – Identifies the unit of time for the upper bound (e.g. second, minute, hour, day, year). This is required for a RelativeDateTimeValidator.

Status Filters

IntendedUIAction – limits the rule so that it only applies to a particular action (e.g. UI_PatientArrived). The default IntendedUIAction is UI_StudyUpdated, but several screens have been updated with logic to change the IntendedUIAction when the user clicks a status type button (e.g. CheckingIn, Arrive, Start, Complete, etc). Note that if a rule was configured to require a value when the exam is being checked in, there is nothing that would prevent the user from removing the value afterwards when arriving the patient. This field is optional; a blank value will mean that the validation should be applied to all statuses.

OnOrAfterStatus – limits the rule so that it only applies once an exam hits a particular status. There is a natural ordering applied to statuses so if a field is required OnOrAfterStatus “Arrived”, it will also be required by the technologist.

Conditions

When a rule is selected, a condition can be added so that a validation failure will not be enforced unless all the other conditions tied to that rule are true. To add a condition, click on a rule and then click the “New Condition” button, a condition can then be configured in the same manner as a regular rule (note that the MessageTemplate for a condition is ignored). A condition is nested underneath its “parent” rule on the top panel of the editor and its name is prefixed with “Condition – “

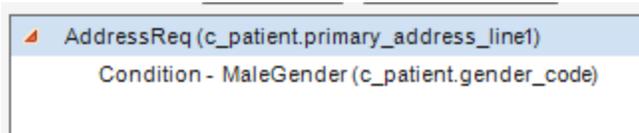


Figure 5.36 – Example of Condition

Conditions may be configured to look at other rows in the same study container regardless of which dataset they belong to.

Warnings

Rules with an alert type of Warning may be useful for building functionality similar to the Alert framework. Rules configured with the Alert framework are potentially more precise but may require a new build of RIS in order to provide new alert types. Rules configured with the ValidationRules framework are dynamic and can be created/configured without a new release of RIS.

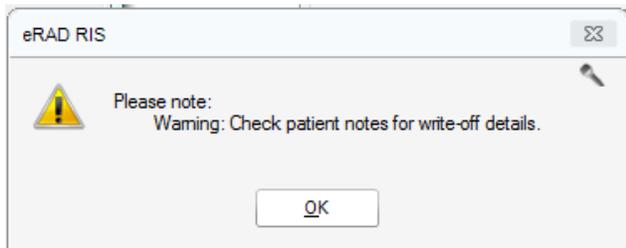


Figure 5.37 – Warning message created

Validation Rules

▸ AddressReq(c_patient.primary_address_line1)
 WriteOffAlert(c_patient.notes)

▲ Data Mapping	
DataSetName	Patient
DataTableName	c_patient
FieldName	notes
▲ General	
ActiveFlag	True
AlertType	Warning
IgnoreNulls	False
MessageTemplate	Check patient notes for write-off details
Name	WriteOffAlert
Negated	True
PracticeCode	
ValidatorType	RegexValidator
▲ Misc Parameters	
DomainMembers	
RegexPattern	write.off
▲ Range Parameters	
LowerBound	
LowerBoundUnit	None
UpperBound	
UpperBoundUnit	None
▲ Status Filters	
IntendedUIAction	
OnOrAfterStatus	

Figure 5.38 – Validation Rules

Visit Number Added to Work Lists

Visit number now shows up as the last column in the worklists for Receptionists, Technologists and Transcriptionists. It appears near the center of the Radiologist worklists as these add extra columns for each worklist beyond the basic set.

Issuer of Ext. Order #	Due Time	Calculated Time Severity	Last Contact	Last Contact Type	Visit #
Overdue 1... None					2

Figure 5.39 – Visit column added to work lists

Cancel Reason Code Added to Orders to Schedule Work List

The column of Cancel Reason has been added to the Orders to Schedule work list.

Order Type	Next Follow Up	Next FollowUp Type	Birth Date	Abort Reason	Cancel Reason
			01-01-1980		No Show
			01-01-1980		
			01-01-1980		

Figure 5.40 – Cancel Reason on Orders to Schedule work list

Referring Doctor Column Added to Work Lists

The Closed Room Reschedule and Confirmation work lists now have the Referring Doctor column added.

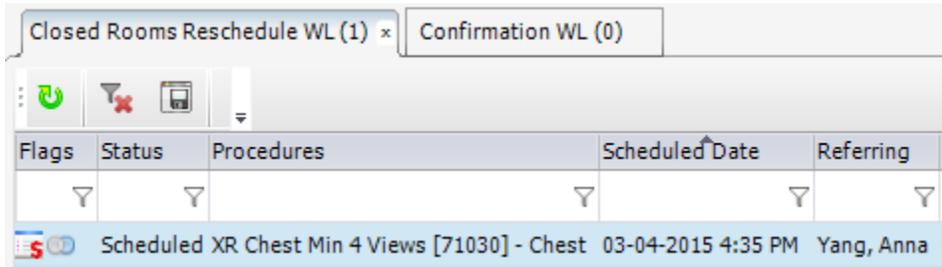


Figure 5.41 – Referring column

Order Number Added to Patient Folder Work List

The Patient Folder WL now has the Order # column.

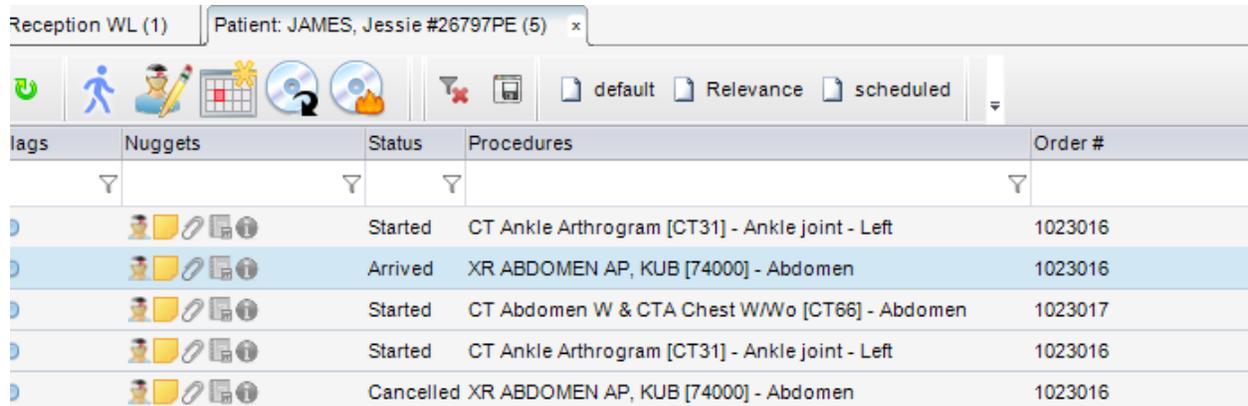


Figure 5.42 – Order # column on Patient Folder

Support Elapsed Time for Contrast on Work List

The ProcedureCode lookup table has been enhanced to include an Oral Contrast Duration field. This represents the amount of time in minutes the oral contrast must be administered before the procedure is performed. This field is numeric and defaults to a value of 0.

Procedure Code	Description	Oral Contrast Duration	Body Part Code	Laterality
Contains:	Contains:	No filter:	Contains:	Contains:
Click here to add a new row				
70140	שדג נעע	30	T-D1100 (Head)	
CT13	שדג כעי חל	0		
RD6	XR Wrist Min 3 Views, Bilat	0	T-D8600 (Wrist) Bila	
73110	XR WRIST MIN 3 VIEWS	0	T-D8600 (Wrist)	
RD22	XR Wrist 2 Views, Bilat	0	T-D8600 (Wrist) Bila	
73100	XR Wrist 2 Views	0	T-D8600 (Wrist)	

Figure 5.43 – Oral Contrast Duration column added to procedure code table

A Contrast Timer column has been added to the Technologist WL. It counts down the number of minutes since the contrast has been consumed by the patient.

On the context menu of the Technologist WL the “Start Contrast Timer” and “Stop Contrast Timer” context menu items have been added. Access to these options on the context menu are controlled by the access string “**Clinical.ContrastTimer**” which has a default of None.

Flags	Status	Procedures	Scheduled Date	Referring	Sedation	First Name	Last Name	Patient Name	MRN	room	Accession #	Contrast Timer	ST
	Arrived	MR Ankle Arthrogram [MR...	04/01/2015 13:55	Smith, Colton		Myra	Jones	Jones, Myra	66	MR1LU 116			
	Arrived	CT 3 Phase [CT13] - Abdo...	04/01/2015 14:00	andy		Randy	Test	Test, Randy	117	CT1LU 114		-11	
	Arrived	CT Abdomen W [74160] - ...	04/01/2015 13:00	on		Ron	Hexall	Hexall, Ron	12	CT1LU 113		-2	
	Arrived	CT Chest W [71260] - Chest	04/01/2015 13:00	Jeff		Jeff	Carter	Carter, Jeff	4	CT1LU 112		4	
	Arrived	CT Ankle Arthrogram [CT3...	04/01/2015 14:00	T		Test	Test, IVT	Test, IVT	50	CT1LU 115		4	

Figure 5.44 – Start Contrast Timer in context menu

If the contrast timer has been started, the system will take the oral contrast duration assigned to the procedure code from the study and begin counting the minutes down. The user will have the ability to stop the contrast timer which will basically remove the value from the Technologist

WL. Selecting start contrast timer again will start the contrast timer from the oral contrast duration.

If the procedure code for the selected study does not have an oral contrast duration greater than zero, the “Start Contrast Timer” menu item will not be available to the user.

The eRAD RIS service team have the ability to add custom colors to the Technologist WL as a visual indicator for the Contrast Timer. For example, the Conditional Formatting Rules Manager can be setup with the following and then saved as a worklist view:

- Set the RowForeColor to Green if the Contrast Timer is > 10 minutes.
- Set the RowForeColor to Orange if the Contrast Timer is <= 10 and >=1.
- Set the RowForeColor to Red if the Contrast Timer is <= 0.

Flags	Status	Procedures	Scheduled Date	Referring	Sedation	First Name	Last Name	Patient Name	MRN	room	Accession #	Contrast Timer	STAT Read
		Arrived MR Ankle Arthrogram [MR...	04/01/2015 13:55	Smith, Carlton6		Myra	Jones	Jones, Myra	66	MR1LU	116		
		Arrived CT 3 Phase [CT13] - Abdo...	04/01/2015 14:15	Acevedo, Gina		Randy	Test	Test, Randy	117	CT1LU	114	-1	
		Arrived CT Abdomen W [74160] - ...	04/01/2015 13:45	Aguirre, Jamal5		Ron	Hextall	Hextall, Ron	12	CT1LU	113	8	
		Arrived CT Chest W [71260] - Chest	04/01/2015 13:00	Williams, Alexis		Jeff	Carter	Carter, Jeff	4	CT1LU	112	14	
		Arrived CT Ankle Arthrogram [CT3...	04/01/2015 14:45	Smith, Alfons		IVT	Test	Test, IVT	50	CT1LU	115	14	

Figure 5.45 – Conditional Formatting of Technologist WL using CellBackColor

Flags	Status	Procedures	Scheduled Date	Referring	Sedation	First Name	Last Name	Patient Name	MRN	room	Accession #	Contrast Timer	STAT Read
		Arrived MR Ankle Arthrogram [MR...	04/01/2015 13:55	Smith, Carlton6		Myra	Jones	Jones, Myra	66	MR1LU	116		
		Arrived CT 3 Phase [CT13] - Abdo...	04/01/2015 14:15	Acevedo, Gina		Randy	Test	Test, Randy	117	CT1LU	114	-1	
		Arrived CT Abdomen W [74160] - ...	04/01/2015 13:45	Aguirre, Jamal5		Ron	Hextall	Hextall, Ron	12	CT1LU	113	8	
		Arrived CT Chest W [71260] - Chest	04/01/2015 13:00	Williams, Alexis		Jeff	Carter	Carter, Jeff	4	CT1LU	112	14	
		Arrived CT Ankle Arthrogram [CT3...	04/01/2015 14:45	Smith, Alfons		IVT	Test	Test, IVT	50	CT1LU	115	14	

Figure 5.46 – Conditional Formatting of Technologist WL using RowForeColor

Technologist – Verify Patient ID

A “Technologist verified ID” checkbox has been added to the documentation tab of the Perform Exam window.

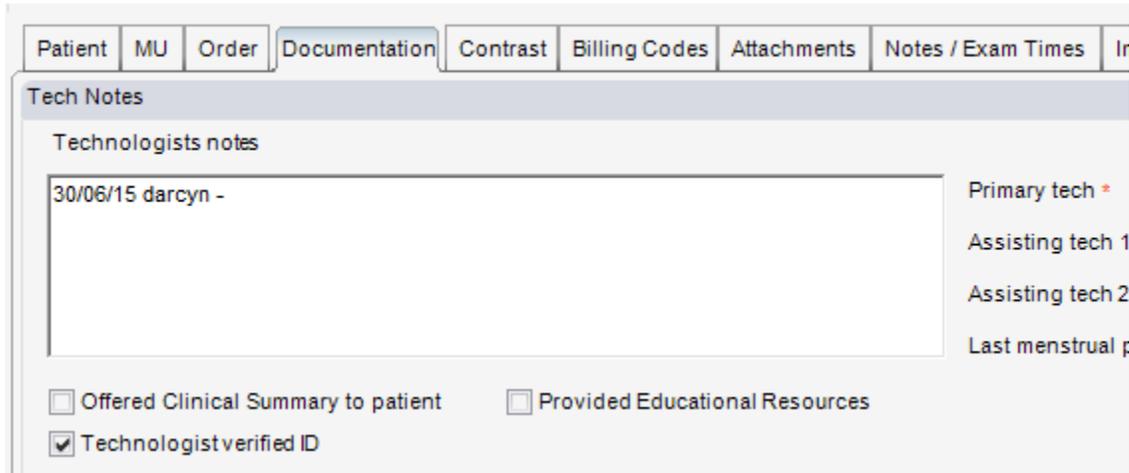


Figure 5.47 – Technologist verified ID check box

Once the technologist verifies the patient by checking the Technologist verified ID checkbox, the “ID verified date” and “ID verified by” labels are automatically updated on the Notes / Exam Times tab.

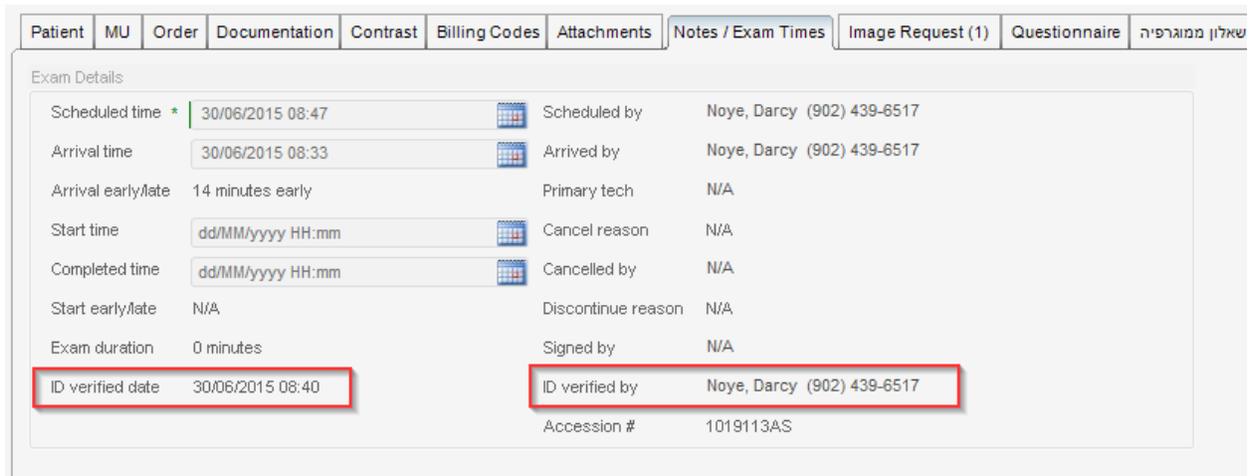


Figure 5.48 – ID verified date and ID verified by fields added to Notes/Exam Times tab

Contrast Enhancements and Injection Doctor Workflow

The contrast fields that were once on the Documentation tab have been given their own tab. The Contrast tab will contain the Contrast and Sedation data panes as well as the new Contrast Injection Details data pane.

Name	Amount	Unit	Vials
contrast brand X	47	cc	1
paint it black	4	mg	1

Name	Amount	Unit
sedative 1	250	mcg
sedative 2	5000	cc

Contrast Injection Details

ID verified (injector)

Injection signed

Injection signed by: Yeo, Dale (902) 555-5555

Injection signed date: 04-30-2015 1:17 PM

Figure 5.49 – Contrast tab of Perform Exam window

Once the Injection signed check box is selected the fields of Injection signed by: and Injection signed date: will auto populate.

The ID verified (injector) and Injection signed check boxes will be enabled if the user has the Resource Type of Injection Physician checked in the Personnel Editor on the Resource tab.

Resource Type

Referring physician

Editor

UM Reviewer

Radiologist

Technologist

Injection Physician

Surgeon

Unknown referring

Additional Resources

Referring Flag

Direct re

Pre-auth

Gold ca

Figure 5.50 – Injection Physician resource type

Technologist – LMP Required Options

The ProcedureCode lookup table has a new column added of Requires Lmp Check Flag, which by default has a value of Y and will be located on the right of the ProcedureCode lookup table.

Hold Code Flag	Confirmation Required Flag	Breast Density Required Flag	Cpoe Pathology Flag	Insurance Service Type Code	Requires Lmp Check Flag	LastU...	Active
Contains: ▾	Contains: ▾	Contains: ▾	Contains: ▾	Contains: ▾	Contains: ▾	Equa ▾	Contains: ▾
N	Y	Y	N		Y	03-18-...	Y
N	Y	N	N		Y	10-07-...	Y
N	Y	N	N		Y	09-26-...	Y
Y	Y	Y	N		Y	09-26-...	Y
Y	Y	N	N		Y	09-25-...	Y

Figure 5.51 – Requires LMP Check Flag column in ProcedureCode lookup table

With the default set to Y, it will behave as before and the LMP will be required to be completed for female patients that fall between the age range set in the system configuration settings of LMPStartingAge (default of 12) and LMPendingAge (default of 56).

Below is an example of the LMP field enabled (set to Y on the procedure code) and disabled.

The image shows two screenshots of a form for 'Last menstrual period'. The top screenshot shows the form with several options: 'Pregnant' and 'Not pregnant' (radio buttons), 'No longer menstruating', 'Not yet menstruating', 'Shielded patient', 'Pregnancy test', and 'Bloodtest' (checkboxes). A large black arrow points downwards to the second screenshot, which shows the same form but with the 'Shielded patient' checkbox selected, indicating the LMP field is disabled.

Figure 5.52 – LMP enabled and disabled for same patient

Cancelled Due to Technical Repeat Status

A new cancelled status has been added to eRAD RIS. The status of CancelTechRepReqd is an end-state status. No auto order replacement study will be created.

The workflow will have the user access the new status from the context menu option of Change Status to... Cancelled due to required tech repeat. Access to this context menu option is controlled by the access string “**Clinical.ChangeStatusCancelTechRepReqd**” which has a default of None.

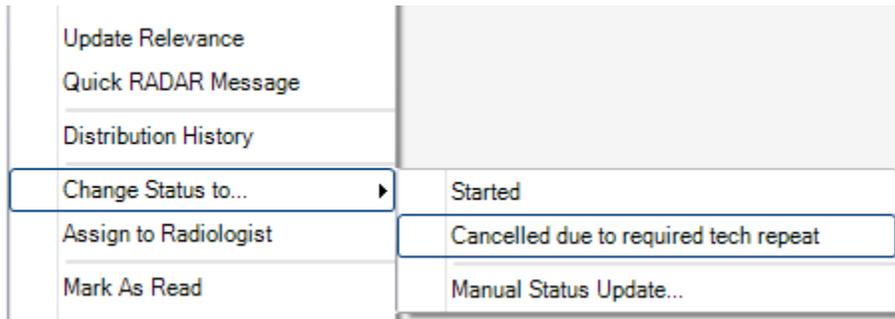


Figure 5.53 – Context menu option to cancel for tech repeat

This status uses sequence 0 like the other cancelled statuses. Also it currently is mapped to no portal_status_code (aka NULL).

These items are only viewable in non-status based work lists such as the Patient Folder work list.

Arrived	CT Abdomen W/Wo & Pelvis W [CT23] - Abdomen	03-18-2015 12:23	Adkins, Dante355 39537 1	R1138	CT1EL EL
Arrived	CT Ankle Arthrogram [CT31] - Ankle joint - Right	03-18-2015 12:02	Adkins, Dante355 39537 1	R1137	CT1LU LU
Arrived	CT Chest W & Abdomen W/Wo [CT42] - Chest	03-18-2015 11:54	Adkins, Dante355 39537 1	R1136	CT1PO PO
Report Drafted	CT 3 Phase [CT13]	03-16-2015 10:20	Adkins, Dante355 39537 1	R1135	CT1FH FH 03-16-2015 10:32
CancelTechRepReqd	CT Chest Wo [71250] - Chest	03-03-2015 11:15	Adkins, Dante355 39537 1	R1064	CT1LU LU
Arrived	CT Head Wo [70450] - Head	03-03-2015 07:45	Adkins, Dante355 39537 1	R1065	CT1LU LU
Exam Done	CT 3 Phase [CT13]	12-19-2014 10:00	Adkins, Dante355 39537 1	5	CT1EL EL
Cancelled	CT 3 Phase [CT13]	12-02-2014 15:20	Adkins, Dante355 39537 1	1	CT1LU LU

Figure 5.54 – CancelTechRepReqd status on work list.

Discontinue and Cancel Reason Codes on Notes/Exam Time Tab

Previously we didn't have anywhere in the application to see the cancelled reason or discontinued reasons. We have added these to the Notes/Exam Time tab in the View/Edit window.

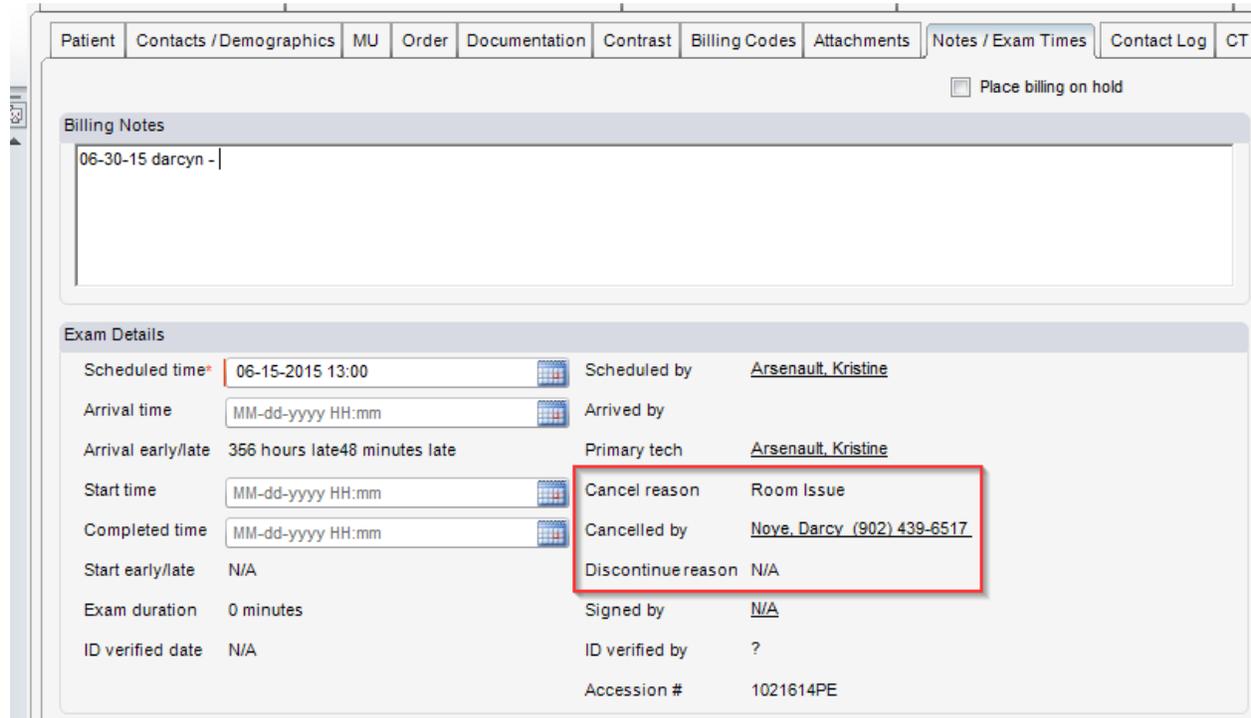


Figure 5.55 – Displaying where the Cancel and Discontinue reason codes can be viewed.

Search Field Override to Patient When Search Starts With Using Symbols

When you are in the search field, regardless of what category you might be on (ie patient or internal person or carrier search etc) – if you search using a # or @ that RIS recognizes you are searching for patient data, and doesn't force you to go choose patient option first.

Entering in the # symbol will search for MRN and the @ symbol will search for accession number.

Example: in the figure below the search option is looking to search for site, but with #24063PE entered it will automatically search for a patient and if found it will open the patient folder

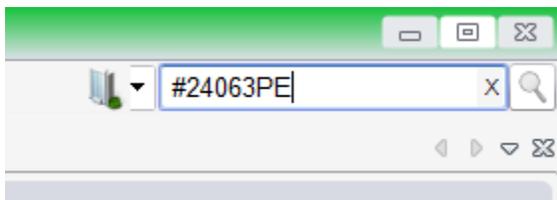


Figure 5.56 – Search for patient in Site search

It will also change the quick search to be for patient.

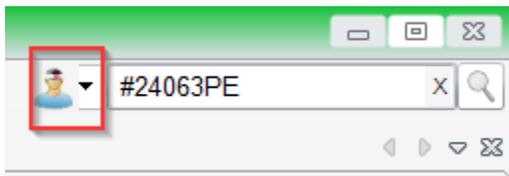
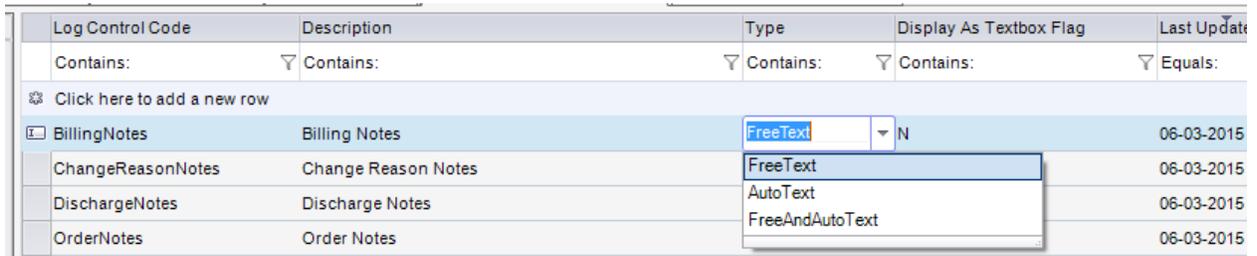


Figure 5.57 – After performing search

Note Fields Configurability to be Log Controls

Throughout the application there are many different note fields (AKA log controls). In Build 45 we have introduced the ability change the note field from a free form text field to an auto text field, or a combination of both.

A new lookup table called LogControl has been added under the General directory of the Configure menu option. This lookup’s access is controlled by access string “**Config.LookupEditor.LogControl**” and has a default access level of None. This table contains all of the eRAD RIS log controls and the state of the log control is defined in this table.



Log Control Code	Description	Type	Display As Textbox Flag	Last Update
Contains:	Contains:	Contains:	Contains:	Equals:
Click here to add a new row				
BillingNotes	Billing Notes	FreeText	N	06-03-2015
ChangeReasonNotes	Change Reason Notes	FreeText		06-03-2015
DischargeNotes	Discharge Notes	AutoText		06-03-2015
OrderNotes	Order Notes	FreeAndAutoText		06-03-2015

Figure 5.58– LogControl lookup table

The LogControl lookup has been modified to include a display_as_textbox_flag column. If the value for display_as_textbox_flag = Y, then the screen will render using a standard textbox and not a log control. Currently, this configuration is only available for the following:

1. Technologist Notes on both the Documentation and New Outside Read screens
2. Signs and Symptoms on both the Documentation and New Outside Read screens
3. Change Reason Note on the Documentation Screen

If a textbox or open text control is to be displayed, open the LogControl lookup table and set the Display as Textbox Flag to ‘Y’ for the log control code. If a log control is to be displayed, set the Display as Textbox Flag to ‘N’ and specify if the log control is FreeText, AutoText, or FreeAndAutoText.

Only ChangeReasonNotes, SignsAndSymptoms, and TechNotes support this feature at this time.

If the Display as Textbox Flag is enabled for ChangeReasonNotes, SignsAndSymptoms, or TechNotes, then only FreeText can be chosen as the Type.

Please note that if the RIS is configured to use a LogControl for a field like TechNotes, it can change the appearance of TechNotes in other areas of the application for example diagnostic

report templates. The TechNotes will include the date stamp and username with each entry versus just plain text.

If a control that doesn't support "Display As Textbox Flag" has the value set to Y, on save of the lookup the user will be prompted with validation message.

Log Control Code	Description	Type	Display As Textbox Flag	Last Updated
Contains:	Contains:	Contains:	Contains:	Equals:
Click here to add a new row				
BillingNotes	Billing Notes	FreeText	N	02-23-2015 10:15 AM
ChangeReasonNotes	Change Reason Notes	FreeAndAutoText	Y	04-27-2015 9:41 AM
DischargeNotes	Discharge Notes	AutoText	N	04-27-2015 1:28 PM
OrderNotes	Order			02-25-2015 1:25 PM
PatientNotes	Patient			04-27-2015 11:55 AM
PersonNotes	Person			02-23-2015 10:15 AM
RadarSMSMessages	Radar			03-25-2015 11:15 AM
RadNotes	Radiol			02-23-2015 10:15 AM
SchedulingNotes	Schedu			02-24-2015 1:50 PM
SignsAndSymptoms	Signs			04-27-2015 2:36 PM
TechNotes	TechnologistNotes	FreeAndAutoText	Y	04-27-2015 11:55 AM
UMExternalNotes	Utilization Management External Notes	AutoText	N	02-23-2015 10:20 AM
UMInternalNotes	Utilization Management Internal Notes	FreeAndAutoText	N	02-23-2015 10:20 AM
VerificationNotes	Insurance Verification Notes	FreeText	Y	02-23-2015 10:15 AM

eRAD RIS

The following error must be corrected:

Display As Textbox Flag: not supported for VerificationNotes.

OK

Figure 5.59 – Validation message informing Log Control doesn't support Display As Textbox Flag

Another validation message will appear if one of the supported Log Controls has the Display As Textbox Flag = Y and the Type column is something other than FreeText

Log Control Code	Description	Type	Display As Textbox Flag
Contains:	Contains:	Contains:	Contains:
Click here to add a new row			
ChangeReasonNotes	Change Reason Notes	FreeText	Y
SignsAndSymptoms	Signs And Symptoms	AutoText	Y
BillingNotes	Billing Notes	FreeText	N
DischargeNotes			N
OrderNotes			N
PatientNotes			N
PersonNotes			N
RadarSMSMessage			N
RadNotes			N
SchedulingNotes			N
TechNotes	TechnologistNotes	AutoText	N
UMExternalNotes	Utilization Management External Notes	AutoText	N
UMInternalNotes	Utilization Management Internal Notes	FreeAndAutoText	N
VerificationNotes	Insurance Verification Notes	FreeText	N

eRAD RIS

The following error must be corrected:

Type: SignsAndSymptoms supports FreeText only when displayed as a textbox.

OK

Figure 5.60 – Validation message informing Log Control must be FreeText when Display As Textbox Flag=Y

Auto text that is to be entered in the log control will come from the Autotext lookup table. This lookup table is controlled by the access string “**Config.LookupEditor.Autotext**” which has a default access level of None.

Description	Language Content	Log Control Code	Display Order	Last
Contains:	Contains:	Contains:	Equals:	Equ
Click here to add a new row				
Autotext1	This is autotext for Order Notes		1	

- BillingNotes (Billing Notes)
- ChangeReasonNotes (Change Reason Notes)
- DischargeNotes (Discharge Notes)
- VerificationNotes (Insurance Verification Notes)
- OrderNotes (Order Notes)
- PatientNotes (Patient Notes)
- PersonNotes (Person Notes)
- RadarSMSMessages (Radar SMS Messages)
- RadNotes (Radiologist Notes)
- SchedulingNotes (Scheduling Notes)
- SignsAndSymptoms (Signs And Symptoms)
- TechNotes (Technologist Notes)
- UMExternalNotes (Utilization Management External Notes)
- UMInternalNotes (Utilization Management Internal Notes)

Figure 5.61 – Autotext lookup table

With the Order Notes field now configured for Autotext, the Order Notes field will not permit to have free text entered. The Autotext is accessed from a context menu on the notes field.

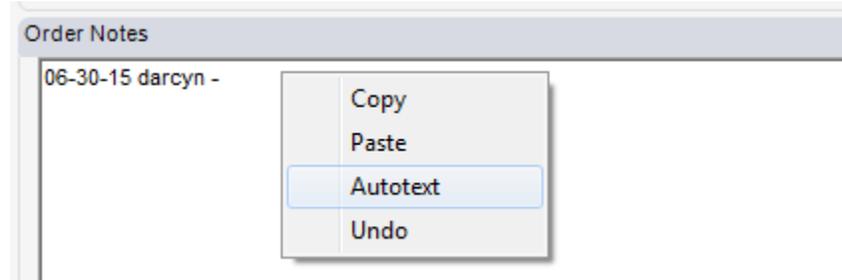


Figure 5.62 – Context menu with Autotext option for Order Notes field

Selecting the Autotext context menu option will open a new window titled Autotext. This window will contain the options available for this log control.

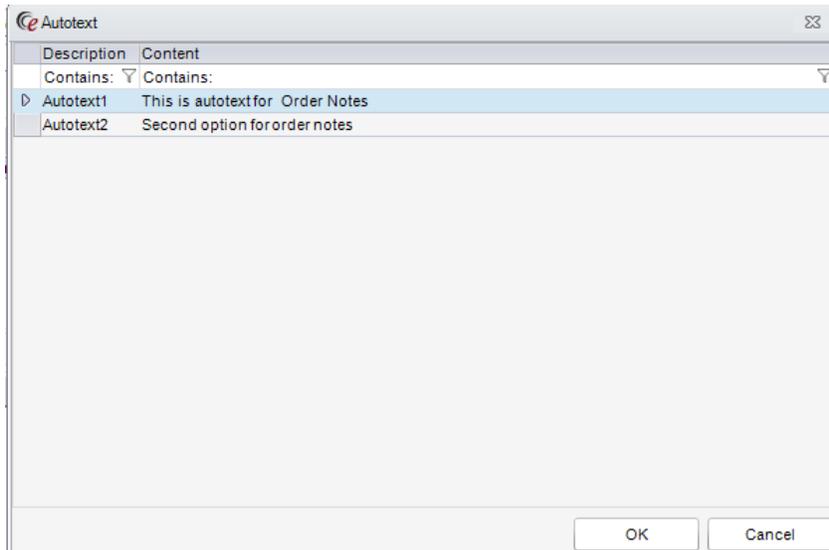


Figure 5.63 – Autotext window with available options

If the log control, in this example Order Notes is configured to be free text and auto text, a combination of both can be used in the field.

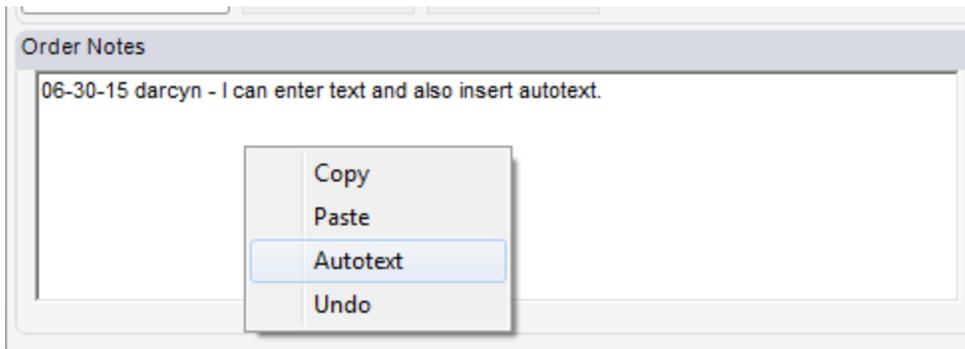


Figure 5.64 – Free text/Autotext field

Overbook Reason Enhancements

To continue on from the previous feature, the Overbook Reason field will also have the options of free text, autotext or a combination of both. To start a new lookup table has been created to capture the Overbook Reason Code that can be used if the field is Autotext only or both available to the field. The OverbookReason table access is controlled by the access string of “**Config.LookupEditor.OverbookReason**” which has a default of Full.

Overbook Reason Code	Description	Display Order	Last Updated	Active
Contains:	Contains:	Equals:	Equals:	Contains:
Click here to add a new row				
1	Mgr Approved	1	03/04/2015 15:...	Y
2	SysAdmin Approved	1	03/04/2015 15:...	Y

Figure 5.65 – Overbook Reason lookup table

If the OverBook reason field is free text, autotext or a combination of both is controlled by a new System Configuration setting called “**OverbookReasonFormat**” has default value of 1.

The possible values are

- 1 - free text only
- 2 - OverbookReason lookup only
- 3 - both free text and the OverbookReason lookup.

The scheduling screen in RIS has been updated to support the above pattern. If the overbook reason utilizes the lookup values, it is important to note that it is the Description field from OverbookReason and not the OverbookReasonCode that is stored in the database.

The Overbook field itself on the scheduling window is controlled by the pre-existing access string of “**Clinical.Schedule.AllowOverbooking**” which has a default access level of None

Send SMS message from Work List

The option to send a RADAR message from the Reception or Patient Folder WL has been added in B45. The context menu option of Quick RADAR Message has been added with an access string of “**Clinical.QuickRadarMessage**” that controls access to it, which has a default of None.

Selecting this context menu option will open the Quick RADAR Message window. The message will have a character limit of 160. Options are SMS (text) or Email. This message can be free text or can be configured to autotext. The patients name, mobile phone number and email address will be displayed in the window.

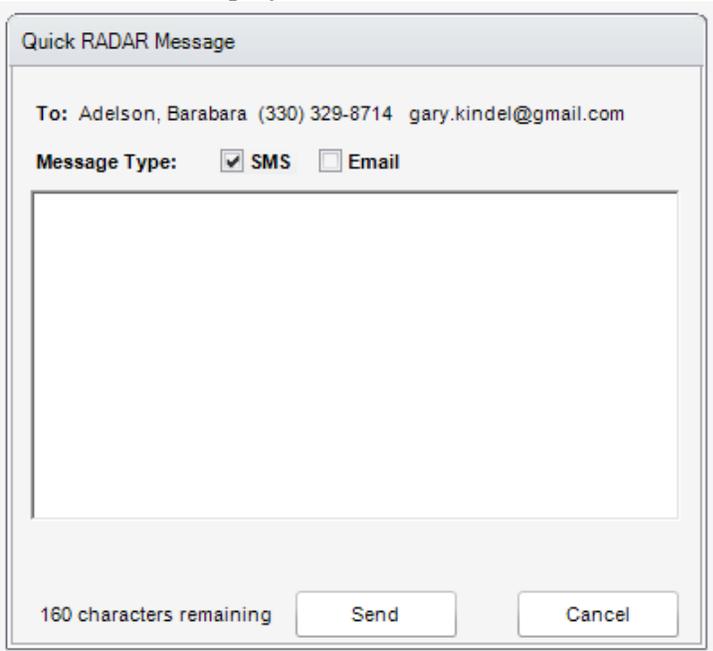


Figure 5.66 – Quick RADAR Message dialog window

If the patient selected to send the RADAR message is missing the Email and mobile phone information the user will be presented with the following message.

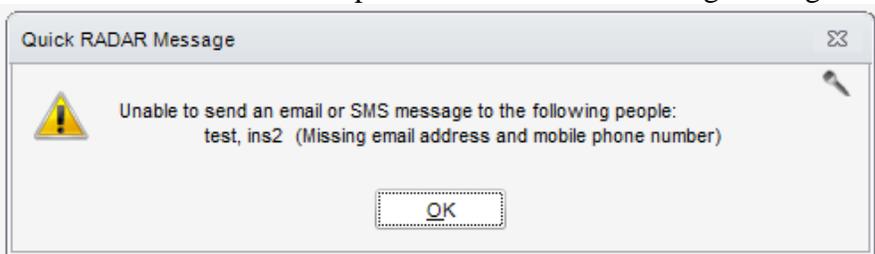


Figure 5.67 – Quick RADAR Message that patient doesn't have an email or mobile phone number

Support Linking of Reports

For stage 1 of linked reports, linking is limited to procedure plans that are predefined to be reported together. There is no support for manual linking and unlinking studies for stage 1.

The ProcedurePlan lookup table has always had the Report Together Flag, but it wasn't being used. Now we will use it for Linked Reporting. When the Report Together Flag is set to Y, the Plan Procedures grid will require one procedure to be set as the Primary Study.

Procedure Plans:			
Procedure Plan Code	Name	Description	Report Together Flag
Click here to add a new row			
CTPlan	CTPlanning	CT Plan	Y
RPP	RankatsProcedurePlan	Rankats Procedure Plan	Y
DPP	DarcysProPlan	Darcys Procedure Plan	Y
ayeleplan	testing hebrew	PP in hebrew	N
NucMed2Studies	Nuc Med 2 studies	Nuc Med 2 Studies	N
CT13	ct13	testing bug 1868	N
testPlan29-1	testCase_procedure29-1	Test Procedure plan by KangHyeok N	N

Procedures:		Plan Procedures:					
Procedure Code	Description	Procedure	Seq	Primary Study Flag	Min Wait...	Max	
Contains: Contains:		G0202	MA DIGITAL MAM...	0	Y	0	0
0028T	DX Body Composition Study	76645	US Breast Uni Or Bil	1	N	0	0
20605	FL Arthrocentesis Inject Intermediate Jt						

Figure 5.68 – Procedure Plan lookup table

The primary study will be the study that is reported on. But before it gets to Exam Done status, the procedure plan will behave just as it did before. After the plan is scheduled the work lists will display a new flags for Primary and Non-Primary studies in the plan.

Flags	Status	Procedures
		Scheduled CT Chest W [71260] - Chest
		Scheduled MA DIGITAL MAMMO SCREEN BIL [G0202] - MAMMO - I
		Scheduled US Breast Uni Or Bil [76645] - Breast - I

Figure 5.69 – Linked Reporting flags for primary and non-primary

If the primary study is rescheduled on its own, the linked reporting will be broken and the studies belonging to the procedure plan will then become individual studies no longer tied together. This is also true if the procedure is changed during the registration process. If the procedure picker row is remove (red x) or the procedure is removed (black x) and a different procedure is used in its place on the primary study, this will also break the linked reporting.

For the Technologist the procedure plan can be opened in the Perform Exam window. If they are of different modalities, the studies will start and completed as before, even if the studies “Include” option is used. The only change is with the Preferred Radiologist. When a radiologist is assigned to one study it will be auto assigned to the remaining studies in the procedure plan.

The worklists have been enhanced to better identify which studies on the work list belong together in the report together procedure plan. When one of the studies from the procedure plan is selected on the work list, the other studies also part of the procedure plan will have their row color change to pinkish color. In the figure below you can see the Mammo study is selected on the work list and the US Breast study has a pink row color.

Flags	Status	Procedures	Scheduled Date	Referring
\$		Scheduled CT Chest W [71260] - Chest	06-30-2015 08:50	Smith, Rober
🔗	✅	Scheduled CT Abdomen W & CTA Chest W/Wo [CT66] - Abdomen	06-30-2015 13:00	Noye, Darcy
🔗	✅	Scheduled MA DIGITAL MAMMO SCREEN BIL [G0202] - Breast - Bilateral	06-30-2015 13:05	Noye, Darcy
🔗	✅	Scheduled US Breast Uni Or Bil [76645] - Breast - Bilateral	06-30-2015 13:20	Noye, Darcy
🔗	✅	Scheduled US Breast Uni Or Bil [76645] - Breast - Bilateral	06-30-2015 13:25	Noye, Darcy

Figure 5.70 – Row color of report together procedure plans change color

Once the report together procedure plan has been completed by the Technologist and the studies are not in a status of Exam Done only the primary study will appear on the My Pending Dictation work list. If one or more of the studies needs to be PACS Corrected, none of the studies can be reported on, the option to open the dictate window will not be available until PACS Corrected = Y for all studies in the plan.

From the Patient Folder a user can select to dictate on one of the non-primary studies, but when the Dictate window opens, it will open for the primary study. The template loaded in the report

editor and the templates and macros available in the Template Browser data pane will also be based off of the primary study.

In the Patient History data pane in the reporting window, the same pinkish row color will be displayed when one of the studies selected from the report together procedure plan is selected. This is true also if the reporting window is opened on another study belonging to the same patient. Other configurable row colors remain the same. The current and selected study background and boarder will still appear.

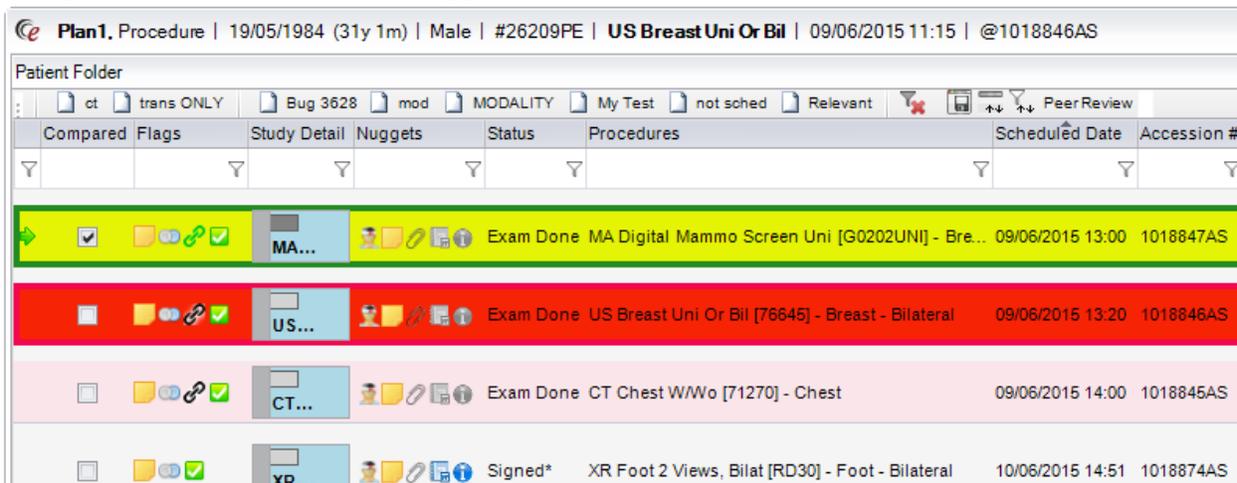


Figure 5.71 – Patient History data pane

PACS images will be opened for all studies belonging to the plan. These are not included in the count for user preference “Load Relevant Priors”. Relevancy is also based off of the primary study only.

The exam status of the primary study will be reflected on the non-primary studies. Once the primary study status changes from Exam-Done to Report Drafted, from Report Drafted to Transcribed... right up to Signed status, so will the non-primary studies. If the primary study is Voided, the non-primary studies will return to a status of Exam Done and will need to be reported on again, or actioned to be cancelled (aborted or discontinued). If the “Delete Dictation/Report and Reset Status” is used, this will also change the status of the studies in the report together procedure plan to all be Exam Done.

Flags added to any of the studies in the procedure plan will also be copied over to the other studies in the plan. Flags such as Suspended, QA, Problem and Mark As Read will be applied to all studies.

If one of the studies has the Supervising Radiologist, Assigned Radiologist or Assigned Editor added or changed, this will also be applied to all of the studies in the report together procedure plan.

The QA workflow will only look at the primary study. If a Radiologist or Editor is configured to have every 2nd study sent to QA, the report together procedure plan will only count as one study. So if a report together procedure plan has 3 studies in the plan, this will only count as one.

This is also true for the Daily Statistics counters. If the report together procedure plan has 3 studies that are dictated on, the counter will only count this as 1. Same is true for Signing counter and Editor statistics

Locking of studies post exam done will be that if one of the procedures is opened, it will lock the remaining studies in the procedure plan.

Editor polling will only open the primary study. The non-primary studies will be skipped over and the next available will be opened.

When viewing the final report from the Data Nugget or from the Preview/Print Report context menu option, the primary and non-primary studies will all display the same report.

Document Distribution will send one report based on the primary study. If a manual job is created, again the primary study will be used.

Show Patient Notes from Previously Merged Patients Notes

In build 45 we added a hyperlink to the bottom of the patient notes control, it will appear as a read only label when there are no previous patient notes, or an underlined hyperlink when there are previous patient notes.

When the user clicks the hyperlink, a dialog box pops up and will display the notes for all of the patients that were merged into the current patient, grouped under a header that shows the previous patient name, MRN, and the date of the merge. The user can then use the mouse to highlight the text they want to extract and press Control+C to copy the text to the clipboard so that it can be pasted into the notes section and saved.

All screens that allow the user to add patient notes have been updated with the new feature.

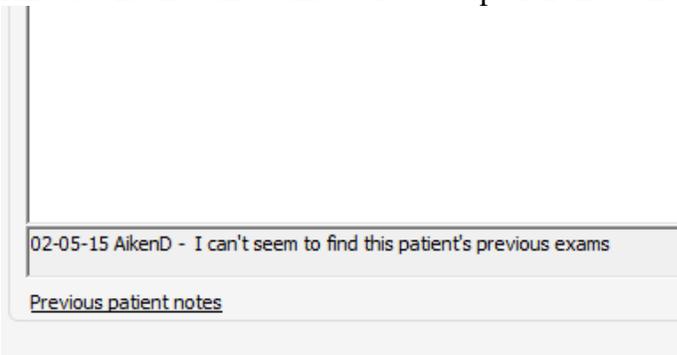


Figure 5.72 – Hyperlink to access merged patient notes

Selecting this hyperlink will open the Previous Patient Notes window.

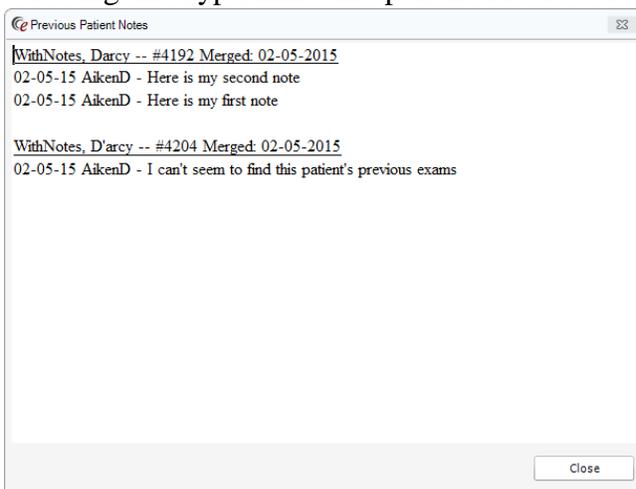


Figure 5.73 – Previous Patient Notes window

Enhanced Alternate MRN

The MRN grid on the patient tab has changed. We also moved the system MRN to be in the grid as well.

The Add/Remove options in the context menu have been removed as well as the buttons. The Grid will not have a “Click here to add a new row” option similar to other grids.

Adding and removing MRN rows is still controlled by the existing access strings, “**Clinical.AddMRN**” and “**Clinical.RemoveMRN**”.

A special read only blue row has been added to the first position in the grid. This row is to hold and display the system issued MRN. The end user cannot edit or remove this row.

Support for applying masks to the MRNs has been added. There is a default mask that can be configured with the new System Configuration setting of “**DefaultAlternateMRNMask**” that has a default of AAAAAAAAAA.

The Issuer table also has a new column titled Mask so a mask can be defined for each issuer. The column.

IssuerCode	Description	Display Order	Mask	Last Updated	Active
Click here to add a new row					
National ID Israel	National ID	4	#####	02-02-2015 11:...	Y
Passport CDN	Passport ID	5	LL#####	02-02-2015 11:...	Y
QE Test	QE Testing	2	###-AA-LLL	01-30-2015 1:0...	Y
Barney	Barney	3		06-19-2012 1:5...	Y
test	test	1		05-15-2012 4:5...	Y

Figure 5.74 – Mask column added to Issuer table

Mask rules: # = number only, A = alphanumeric and L = alpha only.

Configuration Overbook Reason for Rooms/Modalities

The Modality lookup has been modified. It now includes an “Allow Overbook Flag”. This flag defaults to “N”. If enabled, the system will not prompt the user to specify a reason when there is already a procedure booked for the selected time on the scanner. The system will not enforce the overbook reason as a required field.

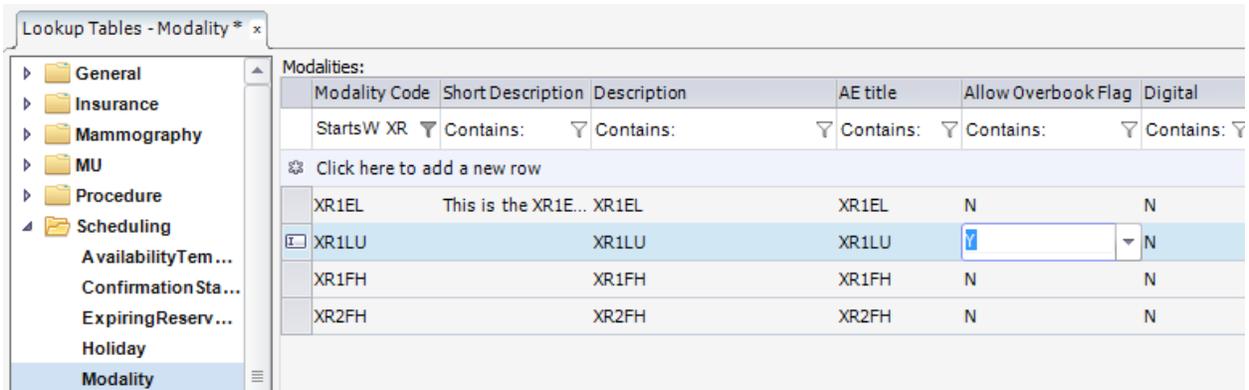


Figure 5.75 – Modality table with Allow Overbook Flag added

New Walk-In Button on Patient Folder

As the title indicates, a new ICON has been added to the Patient Folder to open the Walk-In window.



Figure 5.76 – New Walk-In button on the Patient Folder WL

DOB Field Enhancements

Using the calendar control was a bit cumbersome and time expensive trying to find a date. We have enhanced this DOB field on the Patient tab so it is an intelligent date control which will hopefully save the user's time entering in the patient date of birth.

But we will leave it up to the customer to choose which they like to use. A System Configuration setting of “**ShowDOBCalendar**” has been added with a default of false. When set to true the calendar selection control will be displayed and available.

The screenshot shows the 'Patient' tab in the eRAD RIS system. The 'General Information' section is visible, containing various fields for patient data. The 'DOB' field is highlighted with a date mask 'dd/MM/yyyy'. Other fields include 'Prefix', 'First', 'Last', 'Middle', 'Suffix', 'Sex', 'Birth place', and 'Father's name'. The 'DOB' field is currently empty, and a tooltip with the date mask 'dd/MM/yyyy' is visible next to it.

Figure 5.77 – Changes to DOB field on patient tab

Quick Search Enhancement to Clear Search Criteria

When entering a text in to the Quick Search field for Patient, Internal Person, Site, etc... we can easily clear the contents of the search field using the X.

The image shows two screenshots of the Quick Search field. The top screenshot shows the field containing the text 'steve' with an 'X' button to clear it. The bottom screenshot shows the field empty after the 'X' button is clicked.

Figure 5.78 – Quick Search with the X to clear contents

Using Preferred Site Value on Reschedule

This feature works directly with the System Configuration setting “**ScheduleUsePreferredSite**”. When rescheduling the procedure, the Site field in the Search Options on Schedule tab will be defaulted to the site value from the Preferred Site on the Order tab.

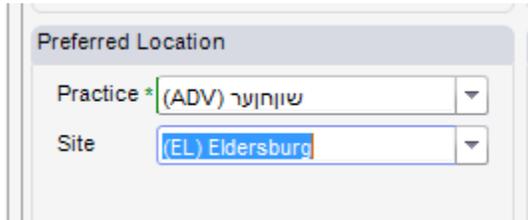


Figure 5.79 – Preferred Site

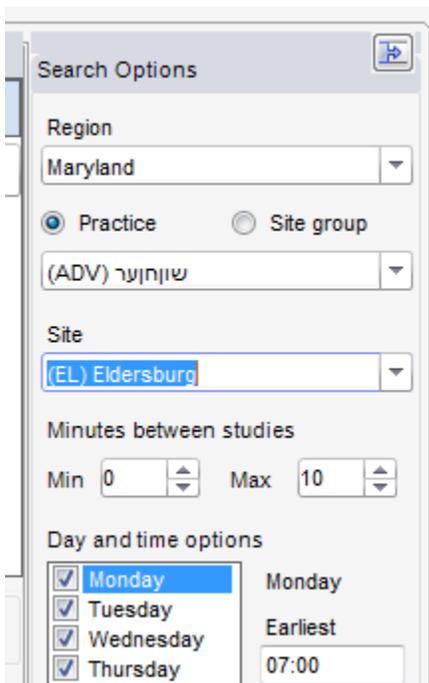


Figure 5.80 – Search Options Site defaulted

Add X Amount of Minutes to Walk-In Procedure

Walk-In has always been a “now” time. So when the Walk-In procedure was completed in the Walk-In window, the time of the exam would be current time.

We have added a new System Configuration setting of “**WalkinAddMinutes**” with a default value of 0, that will add time onto the Walk-In’s scheduled start time.

For example, with the value set to 11 you can see in the figure below the Scheduled Time is 11 minutes more that current time

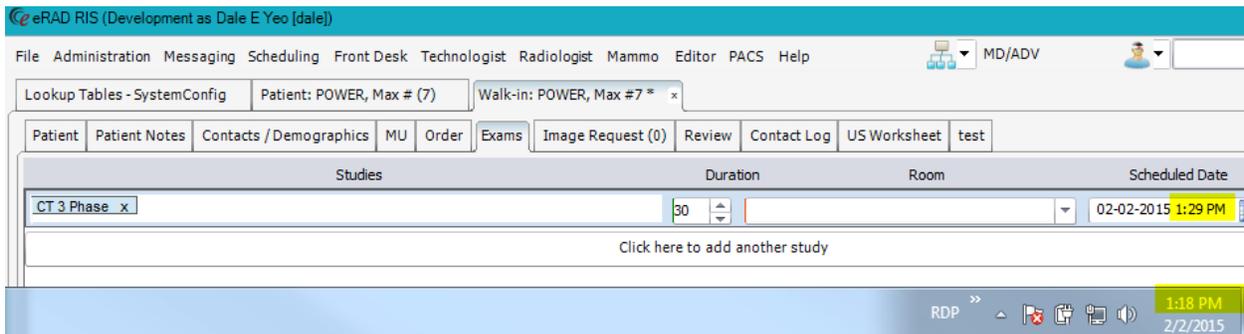


Figure 5.81 – Walk-in time increased by system configuration setting

Issuer of ID Added to Existing Order Window

Added a new column to the existing orders dialog box that appears when scheduling and appointment or creating a Walk-In for a patient that has orders to be scheduled. The new column has the caption “Order Source” and will show either the value of the “issuer_of_placer_order_number” column in the order (when specified, this is generally the emr code), or the system configuration value for RISOrderSourceDescription (generally “RIS”) for an internally generated order.

If the “issuer_of_placer_order_number” matches an EMR code in the EMR lookup table, the tool tip for the Order Source column will show the full description of the EMR as well as the EMR code.

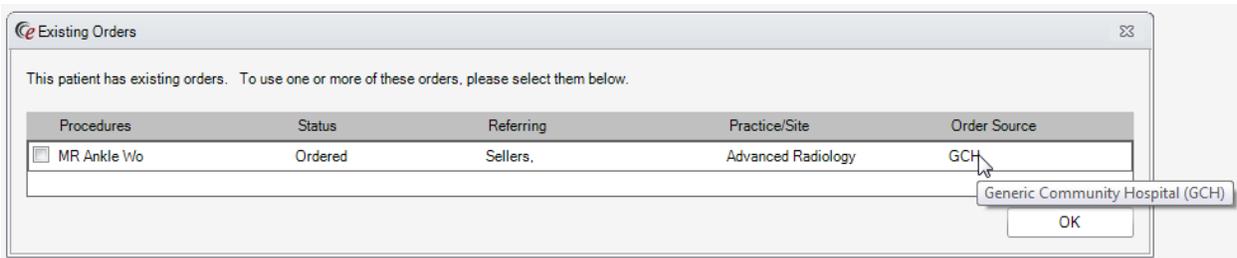
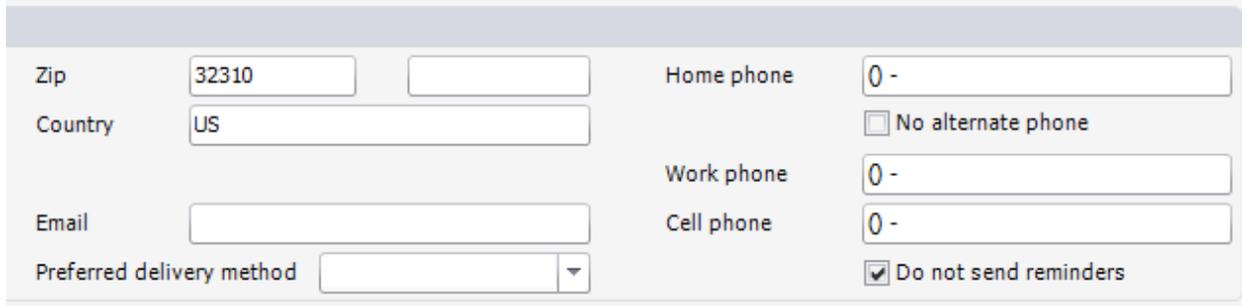


Figure 5.82 – Existing Orders window with Order Source column added

Support Automated Appointment Reminder Opt Out

Some patients do not want to have automated appointment reminders. A new checkbox “Do not send reminders” has been added on the Patient tabs, Contact Information data pane.

This will store this field at the patient level. During Implementation, RADAR will still need to reference this flag.



The screenshot shows a form titled "Patient Contact Information" with the following fields:

Zip	<input type="text" value="32310"/>	<input type="text"/>	Home phone	<input type="text" value="0 -"/>	
Country	<input type="text" value="US"/>			<input type="checkbox"/> No alternate phone	
Email	<input type="text"/>			Work phone	<input type="text" value="0 -"/>
Preferred delivery method	<input type="text"/>			Cell phone	<input type="text" value="0 -"/>
				<input checked="" type="checkbox"/> Do not send reminders	

Figure 5.83 – Checkbox for Do not send reminders

Order Notes added to MU Tab

The order notes field has been added to the MU tab. As with the Order Notes field on other tabs, it will adhere to the configuration set for Autotext in the Log Control lookup table

The screenshot displays the eRAD RIS interface for a patient named POWER, Max # (7). The 'MU' tab is selected, showing various medical data sections:

- Demographics at Encounter:** Height (ft in), Smoking status, Weight (lbs), BMI, Is pregnant.
- Continuity of Care Record (CCR):** View button.
- Clinical Document (C-CDA):** View button.
- Medications:** None / Use grid, Show inactive, Add, Edit, Sync/Refresh.
- Allergies:** None / Use grid, Allergy, Reaction, Severity, Status, Start Date.
- Medical History:** None / Use grid, Problem, Start Date, End Date, Status.
- Lab Orders:** Test, Status / Value, Date, Add, Edit, Skip Labwork Advised WL.
- Order Notes:** A highlighted yellow box containing three lines of text: "01-21-15 YeoD -", "01-21-15 YeoD - ds kfsdak dfadf dsaf kdsfadskfjal sdfaj dsfaksjdf ifaewiof 098 40398 jrdjfaosodfffd 43q0 898q [0ltworfreof jfroaeirt45786093865 biwurfja ijdigfasdfgisdighidufhg siudf sdfughsduhg sddffd", and "01-21-15 YeoD - bcvbcbvbcvbc".

Figure 5.84 – Order notes on MU tab

New Diabetic Medications For MU

Added 4 new diabetic medications to the Quick add/edit screen (Jentaduetto, Invokamet, Kazano and Xigduo). Corrected the two medications that were identified as needed corrected (ACTOPlus Met changed to ActoPlus Met and Kombiglzexr changed to Kombiglyze XR). Created a db script that will need to run that will update the c_patient_medication table changing the drug_name from Kombiglzexr to Kombiglyze XR.

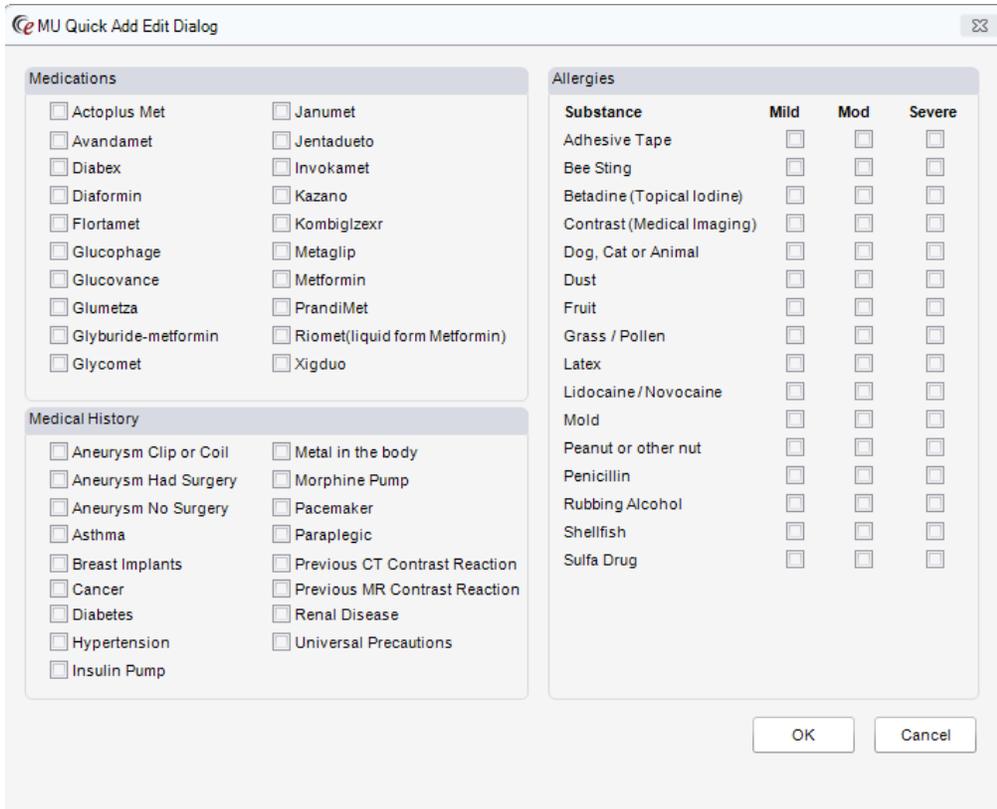


Figure 5.85 – Quick add edit window displaying additions and changes to Medications

Effective Date for Height and Weight

With the pre-existing System Configuration settings of HeightRequiredOnArrival, WeightRequiredOnArrival, HeightRequiredOnSchedule and WeightRequiredOnSchedule configured it was making it difficult to check the patient record in the Scheduling or Registration windows if the patient wasn't there at the time. The user would be prompted to complete this data and couldn't save.

We have added 2 new System Configuration settings.

“HeightRequiredEffectiveDate” which has a default of “1999-01-01”

Date to define when to enable checking if height is required when scheduling or arriving the patient"

“WeightRequiredEffectiveDate” which has a default of “1999-01-01”

Date to define when to enable checking if weight is required when scheduling or arriving the patient"

Reporting – Embedded Audio Recorder

We implemented a new recorder, which can be used by choosing the “eRAD” option in his user preferences. This option is controlled by access string

“**Config.AllowEradReportingIntegration**” which has a default of None

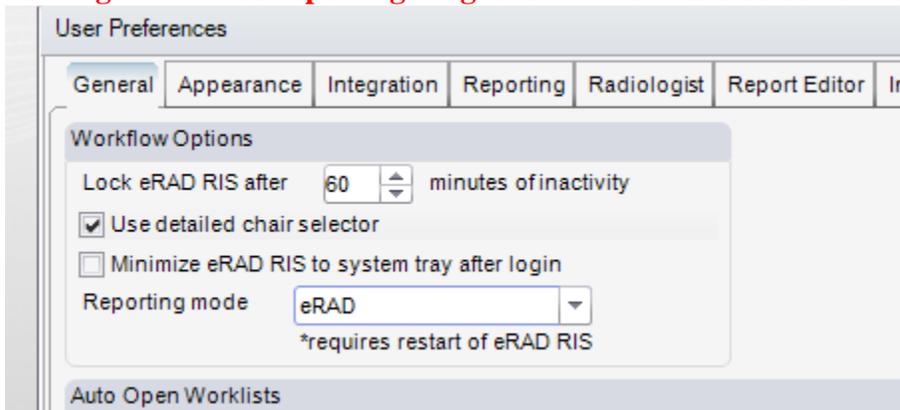


Figure 5.86 – New user preference

This new recorder will support record, pause, stop, playback, rewind, fast forward and show playback position (1:40 of 3:22).

Other User Preferences currently supported are Resume playback after rewinding and Insert/overwrite dictation.

It is recommended user then restarts eRad RIS for changes to take effect, and for their previous modes to be uninitialized. Once this change has been made, the user would not notice or see anything different than if they were running in batch mode. The only real differences would be that there is no batch process, audio must go to MTs for transcription and that the report tab in the dictation screen would now say “Digital Audio Report”.

Current limitations are a user would not have auto save reports/recovery or the ability to set playback speed wouldn’t yield any results.

Reporting – eRAD Report Editor

With the audio recorder we also need to build our own report editor. The report editor would need to be seamless when changing from one editor to another, meaning not losing any functionality. The functionality of the editor will be explained below

Shortcuts – All relevant shortcuts have been added. For more information on shortcuts please reference the Shortcuts.docx document

Command bar – All relevant buttons have been added. Tooltip values are also present

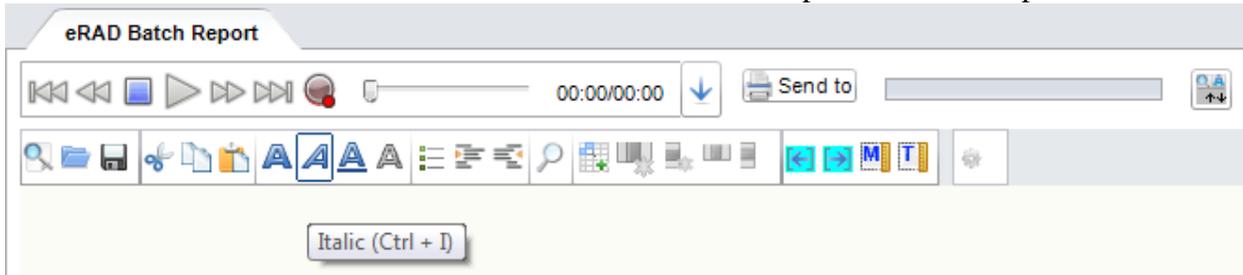


Figure 5.87 – Command bar

Custom Colors in Editor – The editor will support colors for Font, Background, Field Background, Template Text, Macro Text, Radiologist Edit Text, Transcription Edit Text and QA Edit Text. Also Font Size is available.

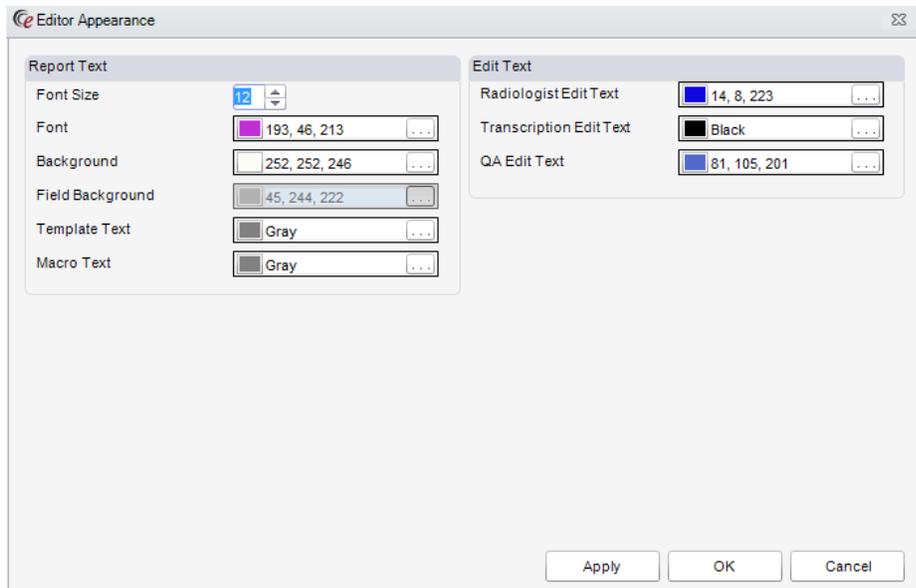


Figure 5.88 – eRAD Editor Appearance

Text Expander – A file called TextExpander.txt is used to create a user specific file <userid>_TextExpander.txt.

We will load all those entries into the editor when we create one assuming the user’s preference for text expander is set. We read the file and add every line item one by one. We’ve seen this take as much as 160ms, on initial load, but this is with many other things trying to load for the first time and accessing the disk. After the initial load we see values around 20ms, which doesn’t seem to fluctuate much based on the size of the file. We tested as big as we deploy, and as small as 1. Difference was not measurable in load time.

Next and Previous Field Navigation – When the template loaded has multiple fields, users will be able to navigate to next and previous fields by use of the mapped buttons on the SpeechMike, the arrow keys on the keyboard, next and previous field buttons on the command bar and using the Fields data pane.

Tables and Columns in Reports - New tables can be added via right click content menu option or toolbar button.

We provided the same control that will create default table of 3 columns and 2 rows. This can be modified at the time of table creation or after.

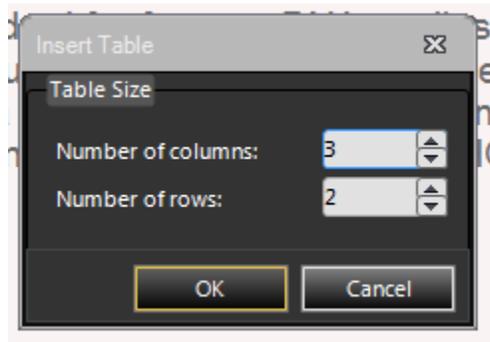


Figure 5.89 – Insert tables

After the table is inserted and the cursor is focused in the table more options will be available to the user in the toolbar and the context menu. These options include Insert Column, Insert Row, Delete Column and Delete Row. There are four options only available in the context menu and they are Insert Column Left, Insert Column Right, Insert Row Above and Insert Row Below.

The pre-existing access string of “**Clinical.CreateTableInReport**” which has default of Full is used to control user access to insert tables into a report.

Base template support - In the template/macro lookup editor, we now have a type for “Base Templates” which is only available when the editor type is set to “eRAD”. These base templates are created just like any other templates.

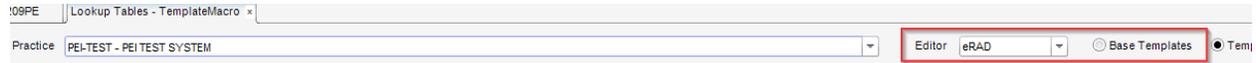


Figure 5.90 – Creating base templates for eRAD reporting

These base templates are created just like any other templates with a couple exceptions. They can only be assigned to practices and you do not have the options to set it as template/default/normal. One of the benefits with the eRAD Base Template, is that you can include fields that will be driven by data which you could not do with our M*Modal implementation. This is a great way to produce advanced custom reports quickly and consistently.

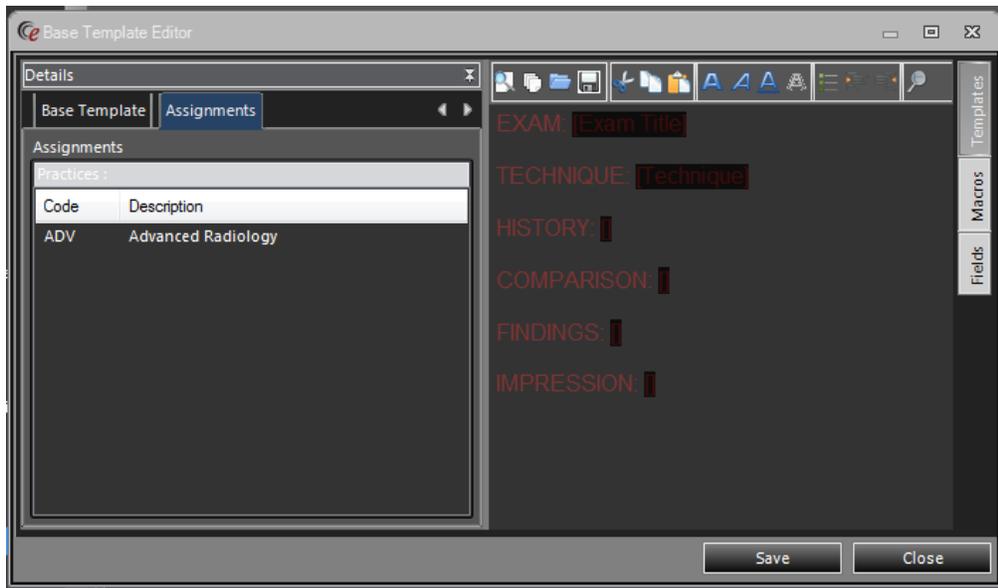


Figure 5.91 – Creating base templates

When the user then creates a template, they will have the option to choose a Base Template in the same dropdown used by M*Modal users, this dropdown will populate based on the selected Practice on the same screen. Unlike with M*Modal the user does not require base template in order to save, it is purely optional.

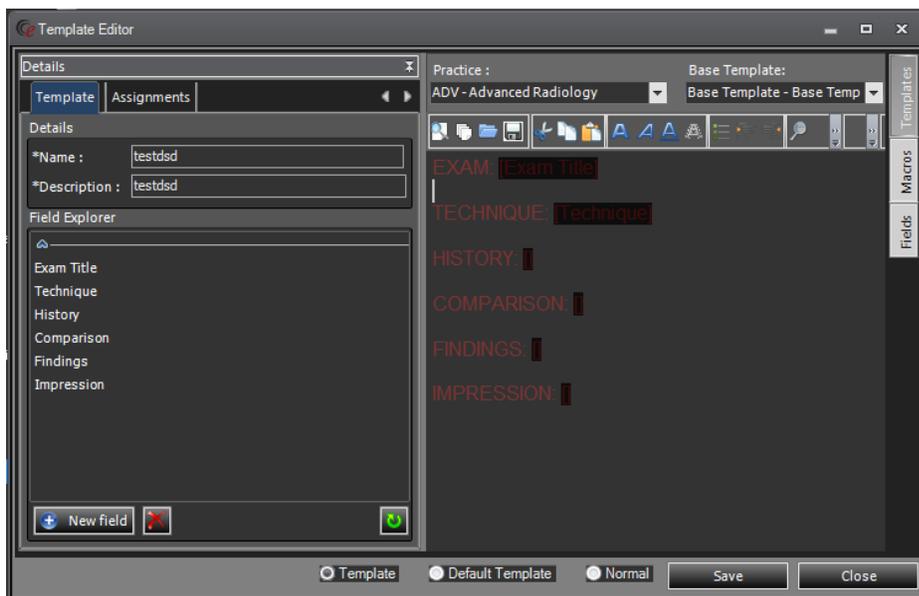


Figure 5.92 – Base template not required

Something to note is that we REQUIRE a base template be created for ADDENDUM it should be named “ADDENDUM” and will be used by code to support addendum workflow. Similar to how in M*Modal we required a pair of Base Document Models to support basic workflow.

Create template from report to support Auto Macros - We insert bookmark around the field before we populate it, we then use those bookmarks to reconstruct the field when we create a template from the report.

Advanced menu for reporting window - A new menu bar with more functionality which can be added to the editor pane at runtime by the user has been added. If the user does not have the correct access, which is “Full”, the code removes the menu item from the context menu.

To enable the editor’s advanced menu, right click in the editor window to bring up the context menu, and then select the “Editor Advanced Menu” item. This will insert a new menu bar with more functionality above the existing one. To remove the advanced menu, simply bring up the context menu again by right clicking in the editor pane and select “Editor Advanced Menu” to toggle visibility.

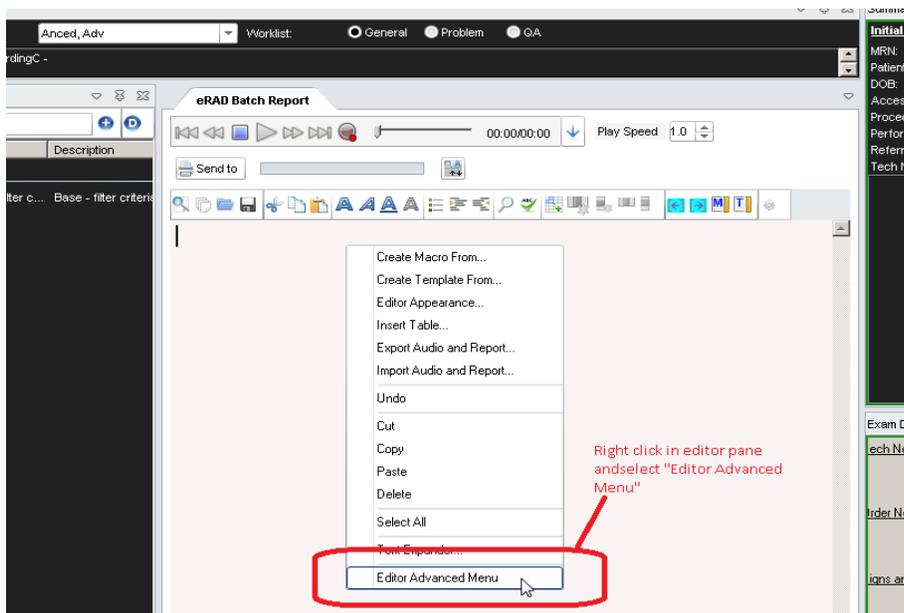


Figure 5.93 – Access to Advanced menu

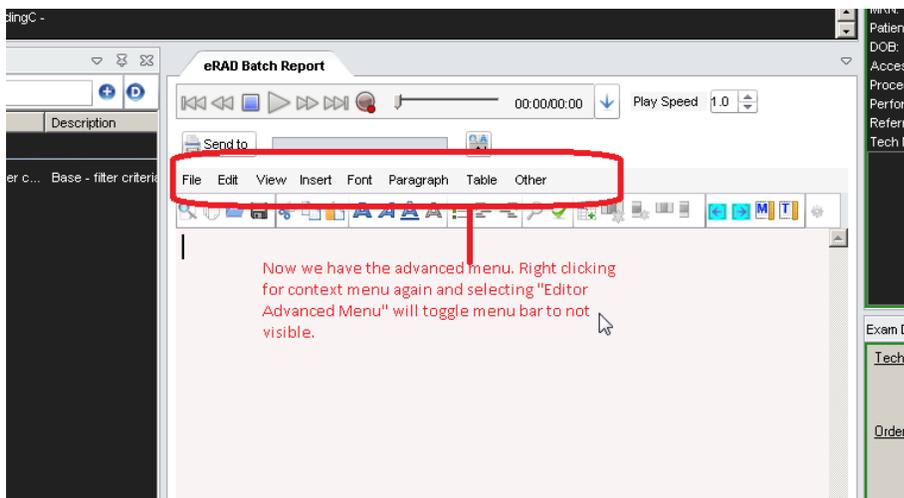


Figure 5.94 – Displaying advanced menu

Support Auto Save in eRAD Editor - With the new editor control, we need to make sure we can support existing auto save functionality so that when RIS crashes or is terminated, then the user would be prompted to reload reports that were in progress on login. One thing we needed to do with this editor was to disable its automatic backup feature. When the report was saved over an existing file, it would create a <filename>.BU backup of the existing

file before overwriting it. This caused errors as our auto save feature would try to parse these files as unique auto saved reports and would start searching for accession numbers with a .BU suffix.

This feature is only really complete once Feature #7864 is completed, as it takes care of the audio recorder part of this feature. Right now we are having some technical difficulties with that one, it might get delayed into another build.

General Reporting – Add Editor Appearance Preferences to User Preferences

This screen was available through the right click context menu on the report in the Radiologist/Transcription screens. We changed it a little mostly sizing and alignments so that it would match that of the user preferences screen. We also changed the buttons; we now have an Apply, OK and a Cancel button.

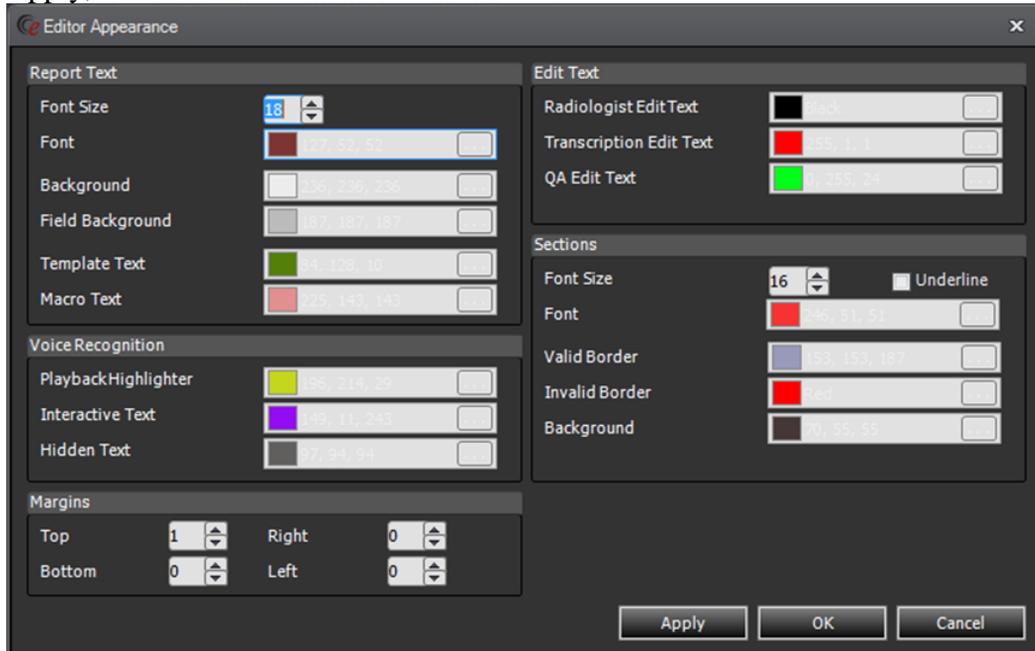


Figure 5.95 – Editor Appearance

We then injected them into the user preference screen under the “Report Editor” tab. These are the same control as the above screen they are being reused in this screen. If the user is using eRAD reporting then the “Margins”, “Sections” and the “Voice Recognition” groups will not be visible neither from the “User Preferences” screen nor the “Editor Appearance” screen.

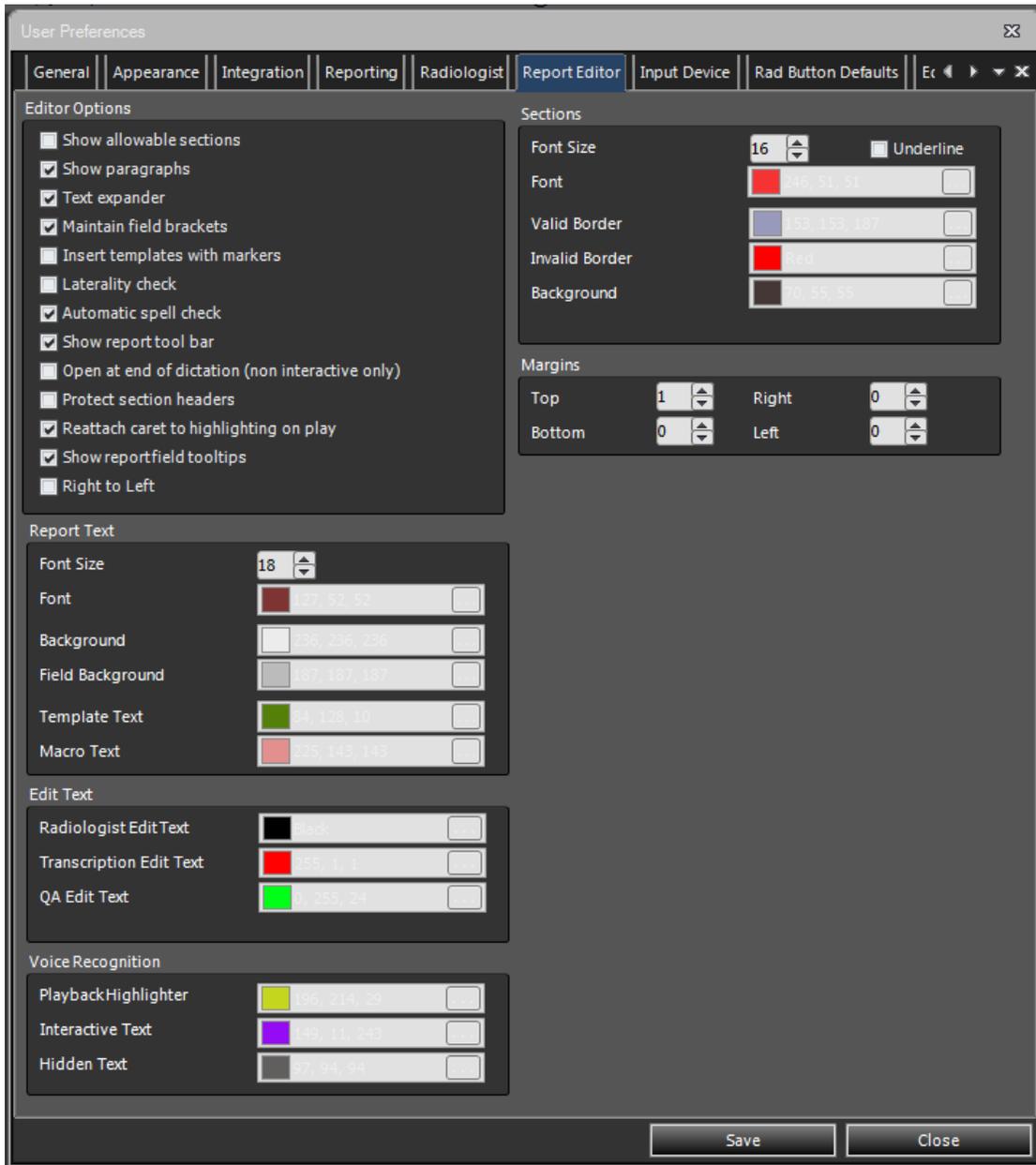


Figure 5.96 – Editor Appearance in User Preferences

General Reporting – Permissions for Report Integration Types

Current report integration types are:

1. eRAD (New type as of build 45 which includes it's own editor "TEEdit" and it's own basic dictation playback/recording device "MCI")
2. External (used to be None)
3. M*Modal
4. PowerScribe 360

The following access strings determine the integration type will be available to be selected in the User Preferences>General> Reporting Mode options

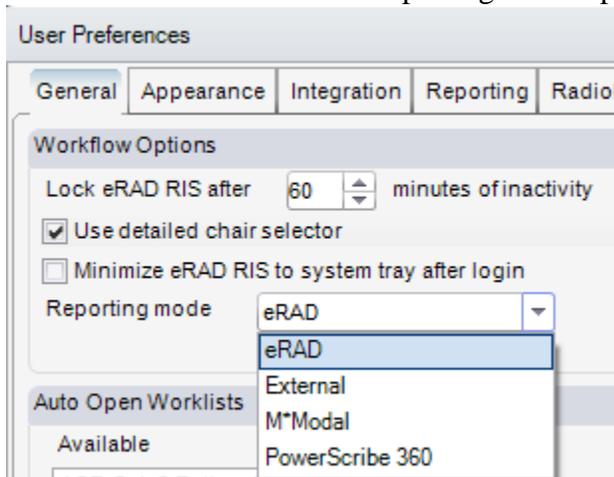


Figure 5.97 – Reporting modes

1. **Config.AllowEradReportingIntegration** – has a default of None. Controls access to eRAD reporting mode.
2. **Config.AllowExternalReportingIntegration** – has a default of None. Controls access to External Reporting Mode.
3. **Config.AllowMModalReportingIntegration** – has a default of Full. Controls access to MModal reporting mode
4. **Config.AllowPowerScribeReportingIntegration** – has a default of None. Controls access to PowerScribe 360 reporting mode

A new system configuration setting of "**AllowedReportingIntegrationTypes**" was added to control which reporting modes are available in the system. The default value for the setting is 15. The value is the sum of desired types where External = 1, MModal = 2, PS360 = 4 and eRAD =

8. So a value of 10 would mean that both eRAD and MModal are allowed. 15 means all are permitted (1+2+4+8=15).

In the template/macro lookup editor, we now have a drop down to identify which editor we are working with (MModal or eRAD integration). This drop down will default to the editor based on the users reporting mode. The default will always fall back to MModal if it's an available option assuming the user is using neither reporting integration types. It will also only load the values in the drop down if the system config setting and the access string allow for it or if the user is still on a no longer allowed mode. When only 1 value exists in the drop down, the drop down will not be shown.

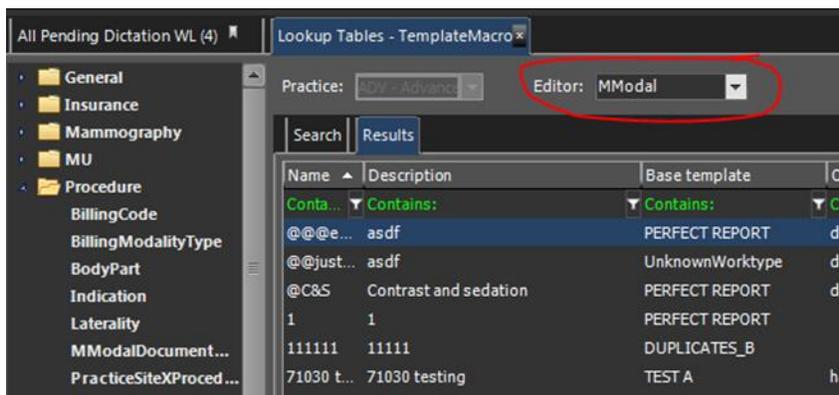


Figure 5.98 – Template/Macro defaulting to reporting mode

If the configuration is such that neither MModal nor eRAD Reporting is permitted, then the Template/Macro editor will not open. It will display the following message "The current system configuration doesn't support this lookup editor."

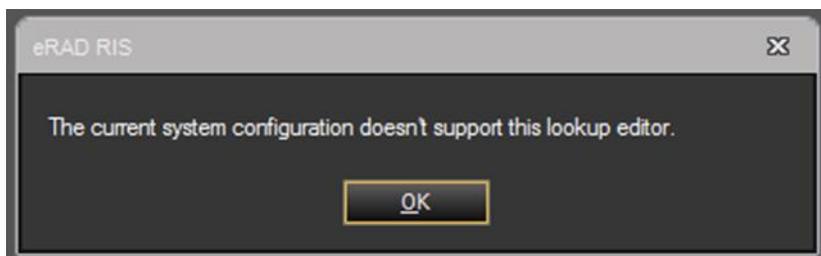


Figure 5.99 – Message is not configured for MModal or eRAD reporting

We are now hiding the “Interactive” and the “Interactive info prompt” group boxed in the “Radiologist” tab and the “Voice Recognition”, “Margins” and “Sections” group boxes under the “Report Editor” tab for user preferences when the user is using the eRAD integration type. We changed the text of the report tab on the reporting screen as follows...

- “Interactive Report” is now “M*Modal Interactive Report”

- “Batch Report” is now “M*Modal Batch Report”
- “eRAD Batch Report” is a new mode that didn’t exist before.
- “Report” for other modes like External or PowerScribe 360

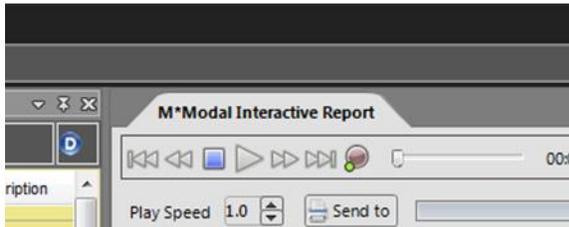


Figure 5.100 – MModal added to tab name when reporting mode is MModal

General Reporting – Custom Field for Modality Description

We added a new custom field in our list of custom fields that maps to the current study item modality report description column. The report description column is set in the Admin>Scheduling>Modality table.

If this value is empty nothing will be placed into the diagnostic report field.

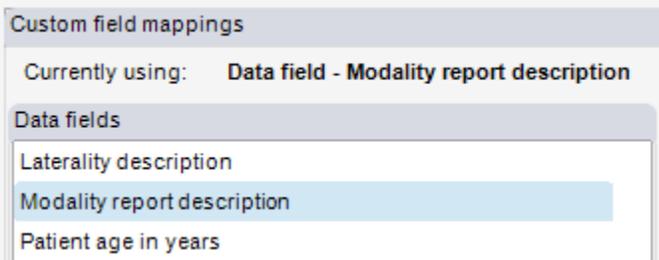


Figure 5.101 – Modality report description custom field mapping

General Reporting – Insert Template in the Template Editor

In the template editor we added a tab on the right hand side that will expand with the list of templates. User double clicks on one and the template will replace all the text in the current editor. We do not merge the documents. This is simply a way to get started using another template.

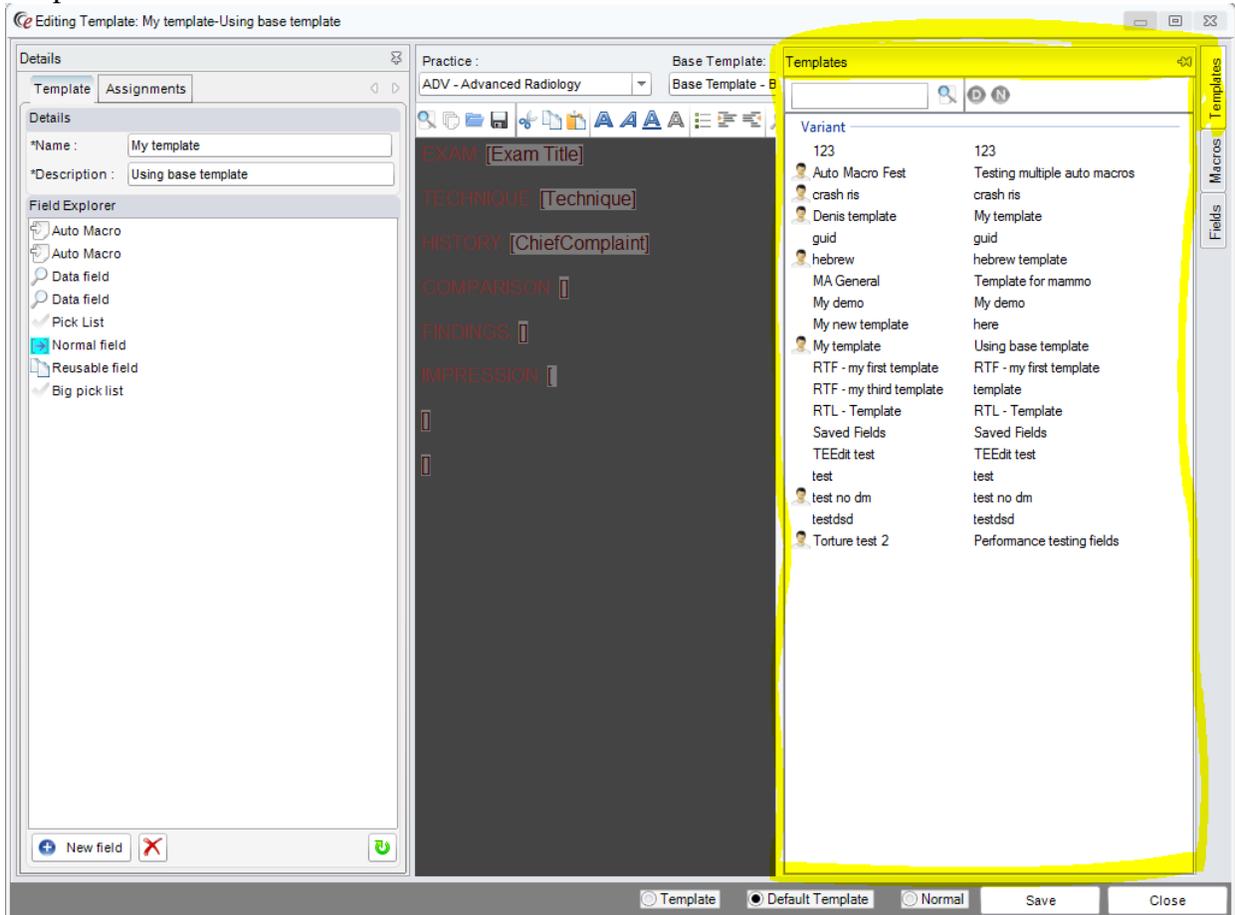


Figure 5.102 – Inserting existing template into new template

General Reporting – Support Pick Lists in Report Editor

We created a new field type called pick list. This option will be available when creating a new field. The field can be named and will show in the field editor as this name.

Users can add option to the pick list type of field and set the following properties on the pick list option.

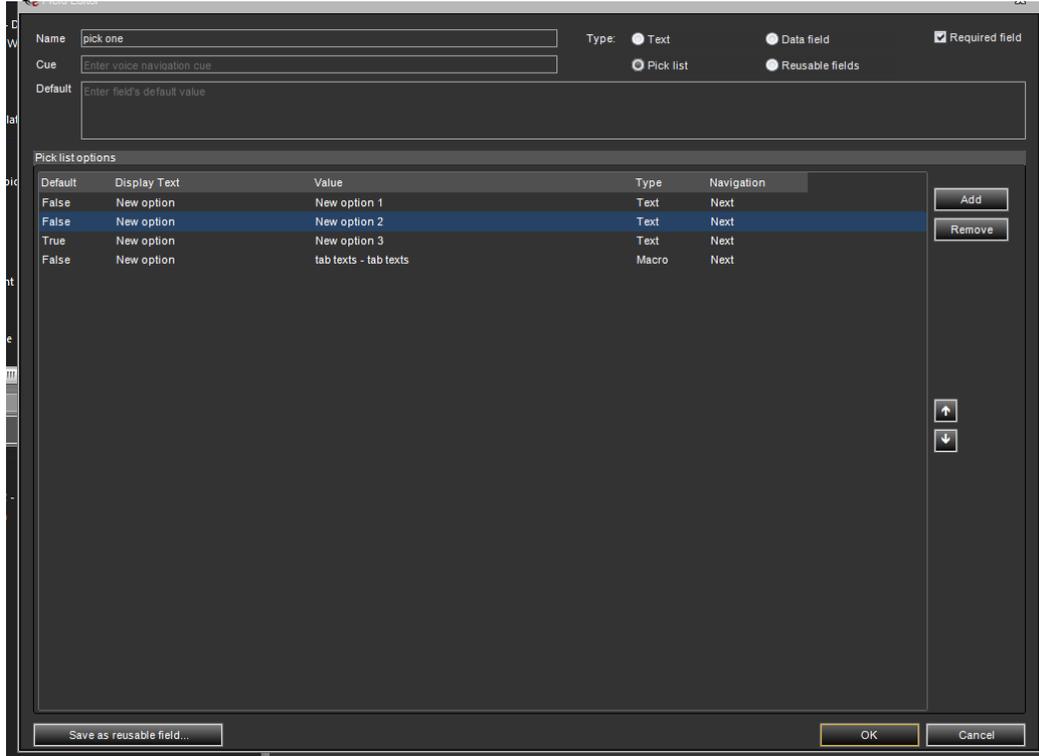


Figure 5.103 – Pick lists

Default – this will determine if the option will be inserted by default when the pick list is first loaded. This default option will be highlighted when the cursor is located in the field.

Display Text – this column will be what the users see in the first column of the “Pick list options” in the “Fields” tool window. Meant to be a short descriptive name.

Value – this column will be one of two scenarios.

- **Type** = “Text” we will simply put this text directly into the field as text.
- **Type** = “Macro” we will try to locate a macro matching on the text entered into the value column. If the macro is not found we will indicate to the user as we do similar to xKeys insertion.

Type – this column will drive the previous value setting. The default for this option is “Text”. There are only two options currently “Macro” and “Text”.

Navigation – this column will determine where the cursor and selection is placed after selected the option. It is a drop down with the following options.

- “Next” – default option will move to the next valid field in the report. Similar to click the next field on the speech mike or shortcut
- “None” – will not do any additional navigation after option selection
- “Previous” – navigate to the previous field

We have the ability to remove an add items in the pick list.

We have the ability to sort the options which is how they will display to the user when creating reports.

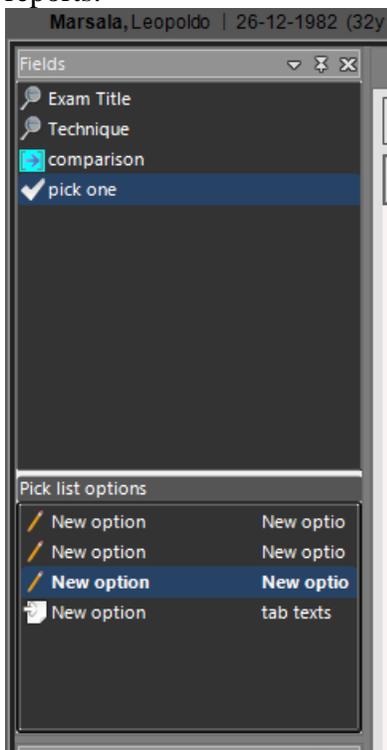


Figure 5.104 – Adding and removing from pick list

General Reporting – Technologist Name as Report Field

We added a new custom field that can be mapped into the diagnostic report that will contain the performing technologist if available.

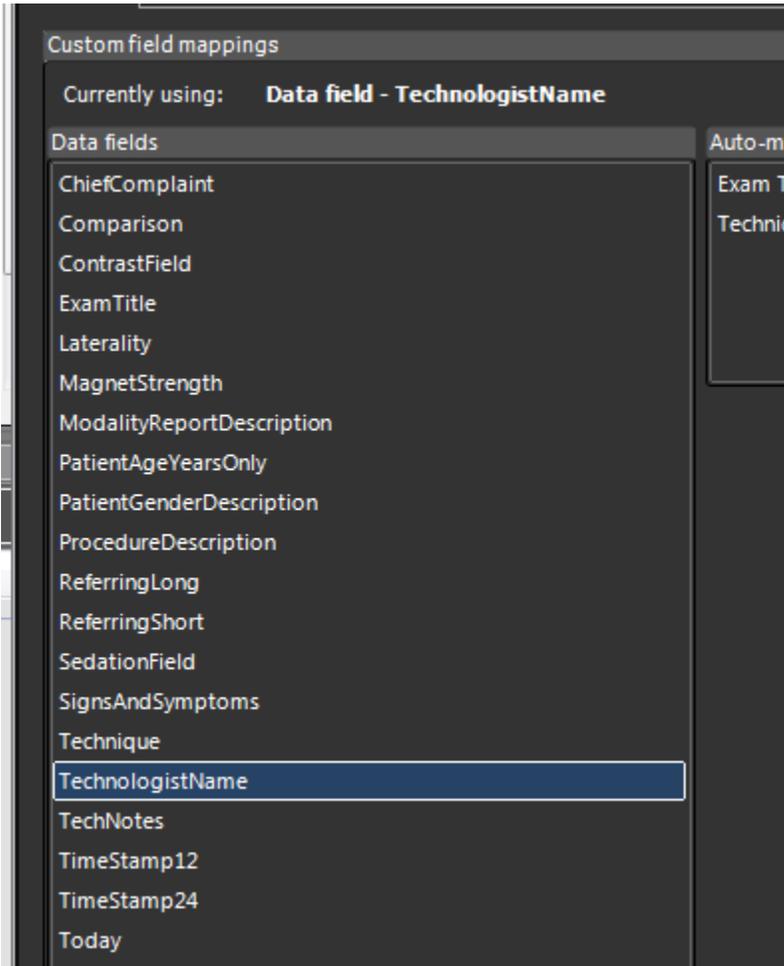


Figure 5.105 – Tech name as custom field

General Reporting – Support DEXA Reporting

Persistence of DEXA values is done in the eRAD RIS database in the c_study_item_dexa table. There will be one row per study item in this table. Typically one row per study until the system supports multiple study items per study.

Loading these DEXA values into the diagnostic reports is done via the template/macro manager tool. In this tool fields can be added and then mapped to the specific DEXA value(s). Current DEXA study values map the field directly to the c_study_item_dexa table. For previous DEXA study values map the field to the c_study_item_dexa_previous table.

Note that we populate the previous dexa table based on performed end date. This will also populate for unsigned studies as it was a performed DEXA exam.

Allowing technologists to create the report prior to the radiologist opening will be addressed in Build 45.1.

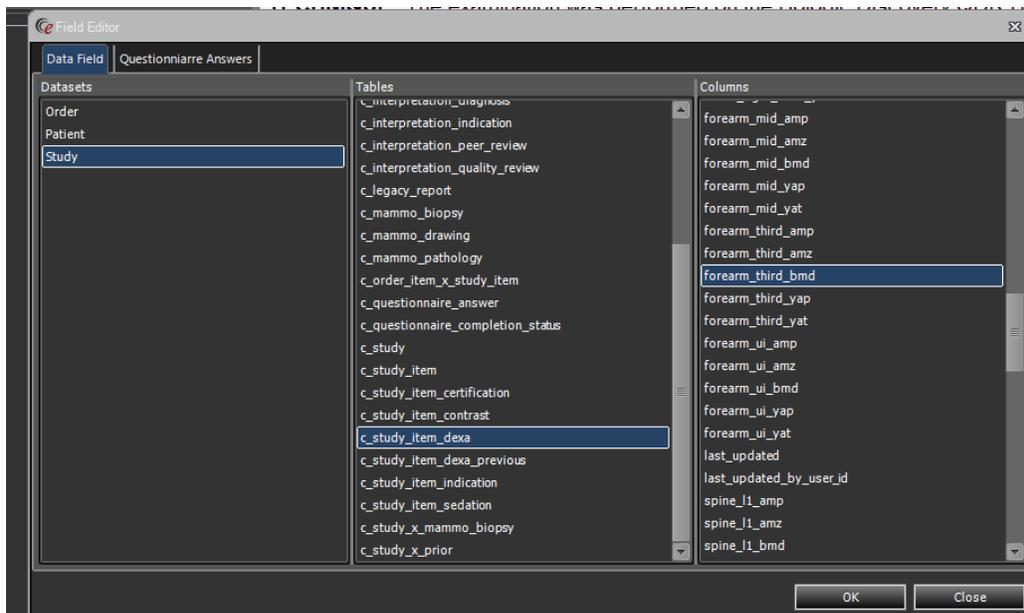


Figure 5.106 – Support for DEXA reporting

General Reporting – Zip Code Added to Signed Reports

The reading location zip code has been requested to be displayed in the report. The zip code is of the reading radiologist is captured in the County Selector or Chair Selector windows. Chair Selector is enabled in the Practice table, where the County Selector is enabled with the System Configuration setting of “**EnforceCountySelection**” with a default of False.

A new System Configuration setting has been added titled “**EnforceZipcodeSelection**” which has a default of False.

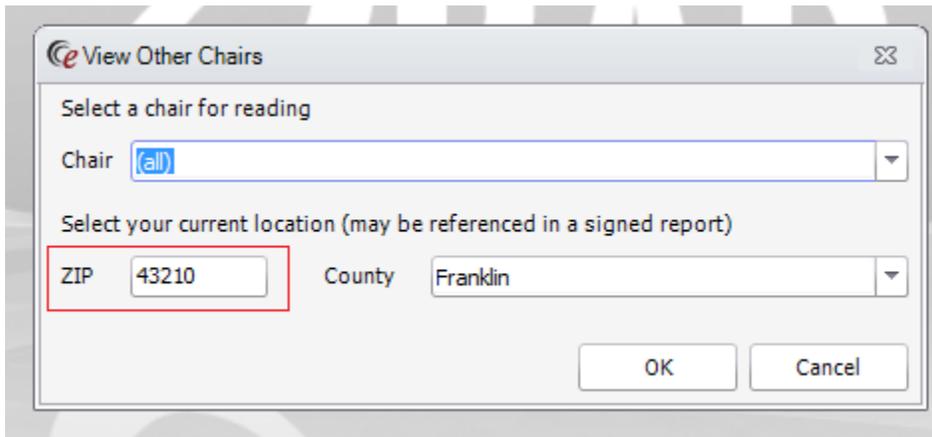


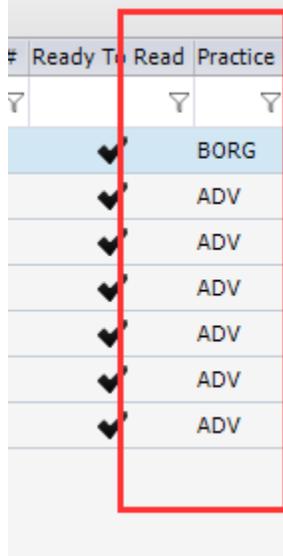
Figure 5.107 – ZIP for report and can be a required field now

When the setting is turned on, the user must enter a zip code before reports can be signed. The selected zip code will then be saved when the report is signed.

General Reporting – Restrict Exam Dictation to Associated Practice Only

We now check the practice code of the study and validate if the radiologist is associated to that practice. If not associated the dictate and sign button will be disabled.

Worklists needed to include the practice code column so the appropriateness checks would function properly. This was mainly a change in the worklist views with the addition of a store procedure used to get the My Signed By Date WL.



#	Ready To Read	Practice
✓		BORG
✓		ADV

Figure 5.108 – Practice column

If using the feature “Report on accession number” (inbound reporting) we check the practice code while opening the dictation screen and indicate to the user they do not have rights to open the study.

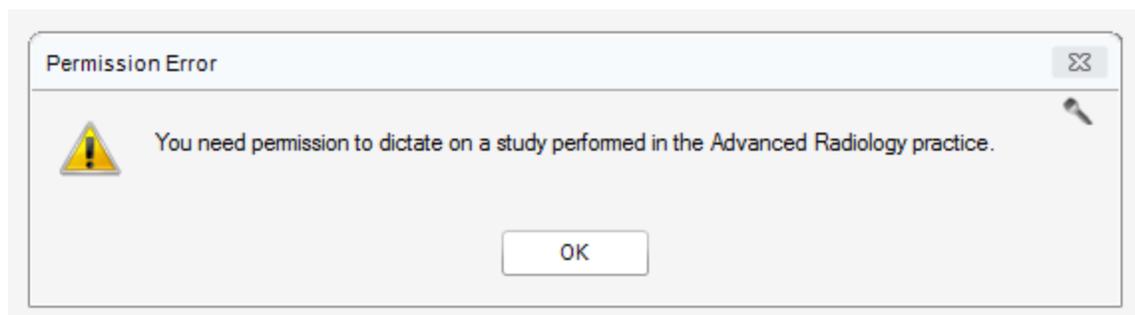


Figure 5.109 – Message informing cannot dictate because not assigned to practice

General Reporting – Show Only Assigned Studies on My Pending Dictation

The Pending Dictation (My) WL in eRAD RIS returns all studies assigned to the logged in user and studies not assigned to anyone.

We added a new practice level setting “Show unassigned studies on Pending Dictation WL”. This new setting is default to true (Y) which will replicate pre-existing WL functionality.

The screenshot shows a web-based configuration interface. At the top, there are input fields for 'zip code' (21244-3244) and 'Country' (US). Below these are several tabs: 'Miscellaneous', 'PACS and Reporting' (which is selected), 'Peer Review', 'Portal', and 'Radar'. Under the 'PACS and Reporting' tab, there is a 'PACS' section with a dropdown menu for 'PACS server' (set to 'PEI eRAD PACS server') and an empty text field for 'CD burner user profile'. Below that is a 'Reporting' section containing a 'CDS object ID' field with the value '2.16.840.1.113883.3.21.11740.361961.362921/9~Def' and a checked checkbox labeled 'Show unassigned studies on Pending Dictation WL'.

Figure 5.110 – Preference on practice to show/hide unassigned studies on Pending Dictation

If the practice chooses not to include unassigned studies on the Pending Dictation WL they can turn this setting off.

General Reporting – Assign Radiologist to Procedure Code Group

A new lookup table of ReadingGroup has been created and resides under the Procedure directory of the Configure menu.

We created a new custom editor to maintain this feature, it allows to see users/reading groups and procedures all on one screen with the ability to add/remove users and procedures from reading groups as well as creating and deleting reading groups.

The editor will open up as follows, it will list the reading groups in the top left grid, with the user assignments grid below, and the procedures on the right.

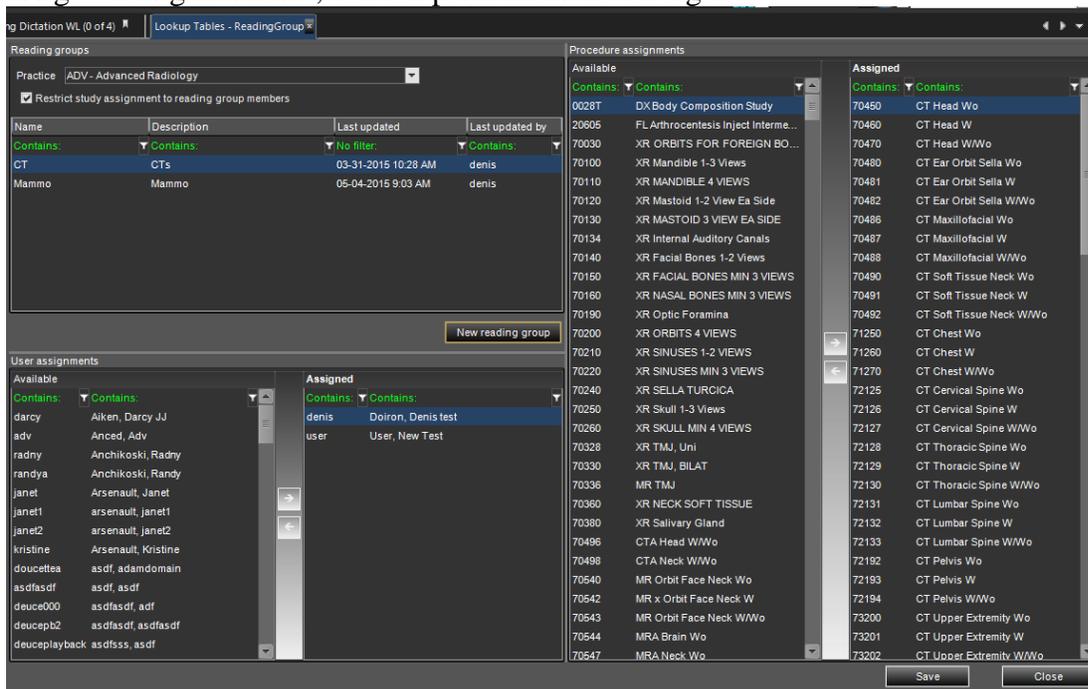


Figure 5.111 – Reading Group lookup table

When they choose to create a new reading group, they click the “New” button and a popup form will show asking for the name and the description of the reading group. These fields have validation and the “OK” button will only enable when they pass validation. Hovering over the red exclamation mark will provide information on why it isn’t passing validation.

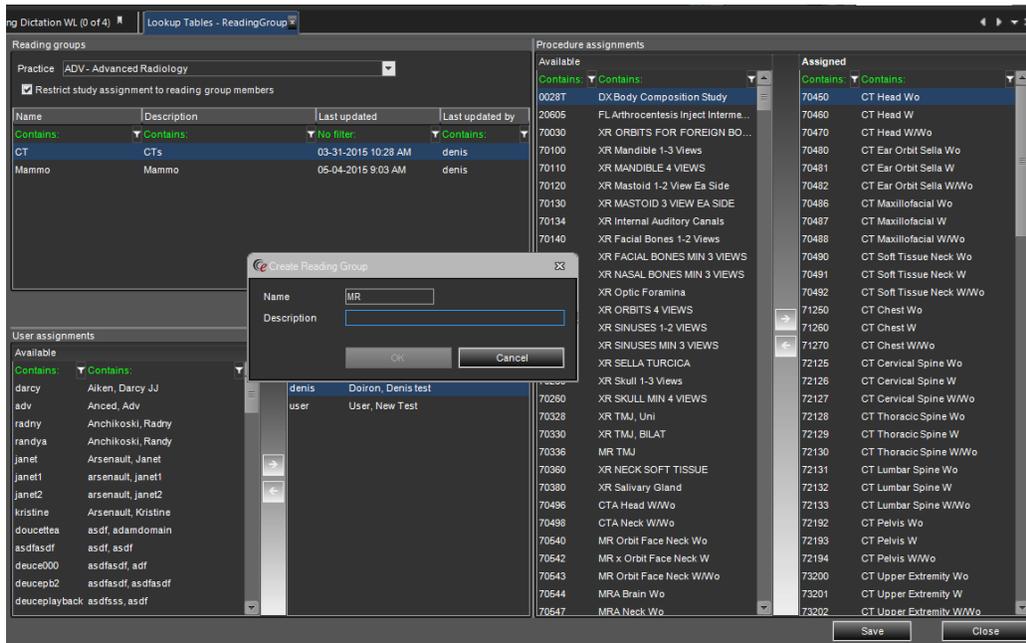


Figure 5.112 – Reading Group

The assignments areas are 2 separate grids, one showing the available items, and the other showing the selected items for this reading group. The user then moves item between them either by double clicking items, or using the arrow button between the grids until he/she is happy with the assignments. The user can create or modify multiple reading groups then click “Save” to commit changes to the database.

Users can be assigned to as many reading groups as desired, but procedures can only be assigned to 1 reading group per practice. Once a procedure is assigned to a reading group, it will no longer be in the available list for any other reading groups in that practice.

From this screen we can also control which practice will limit radiologist assignments to members of appropriate reading groups. This is controlled with the checkmark under the practice selection control.

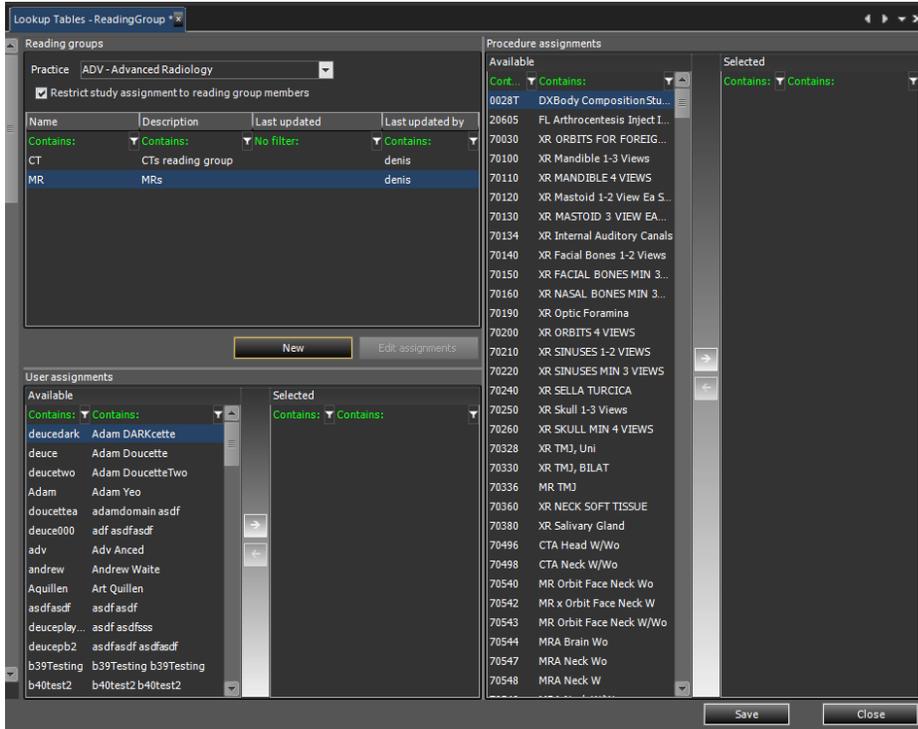


Figure 5.113 – Reading Group lookup table

This is also available to be configured in the “Add/Edit Practice” screen under the “PACS and Reporting” tab.

The screenshot shows the 'Add/Edit Practice' window with the following fields and values:

Section	Field	Value
Details	Practice code	ADV
	Description	Advanced Radiology
	Phone #	(443) 436-1100
	Fax #	(443) 436-4568
	Time zone	(UTC-04:00) Atlantic Time (Canada)
Contact	Contact name	Jim Smith
	Phone #	(443) 436-1100
	Mobile #	() -
	Fax #	() -
	Email	jim@mail.com
Address	Address 1	7253 Ambassador Road
	Address 2	
	City	Baltimore
	State	MD
	ZipCode	21244-3244
	Country	US
PACS and Reporting	PACS Server	PEI eRAD PACS server
	CD burner user profile	user profile
	CDS object ID	2.16.840.1.113883.3.21.11740.361961.362921.9-
	Reporting options	<input type="checkbox"/> Chair workflow enabled <input checked="" type="checkbox"/> Show unassigned studies on Pending Dictation WL <input checked="" type="checkbox"/> Restrict study assignment to reading group members

Figure 5.114 – Preference on practice for reading group

Users can also be assigned to reading groups in the personnel editor. Similar to how we assign user groups and schedule groups.

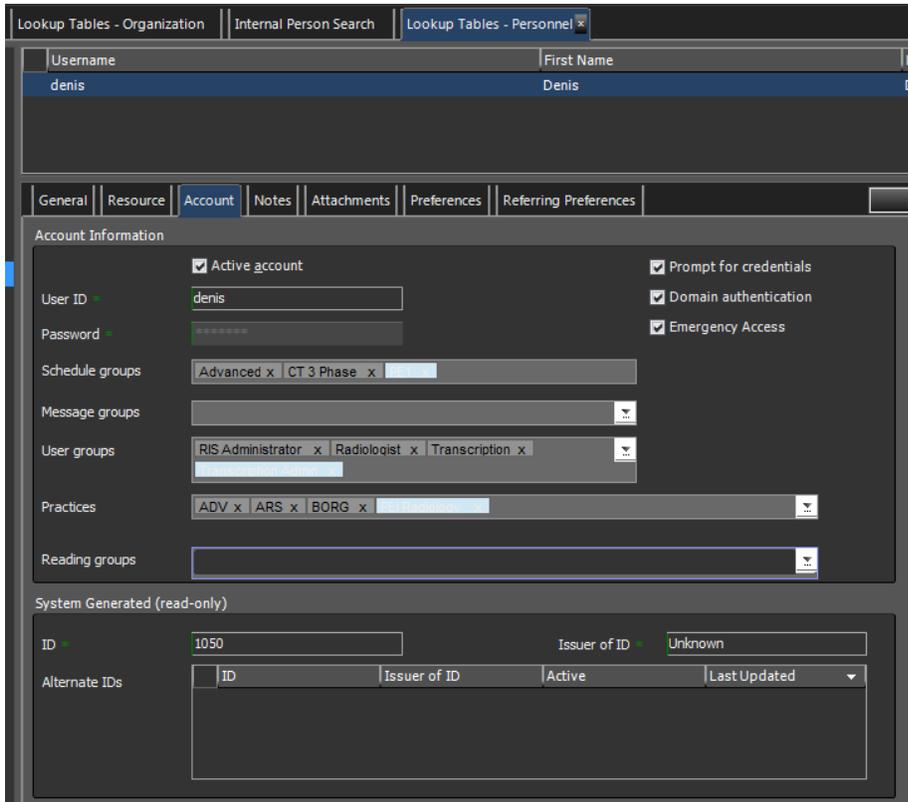


Figure 5.115 – Assigning Reading Groups in Personnel Editor

When the practice is set to “Restrict study assignments to reading group members” we will filter our “Assign to radiologist” dialog to limit the list of users to the currently assigned users or users that are part of all the reading groups of the selected studies. If we are assigning multiple studies as once, the users in the list will be the ones that are allowed to read all cases.

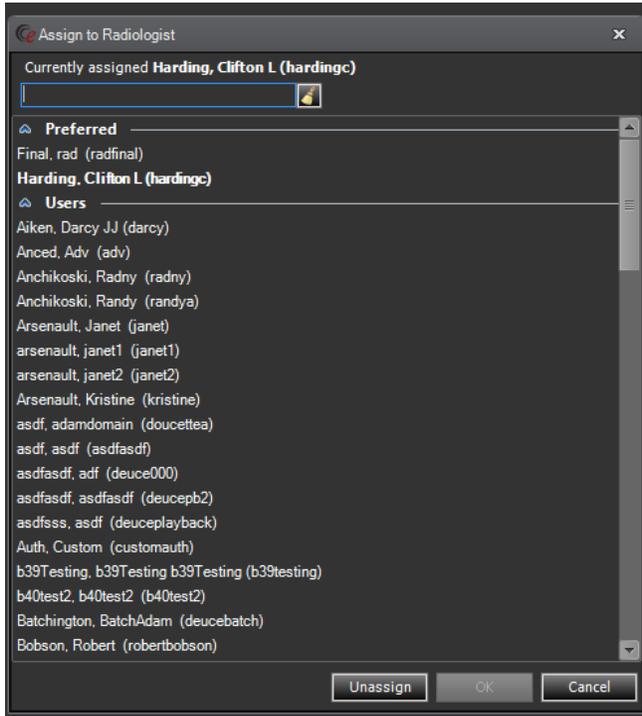


Figure 5.116 – Assign Radiologist filtered by Reading Group

A new column has also been added to the work lists. The Reading Group Column will display the Description and Name of the reading group and is available on the Patient Folder WL as well as the Radiology and Editor WL's

General Reporting – Elapsed Time Pending Signature

Added new column Elapsed Minutes Pending Signature renames Time Pending Signature to Elapsed Time Pending Signature.

The Elapsed Minutes Pending Signature will allow users to sort, filter and create conditional filters to highlight particular exams that exceed configurable amount of time.



Audio Size (bytes)	Elapsed Time Pending Signature	Elapsed Minutes Pending Signature	Elapsed Time
	3h 29m	210	

Figure 5.117 – New columns for time pending signature

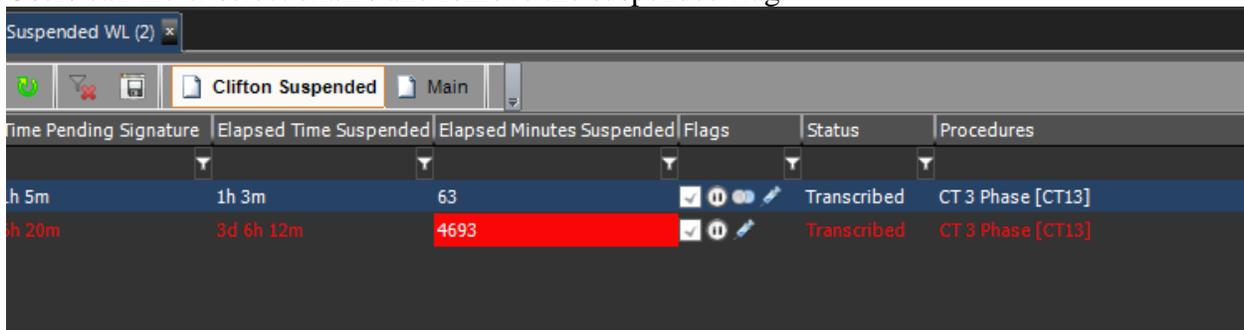
General Reporting – Show Elapsed Suspended Time on Work Lists

We added two new columns Elapsed Time Suspended and Elapsed Minutes Suspended.

The Elapsed Time Suspended was added for consistency with existing Time Pending Signature.

The Elapsed Minutes Suspended will allow users to sort, filter and create conditional filters to highlight particular exams that exceed configurable amount of time.

Users can multi-select exams and remove the suspended flag.



Time Pending Signature	Elapsed Time Suspended	Elapsed Minutes Suspended	Flags	Status	Procedures
1h 5m	1h 3m	63	<input checked="" type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>	Transcribed	CT 3 Phase [CT13]
1h 20m	3d 6h 12m	4693	<input checked="" type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>	Transcribed	CT 3 Phase [CT13]

Figure 5.118 – New columns for time suspended

General Reporting – Ability to Display Audit History for Peer Review

When a report was Peer Reviewed it was never captured in the Audit History. This was to hide the details so other users could not see who had Peer Reviewed others studies.

We now control visibility of the “Report Peer Reviewed” audit entries via access string of “**Clinical.AuditHistory.ShowReportPeerReviewed**” which has a default of None.

If the access string is set to “Full” the entry will be displayed. If set to anything else it will be hidden.

Reporting MModal – Upgrade to MModal Version 7.93

We applied the new libraries provided from M*Modal in our application. This new version uses a new recognizer version (v6). To utilize and gain the benefit from this newer recognizer we must notify M*Modal so they can make backend changes to the users account.

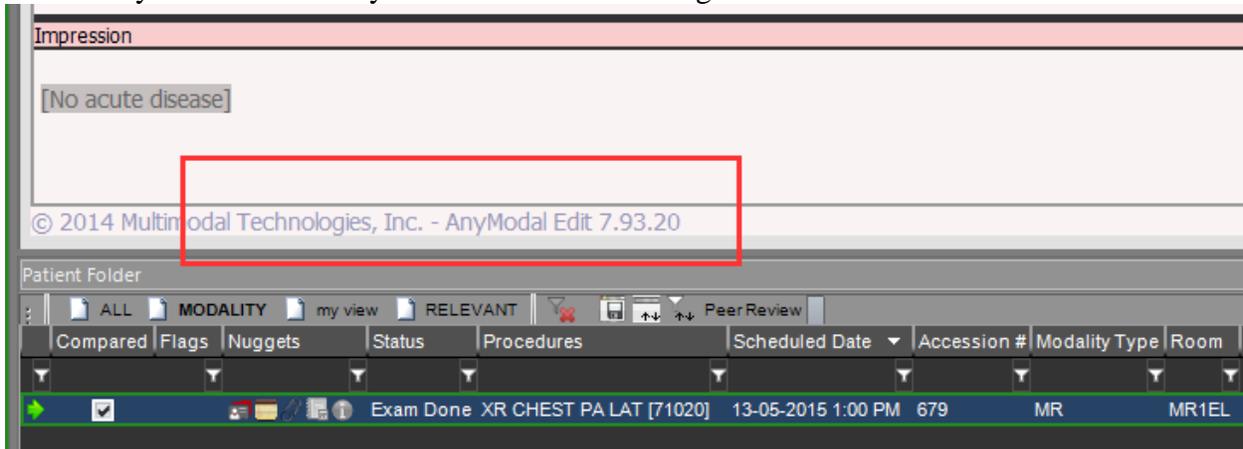


Figure 5.119 – MModal 7.93

Reporting PowerScribe – PowerMicII Support

We integrated the PowerMic II device by referencing the Interop.USBMgrLib.dll in the AudioLib and MainApp projects. This library exposed the needed methods and hooks for us to tie into the device button presses.

Below is a screen shot displaying all of the buttons that can be configured in eRAD RIS.

Configuration options are the same as the Philips Speech Mike device.

We coded the device to support hot-swapping. You can plug and unplug on the fly and it will be recognized with a message.

If another system is using the Power Mic II as an input device you can set the buttons in eRAD RIS to do “Nothing” so it doesn’t conflict with the other application.

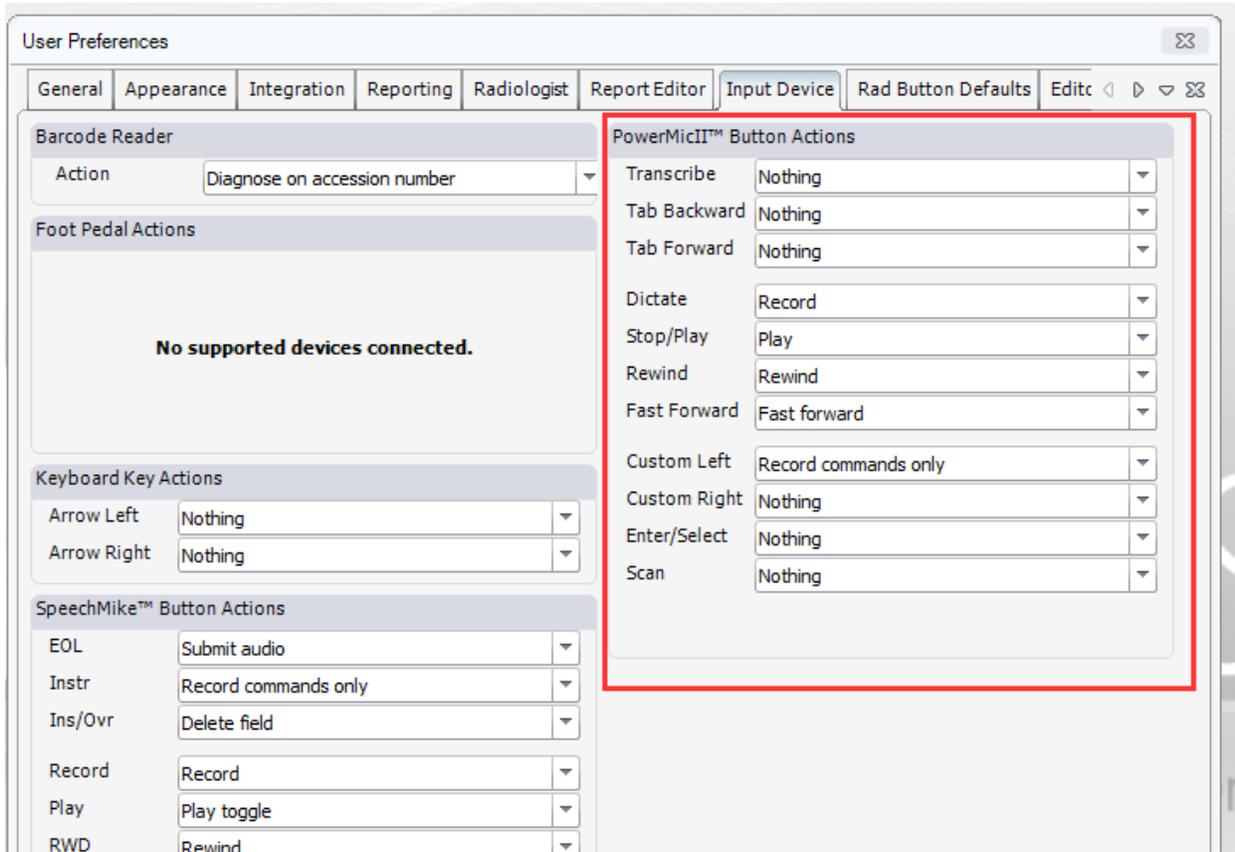


Figure 5.120 – PowerMic button assignments mapped via user preferences

Document Distribution – Save Patient Preference for Report Distribution

The patient preference for report distribution will be saved in the order table in a new column of patient_report_delivery_preference. This feature will not be mapped to any screens in RIS, but simply a place in the system to store the data to receive from and/or pass to external systems.

Document Distribution – Active Printer Synchronization

The DD now starts a task for the queue poller then loops every 10 seconds to poll for new/changed printers each iteration.

If it finds a new printer that is also in the lookup, it will start the worklist worker for this printer. If it finds a printer that is not in the lookup but is currently being worked it will stop the worker. If it finds a printer that no longer has *Keep Printed Documents* turned on then it will stop the worker.

Document Distribution – Verify Printer’s Keep Printed Documents Setting

We now check to make sure the printer has the Keep Printed Documents checked box checked before we submit jobs to it. If it does not, then it will print an error message indicating that printer does not have this setting and will not add it to the list of printers for which is submits jobs. An error message will be printed to the console to indicate that this printer does not have the *Keep Printed Documents* setting on.

Submitting a print job for this printer will now result in the job staying in Pending status.

Document Distribution – Jobs Created When Transaction Fails

All jobs now roll back if any portion of the work of processing the jobs fails to complete. Instead of processing the queue item in one transaction, it is now done in three steps each having its own transaction logic.

The first step involves a database transaction where the action queue row will have its available date time temporarily set to a future date to act as a reservation time period so no other program pulling from this queue can get the same job. This period is based on the database time and a configurable reservation time in the applicationsettings.config file.

The second step is where the actual business logic takes place. This may or may not be done within a transaction, depending on the needs of the program using the queue. The DDE uses a transaction for this step but the Wedge which uses the same code does not.

The third step is within another database transaction and either deletes the action queue row if it was successfully processed or updates it if it was not.

The three step approach has been applied to processing c_action_queue rows one at a time as well as to the strategy of processing all rows grouped by the action_data_key values of their corresponding c_action rows.

Added new settings in the applicationsetting.config file for DDE Service for:

QueueItemReserveTime – This setting determines how long the Wedge will reserve a queue item.

DDEQueueItemReserveTime – This setting determines how long the DDE will reserve a queue item.

Document Distribution – EMR Distribution Jobs Validity Check

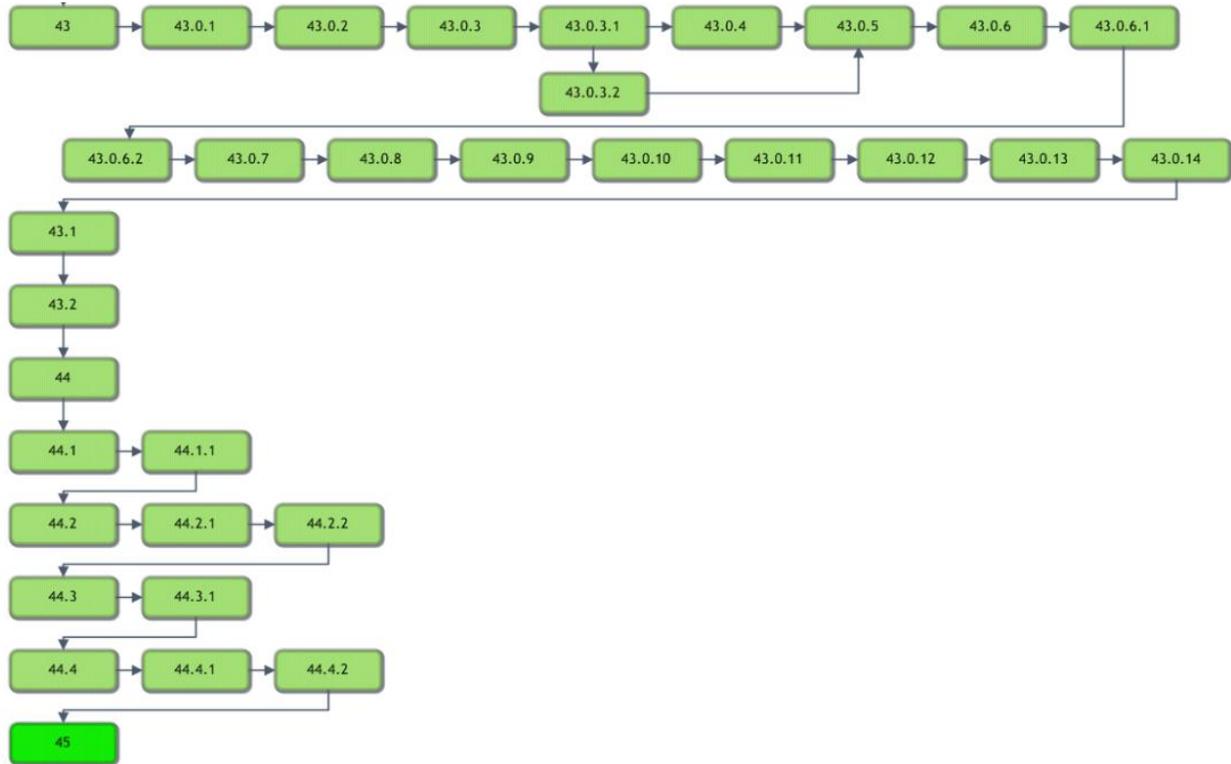
EMR distribution jobs should go to error status in the following cases:

- 1) The job is related to an EMR order that has multiple studies associated to it and the EMR does not have functionality to account for it.
- 2) The job is for an order with no placer order number but is destined for an EMR that does not support unsolicited reports.

There were two new columns added to the EMR lookup table to denote the ability of the EMR to accept reports for these cases.

- supports_unsolicited_reports_flag
- supports_multiple_reports_flag

6. Code Stream



Legend:

Light Green = Released software

Gray = Will not be released

Bright Green = Current Release

7. RIS Release Version Numbers

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

8. Resolved Defects

Bugs Suggested Features and Support Issues resolved in build 2.45. The extract is taken from Redmine bug tracking system and only displays defects resolved in 2.45.

Bug #	Priority	Subject	Category	Found Version
8612	Immediate	DB data dictionary was not being created in B44 or dev branch	DB	2.44
9506	Urgent	view c_frm_reminder_letter missing a status in its filter	DB	2.43.1
9355	Urgent	Possible to set site code for outside reads to null via IVT. ***Study will disappear from patient folder.	DB	2.43.1
9205	Urgent	IVT WL queries are terribly slow for a 3 Radnet data centers	IVT / Precert	2.43
8555	Urgent	Laterality for scheduled procedure is not being initialized as expected.	Scheduling	43.1
8411	Urgent	Patient Name to be included in Email message to RADAR	Document Distribution	2.43.1
9619	High	Collection was modified error related to worklist views	Radiology Reporting	2.43.1
9531	High	Error arriving studies from same order	Reception	2.44.2
9514	High	AppointmentBook is showing cancelled studies	Scheduling	2.44.2
9347	High	Contrast - Perform Exam on non-contrast and contrast study copying contrast/billing codes to non-contrast study	Technologist	2.44.1
9334	High	Scheduling - Body part list is not filtered down when possible list of values exists	Scheduling	2.44
9282	High	Details result set dates are not correct, versus the review tab and timeslot search	Scheduling	2.43
9232	High	Contrast - Perform Exam - CT dose changing while starting exam with multiple studies from same order	Technologist	2.44.1
9021	High	Adding Alternate MRN error in message	Patient Folder	2.43.1
8763	High	QA flag is not removed after verifying edit	Radiology Reporting	2.44

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8762	High	All signed pending QA context menu option for verify edits doesn't open proper action and report can be released	Radiology Reporting	2.44
8460	High	Insurance Eligibility - Copay is asked for when billing codes are configured with "Allow amount to collect with Valid Insurance" set to 'N'.	Insurance Eligibility	43.1
8404	High	New Walkin Button from Patient Search results does not trigger the existing orders prompt	Reception	2.44
8132	High	Marketing - Monthly Variance Report performance issue	Mgt Reports	2.43.0.14
8066	High	MQSA Location Summary Group By BI-RADS - Calculation error	Mgt Reports	43.0.12
7837	High	c_frm_core_view - update view	User Views	2.43.0.6
7730	High	MQSA Location Summary Group By BI-RADS - times out on large installations	Web Services/DB	2.43.0.6
6929	High	Log text box control should display UserID - not a combination of lastname + first initial	All Workflows	2.42
6106	High	error opening merge suggestions due to patient search results	Web Services/DB	1.41
10539	Normal	Arbitration Signed does not save on PerformExam and ViewEdit screen	Technologist	2.44.3
9695	Normal	Undo feature allows user to backspace date/user in notes	Logging	2.44
9661	Normal	Scheduling - Advanced search panel - the time field allows invalid input	Scheduling	2.43
9607	Normal	Login - If you attempt login with blank userid or password you get an error 500 message	Localization	2.44
9600	Normal	patient search is slow when search for first name with "search other variations" turned on and sounds like is used	Patient Search	2.44.2
9536	Normal	error changing pre-cert info on registration	Reception	2.44.2
9520	Normal	Scheduling - Advanced serach - First day of the week should follow the config item for first day of week.	Scheduling	2.44

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9482	Normal	datamodel test case - PrimaryKeyTest() is ignoring tables that it should not be.	DB	2.43.1
9477	Normal	missing database index on c_eligibility_invoice.eligibility_invoice_key	Web Services/DB	2.43.1
9469	Normal	Insurance Eligibility - Warning entries for EligibilitySpecialCondition are not ignored when marked as inactive	Insurance Eligibility	43.1
9442	Normal	Access strings - some flags cannot be visually turned off for users	Admin-Other	2.44
9440	Normal	Template/macro lookup editor shows user names and dates in the wrong format	Radiology Reporting	2.41
9367	Normal	View/Edit - Outside Reads throws error on opening View/Edit.	View Edit	2.44
9288	Normal	a db sql job was causing locks and resulting in slow screen loads	Mammography	2.43.1
9285	Normal	Chair selector - Cancel is not enabled when logging into the application.	Radiology Reporting	2.43
9264	Normal	Color Dialog boxes not persisting custom colors	UI Look and feel	2.4
9246	Normal	CA - job to call c_SummaryMaster failed	DB	2.43.1
9234	Normal	db upgrade scripts will not work if there user supplied credentials	DB	2.44
9233	Normal	Contrast - Changing performed procedure in Perform Exam keeps contrasts but removes their billing codes	Technologist	2.44.1
9221	Normal	Unable to make contrast not required for techs without affecting MU contrast alerts	Technologist	2.44
9220	Normal	ICode expiration date is currently hard codes to 5 days needs to be changed	Connect Patient Portal 1.x	2.44
9219	Normal	MU - Generating of the Icode code needs to be expanded to generate the Icode code at Check-In Status	Meaningful Use	2.43
9177	Normal	RIS DB scheduled jobs should run as a non active directory user.	DB	2.43.1
9094	Normal	Cannot access a disposed object. Object name: 'MainShell'. When exiting application.	Radiology Reporting	2.44

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9019	Normal	Activation issue when using next workflow in dictation screen with reuse on.	Radiology Reporting	2.44
9017	Normal	Collection was modified error on application exit when using Minimized to tray.	Embedded Reporting	1.39
9014	Normal	Preferred Site (c_orderRow.filler_site_code) isn't required when saving an order through "Schedule Later"	Scheduling	2.44.1
9013	Normal	Preferred Site (c_orderRow.filler_site_code) not auto-populating on Scheduling/Walk-ins	Scheduling	2.44.1
9000	Normal	Personnel - Entering password and changing back to the password field later gives "Cannot reuse one of the users last 3 passwords" message.	Person Management	2.44
8996	Normal	Personnel - Unknown NPI and Registered in PECOS checkbox unchecking themselves in certain scenarios.	Person Management	2.44
8989	Normal	Volume level is very high during playback of dictations.	Radiology Reporting	44
8766	Normal	Report History Icon - Study Info panel is always empty.	Radiology Reporting	2.44
8757	Normal	Report History - Error on reports drafted that are Batch and Edited by System as long as it's not an addendum	Radiology Reporting	2.44
8702	Normal	Contrast - Amount value is getting reset back to the default when clicking the start button.	Technologist	2.44
8676	Normal	procedure c_UpdateSalesSummary fails when c_study._site_code is null	DB	2.43.1
8661	Normal	precert query that executes thousands of times in large data centers that could be improved with an index	DB	2.43.1
8648	Normal	CDS Console Management menu option should be available regardless of users reporting mode	Radiology Reporting	2.42.1
8571	Normal	Add alternate MRN is using Issuer Code and Responsible Party is using Description from Issuer table	UI Look and feel	2.44
8527	Normal	Error when trying to create a new template for dictation	Radiology Reporting	2.44
8511	Normal	Payment screen: Last 4 digits of credit card number error and mask are not intuitive.	Payment control	2.44

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8470	Normal	When the PACSIntegration.Override is set to None, get error when you log into RIS	PACS (eRAD) Int - RIS only	2.44
8455	Normal	Error produced if contrast amount is deleted and then the Start or Complete button is selected.	Technologist	2.44
8416	Normal	Connect referring portal is not display quick launch icon	Connect Referring Portal 3.x	2.43
8379	Normal	Title of a Peer Review Report and the title from the folder do not match	Mgt Reports	2.44
8378	Normal	Peer Review Reports are not displaying today's data unless tomorrows date is included in the date range	Mgt Reports	2.44
8302	Normal	Assigned Radiologist is not recognized as assigned in the Assign to Radiologist window	Radiology Reporting	2.44
8301	Normal	GetExamCountsByChair takes a rather long time to execute	Radiology Reporting	2.43
8282	Normal	Dictation Control - Form that is already visibile cannot be displayed as a modal dialog box.	Radiology Reporting	2.44
8184	Normal	BulkWritable columns operations fails in patient folder if there is an order that is not scheduled in the patient's folder	Patient Folder	44
8062	Normal	IVT Turnaround Report Failing	Mgt Reports	43.0.14
8005	Normal	Radiologist reading location - user prompted twice	Radiology Reporting	43.0.12
7995	Normal	County Selection - DB upgrade issue	DB	43.0.12
7977	Normal	Carrier - Performance issue saving lookup table	Insurance Managment	43.0.12
7845	Normal	Floating windows in reporting cannot be made smaller after opening a reporting screen.	Radiology Reporting	2.43
7824	Normal	Person search - Unknown gender is confusing with unknown referring	Web Services/DB	2.42
7792	Normal	Management Reports - No Date Range displayed on 'Carriers Not Using Insurance Eligibility' report	Mgt Reports	2.43.08

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7784	Normal	Adminsitration - Conditional Tab - exception possible after clearing value	Questionnaire	2.43.1
7675	Normal	Need to alter the varchar(5000) fields to varchar(max)	DB	2.43
7576	Normal	Patients from an Electronic Order are not searchable from the Walk-In screen	Reception	2.43
7188	Normal	County selection screen requires user to click or tab to county field.	UI Look and feel	2.43
7171	Normal	Workflow issue saving order when specifying scanned document at exam level	Scanning	2.42
7096	Normal	Reschedule reason drop down lookup lists - Not ordered correctly	Infrastructure	2.41
6360	Normal	The advanced search icon is small, and needs a hover text to ensure clarity of it's purpose.	Scheduling	1.42
5527	Normal	Reporting - Support for IE10	Embedded Reporting	1.4
2935	Normal	New Appointment button is available to users who don't have rights to create new appointment	Scheduling	1.39.001
1963	Normal	Scheduling summary screen overlaps windows taskbar.	Thick Client GUI	1.37
1339	Normal	Column chooser appears to have hidden column names available	UI Look and feel	1.36
8604	Low	Race not auto-populating from Confirmation window	UI Look and feel	2.44
8577	Low	Family History not auto-populating in Edit Billing window (BEWL)	UI Look and feel	2.44
8564	Low	Note to radiologist, the acknowledgment warning has a spelling mistake "actionning" should only have 1 n "actioning"	Radiology Reporting	2.44
8545	Low	When an exam is aborted by a tech in the perform exam window, it is removed from the PACS WL, it can be set back to started then completed (exam done) but the exam is not recreated in PACS.	PACS (eRAD) Integration	2.44
8248	Low	Improper english in eRAD RIS warning message.	Thick Client GUI	2.44

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7951	Low	Unused system config setting for LookupTableIndexTimeToLiveMinutes should be removed	Web Services/DB	2.43.0.12
6978	Low	Message box - poor wording	UI Look and feel	2.43

9. Known Limitations

The following are Bugs Suggested Features and Support Issues found in build 2.45. Bugs reported in previous versions are not captured as Known Limitation in this document.

#	Status	Priority	Subject
10568	In Progress	Urgent	Memory leaks present and memory usage climbing very quickly.
10912	New	High	EMR with new MRN grid
10910	New	High	Unable to match EMR patient to internal patient (Duplicate MRN message)
10897	New	High	Linked Reports - linked_id column should be default of null instead of 0
10846	New	High	Questionnaire - Checkboxes cannot save Y and N values
10844	New	High	Questionnaire - Hebrew questionnaires opened in a browser RTL issue with Save/Finish/Next Page/Previous Page buttons
10840	New	High	Duplicate MRN issue when using the New Patient button from data window or from patient search
10825	New	High	Hidden answers are saved as though they were visible
10767	New	High	M*Modal Interactive Dictionary color problem
10760	New	High	Walk-In - Existing Orders window showing on Checking In
10712	New	High	apparent memory leak in user preferences screen
10620	New	High	Editing pick list option values and hitting enter while cell is in edit mode causes issues
10560	New	High	Schedule - Able to schedule without a room selected causing exception
8994	In Progress	High	ris.exe crashes on exit on Windows Server 2012
10926	New	Normal	New Reading Group lookup table is missing access string
10924	New	Normal	Addendum request's assign to rad dropdown does not show *Preferred rads
10922	New	Normal	Unable to assign to radiologist from the work list for addendums
10920	New	Normal	Next - Previous navigation - keyboard action- Selecting Previous field or section causes an error when using eRAD editor.
10919	New	Normal	Change font size feature does not change the size in the menus
10918	New	Normal	When in the dictation window and using the Next - Previous navigation, hover icon says 'Previous field'

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			regardless if using Next or Previous
10917	New	Normal	Technologist verified ID is required but not showing any indication that is it.
10916	New	Normal	Rename column in modality lookup to avoid confusion
10915	New	Normal	EMR orders missing Contacts/Demographics information
10914	New	Normal	Error when trying to save an incomplete insurance policy if there is an existing expired policy that is "not shown"
10911	New	Normal	MRN - Error on hover on empty issuer
10905	New	Normal	The RIS Icon when launched via Citrix is an 'R'
10900	New	Normal	When launching RIS via Citrix, default for PACS is Hologic
10899	New	Normal	Preferred rad - Display order the same on multiple items
10898	New	Normal	Preferred Rad - Inactive rads can be added to the list
10896	New	Normal	Open Patient Tab limitation setting is exceeded when Reuse Reporting Screen is checked.
10892	New	Normal	error when opening context menu from dataset visualizer
10889	New	Normal	System Config ShowDOBCalendar=False doesn't apply to IVT window
10887	New	Normal	Dictation files save to external location, when they cannot be found in the Gui the Load Audio button is displayed once then the dictation controls are accessible
10885	New	Normal	eRAD Report Editor - Clicking/drag dropping is copying selection of text within report
10882	New	Normal	Visibility Framework - Most fields cannot be set to read-only on Contacts/Demographics tab
10879	New	Normal	Visibility Framework - Including a study on Perform Exam re-enables read-only fields on Documentation tab
10878	New	Normal	Visibility Framework - Some fields cannot be set to read-only/hidden
10858	New	Normal	Validation Framework - Audit History errors in Event Viewer on null value for condition
10857	New	Normal	Report history ICON missing from toolbar in reporting window
10856	New	Normal	Reporting - (Hebrew RIS) Copy button on Reporting panes includes \t
10853	New	Normal	Peer review - skip and continue does not work

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10850	In Progress	Normal	Ability to arrange pages in the questionnaire
10848	New	Normal	Ability to set the display order for conditional tabs
10836	New	Normal	Questionnaire - Unable to save blank/null entries for dropdowns that are tied to DB fields
10829	New	Normal	Polling queue next workflow will try to open interpretation types that the user doesn't have access to
10828	New	Normal	Tabs on the All Suspended WL should state which WL, ie Rad or Editor
10821	New	Normal	When using the New Walk-In and New Appointment from patient search if the patient has existing orders the existing orders popup is incorrect
10820	New	Normal	Unable to remove dates in a date field.
10818	New	Normal	Object reference error when moving mouse over MRN in the MRN grid when the issuer is not one of the issuer's listed in the l_issuer table (EMR MRN)
10817	New	Normal	Issuer does not show up for MRN's from EMR's if the issuer is not in the l_issuer table
10813	New	Normal	Rulesets are evaluated in design mode
10792	New	Normal	When saving a scheduling availability template, the template selection should remain on that template
10789	New	Normal	Image Request - not repopulating the location value
10786	New	Normal	Image request form - phone number - Appears to not populate when only 1 address for the referring
10784	New	Normal	Action Container should not contain c_primary_interpretation node.
10783	New	Normal	Order notes on MU tab needs to take into account Order X
10782	New	Normal	Attached Documents window should have the Minimize option disabled
10775	New	Normal	Personnel - Modifying Additional Resources doesn't recognize changes after intial save
10763	New	Normal	Walk-In - Error on Patient Search>Walk-In>Selecting Mutliple orders from Existing Orders window
10761	New	Normal	Register - MU fields not clearing validation properly
10753	New	Normal	Visibility Framework - Need a way to hide State field on Image Request window
10751	New	Normal	Questionnaire-When creating a text box the instructions "Double-click to edit" remain in the text area
10749	New	Normal	IVT WL - Referring Physician Specialty Column filtering should default to "Contains"
10747	New	Normal	Visibility Framework - Some fields have additional

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			labels that can't be hidden
10740	In Progress	Normal	Reading Groups- Changes to assigned/unassigned Users and Procedures are not contributing any update to the Last updated field
10720	New	Normal	Possible SQL injection on WL queries with parameter order by
10714	New	Normal	External Scheduling Interface - Issue with GetBookingLock and Expiry
10698	New	Normal	Opening a 2nd patient folder from patient search causes an error if data nugget is opened for 1st patient.
10697	New	Normal	Questionnaire- Unable to click and drag to move a question box
10686	In Progress	Normal	Template/Macro Lookup - context menu option Export List to Excel is not working
10685	In Progress	Normal	Template/Macro Lookup - context menu export templates defaults file type to cda (xml)
10676	New	Normal	Assuta External Scheduling Interface - Issue with EndDate
10670	In Progress	Normal	ERAD Editor - when you edit an existing macro, can easily edit a field when you meant to create a new field.
10666	New	Normal	Laterality required orders can be misleading to user if there is more than one
10657	New	Normal	Perform Exam - Body part dropdown isn't filtered initially
10654	New	Normal	Strange behavior in template created in a previous version of RIS
10618	New	Normal	When editing pick lists, there is no way to navigate between cells in the grid.
10615	New	Normal	Word Viewer - closing Word Viewer when closing another reporting tab
10614	New	Normal	When using "Cache Reporting Screen" User Preference once you open a dictation for Addendum every time you try and open the dictation screen after that you get an error from interpretation_get saying there is no item at index 1
10612	New	Normal	Word Report Viewer does not close when closing the patient tab
10597	New	Normal	Linked Reports - User preference to set current study linked background color.
10577	QE Rejected	Normal	Priority column is interfering with the new prioritize arrows in the Insurance Policies grid
10575	New	Normal	Text Expander - adding a new value only saves for the

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			session, log out and back into RIS, value is not saved.
10555	New	Normal	Picklist - with several options, 1 being Type = macro. The macro has several lines of text that is bulleted, when inserted into report numbering is incorrect.
10553	QE Rejected	Normal	Configuration module window still mirrors R to L when it should not
10549	New	Normal	Questionnaire datepickers do not display as RightToLeft when the Questionnaire is RightToLeft
10513	New	Normal	eRAD Report Editor - Entries made in M*Modal text expander
10508	New	Normal	db view called c_vw_WL_SignedByDate_My is obsolete.
10491	New	Normal	There needs to be an access string to disable the 'save as order' button
10465	New	Normal	Cancel Study - c_previous_referring does not belong to this DataSet
10441	New	Normal	eRAD Report Editor - field color not applying
10430	In Progress	Normal	Reports fields with special characters
10419	QE Rejected	Normal	Worklists - Columns not populated on the signed by date worklist.
10388	New	Normal	Phillips Speechmike Barcode scanner does not work through Citrix
10387	New	Normal	Motorola Sybol Scanner does not work in Citrix when not in HID Keyboard Mode
10338	New	Normal	RUM - Default Body part/Laterality not auto-populating on adding Alternate/Additional procedure
10331	New	Normal	RUM - Stat Exam flag set from IVT window doesn't change UM required to UM complete flag
10321	New	Normal	Add/Edit Region dialog box says Add/Edit Site in the title bar.
10316	New	Normal	Setting RecentPasswordRestrictionCount to 0 or lower disables tracking passwords but does not prevent checking against old passwords in validation
10300	New	Normal	TE Edit - Advanced Menu - font seems to interfere with the reporting editor's font.
9735	New	Normal	Missing access string - Clinical.ReportEditor.AdvancedMenu
9716	New	Normal	Editor Appearance -> Color dialog -> system -> some values are saved incorrectly.
9696	New	Normal	System config items - 'Wedge Groups container' and 'Wedge Unescapes Container' look identical, need clarification.

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9690	In Progress	Normal	After login background screen displays duplicate eRAD RIS logo
9673	New	Normal	Changes to Billing Codes not updating Amount to Collect on Self Pay
9654	New	Normal	eligibility service will not run if the connection string doesn't end with ";"
9647	New	Normal	zip code lookup on IVT screen does not behave the same as zip code lookup on other screens
9643	New	Normal	log control on tech notes does not enforce 1000 character limit
9642	In Progress	Normal	Custom fields for time are not working
9486	New	Normal	Procedure plan site override of min/max times cannot find available times
9422	New	Normal	User is able to complete an exam that Requires contrast without entering a contrast.
9356	New	Normal	Contact Log - Saved entries show userID for Contact By
9344	In Progress	Normal	RUM - STAT Exam - Priority dropdown can be cleared > saved which then causes errors.
9343	In Progress	Normal	RUM - Body Part dropdown on adding additional/alternative procedure can be saved with invalid text.
9317	New	Normal	Worklist - Conditional formatting will not set the back color for the entire row.
9297	New	Normal	Manual Status Update - Discontinued - Not prompted to enter discontinue reason
9291	New	Normal	Scheduling-Schedule Date box changes from green to red for the same time slot
8991	New	Normal	Unable to Login with benign error if AllowedPasswordFailAttempts system config is missing
8990	New	Normal	Questionnaire - Rendering questionnaire not displaying correctly
8988	New	Normal	old trace log cleanup procedure looks for trace log in the current directory
8516	New	Normal	Direct Message - Issue attaching CCDA document to New Patient
8279	New	Normal	issuer_of_id has hard coded default of system