



eRAD RIS

COMBINED CUSTOMER RELEASE NOTES

for eRAD RIS Build 0.03 through 0.23

UPDATED MARCH 9, 2022

SUMMARY

This document re-publishes the previously released Customer Release Notes for eRAD RIS Build 0.03 through 0.23 as a single document.

The following documents have been merged:

1. eRAD RIS Customer Release Notes 0.03.pdf
2. eRAD RIS Customer Release Notes 0.04.pdf
3. eRAD RIS Customer Release Notes 0.05.pdf
4. eRAD RIS Customer Release Notes 0.06.pdf
5. eRAD RIS Customer Release Notes 0.07.pdf
6. eRAD RIS Customer Release Notes 0.08.pdf
7. eRAD RIS Customer Release Notes 0.09.pdf
8. eRAD RIS Customer Release Notes 0.10.pdf
9. eRAD RIS Customer Release Notes 0.11.pdf
10. eRAD RIS Customer Release Notes 0.12.pdf
11. eRAD RIS Customer Release Notes 0.13 & 0.14.pdf
12. eRAD RIS Customer Release Notes 0.15.pdf
13. eRAD RIS Customer Release Notes 0.16.pdf
14. eRAD RIS Customer Release Notes 0.17.pdf
15. eRAD RIS Customer Release Notes 0.18.pdf
16. eRAD RIS Customer Release Notes 0.19.pdf
17. eRAD RIS Customer Release Notes 0.20.pdf
18. eRAD RIS Customer Release Notes 0.21.pdf
19. eRAD RIS Customer Release Notes 0.22.pdf
20. eRAD RIS Customer Release Notes 0.23.pdf

User Pre-Release Notes

for RADNET rRIS

Build 1.03

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1. Purpose

This document describes some of the new features and changes implemented in rRIS as of the end of Sprint 3. This pre-release version of rRIS is referred to as Build 1.03.

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 rRIS Development team for the RADNET RIS management team.

3. Installing/Accessing the Application

The client installer for rRIS is still in the early development stages. For now, users can access the system by remoting to the rRIS test server in Baltimore as follows:

1. Start Remote Desktop Connection and specify IP 10.120.0.152
2. Username: TestRIS
3. Password: rRIS1234
4. Double click the rRIS icon on the desktop or go to Start→All Programs→rRIS
5. Login User: terry
6. Login Password: ris

If you experience difficulties accessing the application, please do not hesitate to contact Spencer MacDougall with the PEI RIS Development Team.

4. New Features and Enhancements

Login Screen

There has been a basic login screen developed which accepts a username and password. The system can be configured to validate the user with Windows Authentication or simply use the user credentials stored in the rRIS database.



Figure 4.1 – Login Screen

GUI Framework

MainShell is the visual hub display of the GUI. It consists of an application menu, menu bar, toolbar, status bar, and tab control.

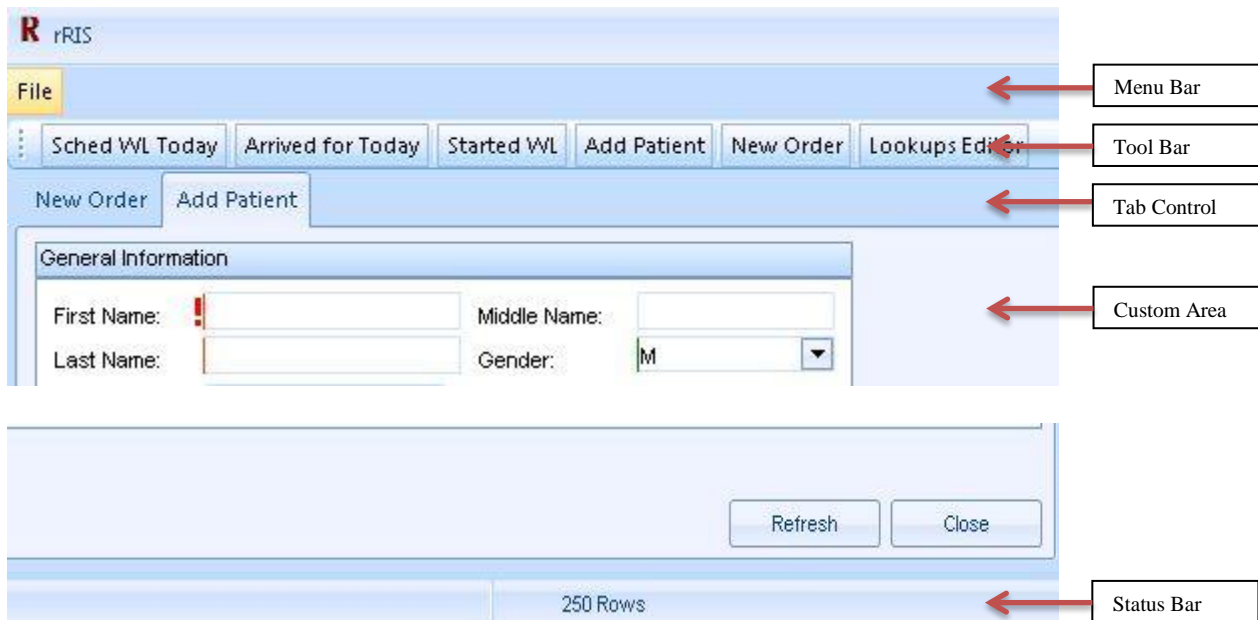


Figure 4.2 – GUI Framework

The user has the ability to navigate the application by clicking on the buttons in the menu bar such as “Add Patient”, “New Order”, or “Started Worklist”. The application has the can open multiple copies of content area forms such as “Edit Patient” but is configured to only open one copy of each worklist.

Worklist Framework

A framework has been developed that will allow the creation of worklists specifying status, double-click action, columns to display, and filter criteria. For example, clicking on the “Started Worklist” button in the Tool Bar will open up a worklist where the Status Code is equal to Started. This status is specified during the creation of the worklist. In the next build, this framework will be enhanced to accept one or more statuses.

last_name	first_name	scheduled_...	status_code	scheduled_modality_code	accession_number
Molyneaux	Kevin	1/9/2009 8:...	Started	CR2	7276467683
testabcaa	Kevin	1/9/2009 1:...	Started	CR2	6658276457
Espinozaaa...	Colby621	1/15/2009 1...	Started	CR1	4325585719
Duarteaaaaa...	April	1/21/2009 9...	Started	CR1	7322586137

Figure 4.3 – Started Worklist

The user has the ability to specify filter criteria to quickly query the worklist. For example, with minimal clicks the “Started Worklist” can be filtered to show only studies for the CR1 modality, with the scheduled start date greater than 10/12/2010, and sorted by the scheduled start date.

last_name	first_name	scheduled_start_date	status_code	scheduled_modality_code	accession_number
Contains: ▼	Contains: ▼	Greater Than: 10/21/2010 12:00:00 AM ▼	Contains: ▼	Equal: CR1 ▼	Contains: ▼
Guzman	Christi	10/23/2010 10:08:22 AM	Started	CR1	6116282588
Hart	Lori79	10/26/2010 12:18:26 AM	Started	CR1	1425336486
Blanchard	Eugene7	10/31/2010 10:14:30 AM	Started	CR1	3125671336
Owen	Bill831	11/11/2010 8:00:26 PM	Started	CR1	7624311434
Galloway	Kenneth471	11/21/2010 6:42:34 PM	Started	CR1	9251618925
Barrett	Clayton	12/7/2010 9:46:43 AM	Started	CR1	9966568277
Pierce	Sheryl97	12/9/2010 11:13:41 PM	Started	CR1	1437815542
Wilcox		12/23/2010 12:57:58 AM	Started	CR1	3383715377
Mcgrath	Tonia9	12/26/2010 8:15:09 PM	Started	CR1	7738279825
Monroe	Brian414	12/29/2010 3:04:49 AM	Started	CR1	1772475528

Figure 4.4 – Started Worklist with filter criteria

In future builds, the user and RIS administrators will have the ability to save and reuse these filters at a worklist level.

Patient Search

The application has a patient search screen, which can be launched by clicking on the search button. If there is search criteria in the search criteria text box (at the top of the screen) the parameters are parsed intelligently and placed in the appropriate sections on the patient search screen which is displayed and the search is automatically executed.

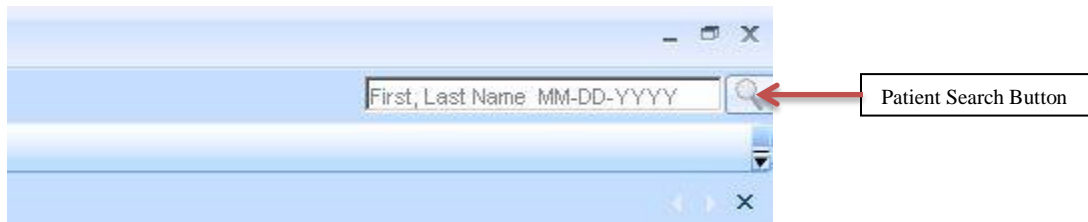


Figure 4.5 – Patient Search button on Menu Bar

Using the patient search on the menu bar, the user can quickly search for a patient by specifying a first and last names followed by a date of birth. In the future, this quick search will be configurable to specify other criteria like MRN.

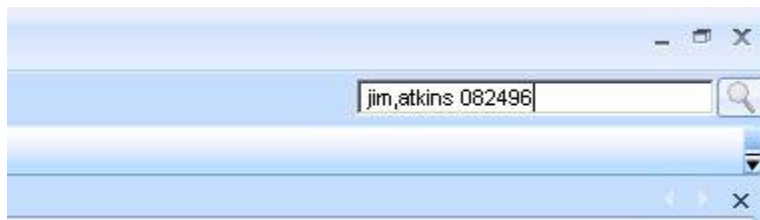


Figure 4.6 – Patient Search with search criteria

By selecting the search button, the user will be brought to the search screen and shown the returned results.

Patient Search

Search Criteria

First Name: jim Birth Date: 08-24-1996

Last Name: atkins

☐ Sounds Like

MRN:

Search Reset

	First Name	Last Name	Middle Name	Birth Date	MRN	Issuer	Gender	Address	City	State	Phone
▶	Jimmy	Atkins	35029	08-24-1996	688653	RIS	F	49 White Nobel Way	Indianapolis	Missouri	640-6742973

Figure 4.7 – Patient Search Screen displaying search results

The Patient Search screen will allow the user to specify First Name, Last Name, Birth Date, and/or MRN as criteria. When querying the patient data table, the system will use a “Starts With” approach. For example, searching for First Name equals “jim” and last name equals “a” will return the following list of patients:

Patient Search

Search Criteria

First Name: jim Birth Date:

Last Name: a

☐ Sounds Like

MRN:

Search Reset

	First Name	Last Name	Middle Name	Birth Date	MRN	Issuer	Gender	Address	City	State	Phone
▶	Jimmy29	Acosta	68490	11-02-1955	815289	RIS	M	91 Cowley Freeway	Detroit	Kentucky	580-5446045
	Jim4	Aguilar	54827	06-13-1958	824429	RIS	U	637 Rocky Fabien Freeway	Hialeah	New Hampshire	857-3247472
	Jim3	Aguirre		10-25-2007	735176	RIS	M	35 White Nobel Boulevard	San Diego	Iowa	946-459-8345
	Jim764	Alexander	72019	07-20-1984	610645	RIS	U	57 North Old Way	Corpus Christi	North Carolina	061-684-2198
	Jimmy35	Allison	98554	06-17-1983	796062	RIS	F	437 Green Fabien St.	Newark	Vermont	466095-2384
	Jimmy000	Alvarez	60788	01-05-1971	313216	RIS	F	721 East Green Cowley Road	Anaheim	Tennessee	1042980920
	Jim73	Andersen	65094	04-11-1967	957089	RIS	F	281 Second Road	Richmond	Rhode Island	071-732-2767
	Jimmie233	Andrade	48980	11-08-1966	537852	RIS	U	713 West Green First Blvd.	Columbus	Washington	873-890-5706
	Jimmy7	Andrews	11830	04-17-1990	762401	RIS	M	50 Green Clarendon Freeway	Buffalo	Kansas	429-9742711
	Jimmy11	Archer	06772	09-07-1969	278481	RIS	F	41 Green Old Street	Jacksonville	Texas	117227-3442
	Jimmy9	Arellano	86869	12-11-1987	537178	RIS	F	822 Rocky Hague Way	Newark	Arkansas	729-5561179
	Jim	Atkins	81622	05-02-2006	102982	RIS	U	486 Green Second Road	Jersey	Kentucky	311895-2148
	Jim58	Atkins	09103	02-19-1956	594654	RIS	M	567 First Parkway	Portland	South Dakota	965-1958122
	Jimmy	Atkins	35029	08-24-1996	688653	RIS	F	49 White Nobel Way	Indianapolis	Missouri	640-6742973


Figure 4.8 – Specifying Search Criteria

Patient Search supports a “Sounds Like” function. This is especially helpful if the user is having difficulties with the spelling of the patient’s name. For example, searching for First Name equals “jim” and last name equals “atkin” with the Sounds Like feature enabled will return the following list of patients:

Patient Search

Search Criteria

First Name: Birth Date:

Last Name: 

☒ Sounds Like

MRN:

	First Name	Last Name	Middle Name	Birth Date	MRN	Issuer	Gender	Address	City	State	Phone
➔	Jane0	Adkins	05225	01-02-1962	535144	RIS	U	606 White Hague Parkway	Rochester	Montana	821-101-8939
	Jeanne	Adkins	52221	07-26-2000	144368	RIS	M	33 South New Way	Louisville	North Carolina	359-298-0340
	Jaime92	Atkins	28894	09-12-1961	175284	RIS	U	539 Oak Blvd.	Denver	California	953239-8807
	Jane466	Atkins	89334	02-06-1980	347186	RIS	F	42 First St.	Memphis	North Dakota	5220991933
	Jeanne	Atkins	34447	01-22-1979	379656	RIS	F	235 Rocky Fabien St.	Miami	Alaska	387-7150348
	Jenna33	Atkins	03170	05-21-1956	515706	RIS	U				
	Jim	Atkins	81622	05-02-2006	102982	RIS	U	486 Green Second Road	Jersey	Kentucky	311895-2148
	Jim58	Atkins	09103	02-19-1956	594654	RIS	M	567 First Parkway	Portland	South Dakota	965-1958122
	Jimmy	Atkins	35029	08-24-1996	688653	RIS	F	49 White Nobel Way	Indianapolis	Missouri	640-6742973
	Joann856	Atkins	20278	09-01-1975	399147	RIS	M	104 Oak Way	Omaha	Nebraska	1181153933
	Johnnie2	Atkinson	20983	07-09-1958	647504	RIS	M	94 Nobel Blvd.	Shreveport	Michigan	6974179767
	Johnnie8	Atkinson	59977	01-12-1974	323527	RIS	M	92 Green Nobel Road	Little Rock	Rhode Island	170-131-5839
	Jon95	Atkinson	40944	08-11-1961	232761	RIS	U	27 Old Street	Bakersfield	Illinois	397994-7363

Figure 4.9 – Specifying Search Criteria using Sounds Like

Custom Area Framework

There is a need for the ris system administrators to respond to the changing needs of the business and to make modifications to enhance operations. This level of customization will be accomplished through two editors:

1. The Data Model Editor, which will define which fields, their type, if they are required, validation rules, calculated fields in the model and default values.
2. The User View, which will define which control displays a piece of data and how it will look on the screen.

The Custom Area can be accessed by right-clicking on a custom form and selecting “Edit View”.

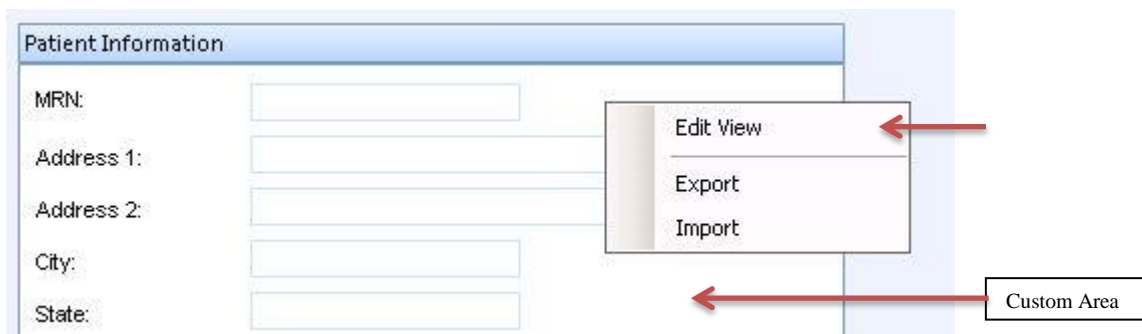


Figure 4.10 – Editing Custom Area

Editing a custom area will be based on the permission of the user and is typically a function of the RIS Administrator. The User View or Dynamic Form Editor allows the administrator to make modifications to the user screens of the application without having to affect the product source code. Here are some of the typical functions that will be performed with this editor:

1. Change the layout of the form such as tab order, field size, font size and color.
2. Add new controls such as Text Boxes and Check Boxes and map them accordingly to the proper field in the dataset.
3. Apply permissions to selected controls.
4. Apply business logic via default values, calculated fields, and specifying required fields.

An example could include a request to add an email field to the Patient Information custom area. Currently, the user must assume there is already a field in the ris database that will store an email at the patient level. In future releases, the ability to add custom fields separate from the ris core data model will exist. The following screen shots will illustrate adding a new Text Box and mapping it to the Patient table.

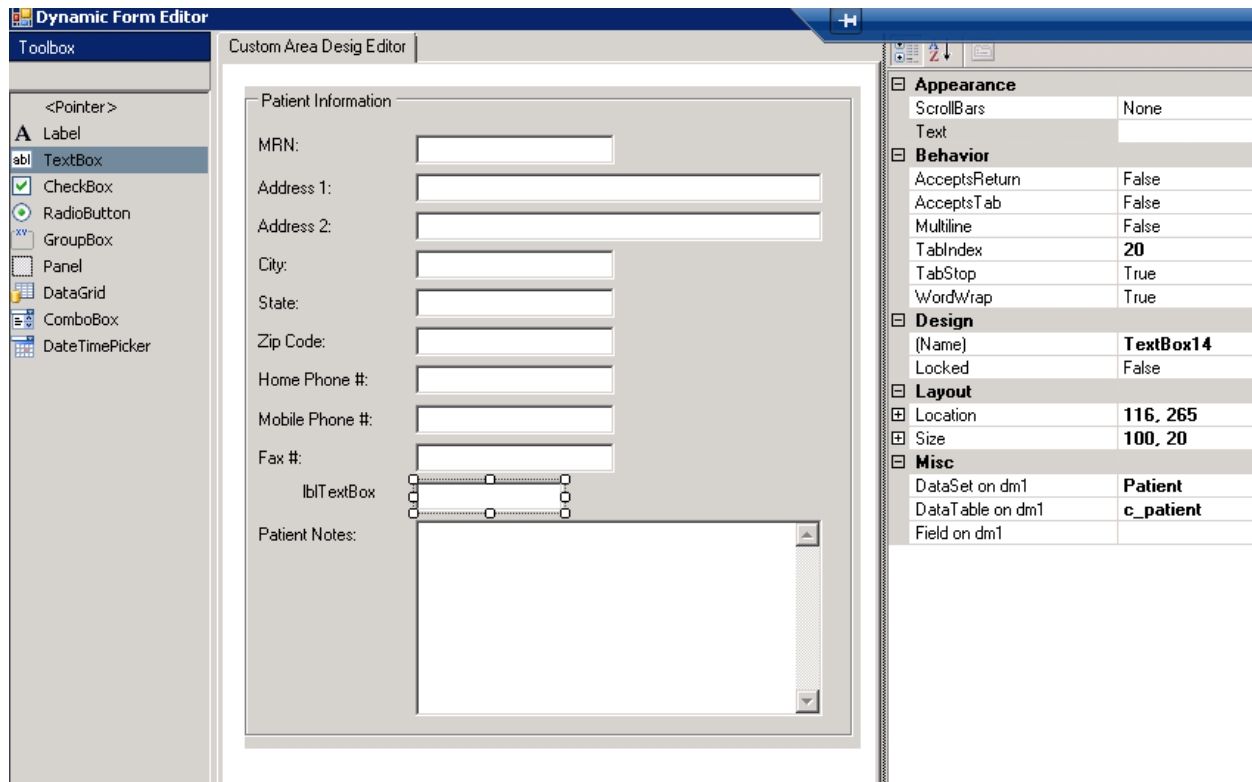


Figure 4.11 – Adding a Text Box to a Custom Area

By simply dragging a TextBox control from the Toolbox and placing it in the desired location on the custom area, the ris creates a new control with a corresponding label in the editor screen. To complete the control's configuration the user will complete the following:

1. Map the DataSet to Patient
2. Map the DataTable to c_patient
3. Map the Field to primary email address
4. Size the Text Box accordingly
5. Change the text of the label and align it
6. Adjust the TabIndex property
7. Save the changes

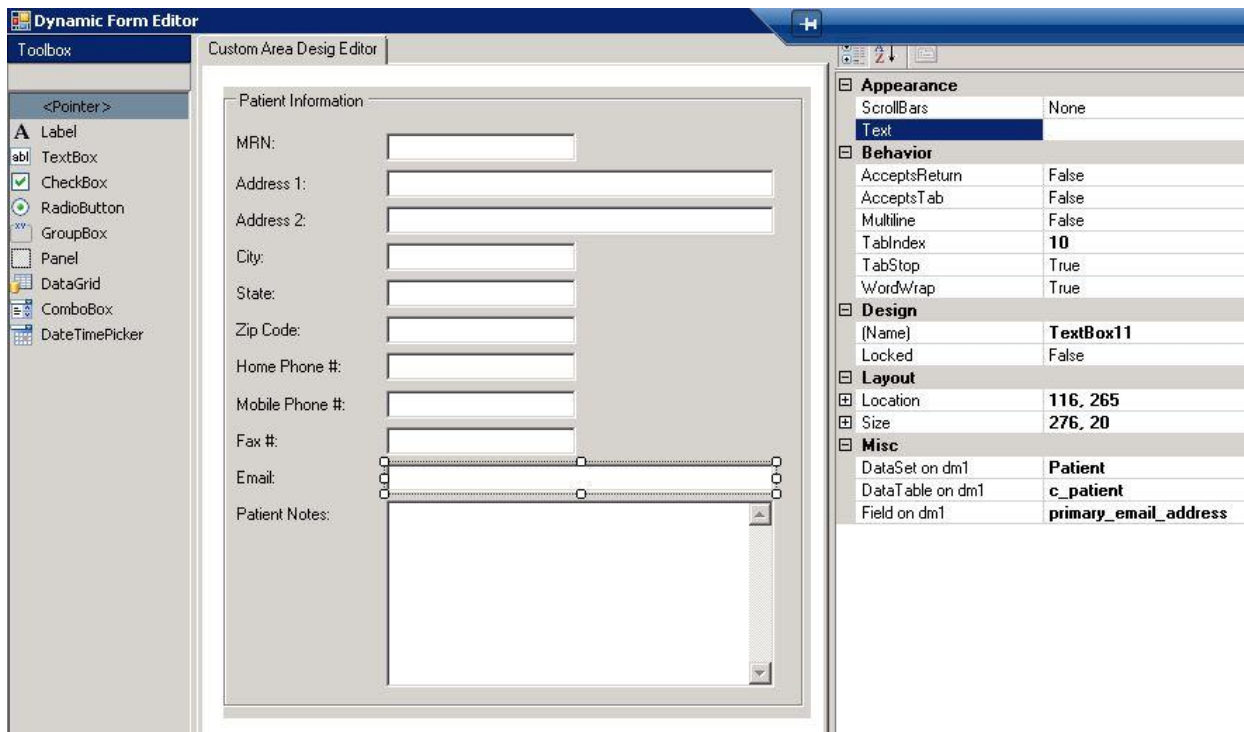


Figure 4.11 – Configuring a Text Box

Once the user has saved changes to the custom area, the system will display these changes in a preview mode so they can first be tested. Once validated, the user has the ability to publish the changes to the database so they are distributed to all ris users. The user also has the option to revert the changes.

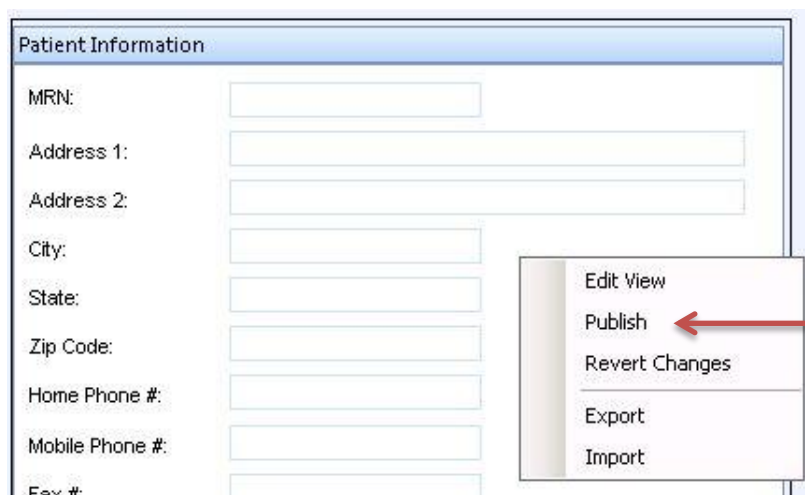


Figure 4.11 – Publishing Custom Area modifications

Adding a Patient


There is a framework in place for adding patients. Keep in mind that this is still in the early stages of development. By clicking on the “Add Patient” button, the user is presented with the Add Patient content area which as discussed previously is customizable. When adding the patient, the user can easily identify any required fields by the red line and exclamation mark on the left of the control. The system will prevent the user from committing the data until all required fields are filled in.

The screenshot displays the 'Add Patient' form with two tabs: 'Add Patient' and 'Add Patient *'. The 'Add Patient' tab is active. The form is divided into two sections: 'General Information' and 'Patient Information'. In the 'General Information' section, the 'First Name', 'Last Name', and 'Birth Date' fields have red exclamation marks on their left, indicating they are required. The 'Middle Name' and 'Gender' fields are optional. The 'Patient Information' section includes fields for 'MRN', 'Address 1', 'Address 2', 'City', 'State', 'Zip Code', 'Home Phone', 'Mobile Phone', 'Fax #', 'Email', and 'Patient Notes'. A modal dialog box titled 'MainApp: Add Patient' is overlaid on the form, displaying the following error messages: 'First Name: Is Required', 'Last Name: Is Required', and 'Birth Date: Is Required'. An 'OK' button is at the bottom of the dialog.

Figure 4.12 – Required Fields

Add Patient Add Patient (Carter, Jeff) *

General Information

First Name: Middle Name:
Last Name: Gender: ▼
Birth Date: 

Patient Information


MRN:
Address 1:
Address 2:
City:
State:
Zip Code:
Home Phone #:
Mobile Phone #:
Fax #:
Email:
Patient Notes: 

Figure 4.13 – Add Patient Form

Lookup Table Editor

The Generic Lookup Table Editor allows the user to edit cached lookup tables. It presents a list of lookups taken from the database. The user can edit a lookup by choosing an entry in the list and either double-clicking or pressing enter. The framework has been built in such a way that specialized editors can be added and launched on double-click instead of the standard grid, in this way the user will always visit the same place in the application to edit lookups, and there will be more consistency of look and feel.

The editor can be accessed by clicking on the “Lookups Editor” button on the application’s Tool Bar. Here, the user is presented with the current list of lookup tables. This list will grow as the product matures. If for example the application requires a new status, it can be added here in the lookup table editor and then submitted to the database. The example below illustrates adding a “Confirmed” status to the status lookup table.

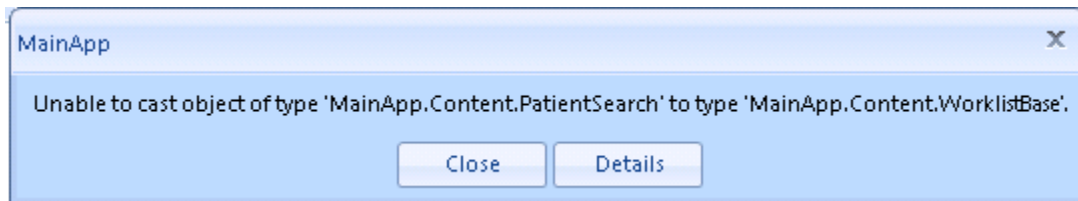
Add Patient Patient Search Lookup Tables - Status *				
AddressDescription	status code	active flag	display order	description
BillingCode	Contains: ▼	Contains: ▼	Equal: ▼	Contains: ▼
BodyPart	Approved	Y	1	
EmploymentStatus	Arrived	Y	2	
ExamPriority	Dictated	Y	3	
Gender	Exam Done	Y	4	
Laterality	Scheduled	Y	5	
MaritalStatus	Signed	Y	6	
Modality	Started	Y	7	
Organization	Transcribed	Y	8	
PersonResource	Confirmed	Y	9	
ProcedureCode	* Click here to add a new row			
ProcedureModifier				
ReadingPriority				
ReportTemplateCDA				
ResourceType				
ScanType				
Status				
StudentStatus				
SystemConfig				
UserDetail				

Figure 4.14 – Add a new row to the Status lookup table

5. Known Limitations

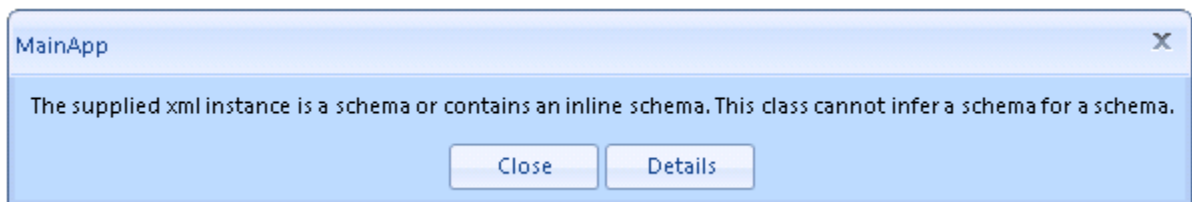
As rRIS is in the early development stages, there will be some known limitations to consider with pre-releases. Build 1.03 has the following limitations:

1. The user will receive an error if he or she performs a quick patient search while the main patient search screen is open.



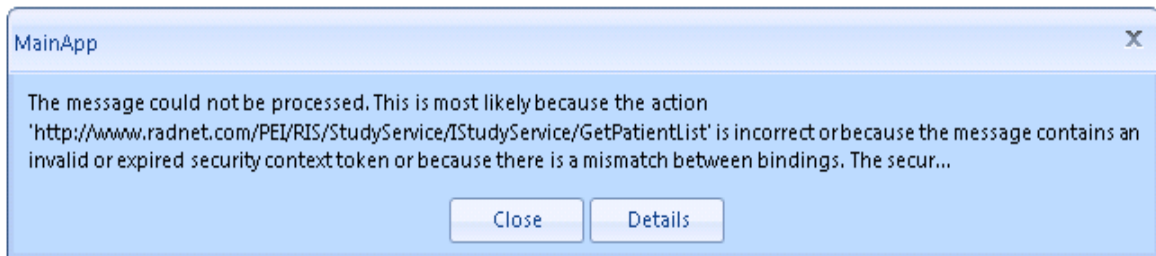
This issue has been noted and resolved in Sprint 4. The user can simply select “Close” and proceed to use the application.

2. Cannot double-click on a selected row on the patient search results grid. This should bring up the Edit Patient screen but instead the following error occurs:



This issue has also been noted and resolved in Sprint 4. The user can simply select “Close” and will be prompted to restart the application.

3. There is an error that occurs on the Baltimore ris server that the development team does not experience in-house. If the user tries to use the ris after an extended time of inactivity, he or she may receive the following error:



This issue has been logged and is currently being reviewed by the development team.

User Pre-Release Notes

for RADNET rRIS

Build 1.04

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1. Purpose

This document describes some of the new features and changes implemented in rRIS as of the end of Sprint 4. This pre-release version of rRIS is referred to as Build 1.04.

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 rRIS Development team for the RADNET RIS management team.

3. Installing/Accessing the Application

The client installer for rRIS is still in the early development stages. For now, users can access the system by remoting to the rRIS test server in Baltimore as follows:

1. Start Remote Desktop Connection and specify IP 10.120.0.152
2. Username: Radnet domain account
3. Password: Radnet domain password
4. Double click the rRIS icon on the desktop or go to Start→All Programs→rRIS
5. Login User: terry
6. Login Password: ris

If you experience difficulties accessing the application, please do not hesitate to contact Spencer MacDougall with the PEI RIS Development Team.

4. New Features and Enhancements

Worklists

During this sprint, there has been considerable effort spent on building upon the existing worklist framework as it is a key area of the application. Some of the features areas which will be described in more detail below include:

- Custom toolbars per worklist
- Pass context of selected worklist row
- Support multiple filter criteria per worklist
- Support multiple statuses per worklist
- Patient driven worklist

Custom Toolbars per Worklist

rRIS now has the ability to dynamically build what buttons are available for each worklist. For example, it makes sense to have the “Edit Order” button available for the Ordered Worklist but not for the Radiologist Worklist. When the Ordered Worklist is created, it can now be configured with what buttons should be available to the user.

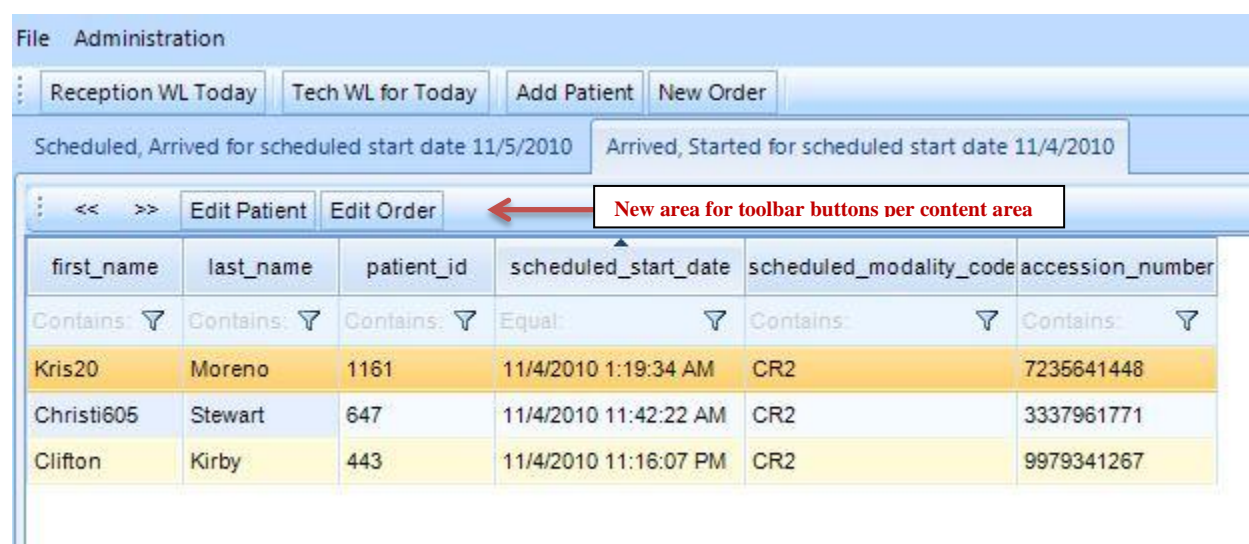


Figure 4.1 – Worklist Custom Toolbar Buttons

Pass Context of Selected Worklist Row

The application now has the ability to pass the context of the selected row to a screen. For example, selecting the “Edit Order” button from the worklist will open the Edit Order screen and load the dataset for the selected order. The ability to pass context from the worklist row is available from both a worklist button click and the worklist selected row double-click action.

first_name	last_name	patient_id	scheduled_start_date	scheduled_modality_code	accession_number
Karin8	Bird	1150	10/18/2010 2:17:24 PM	CR2	5491187959
Vickie	Andrews	519	10/18/2010 8:00:02 PM	CR2	6622543219

Figure 4.2 – Arrived Worklist with Edit Order Button

General Information

First Name: Vickie Middle Name:
Last Name: Andrews Gender: Unknown
Birth Date: 09-20-2001
MRN: 519

Contact Information

Address 1: 148 Pine Stree
Address 2:
City: PE
State: PE
Zip Code: 12478
Home Phone #: 902-777-8520
Mobile Phone #: 902-555-4789
Email: mail@mail.com

Figure 4.3 – Edit Order Content Area with Patient and Order Context

Support Multiple Filter Criteria per Worklist

This relates to the actual creation of the worklist. In the previous build worklists were limited to one filter (ex: Exam Priority = Stat). Now multiple criteria can be defined such as Modality Type = CT and Exam Priority = Normal as an example.

Support Multiple Statuses per Worklist

Currently, the following statuses have been defined in rRIS:

- OrderRequested
- OrderSigned
- OrderCancelled
- Scheduled
- Cancelled
- Arrived
- Started
- Discontinued
- ExamDone
- Dictated
- Transcribed
- Signed1
- Billed
- Approved

When worklists are defined, multiple statuses can be included in the worklist. For example, the Technologist worklist can be created to include Arrived, Started, and Discontinued statuses.

Patient Driven Worklist

Methods have been put in place that will allow the creation of a Patient Worklist. This method returns all patient exams regardless of study status or where the studies were performed.

Establish Core Screen Elements

In the previous build, all content areas were accessible and customizable by an administrative user at runtime. There is a requirement to lock down certain areas of these screens and establish these areas as the “Core” rRIS screens. For example, certain fields like a patient’s name and gender will be required at all Radnet sites and will be locked down or coded into the content area screens. However, there will still be a customizable area on the content areas to allow for the unique needs across the Radnet organization. Below is an image of the Patient content area identifying both the core and customizable areas. Keep in mind that there is considerable effort remaining in the actual design of the screen.

The screenshot displays a web application interface for patient information. At the top, there are two tabs: 'Patient' (selected) and 'Order'. Below the tabs is a 'General Information' section containing fields for First Name (Blanca551), Last Name (Johns), Birth Date (07-05-1953), MRN (317), Middle Name, and Gender (Unknown). Below this is a 'Contact Information' section with fields for Address 1, Address 2, City, State, Zip Code, Home Phone #, Mobile Phone #, and Email. A red arrow points from a box labeled 'Core Area' to the Contact Information section. Below the Contact Information section is a 'Notes' section with a large text area. A red arrow points from a box labeled 'Customizable Area' to the Notes section.

Figure 4.4 – Patient Screen Showing Core and Customizable Areas

Permissions Framework

A permissions framework has been created in this build that has been designed to accomplish the following:

- Establish permission levels (None, Full, and ReadOnly)
- The ability for developers to apply permission levels to rRIS controls such as screens, buttons, worklists, lookup tables, fields, etc.
- Apply permissions to user groups. A user can belong to one or more user group. If the user belongs to multiple groups then the user will have the highest level access to the item over all of the groups. So that if their 1st user group has Level.None and their second user group has Level.Full they will receive Level.Full access.
- Apply permissions to individual users. If the user doesn't belong to any groups or if the access_string hasn't been assigned to that group then the user will receive the default access level code as described in the l_access_string table for that access string.
- A lookup table (l_access_string) to store permission strings

For this build, any changes made to the AccessString lookup table will be applied to all users until the ability to apply permissions to users and user groups has been completed. For example, setting the “Clinical.NewOrder” string to None, will take hide the New Order button from the user.

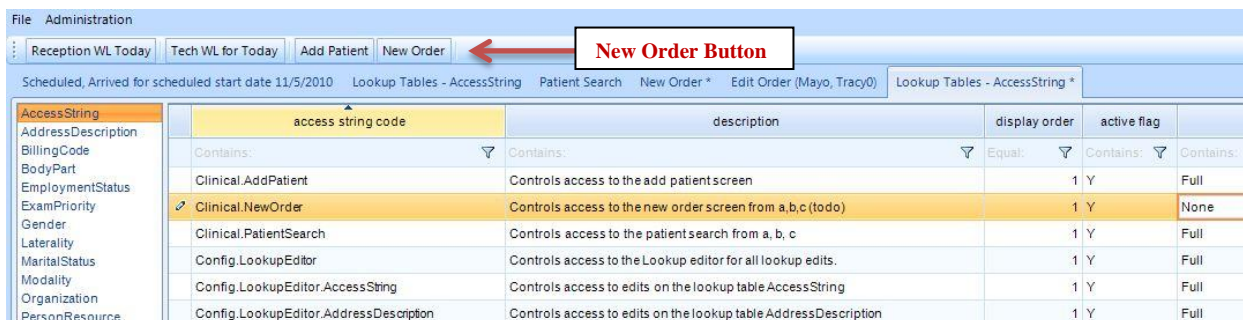


Figure 4.5 – Disabling the New Order Screen Permission

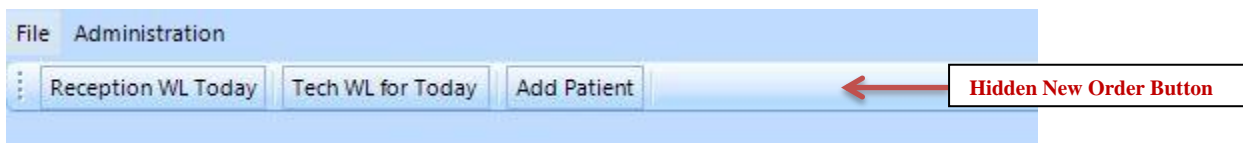


Figure 4.6 – Hiding the New Order Button

The permission framework can also grant read-only access to rRIS screens and fields. This is very useful for example if the radiologists group would like to have the ability to view the order or patient screens but administrators do not want them to have the ability to edit the data.

Locking Framework

rRIS requires a locking framework to prevent two users from editing the same study or order at the same time. The framework supports locking with automatic lock refreshes, releasing a lock when it is no longer required, and overriding the lock of another user. Additionally, the web services must throw an exception if a user tries to update data without the required lock.

The application will not retrieve the study data when a failure to obtain a requested lock occurs. The returned lock result will indicate the failure and the user_ID/workstation information for the current lock holder.

The GUI presents a message to the user indicating that a lock could not be obtained and prompts the user to specify whether they wish to view a readonly copy of the data, break the lock, or cancel. If the user clicks “Cancel” the form (e.g. EditOrder) will close. If the user chooses “ReadOnly”, Edit Order will open a readonly copy of the data. If the user wishes to override the lock, the GUI will make an OverRideLock call using the LockItemCode and WorkstationID of the LockResult that was returned when the lock failed. After overriding the lock, the GUI will then make the initial GetStudyData call over again, and display the data as before.



Figure 4.7 – Attempting to Obtain Lock Message

User Management Screen

A user management framework and a basic screen to manage users have been developed. The ability to add and configure users with this screen will be introduced in the next build.

File Administration

Reception WL Today Tech WL for Today Add Patient New Order

Lookup Tables - UserDetail *

AccessString	last name	first name	middle name
AddressDescription			
BillingCode			
BodyPart			
EmploymentStatus			
ExamPriority			
Gender			
Laterality			
MaritalStatus			
Modality			
Organization			
PersonResource			
ProcedureCode			
ProcedureModifier			
QueueSubscription			
ReadingPriority			
ReportTemplateCDA			
ResourceType			
ScanType			
StudentStatus			
SystemConfig			
UserDetail			

User Information Preferences

General Information

Name: First Name: Last Name: Middle Name:

Name: Sally Mills

Gender: Female

Mobile Phone #: Email Address:

Account Information

User Name: Sally Active

Password: User Group: Scheduling

Address

Location: Home Address City:

Address: State:

Country: United States

Zip Code:

Phone #: Fax #:

Figure 4.8 – User Management Screen

5. Known Limitations

Bugs, Suggested Features, and Support Issues are now tracked in a web based system called Redmine. The following is a snapshot of the issues list as of the end of Sprint 5.

#	Status	Tracker	Priority	Subject	Assigned to	Category	Version
13	Resolved	Bug	Normal	Content Areas with missing required fields are getting marked as dirty	Kevin Molyneaux	Thick Client GUI	1.04
12	New	Bug	Normal	Modifying existing or adding a new user causes exception	Andrew Waite	Admin Tools	1.04
11	Resolved	Bug	Low	Selecting "Cancel" when trying to obtain a lock results in constant hour glass	Darcy Aiken	Thick Client GUI	1.04
10	Resolved	Bug	Normal	Clinical.PatientSearch permission is not functioning	Kevin Molyneaux	Thick Client GUI	1.04
9	Resolved	Bug	Normal	Closing Login Screen using "X" on the Control Box results in error	Darcy Aiken	Thick Client GUI	1.04
8	Resolved	Bug	High	Non-nullable fields are not being enforced by the GUI Custom Areas	Kevin Molyneaux	Thick Client GUI	1.04
7	Resolved	Bug	Normal	Prompted for required fields right away when adding a new user	Andrew Waite	Admin Tools	1.04
6	Resolved	Bug	High	Keep getting prompted to save Custom Area changes	Kevin Molyneaux	Thick Client GUI	1.04
5	New	Bug	Low	Calendar control is unuseable when running the application remotely	Stephen Powell	Thick Client GUI	1.03
4	Resolved	Feature	Normal	Patient Quick Search should be synchronized with Patient Search Screen	Kevin Molyneaux	Thick Client GUI	1.03
3	Resolved	Bug	Normal	Patient Quick Search needs to be configurable	Kevin Molyneaux	Thick Client GUI	1.03
2	Resolved	Bug	Normal	When WCF is down, require better message to user	Darcy Aiken	Web Services/DB	1.03
1	Resolved	Bug	High	Invalid or expired security token error	Darcy Aiken	Web Services/DB	1.03

User Pre-Release Notes

for RADNET rRIS

Build 1.05

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1. Purpose

This document describes some of the new features and changes implemented in rRIS as of the end of Sprint 5. This pre-release version of rRIS is referred to as Build 1.05.

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 rRIS Development team for the RadNet RIS management team.

3. Installing/Accessing the Application

The client installer for rRIS is still in the early development stages. For now, users can access the system by remoting to the rRIS test server in Baltimore as follows:

1. Start Remote Desktop Connection and specify IP 10.120.0.152
2. Username: Radnet domain account
3. Password: Radnet domain password
4. Double click the rRIS icon on the desktop or go to Start→All Programs→rRIS
5. Login User: terry
6. Login Password: ris

If you experience difficulties accessing the application, please do not hesitate to contact Spencer MacDougall with the PEI RIS Development Team.

4. New Features and Enhancements

Enhancements to Lookup Table Editor

The Lookup Table Editor has been expanded in Sprint 5 to account for the following improvements. Please note that these changes have been implemented in the UserGroup lookup table only for Sprint 5. Remaining tables will follow suit in future builds.

1. Validate the data so the user cannot save invalid data such as a duplicate name. The error is shown in the status bar and the user simply clicks on it and is taken to the row with the failed validation.

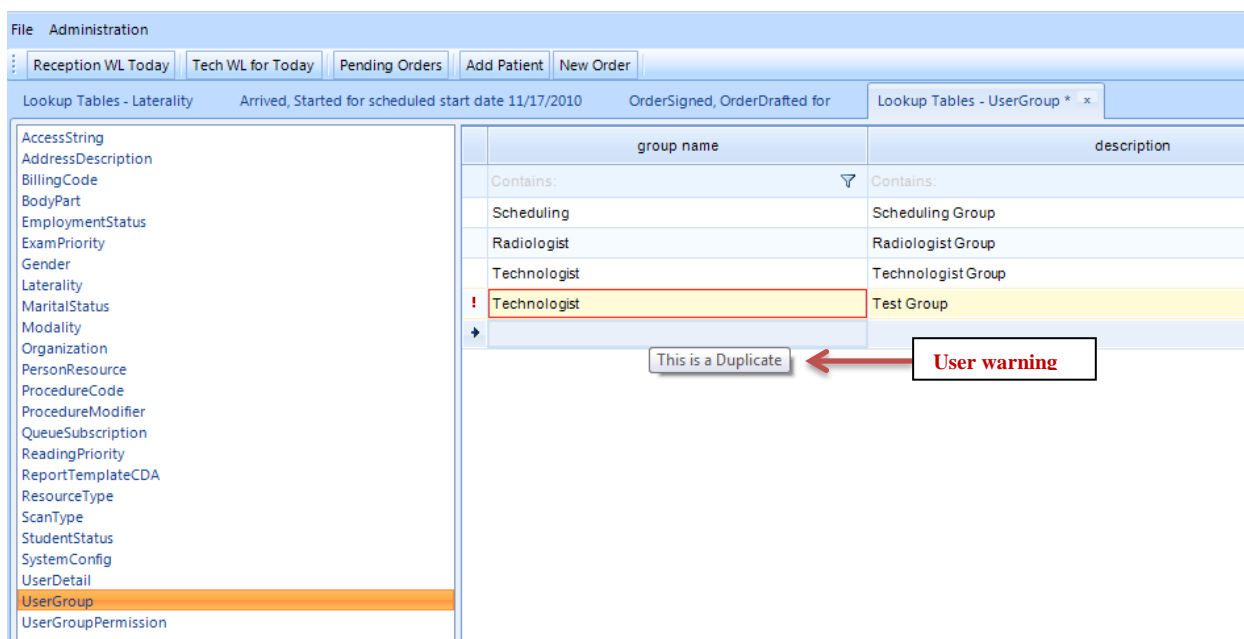


Figure 4.1 – UserGroup Lookup Showing Duplicate Name Warning

2. Default values have been applied to new rows so a field like Active can automatically be set to “Y” by default, saving the user from having to set it manually for every new row.
3. User is prompted when trying to save any rows with missing required fields.
4. When a user clicks on a new row by mistake, the system will not prompt the user to save changes if no changes have been made to the new row.
5. If a user attempts to filter the lookup and add a new row, the default value is based on the filter criteria.

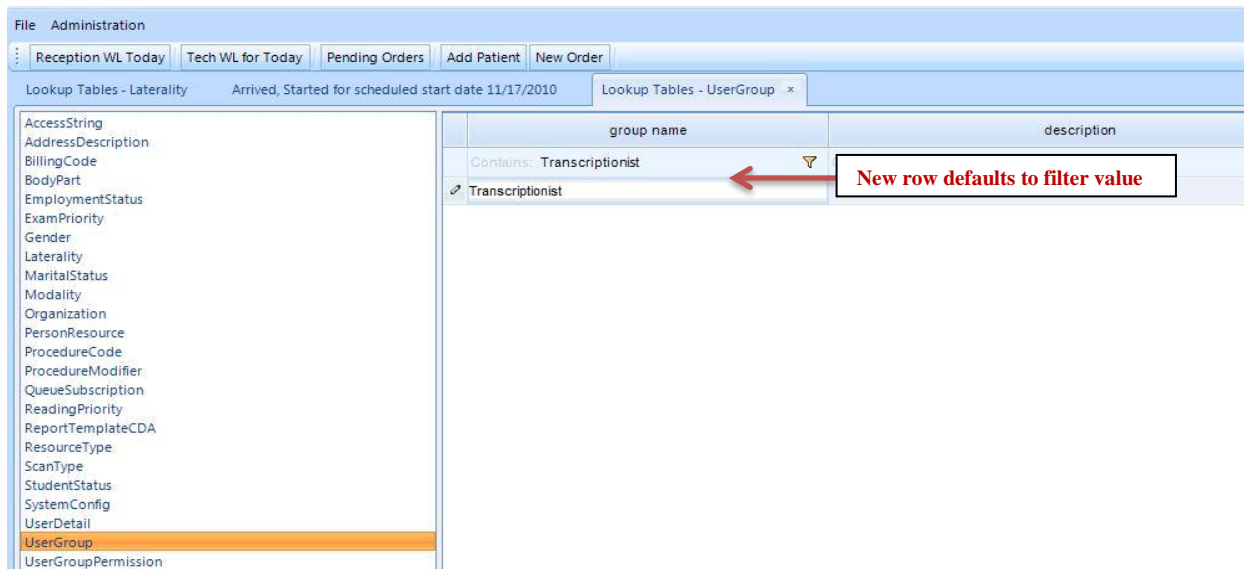


Figure 4.2 – UserGroup Lookup Showing New Row Based on Filter Criteria

6. User is prevented and displayed a message when trying to delete a lookup table row with entries that are referenced in the database.

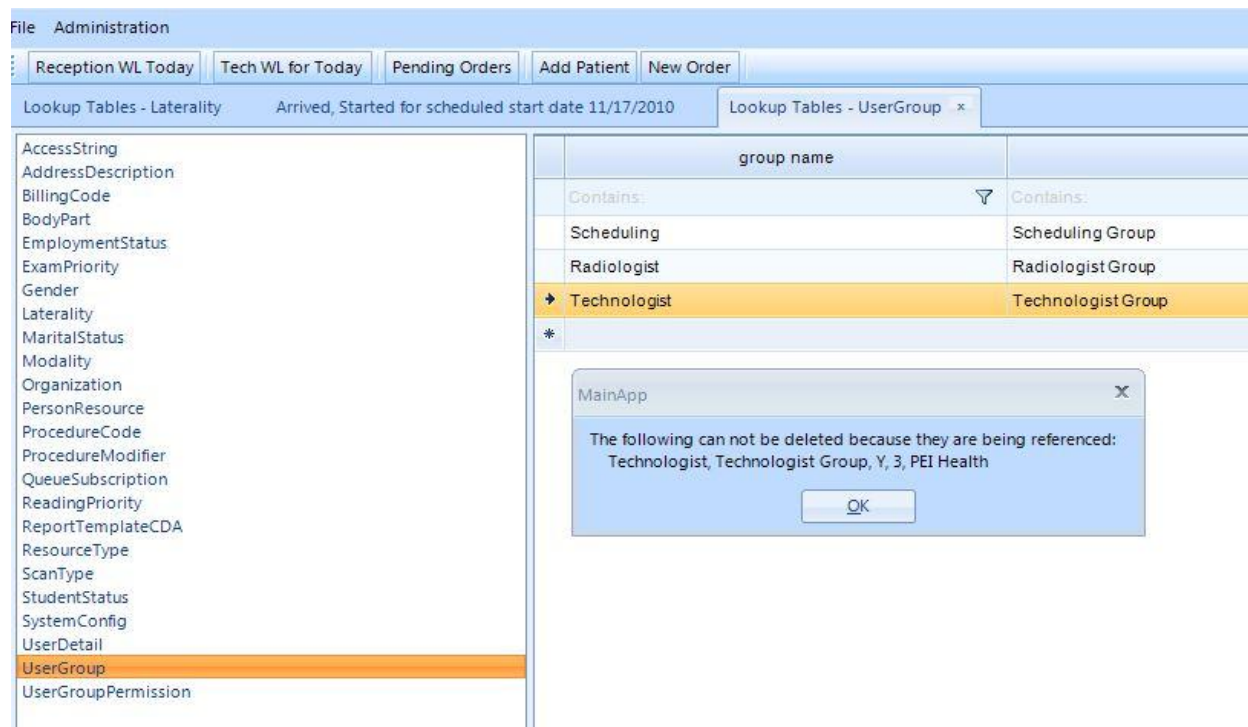


Figure 4.3 – UserGroup Lookup Showing Referenced Row Message

User Manager

The UserDetail screen in rRIS is where the system administrator will add, modify, or mark users as inactive. In the rRIS data model there are Persons, Resources, and Users. A Person can be a User, Resource, or both. Examples of Resources are technologists, transcriptionists, or referring physicians. The UserDetail screen is limited to Users only and does not include Resources unless the Person is both a User and a Resource.

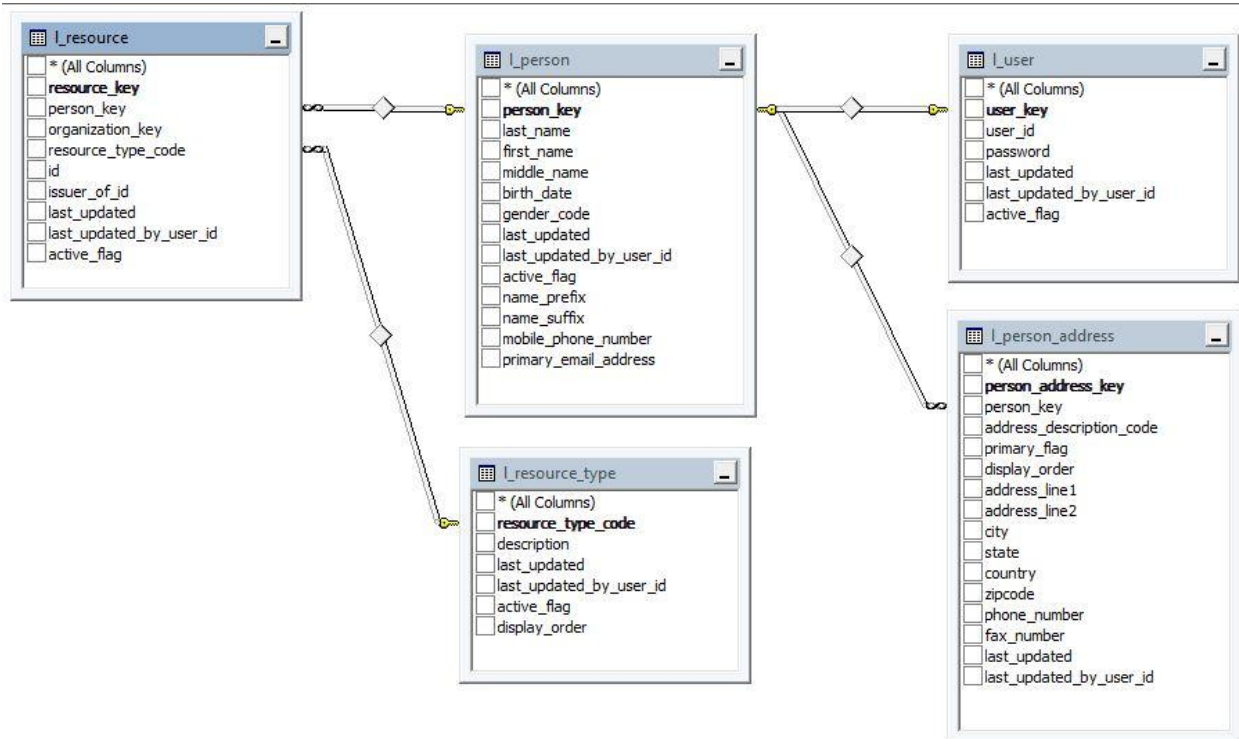


Figure 4.4 – User Data Model

Adding a new user can be accomplished by simply clicking the “New User” button on the UserDetail screen. The application will prompt the user to first search for the new user to see if he or she already exists in the system as a Person/Resource. For example when adding “Jim Smith” as a new user, the search will return Jim Smith as he is already set up as a referring doctor. Simply clicking “Add User” will populate the user screen with Jim Smith’s information. Once required fields like User Name, User Group, and Password are completed Jim Smith is saved as a user and may begin using the application. The system can be configured to validate a user against Windows Active Directory or utilize the username and password stored in the rRIS database.

Create New User

Search for and Create Person

First Name: Jim Last Name: Smith Middle Name:

Gender:

Person List

last name	first name	middle name	birth date	gender code	active flag	name prefix	name suffix	mobile phon...	primary email...
Smith	Jim			M	Y		MD		

Figure 4.5 – New User Person Search

Lookup Tables - UserDetail * x

AccessString
AddressDescription
BillingCode
BodyPart
EmploymentStatus
ExamPriority
Gender
Laterality
MaritalStatus
Modality
Organization
PersonResource
ProcedureCode
ProcedureModifier
QueueSubscription
ReadingPriority
ReportTemplateCDA
ResourceType
ScanType
StudentStatus
SystemConfig
UserDetail
UserGroup
UserGroupPermission

User List

last name	first name	middle name	birth da
Contains: perry	Contains: dave	Contains:	Equal:
doiron	denis		
molyneaux	kevin		
MacDougall	Spencer		8/4/2004 12:00
powell	stephen		
stuart	stephen		
mills	terry		
test3	test3		

User Information **Preferences**

General Information

First Name: Jim Last Name: Smith Middle Name:

Name: Jim Smith

Gender: Male

Mobile Phone #: Email Address:

Account Information

User Name: ☒ Active

Password: User Group:

Address

Location: Home Address City:

Address: State:

Country: United States

Zip Code:

Phone #: Fax #:

Figure 4.6 – New User Details if Person Already Exists

If the Person Search does not return the person that needs to be setup as a user, simply clicking “New Person” will allow the setup of a new person and user details simultaneously.

The screenshot displays the RADNET rRIS Administration interface. The top navigation bar includes 'File', 'Administration', and a series of buttons: 'Reception WL Today', 'Tech WL for Today', 'Pending Orders', 'Add Patient', and 'New Order'. Below this, a status bar shows 'Scheduled, Arrived for scheduled start date 11/18/2010' and a tab for 'Lookup Tables - UserDetail * x'.

On the left, a sidebar lists various system components, with 'UserDetail' highlighted in orange. The main content area is divided into two sections. The top section, titled 'User List', contains a table with columns for 'last name', 'first name', 'middle name', and 'birth date'. The table lists several users, including 'perry dave', 'doiron denis', 'molyneaux kevin', 'MacDougall Spencer', 'powell stephen', 'stuart stephen', 'mills terry', and 'test3 test3'. The bottom section, titled 'User Information', contains three sub-forms: 'General Information', 'Account Information', and 'Address'. The 'General Information' form includes fields for 'First Name', 'Last Name', 'Middle Name', 'Gender' (set to 'Male'), 'Mobile Phone #', and 'Email Address'. The 'Account Information' form includes fields for 'User Name', 'Password', 'User Group', and an 'Active' checkbox. The 'Address' form includes fields for 'Location' (set to 'Home Address'), 'City', 'State', 'Country' (set to 'United States'), 'Zip Code', 'Phone #', and 'Fax #'.

last name	first name	middle name	birth date
Contains:	Contains:	Contains:	Equal:
perry	dave		
doiron	denis		
molyneaux	kevin		
MacDougall	Spencer		8/4/2004 12:0
powell	stephen		
stuart	stephen		
mills	terry		
test3	test3		

User Information | Preferences

General Information

First Name: Last Name: Middle Name:

Name:

Gender:

Mobile Phone #: Email Address:

Account Information

User Name: ☒ Active

Password: User Group:

Address

Location: City:

Address: State:

Country:

Zip Code:

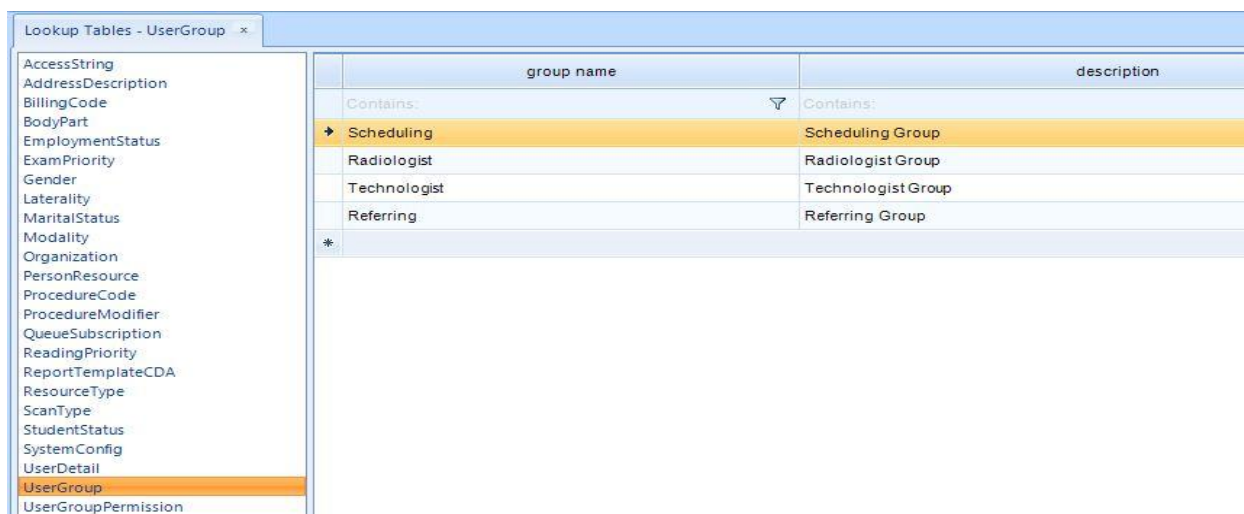
Phone #: Fax #:

Figure 4.7 – New User Details if Person Does Not Exist

User Groups and User Group Permissions

User Groups have been introduced in this release. Currently, a user can only belong to one user group set in the UserDetail screen. In a future release, this will be expanded so a user may belong to one or more user groups.

Permission overrides can be set at the User Group level using the UserGroupPermission lookup table. For example, if technologists are not permitted to create or edit orders then the appropriate access string codes can be set to “None” to hide the order functionality.



The screenshot shows the 'Lookup Tables - UserGroup' window. On the left is a list of lookup tables, with 'UserGroup' selected. The main table has two columns: 'group name' and 'description'. It contains the following data:

group name	description
Contains:	Contains:
→ Scheduling	Scheduling Group
Radiologist	Radiologist Group
Technologist	Technologist Group
Referring	Referring Group
*	

Figure 4.8 – UserGroup Lookup Table



The screenshot shows the 'Lookup Tables - UserGroupPermission' window. On the left is a list of lookup tables, with 'UserGroupPermission' selected. The main table has three columns: 'Group Name', 'access string code', and 'Contains:'. It contains the following data:

Group Name	access string code	Contains:
Contains:	Contains:	Contains:
→ Technologist	Clinical.NewOrder	None
Technologist	Clinical.EditOrder	None
*		

Figure 4.9 – UserGroupPermission Lookup Table

Logging Framework

rRIS requires a logging framework to help administrators and the development team to troubleshoot the application. The client and the server will both utilize the logging framework to persist logging messages to the Windows Event Viewer. The development team have been coding the application with logging in mind to properly capture critical errors, warnings, relevant information, etc. Through configuration settings, logging can be disabled, the logging level can be set, or the destination of the log files (flat file, xml file, event viewer, database, etc.) can be set.

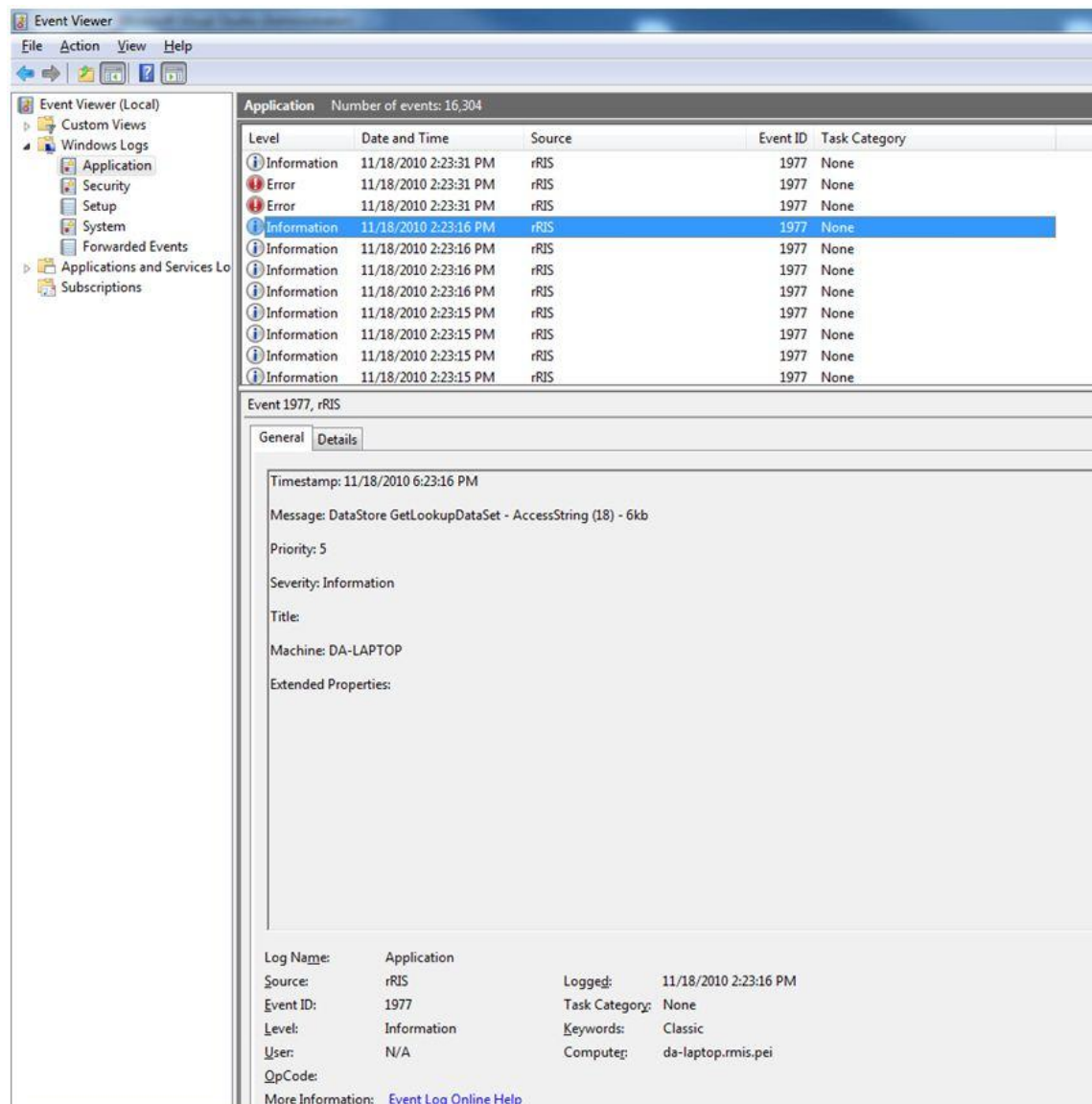
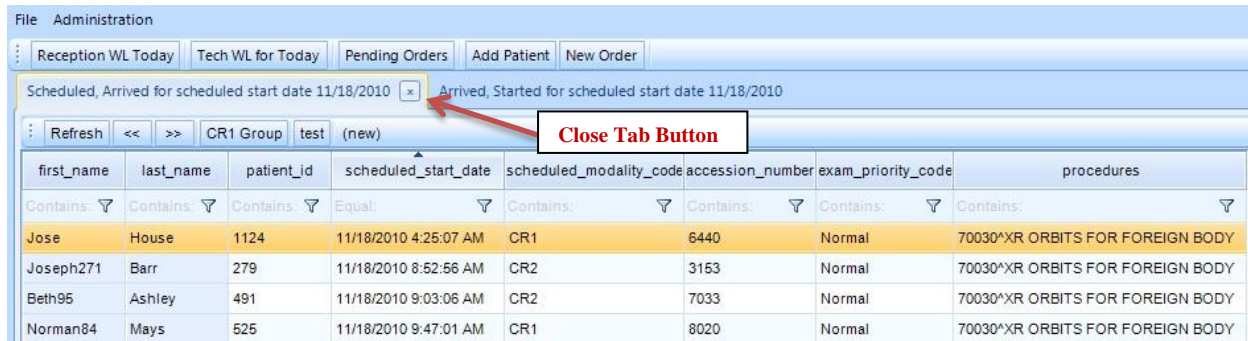


Figure 4.10 – Event Viewer Showing rRIS Logging Information

Close Tab Button

Tabs now have a close button which will only show on the active tab or when the user hovers the mouse pointer over the tab. The tab is closed when the “x” button is pressed.



The screenshot shows the 'Administration' window with a tab titled 'Scheduled, Arrived for scheduled start date 11/18/2010'. A red arrow points to a small 'x' button on the tab, which is labeled 'Close Tab Button'. Below the tab is a table with columns: first_name, last_name, patient_id, scheduled_start_date, scheduled_modality_code, accession_number, exam_priority_code, and procedures.

first_name	last_name	patient_id	scheduled_start_date	scheduled_modality_code	accession_number	exam_priority_code	procedures
Jose	House	1124	11/18/2010 4:25:07 AM	CR1	6440	Normal	70030*XR ORBITS FOR FOREIGN BODY
Joseph271	Barr	279	11/18/2010 8:52:56 AM	CR2	3153	Normal	70030*XR ORBITS FOR FOREIGN BODY
Beth95	Ashley	491	11/18/2010 9:03:06 AM	CR2	7033	Normal	70030*XR ORBITS FOR FOREIGN BODY
Norman84	Mays	525	11/18/2010 9:47:01 AM	CR1	8020	Normal	70030*XR ORBITS FOR FOREIGN BODY

Figure 4.11 – Close Tab Button on Scheduled Worklist

Procedure Picker

rRIS requires the ability to pick several procedure codes when placing an order or scheduling and for each procedure code to specify a laterality and/or body part. Some procedures will require the user to specify a laterality or body part as defined in the lookup table Procedure Codes. Also, some procedures will have a default laterality and or body part as described in the Procedure Codes table.



The screenshot shows a 'ProcedureCode' lookup table. On the left is a list of fields: AccessString, AddressDescription, BillingCode, BodyPart, EmploymentStatus, ExamPriority, Gender, Laterality, MaritalStatus, Modality, Organization, PersonResource, and ProcedureCode. The table has columns: procedure code, description, body part code, laterality code, body part required flag, and laterality required flag.

procedure code	description	body part code	laterality code	body part required flag	laterality required flag
CT31	CT Ankle Arthrogram	lower	Y	Y	Y

Click here to add a new row

Figure 4.12 – ProcedureCode Lookup with Body Part and Laterality Required

The control “MultiTypeAhead” was used in the orders screen such that the user can add procedures by typing in the name of the procedure. As the user types the possible matches are presented and can be selected from a dropdown. Selection can be made by:

- Tabbing away from the control
- Selecting the enter key
- Selecting the space bar
- Selecting the comma key

If the user has a selection made, it will appear in a square area with an ‘x’ on the end. Clicking on the ‘x’ at the end or pressing the “backspace” key will delete the existing procedure codes.

The screenshot shows a 'Procedure:' label followed by a text input field containing 'CT Abdomen W/Wo Pelvis W x'. A red arrow points from a box labeled 'Selected Procedure' to the 'x' at the end of the text. Below the input field is a dropdown menu with 'CT Abdomen W/Wo & Pelvis W' selected. At the bottom, there are two dropdown menus: 'Body Part' and 'Laterality'.

Figure 4.13 – Procedure Picker with CT Abdomen Selected

The user can also use the arrow keys to change the selected procedure code. When the selected procedure is changed the area below will show the laterality and body parts selected for that procedure and if any validation errors exist they will display and the user will be unable to move to another procedure till those validation errors are resolved. If there are any defaults specified for body part and laterality per procedure code, they will automatically display when that procedure code is selected.

The screenshot shows a 'Procedure:' label followed by a list of procedure codes in a grid: 'CT Abdomen W x', 'CT Calcium Scoring x', 'CT Pelvis Wo x', 'CT Screen Chest Wo Abdomen Wo Pelvis Wo x', 'CT Cervical Spine W x', 'MR Ankle Arthrogram x', 'MR Pelvis Radiation Plan x', and 'CT Ankle Arthrogram x'. The 'CT Ankle Arthrogram x' is highlighted. Below the list is a dropdown menu with 'CT Ankle Arthrogram' selected. At the bottom, there are two dropdown menus: 'Body Part' and 'Laterality'. Both dropdown menus have a red exclamation mark icon next to them, indicating validation errors.

Figure 4.14 – Procedure Picker with Body Part and Laterality Required

As the user adds additional values to the procedure code area the text entry box will grow and move other items on the screen down as needed.

The screenshot displays the 'Order' tab of the RADNET rRIS interface. It features a 'Demographics' section with fields for Height, Weight, Marital Status, Student Status, and Employment Status. Below this is the 'Order Details' section, which includes dropdowns for 'Requested By' (Mills, Sally), 'Exam Priority' (Urgent), 'Filler Organization' (General XRay), and 'Reading Priority' (Urgent). The 'Procedure' section shows a list of selected procedures: CT Abdomen W, CT Calcium Scoring, CT Pelvis Wo, CT Screen Chest Wo Abdomen Wo Pelvis Wo, CT Cervical Spine W, MR Ankle Arthrogram, MR Brain W/Wo, MRA Brain Wo, and MR Pelvis Radiation Plan. A scrollable list of other procedures is visible below, including MR Hip Wo & Pelvis Wo, MR Hip Wo, Bilat, MR Knee Arthrogram, MR Knee Wo, MR Lower Ext Joint W/Wo, MR Lower Ext Joint Wo, MR Lower Ext Not Joint W/Wo, MR Lower Ext Not Joint Wo, MR Lumbar Spine W/Wo, MR Lumbar Spine Wo, MR Lumbar Spine Wo & Pelvis Wo, MR MRCP, MR Orbit Face Neck W/Wo, MR Orbit Face Neck Wo, MR Pelvis Radiation Plan (highlighted), and MR Pelvis W/Wo. An 'Order Notes' field is also present.

Figure 4.15 – Procedure Picker with Multiple Procedures Selected

Auditing Framework

An auditing framework has been developed to log all server retrievals and updates of patient, order, and study related data. A GUI screen is available for the user to view the audit log. This is accessible by right-clicking a worklist row and selecting “Audit History” (assuming the user has the necessary permissions).

User has the ability to view an audit trail based on patient, order, and study levels. In the details section of the audit history viewer there is a description showing what fields or statuses were changed by the user.

Show entries for:								
<input type="radio"/> Patient <input type="radio"/> Order <input type="radio"/> Study <input checked="" type="radio"/> Everything for this patient								
	description	notes	date	user id	retrieval	accession number	order number	status
	Contains: ▾	Contains: ▾	Equal: ▾	Contains: ▾	Contains: ▾	Contains: ▾	Contains: ▾	Contains: ▾
▶	Patient Updated	Patient updated	11/18/2010 4:37:51 PM	RMIS\spencer	N			
	Patient Retrieved		11/18/2010 4:37:41 PM	RMIS\spencer	Y			
	UI_OrderSubmitted	Visit updated	11/18/2010 4:35:42 PM	RMIS\spencer	N			
	Order Retrieved		11/18/2010 4:35:35 PM	RMIS\spencer	Y		4121	Signed1
	UI_OrderSubmitted	Patient updated	11/18/2010 4:35:24 PM	RMIS\spencer	N			
	UI_OrderSubmitted	Order updated	11/18/2010 4:35:24 PM	RMIS\spencer	N		4121	Signed1
	Order Retrieved		11/18/2010 4:35:16 PM	RMIS\spencer	Y		4121	OrderSigned

```

<Changes>
<ModifiedRows>
  <c_patient>
    <primary_address_line1 />
  </c_patient>
</ModifiedRows>
</Changes>

```

Figure 4.16 – Audit Trail showing update to Patient Address

Password Encryption

Various password encryptions methods such as Triple DES, AES, SHA-1, SHA-2, and MD5 were researched during Sprint 5. SHA-1 and SHA-2 are secure hash algorithms required by law for use in certain U.S. Government applications. Recently, it has been identified that federal agencies should not use SHA-1 and should be upgraded to SHA-2.

SHA-2 has not been identified as having the same mathematical weakness as SHA-1 and therefore has been utilized in rRIS.

Worklist Context Menus

The rRIS worklist now has a right-click context menu feature which is configurable (through code) and fully supports user permissions.

The screenshot shows the 'Reception Worklist' interface. At the top, there are tabs for 'Reception WL Today', 'Tech WL for Today', 'Pending Orders', 'Add Patient', and 'New Order'. Below these are filters for 'Scheduled, Arrived for scheduled start date 11/18/2010', 'Arrived, Started for scheduled start date 11/18/2010', and 'OrderSigned, OrderDrafted for'. A toolbar includes 'Refresh', '<<', '>>', 'CR1 Group', 'test', and '(new)'. The main table has columns: first_name, last_name, patient_id, scheduled_start_date, scheduled_modality_code, accession_number, exam_priority_code, and procedures. A right-click context menu is open over the row for Norma5, showing options: 'Edit Patient', 'Edit Order', 'Audit History', and 'Change Status To...'. The 'Edit Order' option is highlighted.

first_name	last_name	patient_id	scheduled_start_date	scheduled_modality_code	accession_number	exam_priority_code	procedures
Jose	House	1124	11/18/2010 4:25:07 AM	CR1	6440	Normal	70030*XR ORBITS FOR FOREIGN BODY
Joseph271	Barr	279	11/18/2010 8:52:56 AM	CR2	3153	Normal	70030*XR ORBITS FOR FOREIGN BODY
Beth95	Ashley	491	11/18/2010 9:03:06 AM	CR2	7033	Normal	70030*XR ORBITS FOR FOREIGN BODY
Norman84	Mays	525	11/18/2010 9:47:01 AM	CR1	8020	Normal	70030*XR ORBITS FOR FOREIGN BODY
Norma5	Tucker	1117	11/18/2010 10:47:34 AM	CR1	4120	Normal	70030*XR ORBITS FOR FOREIGN BODY
Arlene514	Woodward	846			8068	Normal	70030*XR ORBITS FOR FOREIGN BODY
Norman91	Pitts	1014			6846	Normal	70030*XR ORBITS FOR FOREIGN BODY
Simon3	Hodges	1265			6583	Normal	70030*XR ORBITS FOR FOREIGN BODY
Dorothy93	Velez	685			9194	Normal	70030*XR ORBITS FOR FOREIGN BODY
Ricardo	Jennings	630	11/18/2010 11:05:22 PM	CR1	6421	Normal	70030*XR ORBITS FOR FOREIGN BODY

Figure 4.17 – Reception Worklist showing Context Menu

Worklist Views

Worklist Views are buttons that reside at the top of a worklist and provide a convenient way of reusing saved filters. Here are some key features that have been implemented with rRIS worklist views:

- System has the ability to classify worklist views as:
 - Core Views – These are system views that will be released with and coded into the application.
 - Group Views – These are views that can be shared amongst a user group such as a group of schedulers or technologists.
 - Personal Views – These views are saved per user and may only be viewed by the user that owns them.
- Views are saved to the database and will be retrieved when the user logs on, therefore following the user no matter where he or she accesses the application.
- A different set of views can be maintained per worklist as they are based on worklist name.
- Views can be deleted by right-clicking the name of the view.

This robust feature is still in the early stages of development. In future release, enhancements like permissions on creating views, renaming views, and better visual indicators will be introduced.

Accessing worklist views is as simple as clicking them on the worklist button bar. The example below illustrates a personal view called “Sorted by Name” where the patient’s last name and first name are sorted ascending and saved as a view.

last_name	first_name	scheduled_start_date	patient_id	scheduled_modality_code	accession_number	exam_priority_code	procedures
Alvarado	Jodie95	11/21/2010 7:19:15 PM	1002	CR2	221	Normal	70030*XR ORBITS FOR FOREIGN BODY
Burch	Trina307	11/21/2010 12:33:07 AM	973	CR1	5844	Normal	70030*XR ORBITS FOR FOREIGN BODY
Carson	Gordon	11/21/2010 3:28:19 PM	271	CR2	6637	Normal	70030*XR ORBITS FOR FOREIGN BODY
Conway	Andrea89	11/21/2010 1:39:21 PM	1018	CR1	2692	Normal	70030*XR ORBITS FOR FOREIGN BODY
Daniel	Dora	11/21/2010 4:11:11 PM	1216	CR2	7374	Normal	70030*XR ORBITS FOR FOREIGN BODY
Dougherty	Lora2	11/21/2010 12:54:18 PM	1046	CR1	3273	Normal	70030*XR ORBITS FOR FOREIGN BODY
Figuroa	Jean7	11/21/2010 9:25:12 AM	808	CR1	3979	Normal	70030*XR ORBITS FOR FOREIGN BODY
Gallagher	Roxanne25	11/21/2010 3:39:04 PM	1028	CR2	9470	Normal	70030*XR ORBITS FOR FOREIGN BODY
Galloway	Kenneth471	11/21/2010 6:42:34 PM	632	CR1	697	Normal	70030*XR ORBITS FOR FOREIGN BODY
Hull	Dina917	11/21/2010 11:46:41 PM	441	CR2	5050	Normal	70030*XR ORBITS FOR FOREIGN BODY
Krause	Marlene043	11/21/2010 7:04:20 PM	467	CR1	1374	Normal	70030*XR ORBITS FOR FOREIGN BODY
Molyneaux	Kevin	11/21/2010 12:56:06 AM	453	CR1	5722	Normal	70030*XR ORBITS FOR FOREIGN BODY
Norman	Jess387	11/21/2010 8:33:39 AM	368	CR1	9234	Normal	70030*XR ORBITS FOR FOREIGN BODY
Peck	Dantuu12	11/21/2010 8:39:02 AM	344	CR1	8707	Normal	70030*XR ORBITS FOR FOREIGN BODY
Petersen	Blake6	11/21/2010 7:08:48 PM	819	CR2	6198	Normal	70030*XR ORBITS FOR FOREIGN BODY
Terry	Darla	11/21/2010 8:23:49 AM	1231	CR2	6950	Normal	70030*XR ORBITS FOR FOREIGN BODY
Walter	Marco26	11/21/2010 6:40:52 PM	743	CR1	4335	Normal	70030*XR ORBITS FOR FOREIGN BODY
Wilkins	Jody	11/21/2010 11:06:41 PM	399	CR1	3242	Normal	70030*XR ORBITS FOR FOREIGN BODY

Figure 4.18 – Reception Worklist showing Worklist Views

To create a worklist view, the user should first filter the worklist to meet his or her needs and then select the “(new)” button. The user is then prompted to provide a name for the view and specify if it is a personal or group view.

For example, a user that belongs to the Scheduling group filters the reception worklist based on a specified modality type and decides to save this view and share it with other schedulers. In this case the group worklist view is called “CR2”. Once the view is saved, it will become accessible by other users belonging to the Scheduling group.

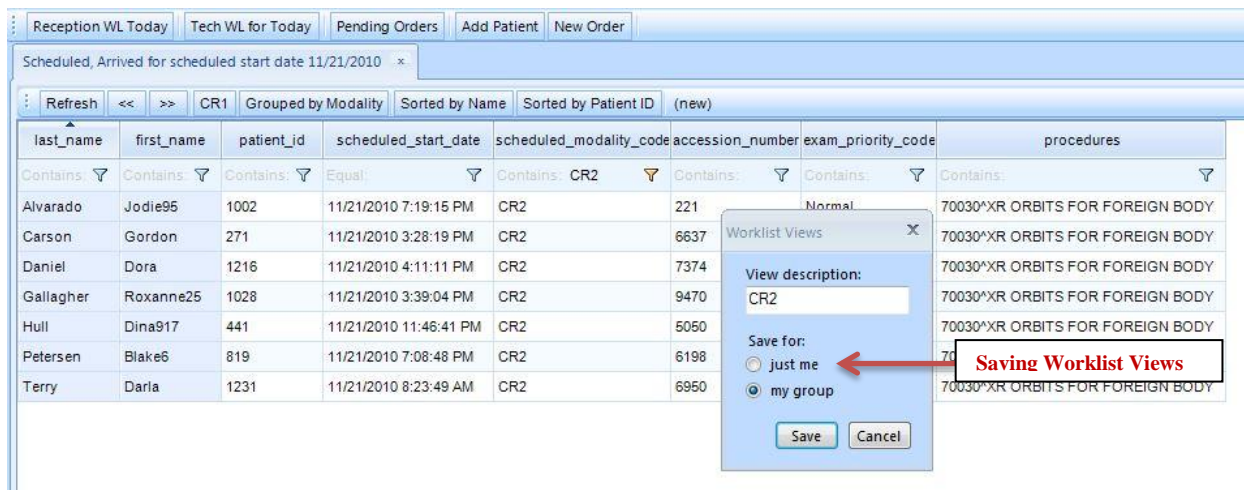
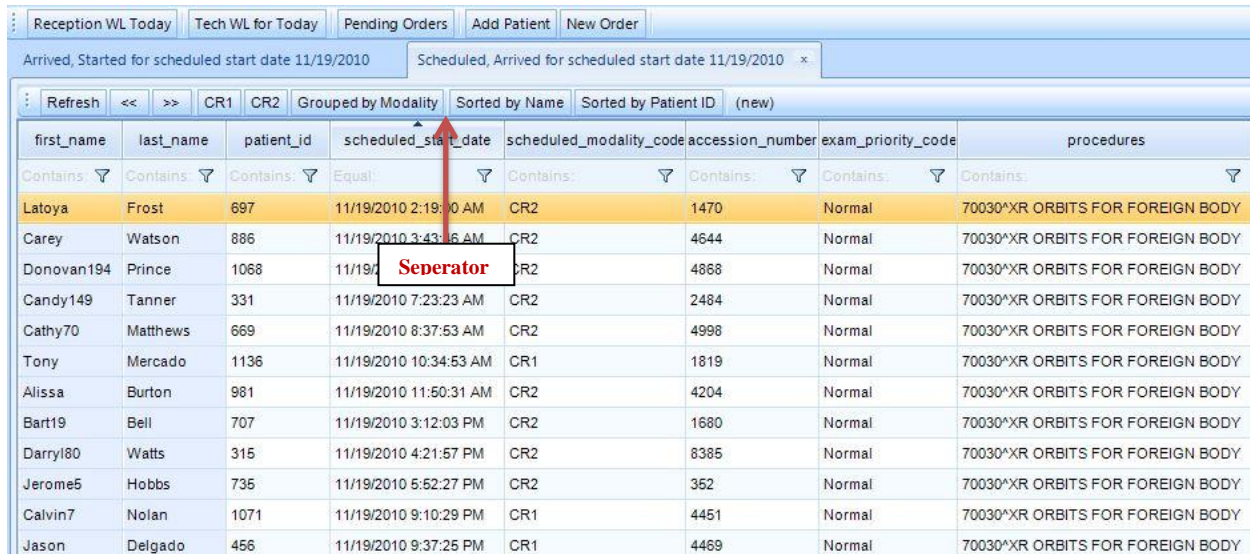


Figure 4.18 – Creating a Worklist Group View



Figure 4.19 – New Worklist Group View Displaying on Button Bar

If the user does not want the worklist view to be accessed by other user than he or she can simply select the “just me” radio button when saving the view. Group views and personal view will both exist on the worklist and are distinguished by a separator.



first_name	last_name	patient_id	scheduled_start_date	scheduled_modality_code	accession_number	exam_priority_code	procedures
Latoya	Frost	697	11/19/2010 2:19:00 AM	CR2	1470	Normal	70030*XR ORBITS FOR FOREIGN BODY
Carey	Watson	886	11/19/2010 3:43:16 AM	CR2	4644	Normal	70030*XR ORBITS FOR FOREIGN BODY
Donovan194	Prince	1068	11/19/10	CR2	4868	Normal	70030*XR ORBITS FOR FOREIGN BODY
Candy149	Tanner	331	11/19/2010 7:23:23 AM	CR2	2484	Normal	70030*XR ORBITS FOR FOREIGN BODY
Cathy70	Matthews	669	11/19/2010 8:37:53 AM	CR2	4998	Normal	70030*XR ORBITS FOR FOREIGN BODY
Tony	Mercado	1136	11/19/2010 10:34:53 AM	CR1	1819	Normal	70030*XR ORBITS FOR FOREIGN BODY
Alissa	Burton	981	11/19/2010 11:50:31 AM	CR2	4204	Normal	70030*XR ORBITS FOR FOREIGN BODY
Bart19	Bell	707	11/19/2010 3:12:03 PM	CR2	1680	Normal	70030*XR ORBITS FOR FOREIGN BODY
Darryl80	Watts	315	11/19/2010 4:21:57 PM	CR2	8385	Normal	70030*XR ORBITS FOR FOREIGN BODY
Jerome5	Hobbs	735	11/19/2010 5:52:27 PM	CR2	352	Normal	70030*XR ORBITS FOR FOREIGN BODY
Calvin7	Nolan	1071	11/19/2010 9:10:29 PM	CR1	4451	Normal	70030*XR ORBITS FOR FOREIGN BODY
Jason	Delgado	456	11/19/2010 9:37:25 PM	CR1	4469	Normal	70030*XR ORBITS FOR FOREIGN BODY

Figure 4.20 – Scheduled Worklist with Group and Personal Views

5. Known Limitations

Bugs, Suggested Features, and Support Issues are now tracked in a web based system called Redmine. The following is a snapshot of the issues found in Build 1.05 as of the end of Sprint 6. Note that the majority if these issues will be resolved in Build 1.06.

#	Status	Subject	Category	Found	% Done	Resolved
15	Resolved	Opening a lookup table that is already open causes strange behaviour	Admin Tools	1.05	100	1.06
16	Closed	Adding a blank row to a lookup causes exception	Admin Tools	1.05	100	1.05
17	Closed	Issues with PersonResource and UserDetail lookups	Admin Tools	1.05	100	1.05
18	New	Rows in UserDetail are getting marked as dirty without any updates	Admin Tools	1.05	0	
19	Resolved	Problems adding a new user that is not a person resource	Admin Tools	1.05	100	1.06
20	New	Updates to PersonResource are reflected in database but not GUI	Admin Tools	1.05	0	
21	Resolved	Setting UserGroupPermission access level to None does not function properly	Admin Tools	1.05	100	1.06
22	Closed	Requested By: is misconfigured on the core Order screen	Thick Client GUI	1.05	100	1.05
23	New	Procedure Codes that are marked as Inactive are still included in the Procedure Picker	Thick Client GUI	1.05	0	
24	Resolved	Procedure Picker will not enforce Laterality and Body Part when multiple procedures are specified	Thick Client GUI	1.05	100	1.06
25	Resolved	Procedure Picker does not refresh screen when removing procedures with required fields	Thick Client GUI	1.05	100	1.06
26	Resolved	Procedure Picker should also be able to filter by Procedure Code	Thick Client GUI	1.05	100	1.06
27	Resolved	Changing patients does not re-validate required fields	Thick Client GUI	1.05	100	1.06
28	Resolved	Order Status when editing an order goes directly to Signed 1	Web Services/DB	1.05	100	1.06
29	Resolved	Order Status does not update when scheduling an order	Web Services/DB	1.05	100	1.06
30	New	Issue with filtered worklists and launching screens with context	Thick Client GUI	1.05	0	
31	Resolved	Deleting rows from Audit History in GUI causes exception	Thick Client GUI	1.05	100	1.06
32	New	Some worklist slowness and flashing when updating status in RIS	Thick Client GUI	1.05	0	
33	Resolved	Context Menu on Pending Orders worklist	Thick Client GUI	1.05	100	1.06
34	New	Parent items in worklist context menus should be hidden if they have no child items	Thick Client GUI	1.05	0	
35	Resolved	Exception when saving group worklist view with name that already exists	Thick Client GUI	1.05	100	1.06
36	New	Exception when occurs when worklist views exceed the size of the tool bar	Thick Client GUI	1.05	0	
37	Resolved	The Code column in the SystemConfig lookup table allows duplicate values	Web Services/DB	1.05	100	1.06
39	Resolved	Loosing changes on lookup table if I try to reopen the same lookup table	Admin Tools	1.05	100	1.06

User Pre-Release Notes

for RADNET rRIS

Build 1.06

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1. Purpose

This document describes some of the new features and changes implemented in rRIS as of the end of Sprint 6. This pre-release version of rRIS is referred to as Build 1.06.

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 rRIS Development team for the RadNet RIS management team.

3. Installing/Accessing the Application

The client installer for rRIS is still in the early development stages. For now, users can access the system by remoting to the rRIS test server in Baltimore as follows:

1. Start Remote Desktop Connection and specify IP 10.120.0.152
2. Username: Radnet domain account
3. Password: Radnet domain password
4. Double click the rRIS icon on the desktop or go to Start→All Programs→rRIS
5. Login User: terry
6. Login Password: ris

If you experience difficulties accessing the application, please do not hesitate to contact Spencer MacDougall with the PEI RIS Development Team.

4. New Features and Enhancements

Support Multiple Addresses in User Manager

The User Manager screen has been expanded in Sprint 6 to include a data grid to support one or more addresses per user. This pattern is required to support not only internal users but also referring doctors who quite often will have more than one office location resulting in multiple possibilities for report delivery.

molyneux	kevin			M	Y
➤ Spencer	MacDougall		8/4/2004 12:00:00...	M	Y
powell	stephen			M	Y
stuart	stephen			M	Y

User Information Preferences

General Information

First Name: Last Name: Middle Name:

Name: MacDougall Spencer

Gender: Male

Mobile #: 902-438-1111 Email Address: spencer@mail.com

Account Information

User Name: spencer ☒ Active

Password:

User Group: Administrator x Technologist x Scheduling x

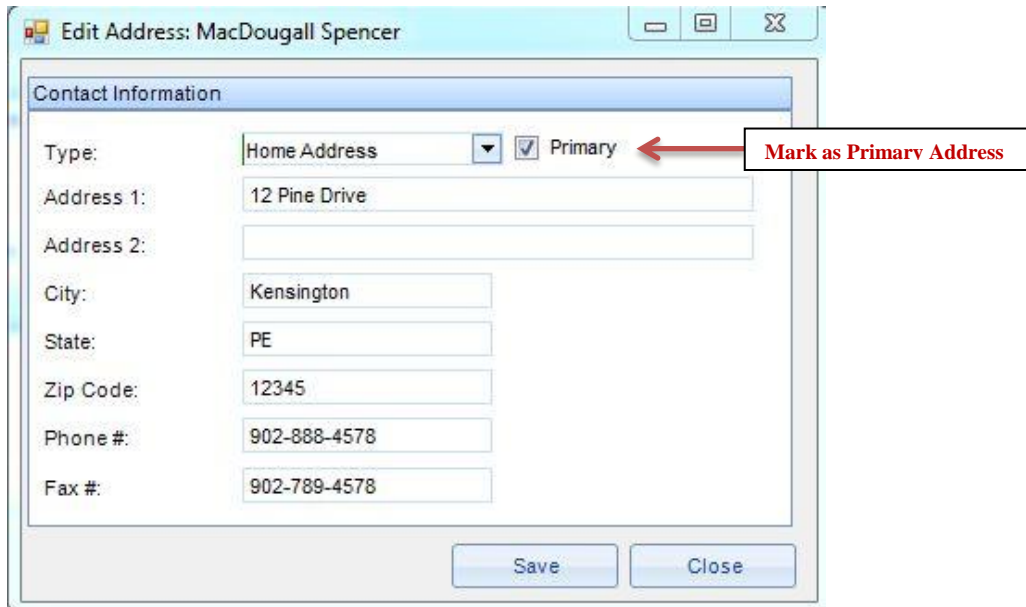
Address	Contact
12 Pine Drive Kensington, PE 12345	*Home Address Phone: 902-888-4578 Fax: 902-789-4578
1345 Duke Street Suite 103 Summerside, PE 87654	Work Address Phone: 902-436-4561 Fax: 902-478-4578
➤ 7459 Central Street Charlottetown, PE 78456	Work Address Phone: 902-888-7412 Fax: 902-888-9745

Edit Add Remove

Figure 4.1 – User Manager Screen with Address Grid

The address grid will allow the user to see three to four addresses at a time without having to scroll. When editing or adding an address a modal popup window is displayed on top of the current screen so again no scrolling is required.

Each user can only have one primary address. In the above example, the Home Address is marked as primary and is visually identified with a “*”. Required fields can also be enforced in the in the address grid. In the example, address type is required and the user is forced to complete it before he or she can save the entry.

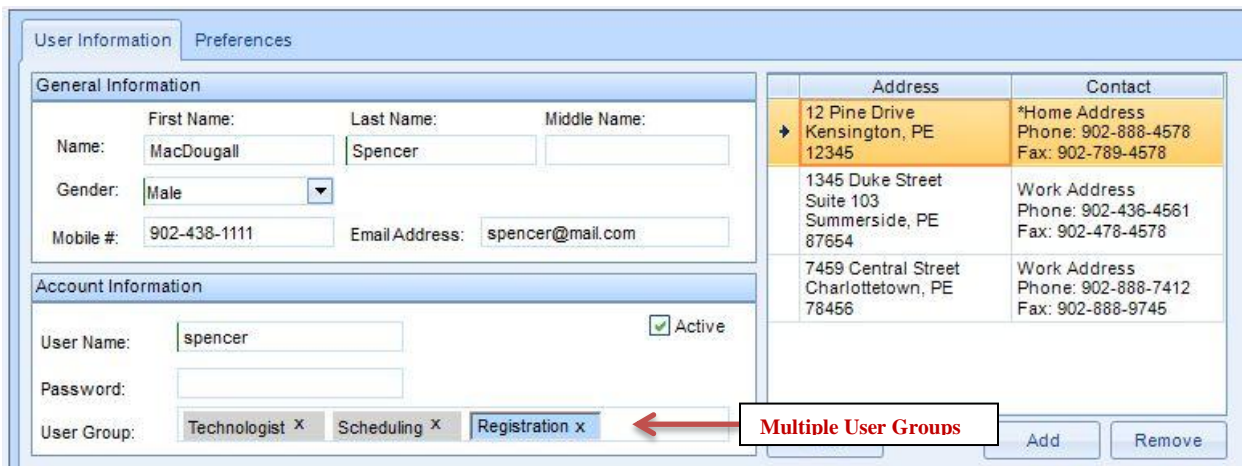


The image shows a modal window titled "Edit Address: MacDougall Spencer". It contains a "Contact Information" section with the following fields: "Type" (set to "Home Address"), "Primary" (checked), "Address 1" (12 Pine Drive), "Address 2" (empty), "City" (Kensington), "State" (PE), "Zip Code" (12345), "Phone #" (902-888-4578), and "Fax #" (902-789-4578). At the bottom are "Save" and "Close" buttons. A red arrow points from a text box labeled "Mark as Primary Address" to the "Primary" checkbox.

Figure 4.2 – Modal Window to Add/Edit an Address in User Manager

Support Multiple User Groups in User Manager

Similar to addresses, there is also a requirement for a user to belong to one or more user group. This can now be defined in the User Manager screen. Many of the permissions in the application will be driven from user groups. Functionality that is available to a radiologist should not be accessible by a scheduler and vice versa. However, there will often be times where a user's job responsibility will span more than one group. For example, User A both schedules and arrives patients and therefore is required to belong to both the Scheduling and Registration user groups.



The image shows the "User Information" tab in the User Manager screen. It includes sections for "General Information" (Name: MacDougall Spencer, Gender: Male, Mobile #: 902-438-1111, Email Address: spencer@mail.com) and "Account Information" (User Name: spencer, Password: [empty], User Group: Technologist x, Scheduling x, Registration x, Active checkbox checked). To the right is a table with "Address" and "Contact" columns. A red arrow points from a text box labeled "Multiple User Groups" to the "Registration x" button in the User Group section.

Address	Contact
12 Pine Drive Kensington, PE 12345	*Home Address Phone: 902-888-4578 Fax: 902-789-4578
1345 Duke Street Suite 103 Summerside, PE 87654	Work Address Phone: 902-436-4561 Fax: 902-478-4578
7459 Central Street Charlottetown, PE 78456	Work Address Phone: 902-888-7412 Fax: 902-888-9745

Figure 4.3 – Multiple User Groups Applied to User

rRIS Client Installer

During both Sprint 5 and 6 there has been much effort invested in the development of the client installer. The installer functions under the assumption that there is a common shared network drive that is accessible by site users. The ris development team uses G:\RISDeployment as the shared drive but the location is configurable.

There are two main components to installing the application:

1. Core Install
2. Build Updates

The core install will require administrative rights and would typically need to be installed on each client pc before go-live. To install the core application, the user would simply run the Install.bat file located in the G:\RISDeployment\Core directory. By running the batch file all previous versions of rRIS are uninstalled and the new one is installed. This is all performed silently, without any required user interaction.

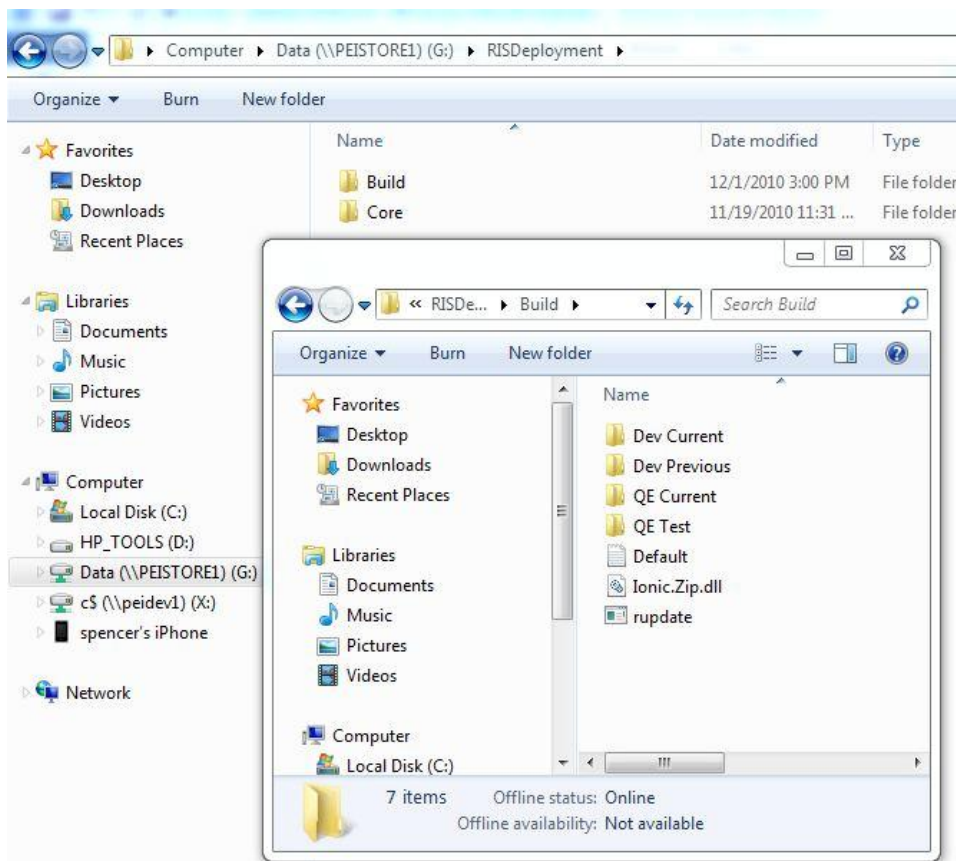


Figure 4.4 – Installer Shared Drive

The Build directory will contain one or more builds available to the users. Consider the following requirements that have been satisfied with this approach:

1. This will allow a site to maintain multiple schemas, like one for production, training, and testing.
2. A default build can be specified. The login screen will automatically select the default build. Typically this will be the production build.
3. Users can be blocked from accessing builds by simply not granting permission to the subdirectories. If a site does not want users accessing the testing build, simply do not grant access to the testing directory. Testing will not show up on the System dropdown menu.
4. A user (with proper permission) is able to switch between different versions of the application with minimal effort required.
5. Current version number is displayed on the Login screen.
6. The ris administrator can easily push builds out to the users by simply overwriting the production files with the new release. The users will automatically install the new release on the next login.

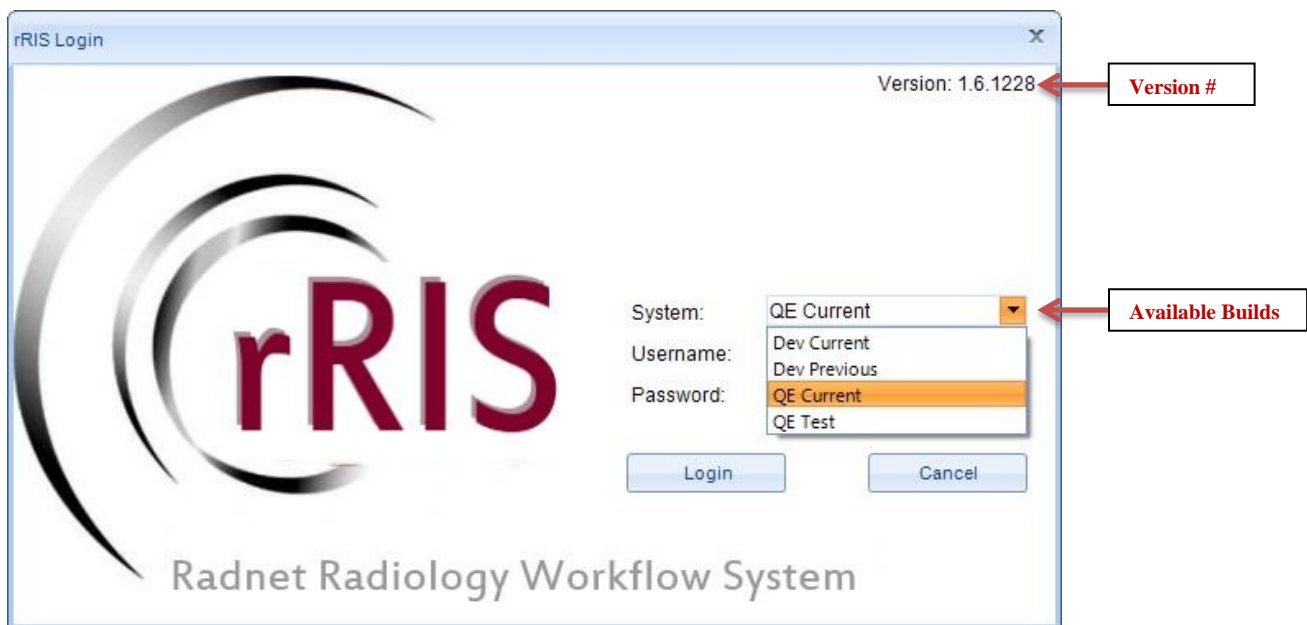


Figure 4.5 – Login Screen showing Version and Available Builds

Shortcut Keys

The development team has been ensuring that the application is keyboard friendly. The following is a list of shortcut keys that are currently supported:

Typical Screens:

Ctrl+W	Close a Screen
Ctrl+S	Save and Close a Screen
Ctrl+F	Focus Patient Search Textbox
F4	In a dropdown box, opens and closes the list In a date input, opens the calendar selection popup In a multi type ahead opens the type-ahead suggestions
Alt+F4	Closes the RIS Program
Alt+Tab	Standard Windows Keys to cycle though active windows programs
Ctrl+Tab	Cycles though active RIS Screens (such as Add Patient, WLs, etc.)
Ctrl+(↑ or↓)	Cycles though current RIS Screen's tabs
Ctrl+Shift+(↑ or↓)	Moves the selection up or down, in a screen's DataGrid (re: User Manager)
ESC	Closes a popup window (as a cancel)
O	Closes a popup window with OK
C	Closes a popup window with Cancel (similar for Y, N, etc).
Ctrl+A	Selects all text in a textbox
Ctrl+C	Copy selected text
Ctrl+V	Paste Selected text
Ctrl+X	Copy and delete selected text
Ctrl+N+...	Opens a data screen for a <u>N</u> ew item such as:
Ctrl+N+P	<u>N</u> ew <u>P</u> atient
Ctrl+N+O	<u>N</u> ew <u>O</u> der
Ctrl+E+...	Opens a data <u>E</u> dit screen for an item such as:
Ctrl+E+P	<u>E</u> dit <u>P</u> atient
Ctrl+E+O	<u>E</u> dit <u>O</u> der
Ctrl+L+...	Opens a Worklist screen such as:
Ctrl+L+A	Arrived Worklist (aka Reception WL)
Ctrl+L+T	Tech WL

Ctrl+L+O	Orders WL
Ctrl+L+S	Scheduled WL

In a Worklist screen:

F5	Refresh Worklist
Ctrl+←	Previous day in dated Worklists
Ctrl+→	Next day in dated Worklists
Enter	TBD

In the Patient Search Screen:

ALT+S	Perform Search
ALT+R	Perform Reset
ALT+L	Goto Last Name
ALT+F	Goto First Name
ALT+B	Goto Birth Date
ALT+M	Goto MRN
ALT+o	Check Sounds Like
CTRL+T	Toggle/Swap First & Last Name

Additional Worklist View Features

The Worklist View framework has the following list of enhancements included in Build 1.06:

1. The ability to rename a view or change its type from a person to a group view or vice versa.
2. The ability to delete a view.
3. The ability to overwrite or update the filter criteria for the selected view.

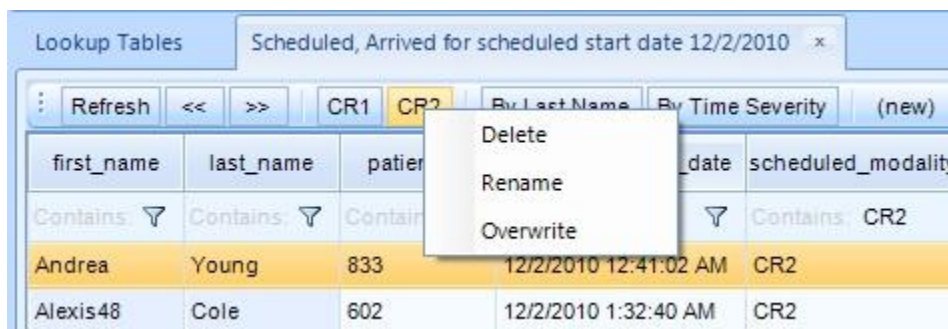


Figure 4.6 – Worklist View Context Menu

- Added permissions to access the editing features of both personal and group views. Permission can be enabled so only system administrators can update group views.


	Group Name	access string code	
→	Contains: 	NotContain: Clinical.EditOrder 	Contains:
	Administrator	WorklistViews.Group.Edit	Full
	Administrator	WorklistViews.User.Edit	Full
	Scheduling	WorklistViews.User.Edit	Full
	Technologist	WorklistViews.User.Edit	Full

Figure 4.7 – Worklist View Permissions

- The ability to load views from multiple user groups on the same worklist.
- The ability to save views to a specific group if the user happens to belong to more than one user group.

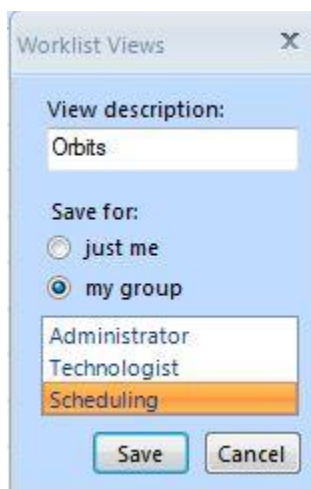


Figure 4.9 – Popup to Save Worklist Views

Worklist Calculated Columns

There is a requirement to support columns to be calculated by the client workstation at runtime. For Build 1.06, a column which calculates patient Due Time has been added to the Scheduled/Arrived worklist. The calculation displays the difference in hours between the current time and the scheduled time. Another calculated column called Calculated Time Severity has been added which will classify the Due Time based on a set range.

: Refresh << >> CR1 CR2 By Last Name By Time Severity (new)						
Calculated Time Severity	Due Time (example)	first_name	last_name	patient_id	scheduled_start_date	procedures
No filter: 	Contains: 	Contains: 	Contains: 	Contains: 	Equal: 	Contains: 
Severe	OVERDUE by 10 HOURS 39 MINUTES	Andrea	Young	833	12/2/2010 12:41:02 AM	70030*XR ORBITS FOR FOREIGN BODY
Severe	OVERDUE by 2 HOURS 43 MINUTES	Cassandra54	Luna	937	12/2/2010 8:36:44 AM	70030*XR ORBITS FOR FOREIGN BODY
Severe	OVERDUE by 9 HOURS 47 MINUTES	Alexis48	Cole	602	12/2/2010 1:32:40 AM	70030*XR ORBITS FOR FOREIGN BODY
Severe	OVERDUE by 2 HOURS 14 MINUTES	Eric70	Maxwell	1056	12/2/2010 9:05:51 AM	70030*XR ORBITS FOR FOREIGN BODY
Severe	OVERDUE by 6 HOURS 10 MINUTES	Emma	Wu	268	12/2/2010 5:09:49 AM	70030*XR ORBITS FOR FOREIGN BODY
Major	OVERDUE by 1 HOURS 22 MINUTES	Marsha	Valencia	594	12/2/2010 9:57:40 AM	70030*XR ORBITS FOR FOREIGN BODY
Minor	OVERDUE by 19 MINUTES	Lashonda7	Sellers	843	12/2/2010 11:00:56 AM	70030*XR ORBITS FOR FOREIGN BODY
None	Due in 9 hours 26 minutes	Steven18	Medina	785	12/2/2010 8:46:47 PM	70030*XR ORBITS FOR FOREIGN BODY
None	Due in 3 hours 40 minutes	Jeanine681	Kramer	776	12/2/2010 3:00:29 PM	70030*XR ORBITS FOR FOREIGN BODY

Figure 4.10 – Worklist showing Calculated Column for Due Time and Severity

5. Known Limitations

Bugs, Suggested Features, and Support Issues are now tracked in a web based system called Redmine. The following is a snapshot of the issues found in Build 1.06 as of the end of Sprint 7. Note that the majority if these issues will be resolved in Build 1.07.

#	Status	Subject	Category	Found	% Done	Resolved
38	Closed	Lookup table editor - clicking close and they clicking save causes an error on UserDetails	Admin Tools	1.06	100	1.06
40	Resolved	updating lookup table - delete row, re-add row can cause a duplicate constraint error	Web Services/DB	1.06	100	1.07
41	Closed	patient_class_code error on new order save	Web Services/DB	1.06	100	1.06
42	Resolved	Error accessing PatientClass lookup	Web Services/DB	1.06	100	1.07
43	Resolved	Stat checkboxes are required on core order details screen	Thick Client GUI	1.06	100	1.07
44	Resolved	Issue with combo-boxes and required fields	Thick Client GUI	1.06	100	1.07
46	Resolved	Should be a reference warning when trying to modify a lookup code that is referenced	Admin Tools	1.06	100	1.07
47	New	Concurrency violations when using more than one instance on the Lookup Table editor	Admin Tools	1.06	0	
48	Resolved	Primary or related keys not found when adding a new patient	Web Services/DB	1.06	100	1.07
49	Resolved	Improvements for "breaking lock" workflow	Thick Client GUI	1.06	100	1.07
50	Resolved	Exception creating new user - Column 'user_key' is read only	Admin Tools	1.06	100	1.06
51	New	Takes 2 clicks to Edit, Add, or Remove row from Address grid	Admin Tools	1.06	0	
52	Resolved	Users not marked as Active can still login to the application	Admin Tools	1.06	100	1.07
53	Resolved	Exception when reapplying user to user group	Admin Tools	1.06	100	1.07
54	Resolved	Exception when trying to access AvailabilityTemplate screen	Admin Tools	1.06	100	1.07
55	New	Overwriting a Group Worklist View saves it as a Person Worklist View	Thick Client GUI	1.06	0	
56	New	When Renaming a WorklistView, popup should default to current values	Thick Client GUI	1.06	0	
57	New	Edit Patient shortcut keys not functioning	Thick Client GUI	1.06	0	
58	Resolved	Column sizing issue with child tables in Lookup Table Editor	Admin Tools	1.06	100	1.07
59	Resolved	Installer - Issue with access to Build directory	Thick Client GUI	1.06	100	1.07
60	Resolved	Installer - No indication of what System user is logging into if RISDeployment directory is not available	Thick Client GUI	1.06	100	1.07
61	Resolved	Delete should be disabled on Custom Area Designer when no controls are present	Admin Tools	1.06	100	1.07
62	New	No visual indicator of what worklist view is selected	Thick Client GUI	1.06	0	
63	New	Hard to filter lookup table columns that reference related lookup tables	Admin Tools	1.06	0	

User Pre-Release Notes

for RADNET rRIS

Build 1.07

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1. Purpose

This document describes some of the new features and changes implemented in rRIS as of the end of Sprint 7. This pre-release version of rRIS is referred to as Build 1.07.

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 rRIS Development team for the RadNet RIS management team.

3. Installing/Accessing the Application

The client installer for rRIS is still in the early development stages. For now, users can access the system by remoting to the rRIS test server in Baltimore as follows:

1. Start Remote Desktop Connection and specify IP 10.120.0.152
2. Username: Radnet domain account
3. Password: Radnet domain password
4. Double click the rRIS icon on the desktop or go to Start→All Programs→rRIS
5. Login User: terry
6. Login Password: ris

If you experience difficulties accessing the application, please do not hesitate to contact Spencer MacDougall with the PEI RIS Development Team.

4. New Features and Enhancements

Database Change Management

As the database for rRIS continues to develop and mature, there is a need to seamlessly upgrade it with each new release of the application. The DBGhost DB Change Management Process has been implemented to satisfy this requirement. The DBGhost solution will automatically generate a SQL file that will account for new and modified core database objects such as tables, views, stored procedures, and user defined functions. “Core” is what the rRIS R&D team refers to as critical components produced and maintained exclusively by the R&D team.

Modality Closure

The modality maintenance screen has been expanded to include a section for modality closures. Modality maintenance is where all the scanners or rooms will be setup and maintained by the RIS system administrator. By filtering and clicking on the modality to be closed, the user can create a date range to define when the modality will not be available.

When scheduling, the list of available timeslots will not include any modalities that have been closed for the specified time period.

Modalities:						
	modality code	short name	description	ae title	digital flag	active flag
	CR1	CR1		CR001	Y	Y
	CR2	CR2		CR002	Y	Y
➔	CT	CT	HL7 CT	CT001	Y	Y
	DX	DX	HL7 DX		Y	Y
	MG1	MG1	HL7 Mammo	MG001	Y	Y
	MR1	MR	HL7 MR	MR001	Y	Y
	RG34	RG	HL7 RG	RG001	Y	Y
* Click here to add a new row						
CT modality Closure:						
	from date	to date	description			
➔	12/31/2010 1:00:00 PM	12/31/2010 5:00:00 PM	Maintenance	Y		
	1/14/2011 8:00:00 AM	1/14/2011 4:00:00 PM	Upgrade	Y		
	2/28/2011 12:00:00 AM	2/28/2011 12:00:00 AM	Maintenance	Y		
	4/14/2011 2:00:00 PM	4/14/2011 4:00:00 PM	Inspection	Y		
* Click here to add a new row						

Figure 4.1 – Modality Maintenance Screen showing Modality Closure

Procedure Modality Mapping

rRIS has the ability through configuration screens to define Procedure Codes, Modalities, and Modality Availability Templates. The purpose of the Procedure Modality Mapping screen is to tie all three together when determining scheduling solutions. This screen will define which procedures can be performed on each modality and what availability template the modality should utilize.

In rRIS, these procedures to modality mappings are referred to as scheduling groups. To create a new Schedule Group, the user opens the ScheduleGroup screen in the lookup table editor and selects the “Add” button.

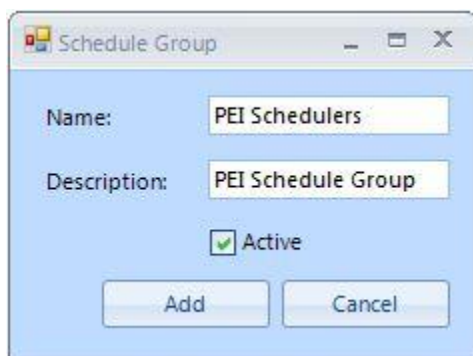


Figure 4.2 is a screenshot of a 'Schedule Group' popup window. It has a title bar with a standard Windows icon and window controls. The main area contains three labels: 'Name:' followed by a text box containing 'PEI Schedulers', 'Description:' followed by a text box containing 'PEI Schedule Group', and a checked checkbox labeled 'Active'. At the bottom are two buttons: 'Add' and 'Cancel'.

Figure 4.2 – Popup to define new Schedule Group

Once a new schedule group has been defined, the user can proceed to select procedures, modalities, and availability templates.

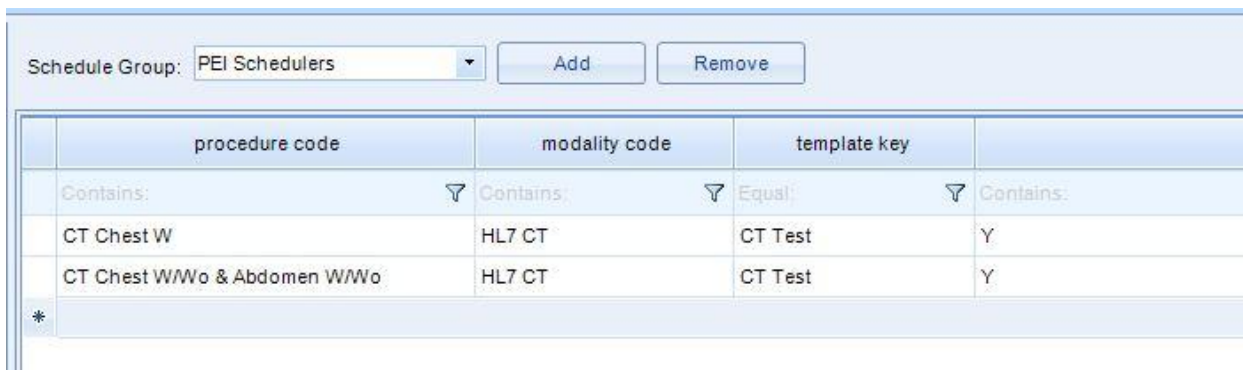


Figure 4.3 is a screenshot of the 'Schedule Group Configuration Screen'. At the top, there is a 'Schedule Group:' dropdown menu currently showing 'PEI Schedulers', followed by 'Add' and 'Remove' buttons. Below this is a table with four columns: 'procedure code', 'modality code', 'template key', and an empty column. The table has two data rows. Each row starts with a 'Contains:' label and a filter icon. The first row shows 'CT Chest W' for procedure code, 'HL7 CT' for modality code, 'CT Test' for template key, and 'Y' in the empty column. The second row shows 'CT Chest W/Wo & Abdomen W/Wo' for procedure code, 'HL7 CT' for modality code, 'CT Test' for template key, and 'Y' in the empty column. A '*' icon is visible in the bottom left corner of the table area.

	procedure code	modality code	template key	
Contains: ▾	CT Chest W	HL7 CT	CT Test	Y
Contains: ▾	CT Chest W/Wo & Abdomen W/Wo	HL7 CT	CT Test	Y

Figure 4.3 – Schedule Group Configuration Screen

The administrator can select the “Add Multiple” button to easily add multiple procedures to a schedule group. This prevents the user from having to do this one row at a time.

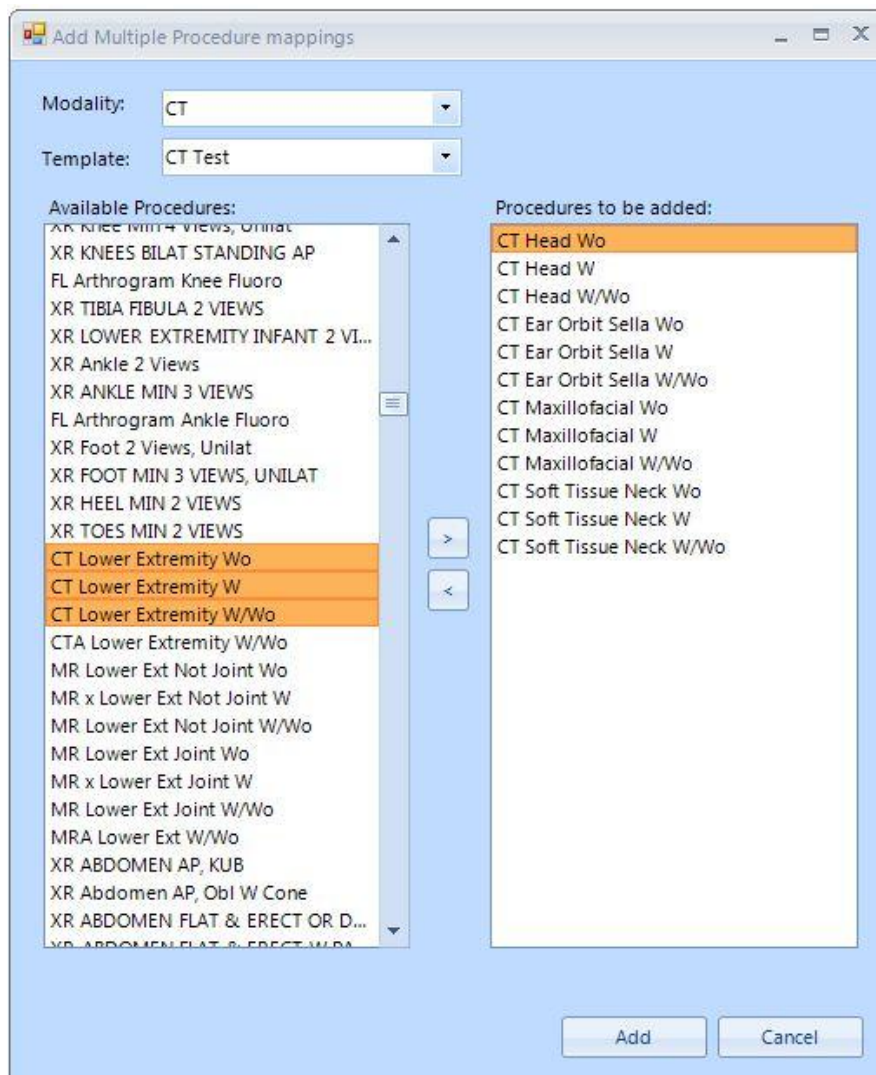


Figure 4.4 – Adding Multiple Procedures to Schedule Group

Schedule Group: PEI Schedulers Add Remove			
procedure code	modality code	template key	
Contains: ⌵	Contains: ⌵	Equal: ⌵	Contains:
CT Chest W	HL7 CT	CT Test	Y
CT Chest W/Wo & Abdomen W/Wo	HL7 CT	CT Test	Y
CT Head Wo	HL7 CT	CT Test	Y
CT Head W	HL7 CT	CT Test	Y
➔ CT Head W/Wo	HL7 CT	CT Test	Y
CT Ear Orbit Sella Wo	HL7 CT	CT Test	Y
CT Ear Orbit Sella W	HL7 CT	CT Test	Y
CT Ear Orbit Sella W/Wo	HL7 CT	CT Test	Y
CT Maxillofacial Wo	HL7 CT	CT Test	Y
CT Maxillofacial W	HL7 CT	CT Test	Y
CT Maxillofacial W/Wo	HL7 CT	CT Test	Y
CT Soft Tissue Neck Wo	HL7 CT	CT Test	Y
CT Soft Tissue Neck W	HL7 CT	CT Test	Y
CT Soft Tissue Neck W/Wo	HL7 CT	CT Test	Y
CT Lower Extremity Wo	HL7 CT	CT Test	Y
CT Lower Extremity W	HL7 CT	CT Test	Y
CT Lower Extremity W/Wo	HL7 CT	CT Test	Y
MR Cervical Spine Wo	HL7 MR	MR Test	Y
MR x Cervical Spine W	HL7 MR	MR Test	Y
MR Thoracic Spine Wo	HL7 MR	MR Test	Y
MR x Thoracic Spine W	HL7 MR	MR Test	Y
MR Lumbar Spine Wo	HL7 MR	MR Test	Y
MR x Lumbar Spine W	HL7 MR	MR Test	Y
MR Cervical Spine W/Wo	HL7 MR	MR Test	Y
MR Thoracic Spine W/Wo	HL7 MR	MR Test	Y
MR Lumbar Spine W/Wo	HL7 MR	MR Test	Y
MR Hip Wo & Pelvis Wo	HL7 MR	MR Test	Y
MR Ankle Arthrogram	HL7 MR	MR Test	Y
MR Elbow Arthrogram	HL7 MR	MR Test	Y
MR Hip Arthrogram	HL7 MR	MR Test	Y

Figure 4.5 – Sample Schedule Group Configuration

User Schedule Group

Once a schedule group has been defined, the rRIS system administrator has the ability to map users to it. This will limit a scheduling user to only have access to procedures, modalities, and templates that have been defined in the applied schedule group.

Schedule groups are set in the User Maintenance screen and are one per user. If a user does not require the ability to schedule, this value can be left blank.

The screenshot displays the 'User Maintenance' screen with two tabs: 'User Information' and 'Preferences'. The 'User Information' tab is active, showing 'General Information' and 'Account Information' sections. In the 'General Information' section, the user's name is 'Spencer MacDougall', gender is 'Male', mobile number is '902-438-1111', and email address is 'spencer@mail.com'. In the 'Account Information' section, the user name is 'spencer', the 'Active' checkbox is checked, and the 'Schedule Group' is set to 'PEI Schedulers'. A red arrow points to the 'Schedule Group' dropdown menu with a callout box that says 'Set Schedule Group'. To the right of the form is a table with two columns: 'Address' and 'Contact'. The 'Address' column contains a list of addresses, with the first one highlighted in orange. The 'Contact' column contains contact information for each address.

Address	Contact
123 West Drive Summerside, PE 12356	*Home Address Phone: 902-878-7894 Fax: 902-455-7845
1	Home Address
1	Phone: 1
1, 1	Fax: 1
1	

Buttons at the bottom right: Edit, Add, Remove.

Figure 4.6 – Setting Schedule Group in User Maintenance Screen

Procedure Plan

Procedure plans are also referred to as series or composite codes. They are basically two or more procedure codes that can be saved in a predetermined sequence with a set wait time between each procedure. Procedure plans are added via the ProcedurePlan screen found in the Lookup Table Editor.

Procedure Plans:					
	procedure plan code	name	description	report together flag	active flag
	Test	Test1111	Test	N	Y
+	Test Plan			N	Y
Click here to add a new row					

Procedures:	
Drag a column here to group by this column.	
procedure code	description
0028T	DX Body Composition Study
20605	FL Arthrocentesis Inject Intermediate Jt
70030	XR ORBITS FOR FOREIGN BODY
70100	XR Mandible 1-3 Views
70110	XR MANDIBLE 4 VIEWS
70120	XR Mastoid 1-2 View Ea Side
70130	XR MASTOID 3 VIEW EA SIDE
70134	XR Internal Auditory Canals

Plan Procedures:				
Procedure	Min Wait Time	Max Wait Time	Sequence	
MM15I NM Injection Only 15 Minutes	15	30	1	
78215 NM Liver and Spleen Static	30	40	2	
NM30S NM Scan 30 Minutes	30	50	3	

Figure 4.7 – Sample Procedure Plan Configuration

Patient Merge

In rRIS, the user now has the ability to select an existing patient (source patient) and merge them into another patient record (destination patient).

The patient merge feature can be accessed if the user has permission by selecting File and Patient Merge from the menu bar. If the user opens patient merge from a worklist, the source patient will default to the patient that is selected. By using the “Patient Search” buttons within the source and destination patient group boxes, the user can add or change the patient selection. There is also a “<>” toggle button in the case where a user happens to get the source and destination patients entered in the wrong order. The toggle button switches the source and destination patients quickly so they don’t have to re-search or re-enter data.

The data in the Patient Merge screen is read-only. Some basic information about the patient is displayed along with the patient worklist data, which summarizes the clinical data that will be transferred to the destination patient’s medical record. If the source and/or the destination isn’t selected attempting a merge will display appropriate messages telling the user what is required. If the source and destination patients are the same an error message will also display when the user attempts a merge. Although the save button for this states “Merge” instead of the standard “Save”, using the quick key “Ctrl+S” will perform the merge.

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The screenshot shows the 'Patient Merge' screen in the rRIS application. The title bar indicates 'Patient Merge (MRN 84659 to 46915)'. The interface is divided into two main sections: 'Source (This patient will be removed)' and 'Destination (This patient will receive all clinical data)'. The Source section contains fields for First Name (Yvonne3), Middle Name (47417), Last Name (Macias), Birth Date (06-14-1988), MRN (84659), and Gender (Unknown). The Destination section contains fields for First Name (Yvonne), Middle Name (25697), Last Name (Macias), Birth Date (05-22-1981), MRN (46915), and Gender (Male). Both sections also include a 'Contact Info' field with address details. At the bottom of each section is a 'Clinical Data' tab with sub-tabs for Accession, Status, Procedures, Scheduled, Dictated, Transcribed, and Signed.

Figure 4.8 – Patient Merge Screen showing Source and Destination Patient

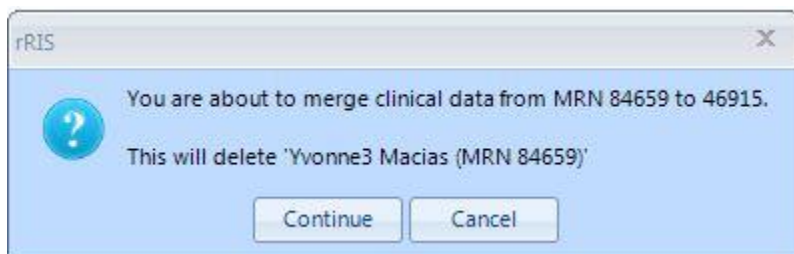


Figure 4.9 – Patient Merge Warning Message

The screenshot shows the 'Audit History' screen in the rRIS application. The title bar indicates 'Audit (Elaine Boone)'. The interface shows a table of audit entries. The first row is highlighted in orange and contains the text 'Patient Merged Patient ID: 1389 merged into Patient ID: 356 12/30/2010 9:51:31 AM RMIS\spencer Y'. The other rows are 'Patient Retrieved', 'Study Retrieved', and 'Study Retrieved', all with dates and times from 12/30/2010 and 11/12/2010.

description	notes	date	user id	retrieval	accession number	order number	status
Contains: ▾	Contains: ▾	Equal: ▾	Contains: ▾	Contains: ▾	Contains: ▾	Contains: ▾	Contains: ▾
➔ Patient Merged	Patient ID: 1389 merged into Patient ID: 356	12/30/2010 9:51:31 AM	RMIS\spencer	Y			
Patient Retrieved		12/30/2010 9:51:19 AM	RMIS\spencer	Y			
Study Retrieved		11/12/2010 3:50:53 PM	Service: RadCont...	Y	444	202	ReportDrafted
Study Retrieved		11/12/2010 3:50:50 PM	Service: RadCont...	Y	545	1113	ReportDrafted

Figure 4.10 – Audit History with Patient Merge Entry

Display “Locked By” on the Worklist

The worklist framework has been expanded to now include a “Locked By” column. This column will display the User ID of the user that has a lock on the study on the worklist.

first_name	last_name	patient_id	locked_by	scheduled_modality_code	accession_number
Contains: ▼	Contains: ▼	Contains: ▼	Contains: ▼	Contains: ▼	Contains: ▼
Angelina	Sexton	876		CR2	262
Loren11	Molinaaaa	1015		CR1	263
Tania953	Welch	459	RMIS\spencer	CR2	264
Vicky917	Vega	975		CR1	265
Shana768	Nielson	869		CR1	266

Figure 4.11 – Worklist Displaying Locked Study

Improvements to Broken Lock Workflow

There have been some significant improvements made to the broken lock workflow pertaining to the messages that are displayed to the user that is breaking the lock or having their lock broken. The phone number is now presented to allow the user to contact the person that is holding the lock.

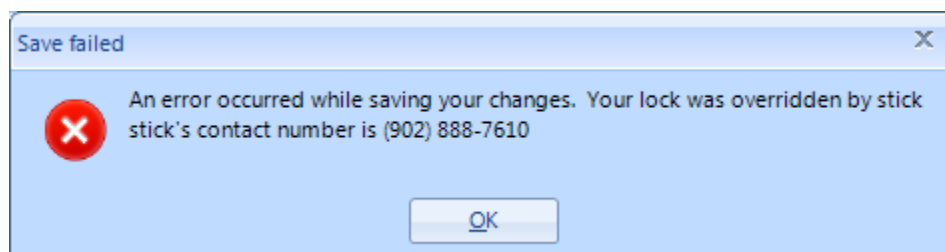


Figure 4.12 – Error Message when Saving a Broken Lock

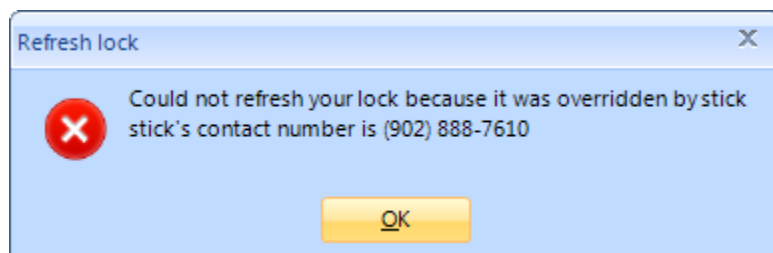


Figure 4.13 – Error Message when Refreshing a Broken Lock

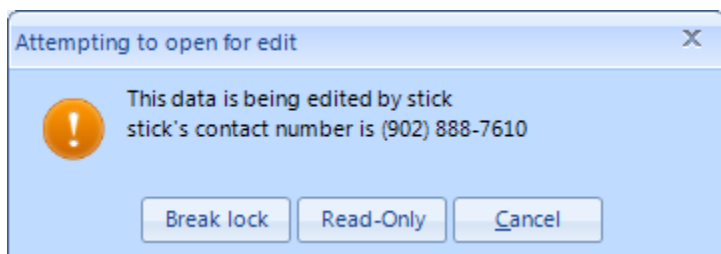


Figure 4.14 – Error Message when Opening Locked Data

Worklist Multi-Select

The ability to select multiple rows on a worklist and perform an action for each selected row has been implemented in this release. Only certain actions support this feature. For example, edit order is limited to only one selected row. The user will be prompted that this feature does not support multi-select from the worklist. However, selecting Assign to Transcriptionist from the Report Drafted worklist does support this feature as demonstrated below.

Lookup Tables - ProcedurePlan Patient Search Pending Orders Technologist WL Reception WL Lookup Tables Audit (Elaine Boone) Report Drafted x									
<div> <div>(new) Refresh</div> </div>									
first_name	last_name	patient_id	locked_by	scheduled_modality_code	accession_number	transcribed_by_user_id	transcribed_date	dictated_by_user_id	dictated_date
Contains: ▼	Contains: ▼	Contains: ▼	Contains: ▼	Contains: ▼	Contains: ▼	Contains: ▼	Equal: ▼	Contains: ▼	Equal: ▼
Angelina	Sexton	876		CR2	262	Service: CDSJobManager.vshost	11/18/2010 3:44:16 PM		
Loren11	Molinaaaa	1015		CR1	263	Service: CDSJobManager.vshost	11/18/2010 3:46:50 PM		
Tania953	Welch	459		CR2	264	Service: CDSJobManager.vshost	11/18/2010 3:46:53 PM		
Vicky917	Vega	975		CR1	265	Service: CDSJobManager.vshost	11/18/2010 3:46:56 PM		
Shana768	Nielson	869		CR1	266	Service: CDSJobManager.vshost	11/18/2010 3:44:18 PM		
	Andrews	452		CR2	267	Service: CDSJobManager.vshost	11/18/2010 3:46:58 PM		
Leigh	Weber	334		CR1	268	Service: CDSJobManager.vshost	11/18/2010 3:47:01 PM		
Beverly31	Richards	777		CR2	269	Service: CDSJobManager.vshost	11/18/2010 3:47:03 PM		
Gustavo7	Navarro	904		CR1	270	Service: CDSJobManager.vshost	11/18/2010 3:44:19 PM		
Gilbert701	Pruitt	531			271	Service: CDSJobManager.vshost	11/18/2010 3:47:05 PM		
Leanne3	Soto	730			272	Service: CDSJobManager.vshost	11/18/2010 3:47:07 PM		
Colin3	Zuniga	834		CR2	273	Service: CDSJobManager.vshost	11/18/2010 3:47:10 PM		

Figure 4.15 – Worklist Multi-Select Assign to Transcriptionist

Patient Search Wild Card Support with Sounds Like

rRIS utilizes the “%” character for wild card support. This can now be used in conjunction with the “Sounds Like” feature to return search results. For example searching for First Name = a% and Last Name = smythe with Sounds Like enabled will look for patients where first name like “A%” (starts with A) and last name like “Smythe”.

Lookup Tables - ProcedurePlan Patient Search x Pending Orders Technologist WL Reception WL Lookup Tables A

Search Criteria

First Name: a% Birth Date:

Last Name: smythe

☒ Sounds Like

MRN:

	First Name	Last Name	Middle Name	Birth Date	MRN	Issuer	Gender	Address	City	State
➔	Alfonso38	Smith	52902	06-17-1962	63114	RIS	M	21 South Green Milton Road	Seattle	Vermont
	Allison45	Smith	97245	09-20-1960	37439	RIS	M	85 White First Avenue	Lubbock	Massachusetts
	Alyssa156	Smith	28741	10-17-1974	46788	RIS	F	84 Green Fabien Parkway	Riverside	Wyoming
	Amelia0	Smith	89165	08-21-1960	34100	RIS	M	28 West Fabien St.	Seattle	Massachusetts
	Angela932	Smith	44562	09-29-1959	69014	RIS	M	33 South Nobel Boulevard	Grand Rapids	
	Armando2	Smith	88482	05-15-1957	28336	RIS	M	54 White Second Freeway	Dallas	West Virginia
	Arnold5	Smith	78746	08-03-1960	30316	RIS	U	64 Rocky Fabien St.	San Diego	North Dakota

Figure 4.16 – Patient Search Results Utilizing Wild Card and Sounds Like

5. Known Limitations

Bugs, Suggested Features, and Support Issues are now tracked in a web based system called Redmine. The following is a snapshot of the issues found in Build 1.07 as of the end of Sprint 8. Note that the majority if these issues will be resolved in Build 1.08.

#	Status	Subject	Category	Found	%Done	Resolved
45	Closed	Updates to Pending Order worklist are taking a long time	Thick Client GUI	1.07	100	1.07
64	Resolved	When removing an availability template, dropdown is not refreshing	Admin Tools	1.07	100	1.08
65	Resolved	Exception when removing an Availability Template	Admin Tools	1.07	100	1.08
66	Resolved	When saving a new Availability Template, focus is lost	Admin Tools	1.07	100	1.08
67	Resolved	When entering time ranges on templates, user can specify a start time later than an end time	Admin Tools	1.07	100	1.08
68	Resolved	When editing an availability template time range, values should default accordingly	Admin Tools	1.07	100	1.08
69	Resolved	When adding a date range to an availability template, button text should read Add instead of Edit	Admin Tools	1.07	100	1.08
70	Resolved	When adding a time range to an availability template, the day of week scrolls out of view	Admin Tools	1.07	100	1.08
71	New	Worklist filter description is no longer showing on tab	Thick Client GUI	1.07	0	
72	New	Shortcut keys to navigate a date worklist do not reference focused worklist	Thick Client GUI	1.07	0	
73	Resolved	Selecting Patient Merge on a worklist with no records result in exception	Thick Client GUI	1.07	100	1.08
74	New	Patients with deleted_flag = 'Y' are still showing up on worklists	Thick Client GUI	1.07	0	
75	Resolved	DateTime Exception when adding a User	Admin Tools	1.07	100	1.08
76	Resolved	There are columns on both PersonResource and UserDetails that are not editable	Admin Tools	1.07	100	1.08
77	Resolved	User is allowed to enter duplicate resource row in PersonResource causing exception	Admin Tools	1.07	100	1.08
78	Resolved	PersonResource - need validation on id field	Admin Tools	1.07	100	1.08
79	Resolved	PersonResource - Need max length set for both ID and Issuer of ID fields	Admin Tools	1.07	100	1.08
80	Resolved	When entering a new user or resource, gender defaults to Male for new persons	Admin Tools	1.07	100	1.08
81	Resolved	Adding a ScheduleGroup and removing it results in exception on save	Admin Tools	1.07	100	1.08
82	Resolved	ScheduleGroup Name is not being validated	Admin Tools	1.07	100	1.08
83	New	ScheduleGroups that are marked as inactive as still available under UserDetails	Admin Tools	1.07	0	
84	Resolved	ProcedurePlan - report together flag should be limited to Y or N value	Admin Tools	1.07	100	1.08
85	Resolved	ProcedurePlan - max length issue with grid	Admin Tools	1.07	100	1.08
86	Resolved	ProcedurePlan - Duplicate sequence error	Admin Tools	1.07	100	1.08
87	Resolved	UserDetail - Getting prompted to save without making any changes	Admin Tools	1.07	100	1.08
88	Resolved	Modality Closure - Warning appear to be referencing deleted rows.	Admin Tools	1.07	100	1.08
89	New	Need to standardize popup forms	Admin Tools	1.07	0	
90	Resolved	Lookup Editor - When rows are being validated, user loses changes.	Admin Tools	1.07	100	1.08
91	New	Worklist multi-select and Enter key	Thick Client GUI	1.07	0	
92	Resolved	Patient ID should be system generated only	Thick Client GUI	1.07	100	1.08
95	New	Worklist - User is able to select 2 rows and launch non-multiselect actions	Thick Client GUI	1.07	0	
96	Resolved	ProcedurePlan - user is able to enter null values in required fields	Admin Tools	1.07	100	1.08
97	Resolved	ProcedurePlan - Min and Max Wait Times allow negative values	Admin Tools	1.07	100	1.08

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98	New	ModalityClosure - Requires additional date/time validation	Admin Tools	1.07	0	
99	Resolved	UserDetail - Exception when filtering grid and creating new user	Admin Tools	1.07	100	1.08
100	Resolved	UserDetail - Issue when trying to add a user that is already a user	Admin Tools	1.07	100	1.08
101	Resolved	Modality - exception when editing a Modality Code	Admin Tools	1.07	100	1.08
102	New	ProcedureCode - Issues changing non referenced procedure codes	Admin Tools	1.07	0	
103	Resolved	ProcedurePlan - renaming procedure plan code results in exception	Admin Tools	1.07	100	1.08
			Web			
104	New	Issue with retry when web service drops	Services/DB	1.07	0	
105	New	Worklist - Issue with large worklist and title bar	Thick Client GUI	1.07	0	
106	New	Worklist - Issue with refreshing when web services are down	Thick Client GUI	1.07	0	
107	New	Worklist - Issue with sorting columns that are numeric but stored as varchar	Thick Client GUI	1.07	0	

User Pre-Release Notes

for RADNET rRIS

Build 1.08

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1. Purpose

This document describes some of the new features and changes implemented in rRIS as of the end of Sprint 8. This pre-release version of rRIS is referred to as Build 1.08.

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 rRIS Development team for the RadNet RIS management team.

3. Installing/Accessing the Application

This build will not be available for remote access. The Baltimore server will be upgraded directly to Build 1.09

4. New Features and Enhancements

Organization Editor

There is now an editor to accommodate the setup of the organization structure. It utilizes regions, practices, and sites. A region such as the East Coast can have multiple practices such as Advanced Radiology associated to it. A practice such as Advanced Radiology can have multiple sites such as St. Joseph Breast Center and St. Joseph Medical Center. A site can have multiple modalities or rooms associated to it. For example, here is the proposed hierarchy for a scanner located at St. Joseph Breast Center.

Region: East Coast (EAST)

Practice: Advanced Radiology (ADV)

Site Group: North Service Area

Site: St. Joseph Breast Center (SB)

Modality: Mammo Room 1 (MA1SB)

Please note that “Site Group” has not been included in this release and will be developed in a future sprint.

The screenshot displays the 'Organization Maintenance' interface. On the left is a 'Lookup Tables - Organization' sidebar with a list of fields including AccessString, AddressDescription, Affiliation, AvailabilityTemplate, BodyPart, Carrier, EmploymentStatus, Gender, Holiday, Laterality, MaritalStatus, Modality, Organization (highlighted), PatientClass, PatientContactType, PatientRelation, Personnel, ProcedureCode, ProcedureModifier, ProcedurePlan, QueueSubscription, ReportTemplate, ResourceType, ScanType, ScheduleGroup, Specialty, StudentStatus, SystemConfig, UserCDSPProfile, UserGroup, UserGroupPermission, and WorkType.

The main area shows a 'Region' dropdown set to 'East Coast'. Below it are two tables:

Practices	
Practice	Practice Notes
→ Advanced Radiology(ADV)	
Test Practice(LUTH)	

Sites	
Site	Notes
→ GBMC Pavilion North(PN)	
GBMC Pavilion(PV)	
Lutherville(LU)	
ODEA(OA)	
St Joseph Breast Center(SB)	
St Joseph Medical Center(ST)	
St Joseph Mobile MRI(SM)	
St Joseph PET-CT(SP)	
Towson(TO)	

Figure 4.1 – Organization Maintenance Screen

Modalities:				
modality code	short name	site code	description	ae title
Contains:	Contains:	Contains: St Joseph Breast Center	Contains:	Contains:
MA1SB	SB MA1	St Joseph Breast Center		
MA2SB	SB MA2	St Joseph Breast Center		
MA3SB	SB MA3	St Joseph Breast Center		
MA4SB	SB MA4	St Joseph Breast Center		
Click here to add a new row				
SB MA1 modality closure:				
from date	to date	active flag	description	
SB MA1 modality duration override:				
procedure code				

Figure 4.2 – Modality Maintenance Screen Illustrating Site Mapping

A system administrator can add or edit a region by simply right-clicking the Region dropdown. Given the fact that more detail is required at the Practice and Site level, data grids and popup forms have been utilized.

Region: East Coast

Practices

Practice	Practice Notes	Address
Advanced Radiology(ADV)		
Test Practice(LUTH)		

Sites

Site
GBMC Pavilion North(PN)
GBMC Pavilion(PV)
Lutherville(LU)
ODEA(OA)
St Joseph Breast Center(SB)
St Joseph Medical Center(ST)
St Joseph Mobile MRI(SM)
St Joseph PET-CT(SP)
Towson(TO)

Practice
Practice Code:
☒ Active
Description:
Phone #:
Fax #:
Practice Notes:

This is a test

Contact
Contact Name:
Phone #:
Mobile #:
Fax #:
Email:
Contact Notes:

Notes go here

Address
Address 1:
Address 2:
City:
State:
Zip Code:

Save Close

Figure 4.3 – Editing a Practice

Personnel Editor

The UserDetail and PersonResource editors have now been combined into one management screen called Personnel. The Personnel screen will be used by the system administrator to manage users and resources. A person may exist in the system as a resource such as a Referring Physician but not necessarily be a user.

Here is the current list of features implemented in the Personnel Editor:

1. The ability to add Persons (not patients) to the system. A Person can be a RIS User and/or a Resource.
2. Associate contact information and one or more addresses to a Person.
3. Associate one or more Resource Types to a Person. Current types supported are Referring Physician, Transcriptionist, Radiologist, and Technologist. This list will grow as more features are implemented.
4. Assign Resource Information such as NPI and Specialties.
5. Assign a User Name and Password to a Person.
6. The ability to deactivate a User.
7. Assign a Schedule Group to a User. A Schedule Group will define what sites and procedures a user can schedule against.
8. Assign one or more User Groups to a User. User Groups mainly dictate user permissions.
9. The ability to specify if User Account supports Voice Recognition.

UserName	First Name	Last Name
Contains: <input type="text"/>	Contains: <input type="text"/>	Contains: <input type="text"/>
stuart	stephen	stuart
dave	dave	perry
denis	denis	doiron
darcy	darcy2	aiken
→ spencer	Spencer	MacDougall
test3	test3	test3
	bob	joe
	RHONIESE	BARNETT SMITH

General Resource Account Preferences System

First Name: Prefix: Birth Date:
Middle Name: Gender:
Last Name: Suffix: ☒ Active Person

Contact Information

Email:
Mobile #:

Contact	Address	Delivery
→ Home Address Phone: 902-878-7894 Fax: 902-455-7845	123 West Drive Summerside, PE 12356	

Edit Add Remove

Figure 4.4 – Personnel Editor showing General Tab

The screenshot shows the 'Resource' tab of the Personnel Editor. At the top, there are five tabs: 'General', 'Resource' (selected), 'Account', 'Preferences', and 'System'. Below the tabs, the 'Resource Type' section contains four checkboxes: 'Referring Physician' (checked), 'Radiologist' (unchecked), 'Transcriptionist' (unchecked), and 'Technologist' (unchecked). The 'Resource Information' section below it contains four text input fields: 'NPI:' with the value '7845', 'Practices:', 'Affiliations:', and 'Specialties:'.

Figure 4.5 – Personnel Editor showing Resource Tab

The screenshot shows the 'Account' tab of the Personnel Editor. At the top, there are five tabs: 'General', 'Resource', 'Account' (selected), 'Preferences', and 'System'. Below the tabs, the 'Account Information' section contains several fields: a checked 'Active Account' checkbox, 'User Name:' with the value 'spencer', 'Password:', 'Schedule Group:' with a dropdown menu showing 'Lutherville', and 'User Groups:' with three buttons labeled 'Scheduling x', 'Technologist x', and 'Administrator x'.

Figure 4.6 – Personnel Editor showing Account Tab

Modality Duration Override

In this release, the Modality management screen has been enhanced to include a section to account for duration overrides for scanners that are on average faster or slower than the standard procedure duration.

Default procedure durations are set at the Procedure Code level. To specify a duration override, the user simply specifies the modality, procedure code, and revised duration. In the sample below, an ultrasound scanner (US1LU) at the Lutherville site has a duration override set at 40 minutes for the US Chest procedure. The default duration for the US Chest procedure is 30 minutes. When scheduling a US Chest in room US1LU at Lutherville, the duration will now be 40 minutes.

Modalities:

modality code	short name	description	ae title	digital flag	active flag	site code
Contains: ▼	Contains: ▼	Contains: ▼	Contains: ▼	Contains: ▼	Contains: ▼	Contains: Lutherville ▼
CT1LU	LU CT1		TOCT1ADV	Y	Y	Lutherville
DX1LU	LU DX1			Y	Y	Lutherville
MA1LU	LU MA1			Y	Y	Lutherville
MR1LU	LU MR1			Y	Y	Lutherville
➤ US1LU	LU US1			Y	Y	Lutherville
US2LU	LU US2			Y	Y	Lutherville
XR1LU	LU XR1			Y	Y	Lutherville
* Click here to add a new row						

LU US1 modality closure:

from date	to date	active flag	description
* Click here to add a new row			

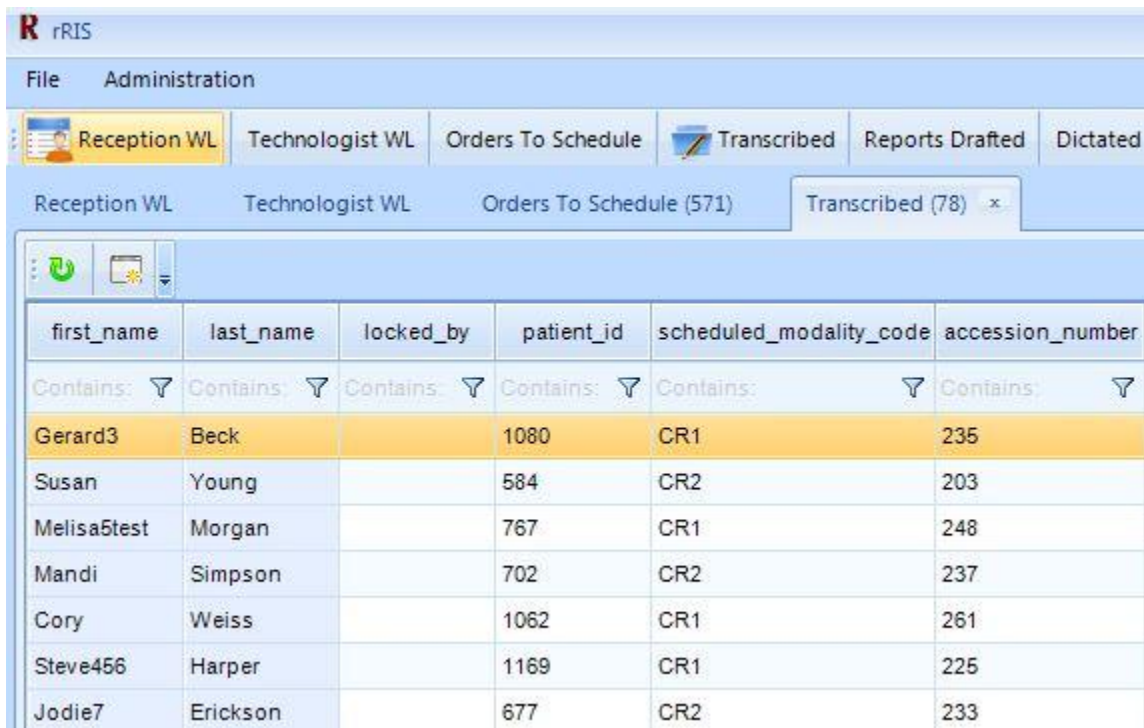
LU US1 modality duration override:

procedure code	active flag	description	duration
* Click here to add a new row			
➤ US Chest	Y	Test Case	40

Figure 4.7 – Modality Editor showing Duration Override

Worklist Icons

In this release, steps have been taken to make the application more visually appealing to the user. For example, icons can now be associated to a worklist.



The screenshot shows the rRIS application interface. At the top, there is a menu bar with 'File' and 'Administration'. Below the menu bar, there are tabs for 'Reception WL', 'Technologist WL', 'Orders To Schedule', 'Transcribed', 'Reports Drafted', and 'Dictated'. The 'Reception WL' tab is selected, and it shows a sub-tab for 'Reception WL' and a button for 'Transcribed (78)'. Below the tabs, there is a table with columns: 'first_name', 'last_name', 'locked_by', 'patient_id', 'scheduled_modality_code', and 'accession_number'. The table contains several rows of patient data, with the first row highlighted in yellow. The first row is: Gerard3, Beck, 1080, CR1, 235. The second row is: Susan, Young, 584, CR2, 203. The third row is: Melisa5test, Morgan, 767, CR1, 248. The fourth row is: Mandi, Simpson, 702, CR2, 237. The fifth row is: Cory, Weiss, 1062, CR1, 261. The sixth row is: Steve456, Harper, 1169, CR1, 225. The seventh row is: Jodie7, Erickson, 677, CR2, 233.

first_name	last_name	locked_by	patient_id	scheduled_modality_code	accession_number
Gerard3	Beck		1080	CR1	235
Susan	Young		584	CR2	203
Melisa5test	Morgan		767	CR1	248
Mandi	Simpson		702	CR2	237
Cory	Weiss		1062	CR1	261
Steve456	Harper		1169	CR1	225
Jodie7	Erickson		677	CR2	233

Figure 4.8 – Reception and Transcribed Worklists with Icons

Scheduling Procedure Picker

There is a great deal of configuration involved with scheduling. In previous releases, the management screens to configure scheduling solutions have been incorporated. These include Modality, AvailabilityTemplate, Organization, ProcedurePlan, ScheduleGroup, and Personnel. In this build, the system is starting to utilize these configurations in the scheduling workflow.

In release 1.09, there will be a great deal more to show regarding scheduling as this release concentrated a great deal on architecture. A scheduling screen has been constructed with a procedure picker to select procedures to schedule for a study. If a procedure or procedures have been specified at the order level, the procedure picker at the study level will default accordingly.

Lookup Tables - Organization Orders To Schedule (571) Schedule Order * x

Patient Order Schedule

Region: East Coast Practice: Advanced Radiology Site: Lutherville

Studies	Duration	Modality	Start Date
CT Calcium Scoring x	30	CT/LU	01-14-2011 1:15 PM

76671

Body Part: Laterality:

Figure 4.9 – Scheduling Screen Illustrating Procedure Picker

5. Known Limitations

Bugs, Suggested Features, and Support Issues are now tracked in a web based system called Redmine. The following is a snapshot of the issues found in Build 1.08 as of the end of Sprint 9. Note that the majority if these issues will be resolved in Build 1.09.

#	Status	Subject	Category	Found	%Done	Resolved
56	Resolved	When Renaming a WorklistView, popup should default to current values	Thick Client GUI	1.08	100	1.09
108	Resolved	Organization - Inconsistent design with similiar admin screens	Admin Tools	1.08	100	1.09
109	Resolved	Organization - I_practice.contact_email_address field size needs to be increased	Web Services/DB	1.08	100	1.09
110	Resolved	Modality - Screen freezes after removing a modality	Admin Tools	1.08	100	1.09.1
111	Resolved	Random exception with DropDown controls	Admin Tools	1.08	100	1.09
112	Resolved	Order Screen - Site dropdown is not filtering by selected Practice	Thick Client GUI	1.08	100	1.09
113	Resolved	Scheduling - User can schedule procedures at a practice that is marked as inactive	Thick Client GUI	1.08	100	
114	Resolved	User is able to push tool bar out of view	Thick Client GUI	1.08	100	1.09
115	In Progress	Look and Feel - Pop up forms are inconsistent across application	Thick Client GUI	1.08	90	1.09
116	New	ScheduleGroup - new templates will not show up without app restart	Admin Tools	1.08	0	
117	Resolved	ScheduleGroup - Grid shows modality description while popup shows modality code	Admin Tools	1.08	100	1.09.1
118	Resolved	Organization - Issue with context menu on record selector	Admin Tools	1.08	100	1.09
119	Resolved	Personnel - Exception when adding a new user	Admin Tools	1.08	100	1.09
120	Resolved	ScheduleGroup - When adding multiples, the list box should be sortable	Admin Tools	1.08	100	1.09.1
121	Resolved	ScheduleGroup - Exception when adding multiple procedures	Admin Tools	1.08	100	1.09.1
122	Resolved	Personnel - Application crashes when adding address to existing user	Admin Tools	1.08	100	1.09
123	Resolved	Modality - Short name is not enough characters to support existing configurations	Web Services/DB	1.08	100	1.09
124	Resolved	Personnel - Resource type required in grid	Admin Tools	1.08	100	1.09
125	Resolved	Personnel - First Name should be a required field	Admin Tools	1.08	100	1.09
126	Resolved	Personnel - Exception when making an exisitng person a user	Admin Tools	1.08	100	1.09
127	New	Modality - Duration is not a required field in duration override	Admin Tools	1.08	0	

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128	New	Modality - Duration override procedures are not filtered by selected modality	Admin Tools	1.08	0	
129	New	ScheduleGroup - No validation for duplicate entries	Admin Tools	1.08	0	
130	New	Modality - No duration override default value	Admin Tools	1.08	0	
131	Resolved	Modality - duration grid AddNewRowPosition property	Admin Tools	1.08	100	1.09
132	New	Modality - modalities should be grouped by Modality Type	Admin Tools	1.08	0	
133	New	Modality - "To Date" should be defaulted when specifying closure	Admin Tools	1.08	0	
134	Resolved	Flag columns should be defaulting to "N"	Web Services/DB	1.08	100	1.09
135	New	GUI - Label sizing issue with patient search	Thick Client GUI	1.08	0	
136	New	GUI - Sizing issue with Edit Patient	Thick Client GUI	1.08	0	
137	New	Body Part and Laterality should only be enabled if required	Thick Client GUI	1.08	0	
138	Resolved	Personnel - When creating a new user, should default to first required field	Admin Tools	1.08	100	1.09
139	New	ProcedurePlan - When saving plan, focus moves to top of grid	Admin Tools	1.08	0	
140	In Progress	commandBarStripElement issue	Thick Client GUI	1.08	0	
141	New	Worklist - "Group By" should include record counts	Thick Client GUI	1.08	0	
142	Resolved	Worklist - User is able to save a worklist view without a valid name	Thick Client GUI	1.08	100	
143	Resolved	Procedure Picker - Procedure code instead of description shows on form load	Thick Client GUI	1.08	100	1.09
144	Resolved	Scheduling - Body Part and Laterality are not being carried forward from order item	Thick Client GUI	1.08	100	1.09.1
145	Resolved	Scheduling - Procedure picker is not expanding to show multiple procedures	Thick Client GUI	1.08	100	1.09.1

User Pre-Release Notes

for RADNET rRIS

Build 1.09

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1. Purpose

This document describes some of the new features and changes implemented in rRIS as of the end of Sprint 9. This pre-release version of rRIS is referred to as Build 1.09.

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 rRIS Development team for the RadNet RIS management team.

3. Installing/Accessing the Application

The client installer for rRIS is still in the early development stages. For now, users can access the system by remoting to the rRIS test server in Baltimore as follows:

1. Start Remote Desktop Connection and specify IP 10.120.0.152
2. Username: Radnet domain account
3. Password: Radnet domain password
4. Double click the rRIS icon on the desktop or go to Start→All Programs→rRIS
5. Login User: terry
6. Login Password: ris

If you experience difficulties accessing the application, please do not hesitate to contact Spencer MacDougall with the PEI RIS Development Team.

4. New Features and Enhancements

Filter Sites by Practice when Creating Orders

When placing an order in rRIS, the user has the ability to assign the order to a practice. The order placer can go one organization level further and place the order for a site within the selected practice. Once the practice is selected, the list of available sites is then filtered accordingly. When the order is scheduled, the modality search will default to available rooms at the site specified on the order.

The screenshot displays the 'New Order' form in the rRIS application. The form is titled 'New Order (Crosby Sidney) *'. It features a 'Patient' tab and an 'Order' tab. The 'Order Details' section includes fields for 'Practice' (Advanced Radiology), 'Site' (Lutherville), 'Requested By' (MacDougall, Spencer), and 'Delivery Location' (Home: 902-555-4562). A dropdown menu is open for the 'Site' field, showing a list of available sites: GBMC Pavilion, GBMC Pavilion North, Lutherville (highlighted), ODEA, St Joseph Breast Center, St Joseph Medical Center, St Joseph Mobile MRI, St Joseph PET-CT, and Towson. The 'Procedure' field is empty, and the 'Order Notes' field is also empty. A 'Laterality' dropdown is visible on the right side of the form.

Figure 4.1 – Filter Site Dropdown by Selected Practice

Procedure Selector Enforces Body Part and Laterality

When placing or scheduling an order, the procedure selector will now enforce both Body Part and Laterality if it is specified as required at the Procedure Code level. If these values are not required for the selected procedure, then the dropdowns will be disabled. The example below illustrates an order for a CT Ankle Arthrogram where Laterality is required for the procedure.

The screenshot displays the 'New Order' window for 'Crosby Sidney'. The 'Order' tab is active, showing 'Order Details'. The 'Practice' is 'Advanced Radiology' and the 'Site' is 'Lutherville'. The 'Requested By' is 'MacDougall, Spencer' and the 'Delivery Location' is 'Home: 902-555-4562'. The 'Procedure' is 'CT Ankle Arthrogram x'. Below the procedure name, there are 'Body Part' and 'Laterality' dropdown menus. The 'Laterality' dropdown is open, showing options: 'Bilateral', 'Left', and 'Right'. The 'Order Notes' section contains the text 'Patient prefers late afternoon'.

Figure 4.2 – Ordered Procedure with Laterality Required

Region/Practice/Site Picker

In Build 1.08, the Organization administration screen was introduced. Here the organizational structure of the site is configured to include regions, practices, and sites.

The screenshot displays the 'Region/Practice/Site Picker' interface. At the top, there is a 'Region' dropdown menu set to 'Maryland', with 'Edit', 'Add', and 'Remove' buttons. Below this is a 'Practices' section with a table. The table has a header 'Practice' and two columns. The first row is '(inactive) Test Practice(LUTH)'. The second row is 'Advanced Radiology(ADV)' with phone '904-987-8776' and fax '987-345-2345', and it is highlighted in yellow. Below the practices is a 'Sites' section with a table. The table has a header 'Site' and two columns. The first row is 'GBMC Pavilion North(PN)'. The second row is 'GBMC Pavilion(PV)'. The third row is 'Lutherville(LU)' with phone '345-876-1234', and it is highlighted in yellow. The fourth row is 'ODEA(OA)'. The fifth row is 'St Joseph Breast Center(SB)'. The sixth row is 'St Joseph Medical Center(ST)'. The seventh row is 'St Joseph Mobile MRI(SM)'. The eighth row is 'St Joseph PET-CT(SP)'. The ninth row is 'Towson(TO)'. A 'Site level notes' column is visible on the right side of the sites table.

Figure 4.3 – Sample Site Configuration

When scheduling an order, the system utilizes the defined organizational structure in combination with the Schedule Group of the user to determine a possible room/scanner solution.

The screenshot displays the 'Scheduling Site Picker' interface. It shows three dropdown menus: 'Region' set to 'Maryland', 'Practice' set to 'Advanced Radiology', and 'Site' set to 'Lutherville'.

Figure 4.4 – Scheduling Site Picker

In the above example, there are multiple sites that belong to the Advanced Radiology practice but the user that is scheduling the procedure belongs to the Lutherville Schedule Group. Therefore, the user is only permitted to schedule procedures in rooms that belong to the Lutherville site. If the user is required to also schedule outside of Lutherville, then the Schedule Group can be adjusted to include other sites as well.

Scheduling Search

The screenshot shows the 'Schedule' tab of the rRIS interface. Search criteria are set as follows:

- Region: Maryland
- Practice: Advanced Radiology
- Site: Lutherville
- Start Date: 02-01-2011
- End Date: 02-28-2011
- Day of Week: Tuesday (checked), Friday (checked)
- Start Time: 7:00 AM
- End Time: 7:00 PM

The search results show a table of available time slots for two rooms, US1LU and US2LU, on Tuesday, 1/02/2011.

US1LU		US2LU	
7:00 AM	30	7:00 AM	40
7:30 AM	30	7:40 AM	40
8:00 AM	30	8:20 AM	40
8:30 AM	30	9:00 AM	40
9:00 AM	30	9:40 AM	40
9:30 AM	30	10:20 AM	40
10:00 AM	30	11:00 AM	40
10:30 AM	30	11:40 AM	40
11:00 AM	30	12:20 PM	40

Figure 4.5 – Scheduling Search

In Build 1.09, Scheduling users now have the ability to search for scheduling solutions based on a specified site, procedure code, start date, end date, day of week, start time, and end time. Or the user can simply specify ALL to receive scheduling solutions from all sites in his or her Schedule Group.

The above scenario is offering a solution for a patient requiring a US Chest procedure at the Lutherville site. The patient would like this procedure anytime in the month of February but is only available on Tuesday and Friday.

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The system shows that two rooms (US1LU and US2LU) are capable of performing this procedure at Lutherville. It also shows that 7:00AM on February 1st is available in both rooms. However, the US Chest takes 30 minutes in US1LU and 40 minutes in US2LU.

Example of configuration involved in the above scenario:

1. Modalities US1LU and US2LU created and assigned to Lutherville site.

modality code	description	ae title	digital flag	active flag	site code
Contains: US	Contains:	Contains:	Contains:	Contains:	Contains: Lutherville
US1LU	LU US1		Y	Y	Lutherville
US2LU	LU US2		Y	Y	Lutherville
Click here to add a new row					

2. Availability Template (LU US) created stating that the rooms are available weekdays from 7:00AM to 3:30PM and Saturday from 8:00AM to 11:30AM.

Template: LU US	Add	Remove
Date Ranges:		
Start		End
Default Template		
Add Edit Remove		
Time Ranges:		
Monday	Tuesday	Wednesday
start end	start end	start end
7:00 AM 3:30 PM	7:00 AM 3:30 PM	7:00 AM 3:30 PM
Thursday	Friday	Saturday
start end	start end	start end
7:00 AM 3:30 PM	7:00 AM 3:30 PM	8:00 AM 11:30 AM

3. Schedule Group for Lutherville is created outlining that rooms US1LU and US2LU are both capable of performing an US Chest utilizing the LU US template.

Schedule Group: Lutherville	Add	Remove
procedure code	modality code	template key
Contains: US Chest	Contains:	Equal:
US Chest	LU US1	LU US
US Chest	LU US2	LU US
Click here to add a new row		

4. A modality duration override of 40 minutes is applied to US2LU for the US Chest procedure. The default duration for the procedure is 30 minutes.

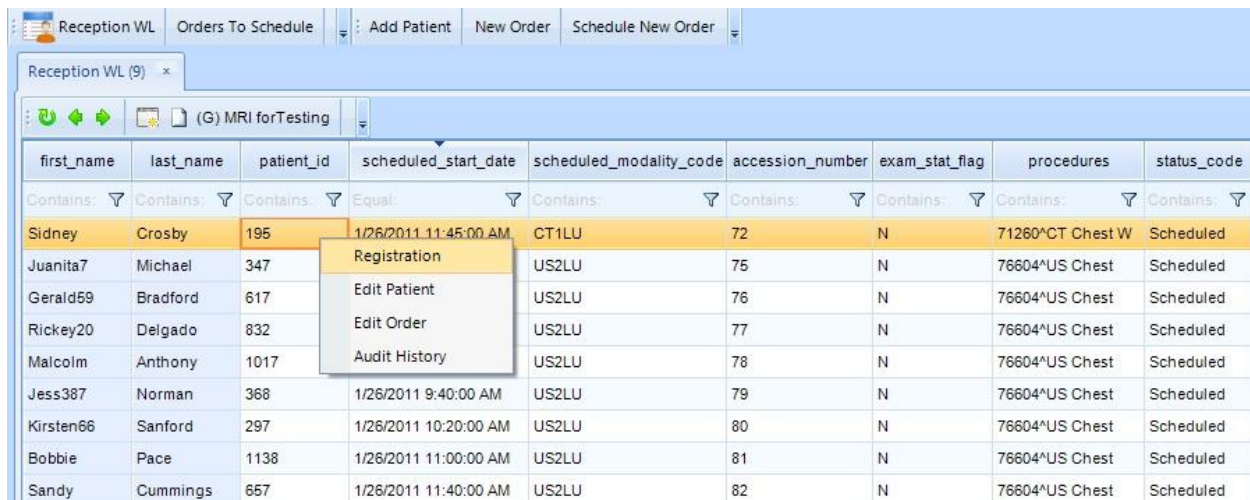
US2LU modality duration override:				
	procedure code	active flag	description	duration
➔	US Chest	Y	Slow scanner	40
*	Click here to add a new row			

5. The Lutherville Schedule Group is applied to the scheduling user so he or she is permitted to schedule for the site.

General	Resource	Account	Preferences	System
Account Information				
	<input checked="" type="checkbox"/> Active Account			
User Name:	<input type="text" value="schedtest"/>			
Password:	<input type="password"/>			
Schedule Group:	<input type="text" value="Lutherville"/>			
User Groups:	<input type="text" value="Scheduling x"/>			

Registration Workflow

In Build 1.09, reception users now have the ability to register a patient. The Reception is a date driven worklist that shows a listing of studies that are scheduled for the selected date. From here, the reception user can launch the registration screen and perform basic level workflow.

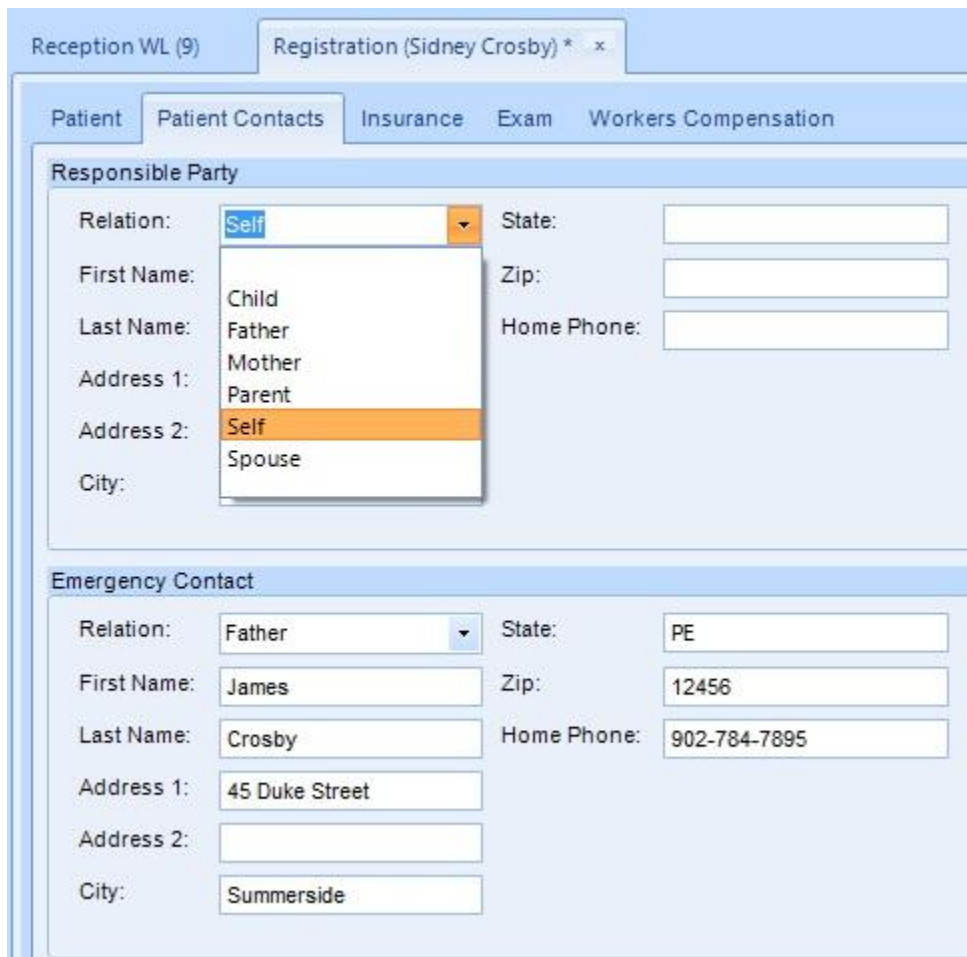


The screenshot shows the 'Reception WL' window with a toolbar containing 'Add Patient', 'New Order', and 'Schedule New Order'. Below the toolbar is a table of scheduled studies. A context menu is open over the first row, showing options: 'Registration', 'Edit Patient', 'Edit Order', and 'Audit History'.

first_name	last_name	patient_id	scheduled_start_date	scheduled_modality_code	accession_number	exam_stat_flag	procedures	status_code
Sidney	Crosby	195	1/26/2011 11:45:00 AM	CT1LU	72	N	71260*CT Chest W	Scheduled
Juanita7	Michael	347		US2LU	75	N	76604*US Chest	Scheduled
Gerald59	Bradford	617		US2LU	76	N	76604*US Chest	Scheduled
Rickey20	Delgado	832		US2LU	77	N	76604*US Chest	Scheduled
Malcolm	Anthony	1017		US2LU	78	N	76604*US Chest	Scheduled
Jess387	Norman	368	1/26/2011 9:40:00 AM	US2LU	79	N	76604*US Chest	Scheduled
Kirsten66	Sanford	297	1/26/2011 10:20:00 AM	US2LU	80	N	76604*US Chest	Scheduled
Bobbie	Pace	1138	1/26/2011 11:00:00 AM	US2LU	81	N	76604*US Chest	Scheduled
Sandy	Cummings	657	1/26/2011 11:40:00 AM	US2LU	82	N	76604*US Chest	Scheduled

Figure 4.6 – Reception Worklist showing Context Menu

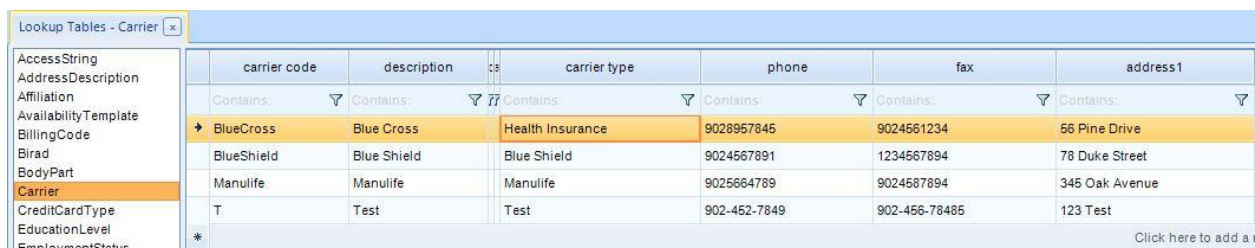
At this point, the registration screen is made up of Patient, Patient Contacts, Insurance, Exam, and Workers Compensation tabs. The Patient tab consists of patient level data and is common throughout other areas of the application. The Patient Contacts tab will be used to store responsible party and emergency contact information at the visit level. Most registration data elements are saved at the visit level as they can vary from one visit to the next.



The screenshot shows the 'Registration (Sidney Crosby) * x' window. The 'Patient' tab is selected, and the 'Patient Contacts' sub-tab is active. The 'Responsible Party' section has a dropdown menu open for 'Relation', showing options: Child, Father, Mother, Parent, Self (highlighted), and Spouse. The 'Emergency Contact' section is also visible, with fields for Relation (Father), State (PE), First Name (James), Zip (12456), Last Name (Crosby), Home Phone (902-784-7895), Address 1 (45 Duke Street), Address 2, and City (Summerside).

Figure 4.7 – Registration Screen showing Patient Contacts

On the Insurance tab, the reception user can enter insurance policy information and payments related to the selected visit. Insurance carriers are maintained in the Carrier lookup table.



The screenshot shows the 'Lookup Tables - Carrier' window. A list of lookup tables is on the left, with 'Carrier' selected. The main table displays the following data:

carrier code	description	carrier type	phone	fax	address1
BlueCross	Blue Cross	Health Insurance	9028957845	9024561234	56 Pine Drive
BlueShield	Blue Shield	Blue Shield	9024567891	1234567894	78 Duke Street
Manulife	Manulife	Manulife	9025664789	9024567894	345 Oak Avenue
T	Test	Test	902-452-7849	902-456-78485	123 Test

Click here to add a new carrier

Figure 4.8 – Carrier Lookup Table

When adding one or more insurance policies to the selected visit, it is important to note that the reception user can easily access a patient's insurance data from previous visits and reuse it if the policies have not changed. Policies can also be marked as expired if they are no longer relevant.

The screenshot shows a 'Patient Insurance' popup window. It contains a table with columns: Use, carrier, policy number, group number, group name, location id, display order, description, phone, fax, city, state, and Expired. The table has two rows: one for 'Blue Cross' (policy 12345, group 7854, location 897) and one for 'Manulife' (policy 7845, group 12441, location 7845). Below the table is a link 'Click here to add a new row'. At the bottom, there is a checkbox 'Hide Inactive Policies' and 'Save' and 'Close' buttons.

Use	carrier	policy number	group number	group name	location id	display order	description	phone	fax	city	state	Expired
<input checked="" type="checkbox"/>	Blue Cross	12345	7854	Test Group	897	1	Blue Cross	9028957845	9024561234	Charlottetown	PE	<input type="checkbox"/>
<input checked="" type="checkbox"/>	Manulife	7845	12441	Red Co	7845	2	Manulife	9025664789	9024587894	Moncton	NB	<input type="checkbox"/>

Click here to add a new row

☒ Hide Inactive Policies

Save Close

Figure 4.9 – Popup to Use Insurance Patient's Insurance from Previous Visit

From the registration screen, the user can add one or more payments that the patient has made on the selected visit. By selecting the Add Payment or Edit Payment buttons, the Front Desk Payment popup form will allow the user to add payments via Cash, Credit Card, or Check.

The screenshot shows the 'Registration Screen' with tabs for Patient, Patient Contacts, Insurance, Exam, and Workers Compensation. The 'Insurance' tab is active, showing a table of 'Insurance Policies' with columns: policy number, group number, group name, location id, description, phone, and copay. The table has two rows: one for 'Blue Cross' (policy 12345, group 7854, location 897) and one for 'Manulife' (policy 7845, group 12441, location 7845). Below the table are 'Move Up' and 'Move Down' buttons. There is an 'Edit Insurance' button. The 'Payments' section shows a table with columns: Date, Posted By, Amount, and Payment Method. The table has one row: '1/1/1800 12:00:00...' posted by 'regtest' for an amount of '500.00' via 'CreditCard'. Below the table are 'Edit Payment' and 'Add Payment' buttons. A 'Front Desk Payment' popup window is open, showing a 'Payment' form with fields for Amount to Collect, Amount, Method, Check Number, Credit Card Type, Credit Card Number, Name on Credit Card, and Credit Card Expiry. The 'Notes' section is empty. At the bottom are 'Save' and 'Cancel' buttons.

policy number	group number	group name	location id	description	phone	copay
12345	7854	Test Group	897	Blue Cross	9028957845	
7845	12441	Red Co	7845	Manulife	9025664789	

Move Up Move Down

Edit Insurance

Date	Posted By	Amount	Payment Method
1/1/1800 12:00:00...	regtest	500.00	CreditCard

Edit Payment Add Payment

Front Desk Payment

Payment

Amount to Collect:

Amount:

Method:

Check Number:

Credit Card Type:

Credit Card Number:

Name on Credit Card:

Credit Card Expiry:

Notes

Save Cancel

Figure 4.10 – Registration Screen showing Insurance and Payment Entries

The Workers Compensation tab on the registration screen allows the user to enter injury related data required for a workers compensation claim.

The screenshot shows the RADNET rRIS Registration Screen. The 'Workers Compensation' tab is active. Below the tab, there is a table titled 'Injuries:' with columns 'claim #' and 'date of injury'. One entry is highlighted: claim # 74512, date of injury 1/12/2011 12:00:00 AM. Below the table are buttons for 'Edit Injury Details' and 'Add Injury Details'. An 'Injury' dialog box is open, showing the following fields:

Injury Information	
Condition Related To:	Employment
Injury Code:	<InjuryCode>
Claim #:	74512
Injury Date:	01-12-2011
Location:	Construction Site
City:	Summerside
State:	PE
Zip Code:	12345
Country:	Canada
Description:	Test

Buttons for 'Save' and 'Cancel' are located at the bottom right of the dialog box.

Figure 4.11 – Registration Screen showing Workers Compensation entry

5. Known Limitations

Bugs, Suggested Features, and Support Issues are now tracked in a web based system called Redmine. The following is a snapshot of the issues found in Build 1.09 as of the end of Sprint 10. Note that the majority of these issues will be resolved in Build 1.10.

#	Status	Subject	Category	Found	%Done	Resolved
185	New	Registration - Missing field for Injury Code	Thick Client GUI	1.09	0	
184	New	Registration - Multiple payments should be in a calculated field	Thick Client GUI	1.09	0	
183	New	Organization - Region context menu	Admin Tools	1.09	0	
182	Resolved	Scheduling - Day label is showing up twice on the Advanced layout	Thick Client GUI	1.09	100	1.10
181	Resolved	Scheduling - Room text box on the study grid	Thick Client GUI	1.09	100	1.10
180	New	Registration - Exception when removing an Insurance policy	Thick Client GUI	1.09	0	
179	New	Registration - Time is showing on the Payments grid	Thick Client GUI	1.09	0	
178	New	Login - Issue when trying to launch the app when it is already running	Thick Client GUI	1.09	0	
177	New	Worklist - No framework present to specify a default worklist	Thick Client GUI	1.09	0	
176	New	Worklist - Group does not default properly when renaming a group worklist view	Thick Client GUI	1.09	0	
175	New	Registration - Exception with sequence buttons on insurance grid	Thick Client GUI	1.09	0	
174	Resolved	Body Part and Laterality are not being enforced on Edit Order	Thick Client GUI	1.09	100	1.10
173	Resolved	Registration - Exception when registering a patient with no scheduled procedure	Thick Client GUI	1.09	100	1.10
172	New	Scheduling - Procedure code needs to be a required field	Thick Client GUI	1.09	0	
171	Resolved	Worklist - Orders are falling off the "Orders To Schedule" worklist without being scheduled	Thick Client GUI	1.09	0	
170	New	Worklist - Sorting issues on keys and dates	Thick Client GUI	1.09	0	
169	New	Permissions - Missing lookup table permissions	Admin Tools	1.09	0	
168	New	Permissions - Issue with lookup table permissions	Admin Tools	1.09	0	
167	New	Permissions - Missing permission on Administration menu item	Thick Client GUI	1.09	0	
166	Resolved	Scheduling - Issue applying availability templates to search results	Thick Client GUI	1.09	100	1.10
165	Resolved	Scheduling - Exception when using mouse scroll wheel to find time slot	Thick Client GUI	1.09	100	1.10
164	New	Scheduling - Exception when searching rooms for a study with multiple procedures	Thick Client GUI	1.09	0	
163	New	Scheduling - Issue when scheduling more than one study per order	Thick Client GUI	1.09	0	
162	Resolved	Worklist - Issue with permissions on worklist buttons	Thick Client GUI	1.09	100	1.10
161	Resolved	Scheduling - Exception when scheduling using search icon	Thick Client GUI	1.09	100	1.10

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160	New	ScheduleGroup - Exception when adding multiple procedures	Admin Tools	1.09	0	
159	Resolved	ScheduleGroup - Exception when adding new schedule group	Admin Tools	1.09	100	1.10
158	Resolved	Registration - Missing permission is causing exception	Thick Client GUI	1.09	100	1.10
156	New	Worklist Views - Multi-select should be disabled	Thick Client GUI	1.09	0	
		UserGroupPermission - Difficult assigning multiple access strings to a user group				
155	New		Admin Tools	1.09	0	
154	Resolved	UserGroupPermission - missing access level dropdown	Admin Tools	1.09	100	1.10
153	New	ComboBoxes - Allow null selection on required fields	Thick Client GUI	1.09	0	
152	Resolved	Personnel - No error handling on duplicate User Names	Admin Tools	1.09	100	1.10
151	Resolved	Personnel - Exception when password is not specified	Admin Tools	1.09	100	1.10
		Scheduling - Issue loading patient context on Schedule New Order				
150	New		Thick Client GUI	1.09	0	
149	New	Registration - Exception when no relation is specified	Thick Client GUI	1.09	0	
148	New	Registration - MRN is editable	Thick Client GUI	1.09	0	
147	New	ScheduleGroup - Conflicting right-click events	Admin Tools	1.09	0	
		ScheduleGroup - Exception after marking a schedule group as inactive				
146	Resolved		Admin Tools	1.09	100	1.10

User Pre-Release Notes

for RADNET rRIS

Build 1.10

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1. Purpose

This document describes some of the new features and changes implemented in rRIS as of the end of Sprint 10. This pre-release version of rRIS is referred to as Build 1.10.

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 rRIS Development team for the RadNet RIS management team.

3. Installing/Accessing the Application

The client installer for rRIS is still in the early development stages. For now, users can access the system by remoting to the rRIS test server in Baltimore as follows:

1. Start Remote Desktop Connection and specify IP 10.120.0.152
2. Username: Radnet domain account
3. Password: Radnet domain password
4. Double click the rRIS icon on the desktop or go to Start→All Programs→rRIS
5. Login User: terry
6. Login Password: ris

If you experience difficulties accessing the application, please do not hesitate to contact Spencer MacDougall with the PEI RIS Development Team.

4. New Features and Enhancements

Calculated Fields

In Build 1.10 a framework for supporting calculated fields has been introduced. Calculated fields are mapped to clinical data and behave in such a way that when the underlying data changes, they are updated and display the new information. The example below illustrates a calculated field called “Age” which reflects the age of the patient in years and months. If the patient is an infant less than one year old then the age will be displayed in months and days.

Orders To Schedule (5 of 558) Patient Search Edit Patient (Jeff Carter) x

General Information

First Name:	Jeff	Middle Name:	
Last Name:	Carter	Gender:	Male
Birth Date:	09-21-1980	Age:	30yrs, 5mos
MRN:	78		

Figure 4.1 – Age Calculated Field

Orders To Schedule (5 of 558) Patient Search Edit Patient (Jeff Carter) * x

General Information

First Name:	Jeff	Middle Name:	
Last Name:	Carter	Gender:	Male
Birth Date:	08-08-2010	Age:	6mos, 2wks
MRN:	78		

Figure 4.2 – Age Calculated Field for Infant

Multi Type Ahead Enhancements

The searching abilities for dropdowns have been enhanced so the user can easily navigate to the desired value. For example, in the procedure picker the user can now type “X” to quickly get a list of all XR procedures or by typing “X fin” the user will get a list of all XR Finger procedures. The parts matching in the type ahead are represented in the results by bolding the characters.

The screenshot shows the 'Order' tab of the RADNET rRIS interface. The 'Order Details' section contains the following fields:

- Practice:** Advanced Radiology (dropdown)
- Site:** Lutherville (dropdown)
- Requested By:** MacDougall, Spencer (dropdown)
- Delivery Location:** Home (dropdown)
- ☐ Stat Exam
- ☐ Stat Read
- Procedure:** XR fin (dropdown menu is open showing results)
- Order Notes:** (text area)

The dropdown menu for the Procedure field shows two results:

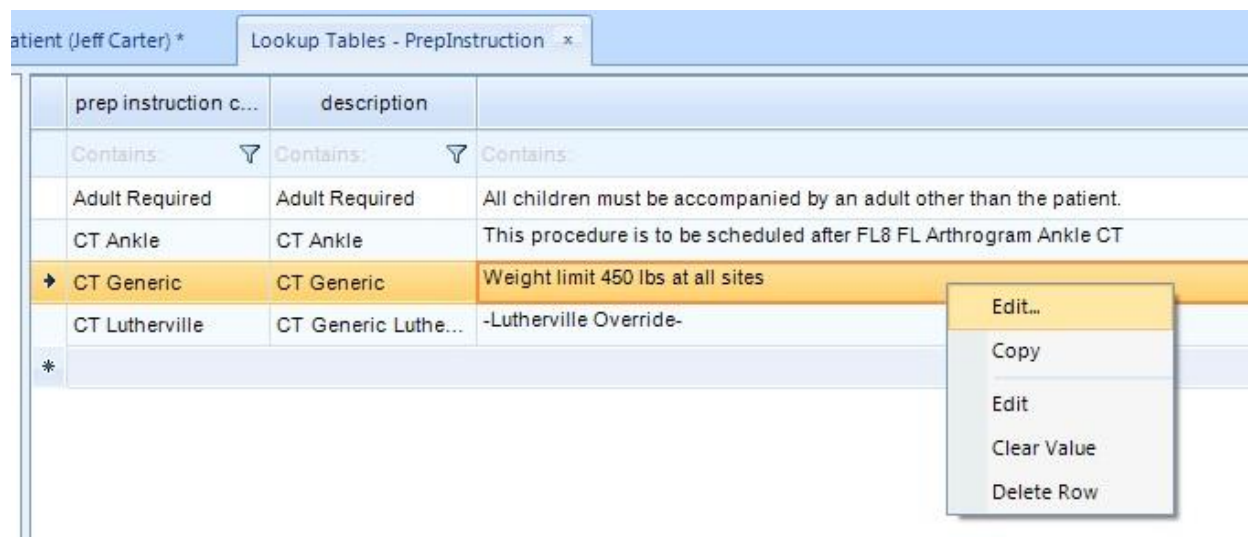
- XR FINGERS** MIN 2 VIEWS (73140)
- XR** Hand 2 Views & **Finger** 2 Views, Unilat (RD20)

Below the dropdown menu, there are fields for 'Body Part' and 'Laterality'.

Figure 4.3 – Type Ahead Results for Procedure like “XR fin”

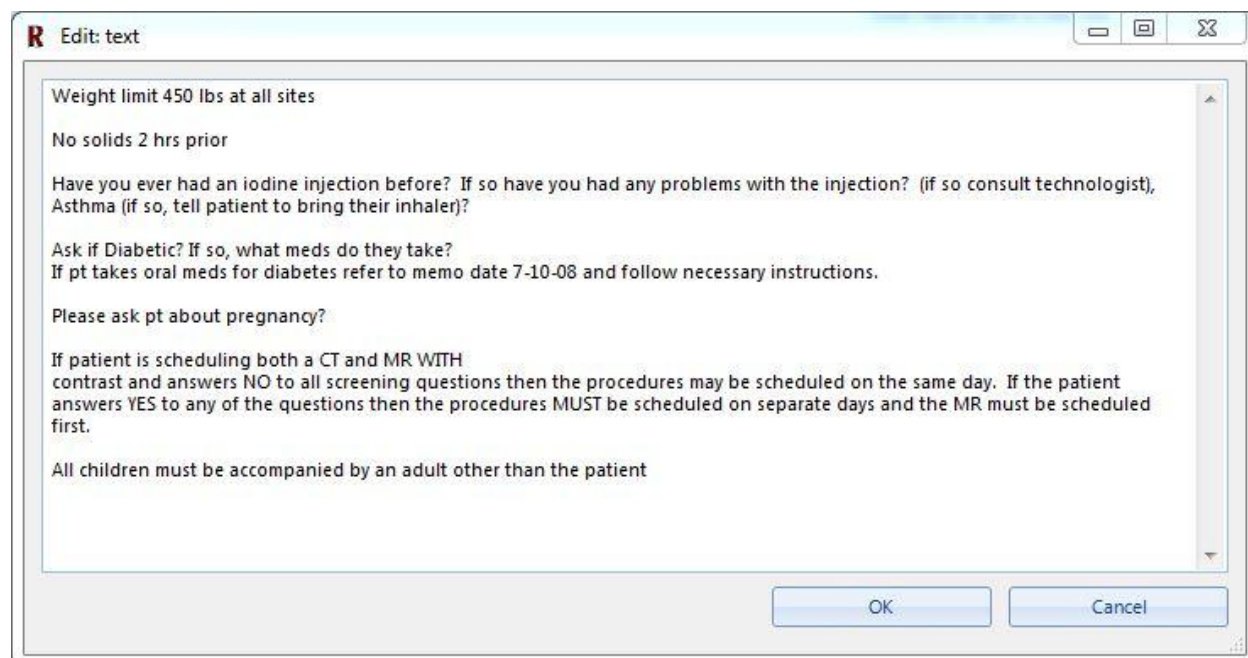
Prep Instructions

Prep Instructions are maintained in the PrepInstruction lookup table. From the lookup table, the user can simply right-click and select Edit to view/modify the selected prep instruction. This launches a multi-line popup window containing the prep instruction structured text.



prep instruction c...	description	
Contains: ▼	Contains: ▼	Contains:
Adult Required	Adult Required	All children must be accompanied by an adult other than the patient.
CT Ankle	CT Ankle	This procedure is to be scheduled after FL8 FL Arthrogram Ankle CT
→ CT Generic	CT Generic	Weight limit 450 lbs at all sites
CT Lutherville	CT Generic Luthe...	-Lutherville Override-
*		

Figure 4.4 – PrepInstruction Lookup Table



Edit: text

Weight limit 450 lbs at all sites

No solids 2 hrs prior

Have you ever had an iodine injection before? If so have you had any problems with the injection? (if so consult technologist), Asthma (if so, tell patient to bring their inhaler)?

Ask if Diabetic? If so, what meds do they take?
If pt takes oral meds for diabetes refer to memo date 7-10-08 and follow necessary instructions.

Please ask pt about pregnancy?

If patient is scheduling both a CT and MR WITH contrast and answers NO to all screening questions then the procedures may be scheduled on the same day. If the patient answers YES to any of the questions then the procedures MUST be scheduled on separate days and the MR must be scheduled first.

All children must be accompanied by an adult other than the patient

OK Cancel

Figure 4.5 – Text Entry Form for CT Generic Prep Instruction

Prep Instructions are applied to procedure codes. This allows the system to use one prep instruction code against many procedure codes instead of having to maintain common instructions separately.

atient (Jeff Carter) *

Lookup Tables - ProcedureCode *

	procedure code	description	cl	bo	late	acti	dis	duration	bir	prep instruction code
➔	Contains: ▼	Contains: CT A ▼	77 ▼	▼	▼	▼	▼	Eq...	▼	Contains: ▼
⊕	74150	CT Abdomen Wo		N	N	Y	1	30	N	CT Generic
⊕	74160	CT Abdomen W		N	N	Y	1	30	N	CT Generic
⊕	74170	CT Abdomen W/Wo		N	N	Y	1	30	N	CT Generic
⊕	CT10	CT Abdomen W/Wo & Pelvis W/Wo		N	N	Y	1	30	N	CT Generic
⊕	CT23	CT Abdomen W/Wo & Pelvis W		N	N	Y	1	30	N	CT Generic
⊕	CT31	CT Ankle Arthrogram		N	Y	Y	1	30	N	CT Ankle
⊕	CT54	CT Abdomen W & Pelvis W & CTA...		N	N	Y	1	30	N	CT Generic
⊕	CT66	CT Abdomen W & CTA Chest W/Wo		N	N	Y	1	30	N	CT Generic
⊕	CT8	CT Abdomen Wo & Pelvis Wo		N	N	Y	1	30	N	CT Generic
⊕	CT9	CT Abdomen W & Pelvis W		N	N	Y	1	30	N	CT Generic
* Click here to add a new row										

Figure 4.6 – CT Procedure Codes with Applied Prep Instruction

Because of the unique needs and/or regulations at each site, rRIS supports the ability to override the default prep instructions for a procedure code. This override exists by modifying the prep instruction for a particular procedure code at the Schedule Group level. For example, the Lutherville site may have a different set of prep instructions for CT's compared to the rest of the organization.

Schedule Group: Lutherville Add Remove

procedure code	modality code	template key	active flag	
Contains: ▼	Contains: ▼	Equal: ▼	Contai... ▼	Contains: ▼
CT Head Wo (70450)	CT1LU	LU CT	Y	CT Generic Lutherville
CT Head W (70460)	CT1LU	LU CT	Y	CT Generic Lutherville
CT Head W/Wo (70470)	CT1LU	LU CT	Y	CT Generic Lutherville
CT Ear Orbit Sella Wo (70480)	CT1LU	LU CT	Y	CT Generic Lutherville
CT Ear Orbit Sella W (70481)	CT1LU	LU CT	Y	CT Generic Lutherville
CT Ear Orbit Sella W/Wo (70482)	CT1LU	LU CT	Y	CT Generic Lutherville
CT Maxillofacial Wo (70486)	CT1LU	LU CT	Y	CT Generic Lutherville
CT Maxillofacial W (70487)	CT1LU	LU CT	Y	CT Generic Lutherville

Figure 4.7 – CT Generic Prep Instructions Applied to Lutherville Schedule Group

Below is an example of how the prep instructions will be displayed to the user at the time of scheduling and registration.

The screenshot displays the 'Exam' tab of the RADNET rRIS registration interface. The top navigation bar includes 'Patient', 'Patient Contacts', 'Insurance', and 'Exam'. The main form is divided into several sections:

- Studies:** A table with columns 'Studies', 'Duration', 'Room', and 'Scheduled Date'. The first row shows 'CT Ankle Arthrogram, Left', '30', 'CT1LU', and '02-22-2011 1:30 PM'. An 'Edit Schedule' button is located below this table.
- Modifiers for CT Ankle Arthrogram:** Includes 'Body Part' (dropdown) and 'Laterality' (dropdown set to 'Left').
- Order Details:** Includes 'Requested By' (MacDougall, Spencer), 'Practice' (Advanced Radiology), 'Delivery To' (Home), 'Site' (Lutherville), and checkboxes for 'Stat Exam' and 'Stat Read'. An 'Order Notes' text area is also present.
- Demographics:** Includes fields for 'Height', 'Weight', 'Marital Status', 'Student Status', 'Employment Status', and a checkbox for 'Is Pregnant'.
- Billable Item:** A table with columns 'Billable Item' and 'Pre Cert #'. The first row shows 'NA Default'.
- Indication:** A text area for the exam's indication.
- Prep Instructions:** A section titled 'CT Ankle' containing the following text:
 - 'This procedure is to be scheduled after FL8 FL Arthrogram Ankle CT'
 - 'Verify that the appropriate radiologist will perform the study at the site where the exam is to be scheduled.'
 - '* The patient should be off all NSAIDS, 3 days prior to their exam. NSAIDS (Non Steroidal Anti-Inflammatory Drugs) include; Motrin, Aleve, or Naprosyn.'
 - '* Patients who are currently taking coumadin need to arrange with their physician to be taken off their coumadin at least 1-2 days prior to the exam.'
 - '* Patients who have stopped their coumadin will also need to have a blood test performed prior to their arthrogram called an INR, requested by their referring physician. The INR (International Normalized Ratio) results should no exceed 1.5 for the exam to be performed in our offices.'
 - 'If patient is scheduling both a CT and MR WITH contrast and answers NO to all screening questions then the procedures may be scheduled on the same day. If the patient answers YES to any of the questions then the procedures MUST be scheduled on separate days and the MR must be scheduled first.'
 - 'All children must be accompanied by an adult other than the patient'

Figure 4.8 – Registration Screen Illustrating Prep Instructions for CT Ankle

Modality Type

In release 1.10 modality type has been added to allow for the categorization of modalities/rooms/scanners for management reports, worklists, etc.

Lookup Tables - ModalityType x	
modality type code	description
Contains: ▼	Contains: ▼
→ ??	Unknown
AN	Angiography
BD	Bone Density
CH	Special Charges
CT	CT
EN	Endoscopy
FL	Fluoroscopy
MA	Mammography
MR	MRI
NM	Nuclear Medicine
PT	PET
RT	Radiation Therapy
SC	Secondary Capture
SP	Special Procedures
UL	Ultrasound
XR	Plain Film/Xray/CR

Figure 4.9 – Modality Type Lookup Table Values

Lookup Tables - Modality x						
Modalities:						
modality code	d	ae title	digital flag	active flag	site code	
Contains: ▼	Contains: ▼	Contains: ▼	Contains: ▼	Contains: ▼	Contains: Lutherville ▼	Contains: ▼
CT1LU		TOCT1ADV	Y	Y	Lutherville	CT
DX1LU			Y	Y	Lutherville	Plain Film/Xray/CR
MA1LU			Y	Y	Lutherville	Mammography
MR1LU			Y	Y	Lutherville	MRI
US1LU			Y	Y	Lutherville	Ultrasound
US2LU			Y	Y	Lutherville	Ultrasound
XR1LU			Y	Y	Lutherville	Plain Film/Xray/CR
*						Click here to add a new row

Figure 4.10 – Modalities with Applied Modality Type

ID Verification at Registration

rRIS now has the ability to remind or alert the user. A good example of this is during the registration workflow where the user is prompted to verify the ID of the patient. Also, the user is prompted if the patient is marked as Arrived without any insurance policies applied.

The screenshot displays the 'Patient' registration form in the rRIS system. The form is divided into several sections: 'General Information' and 'Address Information'. In the 'General Information' section, the following fields are filled: First Name: 'Jeff', Last Name: 'Carter', Birth Date: '09-20-1980', and MRN: '78'. The 'Middle' and 'Gender' fields are empty, with 'Gender' set to 'Male'. A 'Verified ID' checkbox is present and unchecked. The 'Address Information' section contains fields for Address 1, Address 2, City, State, Mobile Phone, and E-mail, all of which are currently empty. A modal dialog box titled 'ID Verification' is overlaid on the form, displaying the message: 'ID has not been verified. Are you sure you wish to arrive this patient?'. The dialog box has two buttons: 'Yes' and 'No'.

Figure 4.11 – Warning that Patient has not been verified during Registration

Scheduling Composite Procedure Codes

Composite Codes/Series/Procedure Plans are configured in the ProcedurePlan lookup table. They consist of 2 or more procedure codes in a specified sequence with a defined minimum and maximum wait time between procedures.

Procedure Plans:			
procedure plan code	name	description	report to
MA01	MA DIGITAL DIAGNOSTIC BILAT MAMMO W BREAST US AND	MA DIGITAL DIAGNOSTIC BILAT MAMMO W BREAST US AND	N
MA02	MA DIGITAL DIAGNOSTIC UNILAT MAMMO W BREAST US AND	MA DIGITAL DIAGNOSTIC UNILAT MAMMO W BREAST US AND	N
MA03	MA DIGITAL CALLBACK UNILATERAL MAMMO W BREAST US	MA DIGITAL CALLBACK UNILATERAL MAMMO W BREAST US	N
MA04	MA DIGITAL CALLBACK BILAT MAMMO W BREAST US	MA DIGITAL CALLBACK BILAT MAMMO W BREAST US	N
MR01	Composite Code - Fluoro & MR Arthrogram Ankle	Composite Code - Fluoro & MR Arthrogram Ankle	N
MR02	Composite Code - Fluoro & MR Arthrogram Elbow	Composite Code - Fluoro & MR Arthrogram Elbow	N
MR03	Composite Code - Fluoro & MR Arthrogram Hip	Composite Code - Fluoro & MR Arthrogram Hip	N
MR04	Composite Code - Fluoro & MR Arthrogram Knee	Composite Code - Fluoro & MR Arthrogram Knee	N
Click here to add a new row			
Procedures:			
procedure code	description	duration	
Contains:	Contains:	Equal:	
0028T	DX Body Composition Study	30	
20605	FL Arthrocentesis Inject Intermed...	60	
70030	XR ORBITS FOR FOREIGN BODY	6	
Plan Procedures:			
Procedure	Min Wait Time	Max Wait Time	
73615 FL Arthrogram Ankle Fluoro	0	0	
73722 MR x Lower Ext Joint W	30	45	

Figure 4.12 – Sample Composite Code Configuration – Fluoro & MR Arthrogram Ankle

In the above example, the MR01 Composite Code - Fluoro & MR Arthrogram Ankle consists of a 73615 FL Arthrogram Ankle Fluoro followed by a 73722 MR x Lower Ext Joint W. A minimum wait time of 30 minutes and a maximum wait time of 45 minutes are required between the two procedures.

When scheduling an MR01 Composite Code, the application will display the individual procedures that make up the code. Based on the user's Schedule Group combined with Availability Templates, the system will then create a scheduling solution across the defined modalities. The minimum wait time is also taken into consideration when presenting time slots.

In the screenshot below, the 73615 FL Arthrogram Ankle Fluoro (60 minutes) and 73722 MR x Lower Ext Joint W (30 minutes) are presented with timeslots in the XR1LU and MR1LU rooms with a wait time of 30 minutes for a total duration of 120 minutes.

Patient Order **Schedule**

Region: Maryland Practice: Advanced Radiology Site: Lutherville
 Site Group:

Studies

FL Arthrogram Ankle Fluoro x
 MR x Lower Ext Joint W x

Modifiers for FL Arthrogram Ankle Fluoro

Body Part: Laterality:

Summary Advanced **Advanced**

LU

Tue, 22/02/2011 Tue, 22/02/2011

12:00 PM	FL Arthrogram Ankle Fluoro
01:30 PM	MR x Lower Ext Joint W
12:30 PM	FL Arthrogram Ankle Fluoro
02:00 PM	MR x Lower Ext Joint W
01:00 PM	FL Arthrogram Ankle Fluoro
02:30 PM	MR x Lower Ext Joint W
01:30 PM	FL Arthrogram Ankle Fluoro
03:00 PM	MR x Lower Ext Joint W
02:00 PM	FL Arthrogram Ankle Fluoro
03:30 PM	MR x Lower Ext Joint W
02:30 PM	FL Arthrogram Ankle Fluoro
04:00 PM	MR x Lower Ext Joint W
03:00 PM	FL Arthrogram Ankle Fluoro
04:30 PM	MR x Lower Ext Joint W
03:30 PM	FL Arthrogram Ankle Fluoro
05:00 PM	MR x Lower Ext Joint W

Figure 4.13 – Scheduling Search Results for Composite Code

Management Report Framework

rRIS utilizes Microsoft SQL Server Reporting Services to effectively communicate ris data to the organization at all levels. Some listed features of using this architecture include:

- **Managed Reporting.** Also often referred to as enterprise reporting - supports the creation of reports that span all aspects of the business and delivers them across the enterprise to provide every employee real time access to information relevant for their business area and enable better decision making
- **Ad-Hoc Reporting.** Enables users to create their own reports on an ad-hoc basis and provides them with the flexibility to quickly get the information that they need, in the format that they need it without submitting a request and waiting for a report developer to create the report for them.
- **Embedded Reporting.** Enables organizations to embed reports directly into business applications and web portals, enabling users to consume reports within the context of their business process. Deep integration with Microsoft Office SharePoint Server 2007 also enables organizations to deliver reports through a central report library or to use new web parts for thin rendering of reports directly within SharePoint enabling easy creation of dashboards. In this way organizations are able to bring all business critical data, structured as well as unstructured, from across the company together in one central location providing one common experience for information access so that users can see key business performance information at a glance.

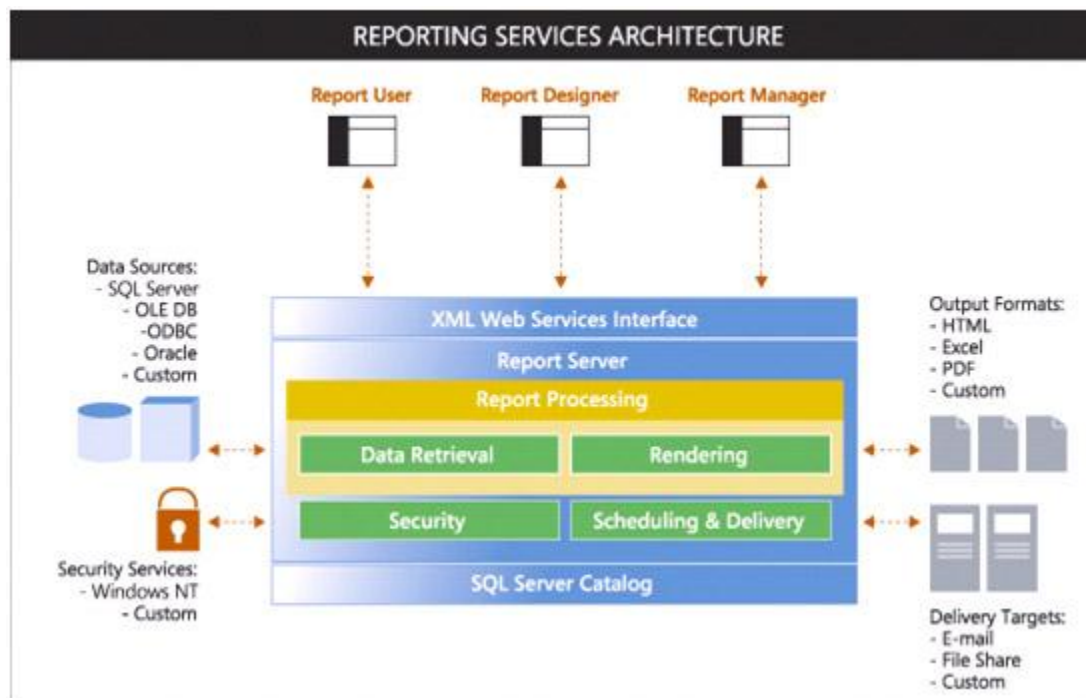


Figure 4.14 – Diagram of Microsoft Reporting Services Architecture

In Build 1.10 the Microsoft Report Viewer has been introduced to allow users to view Management Reports in rRIS. Based on permissions and folder structure, users are presented with a list of published reports from the Report Server. By selecting the report and specifying the parameters, the report is rendered and displayed in the application.

The screenshot displays the 'Management Reports' window in rRIS. On the left, a tree view shows folders like 'Exams Scheduled By Room', 'Forms', 'My Labels', 'rRIS Reports QE', and 'PSR Activity' (which is selected). The main area shows the 'PSR Activity Report' for the date range '1/1/2011 - 3/2/2011' and location 'LU'. The report includes a table with the following data:

PSR	Total Arrived	% of Total Arrived
spencer	4	80.0%
schedtest	1	20.0%
Total	5	100.0%

Below the table, it says 'Report Name: PSR Activity' and 'Page 1 of 1'. The print date is 'Printed: 2/23/2011 2:11:33 PM'.

Figure 4.15 – Sample Management Report available in rRIS

5. Known Limitations

Bugs, Suggested Features, and Support Issues are now tracked in a web based system called Redmine. The following is a snapshot of the issues found in Build 1.10 as of the end of Sprint 11. Note that the majority of these issues will be resolved in Build 1.11.

#	Status	Subject	Category	Found	%Done	Resolved
221	Resolved	ScheduleGroup - No means to multi-select and apply prep instructions	Admin Tools	1.10	100	1.11
219	Resolved	Lookups - Issue removing child rows	Admin Tools	1.10	100	1.11
218	New	Lookups - Issue adding new child row	Admin Tools	1.10	0	
217	Resolved	Scheduling - Exceptions around removing study rows	Thick Client GUI	1.10	100	1.11
216	Resolved	Scheduling - When adding a new study row, room value is lost from previous study	Thick Client GUI	1.10	100	1.11
215	Resolved	Scheduling - Exception when scheduling more than one study	Web Services/DB	1.10	100	1.11
214	Resolved	Scheduling - Exception when scheduling a composite and a standard procedure code	Services/DB	1.10	0	1.11
213	Resolved	Scheduling - Issue when removing study rows	Thick Client GUI	1.10	100	1.11
212	Resolved	Scheduling - Composite codes are not scheduling across modalities	Thick Client GUI	1.10	100	1.11
211	Resolved	Scheduling - Procedure picker is not including composite code description	Thick Client GUI	1.10	100	1.11
210	New	Order - Procedure picker does not include Composite Codes	Thick Client GUI	1.10	0	
209	Resolved	ScheduleGroup - Need to be able to filter by procedure code	Admin Tools	1.10	100	1.11
208	New	Personnel - No means of identifying a default report delivery location	Admin Tools	1.10	0	
207	New	Order - Need to track the referring office the order was referred from	Thick Client GUI	1.10	0	
206	New	Reception Workflow - Additional status is required	Thick Client GUI Web	1.10	0	
205	Resolved	MRN - System allows duplicate Patient ID's	Services/DB	1.10	0	
204	Resolved	Patient Search - Issue when searching by MRN	Thick Client GUI	1.10	100	1.11
203	New	Registration - Exception with Manage Policies	Thick Client GUI	1.10	0	
202	Resolved	GUI - Broom icon on Patient tab	Thick Client GUI	1.10	100	1.11
201	New	GUI - Inability to share tabs across similar forms???	Thick Client GUI	1.10	0	
200	Resolved	Order - Inconsistency on Patient tabs in New Order and New Order Schedule	Thick Client GUI	1.10	100	1.11
199	Resolved	Lookups - Display order is not reflected in the GUI	Admin Tools	1.10	100	1.11
198	Resolved	ModalityType - Display order does not default	Admin Tools	1.10	100	1.11
197	Resolved	PrepInstruction - Exception when adding instructions	Admin Tools	1.10	100	1.11
196	Resolved	Edit and Add Patient - Age calculated field	Thick Client GUI	1.10	100	1.11
195	Resolved	Scheduling - Time slots are out of sync	Thick Client GUI	1.10	100	1.11
194	Resolved	ScheduleGroup - Exception when adding procedure codes to schedule group	Admin Tools	1.10	100	1.11
193	Resolved	UserGroupPermission - Exception when removing group permissions	Admin Tools	1.10	100	1.11
192	Resolved	AvailabilityTemplate - Can not change to another template after selecting save	Admin Tools	1.10	100	1.11
191	Resolved	Scheduling - Issue when Laterality is required	Thick Client GUI	1.10	100	1.11
190	Resolved	Scheduling - rRIS crashes when scheduling without a procedure	Thick Client GUI	1.10	100	1.11
189	Resolved	Personnel - Sizing issue with Contact Information	Admin Tools	1.10	100	1.11
188	Resolved	Personnel - Exception when creating new user	Admin Tools	1.10	100	1.11
187	Resolved	Personnel - Exception when opening screen and/or accessing user information	Admin Tools	1.10	100	1.11
186	New	ScheduleGroup - Refresh issue after editing a schedule group	Admin Tools	1.10	0	

User Pre-Release Notes

for RADNET rRIS

Build 1.11

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1. Purpose

This document describes some of the new features and changes implemented in rRIS as of the end of Sprint 11. This pre-release version of rRIS is referred to as Build 1.11.

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 rRIS Development team for the RadNet RIS management team.

3. Installing/Accessing the Application

The client installer for rRIS is still in the early development stages. For now, users can access the system by remoting to the rRIS test server in Baltimore as follows:

1. Start Remote Desktop Connection and specify IP 10.120.0.152
2. Username: Radnet domain account
3. Password: Radnet domain password
4. Double click the rRIS icon on the desktop or go to Start→All Programs→rRIS
5. Login User: terry
6. Login Password: ris

If you experience difficulties accessing the application, please do not hesitate to contact Spencer MacDougall with the PEI RIS Development Team.

4. New Features and Enhancements

Unknown Referring Workflow

In Build 1.11 a workflow has been implemented that allows orders to be accepted by the system where the requesting referring physician is unknown. The user simply selects “Unknown, Unknown” from the Requesting dropdown. This will enable the Unknown Referring Info editable area where the user can fill in any details regarding the physician.

The screenshot displays the 'New Order' form for 'Carter Jeff'. The 'Order' tab is active. The 'Requesting' dropdown is set to 'Unknown, Unknown' and the 'Delivery Location' is 'Home:'. The 'Order Details' section includes 'Practice' (Advanced Radiology), 'Site' (Lutherville), and checkboxes for 'Stat Exam' and 'Stat Read'. The 'Procedure' is 'CT Ankle Arthrogram(, Left) x', with a dropdown showing 'CT Ankle Arthrogram'. Below this, 'Body Part' and 'Laterality' (Left) are specified. The 'Order Notes' field contains 'Patient is in a wheelchair.' The 'Demographics' section at the bottom includes fields for Height, Weight, Marital Status, Student Status, Employment Status, and a checkbox for 'Is Pregnant'. On the right, the 'Unknown Referring Info' section is visible, containing the text: 'Dr. Jim Smith', '6890 Water Street', 'Charlottetown, PE', and '902-785-7845'. An 'Add Referring' button is located at the bottom right of this section.

Figure 4.1 – New Order with Unknown Referring as Requesting Physician

If the user who placed the order has the proper permission, he or she can select the “Add Referring” button and access the Personnel screen which will allow the entry of the new physician directly into the application.

Typically, an administrative type user will manage the reconciliation of unknown referrals. Once orders are placed with a specified unknown referring doctor, they will be placed on the Unknown Referring WL regardless of status. From here, the administrator can add the new physician and correct the order. Once the order is adjusted, it will fall off the Unknown Referring WL.

last_name	first_name	status_code	patient_id	patient_key	order_key	requested_date	filler_order_number	requested_by	procedures
Contains: ▼	Contains: ▼	Contains: ▼	Contains: ▼	Equal: ▼	Equal: ▼	Equal: ▼	Contains: ▼	Contains: ▼	Contains: ▼
Carter	Jeff	OrderSigned	516	152359	13844	3/10/2011 3:26:27 PM	114	Unknown Unknown	CT31°CT Ankle Arthrogram

Figure 4.2 – Unknown Referring Worklist

Figure 4.3 – Updating Order with Proper Referring Physician

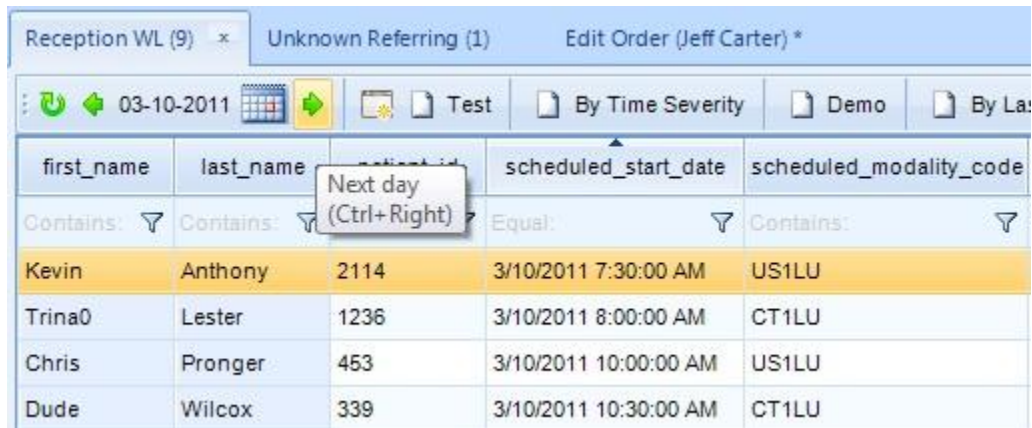
Phone Mask

Phone numbers follow a predefined pattern and therefore a mask such as (xxx) yyy-zzzz is enforced. If additional numbers are keyed in, such as an extension, then the mask will expand to accommodate it - (902) 436-8220 1234. If an international format is required, keying in a plus + at the start of the number will put the user in international phone number mode - +01 902 4368220.

Figure 4.4 – Patient Phone Numbers with Mask

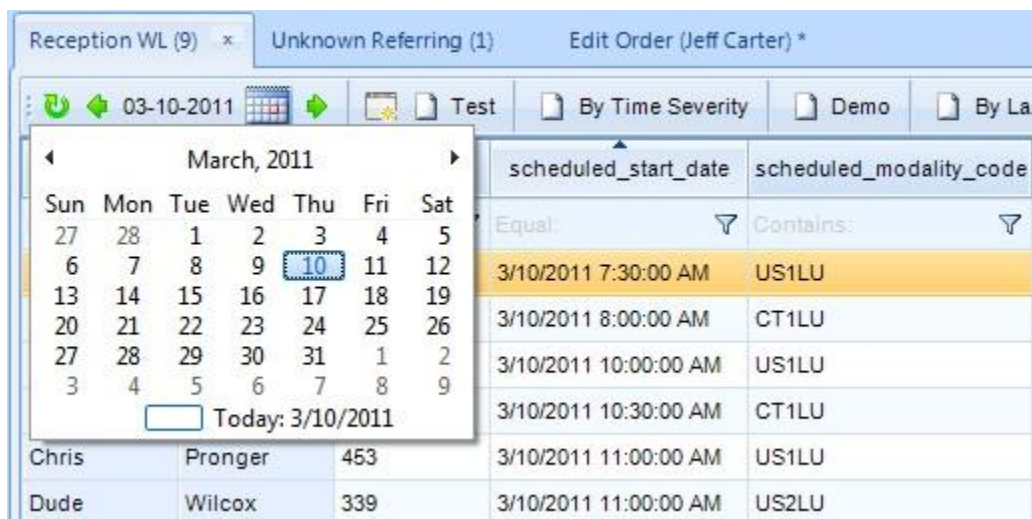
Calendar on Date Worklists

In Build 1.11 a calendar control has been added to date driven worklists to aid with filtering and navigation. The user can easily select a different date by using the arrow buttons or by clicking the calendar button and specifying the date. Date worklists will load with today's date as the default.



first_name	last_name	patient_id	scheduled_start_date	scheduled_modality_code
Kevin	Anthony	2114	3/10/2011 7:30:00 AM	US1LU
Trina0	Lester	1236	3/10/2011 8:00:00 AM	CT1LU
Chris	Pronger	453	3/10/2011 10:00:00 AM	US1LU
Dude	Wilcox	339	3/10/2011 10:30:00 AM	CT1LU

Figure 4.5 – Navigating Reception WL using Next Day Button



first_name	last_name	patient_id	scheduled_start_date	scheduled_modality_code
Chris	Pronger	453	3/10/2011 7:30:00 AM	US1LU
Dude	Wilcox	339	3/10/2011 8:00:00 AM	CT1LU
			3/10/2011 10:00:00 AM	US1LU
			3/10/2011 10:30:00 AM	CT1LU
			3/10/2011 11:00:00 AM	US1LU
			3/10/2011 11:00:00 AM	US2LU

Figure 4.6 – Navigating Reception WL using Calendar Control

Applying Time of Day to Procedure Duration

There is a requirement for rRIS to account for varying procedure durations based on a specific or group of scanners and time of day. Availability Templates have been adjusted to accommodate this. For example, the standard duration for an ultrasound procedure is 30 minutes at site A however in the afternoon there is a shortage of staff resulting in an additional 10 minutes per procedure. This is accounted for in the availability template for the scanner and is reflected in the results when searching for a scheduling solution.

Time Ranges:			
Monday			
	Start	End	Dur
* Click here to add a new row			
	7:00 AM	12:00 PM	30
	12:00PM	4:30PM	40

Figure 4.7 – Applying Procedure Duration to Time of Day

Appointment Time Locking

rRIS now has the ability to lock a time block when scheduling a procedure. This will prevent multiple users from attempting to schedule against the same scanner and time. For example if User A has 9:00am on scanner US1LU selected and it is not locked by another user, a lock icon will appear showing that User A now has a lock on the time block. If User B attempts to select the same time block, he or she will be presented with an open lock icon. If User B tries to schedule the study without getting a lock on the time slot, a warning message appears which will force the user to cancel or select another time block.

Studies	Duration	Room	Scheduled Date
US Soft Tissue - Chest Wall x	30	US1LU	03-17-2011 9:00 AM

Figure 4.8 – Study showing 9:00am Time Block as Unlocked

Studies	Duration	Room	Scheduled Date
US Soft Tissue - Chest Wall x	30	US1LU	03-17-2011 10:00 AM

Figure 4.9 – Study showing 10:00am Time Block as Locked

Scheduling Procedure Plans

When scheduling a Procedure Plan (Composite Code) in rRIS, the system will maintain the sequence and wait times of the procedures and enforce these when searching for a scheduling solution. The user is also able to schedule studies before or after the Procedure Plan.

For example, the screen shot below shows a user scheduling an MR01 - Composite Code - Fluoro & MR Arthrogram Ankle which is 73615 - FL Arthrogram Ankle Fluoro and 73722 - MR x Lower Ext Joint W with a 30 minute minimum wait time. The user is also adding a 71550 – MR Chest Wo.

The screenshot displays the 'Schedule' tab of the rRIS interface. At the top, there are dropdown menus for 'Region' (Maryland), 'Practice' (empty), 'Site' (Lutherville), and 'Site Group' (East Service Area). Below these are fields for 'Studies', 'Duration', 'Room', and 'Scheduled Date'. Three studies are listed:

Studies	Duration	Room	Scheduled Date
FL Arthrogram Ankle Fluoro X	60	XR1LU	03-17-2011 9:30 AM
MR x Lower Ext Joint W X	30	MR1LU	03-17-2011 11:00 AM
MR Chest Wo X	30	MR1LU	03-17-2011 11:30 AM

Below the studies table, there are fields for 'Body Part' and 'Laterality'. At the bottom, there are tabs for 'Summary', 'Advanced', and 'Next 5 Days'. The 'Summary' tab is selected, showing a list of scheduled procedures for 'Thu, 03-17-2011'.

Time	Procedure
9:00 AM	FL Arthrogram Ankle Fluoro
10:30 AM	MR x Lower Ext Joint W
11:00 AM	MR Chest Wo
9:30 AM	FL Arthrogram Ankle Fluoro
11:00 AM	MR x Lower Ext Joint W
11:30 AM	MR Chest Wo
10:00 AM	FL Arthrogram Ankle Fluoro
11:30 AM	MR x Lower Ext Joint W
12:00 PM	MR Chest Wo

Figure 4.10 – Scheduling Procedure Plan followed by Procedure Code

Patient Folder

Patient Folder or Patient Mode is a worklist that shows all activity for a selected patient. The Patient Folder worklist is accessible by double-clicking on a patient search results entry or in most other worklists by right-clicking on a patient record and choosing “Patient Folder” from the context menu. As in other worklists, the actions available to the user are dependent on the status of the selected row.

first_name	last_name	accession_number	status_code	procedures	scheduled_start_date	dictated_date	transcribed_date	si
Chris	Pronger	91	Arrived		2/16/2011 11:00:00 AM			
Chris	Pronger	92	Arrived		2/17/2011 8:00:00 AM			
Chris	Pronger	106	Arrived	CT31^CT Ankle Arthrogram	2/17/2011 1:30:00 PM			
Chris	Pronger	125	Arrived	71260^CT Chest W	2/17/2011 12:00:00 PM			
Chris	Pronger	134	Arrived	71260^CT Chest W	2/17/2011 12:00:00 PM			
Chris	Pronger	145	Arrived		2/17/2011 12:00:00 PM			
Chris	Pronger	157	Arrived	71260^CT Chest W	2/17/2011 10:00:00 AM			
Chris	Pronger	105	Arrived	76604^US Chest	2/17/2011 12:30:00 PM			
Chris	Pronger	112	Arrived	76604^US Chest	2/17/2011 9:00:00 AM			
Chris	Pronger	143	Arrived	76604^US Chest	2/17/2011 11:00:00 AM			
Chris	Pronger	152	Arrived	76604^US Chest	2/17/2011 10:00:00 AM			
Chris	Pronger	115	Arrived	71260^CT Chest W	3/3/2011 2:55:00 PM			
Chris	Pronger	111	Arrived	76604^US Chest	2/26/2011 9:00:00 AM			
Chris	Pronger	133	Arrived	76604^US Chest	3/1/2011 12:30:00 AM			
Chris	Pronger		OrderSigned	CT999^CT .ADDENDUM REPORT TO REPORT ON OLD RIS				
Chris	Pronger		OrderSigned	76604^US Chest				
Chris	Pronger	12	Scheduled	74160^CT Abdomen W	3/9/2011 9:27:10 AM			
Chris	Pronger	13	Scheduled	74160^CT Abdomen W	3/9/2011 9:27:10 AM			
Chris	Pronger	17	Scheduled	74160^CT Abdomen W CT999^CT .ADDENDUM REPORT...	3/9/2011 9:27:10 AM			
Chris	Pronger	18	Scheduled	CT31^CT Ankle Arthrogram 71260^CT Chest W	3/9/2011 9:27:10 AM			

Figure 4.11 – Patient Folder with Selected Row in Arrived Status

Insurance Tab in Scheduling Screen

To provide rapid scheduling support for walk-ins, the Insurance tab has been added to the Schedule New Order screen. This will allow the user to select a new or existing patient, place a new order, schedule the order, collect insurance/payment information, and arrive the patient all in one step from the same screen.

The Insurance Policies will default to the previous visit if the patient has been to the site before.

The screenshot displays the 'Schedule Order (Pronger Chris) *' window. At the top, there are tabs for 'Patient', 'Order', 'Schedule', and 'Insurance', with 'Insurance' currently selected. Below the tabs, the 'Insurance Policies' section contains a table with the following data:

carrier code	carrier name	policy number	group name	group number	notes	priority
BlueCross	Blue Cross	111	ABC	111		
Manulife	Manulife	222	CCC	784		
BlueShield	Blue Shield	333	FFF	555	Carrier Requires a signed F123 form	

Below the table is a 'Manage Policies' button. The 'Payments' section features a table with columns: Date, Posted By, Amount, and Payment Method. The 'Injuries' section features a table with columns: claim # and date of injury. At the bottom, there are buttons for 'Add Payment', 'Edit Payment', and 'View Injury Details'. A 'Total: \$0.00' label is also present.

Figure 4.12 – New Order Schedule with Insurance Tab

5. Known Limitations

Bugs, Suggested Features, and Support Issues are now tracked in a web based system called Redmine. The following is a snapshot of the issues found in Build 1.11 as of the end of Sprint 12. Note that the majority of these issues will be resolved in Build 1.12.

#	Status	Subject	Category	Found	%Done	Resolved
270	New	Scheduling - Exception when scheduling Procedure Plan	Thick Client GUI	1.11	0	
269	New	Locking - Application crash when opening a locked order	Thick Client GUI	1.11	0	
268	New	Scheduling - Better message required for locked time slot	Thick Client GUI	1.11	0	
267	New	AvailabilityTemplate - Adding time ranges should be top down	Admin Tools	1.11	0	
266	Resolved	Lookups - Using the "Edit..." popup does not consider field length	Admin Tools	1.11	100	1.12
265	New	Scheduling - Removing study disables Save button	Thick Client GUI	1.11	0	
264	Resolved	Scheduling - When Laterality is required, warning states Body Part	Thick Client GUI	1.11	100	1.12
263	New	Scheduling - Workflow allows scheduling an order without a procedure	Thick Client GUI	1.11	0	
262	Resolved	Worklist - Sorting on large worklist (>500 rows) crashes application	Thick Client GUI	1.11	100	1.12
261	New	Scheduling - Adding more than one procedure to a study results in exception	Thick Client GUI	1.11	0	
260	New	Site Picker - Allows null selection resulting in exception	Thick Client GUI	1.11	0	
259	New	null reference error when re-ordering insurances with the priority column sorted	Thick Client GUI	1.11	0	
258	Resolved	Registration - Exception when presented with locked record	Thick Client GUI	1.11	100	1.12
257	Resolved	Scheduling - Two users scheduling the same order crashes RIS	Thick Client GUI	1.11	100	1.12
255	New	Scheduling - Site picker is not properly justified	Thick Client GUI	1.11	0	
254	New	Worklist - Add or Remove Buttons is enabled	Thick Client GUI	1.11	0	
253	New	ScheduleGroup - Wrong group loads after Edit	Admin Tools	1.11	0	
252	New	ScheduleGroup - Slowness when saving lookup	Web Services/DB	1.11	0	
251	New	Unknown Referring - Editing more than one Personnel screen causes exception	Admin Tools	1.11	0	
250	New	Unknown Referring - Add Referring button launches multiple instances.	Thick Client GUI	1.11	0	
249	New	Unknown Referring - Saving unknown referring info causing exception	Thick Client GUI	1.11	0	
248	Resolved	Personnel - After saving new resource, form is still marked as dirty	Admin Tools	1.11	100	1.12
247	New	Unknown Referring - Notes are not easily accessible when adding new doc	Admin Tools	1.11	0	
246	Resolved	Registration - Name should be required when relationship is specified	Thick Client GUI	1.11	100	1.12
245	Resolved	Registration - User can enter a new policy without selecting a Carrier	Thick Client GUI	1.11	100	1.12
244	Resolved	Registration - Patient info should auto-populate when relation is set to "Self"	Thick Client GUI	1.11	100	1.12
243	Resolved	Registration - No logic behind priority of insurance policies	Thick Client GUI	1.11	100	1.12
242	New	Registration - Specifying dates is inconsistent with rest of app	Thick Client GUI	1.11	0	
241	New	Registration - No means to remove insurance row accidentally added	Thick Client GUI	1.11	0	
240	New	AvailabilityTemplate - Cannot add multiple time ranges per day	Admin Tools	1.11	0	
239	New	Scheduling - Duration reduces when moving composite codes	Thick Client GUI	1.11	0	

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238	Resolved	Scheduling - Search solutions spanning multiple rooms are incorrect	Thick Client GUI	1.11	100	1.12
237	New	Scheduling - Templates are not being represented correctly in the GUI	Thick Client GUI	1.11	0	
236	New	Scheduling - Issue with procedure plans, prompted that Schedule Date is required	Thick Client GUI	1.11	0	
235	Resolved	Registration - Form gets marked as dirty when clicking on the Exam tab	Thick Client GUI	1.11	100	1.12
234	New	Scheduling - Rooms are not being filtered on orders with a specified procedure	Thick Client GUI	1.11	0	
233	New	Scheduling - System allows over booking of time slots	Thick Client GUI	1.11	0	
232	Resolved	Worklist - Requested_date in Ordered WL is showing UTC time	Thick Client GUI	1.11	100	1.12
231	New	Scheduling - User is able to override schedule group and availability templates	Thick Client GUI	1.11	0	
230	Resolved	Registration - trying to save text in the copay or payment fields hangs app	Thick Client GUI	1.11	100	1.12
229	New	Order - Cannot change patient on Edit Order in OrderSigned status	Thick Client GUI	1.11	0	
228	New	Patient Search - No means to apply search criteria to patient form	Thick Client GUI	1.11	0	
227	New	Scheduling - Calendar view exception - Incorrect syntax near ')'. (WCFCClient)	Thick Client GUI	1.11	0	
226	Resolved	Scheduling - Error with "Previous 5 Days" button	Thick Client GUI	1.11	100	1.12
225	Resolved	Scheduling - Modalities are not being returned from search	Thick Client GUI	1.11	100	1.12
224	New	Order - Exception when scheduling a modified order	Thick Client GUI	1.11	0	
223	Resolved	Registration - Issue with validation on Relation dropdown	Thick Client GUI	1.11	100	1.12
222	Resolved	Order - Delivery Location is not being displayed on Edit Order	Thick Client GUI	1.11	100	1.12

User Pre-Release Notes

for RADNET rRIS

Build 1.12

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1. Purpose

This document describes some of the new features and changes implemented in rRIS as of the end of Sprint 12. This pre-release version of rRIS is referred to as Build 1.12.

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 rRIS Development team for the RadNet RIS management team.

3. Installing/Accessing the Application

The installation instructions for the rRIS client have been posted to the RadNet Wiki page at <http://mdbal01rdtweb/Wiki/>

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

Username: rRIS

Password: Summerside

If you experience difficulties accessing the application, please do not hesitate to contact Spencer MacDougall with the PEI RIS Development Team.

4. New Features and Enhancements

Automatic Form and Label Generation

In Build 1.12, the application now supports the ability to automatically generate labels and forms based on the following criteria:

- A specified RIS Action
 - Patient Created
 - Patient Updated
 - Patient Arrived
 - Order Created
 - Order Updated
 - Study Cancelled
 - Study Scheduled
 - Study Completed
 - Study Updated
 - Report Signed
 - Report Approved
- The Gender Code of the patient
- The Carrier Code of the patient's insurance carrier
- One or more Procedure Codes

Form code	Description	Di...	Form category code	S...	Gender code	Carrier code	Generate on action
Contains: ▼	Contains: ▼	Contains: ▼	Contains: ▼	Contains: ▼	Contains: ▼	Contains: ▼	Contains: ▼
IQE CurrentForms/Exams/CT History Sheet	CT History Sheet	3	Exam	Y			Patient Arrived
Form code	Procedure code						
IQE CurrentForms/Exams/CT History Sheet	CT Chest Wo (71260)						
IQE CurrentForms/Exams/CT History Sheet	CT Chest W (71260)						
IQE CurrentForms/Exams/CT History Sheet	CT Chest W/Wo (71270)						
IQE CurrentForms/Exams/CT History Sheet	CT Cervical Spine Wo (72125)						
IQE CurrentForms/Exams/CT History Sheet	CT Cervical Spine W (72126)						
IQE CurrentForms/Exams/CT History Sheet	CT Cervical Spine W/Wo (72127)						
IQE CurrentForms/Exams/CT History Sheet	CT Abdomen Wo (74160)						
IQE CurrentForms/Exams/CT History Sheet	CT Abdomen W (74160)						
IQE CurrentForms/Exams/CT History Sheet	CT Calcium Scoring (75571)						
IQE CurrentForms/Exams/CT History Sheet	CT Chest W/Wo & Abdomen W/Wo (CT16)						
IQE CurrentForms/Exams/CT History Sheet	CT Chest W/Wo & Abdomen W/Wo (CT2)						
IQE CurrentForms/Exams/CT History Sheet	CT Chest W/Wo Abdomen W/Wo & Pelvis W/Wo (CT21)						
IQE CurrentForms/Exams/CT History Sheet	CT Abdomen W/Wo & Pelvis W (CT23)						
IQE CurrentForms/Exams/CT History Sheet	CT Chest W Abdomen W/Wo & Pelvis W (CT25)						
IQE CurrentForms/Exams/CT History Sheet	CT Chest W & Abdomen W (CT4)						
IQE CurrentForms/Exams/CT History Sheet	CT Chest W & Abdomen W/Wo (CT42)						
Click here to add a new row							
IQE CurrentForms/Exams/Exam Form	Exam Form	4	Exam	Y			Patient Arrived
IQE CurrentForms/Exams/IV Contrast Consent	IV Contrast Consent	2	Exam	Y			Patient Arrived
IQE CurrentForms/Exams/Patient Registration	Patient Registration	1	Exam	Y			Patient Arrived
IQE CurrentForms/Exams/Thyroid Ultrasound History Sheet Page 1	Thyroid Ultrasound History Sheet Page 1	5	Exam	Y	Female	0518 ALLSTATE	Patient Arrived
Form code	Procedure code						
IQE CurrentForms/Exams/Thyroid Ultras...	US Thyroid (76536)						
Click here to add a new row							

Figure 4.1 – Example of Mapping Labels and Forms

In the example above, the following Forms and conditions have been implemented for testing:

- CT History Sheet – Configured to print when the patient arrives for CT procedures
- Exam Form - Configured to print when the patient arrives
- IV Contrast Consent - Configured to print when the patient arrives. Could easily be expanded to only print for procedures that require contrast
- Patient Registration - Configured to print when the patient arrives
- Thyroid Ultrasound History Sheet Page 1 – Configured to print when the patient arrives, when the procedure is a US Thyroid, when the Gender Code is female, and when the Insurance Carrier is Allstate.


Form: /QE Current/Forms/Exams/Exam Form

1 of 2 100% Find | Next

Towson		Name: CARTER, JEFF	
Name: CARTER, JEFF	Sex: M	MRN: 516	
MRN: 516	DOS: 4/18/2011	Encounter ID: 18031	
JOHN AARON MD	DOB: 10/10/1980		

Patient Demographics		Scheduler: spencer	Date/ Time Scheduled: 4/18/2011 2:00 PM	
SSN	Home Phone	Work Phone	Other Phone	Referral Source
	(902) 888-4579			

Patient Notes	Patient Alerts
Patient prefers early morning	

Exam Information					
Barcode Accession #	Procedure ID/ Description	Exam Time	Body Part / Laterality	Modifier	Pre-Cert#
 1000693	71260*CT Chest W	2:00 PM			

Chief Complaint	Patient History (Duration, Trauma, Surgery)
Tech Notes	Primary Tech
	Secondary Tech

Referring Information:			
Referring Physician:	Phone:	Fax:	Address:
JOHN AARON MD	6108699330	6108690660	6108699330
CC Physician:	Phone:	Fax:	Address:
JARED ABAY PAC	4105500939	4105503077	

Procedure Performed:	DOS	Location
76604*US Chest	4/7/2011	
70030*XR ORBITS FOR FOREIGN BODY	10/25/2010	
70030*XR ORBITS FOR FOREIGN BODY	2/26/2010	
70030*XR ORBITS FOR FOREIGN BODY	1/5/2010	
70030*XR ORBITS FOR FOREIGN BODY	12/18/2009	

Figure 4.2 – Example of an Exam Form generated when Patient Arrived

Form: /QE Current/Forms/Exams/CT History Sheet

1 of 1 100% Find | Next

ADVANCED RADIOLOGY
Trusted by more doctors. Preferred by more patients.

Towson
Tech:
Extension:

CT HISTORY SHEET
First Name: JEFF
Last Name: CARTER
Date of Exam: 4/18/2011
MRN #: 516
Date of Birth: 10/10/1980
Ref Phys: JOHN AARON MD
Image Pref:
Specialty Read:
Specialty:
This is a preliminary worksheet, and should not be used in place of the final report.

Study Description: 71260*CT Chest W

SIGNS AND SYMPTOMS - Why did your physician want you to have this test? What kind of problems are you having?

Medical History - check what applies

☐ Asthma / SOB ☐ Emphysema / COPD ☐ Kidney Problems ☐ High Blood Pressure
☐ Heart Problem ☐ Sickle Cell Dz / Trait ☐ Diabetes ☐ Electronic Device _____
☐ Stroke ☐ Multiple Myeloma ☐ Family Hx of Lung Cancer
 If yes, who in your immediate family: _____

☐ Cancer - Type(s) / w Date: _____
☐ Chemo Therapy: _____ ☐ Radiation Treatments: _____
☐ Hx of Asbestos Exposure: _____ ☐ Hx of Tobacco Use: _____ Packs/day _____ Years
☐ Other: _____

PREVIOUS SURGERIES - check what applies

☐ Lung ☐ Kidney ☐ Appendectomy ☐ Prostate
☐ Cardiac ☐ Gall Bladder ☐ Hysterectomy ☐ L-spine
☐ Aorta ☐ Stomach ☐ Total ☐ Partial ☐ C-spine
☐ Breast ☐ Small Bowel ☐ Bladder ☐ Other: _____
☐ Right ☐ Left ☐ Colon ☐ Hernia

PRIOR DIAGNOSTIC TESTING

Type: _____ Date(s): _____
 Facility: _____ Reports Available: ☐ Yes ☐ No

MEDICATIONS

Creatinine: _____ Date(s): _____

CONTRAST MATERIAL

☐ Optiray ☐ 300 ☐ 320 ☐ 350 ☐ 370
☐ 50ML ☐ 75ML ☐ 100ML ☐ 125ML ☐ 150ML

	Non Contrast	Contrast	Delayed	High Res	<input type="checkbox"/> 3D	Oral Contrast
Chest	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		<input type="checkbox"/> None
Abdomen	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>			<input type="checkbox"/> Gastroview
Pelvis	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>			<input type="checkbox"/> H2O
	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>			<input type="checkbox"/> Barium
Palpable area - BB placed		<input type="checkbox"/> Yes	Image number: _____			<input type="checkbox"/> VoLumen
Premedication protocol:		<input type="checkbox"/> Yes				

Figure 4.3 – Example of a CT Work Sheet generated when Patient Arrived

rRIS utilizes Microsoft Reporting Services to generate Labels/Forms and Management Reports. Below is a screenshot of Microsoft's Report Builder 3.0 showing the Patient Registration in design mode. The form is assigned a Data Source which points to the database schema. The form is built on a dataset which in this case is using a database view. The parameter being passed to the form from rRIS is study_key.

The screenshot shows the Microsoft Report Builder 3.0 interface. The title bar indicates 'Patient Registration - Microsoft SQL Server R'. The ribbon at the top includes 'Home', 'Insert', and 'View' tabs. The 'Home' tab is active, showing options for 'Run', 'Paste', 'Font', 'Paragraph', 'Border', 'Number', 'Merge', 'Split', 'Align', and 'Layout'. The 'Report Data' pane on the left shows a tree view with 'Built-in Fields', 'Parameters', 'Images', 'Data Sources', and 'Datasets'. Under 'Data Sources', 'Data Source1' is selected. Under 'Datasets', 'DataSet1' is selected, listing various fields: PatientFullName, AccessionNumber, PatientLastName, PatientFirstName, PatientMiddleName, PatientBirthDate, PatientGender, PatientAddressLine1, PatientAddressLine2, PatientAddressCity, PatientAddressState, PatientAddressZipCode, PatientHomePhone, PatientWorkPhone, PatientMobilePhone, PatientEmail, ResponsiblePartyLastName, ResponsiblePartyFirstName, ResponsiblePartyMiddleName, ResponsiblePartyRelationship, ResponsiblePartyAddressLine1, ResponsiblePartyCity, ResponsiblePartyState, ResponsiblePartyZipCode, ResponsiblePartyHomePhone, ResponsiblePartyWorkPhone, ReferringPhysician, study_key, and visit_key. The main design area shows the 'Patient Registration' form. It has a header section 'Advanced Imaging Partners' and 'Patient Registration'. Below this is a section 'Patient Information' with fields for Last Name, First Name, MI, Date Of Birth, Gender, Marital Status, Address 1, Address 2, City, State, Zip Code, Home, Work, Cell, and Email. Below that is a section 'Responsible Party Information' with fields for Last Name, First Name, MI, Patient's Relationship to Responsible Party, Responsible Party Address, City, State, Zip Code, Responsible Party Home #, and Responsible Party Work#. Below that is a section 'Medical Information' with a field for Referring Physician. At the bottom, there are two checkboxes: 'Is this visit related to an auto accident?' and 'Is this visit related to an injury sustained while at work?'. A date field 'Date of Injury' is also present. A footer section 'To Our Female Patients:' contains a note about pregnancy. The bottom status bar shows 'Row Groups' and 'Column Groups'.

Figure 4.4 – Editing Patient Registration Form in Report Builder

Referring Physician Location

At the order level, rRIS will now capture where the patient visited the referring physician at. This will be utilized if the referring doctor has more than one office location. If the referring is setup in the system with only one address, then the field will default accordingly. In the example below, Dr. Joshua Aaron has four different office locations. The patient visited at 201 Milford Road but Dr. Aaron would like the report faxed to 410-296-5535.

The screenshot shows the 'rRIS (spencer)' application window with the 'Edit Order (Jeff Carter) *' tab active. The 'Referring Details' section contains the following fields:

- Referring:** AARON, JOSHUA
- Visited Location:** E 104, BALTIMORE, MD, 21208 (selected from a dropdown menu)
- Delivery Location:** Work: 4102965535
- CC Physicians:** (empty dropdown)
- Delivery Location for CC:** (empty dropdown)

The 'Exam Requested' section is partially visible below, showing:

- Practice:** Advanced Radiology
- Site:** Towson
- Study(s):** (empty text area)
- Body Part:** (empty dropdown)
- Laterality:** (empty dropdown)
- Stat Exam:** ☐
- Stat Read:** ☐

Figure 4.5 – Edit Order showing Delivery and Visited Locations

CC Physicians

rRIS will support an unlimited number of CC Physicians specified at the order level. The CC Physician picker behaves similar to other pickers in the application. As each doctor is selected via a type ahead search, a report delivery location is specified or defaulted if there is only one.

The screenshot shows the 'Edit Order (Jeff Carter) * x' window. The 'Referring Details' tab is active. The 'Referring:' field is 'AARON, JOSHUA' and the 'Delivery Location:' is 'Work: 4102965535'. The 'Visited Location:' is 'Work: 201 MILFORD MILL RD...'. The 'CC Physicians:' dropdown is open, showing a list of names: 'ADAMS, ALICE', 'ADAMS, D LESLIE', 'ADAMS, GILLIAN', 'ADAMS, GREGORY', 'ADAMS, JOSEPH', and 'ADAMS, KRISTIN'. The 'Delivery Location for CC' dropdown is also visible, showing 'Towson'. The 'Exam Requested' section has 'Practice:' and 'Study(s):' fields. There are checkboxes for 'Stat Exam' and 'Stat Read'.

Figure 4.6 – Edit Order showing CC Physician Dropdown

The screenshot shows the 'Edit Order (Jeff Carter) * x' window. The 'Referring Details' tab is active. The 'Referring:' field is 'AARON, JOSHUA' and the 'Delivery Location:' is 'Work: 4102965535'. The 'Visited Location:' is 'Work: 201 MILFORD MILL RD...'. The 'CC Physicians:' field now displays multiple selected names: 'SMITH, ALAN x', 'MACDONALD, JAMES x', and 'PETERS, CRAIG x'. The 'Delivery Location for CRAIG' is 'Work: 4349248244'. The 'Exam Requested' section has 'Practice:' and 'Study(s):' fields. There are checkboxes for 'Stat Exam' and 'Stat Read'.

Figure 4.7 – Edit Order showing multiple CC Physicians with Report Delivery Locations

Patient Search without Birth Year

Patient Search has been enhanced to allow the user to search for a patient with birth day and/or birth month without having to specify a birth year. In the example below, the user is searching for all patients with a first name of Mike that were born in the month of October.

The screenshot shows the 'Patient Search' window. At the top, there are tabs for 'Reception WL (7)', 'Edit Order (Jeff Carter) *', and 'Patient Search'. Below the tabs is the 'Search Criteria' section. It contains fields for 'First Name' (filled with 'Mike'), 'Last Name' (empty), 'Birth Date' (filled with 'Oct' and a calendar icon), and 'MRN' (empty). There is a 'Sounds Like' checkbox and 'Search' and 'Reset' buttons. Below the search criteria is a table of search results.

	First Name	Last Name	Middle Name	Birth Date	MRN	Issuer	Gender	Address	City	State	Phone
▶	Mike147	Brooks	20899	10-17-1959	67294	RIS	M	296 White Clarendon Street	Riverside	Nevada	
	Mike5	Cole	30212	10-18-1991	11380	RIS	F	77 East White Clarendon Boulevard	Virginia Beach	Missouri	
	Mike02	Conrad	59351	10-31-2007	50903	RIS	M	10 Fabien Road	St. Petersburg	North Dakota	
	Mike	Richards		10-29-2010	4444		M				
	Mike550	Simmons	37892	10-13-1970	57268	RIS	U	16 Cowley Road	Portland	Mississippi	
	Mike51	Whitehead	31502	10-13-1968	46526	RIS	U	19 First Freeway	Jackson	Virginia	
	Mike079	Williams	52393	10-24-1965	12970	RIS	F	81 Cowley Freeway	Greensboro	South Carolina	
	Mike7	Wilson	89362	10-20-1957	75096	RIS	U	904 West Second Blvd.	Denver	South Carolina	

Figure 4.8 – Patient Search with a Partial Birth Date

Additional Search Providers

The search framework in rRIS has been expanded to include more than just patients. Users (with the proper permissions granted) now have the ability to search for staff, sites, and utilize Google. All search providers have been implemented with associated permissions.

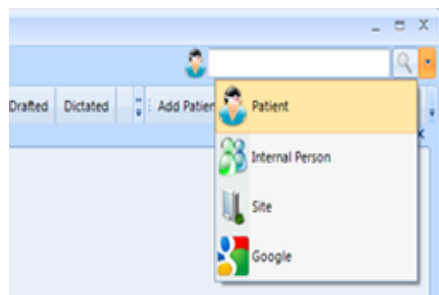


Figure 4.9 – Internal Person, Site, and Google Quick Search

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The internal person search is a great utility to quickly find resources such as referring doctors, technologist, radiologists, etc. in the application. In the example below, a scheduling user needs to contact Dr. David Powers regarding a patient. The user simply types “power” with Internal Person selected. The system acts as a rolodex and quickly returns all resources in the system with a last name like Power. The user has the ability to modify the internal person if he or she has the proper permission granted.

rRIS (spencer)

File Administration Scheduling Front Desk Technologist Radiologist Transcription Help

Reception WL (7) Edit Order (Jeff Carter) * Internal Person Search x

Search Criteria

First Name: State:
Last Name: power City:
Phone #: Type:

First Name	Last Name	Summary	Home Addresses	Work Addresses	Resource Details
ALEXANDROS	POWERS	Gender: M Cell: 1295702017 ID: 21163		Fax Reports to 3017182979 9715 MEDICAL CENTER DR SUITE 227 ROCKVILLE, MD 20850 (US) Phone #: 3017189611 Fax Reports to 3017188660 8800 OLD GEORGETOWN I BETHESDA, MD 20814 (US) Phone #: 3018963100 Fax Reports to 3017188660 4927 AUBURN AVE 2ND FLOOR BETHESDA, MD 20814 (US) Phone #: 3017189611	Referring NPI: 1295702017
DAVID	POWERS	Gender: M ID: 22777		Fax Reports to 4825 BETHESDA AVE BETHESDA, MD 20814 (US) Phone #: 3016525111	Referring NPI: 22777
JAMES	POWERS	Gender: M ID: 24533		Fax Reports to 5550 FRIENDSHIP BLVD SUITE 200 CHEVY CHASE, MD 20815 (US) Phone #: 4109869390	Referring NPI: 24533
R	POWERS	Gender: M ID: 28191		Fax Reports to 7039988256 2800 SHIRLINGTON RD SUITE 102 ARLINGTON, VA 22206 (US) Phone #: 7039988824	Referring NPI: Q59469
ROBIN	POWER	Gender: M ID: 32132		Fax Reports to 4108325783 901 DULANEY VALLEY RD SUITE 129 TOWSON, MD 21204 (US) Phone #: 4108322729	Referring NPI: 32132
MEG	POWERS	Gender: M Cell: 1407899982 ID: 36898		Fax Reports to 7601 O SLER DR DEPT OF NEUROLOGY TOWSON, MD 21204 (US) Phone #: 4103371000	Referring NPI: 1407899982
Ian	Power	Gender: M ian.power@radnet.com Cell: (902) 439-5149 ID: 1045			Radiologist, Referring, Technologist, Transcriptionist

Figure 4.10 – Internal Person Search on Last Name

The site search allows the user to lookup contact information for other sites within the organization. For example if a user needs the fax number for the Lutherville site, he or she can simply use “Luth” as search criteria with the Site search option selected to get a list of matching sites. Users can also use state, city, manager, and phone number as search criteria.

Search Criteria

Site Name: Luth State: Manager: City: Phone #:

Search Reset

Site	Notes	Address	Contact	Practice
Lutherville(LU) Phone: 345-876-1234	Site level notes	34 Pine Street Level 3 Summerfield, CA 12367	Mary Jones Phone: 987-345-7654	Advanced Radiology(ADV) Phone: 904-987-8776 Fax: 987-345-2345

Figure 4.11 – Site Search on Site Name

Search engines like Google are used often throughout the workday for finding necessary information. In rRIS, the user can click on the Google search button to quickly launch their default web browser and navigate to the Google search page.

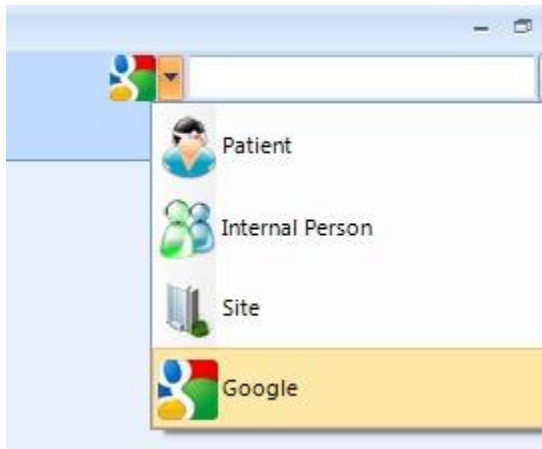


Figure 4.12 – Shortcut to Google Search

Filter Body Part Based on Procedure

There is a requirement to filter the list of applicable body parts based on the procedure code. This is useful if the procedure code is generic like a CT Lower Extremity W (73701). For a CT Lower, it does not make sense to present the user with a list of body parts like arm or shoulder that are not considered lower. In the example below the list of available body parts for a CT Lower include Hip Joint, Ankle Joint, Knee, Leg, Foot, and Pelvis. A default can still be specified from this list.

Procedure co...	Description	Body part code	Laterality co...	Body part required flag	Laterality required fl...	Display order	Duration
Contains: ▾	Contains: lower ▾	Contains: ▾	Contains: ▾	Contains: ▾	Contains: ▾	Equals: ▾	Equ... ▾
73592	XR LOWER EXTREMITY INFANT 2 VIEWS			N	N	1	5
73700	CT Lower Extremity Wo			N	N	1	30
73701	CT Lower Extremity W			Y	N	1	30

I_procedure_code_x_billing_code	I_procedure_code_x_body_part
procedure_code	body_part_code
73701	Hip joint
73701	Ankle joint
73701	Pelvis
73701	Knee
73701	Leg
73701	Foot
*	

Click here to add a new row

Figure 4.12 – Available Body Parts for Procedure CT Lower Extremity W

Lookup Tables - ProcedureCode Reception WL (7) Orders To Schedule (542) Schedule Order (Pineda Joann5) * x

Patient Order Insurance Schedule

Studies

CT Lower Extremity W x

Body Part: ! ▾

Laterality: ▾ Overbook Reason: ▾

Ankle joint

Foot

Hip joint

Knee

Leg

Figure 4.13 – Filtered Body Parts during Scheduling

Cloning Rooms, Availability Templates, and Schedule Groups

A large amount of administrative time can be spent on creating and editing rooms, availability templates, and schedule groups. rRIS allows the administrative user to clone these areas to save valuable time. For example, a user is setting up a CT room at the Townson site and it operates on the same or similar working hours to the CT room at the Lutherville site. The user simply highlights the Lutherville CT template, clicks the Clone button, and enters a new name. Now a new template has been created that is already configured and ready to be applied to a Schedule Group.

Template: LU CT Add Clone Remove

Date Ranges:

Default Template

Add Edit Remove

Time Ranges:

Monday			Tuesday			Wednesday			Thursday			Friday		
Start	End	Dur	Start	End	Dur	Start	End	Dur	Start	End	Dur	Start	End	Dur
* Click here to add a new row			* Click here to add a new row			* Click here to add a new row			* Click here to add a new row			* Click here to add a new row		
7:45 AM	4:00 PM		7:45 AM	4:00 PM		7:45 AM	4:00 PM		7:45 AM	4:00 PM		7:45 AM	4:00 PM	

Figure 4.14 – Cloning an Availability Template

No Show Workflow

In Build 1.12, a No Show worklist has been added to the application. The purpose of this worklist is to track all overdue patients. This worklist has been configured to include all studies that are still in a scheduled status and were scheduled between yesterday and fourteen days prior. From the worklist, a scheduling user can track No Show patients and easily contact them to reschedule or cancel the appointment.

Lookup Tables - AvailabilityTemplate		Orders To Schedule (542)		Schedule Order (Frank Tia8) *		No Show WL (62) x	
First name	Last name	MRN	Scheduled start date	Scheduled modality code	Procedures	Status code	Due Time
Contains: ▼	Contains: ▼	Contains: ▼	Equals: ▼	Contains: ▼	Contains: ▼	Contains: ▼	Contains: ▼
Kenneth42	Townsend	693	4/9/2011 10:30:00 AM	US1LU	76604*US Chest	Scheduled	OVERDUE by 9 DAYS 23 HOURS 43 MINUTES
Bonnie	Test	639	4/12/2011 11:00:00 AM	CT1LU	70491*CT Soft Tissue Neck W	Scheduled	OVERDUE by 6 DAYS 23 HOURS 13 MINUTES
Mike	Richards	4444	4/13/2011 1:05:00 PM	XR1TO	70140*XR Facial Bones 1-2 Views	Scheduled	OVERDUE by 5 DAYS 21 HOURS 8 MINUTES
chris	pronger	453	4/13/2011 1:00:00 PM	XR2TO	RD20*XR Hand 2 Views & Finger 2 Views, Unilat	Scheduled	OVERDUE by 5 DAYS 21 HOURS 13 MINUTES
Mike	Richards	4444	4/13/2011 1:00:00 PM	XR1TO	RD30*XR Foot 2 Views, Bilat	Scheduled	OVERDUE by 5 DAYS 21 HOURS 13 MINUTES
Mike	Richards	4444	4/13/2011 2:30:00 PM	XR1TO	RD20*XR Hand 2 Views & Finger 2 Views, Unilat	Scheduled	OVERDUE by 5 DAYS 19 HOURS 43 MINUTES
chris	pronger	453	4/13/2011 2:30:00 PM	XR2TO	RD26*XR Hand 3 Views & Wrist 3 Views, Bilat	Scheduled	OVERDUE by 5 DAYS 19 HOURS 43 MINUTES
chris	pronger	453	4/13/2011 3:30:00 PM	XR2TO	74000*XR ABDOMEN AP, KUB	Scheduled	OVERDUE by 5 DAYS 18 HOURS 43 MINUTES
Ian4	Allen	96485	4/14/2011 10:00:00 AM	XR1TO	71020*XR CHEST PA LAT	Scheduled	OVERDUE by 5 DAYS 0 HOURS 13 MINUTES
Staci406	Wallace	914	4/15/2011 1:00:00 AM	XR1TO	RD3*XR Knee Min 4 Views, Bilat	Scheduled	OVERDUE by 4 DAYS 9 HOURS 13 MINUTES
Leanne	Pham	503	4/15/2011 6:00:00 AM	XR1TO	RD2*XR Knee 3 Views, Bilat	Scheduled	OVERDUE by 4 DAYS 4 HOURS 13 MINUTES
Jesus2	Alexander	53709	4/14/2011 10:20:00 AM	XR1TO	73850*XR HEEL MIN 2 VIEWS	Scheduled	OVERDUE by 4 DAYS 23 HOURS 53 MINUTES
Bonnie	Test	580	4/14/2011 11:30:00 AM	XR2TO	RD21*XR Knee 1-2 Views, Bilat	Scheduled	OVERDUE by 4 DAYS 22 HOURS 43 MINUTES
Denise	Test	573	4/14/2011 12:00:00 PM	XR2TO	71020*XR CHEST PA LAT	Scheduled	OVERDUE by 4 DAYS 22 HOURS 13 MINUTES
chris	pronger	453	4/14/2011 12:20:00 PM	US2TO	76536*US Thyroid	Scheduled	OVERDUE by 4 DAYS 21 HOURS 53 MINUTES
Mike	Richards	4444	4/14/2011 1:00:00 PM	MA1TO	G0204CBUS*MA DIGITAL MAMMO CB DIAG B...	Scheduled	OVERDUE by 4 DAYS 21 HOURS 13 MINUTES
Ian	Power	565	4/14/2011 1:30:00 PM	CT1LU	70450*CT Head Wo	Scheduled	OVERDUE by 4 DAYS 20 HOURS 43 MINUTES
Rene	Wilson	865	4/15/2011 9:00:00 AM	XR1TO	RD2*XR Knee 3 Views, Bilat	Scheduled	OVERDUE by 4 DAYS 1 HOURS 13 MINUTES
Andrea	Young	833	4/15/2011 10:30:00 AM	XR1TO	RD2*XR Knee 3 Views, Bilat	Scheduled	OVERDUE by 3 DAYS 23 HOURS 43 MINUTES
chris	pronger	453	4/15/2011 3:00:00 PM	US1LU	76604*US Chest	Scheduled	OVERDUE by 3 DAYS 19 HOURS 13 MINUTES
Chri	Mendez	324	4/5/2011 1:15:00 PM	CT1LU	70460*CT Head W	Scheduled	OVERDUE by 13 DAYS 20 HOURS 58 MINUTES
Angelique	Copeland	1251	4/5/2011 2:20:00 PM	DX1LU	77080*DX AXIAL SKELETON	Scheduled	OVERDUE by 13 DAYS 19 HOURS 53 MINUTES
chris	pronger	453	4/6/2011 10:40:00 AM	CT1LU	76604*US Chest	Scheduled	OVERDUE by 12 DAYS 23 HOURS 33 MINUTES
Angela932	Smith	69014	4/6/2011 1:00:00 PM	CT1LU	CT13*CT 3 Phase	Scheduled	OVERDUE by 12 DAYS 21 HOURS 13 MINUTES
Angela932	Smith	69014	4/6/2011 2:00:00 PM	CT1LU	CT66*CT Abdomen W & CTA Chest W/Wo	Scheduled	OVERDUE by 12 DAYS 20 HOURS 13 MINUTES
Alfons	Smith	63114	4/7/2011 8:00:00 AM	US1LU	76604*US Chest	Scheduled	OVERDUE by 12 DAYS 2 HOURS 13 MINUTES
Alfons	Smith	63114	4/7/2011 8:00:00 AM	US2LU	76604*US Chest	Scheduled	OVERDUE by 12 DAYS 2 HOURS 13 MINUTES

Figure 4.15 – No Show Worklist

Advanced Scheduling Search – Next # of Days

The Advanced Search Criteria screen used when searching for scheduling solutions has been enhanced to include Next and Previous buttons represented below by green arrows. If the user has a defined date range set at 7 days, simply clicking the Next Arrow will automatically advance the search by the next 7 days. The Previous Arrow will search the previous 7 days.

The image displays two side-by-side screenshots of the 'Advanced Search Criteria' window. Both windows have the same search criteria: Region: Maryland, Practice: Advanced Radiology, Site: Towson, and a list of days (Monday through Sunday) with checkboxes. The left window shows the date range 04-25-2011 to 04-30-2011. The right window shows the date range 05-01-2011 to 05-07-2011. The right window also shows Start Time: 7:00 AM and End Time: 7:00 PM. At the bottom of each window are two green arrows (Previous and Next) and a Search button.

Figure 4.15 – Advanced Search Criteria showing Next and Previous Days

Appointments Booked

The Appointments Booked screen is a visual representation of schedule activity for scanners/rooms. The user has the ability to filter by:

- Region
- Practice
- Site Group
- Site
- Modality Type
- Room
- Schedule Date

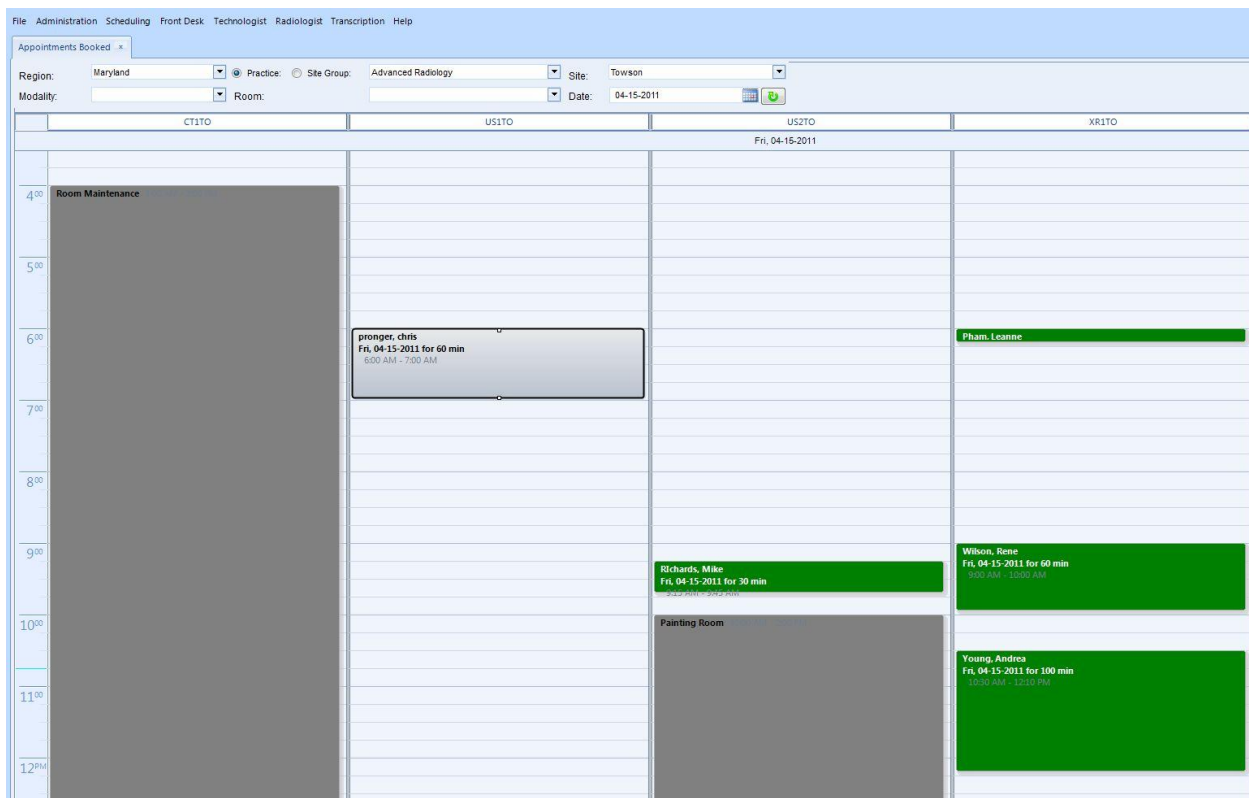


Figure 4.16 – Appointments Booked Screen filtered by Site and Date

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With the proper permissions granted, users have the ability to create new or edit existing scheduled studies simply by clicking on the desired timeslot. Room Closures and the Availability Template are reflected in the layout.

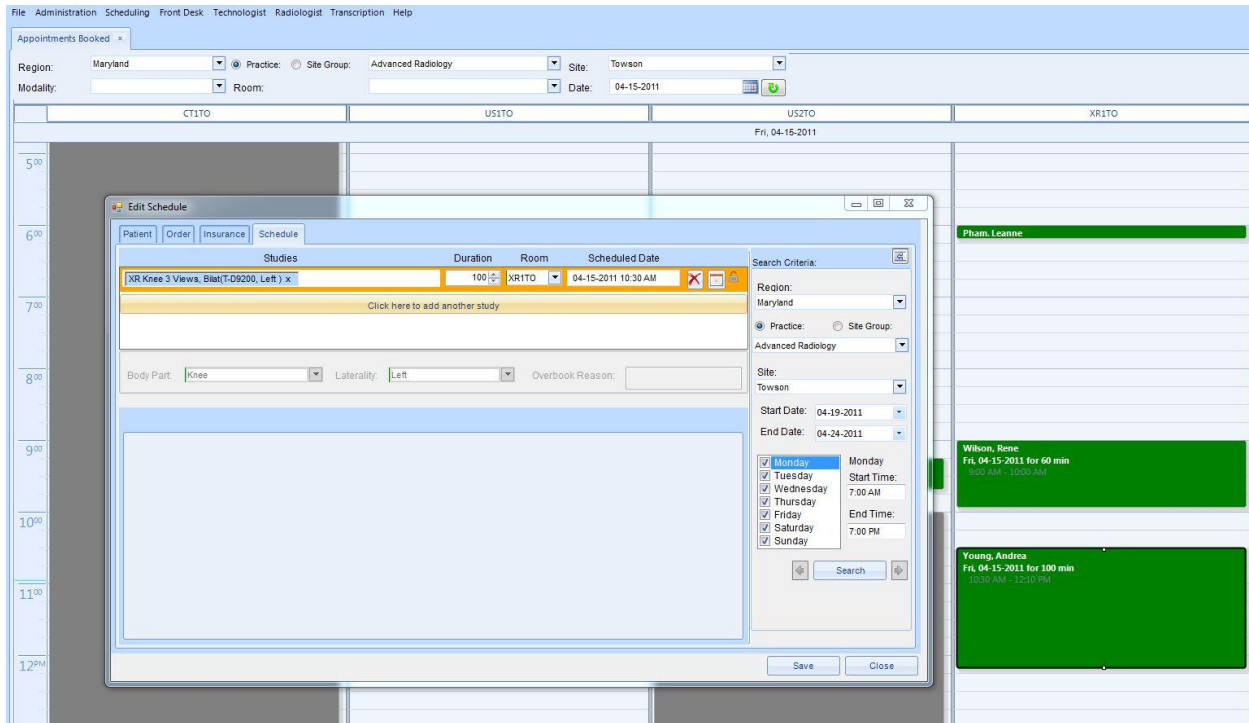


Figure 4.17 – Edit Appointment via Appointments Booked Screen

5. Known Limitations

Bugs, Suggested Features, and Support Issues are now tracked in a web based system called Redmine. The following is a snapshot of the issues found in Build 1.12 as of the end of Sprint 13. Note that the majority of these issues will be resolved in Build 1.13.

#	Status	Subject	Category	Found	%Done	Resolved
343	New	Idle Time Error - Error Creating Window Handle	Thick Client GUI	1.12	0	
342	New	Modality Closure - Inactive closures are still reflected in search results	Admin Tools	1.12	0	
341	New	Worklist - Issue with multi-select and Enter key	Thick Client GUI	1.12	0	
339	New	Scheduling - User can launch appointment book without room selected	Thick Client GUI	1.12	0	
338	New	Scheduling - Modalities marked as Inactive are shown in search results	Thick Client GUI	1.12	0	
337	Closed	Scheduling - Defaulting Room	Thick Client GUI	1.12	100	1.13
336	Resolved	Required Fields - Validation is not refreshing on scheduling screen	Thick Client GUI	1.12	100	1.13
335	Resolved	Scheduling - Exception when scrolling search results	Thick Client GUI	1.12	100	1.13
334	New	Scheduling - Insurance tab	Thick Client GUI	1.12	0	
333	New	Lookups Editor - Forms and Labels to Procedure mappings	Thick Client GUI	1.12	0	
332	New	Scheduling - Room closures are not being reflected in the GUI timeslots	Thick Client GUI	1.12	0	
331	New	Scheduling - Issue with procedures with less than 30 minute duration	Thick Client GUI	1.12	0	
330	New	Scheduling - Issue when searching over multiple days	Thick Client GUI	1.12	0	
329	New	Scheduling - Issue with times in search criteria	Thick Client GUI	1.12	0	
328	New	Scheduling - Edit Schedule	Thick Client GUI	1.12	0	
327	Resolved	Scheduling - Templates are not being stored as default	Admin Tools	1.12	100	1.13
326	Resolved	AvailabilityTemplate - Issue adding date ranges	Admin Tools	1.12	100	1.13
325	New	No Show - Workflow issues/suggestions	Thick Client GUI	1.12	0	
324	New	Insurance - No consideration for field length when entering policies	Thick Client GUI	1.12	0	
323	New	Search Providers - Missing Access String for Google Search	Thick Client GUI	1.12	0	
322	New	Search Providers - Missing Access Strings after upgrade	Admin Tools	1.12	0	
321	New	DataSet Visualizer - Does not show for Studys and CC Physician	Thick Client GUI	1.12	0	
320	New	Internal Person Search - Ignores permissions	Thick Client GUI	1.12	0	
319	Closed	Labels and Forms - Require ability to specify full path to forms	Admin Tools	1.12	100	1.12
318	New	Data Visualizers - Periodically the data visualizers on one tab carry over to another tab	Thick Client GUI	1.12	0	
317	New	Scheduling - Search results don't seem to be returning all timeslots comapred to Appointment Book	Thick Client GUI	1.12	0	
316	Closed	Appointment Book - Issue with new appointment on empty timeslot	Thick Client GUI	1.12	0	
315	New	Scheduling - Registration - Patient Contacts Arrival issue	Thick Client GUI	1.12	0	
314	New	DataSet Visualizer - Should be Read Only	Thick Client GUI	1.12	0	
313	New	Appointment Book - Out of memory exception	Thick Client GUI	1.12	0	
312	Closed	Scheduling - Filling up room schedules	Thick Client GUI	1.12	100	1.12
311	Resolved	Appointment Book - Issue converting timeslots to local time	Thick Client GUI	1.12	100	1.13
310	Resolved	Appointment Book - Needs to default to a configurable start of day	Thick Client GUI	1.12	100	1.13
309	New	Scheduling - Availability not reflected per template	Thick Client GUI	1.12	0	
308	Resolved	Scan Error - Patient Key does not allow nulls	Thick Client GUI	1.12	100	1.13
307	New	Order - dropdowns do not limit user to listed values	Thick Client GUI	1.12	0	
306	Resolved	Modalities - Unable to copy mappings	Admin Tools	1.12	100	1.13
305	Resolved	Scheduling - Advance Search	Thick Client GUI	1.12	100	1.13
304	New	Scheduling - Schedule New Order	Thick Client GUI	1.12	0	
303	Closed	Scheduling - Composite Codes - changing from single procedure to composite	Thick Client GUI	1.12	100	1.13

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302	New	Insurance - buttons are enabled when row count is zero	Thick Client GUI	1.12	0	
301	Closed	Lookups - Issue with validation on ScanType	Admin Tools	1.12	100	1.13
300	Resolved	Scheduling - Refresh lock timer continues to fire	Thick Client GUI	1.12	100	1.13
299	Resolved	Lookups - Availability Template - data storing incorrectly	Thick Client GUI	1.12	100	1.13
298	Resolved	Lookups - Availability Template - Add button, incorrect focus	Thick Client GUI	1.12	100	1.13
297	New	Lookups - Concurrency violation - Delete from lookup	Web Services/DB	1.12	0	
296	New	Lookups - Personnel - Concurrency violation	Services/DB	1.12	0	
295	Closed	Scheduling - Composite Codes	Thick Client GUI	1.12	100	1.13
294	New	Registration - Insurance tab is not properly enforcing required fields	Thick Client GUI	1.12	0	
293	Resolved	Scheduling - Issue adding second study row	Thick Client GUI	1.12	100	1.13
292	Closed	Data Visualizers - Only showing Patient Data	Admin Tools	1.12	0	
291	Closed	Scheduling - Getting prompted that user does not have permission to schedule	Thick Client GUI	1.12	100	1.13
290	New	Scheduling - Study picker has issues with case	Thick Client GUI	1.12	0	
289	Closed	Scheduling - When adding new study, study picker should get focus	Thick Client GUI	1.12	100	1.13
288	Resolved	Order - Search criteria is not defaulting properly	Thick Client GUI	1.12	100	1.13
287	Resolved	Order - Issue with referring delivery method being null	Web Services/DB	1.12	100	1.13
286	New	Installer - No indication that the application installed successfully	Thick Client GUI	1.12	0	
284	New	Personnel - Performance issues on save	Admin Tools	1.12	0	
283	New	Personnel - No character validation with usernames	Admin Tools	1.12	0	
282	New	Worklist - No means to specify "And" or "Or" filter	Thick Client GUI	1.12	0	
281	New	Order - Performance issue with CC Physicians	Thick Client GUI	1.12	0	
280	New	Order - Require additional criteria to filter referrals	Thick Client GUI	1.12	0	
279	New	Order - Performance issue with New Order screen	Thick Client GUI	1.12	0	
278	New	Carrier - No related table for Carrier Type	Admin Tools	1.12	0	
277	New	Registration - Issue presenting carrier notes to user	Thick Client GUI	1.12	0	
276	New	Carrier - Notes field requires more characters	Admin Tools	1.12	0	
275	New	Lookup - The carrier lookup is missing a filter bar	Admin Tools	1.12	0	
274	New	Authorization - InsuranceVerificationRequired is not consistent with other lookups	Admin Tools	1.12	0	
273	New	Lookup - Exception when removing referenced carrier	Admin Tools	1.12	0	
196	Progress	Edit and Add Patient - Age calculated field	In Thick Client GUI	1.12	100	
181	Closed	Scheduling - Room text box on the study grid	In Thick Client GUI	1.12	100	1.13
167	Progress	Permissions - Missing permission on Administration menu item	In Thick Client GUI	1.12	100	
106	Progress	Worklist - Issue with refreshing when web services are down	In Thick Client GUI	1.12	100	

User Pre-Release Notes

for RADNET rRIS
Build 1.13 & 1.14

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1. Purpose

This document describes some of the new features and changes implemented in rRIS as of the end of Sprints 13 and 14. This pre-release version of rRIS is referred to as Build 1.14.

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 rRIS Development team for the RadNet RIS management team.

3. Installing/Accessing the Application

The installation instructions for the rRIS 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

Build 1.14 is considered a new core release of the application and will require a reinstallation of rRIS.

If you experience difficulties accessing the application, please do not hesitate to contact Spencer MacDougall with the PEI RIS Development Team.

4. New Features and Enhancements

Export to Microsoft Excel for Worklist Printing

In Build 1.14, users now have the ability to export worklists to Microsoft Excel. This is available through the right-click export option on the worklist. This feature allows the user to not only print the worklist via page setup in Excel, but also perform analysis on the data.

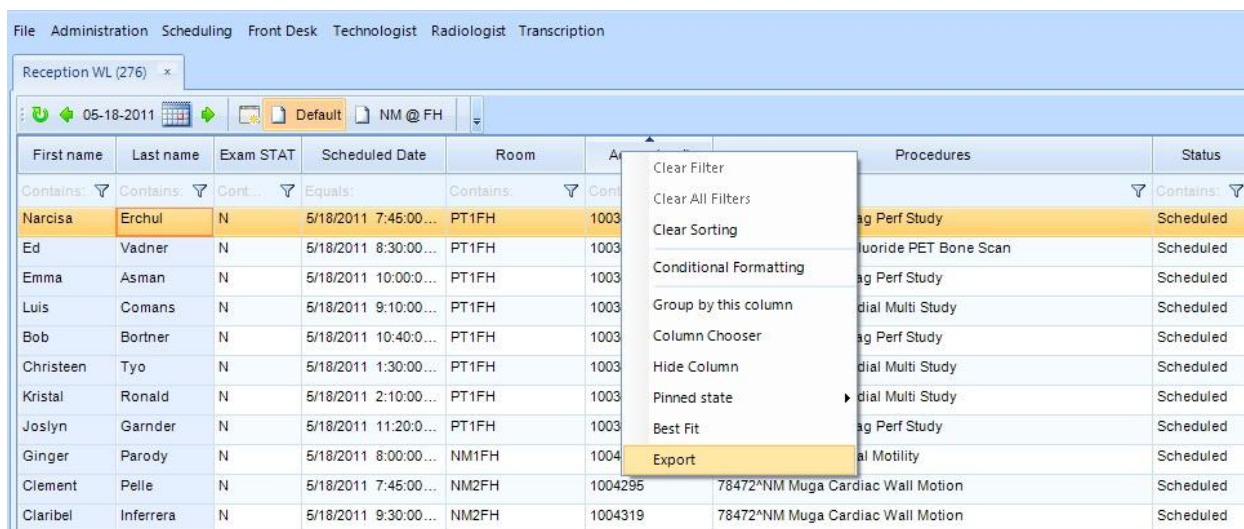


Figure 4.1 – Worklist Export Option

	A	B	C	D	E	F	G	H
1	Reception WL (276)							
2	05-18-2011 11:34 AM							
3	First name	Last name	Exam STAT	Scheduled Date	Room	Accession #	Procedures	Status
4	Narcisa	Erchul	N	5/18/2011 7:45	PT1FH	1003313	78459*PT/CT Myo Imag Perf Study	Scheduled
5	Ed	Vadner	N	5/18/2011 8:30	PT1FH	1003315	PT4*PT/CT Sodium Fluoride PET Bone Scan	Scheduled
6	Emma	Asman	N	5/18/2011 10:00	PT1FH	1003318	78459*PT/CT Myo Imag Perf Study	Scheduled
7	Luis	Comans	N	5/18/2011 9:10	PT1FH	1003320	78492*PT/CT Myocardial Multi Study	Scheduled
8	Bob	Bortner	N	5/18/2011 10:40	PT1FH	1003324	78459*PT/CT Myo Imag Perf Study	Scheduled
9	Christeen	Tyo	N	5/18/2011 13:30	PT1FH	1003328	78492*PT/CT Myocardial Multi Study	Scheduled
10	Kristal	Ronald	N	5/18/2011 14:10	PT1FH	1003336	78492*PT/CT Myocardial Multi Study	Scheduled
11	Joslyn	Garnder	N	5/18/2011 11:20	PT1FH	1003357	78459*PT/CT Myo Imag Perf Study	Scheduled
12	Ginger	Parody	N	5/18/2011 8:00	NM1FH	1004289	78258*NM Esophageal Motility	Scheduled
13	Clement	Pelle	N	5/18/2011 7:45	NM2FH	1004295	78472*NM Muga Cardiac Wall Motion	Scheduled
14	Claribel	Inferrera	N	5/18/2011 9:30	NM2FH	1004319	78472*NM Muga Cardiac Wall Motion	Scheduled
15	Mandie	Mimes	N	5/18/2011 10:00	NM1FH	1004341	NM9*NM EKG Tracing CARDIOLOGIST	Scheduled
16	Cleveland	Megill	N	5/18/2011 13:00	NM1FH	1004408	NM9*NM EKG Tracing CARDIOLOGIST	Scheduled
17	Corie	Kurokawa	N	5/18/2011 13:00	NM2FH	1004413	78464*NM Myocard Imag W Spec Sngl	Scheduled
18	Kalyn	Galston	N	5/18/2011 15:00	US1EL	1005099	93978*US Iliac Artery Duplex Comp	Scheduled
19	Linnea	Mormile	N	5/18/2011 8:30	US1EL	1005104	US61*US OB Follow Up 1 Fetus 1st Tri & OB TV	Scheduled
20	Tonda	Cutia	N	5/18/2011 9:00	US1EL	1005105	76942*US Fine Needle Aspiration	Scheduled
21	Timothy	Alcantas	N	5/18/2011 13:00	US1EL	1005110	76880*US Extrem Non Vascular	Scheduled
22	Terrilyn	Hefferman	N	5/18/2011 7:45	US1EL	1005112	93976*US Duplex Abd Pel Retro Lmt	Scheduled

Figure 4.2 – Worklist shown in Microsoft Excel

Read-Only Notes Field

A common problem with the current RadNet RIS applications is having notes on the order and patient totally editable. Notes from past edits can be modified and removed as the order progresses through the system making it impossible to understand what happened to the patient and upsets users as notes they added are getting removed.

In Build 1.14 a new notes control has been introduced which allows any user to add notes in the top area of the control and everyone can see the past notes as read-only. Each log entry is prefixed with the date followed by the user's initials. Super users will have the ability to edit the notes so invalid data can be cleaned up.

The screenshot displays the RADNET rRIS interface with three tabs: Patient, Order, and Insurance. The 'Order' tab is selected, showing the following sections:

- Referring Details:** Includes fields for Referring (AJALA, YOLANDA), Delivery Location (Work: 4437777869), Visited at (Work: 9105 FRANKLIN SQUARE DR, SUITE 309, BALTIMORE, MD, 21237), CC Physicians (JACKSON, WILLIAM B (x)), and Delivery Location for CC (Work: 4106822783).
- Exam Requested:** Includes fields for Practice (Advanced Radiology), Site, Study(s) (CT 3 Phase x), Body Part, Laterality, and checkboxes for Stat Exam and Stat Read.
- OrderNotes:** A list of notes with timestamps and user initials, such as '05-18-11 sbm - Patient requires an interpreter', '05-18-11 sbm - Insurance was denied. Patient has been contacted', '05-18-11 sbm - Patient called and is taking vacation, would like to move appt to the 25th', and '05-18-11 sbm - Patient prefers early morning appointment'.

Figure 4.3 – Read-Only Past Notes

Availability Templates on the Schedule Calendar

The availability template that is mapped to a scanner/room is now reflected in the calendar view when scheduling procedures. Available timeslots are shown in white while unavailable are represented by blue. In the example below, the ultrasound rooms are open at 7:45am.

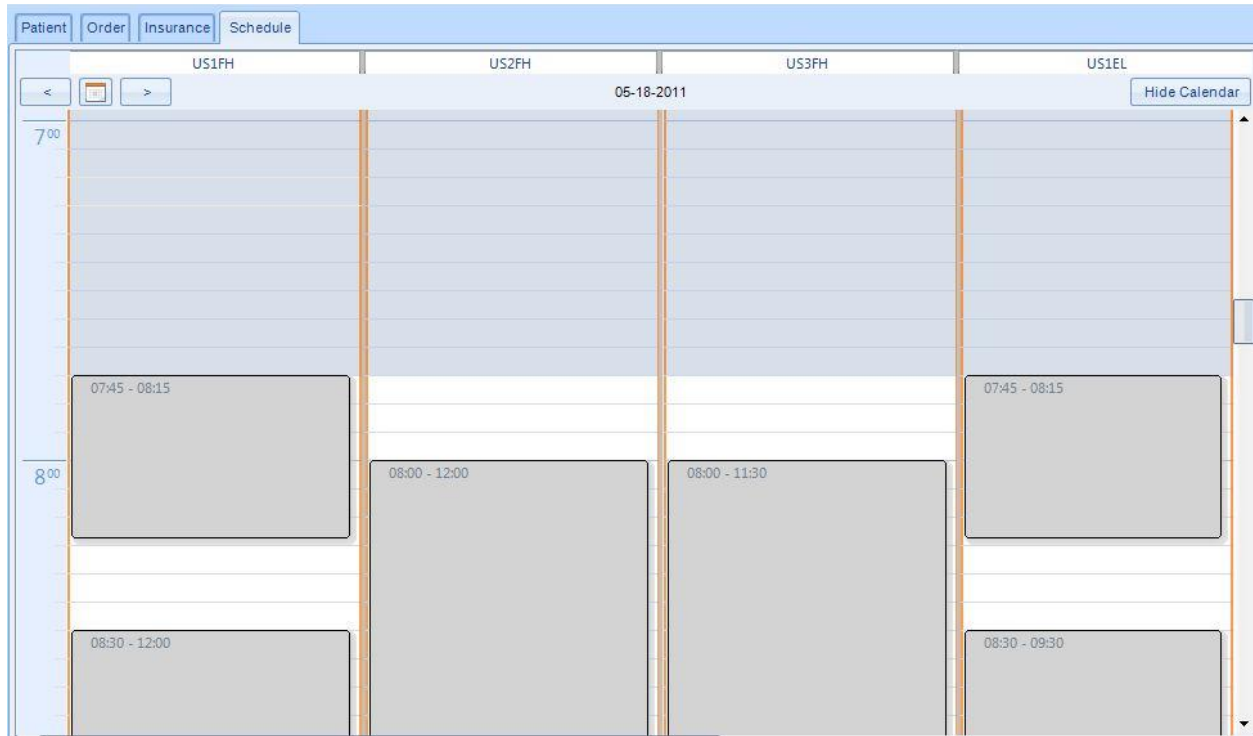


Figure 4.4 – Availability Template reflected in Scheduling Calendar View

Patient History Control

There is now a patient context aware history control that can be placed on user forms. Users like technologists and radiologists will have easy access to a patient's prior exams with the embedded patient history control.


Perform Exam (jeff carter) * x								
	Include	Scheduled Date	Room	Accession #	Locked by	Status	Procedures	Read STAT
	<input type="checkbox"/>	5/4/2011 3:30:00 PM	CT1FH	1001767		Signed1	CT22^CT Head W & Sinus W	Y
	<input type="checkbox"/>	5/7/2011 8:00:00 AM	CT1FH	1001987		Signed1	CT42^CT Chest W & Abdomen W/Wo	N
	<input type="checkbox"/>	5/7/2011 8:30:00 AM	XR1EL	1003181		Signed1	73615^FL Arthrogram Ankle Fluoro	N
	<input type="checkbox"/>	5/11/2011 2:10:00 PM	US2FH	1008763		Signed1	76604^US Chest	N
	<input type="checkbox"/>	5/6/2011 3:30:00 PM	US1FH	1008769		Signed1	76604^US Chest	Y
	<input type="checkbox"/>	5/19/2011 3:30:00 PM	CT1EL	1008998	spencer	Arrived	CT13^CT 3 Phase	N
	<input checked="" type="checkbox"/>	5/19/2011 3:30:00 PM	CT1LU	1008999	spencer	Arrived	CT66^CT Abdomen W & CTA Chest W/Wo	N
	<input type="checkbox"/>	5/20/2011 3:30:00 PM	CT1LU	1009000		Scheduled	CT55^CT Foot & Ankle	N

Figure 4.5 – Patient History Control shown on Technologist Screen

Scanning Control

A scanning control has been implemented to give rRIS users the ability to scan and view scanned documents. The scan control depends on pre-defined scan document types. A scan document type has the following properties:

Property	Description
Width	The width in inches of the document.
Height	The height in inches of the document.
Resolution	The resolution to scan the document at.
Colour	Whether colour should be capture in the scan document or use gray scale.
Duplex	Whether the scanner or the scanner control should scan both sides of the document.
Document association type	PatientLevel or ExamLevel. If PatientLevel, then this scanned document will be pinned to the patient. If ExamLevel, then this scanned document will be pinned to the patient and the exam.

A Scan control has been implemented as a user control. The screen shot below shows the scan control embedded in the registration screen.

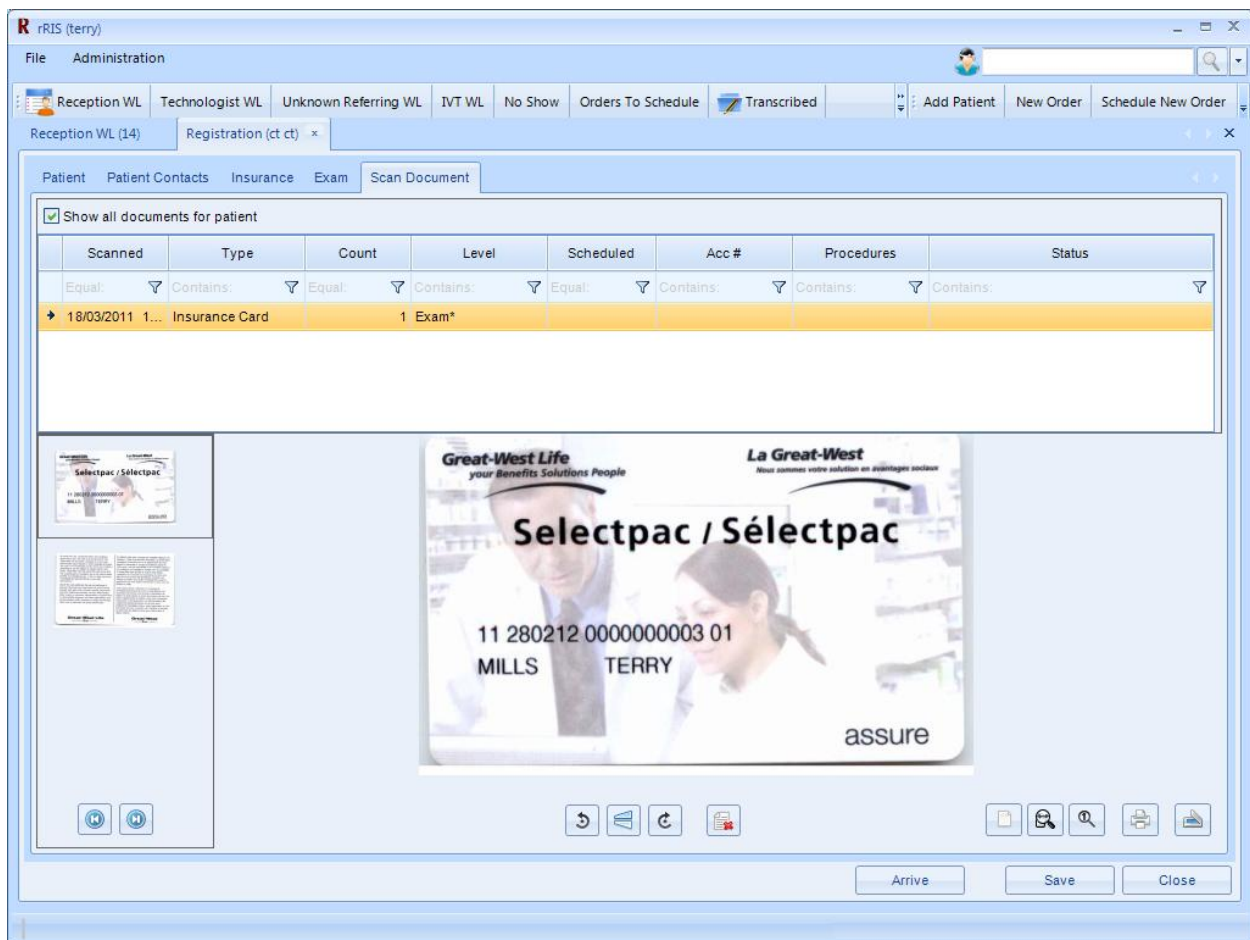


Figure 4.6 – Scan Control on Registration Screen

Screen Geography:










- The top of the control contains a grid of the scan documents for the patient and/or exam. If the scan control is instantiated at the exam level, then by default the list will include scan documents for the exam and scan documents for the patient that are not associated to other scanned documents (i.e. patient level scan documents)
- There is a “Show all documents for patient” check box at the top of the control. When checked, this will show all scan documents for the patient, including scanned documents from other exams. When not checked, it will show exam documents for this exam only plus patient level scan documents.

- The bottom 2/3 of the control contains the thumbnail strip and the image.
- The thumbnail strip is only visible when the scan document has more than one image, for example a front and back, multiple pages or combinations of both.



Figure 4.7 – Scan Control Thumbnail Strip

- At the bottom of the thumbnail strip contains some navigation buttons that allow the user to move up and down the thumbnail list.
- A user can also click the thumbnail image to change the displayed image.
- At the bottom of the scan control contains image controls.

	Rotate the image 90 degrees to the right. This will always be enabled for newly acquired images to allow the user to correctly orient the image. However, it depends on permission if the button will be enabled for previously scanned documents.
	Flip the image on the horizontal axis (same as rotating it 180 degrees). This will always be enabled for newly acquired images to allow the user to correctly orient the image. However, it depends on permission if the button will be enabled for previously scanned documents.
	Rotate the image 90 degrees to the left. This will always be enabled for newly acquired images to allow the user to correctly orient the image. However, it depends on permission if the button will be enabled for previously scanned documents.
	Delete the image. This will always be enabled for newly acquired images to allow the user to remove unwanted images. However, it depends on permission if the button will be enabled for previously scanned documents.
	Zoom out to fit the full image within the control
	Zoom out or in to fit the page width within the control (i.e. no horizontal scroll bars, but may include a vertical scroll bar)
	Show the original image size.
	Print the scan document.
	Scan or import new documents. This button is enabled based on a permission.

When the user acquires new scan documents, the following screen appears.

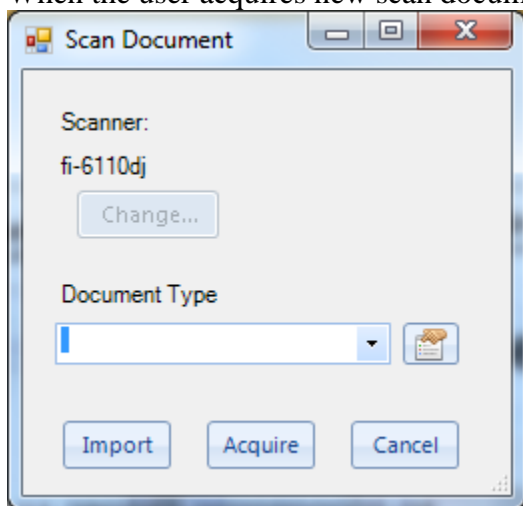



Figure 4.8 – New Scan Document Form

The “Change” allows the user to switch to a different scanner. If there is zero or only one scanner connected to the computer then the button is disabled. If there is only one scanner connected then the control will default to use that scanner. If there is more than one scanner, the button is enabled and there is no scanner selected by default. The document type combo is use to identify the type of document to be scanned or imported. The properties button  is used to allow the user to see the document type properties and change them if necessary. This button is only enabled if the user has permission. When pressed, the screen changes to the following:

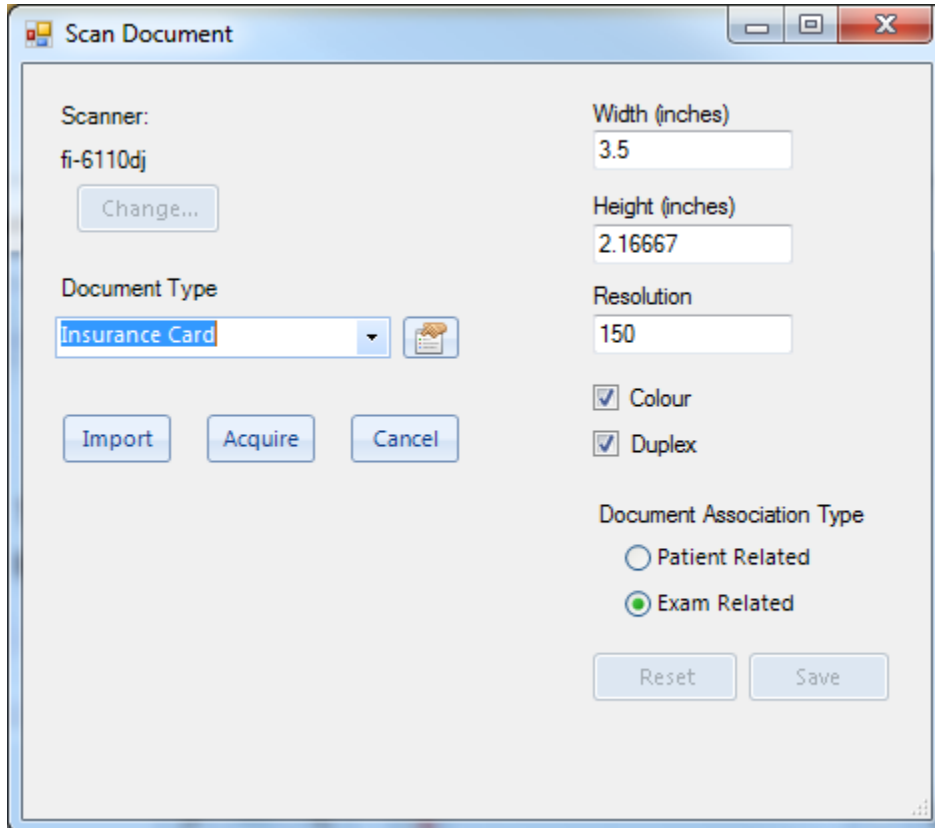


Figure 4.9 – Scan Document Properties Screen

The user now has the ability to change the scan document properties and save them back to the database. The scan document properties are discussed below:

- The “Import” button is used to import an image from the file system.
- The “Acquire” button initiates the scanner to scan a document.

If the scanner has an auto sheet feeder, the scanner will continue until all pages are scanned. When finished the “Scan Document” window will close and return to the scan control. If the scanner is a flatbed scanner then each document will have to be scanned separately. If the scanner is a flatbed scanner and the document type is duplex, the user will be prompted to flip the page.

The image area of the control has the following context menu:

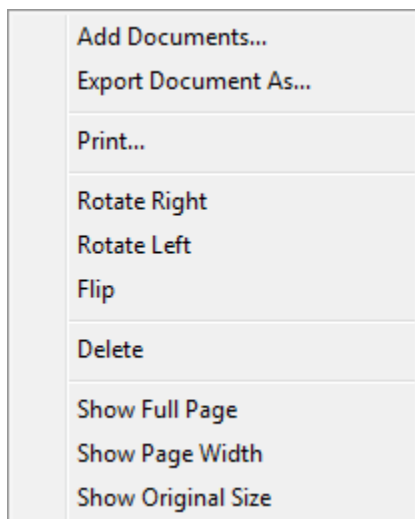
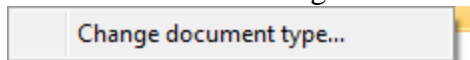


Figure 4.10 – Scan Document Context Menu

Most of the items on the menu match a button on the control. Like the buttons on the scan control these menu items will be visible, invisible, enabled and/or disabled based on permissions. The only feature on the context menu not included via a button is the “Export document as...” item. This item is also permission based. When clicked, the user is prompted with the file save dialog and asked to choose a path and file to save the current image to.

The scan document list grid also has a context menu.



This allows the user to change the document type of a newly acquired or existing document. This is also enabled/ disabled based on permission.

Associating Scanned Documents

There are two ways to associate a scanned document to more than one exam:

1. During acquisition
2. Post-acquisition in the scan document list

During Acquisition

The acquire scan screen was modified to include the patient jacket.

The screenshot shows a window titled "Scan Document" with a table of exams. The table has columns: Select, Study key, Accession #, Status code, Procedures, and Scheduled start date. The first row is highlighted with a blue background. Below the table, there is a "Document Type" dropdown menu, a folder icon, and three buttons: "Import", "Scan", and "Cancel".

Select	Study key	Accession #	Status code	Procedures	Scheduled start date
<input checked="" type="checkbox"/>	15331	1002330	Scheduled	76604^US Chest	3/31/11 3:30:00 PM
<input type="checkbox"/>	15324	1002315	ExamDone	74170^CT Abdomen W/Wo	3/29/11 1:00:00 PM

Figure 4.11 – Associating a Scanned Document to a Study during Acquisition

The patient jacket contains a complete list of the patient exams. A check box was added for each row. The current exam is always checked and cannot be unchecked. The user can check other exams. The newly acquired or imported image will be linked to every exam “checked” in the patient jacket. However, there is one exception. If the scan document acquired or imported is at the patient level, then the “checked” exams will be ignored as the scanned document will be related to all of the patient exams.

Post-Acquisition in the Scan Document List

If the user wants to “link” a scan document to other exams they can use the right click “Edit links...” menu items. Also available is the “Move to patient level” and “Move to exam level”.

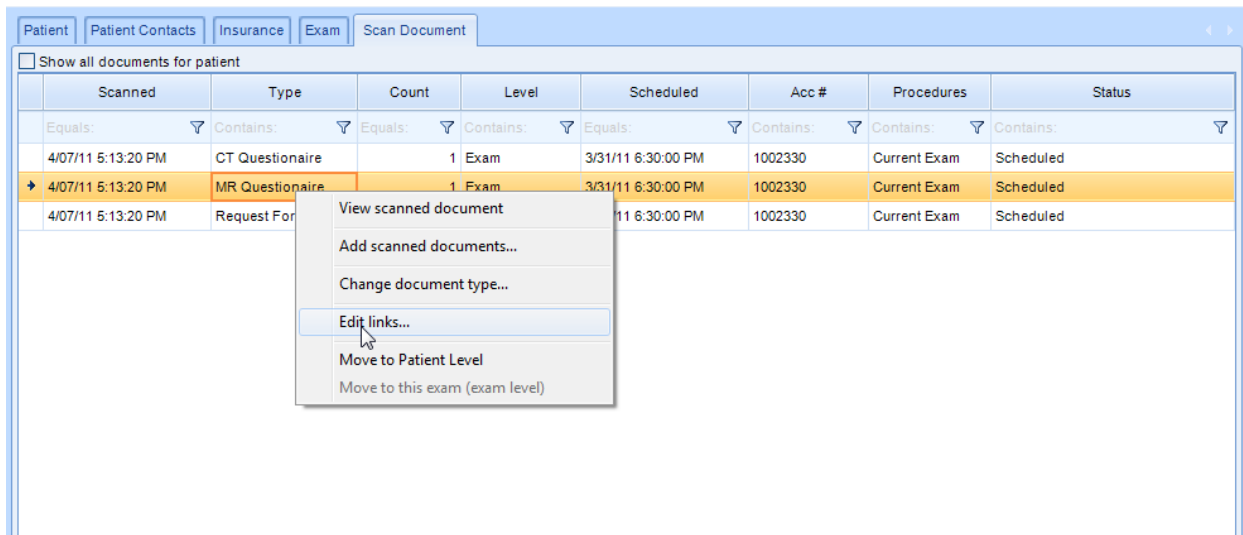


Figure 4.12 – Scan Document Context Menu

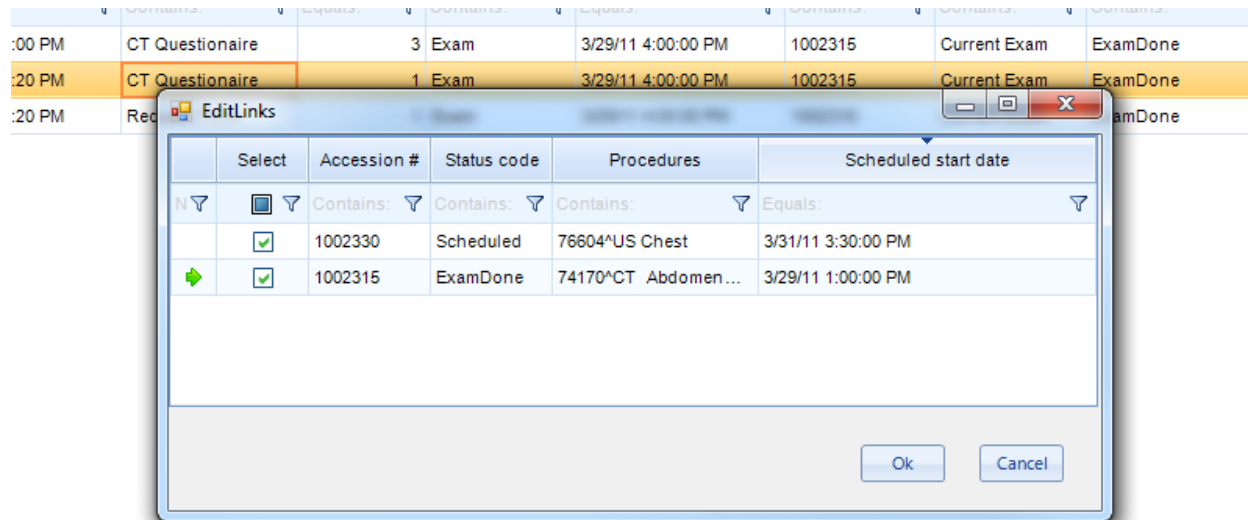


Figure 4.13 – Associating a Scanned Document to a Study after Acquisition

Below is a detailed explanation of the menu items available on the scan document context menu.

Function	Description
Edit Links...	<p>This menu option is only enabled when the user has the “Clinical.ScanDocs.AllowModifyScanDocuments” permission.</p> <p>This menu option is only enabled for exam level scan documents.</p> <p>The Edit Links feature will allow the user to link this scan document to one or more exams. It is very similar to the control on the “Acquire Documents” screen. The user must have one exam selected before pressing the “Ok” button.</p>
Move to patient level	<p>This menu option is only enabled when the user has the “Clinical.ScanDocs.AllowModifyScanDocuments” permission.</p> <p>This menu option is only enabled for exam level scan documents.</p> <p>The “move to patient level” will promote the scan document to the patient level and therefore will be shown in the scan document list for all of the patient exams.</p> <p>There is no undo function once the user promotes to the patient level. The user will need to “move to exam level” and then pin to each individual exam. However, the user can choose to close the form and not save changes, but this will also ignore any and all changes in the form.</p>
Move to exam level	<p>This menu option is only enabled when the user has the “Clinical.ScanDocs.AllowModifyScanDocuments” permission.</p> <p>This menu option is only enabled for patient level scan documents.</p> <p>The “move to exam level” will demote the scan document to the current exam.</p>

Bulk Printing of Forms

Build 1.14 supports the ability to select multiple rows in a worklist and print a form or label for each row. Instead of generating many instances of the same form, the application will generate one form with many pages.

The screenshot shows a web application window titled 'Reception WL (263)'. It contains a table with columns: First name, Last name, Exam STAT, Scheduled Date, Room, Accession #, Procedures, and Status. The table lists various patients and their scheduled exams. A context menu is open over the row for 'Cathi Griner', showing options: Registration, Edit Patient, Forms and labels (selected), Patient Folder, Audit History, and Copy Cell. The 'Forms and labels' submenu is also open, showing a list of forms and labels: Exams, CT History Sheet, Exam Form (highlighted), IV Contrast Consent, Medicare Questionnaire, Patient Registration, Payment Receipt, payments_subreport, Stat Results Form, Thyroid Ultrasound History Sheet Page 1, Thyroid Ultrasound Worksheet Page 2, and WhoAmI.

First name	Last name	Exam STAT	Scheduled Date	Room	Accession #	Procedures	Status
Cheree	Layland	N	5/19/2011 7:45:00...	PT1FH	1003364	78492*PT/CT Myocardial Multi Study	Scheduled
Rozella	Strothers	N	5/19/2011 7:45:00...	NM1FH	1004435	NM10*NM Miraluma	Scheduled
Violette	Goodreau	N	5/19/2011 7:45:00...	US1EL	1005421	76506*US Neonatal Head	Scheduled
Luanne	Forchione	N	5/19/2011 7:45:00...	US3FH	1005439	76811*US OB III 2-3 Tri Ta 1 Fet	Scheduled
Christopher	Fehrenbach	N	5/19/2011 7:45:00...	US2LU	1005485	USMC10*US (MC) Arterial/Pseudoaneurysm Unilat	Scheduled
Winter	Reinhardt	N	5/19/2011 7:45:00...	CT1FH	1005639	72191*CTA Pelvis W/Wo	Scheduled
Jong	Lichstein	N	5/19/2011 7:45:00...	CT1LU	1005668	72128*CT Thoracic Spine Wo	Scheduled
Orval	Hrbacek	N	5/19/2011 7:45:00...	DE1FH	1005783	77080*DX AXIAL SKELETON	Scheduled
Garnet	Prenatt	N	5/19/2011 7:45:00...	MA1EL	1006828	MA11*MA xDigi Mam Scr Bil & Diag Bil	Scheduled
Cara	Lapidus	N	5/19/2011 7:45:00...	MA1FH	1006831	77031*MA Stereotactic Biopsy	Scheduled
Maryrose	Deroos	N	5/19/2011 8:00:00...	US2EL	1005424	76801*US OB 1ST TRI TA 1 FETUS -LESS 14 WKS	Scheduled
Cathi	Griner	N	5/19/2011 8:00:00...	US1FH	1005433	93926*US Lwr Ext Art Duplex Unil	Scheduled
Desiree	Stewart	N	5/19/2011 8:00:00...	US2LU	1005434	US62*US OB Follow Up 1 Fetus 2-3 Tri & OB TV	Scheduled
Lynne	Lage	N	5/19/2011 8:00:00...	US11US	1005460	US11*US OB III 2-3 Tri TA TV 1 Fetus	Scheduled
Teodora	Feit	N	5/19/2011 8:00:00...	US2LU	1005786	77031*MA Stereotactic Biopsy	Scheduled
Luke	Llera	N	5/19/2011 8:00:00...	US2LU	1005984	77031*MA Stereotactic Biopsy	Scheduled
Olympia	Stringfellow	N	5/19/2011 8:00:00...	US2LU	1005996	77031*MA Stereotactic Biopsy	Scheduled
Ines	Welch	N	5/19/2011 8:00:00...	MR1LU	1006034	77031*MA Stereotactic Biopsy	Scheduled
Diedre	Pomiecko	N	5/19/2011 8:00:00...	MA2FH	1006835	77031*MA Stereotactic Biopsy	Scheduled
Leonida	Perrett	N	5/19/2011 8:00:00...	MA3FH	1006839	77031*MA Stereotactic Biopsy	Scheduled
Shawnta	Halpert	N	5/19/2011 8:00:00...	MA1LU	1006851	77031*MA Stereotactic Biopsy	Scheduled
Hallie	Dopico	N	5/19/2011 8:00:00...	MA1EL	1006868	77031*MA Stereotactic Biopsy	Scheduled
Lin	Vanlier	N	5/19/2011 8:05:00...	MA1FH	1006898	77031*MA Stereotactic Biopsy	Scheduled
Ruthe	Pauda	N	5/19/2011 8:05:00...	US3FH	1005487	US2LU	Scheduled
An	Koria	N	5/19/2011 8:15:00...	CT1LU	1005676	72129*CT Thoracic Spine W	Scheduled
Rosemarie	Vick	N	5/19/2011 8:15:00...	CT1LU	1005676	72129*CT Thoracic Spine W	Scheduled

Figure 4.14 – Dynamic Worklist Context Menu showing Forms and Labels

Patient Registration			
Advanced Imaging Partners		Patient Registration	
ARCHIBOLD, GILBERTO SIM		1004498	
Patient Information			
Last Name: ARCHIBOLD		First Name: GILBERTO MI: SIM	
Date Of Birth: 11/3/2005		Gender: Marital Status:	
Address 1:			
Address 2:			
City:		State: Zip Code:	
Home:		Work: Cell: Email:	
Responsible Party Information			
Last Name:		First Name: MI:	
Patient's Relationship to Responsible Party:			
Responsible Party Address:			
City:		State: Zip Code:	
Responsible Party Home #:		Responsible Party Work#:	
Medical Information			
Referring Physician: WILLIAM RAYFIELD MD			
Is this visit related to an auto accident? Y N Is this visit related to an injury sustained while at work? Y N			
Date of Injury _____			
<p>To Our Female Patients: Some imaging procedures are contra-indicated (not recommended) for patients who may be pregnant. If you may be pregnant, please notify one of our team members.</p> <p>By my signature below, I acknowledge that I have read and understand this statement and state that I am not pregnant and there is no chance that I may be pregnant.</p> <p>_____/_____/_____ Signature of Patient or Personal Representative Date</p> <p>Date of Last Menstrual Period : _____</p>			
AUTHORIZATION AND AGREEMENT			
I hereby authorize and direct my insurance carrier to pay directly to this provider of medical services any benefits due under my			

Figure 4.15 – Patient Registration Form with One Page per Worklist Row

Mapping Forms and Labels

Below is a screen show of the configuration screen for specifying form criteria and mapping to procedure codes.

The screenshot shows the 'Lookup Tables - FormsAndLabels' configuration window. It contains a main table with the following columns: Form Location, Event, description, display order, active, form category, gender, and carrier. The table lists several forms, including 'CT History Sheet', 'Exam Form', 'IV Contrast Consent', 'Patient Registration', 'Thyroid Ultrasound History Sheet Page 1', and 'Thyroid Ultrasound Worksheet Page 2'. The 'Thyroid Ultrasound History Sheet Page 1' is highlighted in orange.

Below the main table, there are two lists for mapping to procedures:

- Unassigned Procedures:**
 - DX Body Composition Study (0028T)
 - FL Arthrocentesis Inject Intermediate Jt (20605)
 - XR ORBITS FOR FOREIGN BODY (70030)
 - XR Mandible 1-3 Views (70100)
 - XR MANDIBLE 4 VIEWS (70110)
 - XR Mastoid 1-2 View, Ea Side (70120)
- Assigned to Procedures:**
 - US Thyroid (76536)
 - NM Thyroid Uptake Single (78000)
 - NM Thyroid Uptake Multi Det (78001)
 - NM Thyroid w/Uptake Single Det (78006)
 - NM Thyroid Mult Uptake and Scan_131 (78007)
 - NM Thyroid Mult Intake and Scan_123 (78007R)

Buttons for 'Save' and 'Close' are located at the bottom right of the window.

Figure 4.16 – Mapping Thyroid History Sheet to Procedures

The upper grid displays a list of all of the forms that are available for On Demand printing from a Content Window (e.g. registration) or event driven forms generation. The form location field uniquely identifies the form. The entries in this column are a drop down list of forms that have been published to the report server. The event column has a dropdown list of events that are eligible for automatic form generation (e.g. OrderCreated, PatientArrived, etc). The description column is for freeform text to add additional descriptive information to a form. Form category is used to help classify a form that may be useful for filtering to find the appropriate form. There is a form category lookup table that an administrator can use to specify additional values for the categories.

Gender and Carrier are fields that are used to help determine when a form should be generated. For example, an administrator may choose to configure the system to generate a specific form whenever a female patient is arrived. For an event of “PatientArrived”, the system will generate a form for all patients as they are arrived if no gender filter is specified. If a gender filter is specified, the system will look for the PatientArrived event AND a patient matching the specified gender.

With the insurance carrier dropdown, the system can apply an additional criteria (again using AND logic). The system can be configured to generate a certain form on Patient Arrived when the patient is a female and the patient has a specific insurance carrier.

The last criteria that can be applied is on procedure code. The system can be configured to generate forms only for particular procedures (for a given event, gender, and/or carrier). The assigned procedure and existing procedure lists are used to associate forms with procedures. If no procedures are specifically assigned to a form, the form is considered to be general purpose and is eligible to be generated whenever any type of exam is used.

Data Nuggets

Data Nuggets are buttons which are enabled on the worklist that show a small summary amount of clinical data for each worklist row. The data will pop-up in a window, which the user can move around and dock. The windows can be moved and closed through the standard windows actions; however, the user can also single click and drag a data nugget to open it in an alternate position and if he or she clicks on the button for a data nugget a second time the popup closes.

In addition the data nuggets for a particular worklist row will show as highlighted in a particular color when activated, which will match the outline of the popup window.

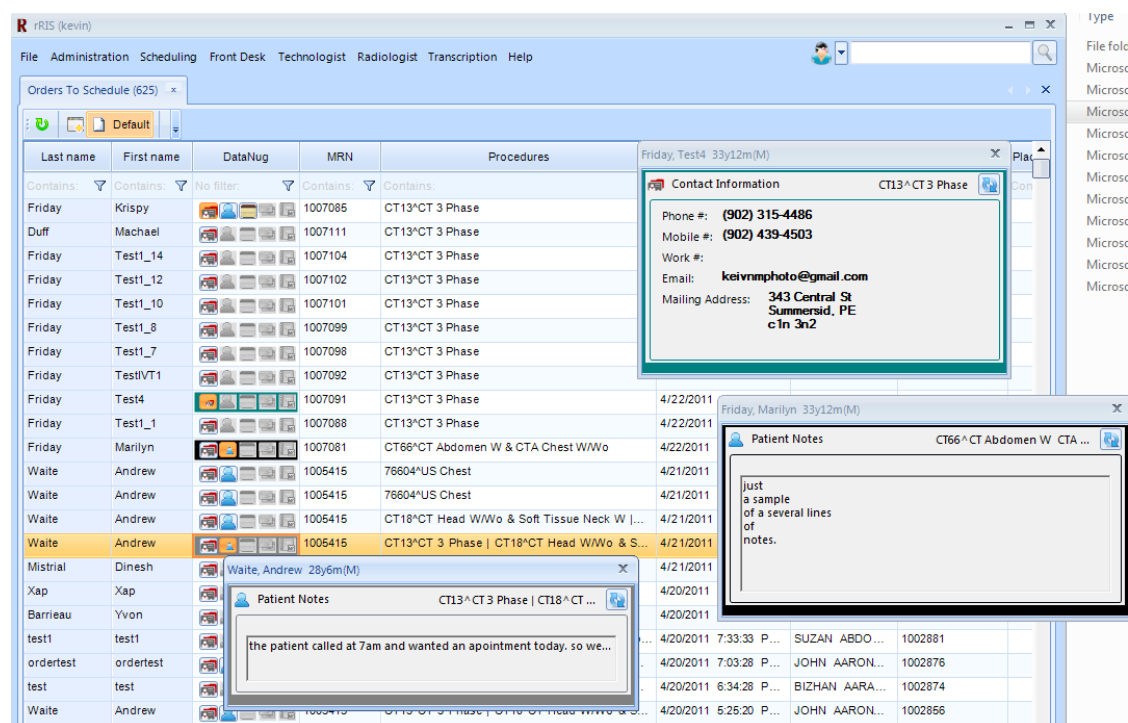


Figure 4.17 – Data Nuggets on the Orders To Schedule Worklist

IVT Workflow

There are two separate but combinable workflows to consider in IVT. The first is insurance verification (IV). The second is pre-certification (authorization) (PC).

IV (Insurance Verification) is based on an insurance carrier, along with a modality type. If a procedure is ordered or scheduled and it meets the carrier to modality type rule, then it will be flagged for IV. This flagging must occur if the order is a single study, multiple studies, or composite code of studies. The flagging of these orders will be done completely by the RIS, transparent to the scheduler/order taker. It will immediately appear on the screen, so that the scheduler will know if IV is required before the screen is even saved. On save, the order will appear on the IVT worklist. A worklist will be created that contains these orders (IVT Worklist), and a data collection screen will be created where the IVT person will see sufficient information to be able to contact the insurance company and determine if the patient has insurance.

The data collection screen is where the IVT specialist can enter notes, and have a checkbox where they can indicate when the IV is complete. If necessary, insurances can be added/changed/deleted while that screen is open, and the system will immediately show if IV is required for the newly entered insurance. If insurance is ultimately denied, the order will likely be manually cancelled, which will remove it from the worklist. The worklist can be filtered by practice.

Whether or not an order requires and/or meets IV is stored at the Visit level, which for Radnet is perceived at the order level, since typically there is a 1-1 relationship of visit to order.

The three “statues” for IV are **Not Required**, **Required**, and **Done**. The system sets **Required** and **Not Required** automatically, and the user sets the status to **Done** by selecting the Verification Complete checkbox. Note that these statuses are completely distinct from study statuses, and the order can be in any status while going through the IV workflow simultaneously. There are no rules to stop workflow based on the lack of IV.

Pre-cert (PC) is the collection of a pre-cert (also called authorization) number from the insurance company. Whether or not a study requires PC is based on rules configured in the insurance table. The relationship is Insurance Carrier to (Modality Type(s) and/or CPT code(s)) and Practice.

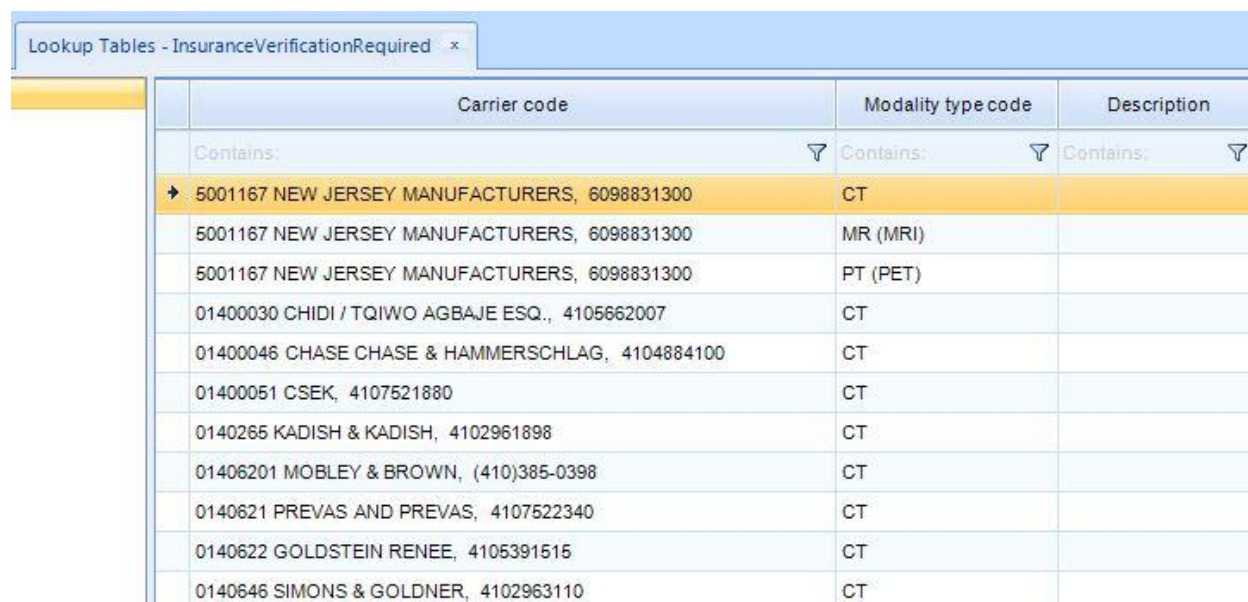
Whether or not a CPT code requires pre-cert will be determined automatically by rRIS, but unlike IV, it does not need to be immediately presented on the scheduler’s screen. It will be determined as the order is saved or scheduled, and sent to the IVT worklist. It is determined and stored at the CPT code level. Note that an order can have multiple procedure codes, and each procedure code can have one or more CPT codes, any of which could require pre-cert based on

the rules above and each pre-cert needs to be stored at that same (CPT) code level. To avoid overload on the worklists however, an order that contains multiple required PC's should appear on the worklist only once per order, but within the order all required PC's should be clear.

It is also a requirement that the system be able to collect PC when the study is in any status. The way that rRIS stores the order before it is scheduled adds internal complexity, however this is in no way visible to the user.

It is also a requirement that during the initial stages of the workflow (ordering, checking in, tech workflow) that studies and/or insurances may be altered. This may invalidate PC numbers and must be able to automatically send these orders back to the IVT worklist without losing any data that was already collected. Note that these rules apply to single studies, multiple studies, and composite codes. For example, if a study is removed from an order and a new series added instead, the pre-cert (if captured) for the original study pre-cert number must be maintained by the system, but (if necessary) the newly added studies may require pre-cert numbers of their own.

A configuration screen called Insurance Verification Required allows the administrator to correlate an insurance carrier and a modality type.



Carrier code	Modality type code	Description
Contains: ▼	Contains: ▼	Contains: ▼
5001167 NEW JERSEY MANUFACTURERS, 6098831300	CT	
5001167 NEW JERSEY MANUFACTURERS, 6098831300	MR (MRI)	
5001167 NEW JERSEY MANUFACTURERS, 6098831300	PT (PET)	
01400030 CHIDI / TQIWO AGBAJE ESQ., 4105662007	CT	
01400046 CHASE CHASE & HAMMERSCHLAG, 4104884100	CT	
01400051 CSEK, 4107521880	CT	
0140265 KADISH & KADISH, 4102961898	CT	
01406201 MOBLEY & BROWN, (410)385-0398	CT	
0140621 PREVAS AND PREVAS, 4107522340	CT	
0140622 GOLDSTEIN RENEE, 4105391515	CT	
0140646 SIMONS & GOLDNER, 4102963110	CT	

Figure 4.18 – Insurance Verification Required matching Carrier to Modality Type

A new admin screen was also built to configure the rules under which a study may require a pre-cert. The relationship is Insurance carrier to Modality type (or CPT code) and practice. This is found in Configuration – Carrier. The user selects a carrier then right-clicks and selects “Pre-Cert Rules”.

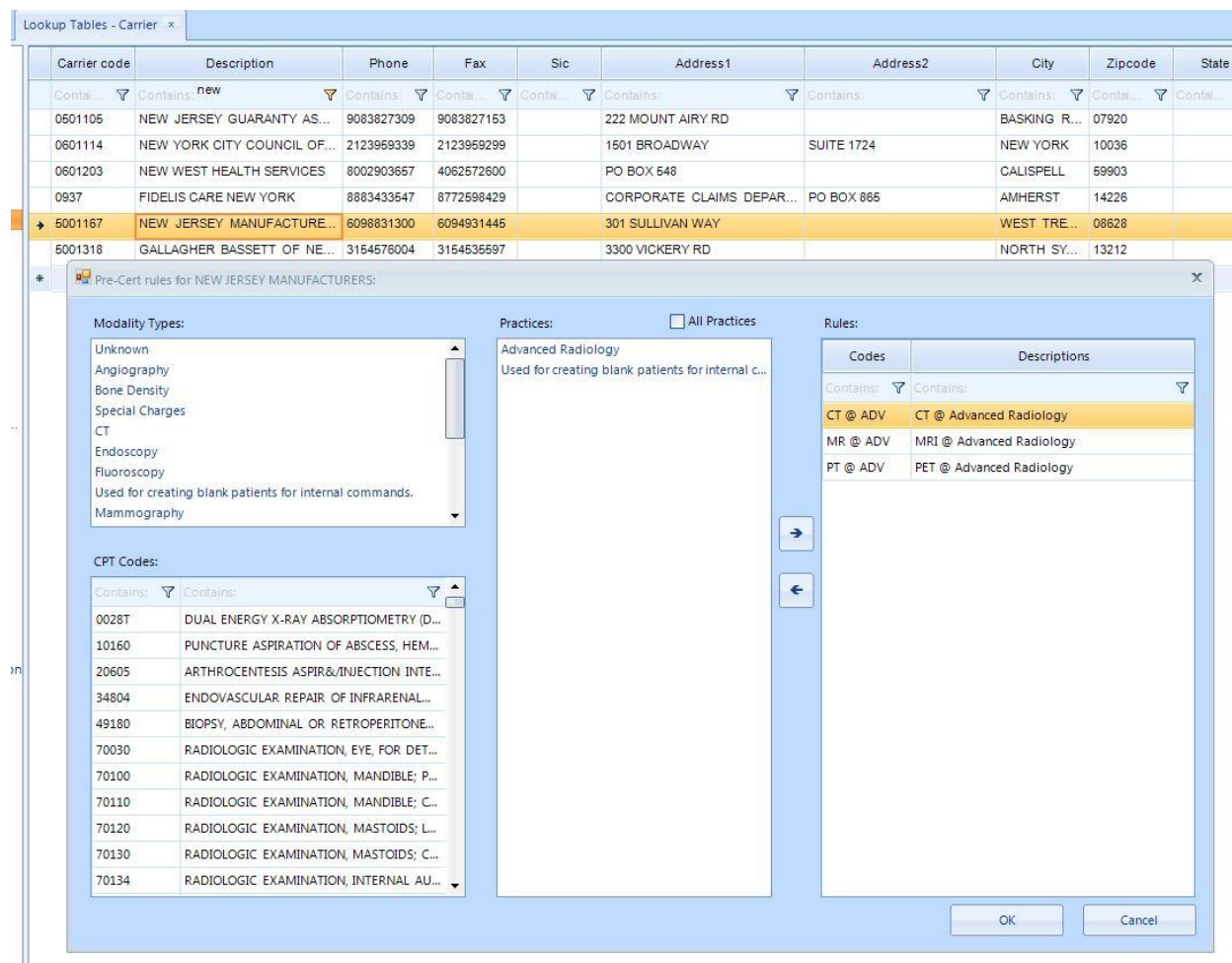
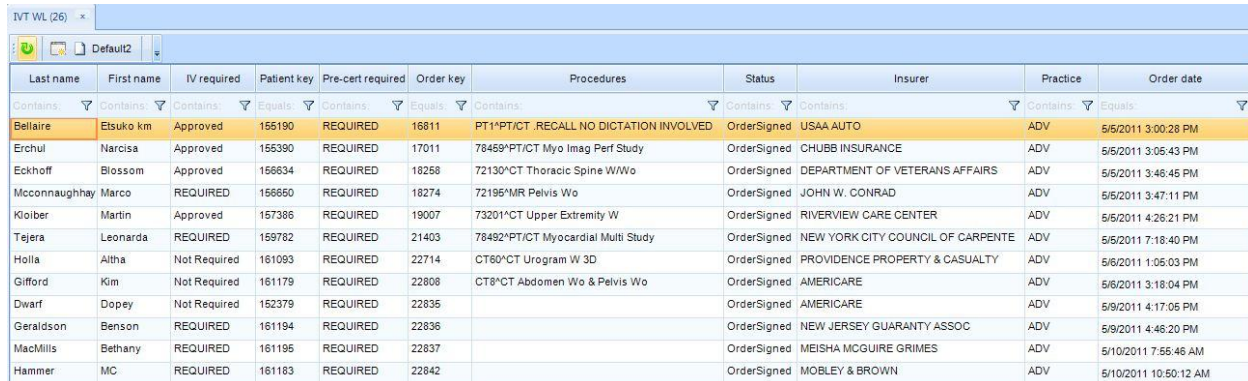


Figure 4.19 – Defining Pre Cert Rules at an Insurance Carrier Level

RADNET, Inc. – rRIS Pre-Release Notes

The IVT worklist contains columns for Patient name, Practice, Procedure(s), Insurance Carrier, Pre-cert Status, Insurance Verified Status, Requested Date, and Study Status. Items appear on this worklist by having a pre-cert status of anything other than Done, or a Verify Insurance status of Pending Confirmation.



The screenshot shows a web application window titled "IVT WL (26)". It contains a table with 11 columns: Last name, First name, IV required, Patient key, Pre-cert required, Order key, Procedures, Status, Insurer, Practice, and Order date. The table lists 15 patient records. The first record, Bellaire Etsuko km, is highlighted in orange and has a "REQUIRED" pre-cert status. The other records have various pre-cert statuses, including "REQUIRED", "Not Required", and "Approved". The "Status" column for all records is "OrderSigned". The "Insurer" column lists various insurance carriers like USAA AUTO, CHUBB INSURANCE, and AMERICARE. The "Practice" column lists various medical practices like ADV and RIVERVIEW CARE CENTER. The "Order date" column shows dates ranging from 5/5/2011 to 5/10/2011.

Last name	First name	IV required	Patient key	Pre-cert required	Order key	Procedures	Status	Insurer	Practice	Order date
Bellaire	Etsuko km	Approved	155190	REQUIRED	16811	PT1*PT/CT, RECALL NO DICTATION INVOLVED	OrderSigned	USAA AUTO	ADV	5/5/2011 3:00:28 PM
Erchul	Narcisa	Approved	155390	REQUIRED	17011	78459*PT/CT Myo Imag Perf Study	OrderSigned	CHUBB INSURANCE	ADV	5/5/2011 3:05:43 PM
Eckhoff	Blossom	Approved	156834	REQUIRED	18258	72130*CT Thoracic Spine W/Wo	OrderSigned	DEPARTMENT OF VETERANS AFFAIRS	ADV	5/5/2011 3:46:45 PM
Mcconnaughay	Marco	REQUIRED	156650	REQUIRED	18274	72195*MR Pelvis Wo	OrderSigned	JOHN W. CONRAD	ADV	5/5/2011 3:47:11 PM
Kiolber	Martin	Approved	157386	REQUIRED	19007	73201*CT Upper Extremity W	OrderSigned	RIVERVIEW CARE CENTER	ADV	5/5/2011 4:26:21 PM
Tejera	Leonarda	REQUIRED	159782	REQUIRED	21403	78492*PT/CT Myocardial Multi Study	OrderSigned	NEW YORK CITY COUNCIL OF CARPENTE	ADV	5/5/2011 7:18:40 PM
Holla	Altha	Not Required	161093	REQUIRED	22714	CT60*CT Urogram W 3D	OrderSigned	PROVIDENCE PROPERTY & CASUALTY	ADV	5/6/2011 1:05:03 PM
Gifford	Kim	Not Required	161179	REQUIRED	22808	CT8*CT Abdomen Wo & Pelvis Wo	OrderSigned	AMERICARE	ADV	5/6/2011 3:18:04 PM
Dwarf	Dopey	Not Required	152379	REQUIRED	22835		OrderSigned	AMERICARE	ADV	5/9/2011 4:17:05 PM
Geraldson	Benson	REQUIRED	161194	REQUIRED	22836		OrderSigned	NEW JERSEY GUARANTY ASSOC	ADV	5/9/2011 4:46:20 PM
MacMills	Bethany	REQUIRED	161195	REQUIRED	22837		OrderSigned	MEISHA MCGUIRE GRIMES	ADV	5/10/2011 7:55:46 AM
Hammer	MC	REQUIRED	161183	REQUIRED	22842		OrderSigned	MOBLEY & BROWN	ADV	5/10/2011 10:50:12 AM

Figure 4.20 – IVT Worklist showing Insurance Verification Required

The IVT screen uses a patient tab and an IVT tab. On the IVT tab there is a grid of insurances for the selected order. One column of this grid is “Insurance verification required”, which will show the Y/N based on the Insurance Carrier and Modality Type. There is a text box for IVT notes where the user can enter any notes and checkbox to indicate that the verification is complete. Once the user enters that verification complete and the study is saved, this item will fall off the IVT worklist. If the screen is later re-opened, the IV checkbox will be greyed out so that it cannot be un-checked. There should never be a reason on un-set IV.

The CPT codes are listed in the grid named “Billing Code Information”. This will show all CPT codes for the selected order. Each grid row has a data collection field for the pre-cert number. It also has a pre-cert status, which is a drop down list box which contains the statuses “REQUIRED”, “Approved”, “Denied”, and “Pending response”. It is the job of the user to collect the pre-cert number per CPT code, and change the status as appropriate. Only when the status is Approved or Denied does this item fall off the IVT worklist. There is a checkbox below this grid “Show inactive CPT codes”. If a CPT code was pre-certified and then the study was later changed, rRIS must maintain the original pre-cert codes but also allow the new codes to be pre-certified. Setting this checkbox on will show the other CPT codes and their pre-cert statuses.

The screenshot displays the IVT (Insurance Verification Tab) interface. At the top, there are tabs for 'Patient' and 'Insurance Verification Pre-Cert'. Below the tabs, the 'Insurance Policies' section contains a table with columns: Note, Carrier code, Carrier name, Policy number, Group name, Group number, Phone, Notes, Insurance verification, and Priority. A single row is visible with the following data: Note (dropdown arrow), Carrier code (0140713), Carrier name (MEISHA MCGUIRE GRIMES), Policy number (65629), Group name (radnet1), Group number (4561), Phone (4102342000), Notes (**ENTER ONE CALL IN APPOINTMENT TAB IN ORD...), Insurance verification (REQUIRED), and Priority (Primary). Below the table is a 'Manage Policies' button. The 'Verification and Pre-Cert Notes' section has a checkbox for 'Verification Complete' (checked) and a text area containing the note '05-20-11 sbm - Verification completed by phone'. The 'Billing Code Information' section contains a table with columns: billing code, pre certification number, and pre cert required flag. A single row is visible with the following data: billing code ((74170) COMPUTED TOMOGRAPHY, ABDOMEN; WITHOUT CONTRAST MATERIAL, FOLLOWED BY CONTRAST MATERIAL(S) AND FURTHER SECTIONS), pre certification number (7845), and pre cert required flag (Approved). At the bottom, there is a checkbox for 'Show inactive CPT codes'.

Note	Carrier code	Carrier name	Policy number	Group name	Group number	Phone	Notes	Insurance verification	Priority
→	0140713	MEISHA MCGUIRE GRIMES	65629	radnet1	4561	4102342000	**ENTER ONE CALL IN APPOINTMENT TAB IN ORD...	REQUIRED	Primary

Manage Policies

Verification and Pre-Cert Notes

☒ Verification Complete

05-20-11 sbm - Verification completed by phone

billing code	pre certification number	pre cert required flag
(74170) COMPUTED TOMOGRAPHY, ABDOMEN; WITHOUT CONTRAST MATERIAL, FOLLOWED BY CONTRAST MATERIAL(S) AND FURTHER SECTIONS	7845	Approved

☐ Show inactive CPT codes

Figure 4.21 – Updating IVT with Verification Notes and Authorization Number

Technologist Workflow

A technologist workflow has been introduced in Build 1.14. The Technologist Worklist is a date-driven worklist that shows patients that are marked as Arrived, Started, Suspended, and Discontinued for the day. The Perform Exam screen is the main data form for the technologist. It consists of an embedded Patient History Worklist at the top of the screen, Patient tab, Documentation tab, Billing Codes tab, Scan Documents tab, and Notes/Exam Times tab.

Include	Room	Accession#	Locked by	Status	Procedures	Read STAT	Scheduled Date
<input type="checkbox"/>	CT1LU	1009000		Scheduled	CT55*CT Foot & Ankle	N	5/20/2011 3:30:00 PM
<input type="checkbox"/>	CT1EL	1008998		Discontinued	CT13*CT 3 Phase	N	5/19/2011 3:30:00 PM
<input checked="" type="checkbox"/>	CT1LU	1008999	spencer	Started	CT66*CT Abdomen W & CTA Chest W/Wo	N	5/19/2011 3:30:00 PM
<input type="checkbox"/>	US2FH	1008763		Signed1	76604*US Chest	N	5/11/2011 2:10:00 PM
<input type="checkbox"/>	XR1EL	1003181		Signed1	73615*FL Arthrogram Ankle Fluoro	N	5/7/2011 8:30:00 AM
<input type="checkbox"/>	CT1FH	1001987		Signed1	CT42*CT Chest W & Abdomen W/Wo	N	5/7/2011 8:00:00 AM
<input type="checkbox"/>	US1FH	1008769		Signed1	76604*US Chest	Y	5/6/2011 3:30:00 PM

Patient | Documentation | Billing Codes | Scan Documents | Notes / Exam Times

Tech Notes

Technologists Notes:

Patient has trouble lying down

Primary Tech: Molyneaux, Levin
 Assisting Tech 1:
 Assisting Tech 2:
 Last Menstrual Period: mm-dd-yyyy ☐ Pregnant ☐ Not Pregnant
☒ Shielded Patient

Procedure
 Scanner: CT1LU
 Performed Procedure: CT Abdomen W & CTA Chest W/Wo (CT66)
 Laterality/Body Part: / Abdomen
 Change Reason Code:
 Change Reason Note:

Chief Complaint
 Referring Physician: AJALA, YOLANDA Phone: 4437778300
 Chief Complaint: Patient is complaining of back pain

Figure 4.22 – Technologist Perform Exam Screen – Documentation Tab

The **Technologist Notes** text box is a simple mapping to a tech notes field that allows the technologist to enter notes.

The **Primary Tech**, assisting tech 1, and assisting tech 2 are study level attributes. They are filtered to include all Techs in the Practice in which the study was scheduled. The Primary Tech field is mandatory if the status is Started.

Last Menstrual Period – this field is disabled if the gender is “Male”. There is a configuration value that indicates which gender represents Male.

Pregnancy – these are represented as radiobuttons so the application can force the tech to answer the question before advancing the study to started.

Shielded Patient – a yes/no flag that indicates whether the tech shielded the patient. This is not a required field.

Scanner – defaults to the scheduled modality. The list is filtered to all modalities of a particular type for a particular site. E.g. if the study is scheduled on a CT in the Summerside clinic, the tech cannot choose either an MRI in Summerside or a CT in Charlottetown. Scanner is a required field.

Performed Procedure – defaults to the scheduled procedure. The list is filtered to show only procedures that can be performed on the modality that was specified when the exam was scheduled. If the Performed Procedure changes, the change reason code dropdown box becomes enabled. This will also restart the Insurance Verification Process.

Change Reason Code – required, but only enabled if the procedure changes.

Change Reason Note – freeform text that only becomes enabled if the procedure changes.

Referring Physician (hyperlink) – show the name and phone number of the referring physician for the current order. The link performs a personnel search so that the user sees more contact detail for the physician

First Name	Last Name	Summary	Home Addresses	Work Addresses	Resource Details
YOLANDA	AJALA	Gender: M Cell: 1619164852 ID: 18020		Fax Reports to 443777869 9105 FRANKLIN SQUARE I SUITE 309 BALTIMORE, MD 21237 (US) Phone #: 4437778300	Referring NPI: 1619164852

Figure 4.23 – Referring Physician Search

Chief Complaint – this is mapped to Order Indication.

Technologist WL (4)

Perform Exam (jeff carter) * x

	Include	Room	Accession #	Locked by	Status	Procedures	Read STAT	Scheduled Date
	<input type="checkbox"/>	CT1LU	1009000		Scheduled	CT55*CT Foot & Ankle	N	5/20/2011 3:30:00 PM
	<input type="checkbox"/>	CT1EL	1008998		Discontinued	CT13*CT 3 Phase	N	5/19/2011 3:30:00 PM
	<input checked="" type="checkbox"/>	CT1LU	1008999	spencer	Started	CT66*CT Abdomen W & CTA Chest W/Wo	N	5/19/2011 3:30:00 PM
	<input type="checkbox"/>	US2FH	1008763		Signed1	76604*US Chest	N	5/11/2011 2:10:00 PM
	<input type="checkbox"/>	XR1EL	1003181		Signed1	73615*FL Arthrogram Ankle Fluoro	N	5/7/2011 8:30:00 AM
	<input type="checkbox"/>	CT1FH	1001987		Signed1	CT42*CT Chest W & Abdomen W/Wo	N	5/7/2011 8:00:00 AM
	<input type="checkbox"/>	US1FH	1008769		Signed1	76604*US Chest	Y	5/6/2011 3:30:00 PM

Patient

Documentation

Billing Codes

Scan Documents

Notes / Exam Times

Billing Code Information

	billing code	pre certification number	cpt modifier1	cpt modifier2	units	change reason	pre cert required flag
	(71275) COMPUTED TOMOGRAPHIC ANGIOGR...	7845					Approved

Figure 4.24 – Technologist Perform Exam Screen – Billing Codes Tab

This grid will show all active billing/CPT codes for the studies that the tech is currently documenting. In the event that the tech is working on two studies at once, CPT codes from both will be displayed – the tech does not need to switch rows on the patient history grid to see the different bill codes.

Billing Code – billing codes relate to procedures, the tech screen does not directly add new rows to this grid, but does call out to other IVT code libraries when the procedure changes.

Precert #/ precert required flag. – Shows the pre-cert status of the study.

CPT Modifiers – Factors that could affect the cost of the procedure (extra surgeons required, etc).

Units – the number of units of contrast used.

Change reason – a hard coded list that explains the reason for the CPT modifiers. This will be lookup table driven later.

Include	Room	Accession#	Locked by	Status	Procedures	Read STAT	Scheduled Date
<input type="checkbox"/>	CT1LU	1009000		Scheduled	CT55^CT Foot & Ankle	N	5/20/2011 3:30:00 PM
<input type="checkbox"/>	CT1EL	1008998		Discontinued	CT13^CT 3 Phase	N	5/19/2011 3:30:00 PM
<input checked="" type="checkbox"/>	CT1LU	1008999	spencer	Started	CT66^CT Abdomen W & CTA Chest W/Wo	N	5/19/2011 3:30:00 PM
<input type="checkbox"/>	US2FH	1008763		Signed1	76604^US Chest	N	5/11/2011 2:10:00 PM
<input type="checkbox"/>	VB1EL	1002181		Signed1	72615^EL Arthrogram Ankle Elbow	N	5/7/2011 8:30:00 AM

Scheduling / Arrival

Scheduled Time: 05-19-2011 3:30 PM Scheduled By: [MacDougall, Spencer Phone: \(902\) 456-1231](#)

Arrival Time: 05-18-2011 1:49 PM Arrived By: [MacDougall, Spencer Phone: \(902\) 456-1231](#)

Arrival Early/Late: 25 hours 41 minutes early

Exam Time

Start Time: 05-20-2011 11:22 AM Completed By: [MacDougall, Spencer Phone: \(902\) 456-1231](#)

Completed Time: mm-dd-yyyy h:mm am/pm

Start Early/Late: n/a

Exam Duration: n/a

Appointment Notes

05-20-11 sbm -

Patient Notes

05-20-11 sbm -

Start Suspend Complete Abort Save Close

Figure 4.25 – Technologist Perform Exam Screen – Notes/Exam Times Tab

This tab shows the Scheduled Time, Arrival Time, Start Time and completed time for the study. It also shows a hyperlink for the user that scheduled, arrived, or performed the exam (the behaviour matches the behaviour for the referring physician hyperlink). There are some calculated fields that show whether the patient arrived early or late, whether the exam was started early or late, and whether the exam duration was greater than or less than the duration indicated for that procedure. The appointment notes and patient notes are mapped to notes columns at the visit and patient level respectively.

The status buttons available to the tech at the bottom of the screen are conditionally enabled based on the current status of the study. For example, the tech cannot Start an exam after it has already been set to Discontinued.

5. Known Limitations

Bugs, Suggested Features, and Support Issues are now tracked in a web based system called Redmine. The following is a snapshot of the issues found in Build 1.13 and 1.14. A number of issues had been found and immediately resolved as part of the clean-up process in preparation for the demos during the week of May 9th.

#	Status	Subject	Category	Found	%Done	Resolved
368	New	Tech - Patient History should be scrollable	Thick Client GUI	1.14	0	
367	New	Scan Document - Form does not cascade properly	Thick Client GUI	1.14	0	
366	New	Scan Document - Missing scroll bar on patient history grid	Thick Client GUI	1.14	0	
365	New	ProcedureCode - Procedure group code should be a required field	Admin Tools	1.14	0	
364	New	Insurance - Prompted for Claim Number when not using carrier	Thick Client GUI	1.14	0	
363	Resolved	Order DW - Patient Height	Thick Client GUI	1.13	100	1.15
362	Resolved	When cancelling a study it does not free up the booked time in the booking summary	Web Services/DB	1.13	100	1.15
361	In Progress	changing a scheduled procedure causes multiple rows in c_study_item and the gui and service does not know which code is active	Web Services/DB	1.13	0	
357	Resolved	Lookup table filters with dropdown datatype don't work		1.13	100	1.14
356	Closed	Edit Order - Same user can Edit and Schedule the same order causing exception	Thick Client GUI	1.13	0	
355	Resolved	Edit Order - Does not retrieve or save CC Physicians	Thick Client GUI	1.13	100	1.14
354	New	Context Menus ignore access strings	Thick Client GUI	1.13	0	
353	New	Labels and Forms - System does not check to see if parameter is available	Thick Client GUI	1.13	0	
352	Resolved	Registration - User can Arrive patient again late in the workflow	Thick Client GUI	1.13	100	1.14
351	Resolved	Technologist Workflow - Scanner not displaying for Exam	Thick Client GUI	1.13	100	1.14
350	Resolved	Scan Error - Move to Patient Level	Thick Client GUI	1.13	100	1.14
349	Resolved	Scanning - Technologist WL	Thick Client GUI	1.13	100	1.14
348	Resolved	Scanning - Click Patient Folder Error	Thick Client GUI	1.13	100	1.14
347	Resolved	Scheduling - ReadOnly Notes strategy	Thick Client GUI	1.13	100	1.14
346	Resolved	Roles should not display if there are no child items	Thick Client GUI	1.13	100	1.14
345	Resolved	Exam Done WL - Export to Excel	Thick Client GUI	1.13	100	1.14
344	Resolved	Order - CC Physicians show key values on refresh	Thick Client GUI	1.13	100	1.14

User Pre-Release Notes

for RADNET rRIS

Build 1.15

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1. Purpose

This document describes some of the new features and changes implemented in rRIS as of the end of Sprint 15. This pre-release version of rRIS is referred to as Build 1.15.

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 rRIS Development team for the RadNet RIS management team.

3. Installing/Accessing the Application

The installation instructions for the rRIS client have been posted to the RadNet Wiki page at <http://mdbal01rdtweb/Wiki/>

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

Username: rRIS

Password: Summerside

Please note that Build 1.15 is considered a new core release of the application and will require a reinstallation of rRIS. This is accomplished by navigating to the rRIS 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 Spencer MacDougall with the PEI RIS Development Team.

4. New Features and Enhancements

Enhancements to Audit Log

The rRIS Audit History has been enhanced to show a before and after version of modified columns. In the example below, a correction was made to the name of a patient. The patient was listed in the system as Tommy Smith but his name is actually Timmy Smith. The Audit Trail now shows that first_name was changed to “Timmy” from “Tommy” as well as the date and user that performed the modification.

Patient Search

Patient: Tommy Smith (1)

Audit (Smith) x

Show entries for:

☐ Patient

☐ Order

☐ Study

☒ Everything for this patient

	description	notes	date	user id	retrieval	accession number	order number	status
	Contains: ▾	Contains: ▾	Equals: ▾	Contains: ▾	Contains: ▾	Contains: ▾	Contains: ▾	Contains: ▾
	Order Updated	Visit updated	6/10/2011 9:31:28 AM	Spencer	N			
➔	Order Updated	Patient updated	6/10/2011 9:31:28 AM	Spencer	N			
	Order Retrieved		6/10/2011 9:31:22 AM	Spencer	Y		1009395	OrderSigned
	UI_OrderSubmitted	Order updated	6/10/2011 9:31:16 AM	Spencer	N		1009395	OrderSigned
	UI_OrderSubmitted	Visit updated	6/10/2011 9:31:16 AM	Spencer	N			
	Patient Retrieved		6/10/2011 9:30:45 AM	Spencer	Y			
	Patient Retrieved		6/10/2011 9:30:36 AM	Spencer	Y			
	UI_PatientCreated	Patient updated	6/10/2011 9:29:26 AM	Spencer	N			

Modified c_patient entries (
first_name:
BEFORE: Tommy AFTER: Timmy)

Figure 4.1 – Audit History showing Before and After Changes

Insurance Verification at the Practice Level

Whether or not Insurance Verification is required is now determined by the combination of Modality Type and Practice. This had been set at the Insurance Carrier level but has been adjusted after feedback. The configuration screen below illustrates that both CT and US procedure types require insurance to be verified at the Advanced Radiology practice.

Modality type code	Description	Display order	Practice code
Contains: ▼	Contains: ▼	Equals: ▼	Contains: ▼
CT	CT	1	ADV (Advanced Radiology)
US (Ultrasound)	US	2	ADV (Advanced Radiology)
*			

Figure 4.2 – Insurance Verification set at Practice and Modality Type

Prep Notes Available on the Schedule Screen

A “Review” tab has been added to the Schedule screen. This will display one or more prep instructions to the scheduler that can easily be communicated to the patient. In the example below, the patient is scheduled for both a CT and XR procedure. As a result, the Review tab displays both sets of prep instructions.

The screenshot shows the RADNET rRIS interface. At the top, there are two tabs: "Orders To Schedule (353)" and "Schedule Order (Schweikert Marc) * x". Below these is a navigation bar with five tabs: "Patient", "Order", "Insurance", "Schedule", and "Review". The "Review" tab is currently selected. The main content area displays prep instructions for two procedures: "General XR" and "General CT".

General XR
General CT

1 of 2 General XR All children must be accompanied by an adult other than the patient

2 of 2 General CT Weight limit 450 lbs at most sites. No solids 2 hrs prior

Have you ever had an iodine injection before?
- If so have you had any problems with the injection?
-- (if so consult technologist)

Asthma?
- (if so, tell patient to bring their inhaler?)

Ask if Diabetic? If so, what meds do they take?
If pt takes oral meds for diabetes refer to memo date 7-10-08 and follow necessary instructions.

For Oral Prep please see memo dated 10-14-2008 and follow protocol

Ask pt about pregnancy?

If patient is scheduling both a CT and MR WITH contrast and answers NO to all screening questions then the procedures may be scheduled on the same day. If the patient answers YES to any of the questions then the procedures MUST be scheduled on separate days and the MR must be scheduled first.

All children must be accompanied by an adult other than the patient

Figure 4.3 – Multiple Prep Instructions available on the Schedule Screen

Ability to Add/Edit Procedures from the Registration Screen

The front desk now has the ability to add or modify scheduled procedures without having to navigate to the Edit Schedule screen. This functionality has been added to the Registration screen. In the following example, the patient has arrived for a CT Chest but has an additional order request for an XR as well. The registration user can add the XR Chest to the same visit/encounter and select a scanner and timeslot.

The screenshot displays the 'Registration (Jermaine Prys)' window. At the top, there are tabs for 'Reception WL (1)', 'Registration (Jermaine Prys) *', and 'Lookup Tables - Personnel'. Below these are tabs for 'Patient', 'Patient Contacts', 'Insurance', 'Exam', and 'Scan Document'. The 'Exam' tab is active, showing a table of scheduled studies.

Studies	Duration	Room	Scheduled Date
CT Chest W(Chest,) x	30	CT1FH	06-16-2011 8:15 AM
XR Chest Min 4 Views(Chest,) x	5	XR1FH	06-16-2011 9:00 AM

Below the table is a link: 'Click here to add another study'. Underneath, there are dropdown menus for 'Body Part: Chest' and 'Laterality:'. To the right of the table is a 'Billable Item' section with a table:

Billable Item	Pre Cert #
MYOCARDIAL IMAGING, P...	
COMPUTED TOMOGRAPH...	
RADIOLOGIC EXAMINATI...	

Below the 'Billable Item' table is an 'Indication:' field. Further down is a 'Prep Instructions:' section with the following text:

General CT
 Weight limit 450 lbs at most sites. No solids 2 hrs prior
 Have you ever had an iodine injection before?
 - If so have you had any problems with the injection?
 --(if so consult technologist)
 Asthma?
 - (if so, tell patient to bring their inhaler?)
 Ask if Diabetic? If so, what meds do they take?
 If pt takes oral meds for diabetes refer to memo date 7-10-08 and follow notes
 For Oral Prep please see memo dated 10-14-2008 and follow protocol
 Ask pt about pregnancy?
 If patient is scheduling both a CT and MR WITH contrast and answers NO to all screening questions then the procedures may be scheduled together
 YES to any of the questions then the procedures MUST be scheduled on separate visits
 All children must be accompanied by an adult other than the patient

Figure 4.4 – Adding an additional scheduled procedure from the Registration Screen

Appointment Details on Schedule Calendar

When scheduling, the calendar view has been enhanced to show additional study information. By clicking on the “Show Details” checkbox the patient name, procedure code, study status, and scheduled time will appear in the study’s timeslot.

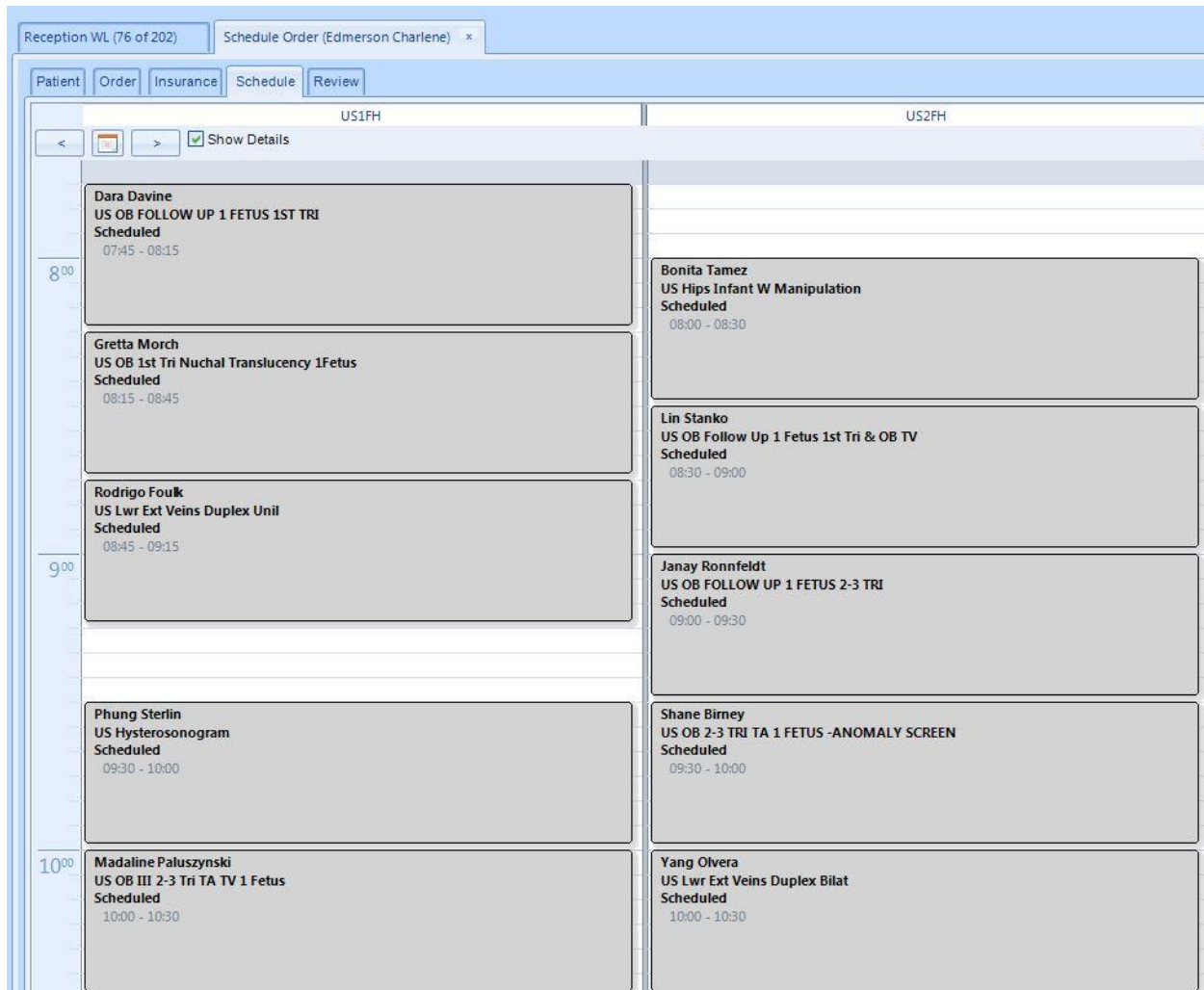


Figure 4.5 – Calendar View showing Appointment Details

Enhancements to Label and Form Printing

The application has been modified to allow front desk users to print all associated forms simultaneously instead of one at a time. In the example below, the user is arriving (changing to arrived status) a patient for an US Thyroid procedure. The system is configured to generate an exam form, history sheet, and worksheet on patient arrival. Therefore once the patient is marked as arrived, the user is prompted to print or preview one or more of the mapped forms.

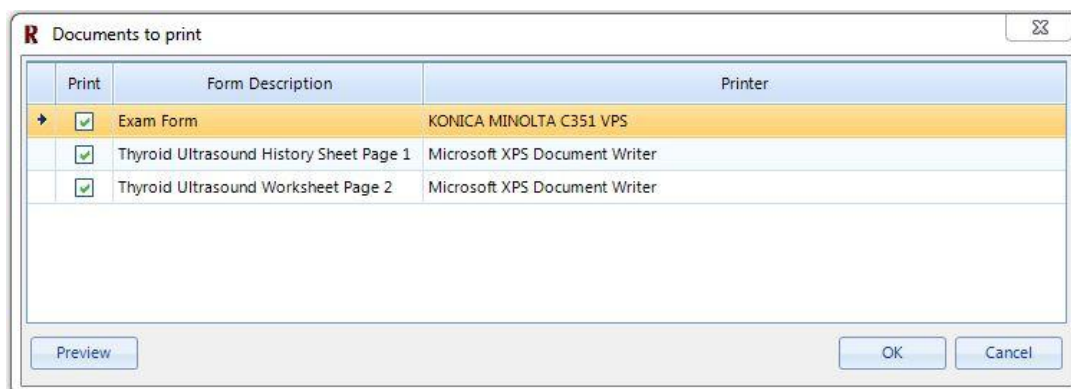


Figure 4.6 – Popup with Mapped Forms to be Printed

1 of 1 100% Find | Next

ADVANCED RADIOLOGY **THYROID ULTRASOUND Worksheet page 2**

First Name: MALCOM
Last Name: DAOUD
Date of Birth: 3/4/1971
MRN #: 9568
Accession #: 1009055

Tech: _____ Date of Exam: 6/10/2011
Extension: _____ This is a preliminary worksheet, and should not be used in place of the final report.

	Length (cm)	Width (cm)	AP (cm)	Vol (cc)	Enlarged	Echotexture
RT	_____	_____	_____	_____	_____	Homog MidHet
LT	_____	_____	_____	_____	_____	ModHet ExHet
ISTHMUS	_____	_____	_____	_____	_____	Homog MildHet
	_____	_____	_____	_____	_____	ModHet ExHet

Enlarged if lobe vol > 10cc, lobe AP > 2cm, isthmus AP > 0.4cm

Side	1			2			3			4			5		
	RT	LT	Isthmus	RT	LT	Isthmus	RT	LT	Isthmus	RT	LT	Isthmus	RT	LT	Isthmus
Location	UP	MP	LP	UP	MP	LP	UP	MP	LP	UP	MP	LP	UP	MP	LP
	Extrathyroidal			Extrathyroidal			Extrathyroidal			Extrathyroidal			Extrathyroidal		
Length (cm)															
Width (cm)															
AP (cm)															
Volume (cc)															
Size Change > 20%	Stable	Smaller		Stable	Smaller		Stable	Smaller		Stable	Smaller		Stable	Smaller	
	*LARGER	##NEW		*LARGER	##NEW		*LARGER	##NEW		*LARGER	##NEW		*LARGER	##NEW	
Composition	SOLID PRED. SOLID Mixed Mixed Spongiform Pred. Cystic Cystic *CYSTIC W/MURAL Too Small to Characterize			SOLID PRED. SOLID Mixed Mixed Spongiform Pred. Cystic Cystic *CYSTIC W/MURAL Too Small to Characterize			SOLID PRED. SOLID Mixed Mixed Spongiform Pred. Cystic Cystic *CYSTIC W/MURAL Too Small to Characterize			SOLID PRED. SOLID Mixed Mixed Spongiform Pred. Cystic Cystic *CYSTIC W/MURAL Too Small to Characterize			SOLID PRED. SOLID Mixed Mixed Spongiform Pred. Cystic Cystic *CYSTIC W/MURAL Too Small to Characterize		

If Vol > 0.1cc (avg diam >= 0.6cm) and non-cystic/spongiform, fill out below

Figure 4.7 – Example of a Thyroid Worksheet

The printer can be different for each form listed in the grid. The application will default to the default printer for the workstation, and if the user chooses a different printer for a particular form, rRIS will persist that preference to the workstation's disk cache and use that as the default printer for that form in the future.

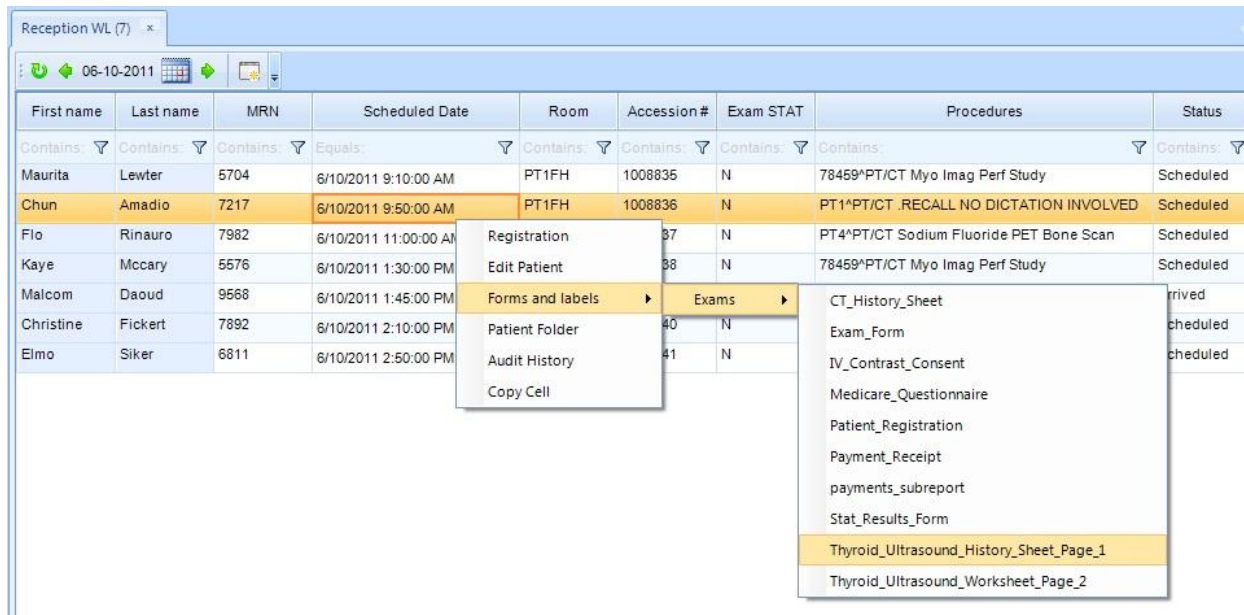


Figure 4.8 – Print Forms directly from the Worklist

If the user chooses to print a form directly from the worklist, they will be presented with a similar dialog box.

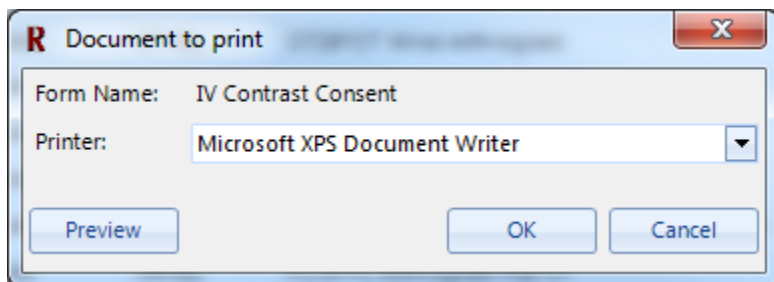


Figure 4.9 – Popup to specify Form Printer

“Checking-In” Status

An additional status is required between Scheduled and Arrived. Checking-In was added to allow the registration user to mark a patient as checking-in while he or she is filling in the required paperwork. Once all documentation has been completed, the registration user can mark the patient as arrived so the technologist will know to come and receive the patient. The Checking-In status will also be used for Management Reporting to determine wait room turnover.

The screenshot displays the 'Registration (Flo Rinauro)' window with the 'Insurance' tab selected. The 'Insurance Policies' table contains one entry: a policy from FUTURECARE OLD COURT with policy number 532056, group number 957578, and phone number 4109223200. Below this table are fields for 'Not required', 'Insurance verified' (unchecked), and 'Amount to collect'. The 'Payments' section is empty, and the 'Injuries' table contains one entry with claim # 626362 and date of injury 04-07-2011. At the bottom, the 'Total' is \$0.00, and the 'Checking In' button is highlighted.

Note	Carrier code	Carrier name	Policy number	Group name	Group number	Phone	Priority
→	111130	FUTURECARE OLD COURT	532056	Test Data	957578	4109223200	Primary

Manage Policies Not required ☐ Insurance verified Amount to collect:

Posted By	Amount	Payment Method	Date
-----------	--------	----------------	------

Add Payment Edit Payment View Injury Details

claim #	date of injury
→ 626362	04-07-2011

Total: \$0.00

Checking In Arrive Save Close

Figure 4.10 – Registration Screen with Checking In Button

Receipt Printing

Build 1.15 allows registration users to print receipts and void payments. The system will detect if a payment has been made and prompt the user to print or preview the receipt.

Insurance Policies

Note	Carrier code	Carrier name	Policy number	Group name	Group number	Phone	Priority
▶	111130	FUTURECARE OLD COURT	532056	Test Data	957578	4109223200	Primary

Manage Policies Not required ☐ Insurance verified Amount to collect: \$100.00

Payments

Posted By	Amount	Payment Method	Date
▶ Spencer	\$100.00	Cash	06-10-2011
Spencer	\$50.00	CreditCard	06-10-2011
Spencer	(\$50.00)	Void	06-10-2011

Add Payment Edit Payment View Injury Details

Injuries

claim #	date of injury
▶ 626362	04-07-2011

Total: \$100.00

Figure 4.11 – Registration Screen with Multiple Payment Entries

In the example above, the patient has paid a \$100 co-pay amount. Two payments have been recorded, but the \$50 credit card payment has been voided. Once the form is saved and the patient is arrived, the user is prompted to print the receipt.

R Document to print

Form Name: Payment Receipt

Printer: KONICA MINOLTA C351 VPS

Preview OK Cancel





Figure 4.12 – Popup Prompting User to Print Receipt

Fisher		Rinauro, Flo Sim	
Receipt # FH24206-61			
<i>Payment_Receipt</i>			
Patient Name: Rinauro, Flo Sim			
Medical Record: 7982			
DOB: 8/13/1944			
6/10/2011	Cash Payment Test	Cash	\$100.00
6/10/2011	Credit Card Test	CreditCard 1245	\$50.00
6/10/2011		Void	(\$50.00)
Total Payments			\$100.00
Billing Inquiries: (443) 436-1300			
Please write this number on your check: 21085			
Make checks payable to: Advanced Radiology			
We thank you for your patronage.			
Payment_Receipt		Printed: 6/10/2011 3:09:16 PM	

Figure 4.13 – Example of a Receipt Preview

Flags Framework

A Flags column has been added to the worklist framework for Build 1.15. Flags are a quick visual indication of relevant data. Four flags have been added to the system:

1. IVT Required 
2. Stat Exam 
3. Stat Read 
4. Special Accommodations 

So basically if an order is marked as Stat, the row in the worklist will show the Stat Exam flag. Since flags are sortable and filterable, the user could easily sort his or her worklist so that all Stat cases are at the top. The user could also create a filtered worklist based on a flag. If the user's function was to verify insurance, he or she could filter the worklist to only show studies where the IVT Required flag is enabled.










Orders To Schedule (352) Reception WL (14)									
Flags	First name	Last name	MRN	Scheduled Date	Room	Accession #	Exam STAT	Procedures	Status
Contains: ▼	Contains: ▼	Contains: ▼	Contains: ▼	Equals: ▼	Contains: ▼	Contains: ▼	Contains: ▼	Contains: ▼	Contains: ▼
	Venetta	Ramone	4520	6/8/2011 7:45:00 AM	PT1FH	1004327	N	PT4*PT/CT Sodium Fluoride PET Bone Scan	Scheduled
	Claribel	Beifuss	9697	6/8/2011 7:45:00 AM	NM2FH	1008874	Y	93017*NM EKG Tracing	Scheduled
	Jeff	Carter	9905	6/8/2011 7:45:00 AM	CT1EL	1009046	N	71260*CT Chest W	CheckingIn
	John	Test15	9883	6/8/2011 7:45:00 AM	CT1FH	1009049	N	71260*CT Chest W	Scheduled
	Jenise	Gawrych	9617	6/8/2011 8:00:00 AM	NM1FH	1008850	Y	78464*NM Myocard Imag W Spec Sngl	Scheduled
	Jeff	Carter	9905	6/8/2011 8:15:00 AM	CT1EL	1009047	N	CT13*CT 3 Phase	CheckingIn
	John	Test15	9883	6/8/2011 8:15:00 AM	CT1FH	1009048	N	CT13*CT 3 Phase	Scheduled
	Maynard	Coxey	4683	6/8/2011 8:30:00 AM	PT1FH	1004316	N	78459*PT/CT Myo Imag Perf Study	Arrived
	Gertrude	Rodenizer	9659	6/8/2011 9:30:00 AM	NM2FH	1008902	N	78464*NM Myocard Imag W Spec Sngl	CheckingIn
	Dung	Mand	4922	6/8/2011 10:00:00 AM	PT1FH	1004343	N	78459*PT/CT Myo Imag Perf Study	Arrived
	Blossom	Breneman	5029	6/8/2011 11:00:00 AM	PT1FH	1004351	N	78459*PT/CT Myo Imag Perf Study	CheckingIn
	Kymerly	Valliere	5064	6/8/2011 1:30:00 PM	PT1FH	1004369	N	78492*PT/CT Myocardial Multi Study	Scheduled
	Chrissy	Egel	4671	6/8/2011 2:30:00 PM	PT1FH	1004397	N	78492*PT/CT Myocardial Multi Study	Scheduled
	John	Test15	9883	6/8/2011 3:31:00 PM	CT1FH	1009050	N	CT13*CT 3 Phase	Scheduled

Figure 4.14 – Reception Worklist with Flags

Orders To Schedule (352)									
Reception WL (6 of 14)									
Flags	First name	Last name	MRN	Scheduled Date	Room	Accession #	Exam STAT	Procedures	Status
Contains: v	Contains: v	Contains: v	Contains: v	Equals: v	Contains: v	Contains: v	Contains: v	Contains: v	Contains: v
	Venetia	Ramone	4520	6/8/2011 7:45:00 AM	PT1FH	1004327	N	PT4*PT/CT Sodium Fluoride PET Bone Scan	Scheduled
	Claribel	Beifuss	9697	6/8/2011 7:45:00 AM	NM2FH	1008874	Y	93017*NM EKG Tracing	Scheduled
	Jenise	Gawrych	9617	6/8/2011 8:00:00 AM	NM1FH	1008850	Y	78464*NM Myocard Imag W Spec Sngl	Scheduled
	Maynard	Coxey	4683	6/8/2011 8:30:00 AM	PT1FH	1004316	N	78459*PT/CT Myo Imag Perf Study	Arrived
	Gertrude	Rodenizer	9659	6/8/2011 9:30:00 AM	NM2FH	1008902	N	78464*NM Myocard Imag W Spec Sngl	CheckingIn
	Dung	Mand	4922	6/8/2011 10:00:00 AM	PT1FH	1004343	N	78459*PT/CT Myo Imag Perf Study	Arrived

Figure 4.14 – Reception Worklist Filtered to only show IVT Required Flag

Storing Time Zone at the Practice Level

One instance of rRIS is required to span across more than one time zone. Because of this, many dates like order date and schedule date are stored in the database in UTC (Coordinated Universal Time) format with an offset in hours. This can allow a group of schedulers or transcriptionists to work in the system from another time zone without having to adjust their local computer's time zone to match the server's.

When setting up Practices in rRIS, the user is now able to specify what time zone the practice exists in. This is how the offset to UTC is determined.

Lookup Tables - Organization

AbortedStudyReason

AccessString

AddressDescription

Affiliation

AvailabilityTemplate

BillingCode

Birad

BodyPart

Carrier

CarrierType

CreditCardType

EducationLevel

StudyType

Region: Maryland

Edit

Add

Remove

Practices

	Practice	Practice Notes	Address	Contact	Contact Notes
	<div>Advanced Radiology(ADV)</div> <div>Phone: (443) 436-1100</div> <div>Fax: (443) 436-4568</div> <div>Time Zone: (UTC-04:00) Atlantic Time (Canada)</div>		7253 Ambassador Road Baltimore, MD 21244	Jim Smith Phone: (443) 436-1100 jim@mail.com	

Figure 4.15 – Organization Editor showing Time Zone of Practice

The screenshot shows a software window titled "Edit Practice". It contains three main sections: "Practice", "Contact", and "Address".

Practice Section:

- Practice Code: ☒ Active
- Description:
- Phone #:
- Fax #:
- Time Zone: (This dropdown is highlighted with a red rectangular box)
- Practice Notes:

Contact Section:

- Contact Name:
- Phone #:
- Mobile #:
- Fax #:
- Email:
- Contact Notes:

Address Section:

- Address 1:
- Address 2:
- City:
- State:
- Zip Code:

At the bottom right of the window are two buttons: "Save" and "Close".

Figure 4.16 – Specifying Time Zone at the Practice Level

5. Known Limitations

Bugs, Suggested Features, and Support Issues are now tracked in a web based system called Redmine. The following is a snapshot of the issues found in Build 1.15.

#	Status	Subject	Category	Found	%Done	Resolved
416	New	Flags - exception loading flags	Thick Client GUI	1.15	0	
415	Resolved	Edit Schedule - Remove study row exception	Thick Client GUI	1.15	100	1.16
414	New	Scheduling - Exception when removing and adding study row	Thick Client GUI	1.15	0	
413	New	Review Tab - Shouldn't show if it is null	Thick Client GUI	1.15	0	
412	New	Labels and Forms - Performance issues sending directly to printer	Thick Client GUI	1.15	0	
411	Resolved	Appointment Book - A few differences between calendar view and appointment book	Thick Client GUI	1.15	100	1.16
410	Resolved	Scheduling - Issue with changing procedure code	Thick Client GUI	1.15	100	1.16
409	New	IVT Worklist - status column is order status	Thick Client GUI	1.15	0	
408	New	Checking In - Missing time stamp in database	Thick Client GUI	1.15	0	
406	New	New Appointment - Unhandled WCF exception	Web Services/DB	1.15	0	
405	New	Registration - Issue removing policy from study	Thick Client GUI	1.15	0	
404	New	Insurance Verification Required - Exception with lookup table	Admin Tools	1.15	0	
403	Resolved	Locking - Cancelling a lock causes exception	Thick Client GUI	1.15	100	1.16
402	New	Registration Workflow - Locking Issues	Thick Client GUI	1.15	0	
401	New	Reception WL - No ability to change status	Thick Client GUI	1.15	0	
400	New	Checking In - Not consistent with Perform Exam screen	Thick Client GUI	1.15	0	
399	New	Audit History - Issue with tab name when opened from Patient History	Thick Client GUI	1.15	0	
398	New	Audit Log - rRIServices entries	Thick Client GUI	1.15	0	
397	New	Forms and Labels - Lookup missing splitter	Admin Tools	1.15	0	
396	New	Audit Log - System related updates should be excluded	Thick Client GUI	1.15	0	
395	Resolved	Registration - Exception adding blank study row	Thick Client GUI	1.15	100	1.16
394	Resolved	Login - Issue with Version name	Thick Client GUI	1.15	100	1.16
393	New	Login - System will not detect disconnected state	Thick Client GUI	1.15	0	
392	Resolved	Dropdowns - Still showing as required when completed	Thick Client GUI	1.15	100	1.16
391	New	Forms - Reverse Tab Order	Thick Client GUI	1.15	0	
390	Resolved	Lookup - InsuranceVerificationRequired does not check for duplicate entries	Admin Tools	1.15	100	1.16

User Pre-Release Notes

for RADNET rRIS

Build 1.16

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1. Purpose

This document describes some of the new features and changes implemented in rRIS as of the end of Sprint 16. This pre-release version of rRIS is referred to as Build 1.16.

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 rRIS Development team for the RadNet RIS management team.

3. Installing/Accessing the Application

The installation instructions for the rRIS client have been posted to the RadNet Wiki page at <http://mdbal01rdtweb/Wiki/>

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

Username: rRIS

Password: Summerside

Please note that Build 1.16 is considered a new core release of the application and will require a reinstallation of rRIS. This is accomplished by navigating to the rRIS 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 Spencer MacDougall with the PEI RIS Development Team.

4. New Features and Enhancements

Patient Search on Previous MRN, First Name, and Last Name

Build 1.16 supports the ability for a user to perform a search on the patient's previous MRN and/or name. For example, Jennifer Anthony (95079) has been merged into Jennifer Griffin (95576). Jennifer had been married and a new MRN had been improperly added for her and the merge had to take place. The user is still able to search for "Jennifer Anthony" or "95079" and Jennifer Griffin will be returned in the search results. The Previous MRN is also included in the search results.

The screenshot shows the 'Patient Search' window. The 'Search Criteria' section has the following fields: First Name (Jennifer), Last Name (Anthony), Birth Date (mm-dd-yyyy), Phone #, Sounds Like (unchecked), and MRN. The 'Search' button is highlighted. Below the search criteria is a table with the following data:

	First Name	Last Name	Middle Name	Birth Date	MRN	Issuer	Gender	Address	City	State	Home Phone	Mobile Phone	Previous MRN
▶	Jennifer	Griffin	39624	04-24-1995	95576	RIS	U	994 Green New Way	Louisville	Alabama			95079

Figure 4.1 – Patient Search on Previous Name

Patient Search on Phone Number

The application now supports the ability to search for a patient using phone number as search criteria. In a future release rRIS will support a partial phone number search (ex: the last 4 numbers) but currently the user will be required to enter all 10 digits.

The screenshot shows the 'Patient Search' window. The 'Search Criteria' section has the following fields: First Name, Last Name, Birth Date (mm-dd-yyyy), Phone # (9028881234), Sounds Like (unchecked), and MRN. The 'Search' button is highlighted. Below the search criteria is a table with the following data:

	First Name	Last Name	Middle Name	Birth Date	MRN	Issuer	Gender	Address	City	State	Home Phone	Mobile Phone	Previous MRN
▶	Jennifer	Griffin	39624	04-24-1995	95576	RIS	U	994 Green New Way	Louisville	Alabama	(902) 888-1234	(902) 555-5678	95576

Figure 4.2 – Patient Search on Phone Number

Patient Name Prefix and Suffix

rRIS is required to support the storing of the patient's prefix and/or suffix. The patient tab has been updated with dropdowns for both prefix and suffix to accommodate this feature. Lookup tables have been added for both PatientPrefix and PatientSuffix, making the lists configurable.

The screenshot shows the 'Patient: Mike Richards (9)' tab. The 'General Information' section contains the following fields:

- Prefix: Father (dropdown)
- First Name: Mike
- Last Name: Richards
- Middle: (empty)
- Suffix: (dropdown menu open showing Jr and Sr)
- MRN: 4444
- Gender: Male (dropdown)
- Birth Date: 10-29-2010
- Age: 8m0w

Figure 4.3 – Patient Tab showing Prefix and Suffix Dropdowns

Patient prefix code	Description	Display order
Contains:	Contains:	Equals:
Atty	Attorney	3
Father	Father	1
Hon	Honorable	4
Rev	Reverend	5
Sister	Sister	2
*		

Figure 4.4 – Patient Prefix Lookup

Patient suffix code	Description	Display order
Contains:	Contains:	Equals:
Jr	Jr	1
Sr	Sr	2
*		

Figure 4.5 – Patient Suffix Lookup

There is now a Claustrophobic checkbox available on the Patient tab. When this is specified, the system will know to describe the rooms as open or closed modalities.

The screenshot shows the 'Patient' tab in the rRIS system. The 'General Information' section contains the following fields:

- Prefix: [Dropdown]
- First Name: Jennifer
- Last Name: Griffin
- Middle: 39624
- Suffix: [Dropdown]
- MRN: 95576
- Gender: Unknown
- Birth Date: 04-24-1995
- Age: 16y2m
- Claustrophobic: ☒

Figure 4.8 – Patient Tab showing Claustrophobic Checkbox

In the example below, the scheduling user is attempting to schedule a MR Chest for a Claustrophobic patient. The system will present three rooms as a scheduling solution, but two of the rooms will be listed as “Confined Space”.

The screenshot shows the 'Schedule' tab in the rRIS system. The 'Studies' section contains the following information:

- Study: MR Chest W/Wo(Chest,) x
- Duration: 30
- Room: [Dropdown]
- Scheduled Date: mm-dd-yyyy h:mm am..

Below the 'Studies' section, there is a link: [Click here to add another study](#).

The 'Body Part' is set to Chest and the 'Laterality' is set to [Dropdown].

The 'Summary' tab is selected, showing the following scheduling solution:

EL	FH	LU
MR1EL	MR1FH (confined space)	MR1LU (confined space)
Thu, 06-30-2011		Thu, 06-30-2011
11:25 AM 30	11:25 AM 30	11:25 AM 30
1:00 PM 30	1:00 PM 30	1:00 PM 30
1:30 PM 30	1:30 PM 30	1:30 PM 30
2:00 PM 30	2:00 PM 30	2:00 PM 30
2:30 PM 30	2:30 PM 30	2:30 PM 30
3:00 PM 30	3:00 PM 30	3:00 PM 30
3:30 PM 30	3:30 PM 30	3:30 PM 30

Figure 4.9 – Scheduling Solution showing Rooms Flagged as Confined Space


Additional Details on the Appointment Book

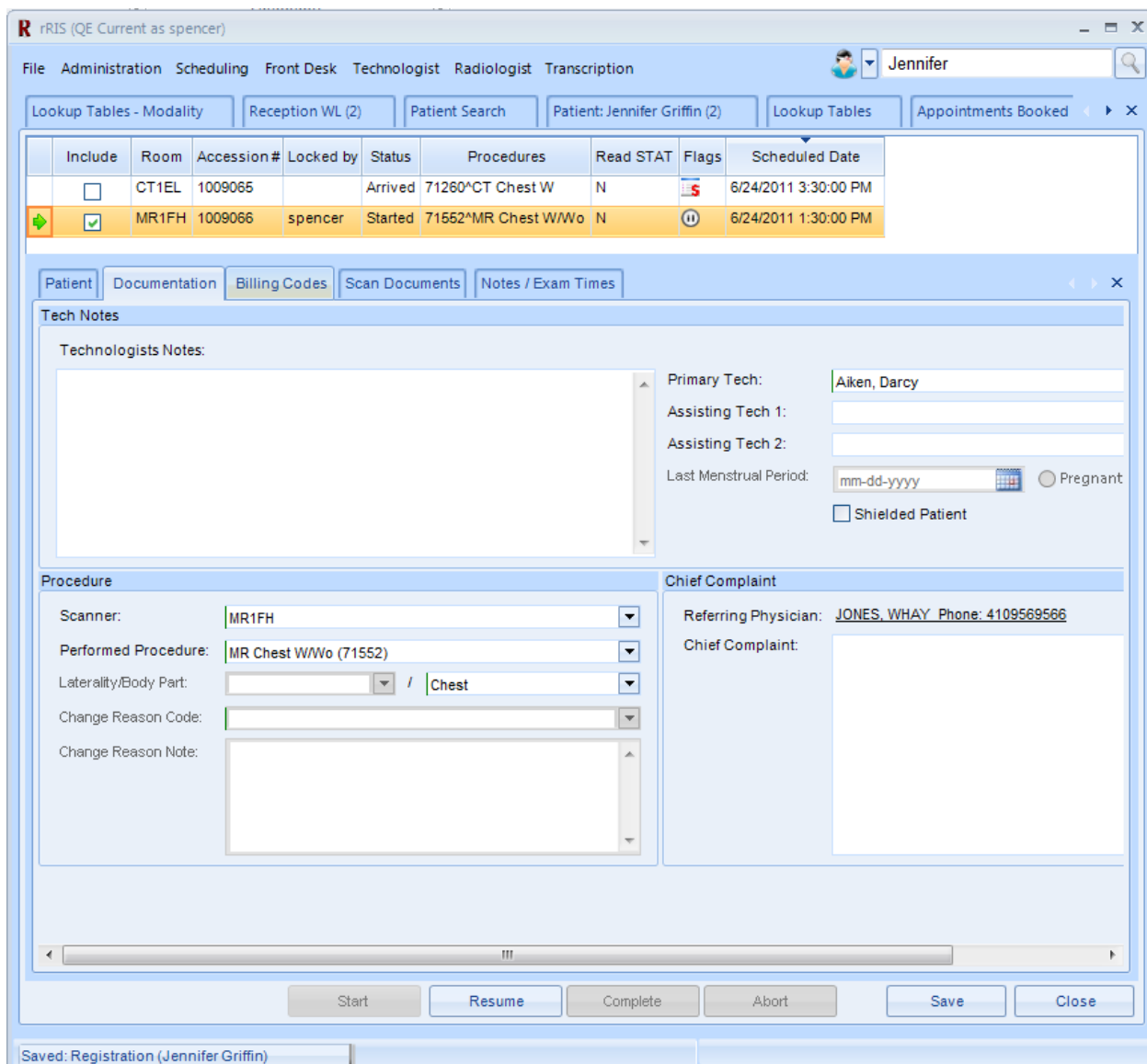
The Appointment Book has been enhanced to also show the referring physician with the patient name, procedure, status, and time.

The screenshot displays the 'Appointment Book' interface. At the top, there are tabs: 'Lookup Tables - Modality', 'Reception WL (2)', 'Patient Search', 'Patient: Jennifer Griffin (2)', 'Lookup Tables', and 'Appointments Booked x'. The left sidebar contains filters: 'Region:' (Maryland), 'Practice:' (Advanced Radiology), 'Site:' ((all)), 'Modality:' (MRI), 'Room:' (empty), and 'Date:' (06-30-2011). The main area shows a calendar grid for the date 06-30-2011. A green box highlights an appointment for Jennifer Griffin, with details: MR Chest W/Wo (71552), REQ: Ian Power, Scheduled, 1:30 PM - 2:00 PM.

Figure 4.10 – Appointment Book showing Referring Doctor in Appointment Details

Study Suspended Flag

In the previous release when the technologist suspended a study, the study's status would change to Suspended. It has been determined that Suspended is better suited as a Flag and not a Status. In the example below, the technologist has Started the procedure and then Suspended it. The procedure remains in the Started status, with the Suspended flag  enabled on the worklist. Once the technologist clicks the Resume button, the Suspended flag will be removed.



The screenshot displays the rRIS (QE Current as spencer) application window. The top menu bar includes File, Administration, Scheduling, Front Desk, Technologist, Radiologist, and Transcription. The user is logged in as Jennifer. The main window shows a table of studies with columns: Include, Room, Accession #, Locked by, Status, Procedures, Read STAT, Flags, and Scheduled Date. The second row is highlighted in orange, indicating it is the selected study. This row shows a study in the 'Started' status with a 'Suspended' flag (a blue square with a white pause symbol) and a scheduled date of 6/24/2011 1:30:00 PM. Below the table, there are tabs for Patient, Documentation, Billing Codes, Scan Documents, and Notes / Exam Times. The 'Tech Notes' section is active, showing a large text area for notes and fields for Primary Tech (Aiken, Darcy), Assisting Tech 1, Assisting Tech 2, Last Menstrual Period (mm-dd-yyyy), and a checkbox for Shielded Patient. The 'Procedure' section includes fields for Scanner (MR1FH), Performed Procedure (MR Chest W/Wo (71552)), Laterality/Body Part (Chest), Change Reason Code, and Change Reason Note. The 'Chief Complaint' section includes fields for Referring Physician (JONES, WHAY Phone: 4109569566) and Chief Complaint. At the bottom, there are buttons for Start, Resume, Complete, Abort, Save, and Close. A status bar at the very bottom indicates 'Saved: Registration (Jennifer Griffin)'.


Include	Room	Accession #	Locked by	Status	Procedures	Read STAT	Flags	Scheduled Date
<input type="checkbox"/>	CT1EL	1009065		Arrived	71260*CT Chest W	N		6/24/2011 3:30:00 PM
<input checked="" type="checkbox"/>	MR1FH	1009066	spencer	Started	71552*MR Chest W/Wo	N		6/24/2011 1:30:00 PM

Figure 4.11 – Study Started but Flagged as Suspended

Enhanced Form Generation Criteria

Additional criteria were identified as requirements for Label and Form generation. Forms can now be associated with one or more of each of the following:

- Actions - Patient Arrived, Order Created, Study Completed, etc.
- Carrier(s) – The insurance carrier of the patient
- Carrier Type(s) – The type of insurance carrier such as Blue Cross, Tricare, etc.
- Modality Type(s) – The modality type of the scheduled procedure such as MR, CT, etc.
- Procedure(s) – The actual procedure code such as 76536 – US Thyroid
- Gender(s) - The gender of the patient

With the additional criteria stated above, rRIS can be configured to take much of the guess-work out of labels and forms and greatly reduce the chances of user error. This will also reduce the amount of wasted paper as only the required forms will be generated.

Consider the following test case. A Medicare Questionnaire should only be generated if:

- The patient is being checked in
- The carrier type is Medicare
- All modality types and procedure codes
- All genders

Forms And Labels									
form	description		active	form category					
/QE Current/Forms/Exams/CT History Sheet	CT History Sheet		Y	Exam					
/QE Current/Forms/Exams/Exam Form	Exam Form		Y	Exam					
/QE Current/Forms/Exams/IV Contrast Consent	IV Contrast Consent		Y	Exam					
→ /QE Current/Forms/Exams/Medicare Questionnaire	Medicare Questionnaire		Y	Exam					
/QE Current/Forms/Exams/Patient Registration	Patient Registration		Y	Exam					
/QE Current/Forms/Exams/Thyroid Ultrasound History Sheet Page 1	Thyroid Ultrasound History Sheet Page 1		Y	Exam					
/QE Current/Forms/Exams/Thyroid Ultrasound Worksheet Page 2	Thyroid Ultrasound Worksheet Page 2		Y	Exam					
* Click here to add a new row									

Printing Criteria									
name	description	active	action	carrier	carrier type	modality type	procedure	gender	
Contains: ▼	Contains: ▼	Con ▼							
→ Medicare Rule 1	Medicare Rule 1	Y	Checking In (UI_PatientChec...		Medicare (C)				
			(...)	(all)	(...)	(all)	(all)	(all)	(all)
* Click here to add a new row									

Figure 4.12 – Configuring Rule to Generate Medicare Questionnaire

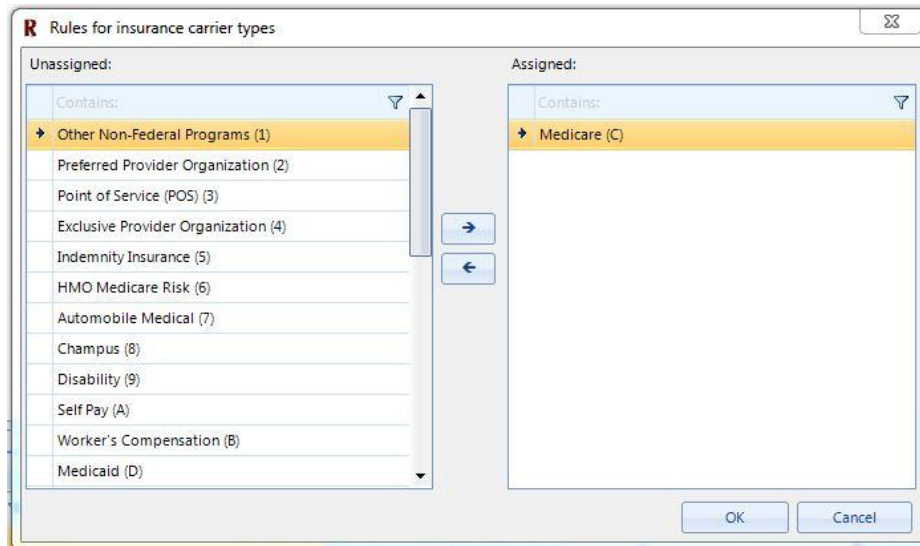


Figure 4.13 – Assigning an Insurance Type to the Medicare Form Rule

Medicare Questionnaire

1 of 1 | 100% | Find | Next

ADVANCED RADIOLOGY Medicare Questionnaire
Trusted by more doctors. Preferred by more patients.

Date of Exam: 6/30/2011

First Name: JENNIFER
Last Name: GRIFFIN
Date of Birth: 4/24/1995
MRN #: 95576

Medicare questions to determine if Medicare is primary or secondary.

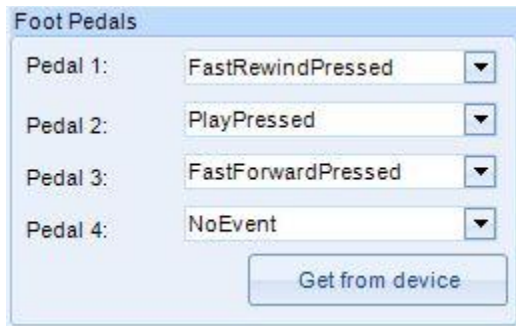
1. Are you covered under any other policies other than Medicare?	<input type="checkbox"/> Yes <input type="checkbox"/> No
2. Are you currently working?	<input type="checkbox"/> Yes <input type="checkbox"/> No
If no, go to number 5.	
3. Does your current employer provide any group health coverage?	<input type="checkbox"/> Yes <input type="checkbox"/> No
If no, go to number 5.	
4. Did you elect coverage under your employer's health plan?	<input type="checkbox"/> Yes <input type="checkbox"/> No
5. If you are married, is your spouse working?	<input type="checkbox"/> Yes <input type="checkbox"/> No
If no, go to number 8.	
6. Are you covered under his/her employer's health coverage?	<input type="checkbox"/> Yes <input type="checkbox"/> No
If no, go to number 8.	
7. If your spouse is not currently working or is deceased, are you still covered under his/her previous employer's health benefits?	<input type="checkbox"/> Yes <input type="checkbox"/> No
8. Is your illness/injury due to an automobile accident or work related?	<input type="checkbox"/> Yes <input type="checkbox"/> No
9. Are you being treated under the D.O.L. Black Lung Program?	<input type="checkbox"/> Yes <input type="checkbox"/> No
10. Are you being treated for end-stage renal disease?	<input type="checkbox"/> Yes <input type="checkbox"/> No
11. Are you submitting under VA?	<input type="checkbox"/> Yes <input type="checkbox"/> No
12. Are you covered under disability insurance?	<input type="checkbox"/> Yes <input type="checkbox"/> No

Patient's Signature: _____ Date: _____

Figure 4.14 – Medicare Questionnaire Automatically Generated

Foot Pedal Support and Configuration

rRIS supports the use of foot pedals to playback and navigate dictations. It also allows the configuration of the foot pedals at a user level. For example, a transcription user may want Pedal 1 to be Fast Rewind, Pedal 2 to be Play, and Pedal 3 to be Fast Forward.



The image shows a 'Foot Pedals' configuration window. It contains four rows, each with a label (Pedal 1 through Pedal 4) and a dropdown menu. The dropdown menus are set to 'FastRewindPressed', 'PlayPressed', 'FastForwardPressed', and 'NoEvent' respectively. A 'Get from device' button is located at the bottom right of the window.

Pedal	Event
Pedal 1:	FastRewindPressed
Pedal 2:	PlayPressed
Pedal 3:	FastForwardPressed
Pedal 4:	NoEvent

Get from device

Figure 4.15 – Foot Pedal User Configuration

To help the ris administrator configure the foot pedals, the rRIS user preference screen will indicate which pedal is being pushed by highlighting the event in green.



The image shows the same 'Foot Pedals' configuration window as Figure 4.15. In this version, the 'PlayPressed' option for Pedal 2 is highlighted in green, indicating it is the selected event.

Pedal	Event
Pedal 1:	FastRewindPressed
Pedal 2:	PlayPressed
Pedal 3:	FastForwardPressed
Pedal 4:	NoEvent

Get from device

Figure 4.16 – User Selecting Pedal 2

SpeechMike Configurable Buttons

Similar to foot pedals, rRIS also supports the configuration of the Philips SpeechMike buttons at a user level.

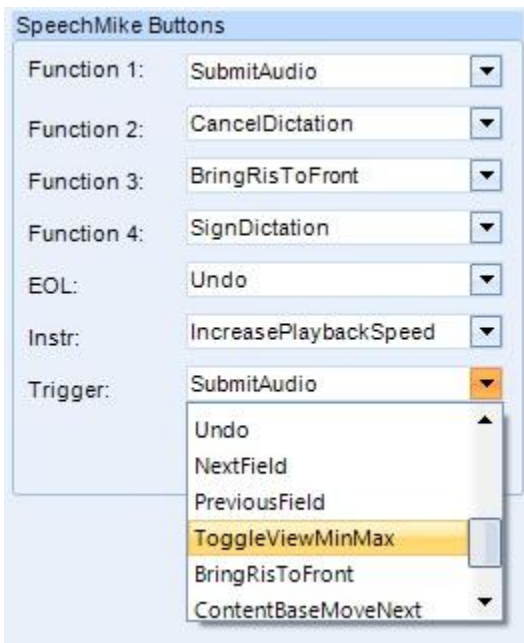



Figure 4.17 – Sample SpeechMike Configuration

Optimizing Dictation Playback

When a radiologist is dictating sometimes they have long pauses between words which create “dead” space in the dictation. This dead space is useless and time consuming to the transcription user. rRIS has the ability to skip this dead space in the dictation during editing and playback for transcriptionists.

On the reporting control there is an Optimize Playback toggle button . When this button is enabled, rRIS will skip any dead space in the report/dictation. The button state is stored at the user level so the application will remember the setting when the next report is loaded.

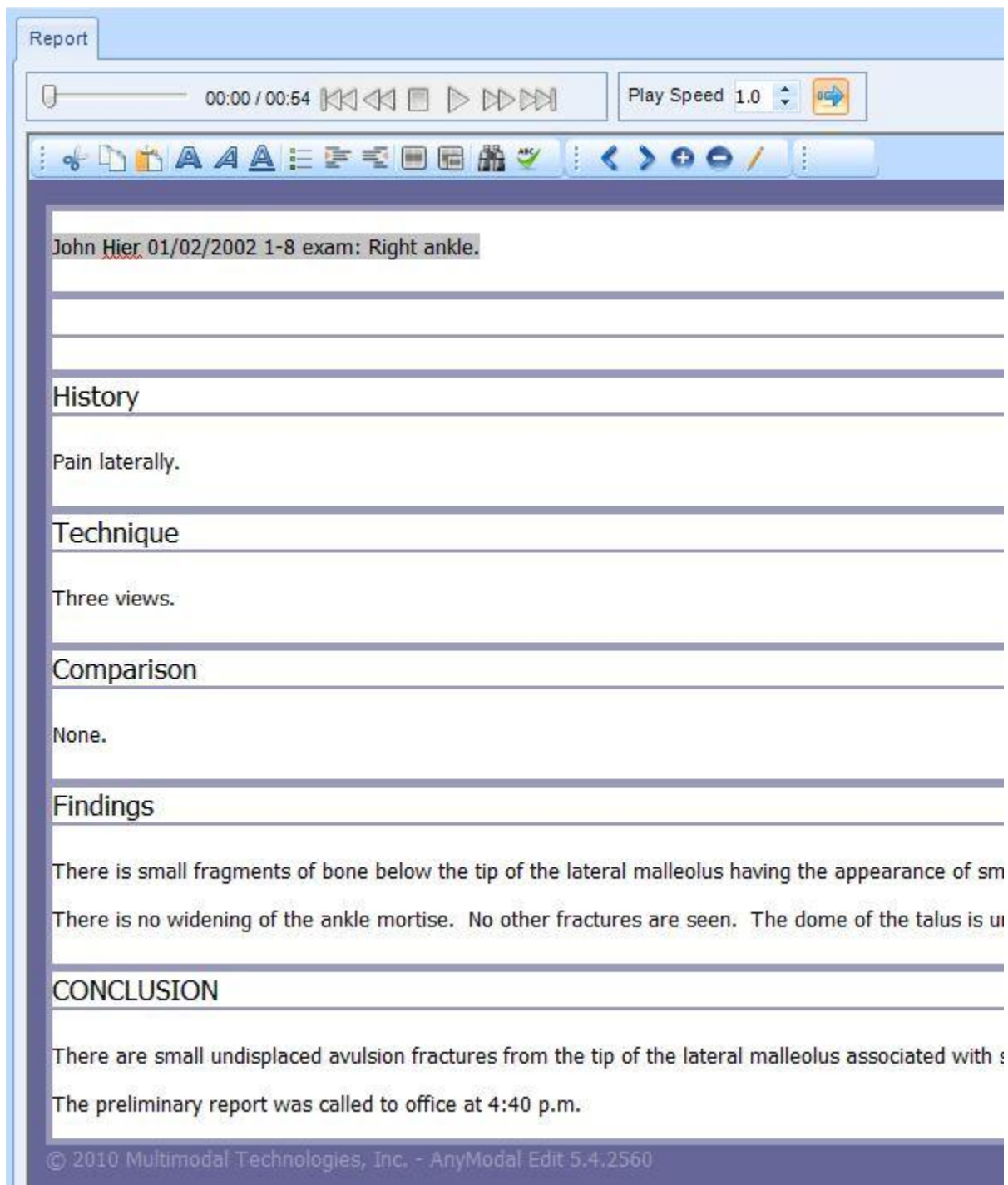


Figure 4.18 – Drafted Report with Optimize Playback Button Enabled

Playback Speed per Radiologist

Each radiologist talks at a different speed while dictating. Some very fast and others too slow. The transcription user will need to adjust the playback speeds to optimize editing performance in rRIS. This setting is stored per author. A transcriptionist can have a playback speed of 1.5 for radiologist A and a separate speed of 1.7 for radiologist B. The system will recognize the author and automatically playback at the specified speed saving the transcriptionist from having to change the playback with each dictation.

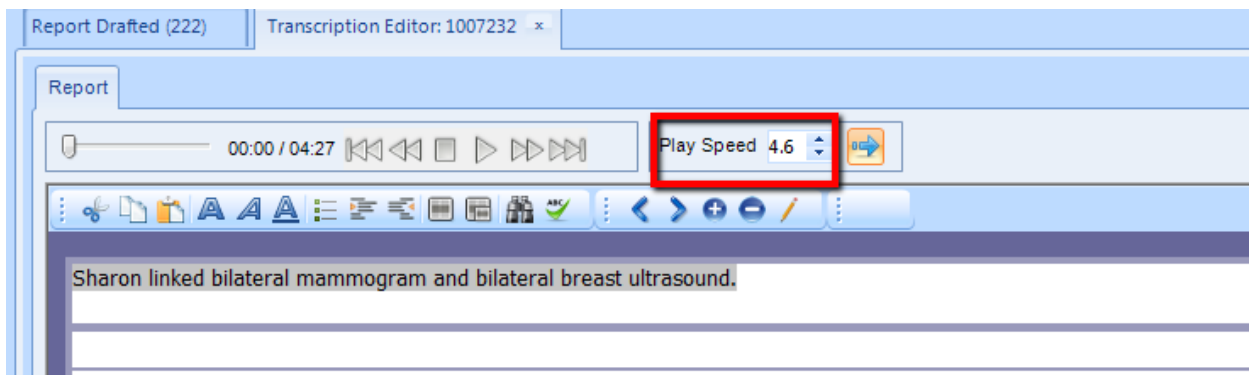


Figure 4.19 – Drafted Report showing Playback Speed Control

Show Paragraph Line Breaks in the Report Editor

In Build 1.16, a user preference for showing paragraphs in the report editor has been added to the application. This is stored at a user level and is disabled by default.

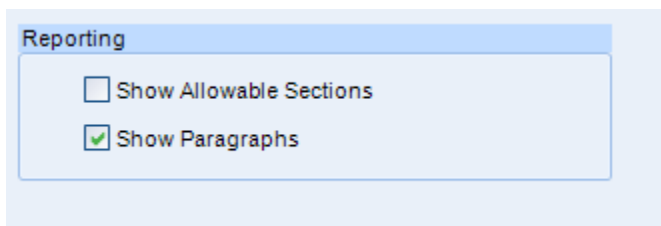


Figure 4.20 – Show Paragraphs User Preference

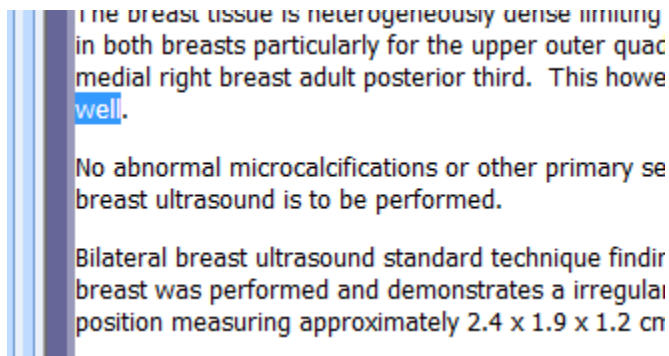


Figure 4.21 – Show Paragraphs Enabled

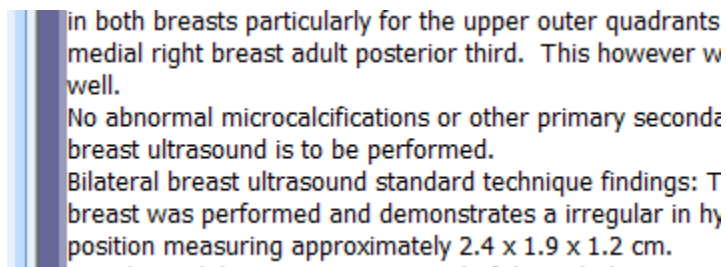


Figure 4.22 – Show Paragraphs Disabled

5. Known Limitations

Bugs, Suggested Features, and Support Issues are now tracked in a web based system called Redmine. The following is a snapshot of the issues found in Build 1.15.

#	Status	Subject	Category	Found	%Done	Resolved
441	New	Add Patient - Age calculation	Thick Client GUI	1.16	0	
440	New	Forms and Labels - Exception adding printing criteria	Admin Tools	1.16	0	
439	New	User Preferences - Foot pedal config modification requires application restart	Admin Tools	1.16	0	
438	New	User Preferences - Should enable or disable speech preferences based on resource type	Admin Tools	1.16	0	
437	Resolved	Personnel - Search Issues when searching by "Type" only	Admin Tools	1.16	100	1.17
436	Resolved	Personnel - Exception when adding multiple addresses	Admin Tools	1.16	100	1.17
435	Resolved	Personnel - Exception when searching with no criteria specified	Admin Tools	1.16	100	1.17
434	Resolved	Personnel - Exception when searching	Admin Tools	1.16	100	1.17
433	New	Appointment Book - Exception when leaving appointment book open	Thick Client GUI	1.16	0	
432	New	Modality Lookup - Exception when filtering by Modality Type Code	Admin Tools	1.16	0	
431	New	Lookups Tables - Lookups are being painted poorly when loading	Admin Tools	1.16	0	
429	New	Patient Search - Issue displaying previous MRN(s)	Thick Client GUI	1.16	0	
428	New	Insurance - Claim Number is showing as required	Thick Client GUI	1.16	0	
427	Resolved	Management Reports - Report Turnaround threshold	Mgt Reports	1.16	100	1.17
426	Resolved	Management Reports - Daily Schedule additional information required	Mgt Reports	1.16	100	1.17
425	New	Add Patient - Gender is defaulting to Male	Thick Client GUI	1.16	0	
424	Resolved	Management Reports - Technologist Activity Report needs procedure category breakdown	Mgt Reports	1.16	100	1.17
423	New	IVT Worklist - Issue with Pre-cert required status	Thick Client GUI	1.16	0	
422	Resolved	Installer - Issue upgrading from B1.15 to B1.16	Thick Client GUI	1.16	100	1.17
421	New	Exam Done - Diagnose	Thick Client GUI	1.16	0	
420	New	Scheduling - Manage policies - claim number	Thick Client GUI	1.16	0	
419	New	Scheduling - Manage policies	Thick Client GUI	1.16	0	

User Pre-Release Notes

for RADNET rRIS

Build 1.17

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1. Purpose

This document describes some of the new features and changes implemented in rRIS as of the end of Sprint 17. This pre-release version of rRIS is referred to as Build 1.17.

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 rRIS Development team for the RadNet RIS management team.

3. Installing/Accessing the Application

The installation instructions for the rRIS client have been posted to the RadNet Wiki page at <http://mdbal01rdtweb/Wiki/>

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

Username: rRIS

Password: Summerside

Please note that Build 1.17 is considered a new core release of the application and will require a reinstallation of rRIS. This is accomplished by navigating to the rRIS 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 Spencer MacDougall with the PEI RIS Development Team.

4. New Features and Enhancements

Arbitration Signed

In Build 1.17 an Arbitration Signed Checkbox has been added to the patient form for study level data. The checkbox will not be visible if there is no associated study data.

The image shows a screenshot of a web-based registration form for a patient named Mike Richards. The form is titled "Registration (Mike Richards)" and has tabs for "Patient", "Patient Contacts", "Insurance", "Exam", and "Scanning". The "Patient" tab is selected, and the "General Information" section is visible. This section contains fields for Prefix, First Name (Mike), Last Name (Richards), Middle, Suffix, MRN (4444), Gender (Male), Birth Date (10-29-2010), and Place of Birth. On the right side of the form, there are three checkboxes: "Claustrophobic" (unchecked), "Arbitration Signed" (checked), and "Verified ID" (unchecked). The "Arbitration Signed" checkbox is highlighted with a green checkmark.

Figure 4.1 – Arbitration Signed Checkbox on the Registration Screen

Consecutive Receipt Numbers

Receipt Numbers are now generated based on the following criteria:

1. Payment Receipts have unique receipt numbers that are consecutive per site.
2. Receipts are generated when a payment is saved.
3. If a single payment is saved by itself, the system will assign it a unique receipt number.
4. If multiple payments are saved at once, they are assigned the same unique receipt number.
5. The same receipt number cannot be assigned to multiple visits.


The example on the next page will show a consecutive receipt number based on the concatenation of Site Code, Payment Number, and Visit Key.

Lutherville Receipt # LU-16-26062	Richards, Mike
Payment Receipt	
Patient Name: Richards, Mike Medical Record: 4444 DOB: 10/29/2010	
7/19/2011 11:53 AM Test Payment CreditCard 4125 \$100.00	
Total Payments \$100.00	
Billing Inquiries: (410) 580-2240 Please write this number on your check: 26062 Make checks payable to: Advanced Radiology	
We thank you for your patronage.	
Payment Receipt	Printed: 7/19/2011 11:53:41 AM

Figure 4.2 – Receipt Showing Consecutive Number Per Site “LU-16-26062”

Dataset Visualizer Change

The Dataset Visualizer is a tool that has been developed to aid support personnel in the field. It is automatically available to Super Users or can be added with an additional permission (Config.DataSetVisualizer). It basically allows the user to see the underlying datasets that belong to the current screen and is available by clicking Administration and DataSet Visualizer.



The screenshot shows a window titled "DataSet Visualizer" with a dropdown menu set to "Study.c_study". Below the menu is a table with the following data:

study_key	patient_key	order_key	accession_number	requested_procedure_id	sps_id	appointment_id	linked_id	status_code	pro
22305	152332	22941	1009094	1009082	28465	1008980	0	Scheduled	

Figure 4.3 – Dataset Visualizer Showing Study Data

Delete Dictation/Report and Reset Status

If a dictation has been submitted in error, the user requires the ability to delete the dictation and set the status of the exam back to either Signed or Exam Done status depending on the last known good state of the diagnostic report.

In Build 1.17 there is a context menu option on the Report Drafted, Dictated, and Patient Folder worklists that will allow a user to right-click on the selected exam and perform the delete dictation/report and reset status.

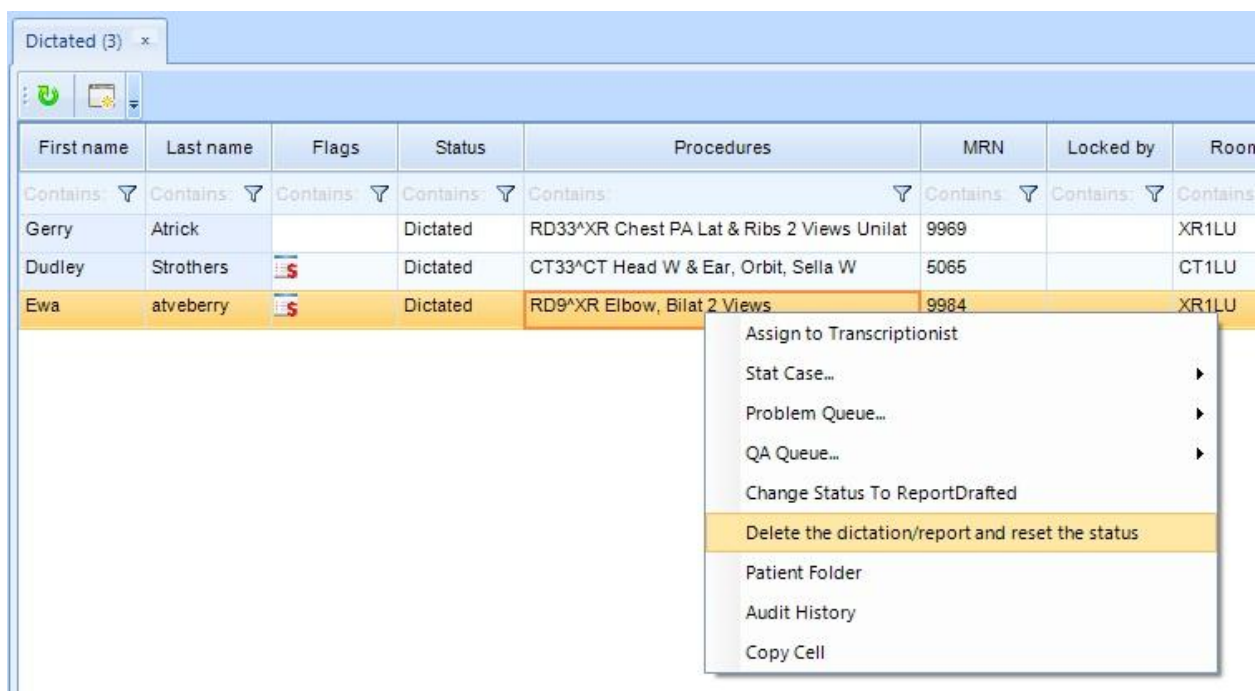


Figure 4.4 – Context Menu for Deleting a Dictation

When the delete dictation/report happens the system will remove the current dictation and set the status back to exam done with the exception of an addendum. If the dictation is for an addendum then the application will reset the status back to Signed where it can be dictated on once again if needed.

A dictation deletion can only be performed when the study is in Dictated, ReportDrafted or Transcribed status. There is a permission called “Clinical.DeleteDictationReportAndReset” with the default access level is set to “None”. Currently this permission is only enabled for Super User and Transcription Admin user groups.

When trying to delete a dictation, the system will prompt the user before completion. This action cannot be reversed and once the dictation and report are deleted there is no turning back.

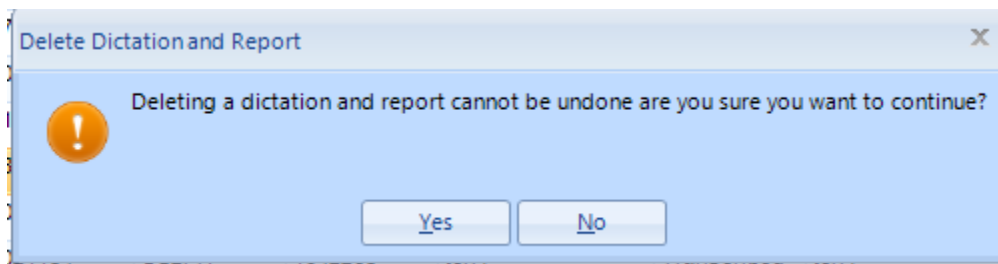


Figure 4.5 – User Prompt when Deleting a Dictation

Dictation Purge

There is a requirement for rRIS to have the ability to clean up dictations in the database based on a configurable number of days. The DaysToKeepDictation system configuration value is currently set at seven days. Dictations are deleted only for the exams that are signed.

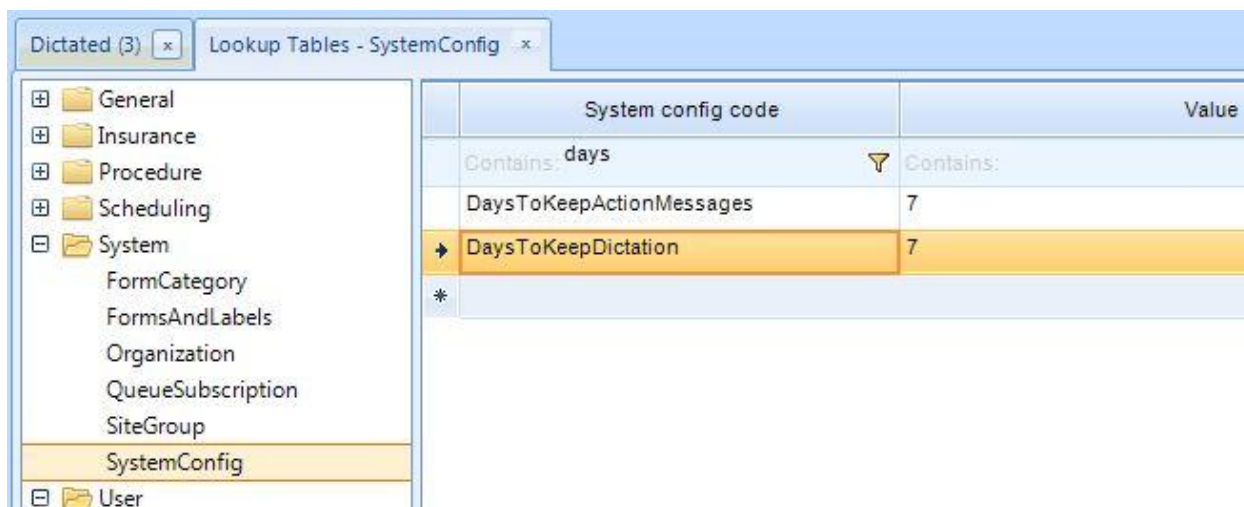


Figure 4.6 – System Config Value for the Number of Days to Keep Dictations

A user is still able to review a signed diagnostic report even if the dictation has been removed. The user is simply presented with a “No Audio Available” message.

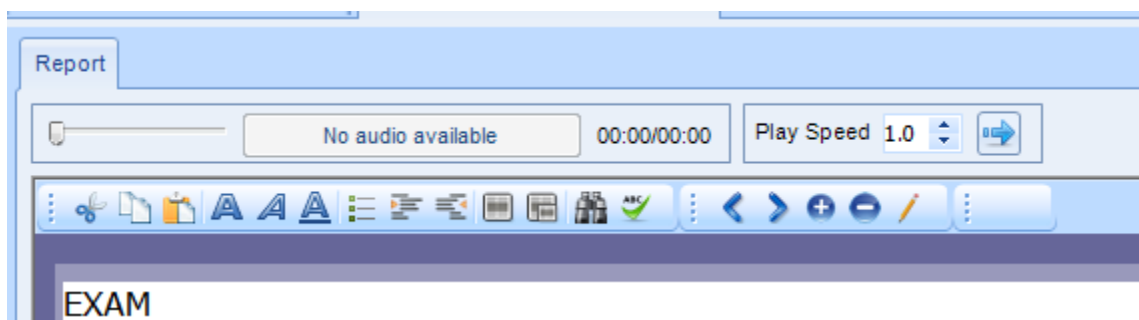


Figure 4.7 – Diagnostic Report Preview Indicating that No Audio is Available

Change Status to ReportDrafted

If a study happens to get hung or stuck in Dictated status, it may be necessary for the system administrator to advance it to the ReportDrafted status. He or she may only move the study to ReportDrafted from Dictated, Suspended, or Transcribed statuses.

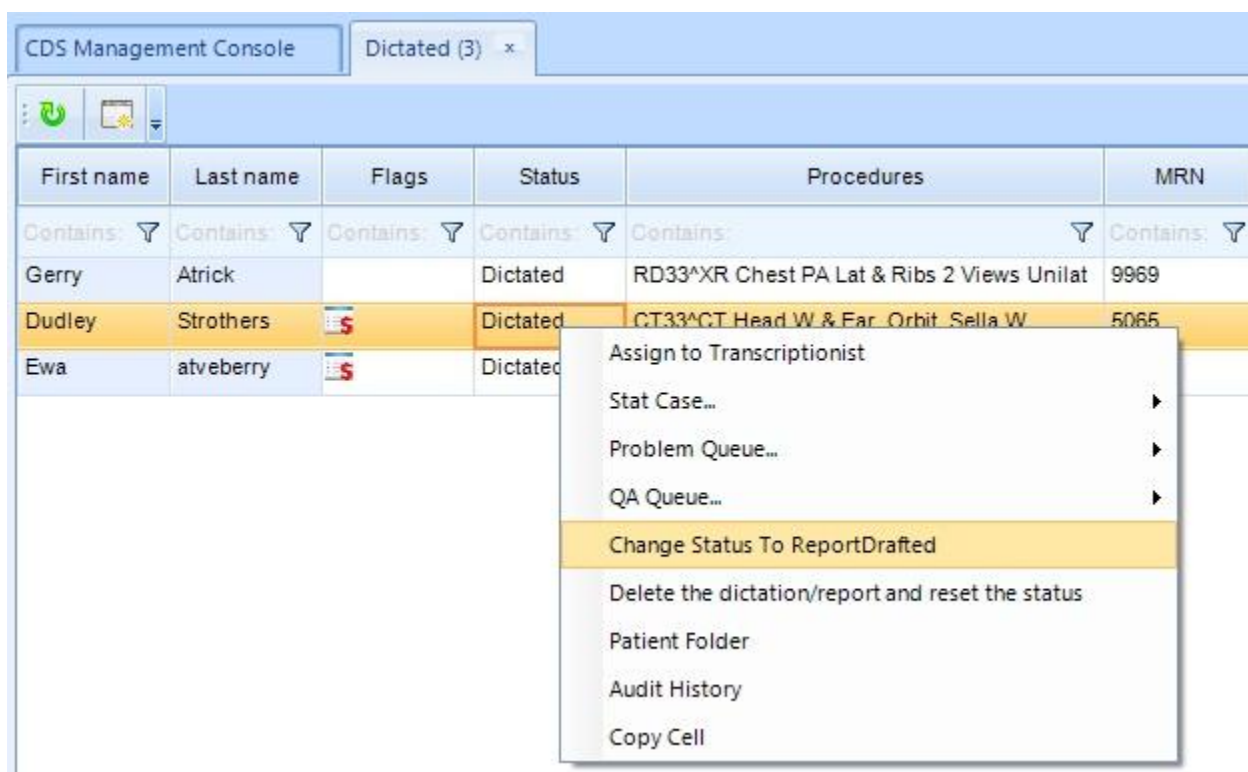


Figure 4.8 – Manually Advancing Study from Dictated to ReportDrafted Status

Forms and Labels Context Menu Refactor

In previous releases of rRIS, the Forms and Labels context menu was presenting a complete list to the user. In this release, the list is filtered by procedure code and modality type so only the appropriately mapped forms and labels will be presented to the user.

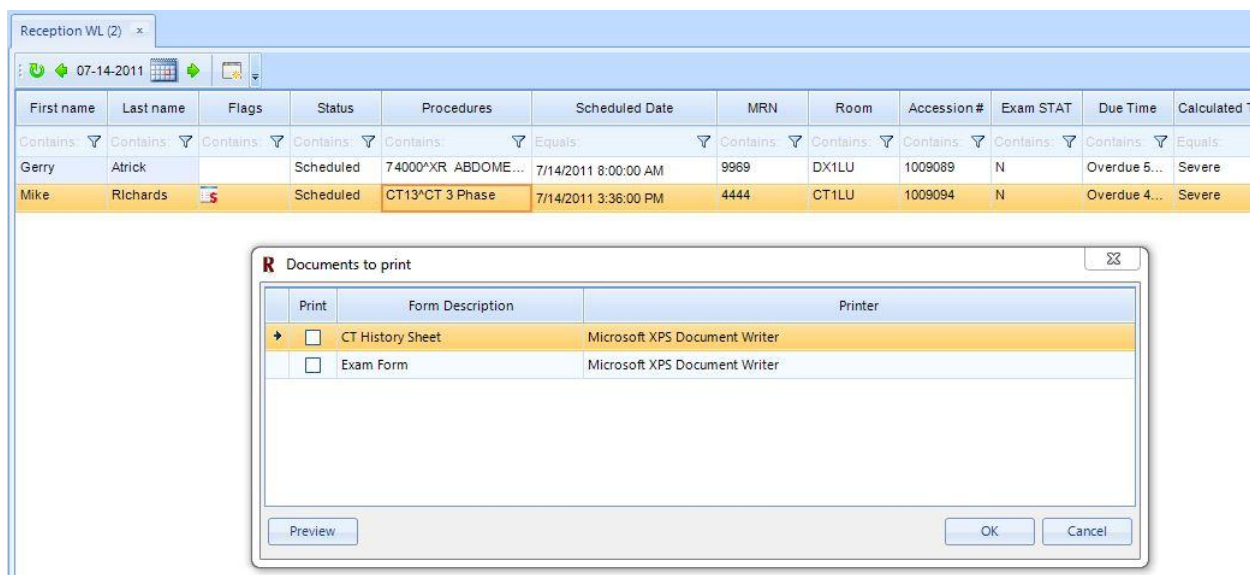


Figure 4.9 – Labels and Forms Selection Mapped to CT 3 Phase

If there are no modality type filters, the form will match any modality; otherwise it will only match the types on the list. Similarly, if there are no procedure code filters, the form will match any procedure; otherwise it will only match the procedure codes on the list. The application caches these modalities and procedures in hash tables the first time they are processed to improve performance.

If multiple rows are selected, the application will find the list of forms that match at least one row on the list. A form will only be printed for the selected rows that match the procedure and/or modality type criteria.

Insurance Policy Mask

Some insurance carriers have a policy that must conform to a known mask; the user should not be allowed to add a policy without specifying a valid policy number for these carriers that conforms to the mask.

Carrier code	Description	Policy number mask	Phone	Fax
Contains: ▼	Contains: ▼	Contains: ▼	Contains: ▼	Contains: ▼
01400030	CHIDI / TQIWO AGBAJE ESQ.		4105862007	4105586417
01400046	CHASE CHASE & HAMMERSCH...		4104884100	4104884174
➔ 01400051	CSEK	A000-000	4107521880	4105471996
0140265	KADISH & KADISH		4102961898	4103378504
01406201	MOBLEY & BROWN		(410)385-03...	4103855851

Figure 4.10 – Policy Mask set at Carrier Level

Masks can be created based on the following criteria:

- A – any letter/character is required
- 0 – any number/digit is required
- Any Character(ex: -) – a matching character is required

In the example above, A000-000 would match a policy of Z123-456 but not A123-45.

Patient Insurance Policies

Policies:

Use	carrier	policy number	group number	group name	Expired
<input checked="" type="checkbox"/>	5001161 INJURY CARE SERVICES, 8774306653	890072	102078	Test Data	<input type="checkbox"/>
<input checked="" type="checkbox"/>	0140749 ATKINS, RAYMOND M. JR, 4103217117	A0512Z			<input type="checkbox"/>

* Click here to add a new row

Invalid Policy number. Expected mask: A00000

Figure 4.11 – Message Presented to User when Mask does not Pass Validation

In the event that the mask is wrong and has not yet been updated by an administrator, the policy number can be prefixed with a “+” to bypass the mask validation.

Log Payments to Audit Trail

rRIS will now add payments to the audit log whenever a payment is posted or voided. The payment is visible in the Audit History viewer in the GUI under “Patient” or “Everything for this patient”.

description	notes	date	user id	retrieval	accession number	order number	status
Contains: ▾	Contains: ▾	Equals: ▾	Contains: ▾	Contains: ▾	Contains: ▾	Contains: ▾	Contains: ▾
Patient Retrieved		7/19/2011 3:13:31 PM	spencer	Y			
Study Updated	Study updated	7/19/2011 3:13:31 PM	spencer	N	1009091	1009433	
Study Updated	Order updated	7/19/2011 3:13:31 PM	spencer	N		1009433	OrderSigned
→ Study Updated	Added payment of \$50.00	7/19/2011 3:13:31 PM	spencer	N			
Study Updated	Visit updated	7/19/2011 3:13:31 PM	spencer	N			
Study Updated	Patient updated	7/19/2011 3:13:31 PM	spencer	N			
Study Retrieved		7/19/2011 3:13:13 PM	spencer	Y	1009091	1009433	Arrived
Study Updated	Study updated	7/13/2011 12:02:17 PM	Ian	N	1009091	1009433	
Study Updated	Visit updated	7/13/2011 12:02:17 PM	Ian	N			
Study Updated	Patient updated	7/13/2011 12:02:17 PM	Ian	N			
Study Retrieved		7/13/2011 12:01:28 PM	Ian	Y	1009091	1009433	Arrived
Study Retrieved		7/13/2011 12:01:22 PM	Ian	Y	1009091	1009433	Arrived

Figure 4.12 – Audit Trail showing Payment of \$50.00

Categorize the Lookup Editor

The Lookup Table Editor has been simplified by adding categories which will make navigation easier for the administrative user.

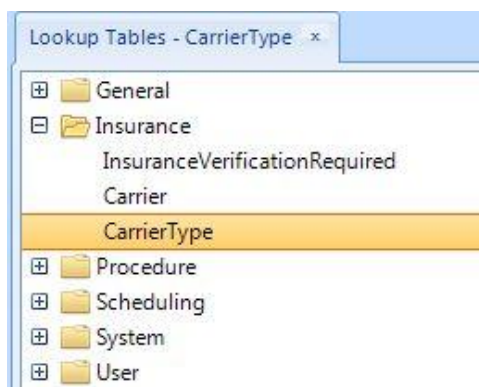
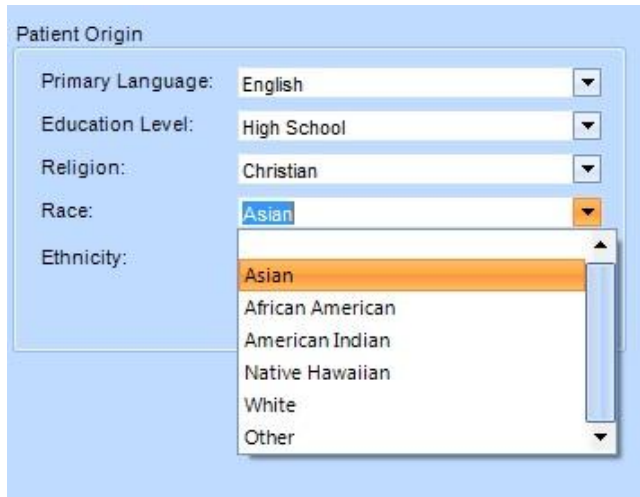


Figure 4.13 – Lookup Table Editor with Categories

Meaningful Use – Record Patient Demographics

This feature is to comply with Meaningful Use requirement 107.304.c for Patient Demographics. The system must allow a user to electronically record, modify, and retrieve patient demographic data including preferred language, gender, race, ethnicity, and date of birth for 50% of recorded patients. The race and ethnicity is to be recorded in accordance with the standard specified at §170.207(f).




The screenshot shows a form titled "Patient Origin" with several dropdown menus. The "Race" dropdown is open, showing a list of options: Asian, African American, American Indian, Native Hawaiian, White, and Other. The "Asian" option is highlighted in orange. The other dropdowns are set to: Primary Language: English, Education Level: High School, Religion: Christian, and Ethnicity: (empty).

Figure 4.14 – Patient Tab Showing Race Dropdown

Meaningful Use – Record Vital Statistics

Meaningful use requirement for vital signs is for a user to electronically record, modify, and retrieve a patient's vital signs including, at a minimum, the height, weight, and blood pressure (170.302.f.1_vitalsigns_v1.0.pdf). The system also needs to calculate body mass index automatically and display body mass index (BMI) based on a patient's height and weight (170.302.f.2_BMI_v1.0.pdf). The system will need to supply the means to plot and display growth charts for children 2-20 years, including BMI.



The screenshot shows a form titled "Demographics at Encounter" with various input fields and dropdown menus. The fields are: Height: 5ft 11in, Weight: 175 lbs, BMI: 24.40, Blood Pressure: 80 / 120, Smoking Status: Former Smoker, Marital Status: Married, Student Status: (empty), Employment Status: Full Time, and Is Pregnant: (checkbox). The BMI field is calculated based on the height and weight.

Figure 4.15 – Order Tab Showing Vital Signs and Calculated BMI

SpeechMike Bar Code Support

Build 1.17 has support for the SpeechMike Barcode scanner to perform specified actions in the application. The system supports two modes for barcode input:

1. Simple text entry - Takes the scanned barcode and essentially keyboards it into whatever field is active. This is the standard barcode implementation.
2. Trigger event action - This will cause the Barcode to trigger a configurable event to be fired in rRis and a corresponding action will be taken.

To configure this functionality the user will navigate to user preferences. There are two settings that they can change. One determines the mode the application will run in (keyboard text or event action). The other will determine which action will be triggered if event action mode is selected.

The screenshot shows the 'UserPreferenceForm' window with the 'Speech Recognition' tab selected. The 'SpeechMike Buttons' section contains seven dropdown menus: Function 1 (SignDictation), Function 2 (Undo), Function 3 (ContentBaseMoveNext), Function 4 (ContentBaseMovePrevious), EOL (ContentBaseMoveNext), Instr (BringRisToFront), and Trigger (BringRisToFront). The 'Foot Pedals' section has four dropdown menus: Pedal 1 (FastForwardPressed), Pedal 2 (PlayPressed), Pedal 3 (FastRewindPressed), and Pedal 4 (Not supported), along with a 'Get from device' button. The 'SpeechMike BarCode Mode' section has two radio buttons: 'Keyboard Text' and 'Event Action' (which is selected). Below this is the 'BarCode Event Action' section with a dropdown menu set to 'DiagnoseOnAccessionNumber'. At the bottom of the window are 'Save' and 'Close' buttons.

Figure 4.16 – User Preference Form Showing SpeechMike BarCode Mode

Inbound TCP Reporting

Build 1.17 now supports Inbound Transmission Control Protocol (TCP) Accession Numbers for Diagnostic Reporting. This will enable rRIS to accept an Accession Number from an external system (ex: PACS or HIS) and enable Reporting workflow.

Launch rRIS to System Tray

To support Radiologist workflow, there is a requirement that rRIS may have to run as a slave system to another system like the PACS. In order to satisfy this requirement, rRIS needs to be able to be configured to launch to the system tray.

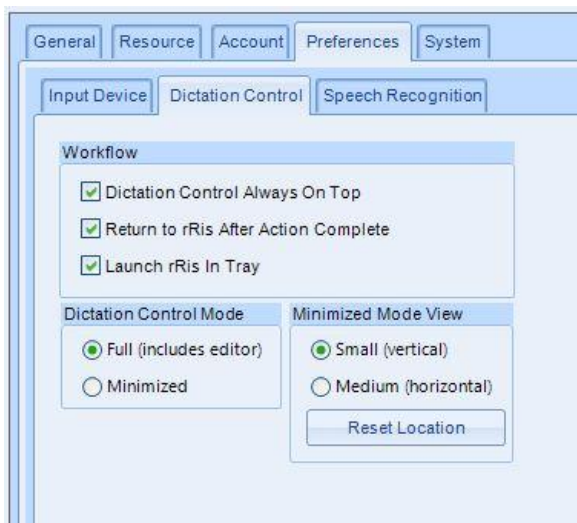


Figure 4.17 – “Launch rRIS In Tray” User Preference Enabled

If rRIS is configured to launch in tray, immediately after logging in the application will not show on the screen as usual but appear in the system tray as a small “R” icon.

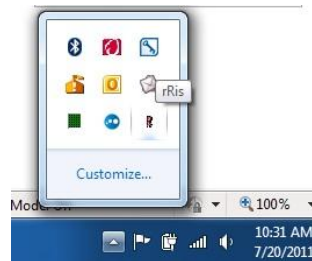


Figure 4.18 – rRIS Running on Windows System Tray

In this mode, the application can be brought on the screen by double clicking the tray icon or by using the icon's right-click context menu.

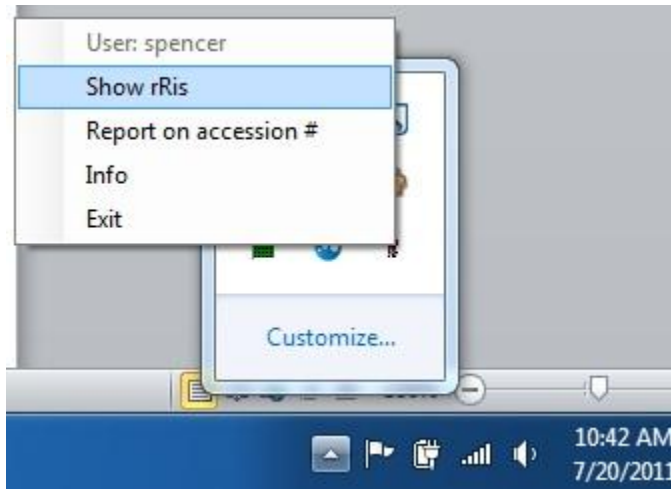


Figure 4.19 – rRIS System Tray Context Menu

Using the tray icon's context menu the user can use the following items:

- **User id** - identifies currently logged in user
- **Show rRis** - Will bring rRis on the screen, same as double clicking
- **Report on accession #** - Prompt user for the accession number
- **Info** - Will display information about rRis such as version
- **Exit** - Will exit rRis completely

When rRis is shown and this mode is configured, minimizing or closing rRis using the icons at the top right of the application window will simply return rRis to the tray icon. To actually exit rRis the user needs to select File -> Exit from the file menu when rRis is onscreen, or using the tray icons context menu -> Exit.

Report on Accession Number

This feature will allow the user to open the Diagnose screen on a study based on a specified accession number. This provides the user with the ability to bypass the worklist type workflow and run rRis in a “slave” type mode. The input of this accession number can come in different forms as tcp listener, file watcher, etc. These are all used as methods to drive workflow from another system such as a PACS system.

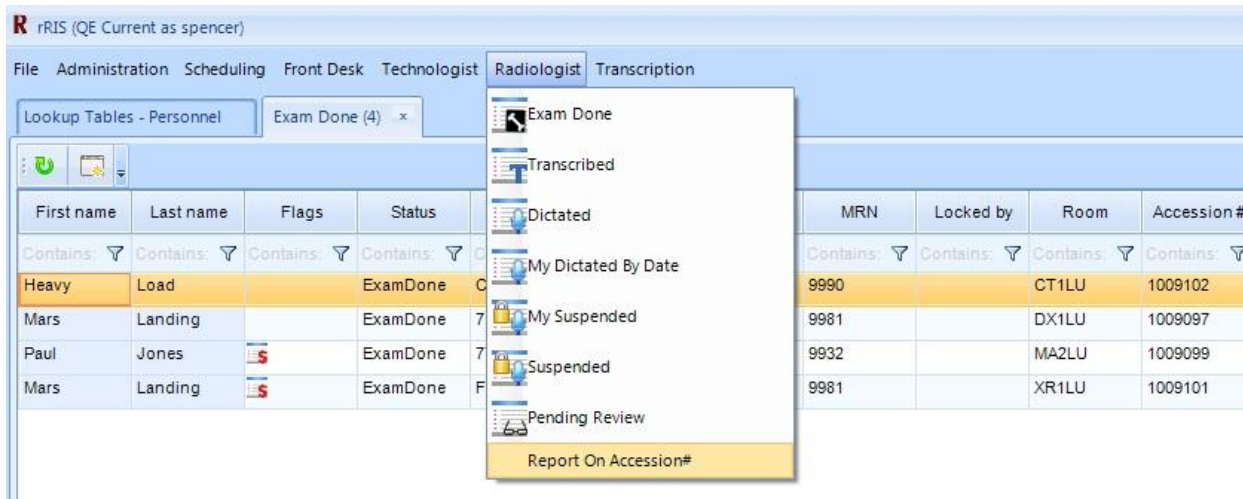


Figure 4.20 – Report On Accession# Menu Option in rRIS

The user also has the ability to manually enter an Accession Number and let rRIS search for it. This can be done by using the menu option or the right-click context menu on the system tray icon. If the Accession Number is not found, the user is prompted accordingly.

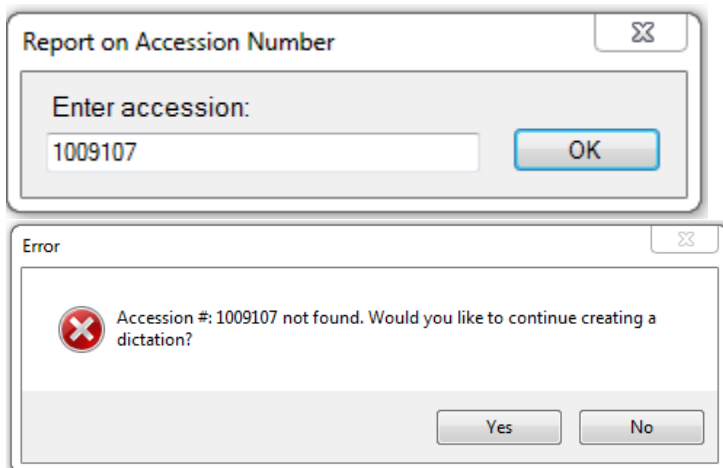


Figure 4.21 – Report on Accession Number Prompt and Accession Not Found Popup

Small and Medium Sized Dictation Control

Build 1.17 provides the radiologist user both small and medium dictation controls as a user preference for dictating on Accession Numbers outside of rRIS.

Two different dictation control layouts have been implemented; a vertical (small) and a horizontal (medium). These controls exist outside of the rRis GUI. They have the ability to float on the screen and can be placed where they interfere the least with the radiologist's existing RIS/PACS workstation.

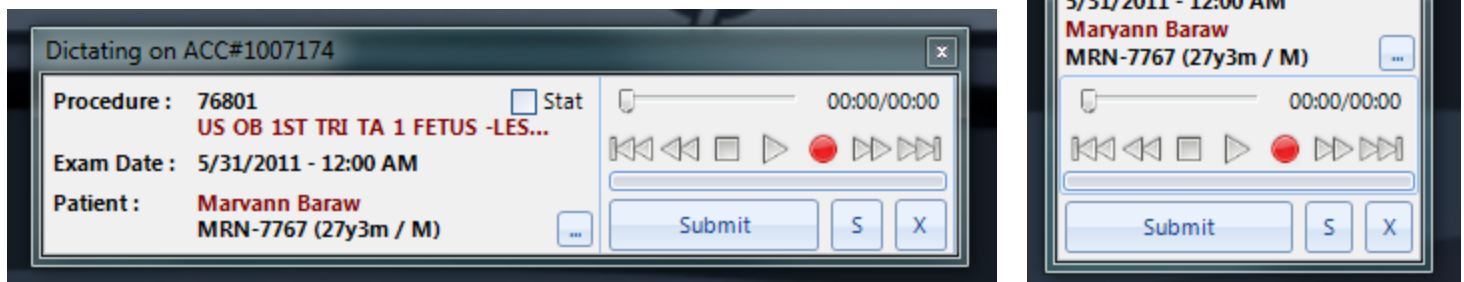


Figure 4.22 – Dictation Control Layouts

The radiologist has the option to use any of these two controls and he or she also has the option of using the full reporting screen. This is configured using the user preferences. There are two available options:

1. Dictation control mode (full or minimized)
2. Minimized Mode View (small or medium)

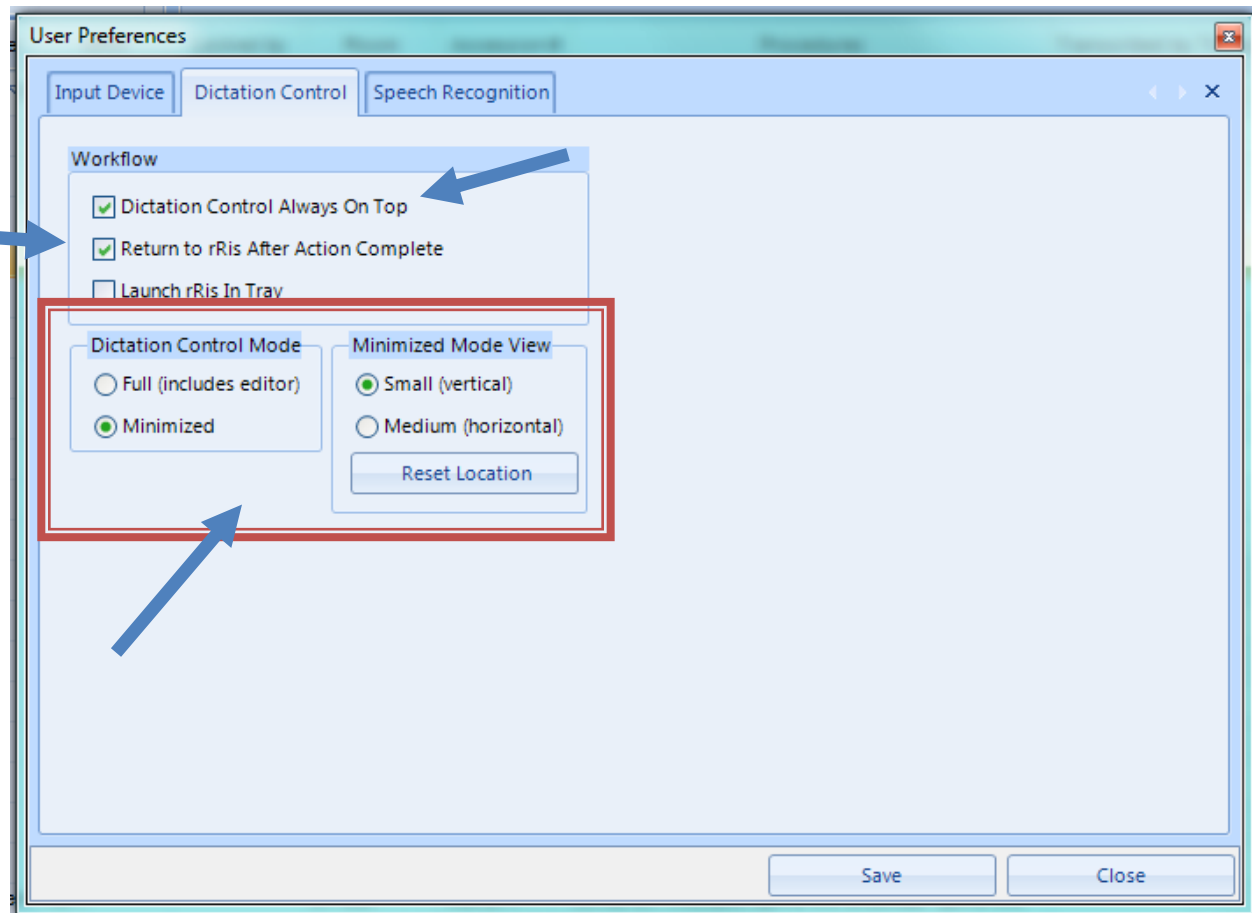


Figure 4.23 – Dictation Control User Preference

The minimized views can be placed anywhere on the screen and their location will be remembered forever. In the unlikely event that the location was saved to make them appear in an area which is not visible, in the user preferences the user can select “Reset Location” which will reset the control’s location to position 0,0 (top left of screen 1).

The “Dictation Control Always On Top” when turned on will force the control to remain on top of other windows even if the other window has focus.

When the radiologist has rRis open and diagnoses a study, if he or she is using the minimized mode, rRis will minimize and the dictation control will appear.

No Report Required Workflow

There are certain exams in rRIS that the radiologist will not be required to dictate on. These exams may need to be reported on in another system like a DEXA or not at all. There has been a new column added to the Procedure Code lookup table called No Report Required. When this column is set to “Y”, the system will not allow the radiologist to open the exam for dictation.

Lookup Tables - ProcedureCode * x						
	Procedure code	Description	Body part code	No report required flag	Laterality code	
	Contains: ▼	Contains: ▼	Contains: ▼	Contains: ▼	Contains: ▼	
→ ⊕	0028T	DX Body Composition Study		Y		
⊕	20605	FL Arthrocentesis Inject Intermediate Jt		N		
⊕	70030	XR ORBITS FOR FOREIGN BODY	T-D1100 (Head)	N		
⊕	70100	XR Mandible 1-3 Views	T-D1100 (Head)	N		

Figure 4.24 – No Report Required Specified at the Procedure Code Level

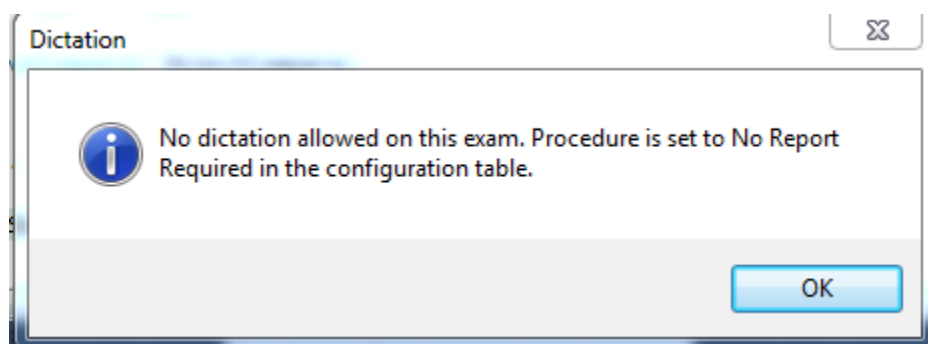


Figure 4.25 – Radiologist Prompt when No Report Required

Tech Notes Required

In Build 1.17, the “Technologists Notes” field is now required to be filled in before the technologist can make the procedure as Complete.

The screenshot displays the RADNET rRIS interface. At the top, there is a menu bar with options: File, Administration, Scheduling, Front Desk, Technologist, Radiologist, and Transcription. Below the menu bar, there are several tabs: 'Lookup Tables - Personnel', 'Exam Done (4)', 'Lookup Tables - ProcedureCode *', 'Technologist WL (1)', and 'Perform Exam (Clare Cone) *'. The 'Exam Done (4)' tab is active, showing a table with columns: Include, Flags, Status, Procedures, Scheduled Date, Room, Accession#, Locked by, and Read STAT. The table contains one row with the following data: Include (checked), Flags (green arrow), Status (Started), Procedures (CT66^CT Abdomen W & CTA Chest W/Wo), Scheduled Date (7/20/2011 4:37:00 PM), Room (CT1LU), Accession# (1009106), Locked by (spencer), and Read STAT (N). Below the table, there are several tabs: 'Patient', 'Documentation', 'Billing Codes', 'Scan Documents', and 'Notes / Exam Times'. The 'Notes / Exam Times' tab is active, showing a 'Tech Notes' section. The 'Tech Notes' section has a large text area for 'Technologists Notes' and a red exclamation mark icon. To the right of the text area, there are fields for 'Primary Tech' (Noye, Darcy), 'Assisting Tech 1', 'Assisting Tech 2', 'Last Menstrual Period' (06-28-2011), and a 'Pregnant' checkbox. Below these fields, there is a 'Shielded Patient' checkbox. The 'Procedure' section shows 'Scanner' (CT1LU) and 'Performed Procedure' (CT Abdomen W & CTA Chest W/Wo (CT66)). The 'Chief Complaint' section shows 'Referring Physician' (Noye, Darcy Phone: (541) 574-5855) and 'Chief Complaint'. At the bottom, there are buttons: 'Start', 'Suspend', 'Complete', 'Abort', 'Save', and 'Close'. A status bar at the bottom left shows 'Connected: QE Current 1.17.4805'. A status bar at the bottom right shows a red exclamation mark and the text: 'Tech Notes' must be entered before the exam can be completed.

Figure 4.26 – Technologists Notes as a Required Field

Closed Modality Worklist

There is a requirement for rRIS to support the ability to notify administrators and schedulers of any studies that are affected by room closures. A new Closed Rooms Reschedule worklist has been added to the application. When a room is closed for a time period and there are procedures scheduled for time slots in the closed time frame, the affected studies will appear on the Closed Rooms Reschedule worklist. This will allow the user to easily identify the affected studies and reschedule them.

Lookup Tables - Modality x

Modalities:

	Modality code	Description	AE title
	Contains: ▼	Contains: ▼	Contains: ▼
→	CT1EL	CT1EL	CT1EL
	CT1FH	CT1FH	CT1FH
	CT1LU	CT1LU	CT1LU
	DE1EL	DE1EL	DE1EL
	DE1FH	DE1FH	DE1FH
	DX1LU	DX1LU	DX1LU

CT1EL modality closure:

	From date	To date	
→	7/21/2011 6:00:00 AM	7/21/2011 10:00:00 PM	Maintenance on Scanner
*	Click here		

Figure 4.27 – Room CT1EL Closed for Maintenance

Closed Rooms Reschedule (4) x										
First name	Last name	Flags	Status	Procedures	Scheduled Date	MRN	Room	Accession#	Exam STAT	
Contains: ▼	Contains: ▼	Contains: ▼	Contains: ▼	Contains: ▼	Equals: ▼	Contains: ▼	Contains: ▼	Contains: ▼	Contains: ▼	
Mike	Richards		Scheduled	71260^CT Chest W	7/21/2011 8:15:00 AM	4444	CT1EL	1009107	N	
Abel	Jones		Scheduled	71260^CT Chest W	7/21/2011 9:15:00 AM	9765	CT1EL	1009110	N	
Bonnie783	Ballard		Scheduled	CT13^CT 3 Phase	7/21/2011 9:45:00 AM	65098	CT1EL	1009108	N	
Jeff3	Carr		Scheduled	71260^CT Chest W	7/21/2011 11:15:00 AM	39967	CT1EL	1009109	N	

Figure 4.28 – Studies from Room CT1EL that Require Reschedule

Database Cleanup Procedures

A procedure is required to clean up old unwanted data from the rRIS database. The 2 areas to date that have been identified requiring data cleaning are:

1. Audio dictations – The audio dictation is no longer needed when a report is “signed” or “action completed”. After a configurable retention period the audio should be purged.
2. Action Messages – Used by the application’s external interfaces, they should be purged when the messages are no longer referenced by a queue. Purging should happen after a configurable retention period.

To fulfil this requirement two new stored procedures have been added the database. CleanupSignedDictations will delete the dictation rows for all studies that are signed and have been signed for a configurable amount of days. CleanupActionMessages will delete the action rows for all messages that are no longer referenced in the message queue and are older than a configurable amount of days.

Both of these stored procedures can be scheduled to run by the database server.

Interval Change for Appointment Book

The Appointment Book in Build 1.17 now supports the ability to alter the size of the intervals between time slots so more hours can be displayed on the screen.

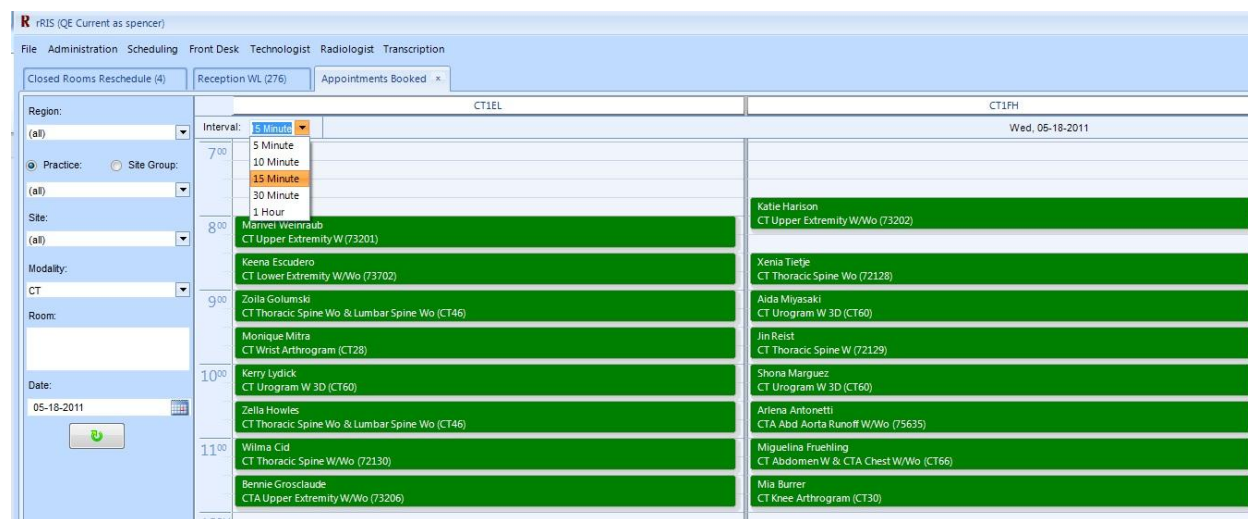


Figure 4.29 – Appointment Book showing Time Slot Intervals

LMP for Females Age 12-55

The technologist screen in this release of rRIS will now only force LMP (Last Menstrual Period) to be required for females age 12 to 55 years. In the example below, the technologist is documenting a procedure for a female patient age 21 years. The system will not allow the user to save changes until LMP has been specified.

The screenshot shows the rRIS (QE Current as spencer) interface. The top menu bar includes File, Administration, Scheduling, Front Desk, Technologist, Radiologist, and Transcription. Below the menu, there are tabs for Closed Rooms Reschedule (4), Reception WL (276), Appointments Booked, Technologist WL (1), and Perform Exam (Clare Cone) * x. A table lists procedures with columns: Include, Flags, Status, Procedures, Scheduled Date, Room, Accession#, Locked by, and Read STAT. The first row shows a procedure: CT66*CT Abdomen W & CTA Chest W/Wo, Scheduled Date 7/20/2011 4:37:00 PM, Room CT1LU, Accession# 1009106, Locked by spencer, and Read STAT N. Below the table, there are tabs for Patient, Documentation, Billing Codes, Scan Documents, and Notes / Exam Times. The Tech Notes section shows a note: Patient complaining of pain in chest during procedure. The Primary Tech is Noye, Darcy. The Last Menstrual Period field is highlighted with a red exclamation mark and the text 'mm-dd-yyyy', indicating it is required. There are also checkboxes for Pregnant, Not Pregnant, and Shielded Patient. The Procedure section shows the Scanner as CT1LU, Performed Procedure as CT Abdomen W & CTA Chest W/Wo (CT66), Laterality/Body Part as Abdomen, and Change Reason Code as . The Chief Complaint section shows the Referring Physician as Noye, Darcy Phone: (541) 574-5855 and the Chief Complaint as stomach pain. At the bottom, there are buttons for Start, Suspend, Complete, Abort, Save, and Close. The status bar at the bottom shows 'Connected: QE Current 1.17.4805' and a red exclamation mark icon with the text 'There are 2 Errors'.

Include	Flags	Status	Procedures	Scheduled Date	Room	Accession#	Locked by	Read STAT
<input checked="" type="checkbox"/>		Started	CT66*CT Abdomen W & CTA Chest W/Wo	7/20/2011 4:37:00 PM	CT1LU	1009106	spencer	N

Tech Notes

Technologists Notes:
Patient complaining of pain in chest during procedure

Primary Tech: Noye, Darcy
Assisting Tech 1:
Assisting Tech 2:
Last Menstrual Period: mm-dd-yyyy ☐ Pregnant ☐ Not Pregnant
☐ Shielded Patient

Procedure

Scanner: CT1LU
Performed Procedure: CT Abdomen W & CTA Chest W/Wo (CT66)
Laterality/Body Part: / Abdomen
Change Reason Code:
Change Reason Note:

Chief Complaint

Referring Physician: Noye, Darcy Phone: (541) 574-5855
Chief Complaint: stomach pain

Start Suspend Complete Abort Save Close

Connected: QE Current 1.17.4805 There are 2 Errors

Figure 4.30 – Technologist Screen showing LMP as Required for 21 Year Old Female

Weight Mask and Restriction

Because certain modalities have weight restrictions, the system will now prompt the user when scheduling a procedure in a room that has a weight restriction that the patient's weight is violating. A Weight field has been added to the Modality lookup to support this.

Appointment Booked Technologist WL (1) Lookup Tables Lookup Tables - Modality * Schedule Order (Richards Mike) *						
Modalities:						
Modality code	Description	Weight	AE title	Digital	Site code	
Contains: ▾	Contains: ▾	Equals: ▾	Contains: ▾	Contains: ▾	Contains: ▾	
CT1EL	CT1EL	300	CT1EL	N	EL (Eldersburg)	
CT1FH	CT1FH		CT1FH	N	FH (Fisher)	
CT1LU	CT1LU		CT1LU	N	LU (Lutherville)	
DE1EL	DE1EL		DE1EL	N	EL (Eldersburg)	
DE1FH	DE1FH		DE1FH	N	FH (Fisher)	
DX1LU	DX1LU		DX1LU	N	LU (Lutherville)	

Figure 4.31 – Weight Limit of 300 Pounds set on Room CT1EL

Closed Rooms Reschedule (4) | Reception WL (276) | Appointment Booked | Technologist WL (1) | Lookup Tables | Lookup Tables - Modality | Schedule Order (Richards Mike) * x

Patient | Order | Schedule | Review

Studies

CT Chest W x

Click here to add another study

Warning

This Patient Exceeds the weight Limit of the rooms scanner for the following Studies:
CT Chest W(71260)

OK

Body Part: Chest

Summary | Advanced

EL	FH	LU
CT1EL	CT1FH	CT1LU
Thu, 07-21-2011		Thu, 07-21-2011
	2:30 PM 30	2:30 PM 30
	3:00 PM 30	3:00 PM 30
	3:30 PM 30	3:30 PM 30
Fri, 07-22-2011		Fri, 07-22-2011
7:45 AM 30	7:45 AM 30	7:45 AM 30
8:15 AM 30	8:15 AM 30	8:15 AM 30
8:45 AM 30	8:45 AM 30	8:45 AM 30
9:15 AM 30	9:15 AM 30	9:15 AM 30

Figure 4.32 – Scheduler Prompted that the Patient Exceeds the Weight Limit of the Room

Demographics at Encounter

Height: 6ft 3in Marital Status: Married ▾

Weight: 325 lbs Student Status: ▾

Blood Pressure: 90 / 140 Employment Status: Full Time ▾

Smoking Status: Smoker ▾ ☐ Is Pregnant

Figure 4.33 – Patient Weight at the Time of the Order/Request

Void Payments Permission

In Build 1.17 a new permission has been added to the application so not just any user can void a payment. The new permission is called Clinical.VoidPayment. If the user does not have this permission granted, then the Void Payment option will not be enabled on the payment context menu.

Payments				Injuries	
Posted By	Amount	Payment Method	Date	claim #	date of injury
spencer	\$100.00	Cash	07-21-2011		

Buttons: Add Payment, Total: \$100.00, Edit Payment, View Injury Details

Context Menu: Void Payment, Delete Payment

Figure 4.34 – Void Payment Option on Registration Screen

ZIP Code to City and State

When a ZIP Code is entered for a new or existing patient, the system will now automatically populate the patient’s city, state, and country. The complete list of ZIP Codes is supplied to rRIS by a third party and will be updated periodically as new ZIP Codes are added.

Contact Information			
Address 1:	14 Pine Drive	Zip:	94539
Address 2:	Suite 456	Country:	USA
City:	Fremont	Home Phone:	(902) 555-4789
State:	California	Mobile Phone:	(902) 555-7845
		Email:	rob@mail.com

Figure 4.35 – Patient Contact Information with ZIP Code Lookup

In the example above, the user entered “94539” into the Zip field and clicked the Search button or pressed the Enter key. The City, State, and Country automatically populated for the user.

Personnel Improvements

The Personnel/User Management screen has been refactored to improve performance. Because of the potential large number of referring doctors and system users that will live in the system, it made more sense to force the user to search first rather than loading all user information into memory. In the screenshot below the system administrator is returning a list of all Referring doctors with Last Name starting with “w”.

The screenshot displays the 'Personnel Search' window. The search criteria are set to 'Last Name: w' and 'Type: Referring'. The results table lists six entries, with the first entry highlighted.

Last name	First name	Summary	Resource details
WISINSKI	WIESLAWA	Gender: M Cell: 1518044239 ID: 17856 NPI: NONPI164	Ref,
WARREN	WILLIAM	Gender: M Cell: 1669478285 ID: 17984 NPI: NONPI292	Ref,
WATERFIELD	WILLIAM	Gender: M Cell: 1871552760 ID: 17985 NPI: NONPI293	Ref,
WOMENS CEN		Gender: M Cell: NONPI ID: 17994 NPI: NONPI301	Ref,
WOMENS HEA ASSOCIATES		Gender: M Cell: NONPI ID: 17995 NPI: NONPI302	Ref,
WOMENS HEA		Gender: M Cell: NONPI ID: 17996 NPI: NONPI303	Ref,

6 Rows

Figure 4.36 – Personnel Search Screen

Once the search results are returned, the administrator can select one of the returned rows or add a new user.

The screenshot displays the 'Personnel' screen in the RADNET rRIS system. On the left is a navigation pane titled 'Lookup Tables - Personnel' with a tree structure. The 'Personnel' item is selected and highlighted in orange. The main area on the right contains a form with several tabs: 'General', 'Resource', 'Account', 'Preferences', and 'System'. The 'General' tab is active. The form includes fields for 'First Name' (ASSOCIATES), 'Prefix' (empty), 'Birth Date' (03-31-2011), 'Middle Name' (empty), 'Gender' (Male), 'Last Name' (WOMENS HEALTH), and 'Suffix' (empty). There is a checkbox for 'Active Person' which is checked. Below these fields is a section titled 'Contact Information' containing 'Mobile #' (NONPI) and 'Email' (empty). At the bottom of this section is a table with three columns: 'Contact', 'Address', and 'Delivery'. The table has one data row highlighted in orange.

Contact	Address	Delivery
Work Address Phone: 4103379878 Fax: 4103376955	7300 YORK RD TOWSON, MD 21204 (US)	Fax to 4103376955

Figure 4.37 – Personnel Screen Showing Selected Referring User

Scanning – Auto Deskew and Auto Enhance

Auto Deskew - The scan control has been enhanced to automatically detect if the scanned document/image is smaller than the scan surface and if so crop, rotate (if needed), and then crop again so that the final image fits better on the screen and less wasted area is captured and saved. The purpose of this feature is so users will be able to scan batches of documents and categorize them later.

Auto Enhance - Several image processing algorithms were introduced. Mainly some scanners such as flatbed scanners introduce a lot of noise into the image such that dust or a hair could be detected as document content and affect the crop and rotation logic. For this reason a medium filter is applied to a copy of the image, which removes random and dust noise, then the crop and rotation calculations are based on that temporary (less noisy) version of the image.

The first of the following screen shots shows a document scanned directly into Photoshop without any enhancements, while the second shows the same document exported from an rRIS Scan. The histogram in the right of each of these images shows the stretching that has occurred in the data. This enhancement is dynamic based on the first occurrences of black and white in the image and has a major improvement on readability and the quality of re-prints.

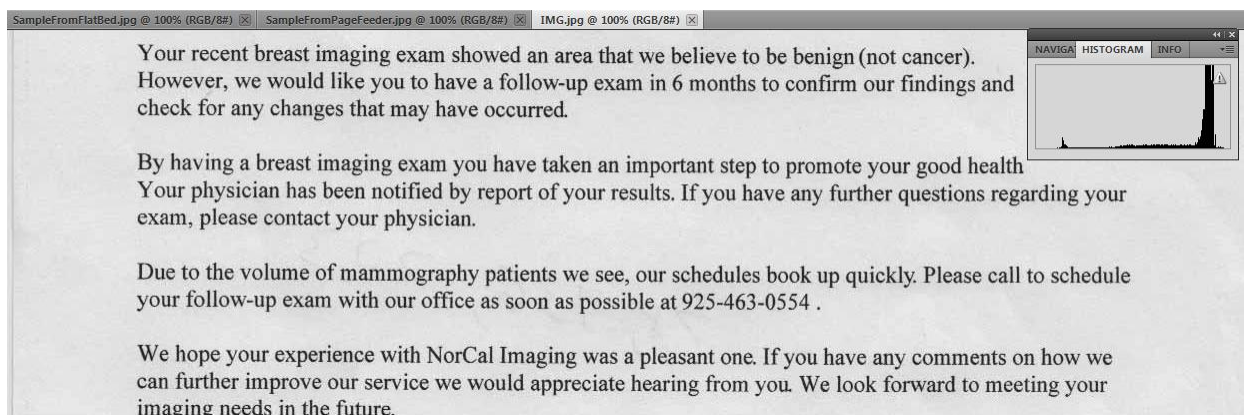


Figure 4.38 – Scanned Image with AutoEnhance Disabled

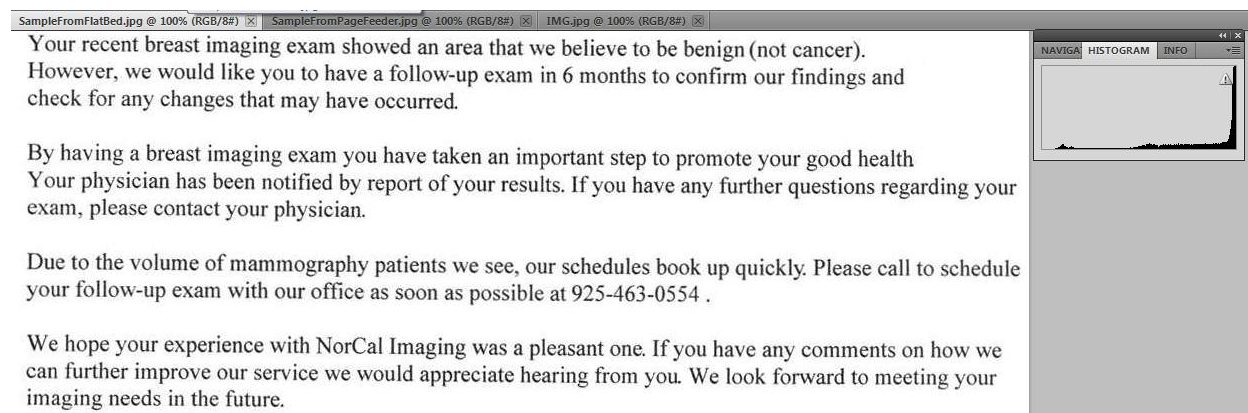


Figure 4.39 – Scanned Image with Auto Enhance Enabled

These two new options are configurable by document type and can be turned on or off at the time of scanning as shown in the following acquire scan dialog:

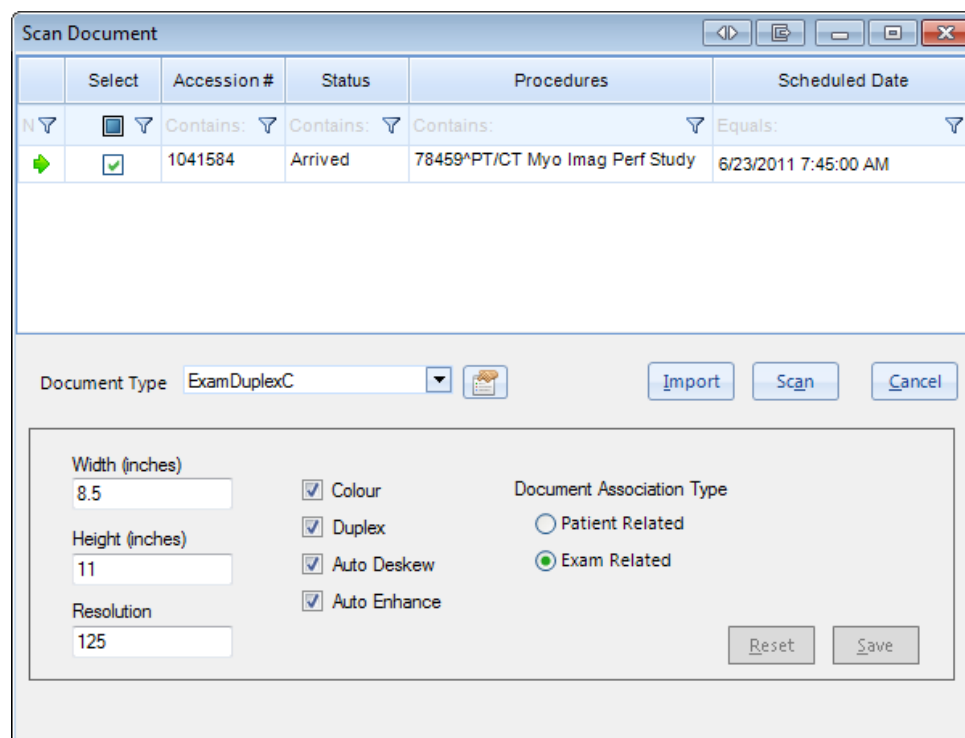


Figure 4.40 – Scanned Document Type with Auto Deskew and Auto Enhance Specified

Also to improve fixing rotations after a batch scan, keyboarding shortcuts such where tweaked to include tool tips such as <Page Down> for previous image, <Page Up> for next image, <R> for rotate right, <Shift>+<R> for rotate left, <F> for flip and <Enter> to accept the changes and close the window. In addition, the space bar will change the view type between “Fit To Screen”, “Fit To Width” and “Original”. The up and down arrows will also flip between pages; however, if the scroll bar is shown the up and down arrows will move you up and down though the document (same as mouse wheel).

Print “ALL” was introduced as a standard option in the print dialog box so that “Selection” is now the default and will only print the image the user has selected, while the “All” option, which previously didn’t function will print all the images.

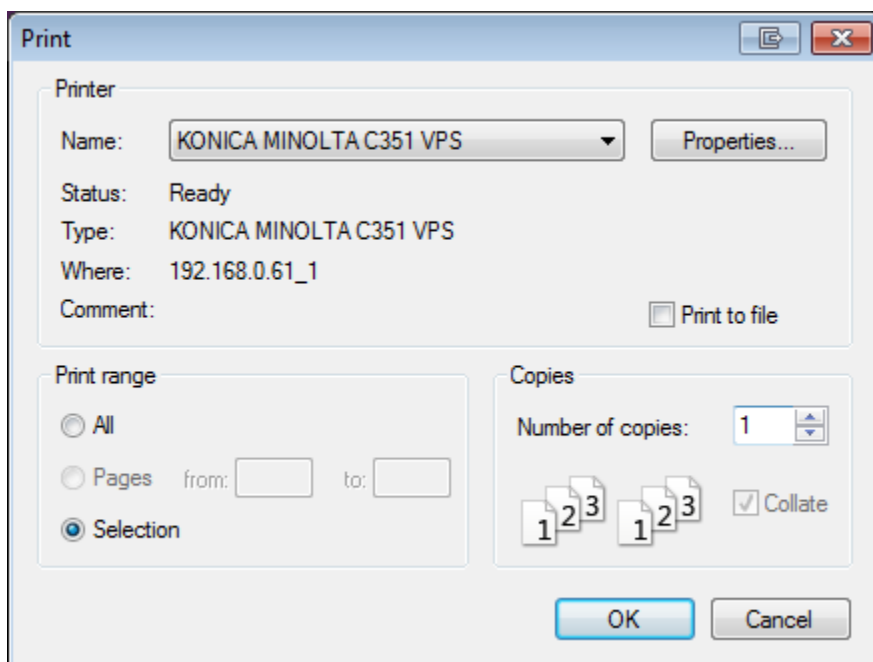


Figure 4.41 – Printing Scans Dialog Box

5. Known Limitations

Bugs, Suggested Features, and Support Issues are now tracked in a web based system called Redmine. The following is a snapshot of the issues found in Build 1.17.

#	Status	Subject	Category	Found	%Done	Resolved
463	New	Concurrency error on scheduling	Web Services/DB	1.17	0	
462	New	Error attempting to save an edited scheduled exam from Appointment Book	Thick Client GUI	1.17	0	
461	New	Editing Order Notes	Thick Client GUI	1.17	0	
460	New	Order / Scheduling > Schedule This Order button is active on scheduled exam in Patient mode	Thick Client GUI	1.17	0	
459	New	Admin tools > cannot view entire tool tip	Admin Tools	1.17	0	
458	New	Add payment error - WCFClient Receipt_number error	Thick Client GUI	1.17	0	
457	New	Edit User - Account > Account Information > User Groups > not all user groups are displayed when more than one line of user groups assigned.	Thick Client GUI	1.17	0	
456	New	GUI dictation control visualization	Thick Client GUI	1.17	0	
455	New	Report history button is active when there is no report history	Thick Client GUI	1.17	0	
454	New	Add / edit user - Contact information edit button active when no enteries to edit!	Admin Tools	1.17	0	
452	New	Add / edit user - Contact information - problem with phone/fax number field	Admin Tools	1.17	0	
451	Resolved	Data Nuggets - Can cause multiple instances or rRIS	Thick Client GUI	1.17	100	1.18
450	Resolved	Data Nugget - Exception loading report	Thick Client GUI	1.17	100	1.18
449	New	Reporting - Exception deleting dictation	Thick Client GUI	1.17	0	
448	New	Receipt - Registration screen should stay in foreground when prompted for receipt	Thick Client GUI	1.17	0	
447	New	Dictation - User is able to start dictating with SpeechMike when it is not the recording device	Thick Client GUI	1.17	0	
446	New	Receipt - No means to reprint a receipt	Thick Client GUI	1.17	0	
445	New	Checkbox - When selecting, forms do not get marked as dirty	Thick Client GUI	1.17	0	
444	New	Worklist - Issue with dates when adjusting row height	Thick Client GUI	1.17	0	
443	Closed	Save As Order - Exception on Save	Thick Client GUI	1.17	100	1.17
442	New	Edit Order - Payments will not save to database	Thick Client GUI	1.17	0	
430	Resolved	Patient Search - Issue when searching by phone number	Thick Client GUI	1.17	100	1.18

User Pre-Release Notes

for RADNET rRIS

Build 1.18

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1. Purpose

This document describes some of the new features and changes implemented in rRIS as of the end of Sprint 18. This pre-release version of rRIS is referred to as Build 1.18.

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 rRIS Development team for the RadNet RIS management team.

3. Installing/Accessing the Application

The installation instructions for the rRIS client have been posted to the RadNet Wiki page at <http://mdbal01rdtweb/Wiki/>

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

Username: rRIS

Password: Summerside

Please note that Build 1.18 is considered a new core release of the application and will require a reinstallation of rRIS. This is accomplished by navigating to the rRIS 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 Spencer MacDougall with the PEI RIS Development Team.

4. New Features and Enhancements

Aborted Study Workflow

In previous versions we could abort a study and reschedule but if the user chose not to reschedule, the study was left in aborted status. In build 1.18 we have taken it a step further. Instead of leaving the study in aborted status we now make a copy of the visit and order and mark them as new, resulting in the study being moved back to the Orders to Schedule work list. A pop up in the Perform Exam screen informs the user that the order has been returned to pending orders work list.

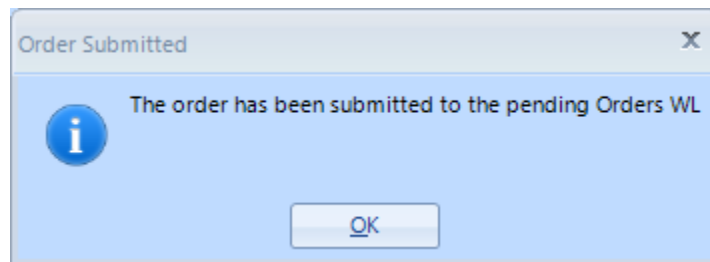


Figure 4.1 – Aborted Study Confirmation box.

Ability to add Assigned, Performing and Assisting Radiologists

In build 1.18 three new list boxes were added to the Perform Exam allowing the Technologist to capture the Assigned Radiologist, Performing Radiologist and Assisting Radiologist.

File Administration Scheduling Front Desk Technologist Radiologist Transcription MD/ADV

Perform Exam (Zelda Zoom) * x

Include	Flags	Status	Procedures	Scheduled Date	Referring	Room	Accession #	Locked by	Read STAT	Sedation
<input checked="" type="checkbox"/>	\$	Arrived	76604*US Chest	03/08/2011 1:00:00 PM	Dr Darcy Noye	US1EL	1009175	darcyn	N	

Patient Documentation Billing Codes Scan Documents Notes / Exam Times

Notes:

Primary Tech: Noye, Darcy
 Assisting Tech 1:
 Assisting Tech 2:
 Last Menstrual Period: mm-dd-yyyy ☐ Pregnant ☒ Not Pregnant
☐ Shielded Patient

Chief Complaint

Referring Physician: Noye, Darcy Phone: (541) 574-5855
 Chief Complaint:

Associated Radiologists

Assigned Radiologist: MacDougall, Spencer
 Performing Radiologist: Power, Ian
 Assistant Radiologist: Piled, Jerry
 Molyneaux, Levin
 MacDougall, Spencer
 Harding, Clifton
 John, Harry
 Noye, Darcy
 Piled, Jerry

Start Suspend Complete

Saved: Schedule Order

Figure 4.2 – Associated Radiologists list boxes

Capture Injury / Adjustor Info

In build 1.18 the Adjustor's first and last names and also adjustor's phone number can be captured in the Manage Policies / Patient Insurance Policies window.

Use	carrier	policy number	group number	group name	Expired
<input type="checkbox"/>	720125 MEDICAL CLAIMS MANAGEMENT CORP, 8003340609	12684651	5411		<input type="checkbox"/>

Click here to add a new row

☐ Show Inactive Policies

Policy Holder Information

Relation to patient: Parent
 First Name: Connie
 Last Name: Cone
 Birth Date: 02-27-1963
 Gender: Female

Injury Details

Claim Number: 1524 ☒ Unknown Claim Number
 Injury Date: 07-25-2011
 City: Sunnyville
 State: PE
 Adjustor First Name: Henry
 Adjustor Last Name: Wienstien
 Adjustor Phone Number: (902) 154-8798
 Source: Employment
 Employer: Sunnyville Honda

OK Cancel

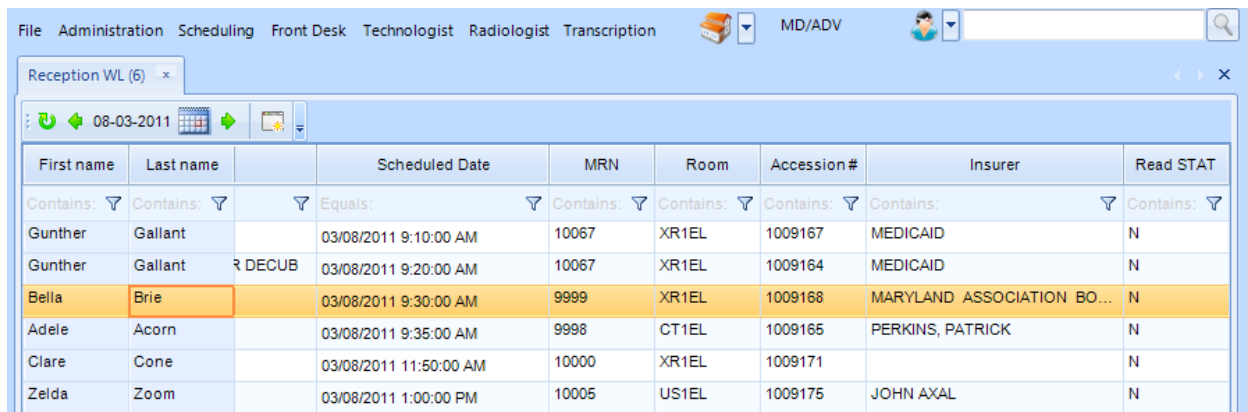
Figure 4.3 – Manage Policies – Injury details with new fields to capture Adjustor info and Unknown Claim Number.

Unknown Claim Number Flag

Some carriers require that a claim number be captured. If the claim number is not known at the time of entering insurance information, the user had no way to proceed. In build 1.18 we have added a check box “Unknown Claim Number” so the work flow can proceed (see Figure 4.3 of this document). Other injury information can be captured, and selecting Unknown Claim Number will allow the user to save Policy and Injury details.

Carrier Information on Registration Work List

Build 1.18 the carrier name will be displayed on the Reception work list listed in a new column for each patient. If the patient does not have carrier information, the column is left blank. If the patient has more than one carrier policy, only the primary carrier will be displayed.



The screenshot shows the 'Reception WL (6)' window. At the top, there's a menu bar with 'File', 'Administration', 'Scheduling', 'Front Desk', 'Technologist', 'Radiologist', and 'Transcription'. Below the menu is a toolbar with icons for refresh, back, forward, and search. The main area is a table with columns: First name, Last name, Scheduled Date, MRN, Room, Accession#, Insurer, and Read STAT. The table contains several rows of patient data. The row for 'Bella Brie' is highlighted in orange, showing a scheduled date of 03/08/2011 9:30:00 AM, MRN 9999, Room XR1EL, Accession# 1009168, and Insurer MARYLAND ASSOCIATION BO....

First name	Last name	Scheduled Date	MRN	Room	Accession#	Insurer	Read STAT
Contains: ▼	Contains: ▼	Equals: ▼	Contains: ▼	Contains: ▼	Contains: ▼	Contains: ▼	Contains: ▼
Gunther	Gallant	03/08/2011 9:10:00 AM	10067	XR1EL	1009167	MEDICAID	N
Gunther	Gallant	03/08/2011 9:20:00 AM	10067	XR1EL	1009164	MEDICAID	N
Bella	Brie	03/08/2011 9:30:00 AM	9999	XR1EL	1009168	MARYLAND ASSOCIATION BO...	N
Adele	Acorn	03/08/2011 9:35:00 AM	9998	CT1EL	1009165	PERKINS, PATRICK	N
Clare	Cone	03/08/2011 11:50:00 AM	10000	XR1EL	1009171		N
Zelda	Zoom	03/08/2011 1:00:00 PM	10005	US1EL	1009175	JOHN AXAL	N

Figure 4.4 – Carrier Information displayed on Reception work list.

Insurance Policy Carrier notes popup

Previous to build 1.18 the user had to double click on the carrier to see the Insurance Carrier Notes. New in this build when Insurance Carrier information is added or edited we will now automatically display in a popup message displaying the Carrier notes when one of the following conditions are met.

1. The Carrier has associated notes configured
2. The “Use” check box is selected for that Carrier.

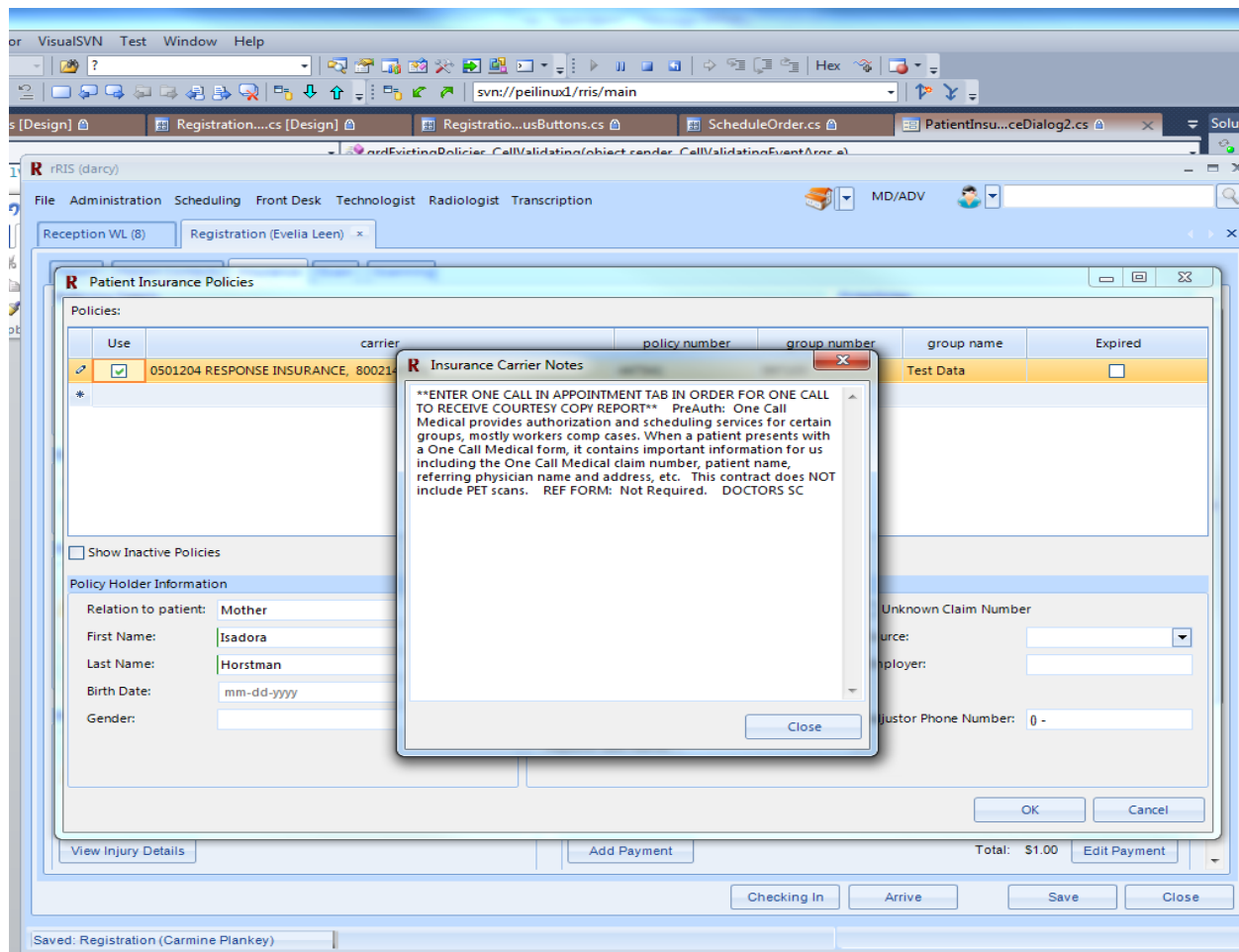


Figure 4.5 – Carrier Notes Popup displays when adding or editing Carrier information

Clone Personnel

Build 1.18 has the added ability to clone personnel allowing an Administrator to copy the settings of an existing user. A drop down list box has been added under the Create New button (see figure 4.6).

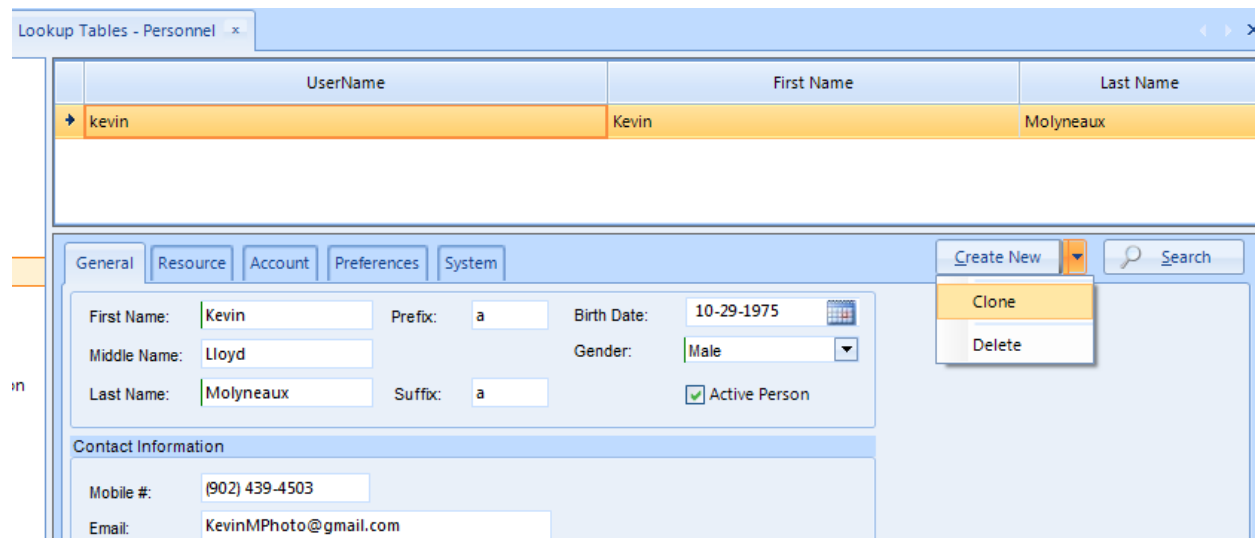


Figure 4.6 – Create New Clone option

Selecting Clone will open a new window where the user can then choose which options they would like to have pre-configured for the new user.

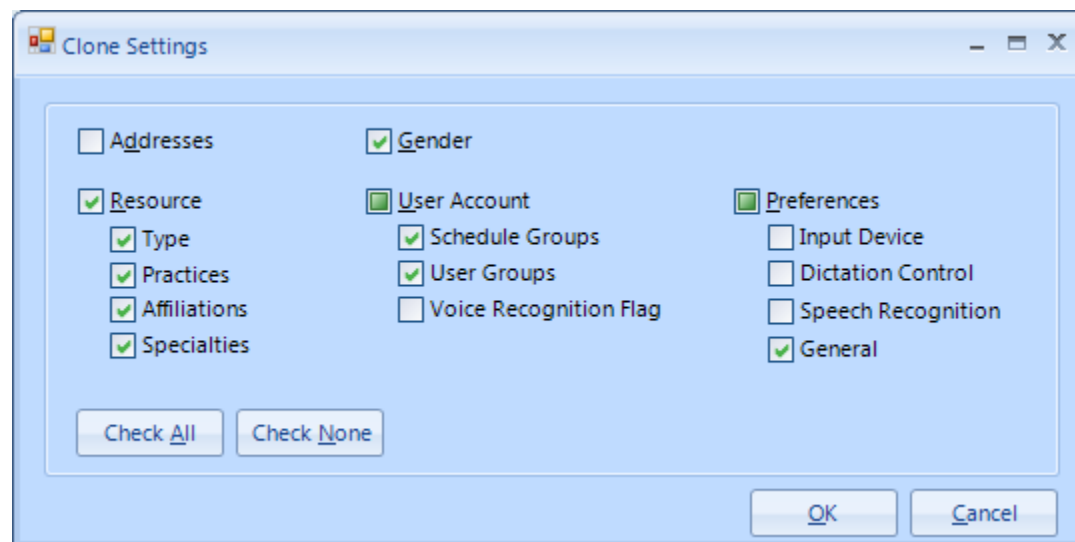


Figure 4.7 – New Clone setting window.

Document Distribution Management

The ability to view and manage document distribution was added to the application in build 1.18. Accessed from the Administration menu - Document Distribution Manager, a new work list will show all documents in an “active” status (jobs that are cancelled or completed will not show in this work list).

The WL is auto refreshed. Buttons to edit, pause and cancel are available for all jobs listed in work list. The retry button is only enabled for jobs **not** in pending status. If a combination of pending and non-pending jobs are selected, the retry button will not be available.

Document distribution key	Interpretation key	Study key	Version	Delivery method	Destination	Status	Retry count	Available datetime	Last exception	Priority	Deliver to	Delivery address	Practice
1	1	22328	1	Fax	(655) 555-6316	Pending	1	03/08/2011 10:57:15 AM		0	Dr Darcy Noye		ADV
2	1	22373	7	Fax	(902) 555-5556	Pending		03/08/2011 10:03:34 AM		0	Ian Power		ADV
3	1	22373	7	Fax	9025555584	Pending		03/08/2011 10:06:25 AM		0			ADV
4	1	15209	7	Fax	(902) 555-5556	Pending		03/08/2011 4:39:33 PM		0	Ian Power		ADV
5	1	22371	5	Fax	9025555548	Hold		03/08/2011 4:41:44 PM		0	Dale Yeo		ADV
6	1	22371	5	Fax	9024875124	Pending		03/08/2011 4:43:01 PM		0	Dr Jerry Piled		ADV
7	1	22371	5	Fax	8745478547	Pending		03/08/2011 4:43:25 PM		0	WILLIAM MAYER MD		ADV
8	1	22328	1	Fax	9025487547	Pending		03/08/2011 4:44:22 PM		0	Dr Darcy Noye		ADV
9	1	22371	5	Fax	(655) 555-6316	Pending		03/08/2011 4:48:25 PM		0	Dr Darcy Noye		ADV

Figure 4.8 – Document Distribution Work List

The work list allows for multi selection, enabling the user to select a range of jobs for a specific action button. Cancelling jobs will move the jobs status to Cancelled and remove the job from the work list.

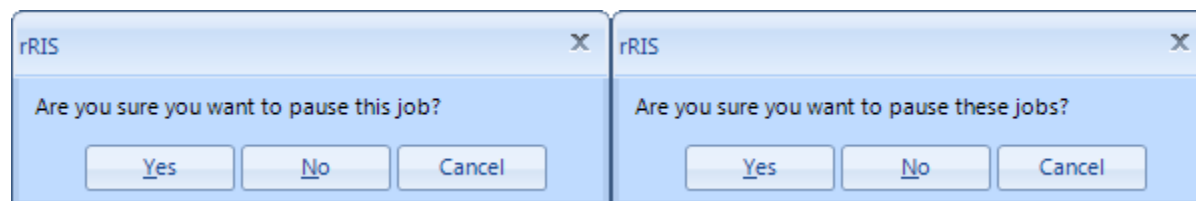


Figure 4.9 – Confirmation message on left for single job. Confirmation message on right for multiple jobs.

The edit job button opens another dialog form with the fields for Recipient, Location and Delivery Method disabled. If the user wants to modify these values they will have to cancel this job and create a new one with the desired Recipients information. The Destination and Priority fields are editable. If multiple jobs are selected that belong to the same recipient, the Destination field will be enabled, otherwise the Destination field will not be editable.

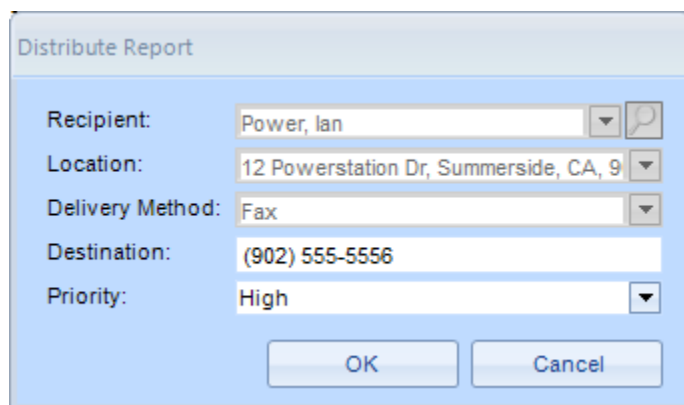
A screenshot of a 'Distribute Report' dialog box. It has a light blue header with the title 'Distribute Report'. Below the header, there are five labeled fields: 'Recipient:' with a dropdown menu showing 'Power, Ian' and a magnifying glass icon; 'Location:' with a dropdown menu showing '12 Powerstation Dr, Summerside, CA, 9'; 'Delivery Method:' with a dropdown menu showing 'Fax'; 'Destination:' with a text input field containing '(902) 555-5556'; and 'Priority:' with a dropdown menu showing 'High'. At the bottom of the dialog are two buttons: 'OK' and 'Cancel'.

Figure 4.10 – Edit Job popup dialog

In Figure 4.10 you can see that a Location was chosen. This auto-populates the delivery and destination values. If job that has a Location value is edited and the Destination value is changed, the user will be prompted asking if they would like to update fax delivery for this address.

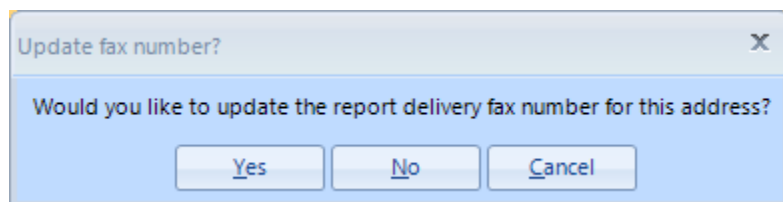
A screenshot of a 'Update fax number?' dialog box. It has a light blue header with the title 'Update fax number?' and a close button (X) in the top right corner. Below the header, there is a text prompt: 'Would you like to update the report delivery fax number for this address?'. At the bottom of the dialog are three buttons: 'Yes', 'No', and 'Cancel'.

Figure 4.11 – Edit destination information on job that has Location key value.

NPI Required for Radiologists and Referring Physicians.

In build 1.18 the NPI number will now be required for any users created that have Resource Type of Referring Physician or Radiologist checked under the Resource tab. The Resource

Information section of this tab is where you will find the NPI field that is now required.

The screenshot displays the RADNET rRIS software interface. At the top, a menu bar includes 'File', 'Administration', 'Scheduling', 'Front Desk', 'Technologist', 'Radiologist', and 'Transcription'. A user profile icon and 'MD/ADV' are in the top right. Below the menu, a 'Lookup Tables - Personnel *' window is open. On the left, a tree view shows folders for 'General', 'Insurance', 'Procedure', 'Scheduling', 'System', and 'User'. Under 'User', there are sub-items: 'Affiliation', 'Personnel' (highlighted), 'Specialty', 'UserCDSPProfile', 'UserGroup', and 'UserGroupPermission'. The main area shows a table with columns 'UserName' and 'First Name'. A row is highlighted with 'Darcy' in the 'First Name' column. Below the table, there are tabs for 'General', 'Resource', 'Account', 'Preferences', and 'System'. The 'Resource' tab is active, showing 'Resource Type' with checkboxes for 'Referring Physician' (checked), 'Radiologist', 'Unknown Referring', 'Transcriptionist', and 'Technologist'. Below this is the 'Resource Information' section, which includes a hyperlinked 'NPI:' label, a 'UPIN:' field, and three text input fields for 'Practices:', 'Affiliations:', and 'Specialties:'.

Figure 4.12 – NPI required and NPI hyperlink

For convenience the [NPI:](#) label is hyperlinked to the NPI registry. The First and Last name fields are passed to the NPI site opening a new window with the available results from the criteria searched.

NPI Search: Noye, Darcy

NPPES
National Plan & Provider Enumeration System

[Home](#) | [Help](#)

NPI Registry Search

Please enter data for at least one of the following fields. If searching on Practice Address State, you must enter data for at least one other field. To perform a wild card search, at least two characters must be entered before the "*". For example, to search for data beginning with "Ch", enter "Ch*". Wild card searches are only available on the Provider First Name, Provider Last Name and Practice Address City fields.

Information in the NPI Registry is updated daily.

- Attention: No matching records found.

NPI

Provider First Name

Provider Last Name

Practice Address City

Practice Address State

Practice Address Zip

Figure 4.13 – Search window opened from hyperlink

Assign to Radiologist

Build 1.18 has the ability to assign Radiologist to a study. This is achieved by selecting a row or a range of rows from the Exam Done work list and from the right click short cut menu selecting Assign to Radiologist.

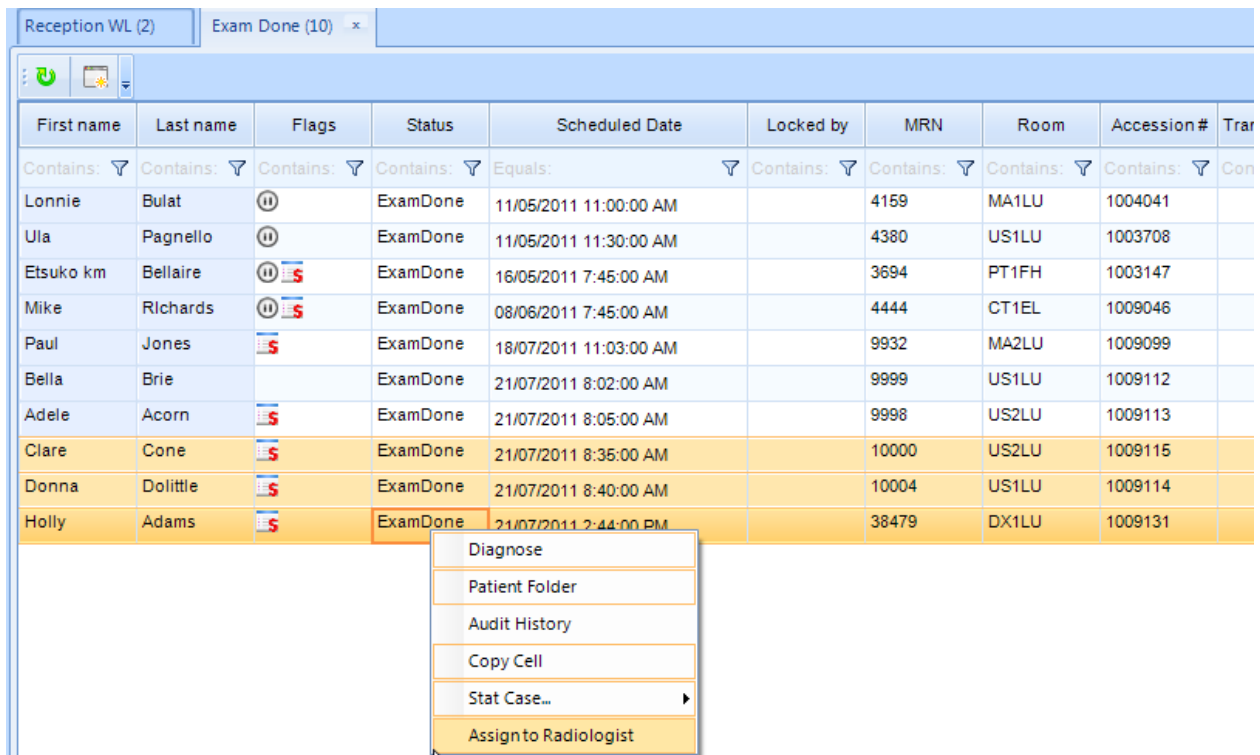


Figure 4.14 – Assign to Radiologist from right click on Exam done work list.

Selecting Assign to Radiologist will spawn a new window displaying the available Radiologists.

Note: The list of Radiologists displayed will be filtered by Practice based on the exam selected.



Figure 4.15 – Assign to Radiologist

Audible Sound on Record Dictation Start

A user preference called Beep when ready was added to the Dictation Control tab. This feature will play an audible sound to alert the user as to when the control is ready for recording.

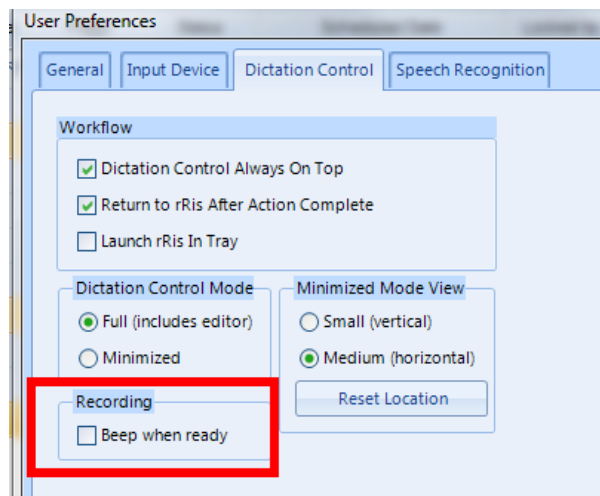


Figure 4.16 – Patient Tab Showing Race Dropdown

Organization Picker

The ability to change between organizations has been built into the application in Build 1.18. A new ICON (looks like an office building) was added to the menu bar. Selecting the arrow next to the ICON will expand to a drop down list enabling the user to change from current site. Expanding the list will display all the Orgs and Sites the current logged in user is configured for. When the selected Org or site changes, work lists will refresh as will the label next to the ICON. The org and site codes of your currently selected Organization and site are displayed to the right of the ICON.

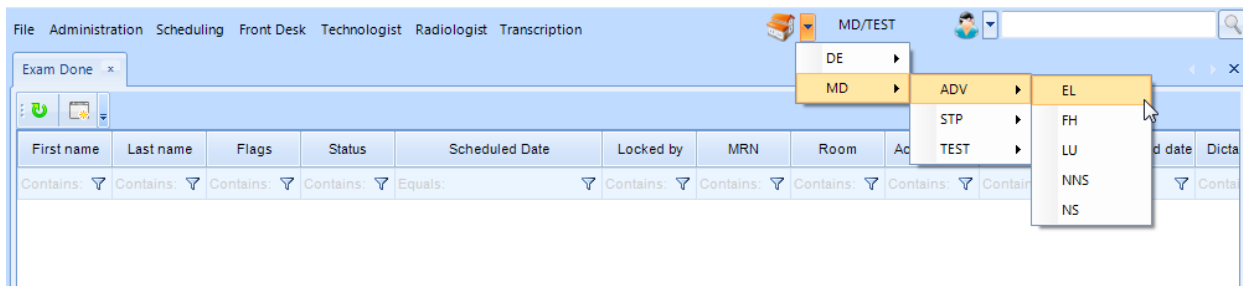


Figure 4.17 – New Organization Picker ICON and visual representation of you current organization.

Sedation Type Added to Work list

Build 1.18 has a column called Sedation added to the Technologist work list. The sedation type will be captured at Reception. The code for Sedation type will be displayed in this column.

Technologist WL (2) x Reception WL (2)												
First name	Last name	Flags	Status	Procedures	Scheduled Date	Referring	MRN	Room	Accession #	Locked by	Read STAT	Sedation
Contains: ▼	Contains: ▼	Contains: ▼	Contains: ▼	Contains: ▼	Equals: ▼	Contains: ▼	Contains: ▼	Contains: ▼	Contains: ▼	Contains: ▼	Contains: ▼	Contains: ▼
Zelda	Zoom	\$	Arrived	71010*XR...	04/08/2011 8:...	Dr Darcy N...	10005	XR1EL	1009176		N	T1
BRenda	Belle		Arrived	G0204CB^...	04/08/2011 1:...	Dr Darcy N...	10081	MA1EL	1009177		N	T1

Figure 4.18 – Sedation column added to Technologist work list.

Delivery Location vs Visited Location Cleanup

A change was made for configuring the delivery location of where the report should be sent. Now the user can be configured to have a different “Delivery To” location than the address or fax number listed for contact information. As you can see in the figure 4.19 below the Delivery information can be completely different and separate from the contact information. The delivery information can be specified for each address added for the user.

The screenshot shows the 'Edit Address: Darcy Noye' dialog box. It contains a 'Contact Information' section with fields for Type (Home Address), Address 1 (951 Home St.), Address 2, City (Summerside), State (MD), Zip Code (90210), Phone #, and Fax #. Below this is a 'Delivery To' section with radio buttons for Fax (selected) and Print. The 'Delivery To' section also includes fields for Delivery Fax# (464) 654-6546, Address 1 (951 Home St.), Address 2, City (Summerside), State (MD), and Zip Code (90210). In the background, a table lists contact information and addresses:

Contact	Address	Delivery
Work Address Phone: (541) 574-5855 Fax: (555) 555-6316	154 Hangdown Dr. Hangtown, MD 45742	Fax to (555) 555-6316
Home Address Phone: (564) 225-8222 Fax: (222) 252-2065	951 Home St. Summerside, MD 90210	Fax to (464) 654-6546

Figure 4.19 – “Delivery To” changes in Add/Edit Address

This is carried over to the Orders tab. The drop down list for Delivery location was removed from this tab. The address selected for “Visited at” will use the Delivery To method configured for that contact information.

Lookup Tables - Personnel Orders To Schedule (368) Schedule Order x

Patient Contacts / Demographics **Order** Schedule Review

Referring Details

Referring: Noye, Darcy T Visited at: 154 Hangdown Dr., Hangtown, MD, 45742

CC Physicians: Visit Location for CC

Preferred Location

Practice: Advanced Radiology Site:

Flags

☐ Stat Exam ☐ Special Accommodations
☐ Stat Read Sedation:

Insurance Policies

Figure 4.20 – Reorganized order tab

Book X Continued – Arrive Multiple same day orders for patient,

Reception will be prompted with the window displayed below if the patient they selected for registration has multiple orders scheduled for that day within the user's organization. The window displayed in Figure 4.21 shows all the exams scheduled for Sally Mills for today. The user can select which scheduled orders they would like to arrive with the current one or they can cancel and only arrive the current scheduled order. All orders are selected by default.

R Multiple Scheduled Studies

Brenda Belle has multiple orders scheduled for the same day in addition to

- XR Chest Min 4 Views(71030) XR1EL at 2:00 PM
- CT Abdomen W _CTA Chest W/Wo(CT66) CT1EL at 1:33 PM that you are currently opening.

Please select the other orders that you would also like to open.

Studies	Location	Time	Referring	Insurer
<input checked="" type="checkbox"/> US Chest(76604)	US1EL	3:00 PM	Darcy Noye	
<input checked="" type="checkbox"/> XR NECK SOFT	XR1EL	3:25 PM	Ian Power	

Ok Cancel

Figure 4.21 – Arriving a patient with multiple scheduled orders will prompt user.

If the user chooses to Arrive more than one, the registration window will open an order tab for each scheduled order.

	Studies	Duration	Room	Scheduled Date
A	XR Chest Min 4 Views(Chest,) x	5	XR1EL	08-04-2011 2:00 PM
B	US Chest(Chest,) x	30	US1EL	08-04-2011 3:00 PM
C	XR NECK SOFT TISSUE(Neck,) x	5	XR1EL	08-04-2011 3:25 PM

Body Part: Neck Laterality:

Figure 4.22 – Arriving multiple scheduled orders

Preview for Diagnostic Report

Build 1.18 provides the radiologist and the technologist the ability to preview diagnostic reports. From within the diagnose or create reports windows a new button “Preview” will display a print layout view of the report even when the interpretation is not saved to the DB.

Report

EXAM

HISTORY

REPORT

TECHNIQUE

COMPARISON

FINDINGS

IMPRESSION

Preview

Figure 4.23 – Preview button

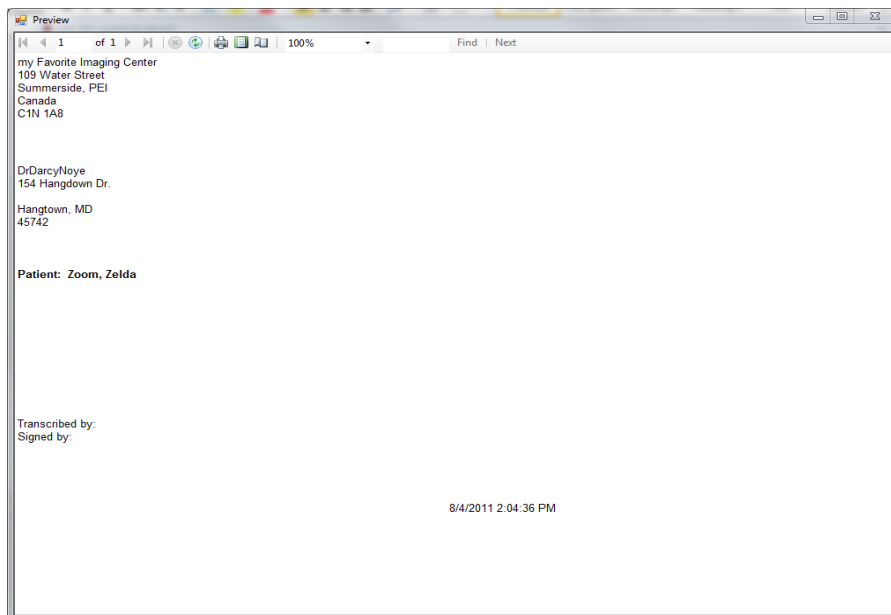


Figure 4.23 – Preview of report

Study Confirmation Work List.

A new work list has been added to verify the currently selected day's exams have been confirmed. The new work list is opened from under the Scheduling menu.

The screenshot shows a 'Confirmation WL (6)' window with a toolbar and a table of scheduled exams for 07-11-2011. The table has columns: First name, Last name, Flags, Status, Procedures, Scheduled Date, MRN, Room, Accession#, Exam STAT, and a partial 'Co' column. The first row is highlighted in orange.

First name	Last name	Flags	Status	Procedures	Scheduled Date	MRN	Room	Accession#	Exam STAT	Co
er	er		Scheduled	CT13*CT 3 Phase	11/07/2011 8:15:00 AM	11494234	CT1FH	1044910	N	
Elizabet	Wainkrantz	\$	Scheduled	78459*PT/CT Myo Imag Perf Study	11/07/2011 10:05:00 AM	2017426	PT1FH	1041754	N	CI
Cherlyn	Rubick	\$	Scheduled	78492*PT/CT Myocardial Multi Study	11/07/2011 10:45:00 AM	2018655	PT1FH	1041755	N	SU
Particia	Silvestro	\$	Scheduled	78492*PT/CT Myocardial Multi Study	11/07/2011 1:00:00 PM	2002285	PT1FH	1041763	N	BE
Echo	Fiscus	\$	Scheduled	78459*PT/CT Myo Imag Perf Study	11/07/2011 1:40:00 PM	2015275	PT1FH	1041753	N	AN
Evelia	Leen	\$	Scheduled	78492*PT/CT Myocardial Multi Study	11/07/2011 2:20:00 PM	2017581	PT1FH	1041761	N	RE

Figure 4.24 – Confirmation Work List.

Selecting a study and hitting the Confirm button will check to see if the patient has multiple studies scheduled for that day. If multiple studies are found, a prompt will display asking which studies are to be confirmed.

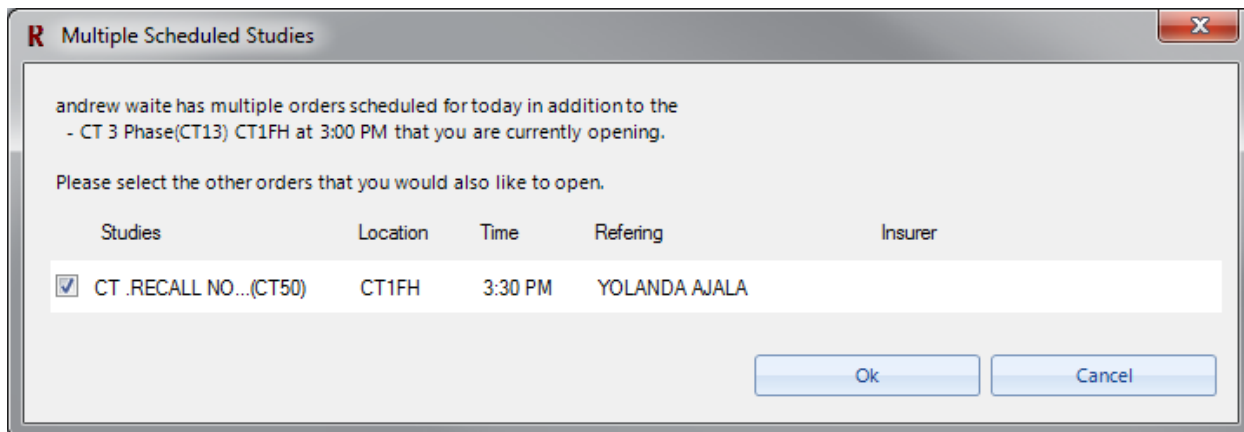


Figure 4.25 – Multiple Scheduled Studies found for today.

Choosing all or none of the extra exams, the user selects Ok on the prompt displayed in Figure 4.25, which will then open the confirmation window. The Confirm window is open to allowing exam or patient data changes. Once the study is confirmed it is removed from the Confirmation work list, but remains in the Reception work list.

Figure 4.26 – Confirmation window

Ability to Create Unknown Referring Physician

In Build 1.18 a scheduler will have the ability to create an Unknown Referring Physician if their search for a referring physician comes up empty. From within the search window selecting the Create New button will open a scaled back version (by permissions) of the personnel editor. The flag for Unknown Referring is defaulted and cannot be changed at this point. If the visit information is required on Orders tab, the creator of the unknown referring physician will have to make sure this information is added at this time. Upon completion of create the unknown Referrer, the order screen is populated with the new data. The referring name will be appended with (unknown)

The screenshot shows a software window titled "Add Unknown Referring". It contains two tabs: "General" and "Resource". The "General" tab is selected and displays the following fields: "First Name:", "Middle Name:", "Last Name:", "Prefix:", "Suffix:", "Birth Date:" (with a date picker set to "mm-dd-yyyy"), "Gender:" (a dropdown menu), and a checked "Active Person" checkbox. Below these is a "Contact Information" section with "Mobile #:" and "Email:" fields. At the bottom of the tab is a table with three columns: "Contact", "Address", and "Delivery". The table is empty. At the bottom of the window are buttons for "Edit", "Add", "Remove", "OK", and "Close".

Figure 4.27 – Add Unknown Referring Physician

An administrator has access to an Unknown Physician work list. This work list will contain the orders that currently have referrers flagged as unknown. The action from this work list is to edit the orders that have unknown referrers. The administrator can right-click on the physician in the order tab, and can select a new context menu items called “Reconcile Unknown Referring”. A new screen will launch that displays the existing unknown referring data, and has a referring search control built in.

Last name	First name	Gender	Summary	Work Address	Home Address
unk	billy	Gender: F Cell: ID: 2017382			asdf

Edit

Search Criteria

First Name: City:

Last Name: Phone #:

NPI:

Search Reset

No data to display

Select Close

Figure 4.28 – Unknown Physician Reconciliation window.

The administrator can search for a referring. If they find and select one and close the screen, the new physician will replace the original unknown referring, and the unknown referring will be deleted.

If the administrator cannot find a suitable match, they can select an Edit button beside the unknown referring's information. This will launch the personnel editor, and will allow the admin to update this physician to a known physician (by changing the flag) , and can add or edit any other data about the referring.

Scanning Documents on Scheduling Screens

Scanning documents for orders, scheduled exams or arriving patients will be controlled via a scan button located in the procedure picker's window study row. Selecting this button will open the Scan Document Viewer window, and then also launch the Scan Document window. At this point the user can choose to scan or import a document. Selecting Cancel on Scan Document window will take the user back to the Scan Document Viewer window where the user can view already scanned documents for this order or select check box to show all documents for patient.

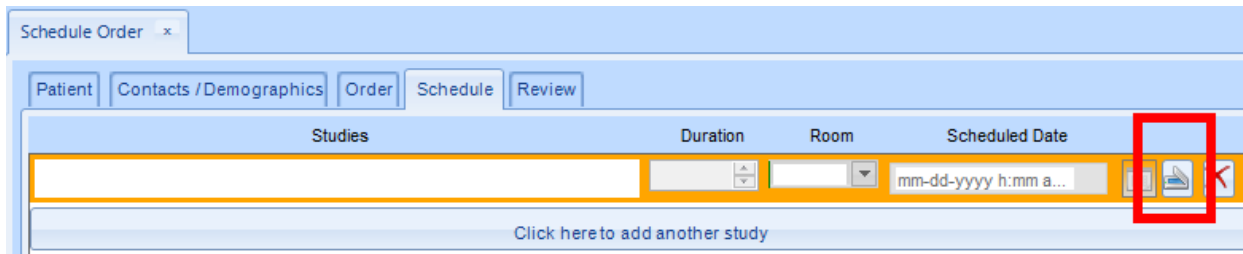


Figure 4.29 – Scan ICON on Schedule tab

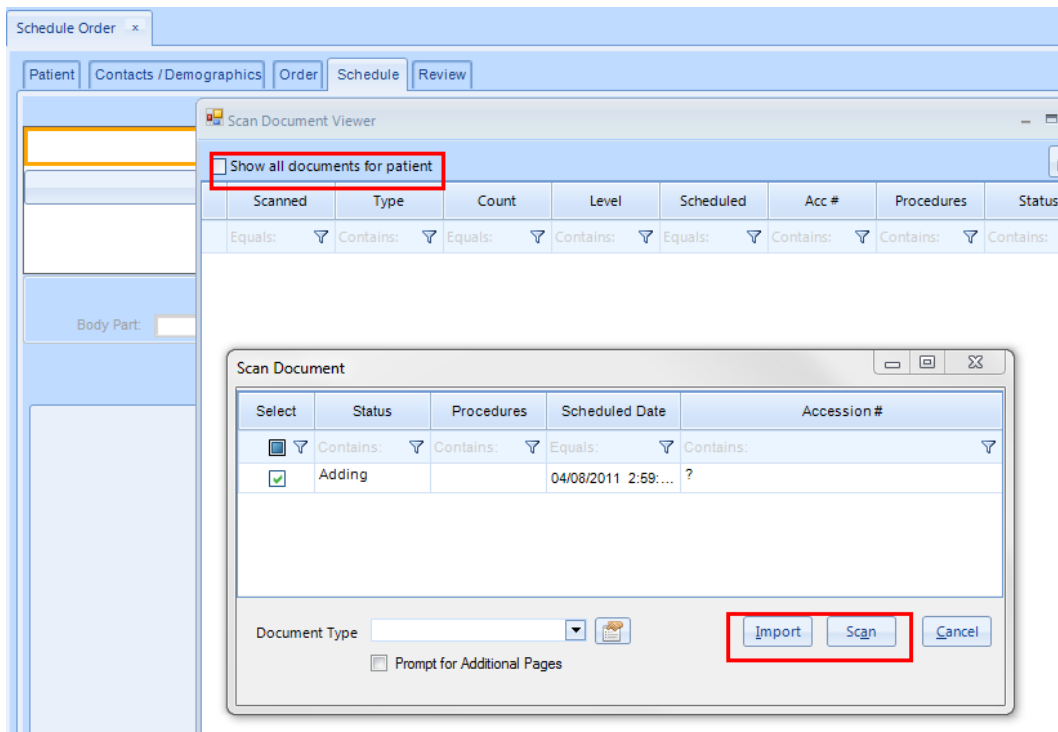


Figure 4.30 – Scan Document View and Scan Document windows.

Note: possible future change. Upon selecting the Scan Document ICON on the schedule tab it opens the Scan Document Viewer window only with focus put on the Scan ICON in this window. This way if the user only wants to view scan documents they are not required to always close the Scan document window. With the focus put on the Scan ICON in the Scan Document Viewer, the user can select Enter on keyboard to launch the Scan Document window to complete or import scans.

5. Known Limitations

Bugs, Suggested Features, and Support Issues are now tracked in a web based system called Redmine. The following is a snapshot of the issues found in Build 1.18.

#	Status	Subject	Category	Target version	% Done	Resolved Version
483	New	Distribute document - error is returned if recipient does not have fax number	Thick Client GUI	1.18	0	
482	New	Enhancements for scanning work flow	Thick Client GUI	1.18	0	
481	New	Carrier notes pop up is displayed when Carrier does not have any notes associated	Thick Client GUI	1.18	0	
480	Resolved	Edit schedule, the room is not retained	Thick Client GUI	1.18	100	1.19
479	Resolved	Scheduling double order will give error from Calendar	Thick Client GUI	1.18	100	1.19
478	Resolved	Scan document work list.	Thick Client GUI	1.18	100	1.19
477	Resolved	Removing Scan doc returns error on save of Perform Exam window	Thick Client GUI	1.18	100	1.19
476	New	Receipt error after abort study by tech and do not want to reschedule	Thick Client GUI	1.18	0	
457	Resolved	user groups are displayed when more than one line of user groups assigned.	Thick Client GUI	1.18	100	1.19

User Pre-Release Notes

for RADNET rRIS
Build 1.19

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1. Purpose

This document describes some of the new features and changes implemented in rRIS as of the end of Sprint 19. This pre-release version of rRIS is referred to as Build 1.19.

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 rRIS Development team for the RadNet RIS management team.

3. Installing/Accessing the Application

The installation instructions for the rRIS client have been posted to the RadNet Wiki page at <http://mdbal01rdtweb/Wiki/>

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

Username: rRIS

Password: Summerside

Please note that Build 1.19 is considered a new core release of the application and will require a reinstallation of rRIS. This is accomplished by navigating to the rRIS 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 Spencer MacDougall with the PEI RIS Development Team.

4. New Features and Enhancements

Document Distribution History Screen

The document distribution history screen is a new work list that displays the list of all distributed jobs for a particular study. The work list is accessed via a context menu (right click on mouse) from the Patient Mode work list.

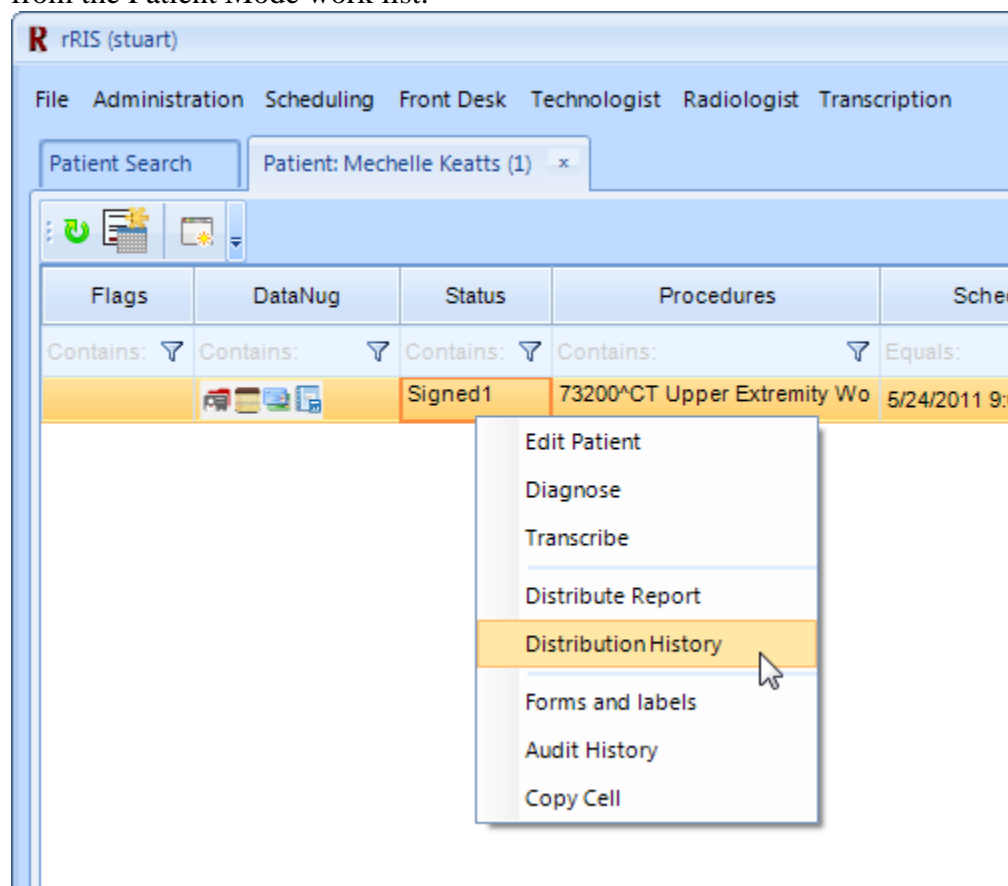


Figure 4.1 – Accessing Distribution History work list from context menu

This new work list will allow the user to not only view jobs for a particular study but the user also has the ability to edit, pause, retry, cancel and create new jobs. Jobs in cancelled or completed status can be retried, but the original job stays in the work list as part of its history. If a job is in Pending or In Progress, the retry button is not an option.

Document distribution key	Interpretation key	Study key	Version	Delivery method	Destination	Status	Retry count	Available datetime	Last exception	Priority
Equals: ▼	Equals: ▼	Equals: ▼	Equals: ▼	Contains: ▼	Contains: ▼	Contains: ▼	Equals: ▼	Equals: ▼	Contains: ▼	Equals: ▼
2	1	22373	7	Fax	(902) 555-5556	Pending		03/08/2011 10:03:34 AM		0
3	1	22373	7	Fax	9025555584	Pending		03/08/2011 10:05:25 AM		0

New JobEdit JobPause JobCancel JobRetry JobAuto Refresh ☒

Figure 4.2 – Document Distribution History Work List

Creating a new job will open the Distribute Report window with all fields blank. Search option is available for locating a recipient. Selecting an address will populate the users default delivery information into the remaining fields.

Distribute Report

Recipient: Noye, Darcy T ▼ 🔍

Location: 951 Home St., Summerside, MD, 90... ▼

Delivery Method: Fax ▼

Fax Number: (464) 654-6546

Priority: High ▼

OKCancel

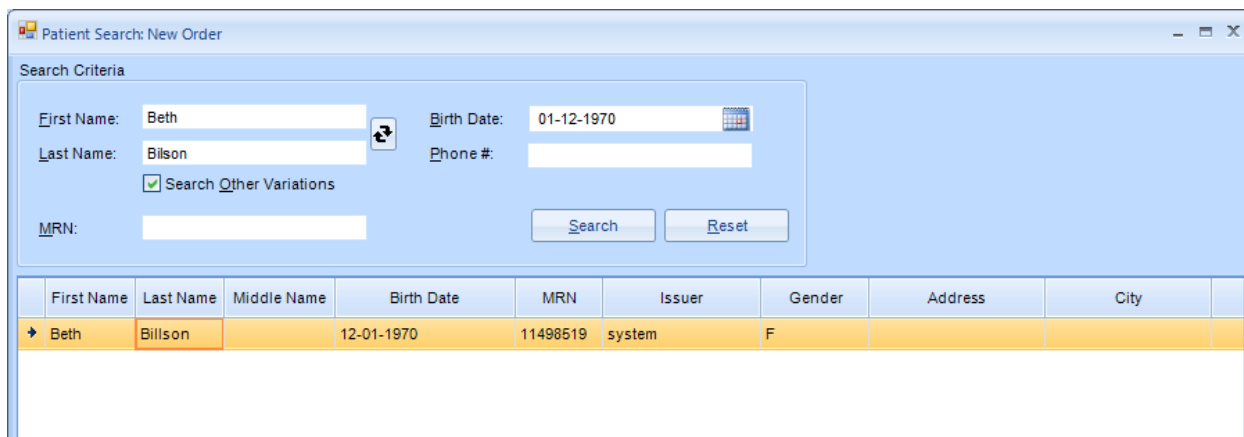
Figure 4.3 – Distribute Report

Duplicate Patient Safety Net

To reduce the risk of creating a duplicate patient, patient search has been modified to increase a user's chances of finding an existing patient. A background search will be completed for the patient once 3 key fields of *first name*, *last name*, and *birthdate* are populated. The results window will popup if there are close matches found. If there are no close matches, the search result window will not be displayed.

Patient search will now also support searching on other variations of name and birthdate. When the *Search Other Variations* (keyboard shortcut = *Alt + O*) is checked the following name and birthdate characteristics will also be searched.


1. Starts with search is performed
2. Then a sounds like search (name is Stuart, but user entered Stewart)
3. Then a sounds like and a transposed birthdate (DOB entered 12-01-1970, but patients actual DOB is 01-12-1970)
4. If a name component entered is only one character it will perform a starts with instead of a sounds like. (EX: . firstname sounds like s, lastname sounds like smith will be converted to firstname starts with s, lastname sounds like smith)



First Name	Last Name	Middle Name	Birth Date	MRN	Issuer	Gender	Address	City
Beth	Bilson		12-01-1970	11498519	system	F		

Figure 4.4 – Patient Search window with “Search other variations” checked. In this example it matched on approximate last name and transposed birthdate.

Enhance Special Accommodations

A check box for Special Accommodations has been added to the order tab. When the box is checked a drop down list box and free text field becomes enabled. The list box has Yes/No values, and the text box allows for a maximum of 100 characters. A flag  is added under the Flags column on main work lists, and also in patient history on Perform Exam data window.

The screenshot shows the 'Referring Details' section of the rRIS interface. The 'Special Accommodations' dropdown menu is open, showing 'Yes' and 'No' options. The 'Yes' option is highlighted. The 'Flags' section includes checkboxes for 'Stat Exam', 'Stat Read', 'Stat Precert', and 'Special Accommodations'. The 'Class' dropdown is set to 'Unknown' and the 'Sedation' dropdown is set to 'None'.

Figure 4.5 – Special Accommodations.

Indication Code Search Provider

An easy way to search indication codes was required for the user. In Build 1.19 a menu item was added to the provider list.

The screenshot shows the 'Confirmation WL (19)' window. The 'Indication Code' search option is highlighted in the provider list. The table below shows the patient list with columns for First name, Last name, Flags, Status, Procedures, Scheduled Date, MRN, Room, Accession#, and Insurer.

First name	Last name	Flags	Status	Procedures	Scheduled Date	MRN	Room	Accession#	Insurer
Bella	Brie		Scheduled	CT22*CT...	15/08/2011 8:...	9999	CT1FH	1009244	
Clare	Cone		Scheduled	71030*XR...	15/08/2011 9:...	10000	XR1FH	1009245	
Adele	Acorn		Scheduled	76604*US...	15/08/2011 1...	9998	US1FH	1009246	

Figure 4.6 – Ability to search for Indication Code.

Selecting Indication Code from search list will open a new window. The user can search by code and full or partial description.

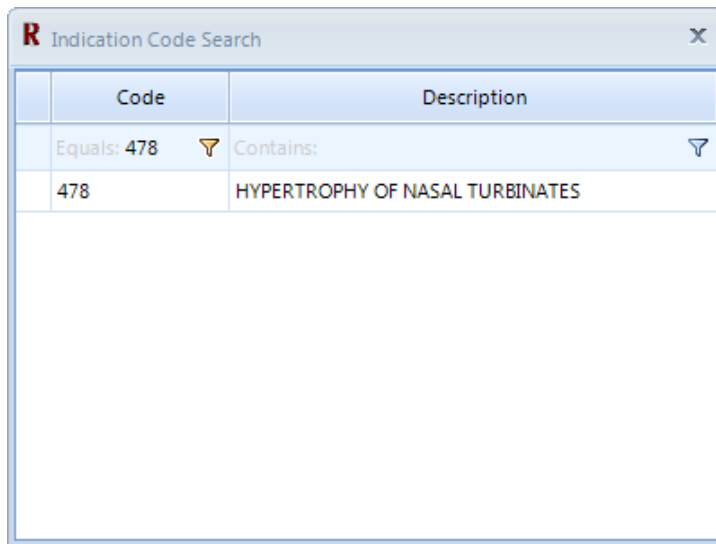


Figure 4.7 - Indication Code Search window

Inpatient Workflow

Patients can be identified at the visit level as to whether they are outpatients, inpatients, emergency, etc. A new combo list box was added to the order tab for the scheduler, registration and technologists. This is a mandatory field.

The screenshot shows the 'Patient Class' form in the rRIS system. The 'Order' tab is selected. The form includes the following sections:

- Referring Details:** Fields for Referring (dropdown), Visited at (dropdown), CC Physicians (dropdown), and Visit Location for CC (dropdown).
- Preferred Location:** Fields for Practice (dropdown, set to 'Advanced Radiology') and Site (dropdown).
- Flags:** Checkboxes for Stat Exam, Stat Read, Stat Precert, and Special Accommodations. A 'Class' dropdown is set to 'Outpatient' (highlighted in yellow). A 'Sedation' dropdown is also present.
- Insurance Policies:** A table with columns: Note, Carrier code, Carrier name, Policy number, Group name, Group number, Phone, and Priority. Below the table is a 'Manage Policies' button and a 'Verification REQUIRED' checkbox.
- OrderNotes:** A text area containing the date '07-27-11 tm -'.

Figure 4.8 – Patient Class

A new system configuration setting “PatientClassDefaultCode” has been added to default the value in the Class list box field on the order tab. The value can be any active Patient Class Code from the PatientClass lookup table. In figure 4.9 below shows the PatientClass lookup table codes and descriptions as well as the new systemconfig setting with the patient class code value for Outpatient making it the default value for the Class field on Order tab as displayed in Figure 4.8.

Lookup Tables - PatientClass

Patient class code	Description	Display order	
Contains:	Contains:	Equals:	Contains:
E	Emergency	2	Y
O	Outpatient	1	Y
P	Portable	4	Y
U	Unknown	3	Y
*	Click here to add a new row		

System config code	Value	Default	Description
Contains: patient	Contains:	Contains:	Contains:
PatientClassDefaultCode	O		(value = valid patient class code) The de

Click here to add a new row

Figure 4.9 – PatientClass lookup and SystemConfig setting for defaulting Class field.

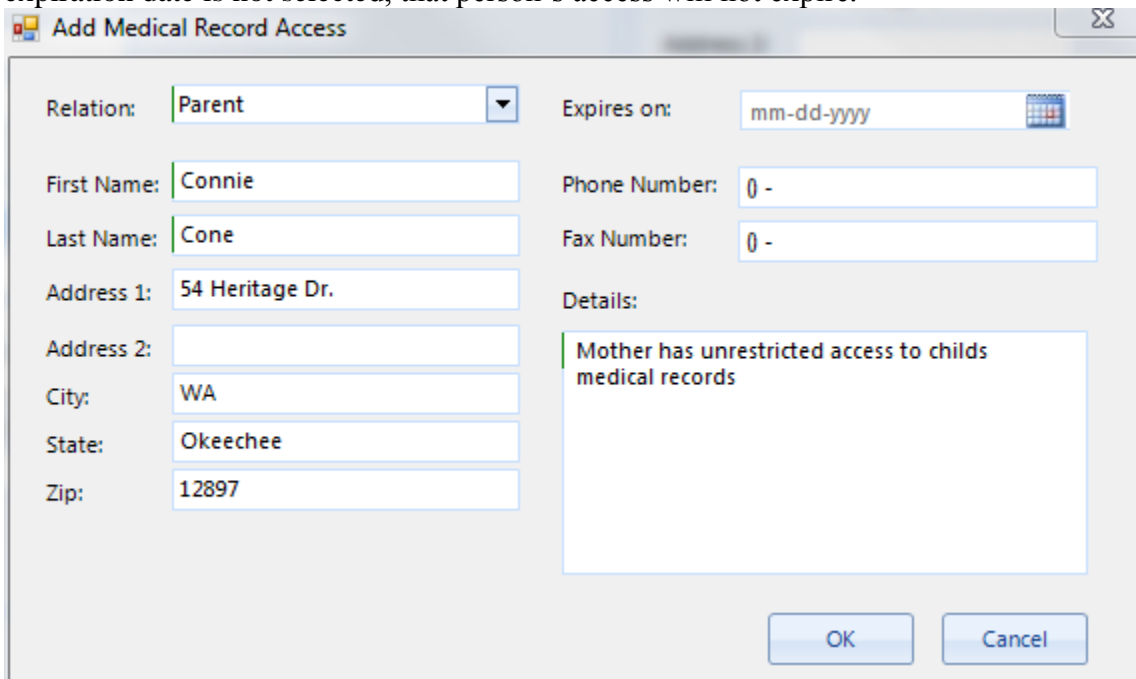
Medical Record Access

The ability to capture who has access to a patient’s medical records, and the duration the persons access is valid has been added. Located on the Contacts / Demographics tab the user will have the option to Add, Edit, and Remove access. The previous button will display expired medical record access for this patient. If a patient is merged, medical record access entries are carried over to the “new” patient’s demographics.

Relation	Name	Expiry	Details
Parent	Cone, Connie		Mother has unrestricted access to childs me...
Father	Cone, Clark	12-31-2011	Add notes in details box

Figure 4.10 – Approved Medical Record Access data pane

The Add (or edit) Medical Record Access window captures the approved parties demographic details, relationship to patient, expiration of access, and details text box to capture notes. If an expiration date is not selected, that person's access will not expire.



The screenshot shows a window titled "Add Medical Record Access". It contains the following fields and controls:

- Relation:** A dropdown menu with "Parent" selected.
- Expires on:** A date field with the placeholder "mm-dd-yyyy" and a calendar icon.
- First Name:** A text field containing "Connie".
- Last Name:** A text field containing "Cone".
- Address 1:** A text field containing "54 Heritage Dr.".
- Address 2:** An empty text field.
- City:** A text field containing "WA".
- State:** A text field containing "Okeechee".
- Zip:** A text field containing "12897".
- Phone Number:** A text field containing "0 -".
- Fax Number:** A text field containing "0 -".
- Details:** A large text area containing the text "Mother has unrestricted access to childs medical records".
- Buttons:** "OK" and "Cancel" buttons at the bottom right.

Figure 4.11 – Medical Record Access window.

No Alternate Phone Flag

Users needed the ability to capture if the patient has an alternate phone number, and if no alternate phone number is available mark the patient as such. A new check box "No Alternate Phone" was added. When this checked box is selected the Work Phone and Other Phone fields are disabled. In Figure 4.12 the Other Phone Alternate number was entered before the check was added to "No Alternate Phone" box. As you can see the phone number is retained just in case the check box is selected by accident there is no risk of lost data.

The screenshot shows the 'Patient' tab selected in the top navigation bar. Below it, the 'General Information' section contains fields for Prefix, First Name (Clare), Last Name (Cone), Middle, Suffix, MRN (10000), Gender (Female), Birth Date (07-20-1999), and Place of Birth. A 'Clastrophobic' checkbox is also present. The 'Contact Information' section below it contains fields for Address 1 (54 Heritage Dr.), Address 2, City (Okeechee), State (WA), Zip (12897), Country, Email, Primary Phone ((902) 587-2665), Work Phone (0 -), and Other Phone ((902) 452-3246). A red box highlights the 'Primary Phone' section, which includes a checked 'No Alternate Phone' checkbox.

Figure 4.12 – No Alternate Phone check box

PreCert Expiration Date.

In some cases Precertification numbers have expiration dates. In build 1.19 the IVT, Confirmation, Registration, and Perform Exam data windows, the user now has the ability to add or edit the PreCert expiration date.

The first screenshot shows the 'Billing Code Information' window with a table containing one row: a pre certification number, an expiration date, and a billing code '(76700) ULTRASOUND, ABDOMINAL, REAL TIME WITH IMAGE DOCUMENT'. The second screenshot shows the 'Perform Exam' window with a table for studies. The first row is 'US Soft Tissue - Chest Wall(Chest,)' with a duration of 40, room US3FH, and scheduled date 08-15-2011 3:00 PM. A 'Click here to add another study' link is visible below the table. To the right, a table for Pre Cert #, Expiration Date, and Billable Item is shown, with one row for 'ULTRASOUND, C...'.

Figure 4.13 – Perform Exam and Registration windows with Pre Cert Expiration added.

Reschedule Studies

When rescheduling a study the user will now be prompted with a popup window and have to provide a reason from a pre-configured list to enable the OK button to continue with rescheduling. If the patient has multiple studies scheduled for that day, the user will have the option to select which studies are to be rescheduled. The study that was selected from the work list is selected by default. If cancel is selected the user is returned to work list and no action is taken on any of the studies.

If the patient has a scheduled series, each study of the series will be listed with series named displayed. They may choose to select all or only some of the studies that belong to the series. If they choose to only select some of the studies, the series rules will be broken and will now follow normal scheduling procedures.

The image shows a 'Reschedule' dialog box with a title bar containing a red 'R' icon and the text 'Reschedule'. The main area has a light blue background and contains the instruction 'Choose the studies to be canceled/rescheduled.' Below this is a section titled 'Studies' with a checkbox. Underneath, there is a list of studies, each with a checkbox, a description, a date and time, and a study ID. The studies are: 'Darcy Noye' (checkbox), 'CT Chest W Abdomen W...(CT5)' (checkbox) with date '08-15-2011 11:30 AM' and ID 'CT1LU', 'Darcy Noye' (checkbox), 'US Abdominal Ltd Or...(76705)' (checkbox) with date '08-15-2011 1:40 PM' and ID 'US1FH', 'Harvey Wallbanger' (checkbox), and 'XR Chest Min 4 Views(71030)' (checked checkbox) with date '08-15-2011 9:00 AM' and ID 'XR1FH'. At the bottom right, there is a 'Reason:' label, a dropdown menu with 'Please choose a reason', and 'Ok' and 'Cancel' buttons.

Study	Date/Time	Study ID
<input type="checkbox"/> Darcy Noye		
<input type="checkbox"/> CT Chest W Abdomen W...(CT5)	08-15-2011 11:30 AM	CT1LU
<input type="checkbox"/> Darcy Noye		
<input type="checkbox"/> US Abdominal Ltd Or...(76705)	08-15-2011 1:40 PM	US1FH
<input type="checkbox"/> Harvey Wallbanger		
<input checked="" type="checkbox"/> XR Chest Min 4 Views(71030)	08-15-2011 9:00 AM	XR1FH

Figure 4.14 – Rescheduling studies for patient with multiple studies in one day.

Selecting the Studies check box will select all studies listed. Selecting Referrer (in Figure 4.14 the referrers are Darcy Noye and Harvey Wallbanger) will auto select all studies listed directly for that order. If 2 separate orders were scheduled from the same referrer, the second scheduled orders studies will not be selected. If more than one study is selected to be rescheduled, each study will have its own order tab, and multiple procedure rows will be displayed on the exam tab.

Studies	Duration	Room	Scheduled Date
CT Chest W Abdomen W Pelvis W(Chest,) x	30		mm-dd-yyyy h:mm a...
US Abdominal Ltd Or Fu(Abdomen,) x	30		mm-dd-yyyy h:mm a...
XR Chest Min 4 Views(Chest,) x	5		mm-dd-yyyy h:mm a...

[Click here to add another study](#)

Body Part: Laterality:

Figure 4.15 – Multiple studies selected for reschedule from different referrers but originally scheduled for same day.

Review Scheduled Information

The review tab will display a summary of information for the study(s) to be scheduled, or that has already been scheduled. Captured in this new text area is the scheduled procedure name, date and time of the schedule, study duration, site name, CPT code and description for each study. Also the address for the site is also displayed.

CT 3 Phase scheduled for Thursday August 04, 2011 at 1:00 PM for 30 minutes Located at: Lutherville
 (70482) CT ORBIT SELLA/POST FOSSA/EAR C-IC+
 (74170) COMPUTED TOMOGRAPHY, ABDOMEN; WITHOUT CONTRAST MATERIAL, FOLLOWED BY CONTRAST MATERIAL(S) AND FURTHER SECTIONS
 CT .RECALL NO DICTATION INVOLVED scheduled for Thursday August 04, 2011 at 1:30 PM for 30 minutes Located at: Lutherville
 (99999) Non-Billable Code

Address:
 Lutherville
 1209 York Road
 Suite 100

General CT
 Weight limit 450 lbs at most sites. No solids 2 hrs prior
 Have you ever had an iodine injection before?
 - If so have you had any problems with the injection?
 --(if so consult technologist)
 Asthma?
 - (if so, tell patient to bring their inhaler)
 Ask if Diabetic? If so, what meds do they take?
 If pt takes oral meds for diabetes refer to memo date 7-10-08 and follow necessary instructions.
 For Oral Prep please see memo dated 10-14-2008 and follow protocol
 Ask pt about pregnancy?
 If patient is scheduling both a CT and MR WITH contrast and answers NO to all screening questions then the procedures may be scheduled on the same day. If the patient answers YES to any of the questions then the procedures MUST be scheduled on separate days and the MR must be scheduled first.
 All children must be accompanied by an adult other than the patient

Figure 4.16 – Review tab

Scanned By Displayed in Scanning Grid

After a document is scanned, the user that scanned the document is now displayed under a new column in the work list called “Scanned By”.

Scanned	Type	Count	Level	Scheduled	Acc #	Procedures	Status	Scanned By
7/20/2011 8:47:39 AM	PatientBW	1	Patient					dale
5/31/2011 8:58:13 AM	PatientDuplexC	1	Patient					terry
5/31/2011 8:58:13 AM	PatientDuplexC	1	Patient					terry

Figure 4.17 – Scanning tab grid.

Schedule Walk In

A new menu option called Walk-in located under the Front Desk menu added.

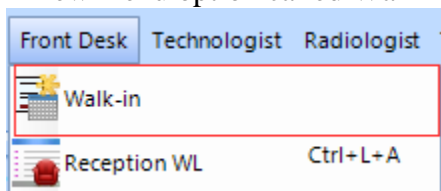


Figure 4.18 – New Walk-in menu option

The window that opens is the Registration window without any patient data. This gives the user the ability to create order, schedule, and arrive or check-in patient without selecting a pre-existing scheduled study from the work list. A new MRN is defaulted for creation of a new patient. If an existing patient is used, the MRN will change to that of the patient selected.

The screenshot displays the 'rRIS (QE Current as darcyn)' application window. The top menu bar includes 'File', 'Administration', 'Scheduling', 'Front Desk', 'Technologist', 'Radiologist', and 'Transcription'. The 'MD/ADV' dropdown is set to 'MD/ADV', and the 'ICD9' dropdown is set to '478'. The 'Registration' tab is active, with sub-tabs for 'Patient', 'Contacts / Demographics', 'Order', and 'Exam'. The 'Patient' sub-tab is selected, showing the 'General Information' section. This section includes fields for Prefix, First Name, Last Name, Middle, Suffix, MRN (10130), Gender, Birth Date (mm-dd-yyyy), Place of Birth, and checkboxes for 'Claustrophobic' and 'Verified ID'. The 'Contact Information' section includes Address 1, Address 2, City, State, Zip, Country, Email, Primary Phone, Work Phone, and Other Phone. The 'Patient Origin' section includes dropdowns for Primary Language, Education Level, Religion, Race, and Ethnicity. The 'Patient Notes' section contains a text area with the note '08-16-11 dtn -'. At the bottom, there are buttons for 'Checking In', 'Arrive', 'Save', and 'Close'. A status bar at the bottom indicates 'Saved: Schedule Order (Green Miguel)' and 'There are 3 Errors'.

Figure 4.19 – Walk-in data window

Restricted Modality Times (Soft Block)

A new method of marking a modality as unavailable had been introduced in build 1.19. This “soft block” will inform a user that a modality may not be available, or may have restrictions for specified period of time. Figure 4.20 displays where the block is configured. Selecting the modality, and a new data pain on the bottom right will allow the user to configure a specified time (From date → To date and time of day is captured). The description entered is what the user will see when scheduling.

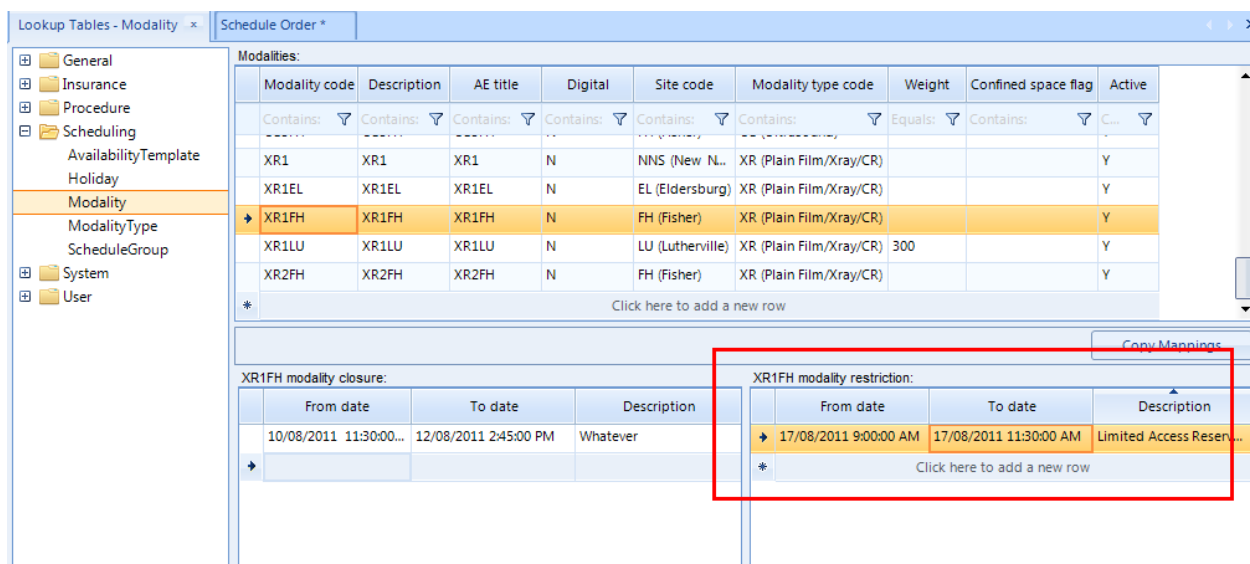


Figure 4.20 – Add or Edit Restricted Modality Times

When scheduling you perform an appointment search. The time results returned that fall in the time frame specified for modality restriction will have a red colored background. Hover the mouse pointer over the red colored time slot will display the description entered for the Modality restriction.

Lookup Tables - Modality | Schedule Order * x

Patient | Contacts / Demographics | Order | Schedule | Review

Studies | Duration | Room | Scheduled Date

XR CHEST PA LAT x | 5 | | mm-dd-yyyy h:mm a...

Click here to add another study

Body Part: Chest | Laterality:

Summary | Advanced

FH

XR1FH | XR2FH

Wed, 08-17-2011 | Wed, 08-17-2011

10:50 AM	5	10:50 AM	5
10:55 AM	5	10:55 AM	5
11:00 AM	5	11:00 AM	5
11:05 AM	5	11:05 AM	5
11:10 AM	5	11:10 AM	5
11:15 AM	5	11:20 AM	5
11:20 AM	5	11:25 AM	5
11:25 AM	5	11:30 AM	5
11:30 AM	5		

Limited Access Reserved for Stat cases

Figure 4.21 – Restricted time in search with description

Selecting a restricted time slot will prompt the user informing that this time is restricted giving the user the option of proceeding in selecting the current time slot, or cancelling and selecting a different time. If yes is selected, the booking proceeds as normal

Restriction


There is a restriction between the time of "08-17-2011 9:00 AM" and "08-17-2011 11:30 AM" for the room "XR1FH". The reason for is: "Limited Access Reserved for Stat cases"

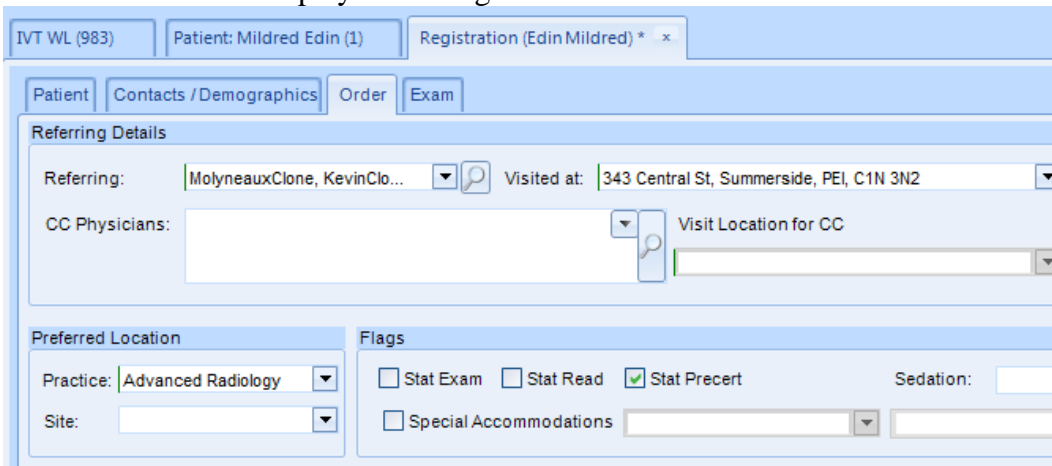
Would you still like to use this time?

Yes No

4.22 – Message prompt informing user that restricted time was selected.

Stat Precertification Flag

A new check box “Stat Precert” has been added to the order tab so the user may flag studies that require pre-certification ASAP are first to be processed. The default sort order for the IVT work list has been configured so precert stat items show at the top. A new flag  for precert stat items will now also display in the flag column.



IVT WL (983) Patient: Mildred Edin (1) Registration (Edin Mildred) * x

Patient Contacts / Demographics Order Exam

Referring Details

Referring: MolyneauxClone, KevinClo... Visited at: 343 Central St, Summerside, PEI, C1N 3N2

CC Physicians: Visit Location for CC

Preferred Location

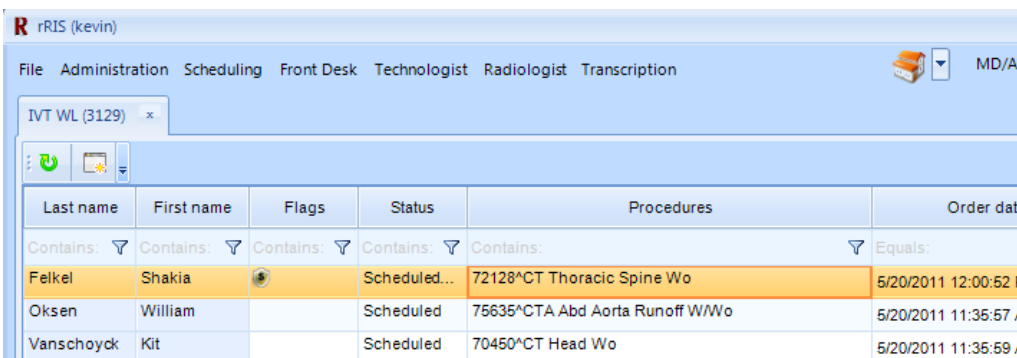
Practice: Advanced Radiology Site:

Flags

☐ Stat Exam ☐ Stat Read ☒ Stat Precert Sedation:

☐ Special Accommodations

Figure 4.23 – Stat Precert flag check box.



rRIS (kevin)

File Administration Scheduling Front Desk Technologist Radiologist Transcription

IVT WL (3129) x

Last name	First name	Flags	Status	Procedures	Order date
Contains: Felkel	Contains: Shakia	Contains:	Contains: Scheduled...	Contains: 72128^CT Thoracic Spine Wo	Contains: 5/20/2011 12:00:52
Oksen	William		Scheduled	75635^CTA Abd Aorta Runoff W/Wo	5/20/2011 11:35:57
Vanschoyck	Kit		Scheduled	70450^CT Head Wo	5/20/2011 11:35:59

Figure 4.24 – IVT worklist Stat Precert flag

Diagnostic Reporting Text Expander

To enhance and improve productivity a Text Expander is available for diagnostic reporting. This feature can be turned on / off with a user preference. If the user has this option on, a base file is downloaded from the database at first time use. They can add and remove text stored in their

file. When changes are made, it is saved back to the database. The client machine will be updated if the stored copy is newer than the local copy. The text expander can be edited by selecting the option from a context menu (right click) within the report.

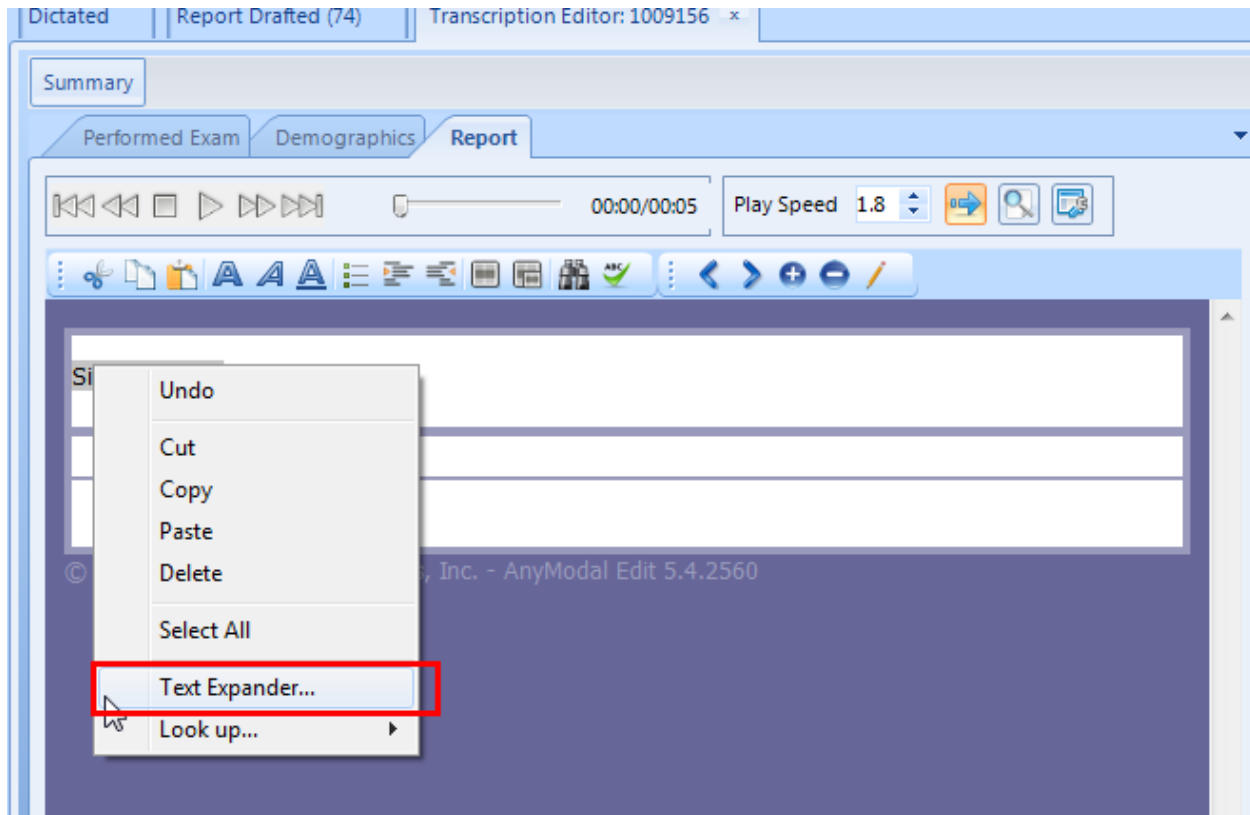


Figure 4.25 – Accessing Text Expander

The dialog box will open displaying a pre-defined list from the base file. The user can add additional text and save for future entries. The next time the user enters text that matches with text in the “Replace” column, it will recognize that the text entered is to be replaced with the expanded or corrected text specified.

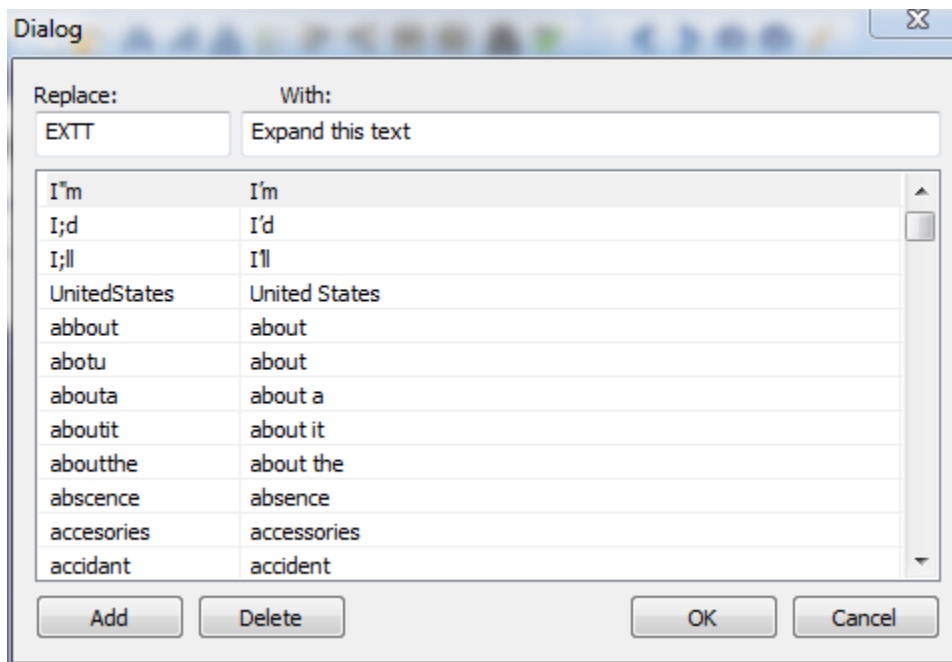


Figure 4.26 – Text Expander Dialog window

The following is additional information from MModal help file:

“AME comes with a builtin text expander. This expander is disabled by default to prevent conflict with 3rd party text expanders used by the MT (like for example InstantText, Shorthand, Shortcut, ...). To enabled it call [ICdsEditorCtrl.SetProperty](#)("TextExpanderEnabled", "true"). If the MT has a version of MS Word installed on their machine then AME will import the MT's Word AutoCorrect text mappings the first time TextExpanderEnabled is set to true. After setting TextExpanderEnabled the MT can right click a word in AME and click "Text Expander..." to edit text mappings: the MT can delete mappings, add new mappings, and replace existing mappings. AME will replace text whenever the user types one of her abbreviations followed by a spacebar press or punctuation symbol keystroke (period, comma, colon).

The text expander functionality somewhat overlaps with AME's context-dependent [Auto Completion](#). MTs have to decide on their own in which situations they want to use which technology: the text expander make sense for the most frequent and longer phrases consisting of multiple words - like for example mapping "tpi" to "the patient is", whereas auto-complete makes sense for long but less frequent individual words.”

Report Utility

In build 1.19 a Report Utility has been added for use by Radiologists and Transcription so they may see the history of the report, what was changed, and who changed it. Figure 4.27 shows the ICON to open the utility.

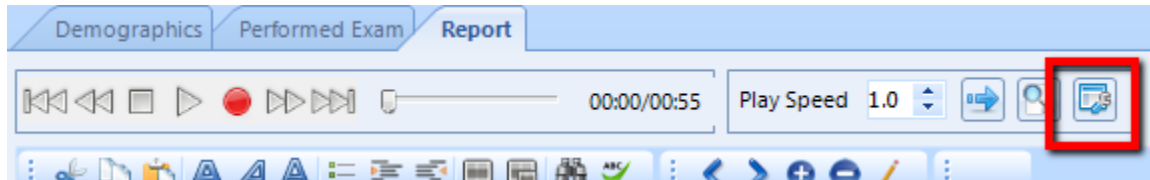


Figure 4.27 – Report Editor Control

Upon load, a tree view will display the history of the report. The user can select which version they would like to view as well as play back the dictation for that interpretation. The user may also enter another accession number to view the report and play back the dictation. The study info panel displays information about the patient and specific history of the study.

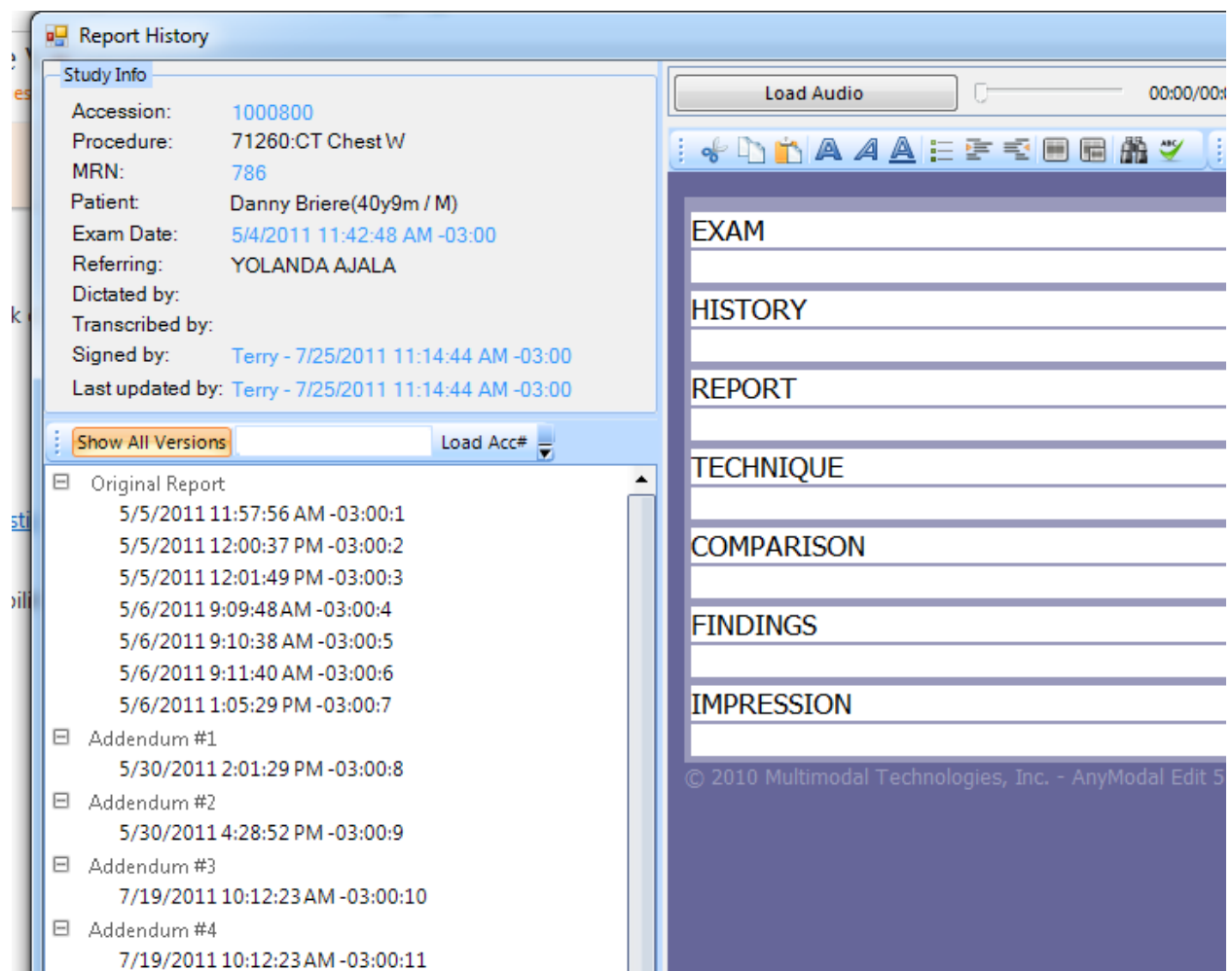


Figure 4.28 – Report History

Reporting Screen Refactor (Configurability)

In build 1.19 comes with a redesigned reporting screen. The users may customize the reporting screen to fit their individual needs and preferences.

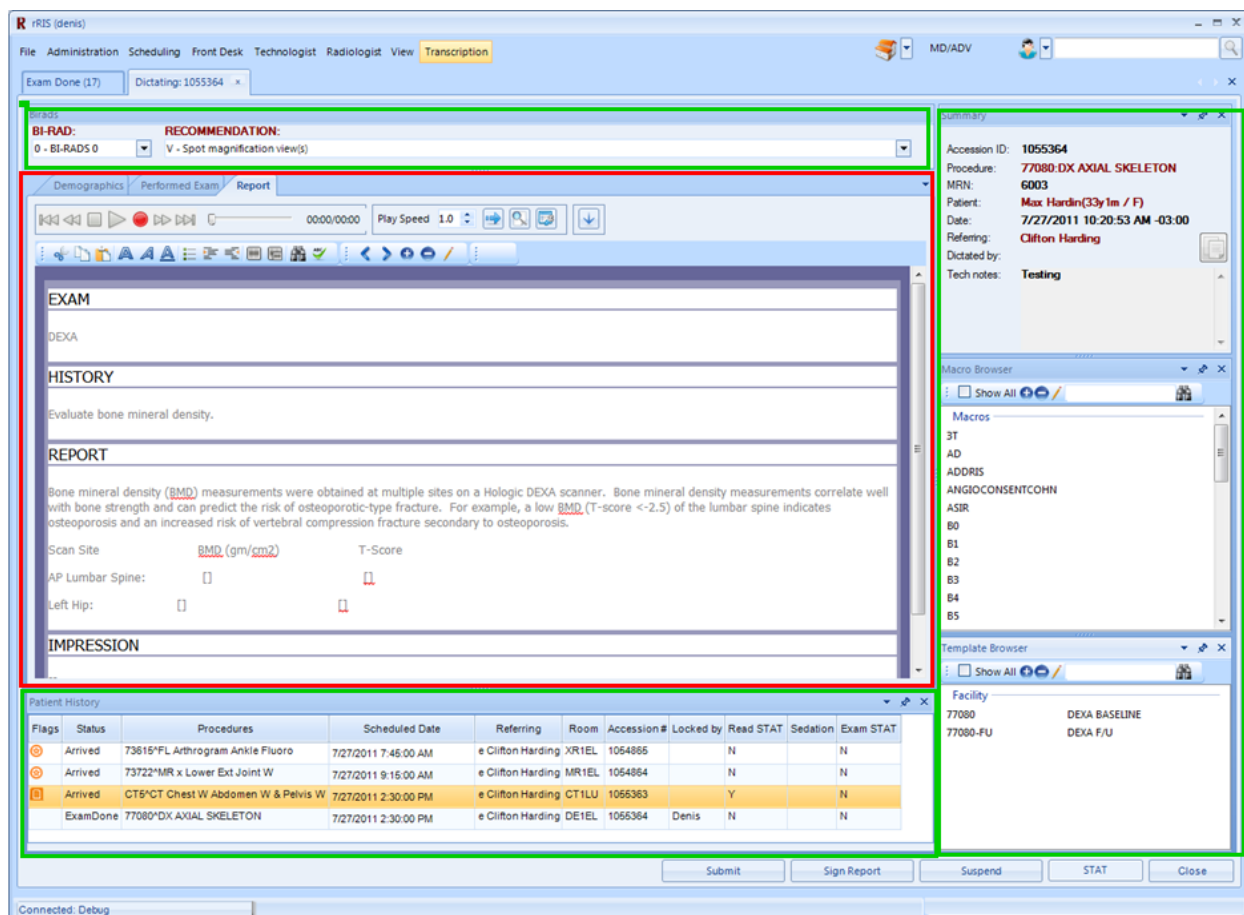


Figure 4.29 – Reporting window

Document Window: (red outline figure 4.29)

This is the main part of the screen, the report and the data panes. These controls have limited flexibility, they can be moved around and docked in different ways, but they cannot be floated or closed. They can also only be tabbed documents within the main document area (red). They cannot be docked on the perimeter with the tool windows (green).

Tool Window: (green outline figure 4.29)

These controls are much more flexible, they can be docked anywhere in the bounds of the reporting screen, they can be displayed as a tabbed document window next to the document window as if it was one. It can be floating above the rRIS, or on another screen. They can be pinned so that they stay visible or they can be unpinned so that they auto hide to a small tab.

One exception is the BIRAD control, when it is required for the study it cannot be hidden or auto hidden.

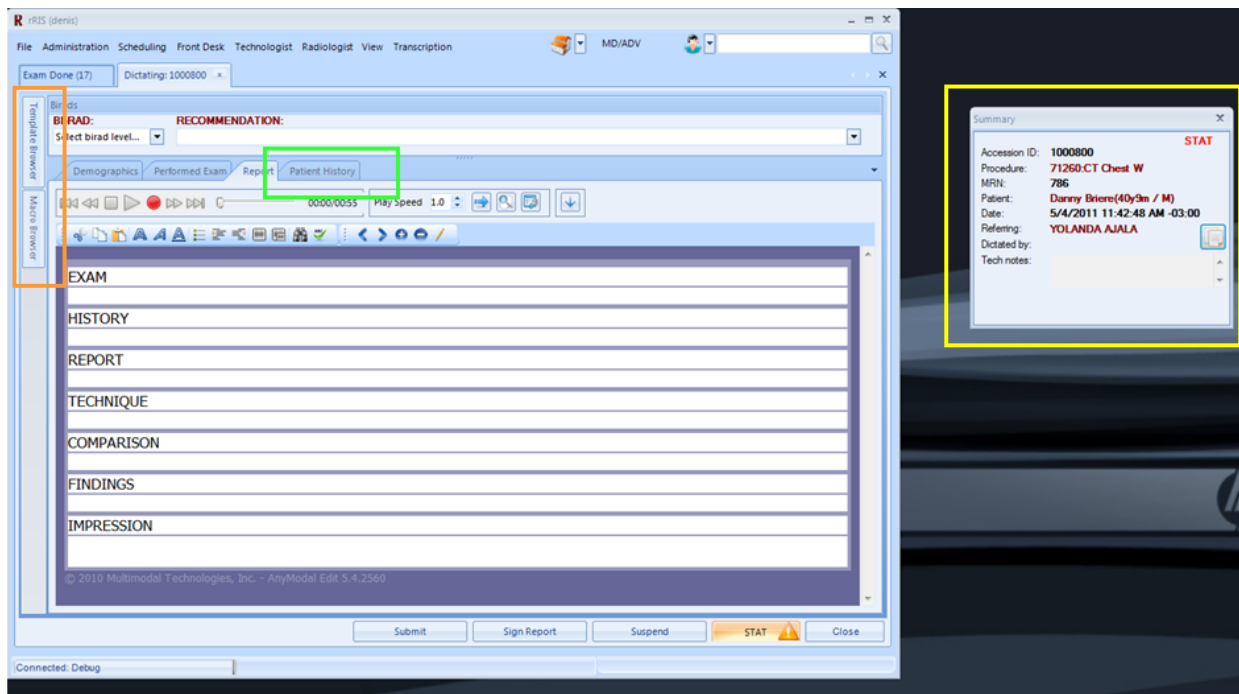


Figure 4.30 – Various configurations of reporting screen.

In Figure 4.30 we have the **summary screen** that is floating on the desktop on the right of the rRIS. **Patient history** is a tab next to the report tab (sequence of tabs can be re-arranged), and the **macro and template browser** are unpinned to make them auto hide on the left side of the window. Hover the mouse over the unpinned data panes (template browser and macro browser) will expand that data pane into view.

In Figure 4.31 you will see a new “View” menu. This menu is present in the dictate and reporting windows. Expanding the menu allows the user to select which data panes they wish to view. If one of the data panes is accidentally closed, it can be re-opened from this menu. You will also notice that you can “Save Layout” changes and “Reset Layout” changes. Adjusting the layout during the session doesn’t automatically save the layout on exit of the window. If the user adjusts the layout to their liking, select Save Layout will retain the layout for all future sessions. Reset layout will remove any changes made and revert back to the default layout.

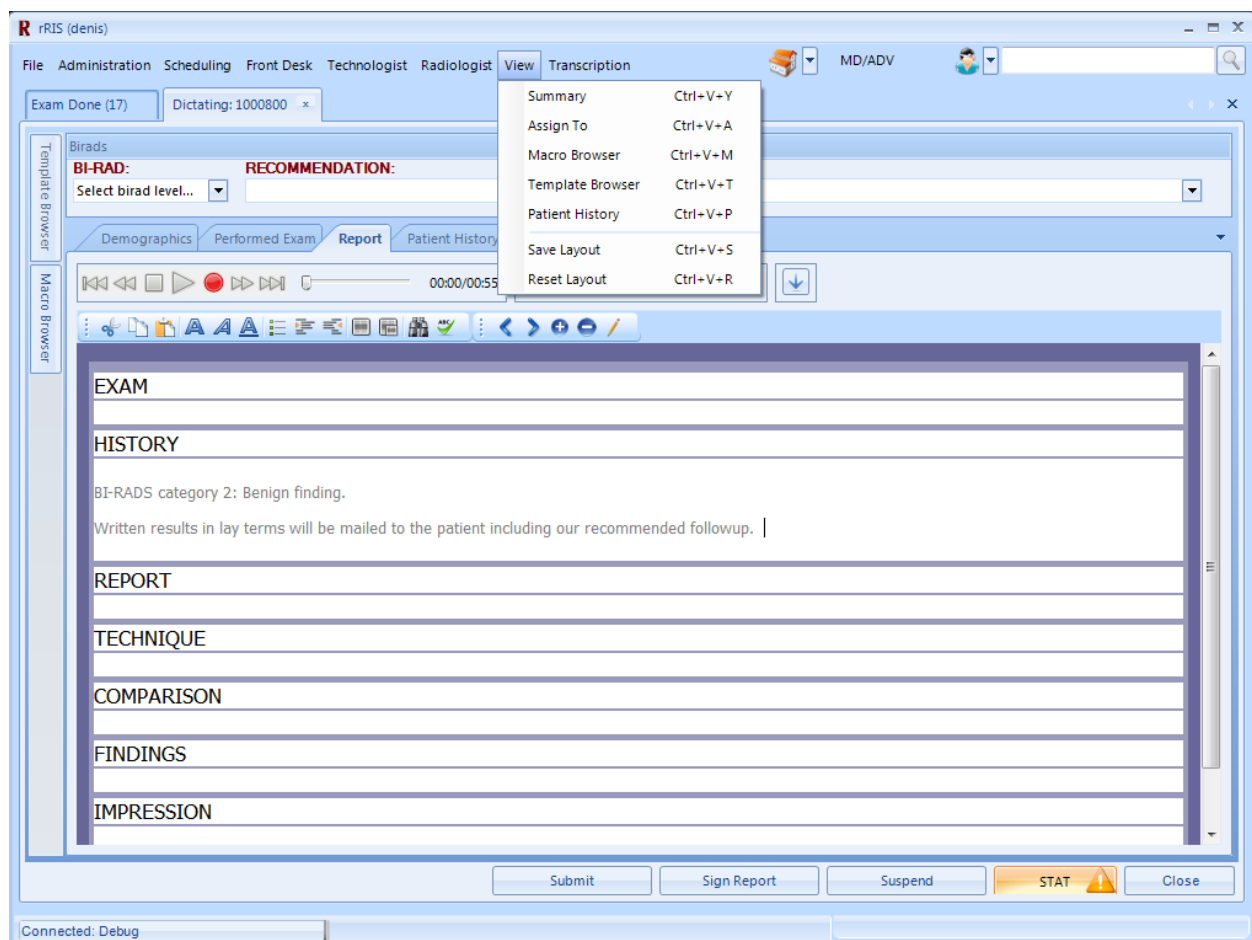


Figure 4.31 – View menu

Letter of Intent Added to Precert Status

Letter of Intent was added as a Precert status with the item still being considered at “required”. Figure 4.32 displays the new addition to the Precert status flag list.

code	pre certification number	pre cert required flag
RS&I C-/C+ POST-PXESSING		<div>Not Required</div> <div>Required</div> <div>Approved</div> <div>Denied</div> <div>Pending Respon..</div> <div>Not Required</div> <div>Letter of intent</div>

Figure 4.32 – Pre Cert Required Flag addition (letter of intent)

Stat Prelim Form

A new form was added in Build 1.19. A study is flagged as a stat exam the Stat Prelim Form will be an option to select to print. Figure 4.33 shows an example of the form.


 <p>ADVANCED RADIOLOGY <small>Trusted by more doctors. Preferred by more patients.</small></p>	<p>Lutherville 1209 York Road Lutherville, MD 21093 Phone: (410) 580-2240 Fax: (410) 580-2270</p>
<p>STAT PATIENT RESULTS</p>	
<p>Please deliver to: Ian Power Fax Number: (410) 580-2270 Phone Number: (410) 580-2240</p>	
<p>Patient Name: Green, Miguel DOB: 9/27/1971</p>	
<p>MR# 821 Date of Exam: 8/16/2011</p>	
<p>Type of Exam</p>	<p> <input type="checkbox"/> Positive <input type="checkbox"/> Negative <input type="checkbox"/> No Charge <input type="checkbox"/> Fax Final Report </p>
<p>CT42°CT Chest W & Abdomen W/Wo</p>	
<p>This is a preliminary impression of the exam(s) performed on your patient; the final report(s) will be sent to your office.</p>	
<p>Radiologist: _____</p>	<p> <input type="checkbox"/> AM <input type="checkbox"/> PM </p>
<p>Faxed by: _____ <small>(Advanced Radiology Representative - PRINT NAME)</small></p>	<p> <input type="checkbox"/> AM <input type="checkbox"/> PM </p>
<p>Verbally confirmed receipt of fax with: _____ <small>(Advanced Radiology Representative - PRINT NAME)</small></p>	<p> <input type="checkbox"/> AM <input type="checkbox"/> PM </p>
<p>Time called: _____</p>	
<p>Caller: _____ <small>(Advanced Radiology Representative - PRINT NAME)</small></p>	<p>Date: _____</p>
<p><small>The information contained in this facsimile message is privileged and confidential information intended only for the use of the individual or entity named as recipient. If the reader is not the intended recipient, be hereby notified that any dissemination, distribution or copy of this communication is strictly prohibited. If you have received this communication in error, please notify us immediately by telephone and return the original message to us at the above address via the U.S. Postal Service. Thank you!</small></p>	
<p>Patient Name: Green, Miguel</p>	<p>DOB: 9/27/1971</p>
<p>1</p>	

Figure 4.33 – Stat Prelim Form

Referring Physician Notification Management Report

When a new user is added to the system and flagged as a referring physician or when a user is modified and the original referring physician flag was set to NO and changed to YES, this report will capture this activity to assist in tracking new referrers added.

Referring Physician Notification

Date Range: 8/10/2011 - 8/17/2011

Referring Physician Name	Practice	Address Type	Address	Phone	Email
<i>Muttery, Troy</i>	ADV	Home	584 Rough and Tumble Hills Rocky Road AZ 25874	(902) 548-6547	
Date Added: 8/15/2011		Work	132 Orphy Dr. Seaside DE 45874	(902) 548-7464	
<i>O'roukes', Abdu'la Hugh-Prince O'roukes'</i>	ADV	Work	123 Western Highway St. Eleanor's RI 25148	(902) 485-6554	o'roukes'@hugh-prince.com
Date Added: 8/12/2011					
<i>Sand#@@#\$*, Herbert (Herb)+_(@*#\$</i>	ADV	Work	954 Ninth' St. Pitt\$ville DE 33333	(902) 548-7899	
Date Added: 8/12/2011					

Referring Physician Notification

<http://peidev1/ReportServer/QE Current/Management Reports>

RadNet - Confidential and Proprietary

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Date Run: 8/17/2011 2:20 PM

RMIS\dcrcyn

Figure 4.34 – Referring Physician Management Report

5. Known Limitations

Bugs, Suggested Features, and Support Issues are now tracked in a web based system called Redmine. The following is a snapshot of the issues found in Build 1.19.

#	Status	Subject	Category	Target version	% Done	Resolved Version
490	New	Edit order - Cannot change procedure	Thick Client GUI	1.19	0	
491	New	IVT procedure column does not update	Thick Client GUI	1.19	0	
492	New	Cannot cancel an order	Thick Client GUI	1.19	0	
494	New	Aborted exams not retaining studies when returned to pending orders	Thick Client GUI	1.19	0	
495	New	Refresh issue with scrolling available time slots for scheduling.	Thick Client GUI	1.19	0	
498	New	Unknown Referring - Exception thrown trying to edit order	Thick Client GUI	1.19	0	
488	Resolved	Review Scheduled Info tab data missing on Reschedule.	Thick Client GUI	1.19	100	1.20
489	Resolved	Remove cancelled room info will cause an exception	Admin Tools	1.19	100	1.20
496	Resolved	Error on room / time availability	Thick Client GUI	1.19	100	1.20
497	Resolved	Appointment screen (work list) room field returns procedures.	Thick Client GUI	1.19	100	1.20
499	Resolved	Patient Search - Search other variations not complete	Thick Client GUI	1.19	100	1.19

User Pre-Release Notes

for RADNET rRIS

Build 1.20

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1. Purpose

This document describes some of the new features and changes implemented in rRIS as of the end of Sprint 20. This pre-release version of rRIS is referred to as Build 1.20.

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 rRIS Development team for the RadNet RIS management team.

3. Installing/Accessing the Application

The installation instructions for the rRIS client have been posted to the RadNet Wiki page at <http://mdbal01rdtweb/Wiki/>

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

Username: rRIS

Password: Summerside

Please note that Build 1.20 is considered a new core release of the application and will require a reinstallation of rRIS. This is accomplished by navigating to the rRIS 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 Spencer MacDougall with the PEI RIS Development Team.

4. New Features and Enhancements

Checklist for Scheduling

A new check box, “Prep Instructions Reviewed”, has been added to the Review tab for orders and the Exam tab for scheduled studies data windows. The check box provides a visual confirmation that the Prep Instructions have been read. The new flag is added at the order level. If a new procedure is added to the order / exam, the flag is removed, as this will often require an additional review of the prep instructions.

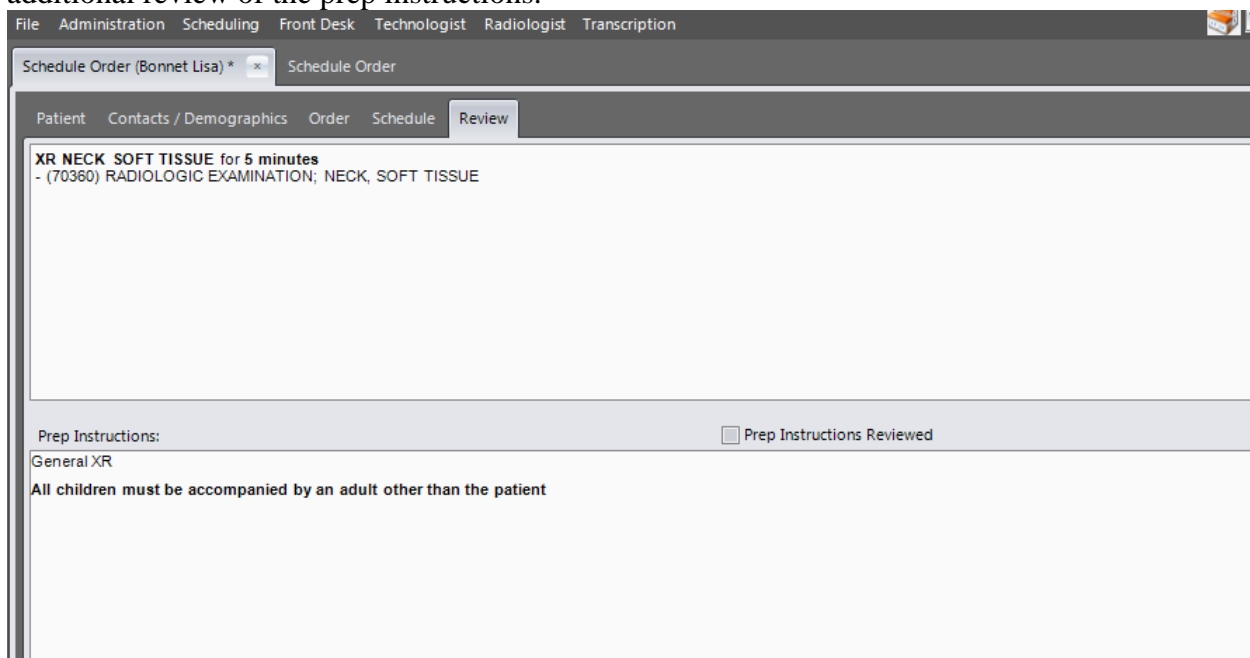


Figure 4.1 – Prep Instructions Reviewed check box location on Schedule Order.

The screenshot displays the RADNET rRIS interface. At the top, there are tabs for 'Reception WL (1)' and 'Registration (Bonnet Lisa) *'. Below these is a navigation bar with 'Patient', 'Contacts / Demographics', 'Order', and 'Exam' tabs. The 'Exam' tab is active, showing a table with columns: 'Studies', 'Duration', 'Room', and 'Scheduled Date'. A single study is listed: 'XR NECK SOFT TISSUE(Neck,) x' with a duration of '5', room 'XR1EL', and scheduled date '08-29-2011 9:05 AM'. Below the table is a button that says 'Click here to add another study'. Underneath the button are two dropdown menus: 'Body Part: Neck' and 'Laterality:'. To the right of these is a 'Pre Cert #' field. Below the dropdowns is a section titled 'Prep Instructions:' with a checkbox labeled 'Prep Instructions Reviewed' which is checked. Below this checkbox is a text area containing the text 'General XR' and 'All children must be accompanied by an adult other than the patient'.

Figure 4.2 – Prep Instructions Reviewed check box location Registration.

Credential Switch

To assist in auditing in shared workstation environments where a common login may be used, Credential Switch has been added in build 1.20. The Credential Switch flag is added at the personnel level.

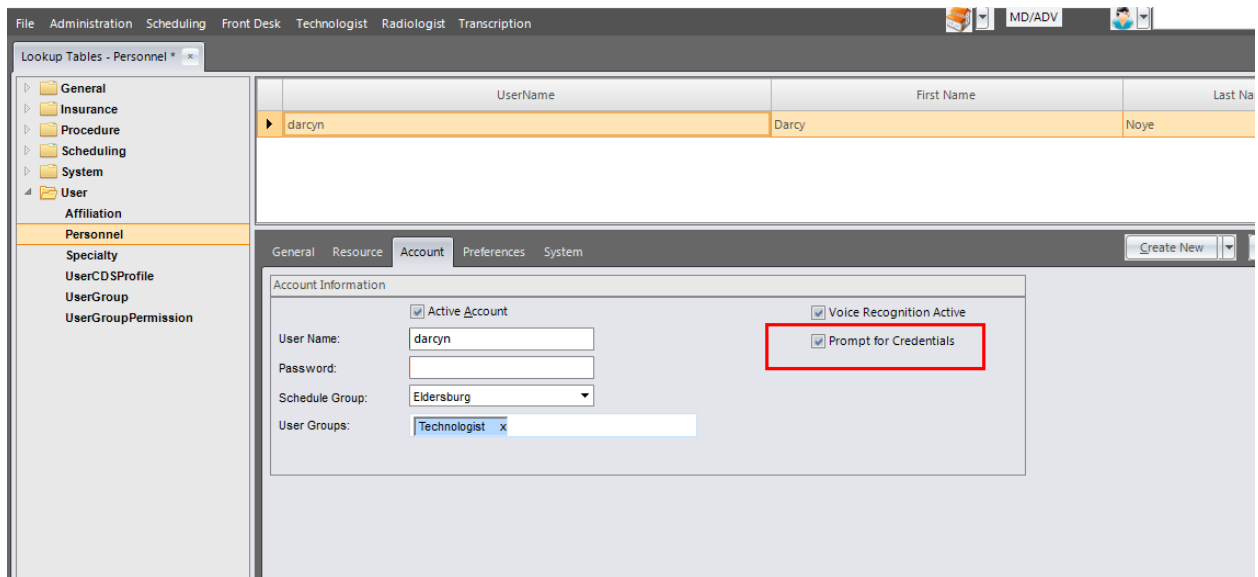


Figure 4.3 – Prompt for Credentials flag

If the user's account has this flag checked, they will receive a prompt. Build 1.20 will prompt users who are attempting Perform Exam or Edit Patient. If valid credentials are entered, the user will be permitted to continue workflow.

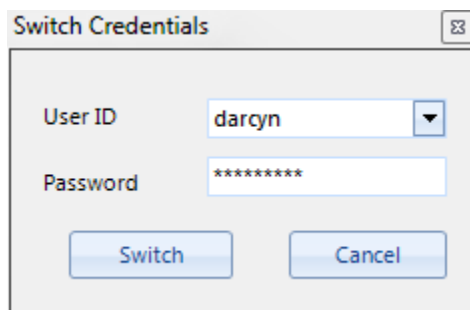


Figure 4.4 – Prompt for Credentials dialogue box

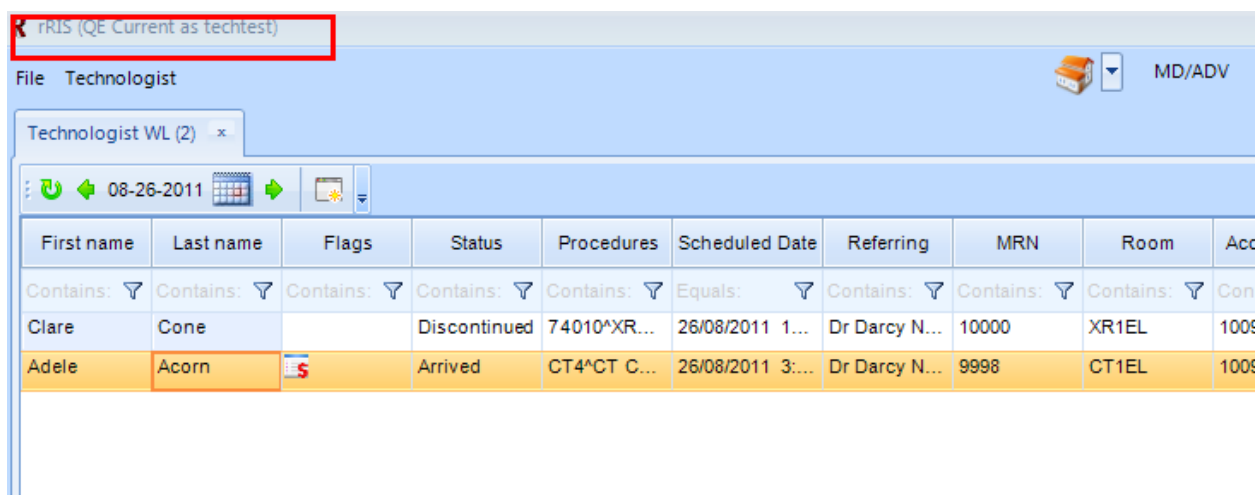


Figure 4.5 – Prompt for Credentials dialogue box

Figure 4.5 shows a common login (techtest). Performing exam on the highlighted row will prompt user with dialogue box in Figure 4.4. If valid credentials are entered, the Perform Exam data window will open with the title bar displaying the user logged into this Data window. Toggling back to the Technologist work list will show the title bar once again as the “common logged in user” as shown in figure 4.6
The same is true for Edit Patient.

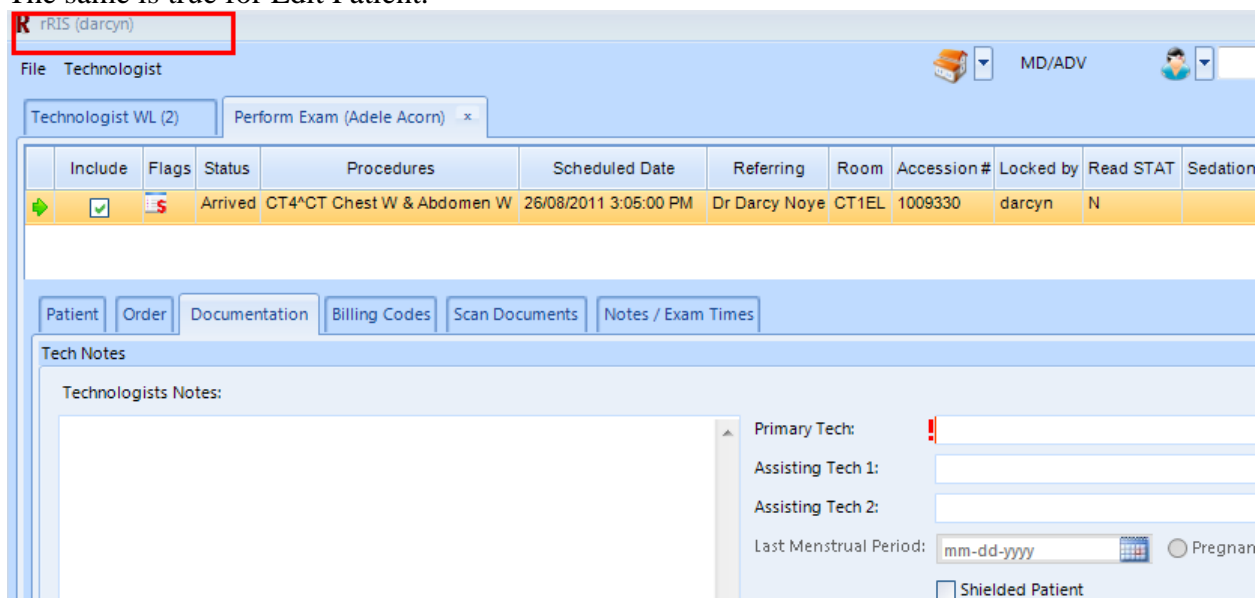


Figure 4.6 – Prompt for Credentials dialogue box

The user will be prompted every time either of these Data Windows is accessed, even when the user may currently have a data window open where credentials have been passed. If a second user clicks on the first user's tab, rRIS will allow them to see the tab, without being prompted for credentials again. In this manner, it is possible for the second user to save the data of the first user, and it will be saved under the credentials of the first user. This was preferred to having the system prompt yet again for credentials. When the user leaves the Perform Exam or the Edit Patient, the credentials will be set back to the generic user account

The dialogue box will keep a history of User ID's enter as long as the current rRIS session is active.

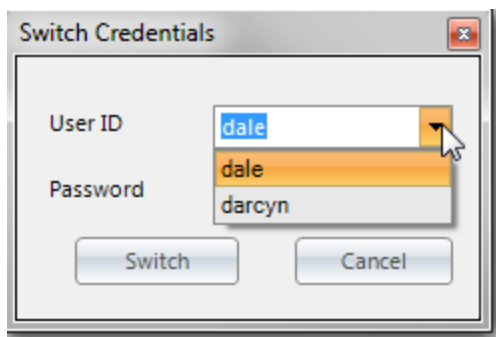


Figure 4.7 – Switch Credentials dialogue box user history.

Direct Referral Program

A flag has been added at the personnel level for Referring Physicians. If this user's account has the Resource Type of Referring Physician, the flag for Direct Referral Program will become active.

The screenshot shows a personnel lookup window with tabs for 'abc (1)', 'Registration (abc abc) *', and 'Lookup Tables - Personnel *'. A table lists personnel with columns 'UserName', 'First Name', and 'Last'. The entry 'kevin' is highlighted, showing 'Kevin' as the first name and 'Molyneaux' as the last name. Below the table are tabs for 'General', 'Resource', 'Account', 'Preferences', and 'System'. The 'Resource' tab is active, showing 'Resource Type' with checkboxes for 'Referring Physician' (checked), 'Radiologist', 'Unknown Referring', 'Transcriptionist', and 'Technologist'. The 'Referring Flags' section has checkboxes for 'Direct Referral Program' (checked) and 'Pre-Auth Program'. A 'Create New' button is visible in the top right.

UserName	First Name	Last
kevin	Kevin	Molyneaux

Resource Type

☒ Referring Physician ☐ Radiologist ☐ Unknown Referring
☐ Transcriptionist ☐ Technologist

Referring Flags

☒ Direct Referral Program
☒ Pre-Auth Program

Resource Information

Figure 4.8 – Direct Referral Flag at personnel level.

When a Referring Physician has this flag, an additional check box is added to the New Appointment / Schedule Order data windows when this referrer is selected.

The screenshot shows a schedule order window with tabs for 'File', 'Administration', 'Scheduling', 'Front Desk', 'Technologist', 'Radiologist', and 'Transcription'. The 'Schedule Order (Brie Bella) *' tab is active. The 'Order' tab is selected, showing 'Referring: Noye, Darcy T' and 'Visited at: 154 Hangdown Dr., Hangtown, MD, 45742'. A red box highlights the 'Direct Referral' checkbox, which is checked. Below this are fields for 'CC Physicians' and 'Visit Location for CC'. The 'Preferred Location' section shows 'Practice: Advanced Radiology' and 'Site:'. The 'Flags' section has checkboxes for 'STAT Exam', 'STAT Read', 'STAT Precert', 'Transportation Required', and 'Special Accommodations'. The 'Class' is set to 'Outpatient' and 'Sedation' is empty. The 'Insurance Policies' section is at the bottom with a table of columns: Note, Carrier code, Carrier name, Policy number, Group name, Group number, Phone, and Priority.

Referring: Noye, Darcy T Visited at: 154 Hangdown Dr., Hangtown, MD, 45742

☒ Direct Referral

CC Physicians: Visit Location for CC:

Preferred Location

Practice: Advanced Radiology Site:

Flags

☐ STAT Exam ☐ STAT Read ☐ STAT Precert Class: Outpatient Sedation:

☐ Transportation Required: ☐ Special Accommodations:

Insurance Policies

Note	Carrier code	Carrier name	Policy number	Group name	Group number	Phone	Priority
------	--------------	--------------	---------------	------------	--------------	-------	----------

Figure 4.9 – Direct Referral Flag at order level.

Pre-Auth Program

Similar to the Direct Referral Program flag, the Pre-Auth Program is a new flag added to Personnel that becomes active when the resource type Referring Physician flag checked.

The screenshot shows the 'Lookup Tables - Personnel' window. A table lists personnel with columns for Username, First Name, and Last. The first entry is 'kevin', 'Kevin', and 'Molyneux'. Below the table are tabs for General, Resource, Account, Preferences, and System. The 'Resource' tab is active, showing 'Resource Type' with checkboxes for 'Referring Physician' (checked), 'Radiologist', 'Unknown Referring', 'Transcriptionist', and 'Technologist'. To the right, 'Referring Flags' shows 'Direct Referral Program' and 'Pre-Auth Program' (checked). A 'Create New' button is in the top right.

Figure 4.10 – Pre-Auth Program check box.

If the ordering referring physician selected has the Pre-Auth Program flag, it will display directly under the Referring box on the order tab. The Referrer may or may not have the Direct Referral flag.

The screenshot shows the 'Schedule Order' form in the rRIS application. The 'Referring Details' section has a 'Referring:' dropdown set to 'Noye, Darcy T'. Below it, 'Direct Referral (Pre-Auth Program)' is checked. The 'CC Physicians' field is empty. The 'Visit Location for CC' dropdown is also empty. The 'Preferred Location' section shows 'Practice: Advanced Radiology' and 'Site:' as a dropdown. The 'Flags' section includes checkboxes for 'STAT Exam', 'STAT Read', 'STAT Precert', 'Transportation Required', and 'Special Accommodations'. The 'Class' dropdown is set to 'Outpatient'.

Figure 4.11 – Pre-Auth Program displayed on order. (In this example the Referrer also has the Direct Referral flag)

Report Delivery Options

It is now possible for a user to have delivery methods of print and fax selected for a particular “Type” address. Previous to build 1.20 the “Delivery To” was a list box with only one selection possible. Check boxes are now used in place of the list box.

Address	Delivery
343 Central St PEI	Fax to (902) 436-8220 Print Reports

Figure 4.12 – Personnel contact information – Delivery To

Scanned Document Notes

The ability to attach notes to a scanned document has been introduced in build 1.20.

After scanning a document the Scan Document Viewer Control opens to view the completed scan. A new ICON displayed in Figure 4.13 has been added. Selecting this ICON will open the Scan Document Notes window. See Figure 4.14



Figure 4.13 – Notes ICON in Scan Document Viewer Control.

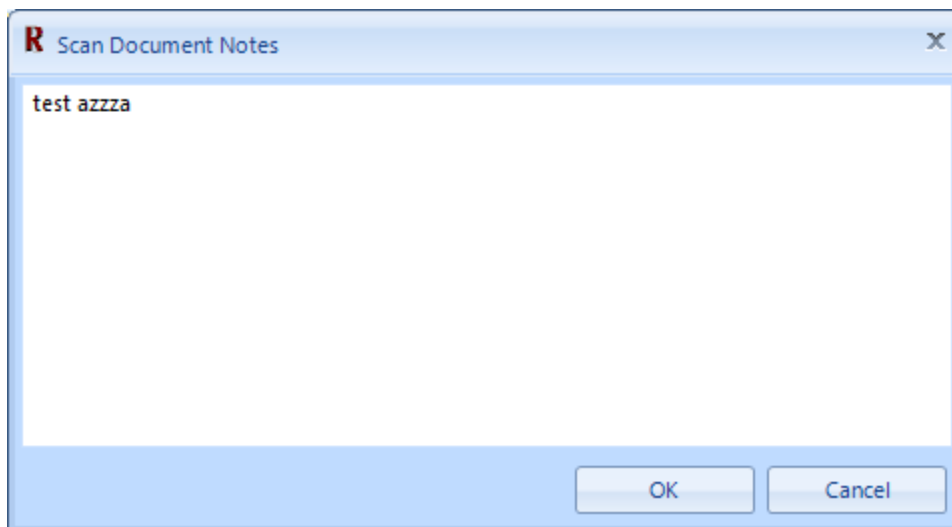


Figure 4.14 – Scan Document Notes window.

Entering notes in the above window, selecting OK will attach the note to scanned document. The note ICON will display in a new column titled “notes” on the Scan Document Viewer work list.

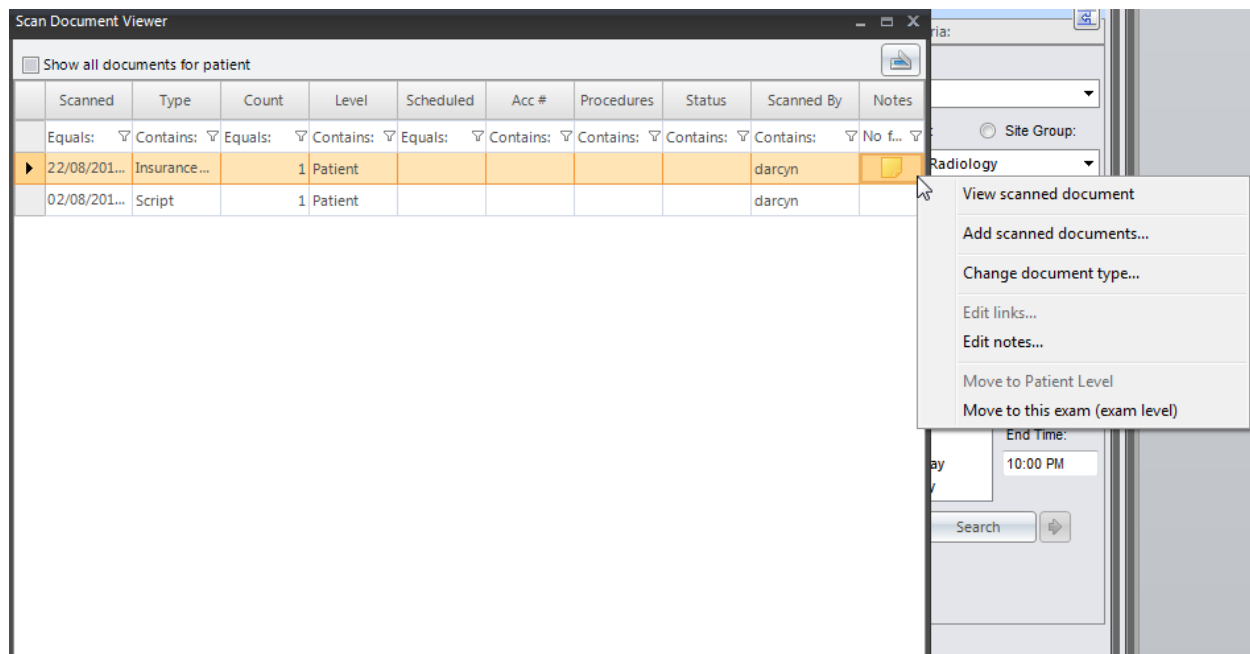


Figure 4.15 – Notes column added to Scan Document Viewer work list

The scan document notes can be edited from the work list via a right click menu from the notes ICON.

Transportation Required

A flag was added to document if transportation is required. This is something that practices may offer as a service to patient's that don't have reliable means of transportation.

The field for transportation is a yes or no field and if yes, it will require the user to fill out the patient address and phone numbers at the time of scheduling. The text box is enabled when the flag is added

The screenshot shows the 'Registration (asdf asdf) * x' window with tabs for Patient, Contacts / Demographics, Order, and Exam. The 'Referring Details' section includes a 'Referring:' dropdown set to 'Molyneaux, Kevin L', a 'Visited at:' dropdown set to '343 Central St, Summerside, PEI, C1N 3N2', and a 'Direct Referral (Pre-Auth Program)' checkbox. The 'CC Physicians:' field is empty. The 'Preferred Location' section has a 'Practice:' dropdown set to 'Advanced Radiology' and an empty 'Site:' dropdown. The 'Flags' section includes checkboxes for 'STAT Exam', 'STAT Read', 'STAT Precert', 'Transportation Required' (checked), and 'Special Accommodations'. The 'Transportation Required' text box contains 'Call a cab that morning at 11:00.'. The 'Class:' dropdown is set to 'Outpatient' and the 'Sedation:' field is empty. The 'Insurance Policies' section is a table with columns: Note, Carrier code, Carrier name, Policy number, Group name, Group number, Phone, and Priority. A 'Checking In' button is at the bottom right. A status bar at the bottom shows 'Connected: Debug' and a red error icon with the text 'There are 4 Errors'. A tooltip on the right lists four errors: 'Address 1' Is Required, 'City' Is Required, 'State' Is Required, and 'Primary Phone' Is Required.

Note	Carrier code	Carrier name	Policy number	Group name	Group number	Phone	Priority
------	--------------	--------------	---------------	------------	--------------	-------	----------

Figure 4.16 – Transportation required flag and text box.

Site Logos

The ability to add a logo to the practice and /or the site has been added in build 1.20. The logo can be added, edited or removed via the configure Organization – Edit practice or edit site windows. The user will only be able to load picture format logos. For example the user would not be able to load a .pdf file.

Lookup Tables - Organization * x

Region: Maryland

Practices

Advanced Radiology
Phone: (443) 436-1100
Fax: (443) 436-4568
Time Zone: (UTC-04:00) Atlantic Time (Canada)

Stick Practice

Test Practice

Eldersburg (E)
Phone: (443) 436-1100
Fax: (443) 436-4568

Fisher (FH)
Phone: (443) 436-1100
Fax: (443) 436-4568

Lutherville (L)
Phone: (410) 580-1100
Fax: (410) 580-4568

General

Insurance

Procedure

Scheduling

System

CanceledStudyReason

FormCategory

FormsAndLabels

Organization

QueueSubscription

SiteGroup

SystemConfig

User

Practice

Practice Code: ADV ☐ Active

Description: Advanced Radiology

Phone #: (443) 436-1100

Fax #: (443) 436-4568

Time Zone: (UTC-04:00) Atlantic Time (Canada)

Practice Notes:

Contact

Contact Name: Jim Smith

Phone #: (443) 436-1100

Mobile #:

Fax #: 0 -

Email: jim@mail.com

Contact Notes:

Address

Address 1: 7253 Ambassador Road

Address 2:

City: Baltimore

State: MD

Zip Code: 21244

Load Logo

Delete Logo

Save Close

Figure 4.17 – Adding logo to practice and / or site.

Expiring Time Block Exceptions

The expiring time block indicators will allow the administrator to ability to hide specific time periods from scheduling search until a pre-determined time. The time is calculated in days, so the earliest a time block would display would be 24 hours before that block would be available. The time block is setup from the Availability template window. Select the template, and to add a time block select the Exception button. See figure 4.18

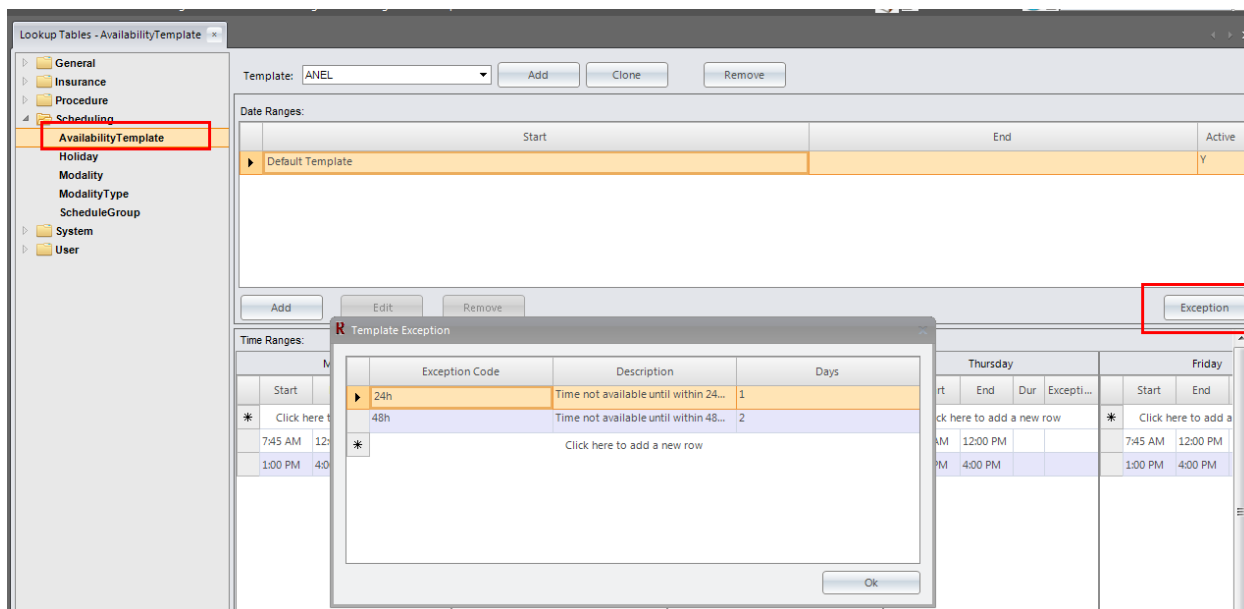


Figure 4.18 – Time Block Exception setup.

Once the exception has been defined, the time range(s) must be edited to indicate what exception is to be used. Under the Time Ranges section of this window, a new “exception” column has been added to this window that requires the Exception Code configured in the Template Exception window. In the example displayed in Figure 4.19 the time range of 6-9 on Monday will be available for schedule at any given time. The same time range for Tuesday and Wednesday would not be available via scheduling search until 24 hours before, and Thursdays time range of 7:10-9 is available 48 hours before.

Lookup Tables - AvailabilityTemplate

General
Insurance
Procedure
Scheduling
AvailabilityTemplate
Holiday
Modality
ModalityType
ScheduleGroup
System
User

Template: XREL [Add] [Clone] [Remove]

Date Ranges:

Start	End
Default Template	

[Add] [Edit] [Remove] [Excel]



Time Ranges:

Monday					Tuesday					Wednesday					Thursday					Friday		
Start	End	Dur	Exception		Start	End	Dur	Exception		Start	End	Dur	Exception		Start	End	Dur	Exception		Start	End	
* Click here to add a new row					* Click here to add a new row					* Click here to add a new row					* Click here to add a new row					* Click here to add a new row		
7:45 AM	12:00 PM				7:45 AM	12:00 PM				7:45 AM	12:00 PM				7:45 AM	12:00 PM				7:45 AM	12:00 PM	
1:00 PM	4:00 PM				1:00 PM	4:00 PM				1:00 PM	4:00 PM				1:00 PM	4:00 PM				1:00 PM	4:00 PM	
6:00 PM	9:00 PM	5			6:00 PM	9:00 PM	5	24h		7:00 PM	9:00 PM	5	24h		7:10 PM	9:00 PM	5	48h				

Figure 4.19 – Specifying time range exceptions

Pre_Auth Referring Physician Management Report

A new management report is available with build 1.20. The report is accessed via the Administration – Management Reports menu and displays the modality counts for Pre-Auth Referring Physicians.

Practice:	Advanced Radiology ▼	Site(s):	Eldersburg, Fisher, Lutherville ▼
Param Date	09/07/2011 	Param Date2	08/08/2011 

143db59c-22da-4398-84b5-88a2d7af0fd8

Practice: Advanced Radiology
 Site(s): Eldersburg, Fisher, Lutherville, New site just bought
 Date Range: 7/9/2011 - 8/8/2011

Ref Phys	Modality Code	Total
<input checked="" type="checkbox"/> a Kevin Molyneaux a		49
<input type="checkbox"/> Ian Power	CT1LU	5
	DE1EL	1
	DE1FH	1
	PT1FH	2
	US2EL	1
	XR1EL	5
	XR1FH	14
	XR1LU	6
	XR2FH	8
<input checked="" type="checkbox"/> s Stick Powell s		23
Total		115

Figure 4.20 – Pre-Auth Referring Physician Report

Composite Code Min – Max Site Override

In build 1.20 procedure plans may be overridden for specified site(s). The Procedure Plan window has been modified by adding an ICON in the lower right corner of the window.

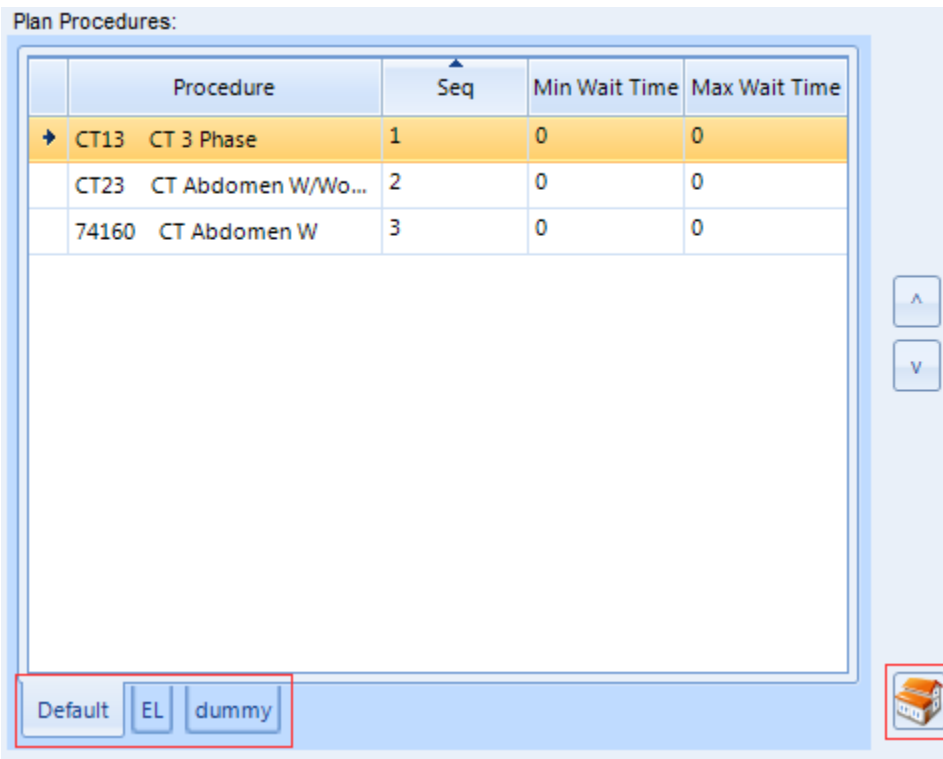


Figure 4.21 – ICON to add, edit, or remove sites to be exempt from a procedure plan.

Selecting this ICON will spawn a new window where the user may select the site(s) that are to override this procedure plan.

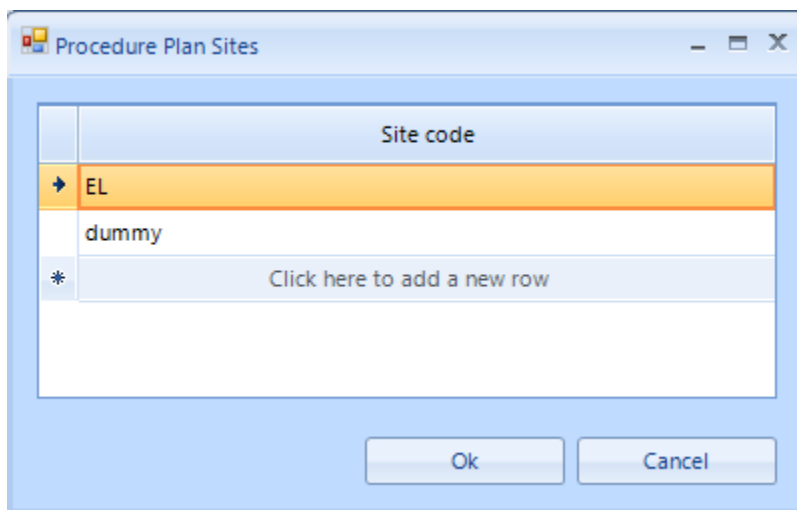


Figure 4.22 – Add, edit and delete sites to override procedure plan

5. Known Limitations

Bugs, Suggested Features, and Support Issues are now tracked in a web based system called Redmine. The following is a snapshot of the issues found in Build 1.20.

#	Status	Subject	Category	Target version	% Done	Resolved Version
522	New	Search for available times incomplete based on criteria	Thick Client GUI	1.20	0	
521	New	Exception thrown at login if user is not associated to a practice	Admin Tools	1.20	0	
520	Resolved	Scheduler gets exception when selecting procedure	Thick Client GUI	1.20	100	1.21
519	New	Scheduling Planned Procedures does not adhere to min/max times	Thick Client GUI	1.20	0	
518	New	Config - User groups added don't have "x" to remove	Admin Tools	1.20	0	
516	New	Exception on reschedule	Thick Client	1.20	0	
515	New	Exception on closing edit patient window	Thick Client	1.20	0	
514	New	Refresh issue on save personnel	Admin Tools	1.20	0	
512	Resolved	Incorrect button labels on popups for adding printing criteria	Admin Tools	1.20	100	1.21
511	Resolved	Error saving AvailabilityTemplate	Admin Tools	1.20	100	1.21
509	New	Credential switch lock overridden by unknown user	Thick Client GUI	1.20	0	
508	New	IVT worklist is blank for sites	Thick Client	1.20	0	
507	New	Credential Switch - Exception thrown on save edit user.	Thick Client GUI	1.20	0	
506	New	Scanning document with notes, first notes ICON does not display	Thick Client GUI	1.20	0	
505	New	Exception thrown scanning document	Thick Client	1.20	0	
504	New	Scan Doc notes	Thick Client	1.20	0	
503	Resolved	Report Delivery Options Sprint 1.20	Web	1.20	100	1.21
502	Resolved	Document Distribution - ok / cancel buttons missing	Thick Client GUI	1.20	100	1.21
501	Resolved	Report delivery - print selected does not require address	Thick Client GUI	1.20	100	1.21
500	Resolved	Reschedule double study has incorrect study selected.	Thick Client GUI	1.20	100	1.21

User Pre-Release Notes

for RADNET rRIS

Build 1.21

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1. Purpose

This document describes some of the new features and changes implemented in rRIS as of the end of Sprint 21. This pre-release version of rRIS is referred to as Build 1.21.

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 rRIS Development team for the RadNet RIS management team.

3. Installing/Accessing the Application

The installation instructions for the rRIS client have been posted to the RadNet Wiki page at <http://mdbal01rdtweb/Wiki/>

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

Username: rRIS

Password: Summerside

Please note that Build 1.21 is considered a new core release of the application and will require a reinstallation of rRIS. This is accomplished by navigating to the rRIS 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 Features and Enhancements

Apply Document Type after Scanning

Build 1.21 gives the user the ability to assign or change the document type after the document has been scanned. Additionally the user has the option to change the type of the document selected and also the documents that follow the currently selected document.

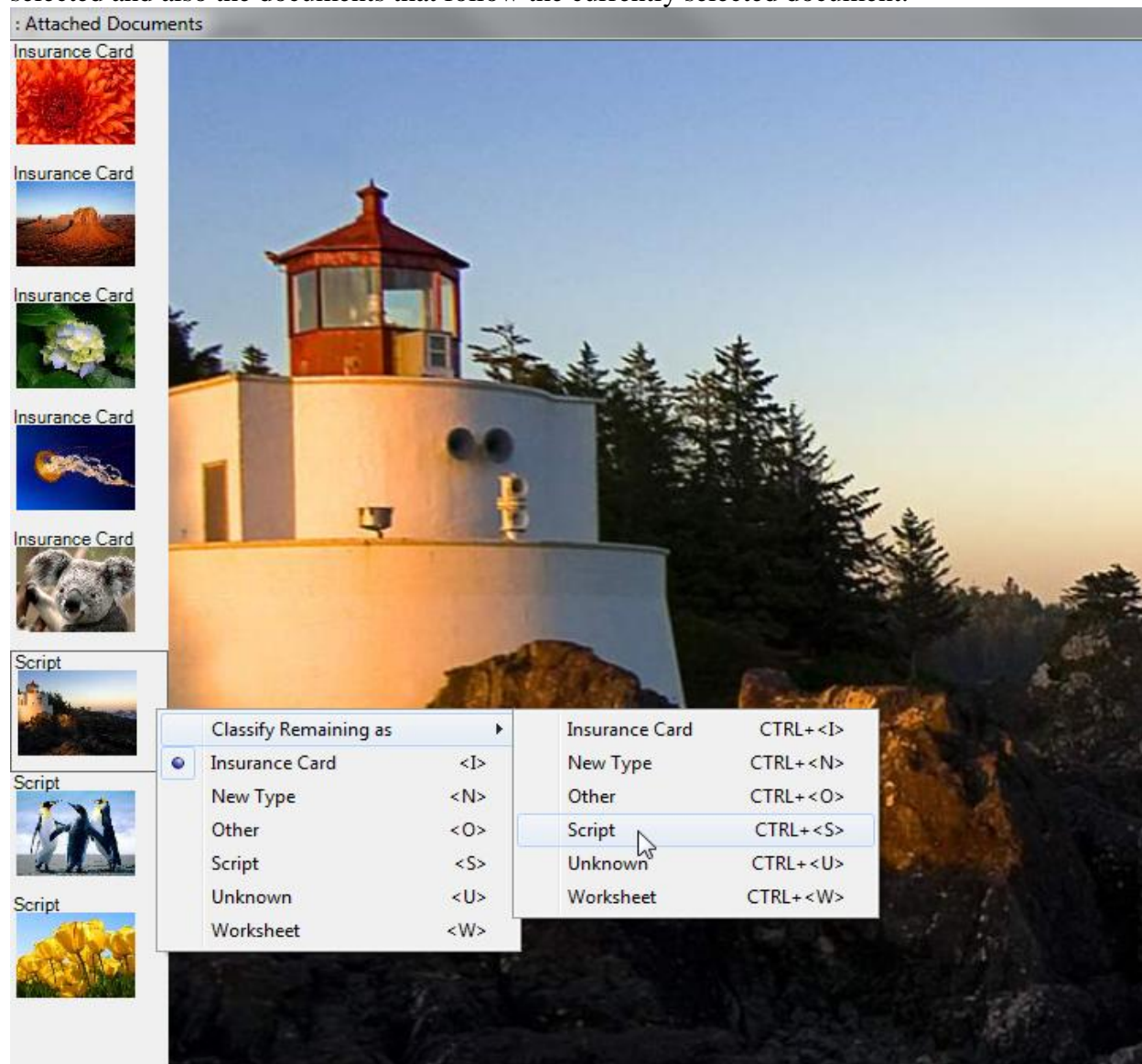


Figure 4.1 –Attached document selection type.

In the view attachment window, thumbnails are displayed on the left side. A right click on a thumbnail will open the list displayed in Figure 4.1. The first menu item “Classify Remaining as” expands the menu to show the available document types. The user can change the currently selected document as well as the all of the documents that follow the document in thumbnail view below it.

The document types available from this context menu are only those of the same document type of the scanned or imported image. For example, if the document scanned has a document type that is at the Patient Level, the context menu will only show active document types at Patient Level.

Changing the document type as shown in Figure 4.1 a new record is created and a new row will display in the Attachment Viewer. The original attachment “Insurance Card” has 8 pages. Three of those pages are changed to Type “script”, creating a new row for “script” document with 3 pages and “Insurance Card” has the remaining

Attachment Viewer

☐ Show all documents for patient

Attached	Type	Pages	Level	Scheduled	Acc #	Procedures	Status	Attached By	Notes
Equals: ▾	Contains: ▾	Equals: ▾	Contains: ▾	Equals: ▾	Contains: ▾	Contains: ▾	Contains: ▾	Contains: ▾	N... ▾
→ 09-07-2011	Insurance C...	8	Exam*	09-07-2011...	?	Current Exam	Adding	?	

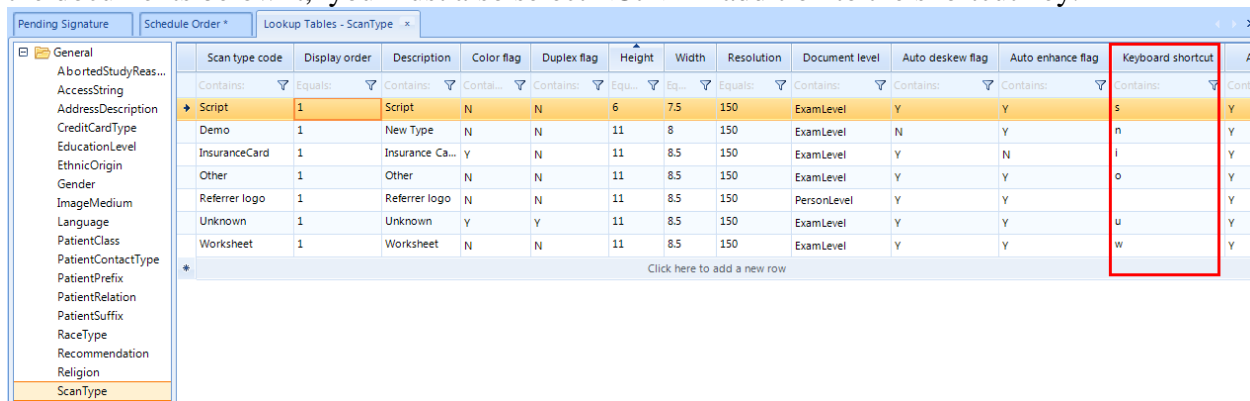
Attachment Viewer

☐ Show all documents for patient

Attached	Type	Pages	Level	Scheduled	Acc #	Procedures	Status	Attached By	Notes
Equals: ▾	Contains: ▾	Equals: ▾	Contains: ▾	Equals: ▾	Contains: ▾	Contains: ▾	Contains: ▾	Contains: ▾	N... ▾
09-07-2011	Insurance C...	5	Exam*	09-07-2011...	?	Current Exam	Adding	?	
→ 09-07-2011	Script	3	Exam*	09-07-2011...	?	Current Exam	Adding	?	

Figure 4.2 – Before and after changing document type for multiple documents

Also from Figure 4.1 you will notice that the document types may have shortcut keys assigned. To change the document type for a single document, you only need to select the shortcut key itself. For example, to change the document type to Unclassified, highlight the thumbnail and select **U** on the keyboard. To change the document type for the currently selected thumbnail and the documents below it, you must also select **<Ctrl>** in addition to the shortcut key.



Scan type code	Display order	Description	Color flag	Duplex flag	Height	Width	Resolution	Document level	Auto deskew flag	Auto enhance flag	Keyboard shortcut	At
Script	1	Script	N	N	6	7.5	150	ExamLevel	Y	Y	s	Y
Demo	1	New Type	N	N	11	8	150	ExamLevel	N	Y	n	Y
InsuranceCard	1	Insurance Ca...	Y	N	11	8.5	150	ExamLevel	Y	N	i	Y
Other	1	Other	N	N	11	8.5	150	ExamLevel	Y	Y	o	Y
Referrer logo	1	Referrer logo	N	N	11	8.5	150	PersonLevel	Y	Y		Y
Unknown	1	Unknown	Y	Y	11	8.5	150	ExamLevel	Y	Y	u	Y
Worksheet	1	Worksheet	N	N	11	8.5	150	ExamLevel	Y	Y	w	Y

Figure 4.3 – Lookup table ScanType. Keyboard shortcut column added

Assign Affiliation at Referring Address

Affiliation to a referring was already an option in rRIS. In this build it has been moved to be associated at the referrers address level. Users may be configured with multiple addresses. Each address may have different and multiple affiliations.

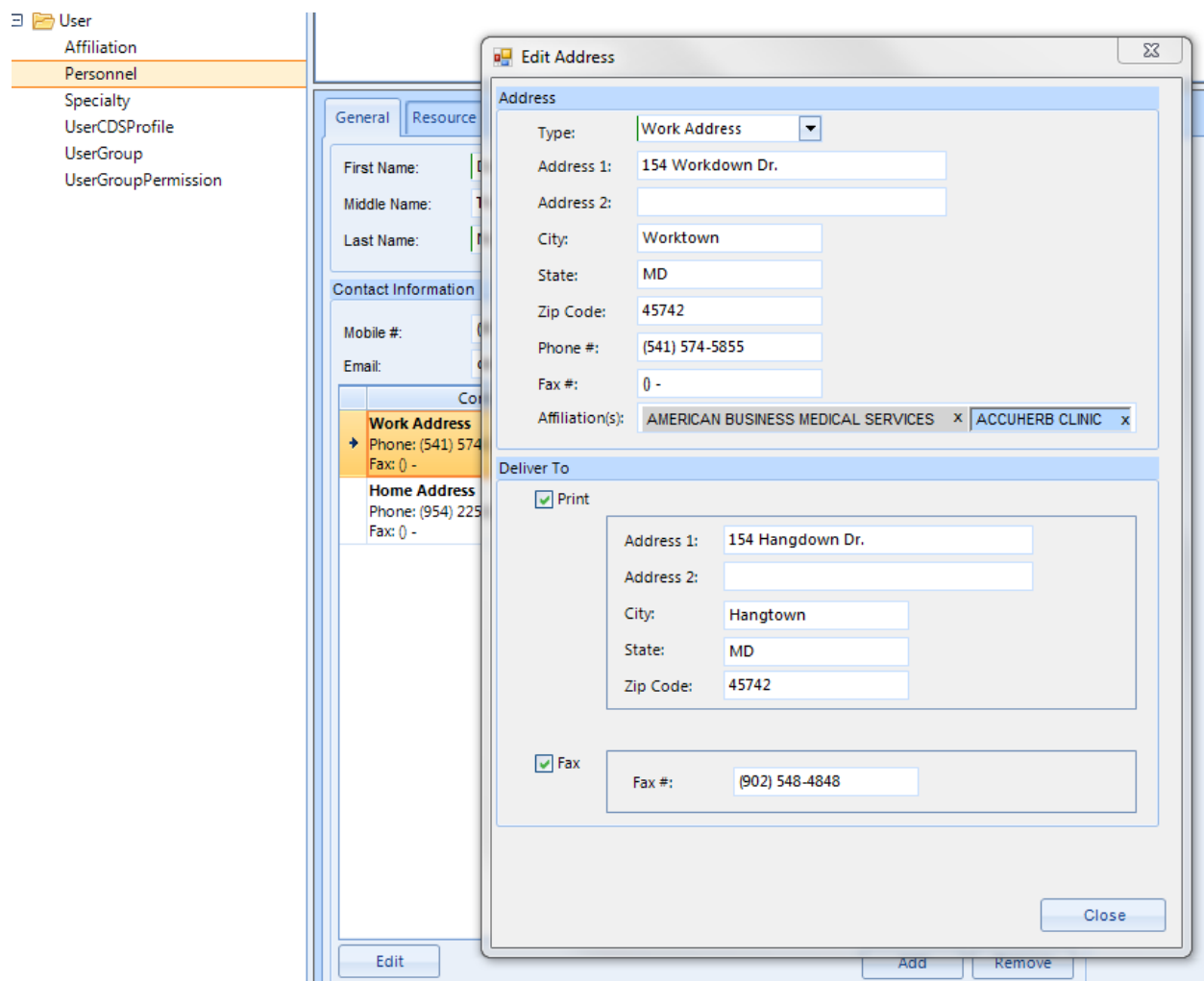


Figure 4.4 – Affiliation moved to Address level

Modality Procedure Duration Override

In build 1.21 the ability to add study duration has been added to the modality level. In previous builds each procedure was assigned a default duration time. In addition to the procedure level, the duration could also be set for specific time blocks in the Availability Template.

The Duration Override is configured via the Modality lookup table. Choosing a modality code, then selecting this new button will spawn a new window. In this window the user may choose a

procedure and enter in the duration override to be used for this procedure in this specific modality.

The screenshot shows the 'Duration Override' dialog box in the RADNET rRIS interface. The dialog is titled 'Duration Override' and contains a table for 'Procedure duration overrides for XR1EL:'. The table has two columns: 'procedure_code' and 'duration'. The 'duration' column shows a value of 10. The 'procedure_code' column has a dropdown menu open, showing a list of procedures. The selected procedure is 'XR Foot 2 Views, Bilat (RD30)'. The dialog also has 'OK' and 'Cancel' buttons.

Modality code	Description	AE title	Digital	Site code	Modality type code	Weight	Confined space flag	Device Template	Active
Contains: US2FH	Contains: US2FH	Contains: US2FH	Contains: US2FH	Contains: US2FH	Contains: US2FH	Contains: US2FH	Contains: US2FH	Contains: US2FH	Contains: US2FH
US2FH	US2FH	US2FH	N	FH (Fisher)	US (Ultrasound)				Y
US2LU	US2LU	US2LU	N	LU (Lutherville)	US (Ultrasound)				Y
US3FH	US3FH	US3FH	N	FH (Fisher)	US (Ultrasound)				Y
XR1	XR1	XR1	N	NNS (New NL)	XR (Plain Film/Xray/CR)				Y
XR1EL	XR1EL	XR1EL	N	EL (Eldersburg)	XR (Plain Film/Xray/CR)				Y
XR1FH	XR1FH	XR1FH	N	FH (Fisher)	XR (Plain Film/Xray/CR)				Y
XR1LU	XR1LU	XR1LU	N	LU (Lutherville)	XR (Plain Film/Xray/CR)	300			Y
XR2FH	XR2FH	XR2FH	N	FH (Fisher)	XR (Plain Film/Xray/CR)				Y
XR4Ti	XR4Ti		N	EL (Eldersburg)	XR (Plain Film/Xray/CR)		N		Y

Figure 4.5 – Duration Override at modality level

With the duration override configured, procedure XR Foot 2 Views, BILAT (RD30) in modality XR1EL will be 10 minutes, overriding the procedures default duration of 5 minutes.

The order of process for procedure duration is as follows.

1. The procedure default duration is checked first
2. If a modality duration override is present it takes precedence over procedure level
3. The availability template may have a duration configured for a particular time block(s).
The duration set here will take precedence over modality and procedure levels.

Schedule Order * x

Patient | Contacts / Demographics | Order | Schedule | Review

Studies | Duration | Room | Scheduled Date

XR Foot 2 Views, Bilat x 5 mm-dd-yyyy h:mm a...

Click here to add another study

Body Part: Foot Laterality: Bilateral

Summary | Advanced

EL		FH		LU	
XR1EL		XR1FH		XR1LU	
Mon, 09-12-2011				Mon, 09-12-2011	
1:35 PM	10	1:35 PM	5	1:35 PM	5
1:45 PM	10	1:40 PM	5	1:40 PM	5
1:55 PM	10	1:45 PM	5	1:45 PM	5
2:05 PM	10	1:50 PM	5	1:50 PM	5
2:15 PM	10	1:55 PM	5	1:55 PM	5
2:25 PM	10	2:00 PM	5	2:00 PM	5
2:35 PM	10	2:05 PM	5	2:05 PM	5
2:45 PM	10	2:10 PM	5	2:10 PM	5
2:55 PM	10	2:15 PM	5	2:15 PM	5
3:05 PM	10	2:20 PM	5	2:20 PM	5
3:15 PM	10	2:25 PM	5	2:25 PM	5
3:25 PM	10	2:30 PM	5	2:30 PM	5
3:35 PM	10	2:35 PM	5	2:35 PM	5
3:45 PM	10	2:40 PM	5	2:40 PM	5
6:00 PM	5	2:45 PM	5	2:45 PM	5
6:05 PM	5	2:50 PM	5	2:50 PM	5
6:10 PM	5	2:55 PM	5	2:55 PM	5
6:15 PM	5	3:00 PM	5	3:00 PM	5
6:20 PM	5	3:05 PM	5	3:05 PM	5
6:25 PM	5	3:10 PM	5	3:10 PM	5

Figure 4.6 – Scheduling window displaying duration override for XR1EL modality

Outside Reads (Tech Only and Professional Only)

Tech Only work flow. The tech will have the ability to mark a study as “No Report / Tech Only”. When a check is added the user will be prompted with confirmation message and the label “No Report / Tech Only” will be bolded red. Selecting “Yes” to confirm will add flag. Once the study is flagged and saved, it will move from the Technologist work list and flagged to skip professional services part of the workflow.

NOTE: currently this study will be sent to exam done work list and is not marked as a “no report” study. In next build the exam status will be informative (Ex: exam done / No Report)

Tech Notes

Technologists Notes:

Primary Tech: Yeo, Dale

Assisting Tech 1:

Assisting Tech 2:

Last Menstrual Period: mm-dd-yyyy

☐ Shielded Patient

Procedure

Scanner: MA1EL

Performed Procedure: MA Stereotactic Biopsy (77031)

Laterality/Body Part: / Breast

Change Reason Code:

Change Reason Note:

☐ No Report / Tech Only

Associated Radiologists

Assigned Radiologist:

Performing Radiologist:

Assistant Radiologist:

Warning: Tech Only Checked

This will prevent a report from being created.

Do you really want 'No Report / Tech Only'?

Yes No

Figure 4.7 – Tech Only work flow

Procedures may also be pre-configured as No report required flag from the Procedure Code lookup table.

Lookup Tables - ProcedureCode

	Procedure code	Description	Prep instruction code	Coding scheme	Procedure group code	No report required flag	Requires contrast flag	Mammo type code	Ac
General	74400	XR IVP	General XR	RIS	XR (Plain Film/Xray/CR)	Y	N		Y
Insurance	77081	DX Appendicular Skeleton	General XR	RIS	XR (Plain Film/Xray/CR)	Y	N		Y
Procedure	0028T	DX Body Composition Study	General XR	RIS	XR (Plain Film/Xray/CR)	N	N		Y
BillingCode	20605	FL Arthrocentesis Inject Intermediate Jt	General FL	RIS	FL (Fluoroscopy)	N	N		Y
Birad	70030	XR ORBITS FOR FOREIGN BODY	General XR	RIS	XR (Plain Film/Xray/CR)	N	N		Y
BodyPart	70100	XR Mandible 1-3 Views	General XR	RIS	XR (Plain Film/Xray/CR)	N	N		Y
Indication	70110	XR MANDIBLE 4 VIEWS	General XR	RIS	XR (Plain Film/Xray/CR)	N	N		Y
Laterality	70120	XR Mastoid 1-2 View Ea Side	General XR	RIS	XR (Plain Film/Xray/CR)	N	N		Y
MammoType									
PrepInstructi...									
ProcedureC...									
ProcedureC...									

Figure 4.8 – Procedure codes with No report required flag.

Tech performing exam on a procedure that has the No report required flag pre-configured will automatically have the Check box for No Report / Tech Only pre-selected, and disabled so the user cannot remove flag as displayed in Figure 4.9.

The screenshot displays the RADNET rRIS interface with the following components:

- Navigation Tabs:** Patient, Order, Documentation, Billing Codes, Attachments, Notes / Exam Times.
- Tech Notes Section:**
 - Technologists Notes:** A large text area for notes.
 - Primary Tech:** A dropdown menu with a red exclamation mark icon.
 - Assisting Tech 1:** A dropdown menu.
 - Assisting Tech 2:** A dropdown menu.
 - Last Menstrual Period:** A text input field with 'mm' and a checkbox labeled 'S'.
- Procedure Section:**
 - Scanner:** A dropdown menu showing 'DE1EL'.
 - Performed Procedure:** A dropdown menu showing 'DX Appendicular Skeleton (77081)'.
 - Laterality/Body Part:** Two dropdown menus separated by a slash.
 - Change Reason Code:** A dropdown menu.
 - Change Reason Note:** A large text area.
 - No Report / Tech Only:** A checkbox that is pre-selected and disabled, highlighted with a red box.
- Associated Radiologists Section:**
 - Assigned Radiologist:** A dropdown menu.
 - Performing Radiologist:** A dropdown menu.
 - Assistant Radiologist:** A dropdown menu.

Figure 4.9 – Procedure defaulted for no report

Professional Only workflow outside reads – a new data window was added under the Administration menu.

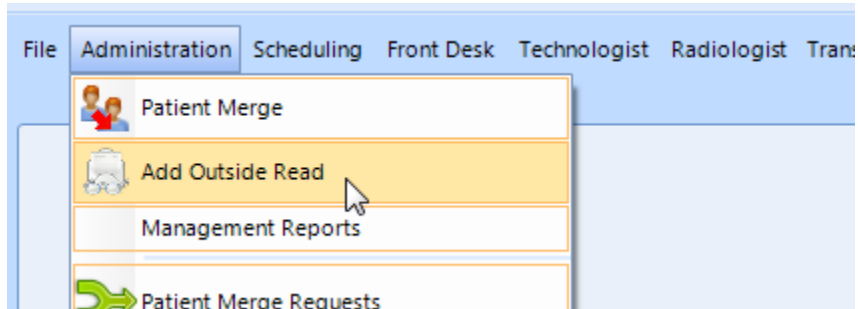


Figure 4.10 – Add Outside Read

“Add Outside Read” will open a new window that will allow the user to:

- Search or add a new patient.
- Data entry for exam date, order notes, stats, indications, referring, practice, etc.
- Entry for the exam location using the site field (required).
- Enter a list of studies for the order.
- Scan Documents for each study.

Once the information for the Outside Read has been added to the data window, the study will be moved directly to Exam Done status and are ready for dictation, transcription and signing.

NOTE: currently have outstanding issue of tech workflow fields required data at time of dictation.

rRIS (kevin)

File Administration Scheduling Front Desk Technologist Radiologist Transcription

Patient: AA BB (10) Add Outside Read * x

Patient Order

Study(s): CT 3 Phase x

Body Part: Laterality: Exam Date: mm-dd-yyyy

Chief Complaint: aa

Referring Details

Referring: Molyneaux, Kevin L Visited at: 343 Central St, Summerside

CC Physicians: Visit Location for C:

Performed Location

Practice: Advanced Radiology Site: OutsideMed

Flags

☐ STAT Read ☐ STAT Precert ☒ Outside Read

OrderNotes

08-22-11 klm -

Save Close

Saved: Add Outside Read Exam Date' Is Required

Figure 4.11 – Outside read data window

Administrators will need to create one modality for each modality type. These modalities created do not have to be assigned to scheduling groups (sites) also the Outside Read Modalities can be marked as inactive. If the modality does not exist a message will inform the user with a list of modalities the administrator will need to create.

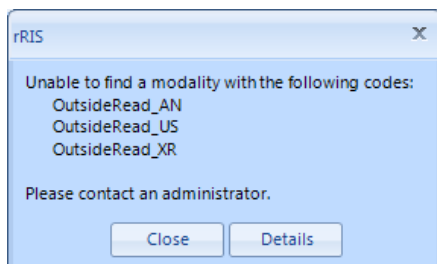


Figure 4.12 – Informative message instructing Modalities to be created

In the organization screen for site, the field “outside_read_location_flag” has been added. When this flag is set those sites will not show up in the other Scheduling screen’s schedule/reschedule inputs for site. And on the “New Outside Read” only the sites for outside reads will be displayed

A screenshot of the "Add Site" form in the rRIS application. The form is divided into three main sections: Site, Contact, and Address. The Site section includes fields for Site Code (set to "OutsideMed"), Description (set to "OutsideMed"), Phone #, Fax #, and a checked "Outside Read Location" checkbox. It also has a "Site Notes" text area with the text "Nice to have outside read locations defined for the actual location where those exam's are taken for reporting on how many from eacy site we are getting." and a "Template" dropdown. The Contact section includes fields for Contact Name (set to "joe and randy"), Phone #, Mobile #, Fax #, and Email, along with a "Contact Notes" text area containing "call when the difficult issues arise." The Address section includes fields for Address 1, Address 2, and City. At the bottom right are buttons for "Load Logo", "Delete Logo", "Save", and "Close".

Figure 4.13 – Add site Outside Read Location Flag

Preferred Reader

In build 1.21 a radiologist can be assigned as a preferred reader. Referring physicians may have one or more preferred radiologists to read a specific modality type or specific procedure.

The screenshot displays the 'Personnel' profile for a user in the RADNET rRIS system. The left sidebar shows the navigation menu with 'Personnel' selected. The main content area has tabs for 'General', 'Resource', 'Account', 'Preferences', and 'Scan Docs'. The 'Resource' tab is active, showing the 'Resource Type' section with checkboxes for 'Referring Physician' (checked), 'Transcriptionist', 'Radiologist', 'Technologist', and 'Unknown Referring'. The 'Referring Flags' section has checkboxes for 'Direct Referral Program' (checked) and 'Pre-Auth Program' (checked). The 'Resource Information' section includes fields for 'NPI' (2011), 'UPIN', 'Practices' (Advanced Radiology, Papastavros Medical Imaging), and 'Specialties' (General Practice, Radiology, Diagnostic X-Ray). The 'Preferred Radiologists' section lists two radiologists: Molyneaux, Levin Lloyd and Noye, Darcy Thane. Molyneaux is assigned to CT (CT), CT 3 Phase (CT13), and MR (MRI). Noye is assigned to CT (CT), CT 3 Phase (CT13), NM (Nuclear Medicine), and XR (Plain Film/Xray/CR). The 'XR (Plain Film/Xray/CR)' section is expanded, showing 'XR Wrist 2 Views (73100)', 'XR Wrist 2 Views, Bilat (RD22)', 'XR WRIST MIN 3 VIEWS (73110)', and 'XR Wrist Min 3 Views, Bilat (RD6)'. Buttons for 'Add Radiologist', 'Add Modality', 'Add Procedure', and 'Remove' are on the right.

Figure 4.14 – Preferred reader(s) added to referrers Personnel profile

In the example above for this particular referrer, Molyneaux is the preferred reader for all MR (MRI) and CT 3 Phase (CT13). Noye is also a preferred reader CT 3 Phase (CT13), as well as all NM (Nuclear Medicine) and XR Wrist 2 views, XR Wrist 2 views, Bilat, XR Wrist min 3 views and XR Wrist Min 3 Views, Bilat.

When this referrer is selected for an order and the exam to be completed is of the Modality MR, Molyneaux will be defaulted as the Assigned Radiologist for the Technologist performing the exam.

The screenshot displays the RADNET rRIS Pre-Release interface. At the top, there are tabs for Patient, Order, Documentation, Billing Codes, Attachments, and Notes / Exam Times. The 'Tech Notes' section is active, showing a large text area for 'Technologists Notes' and a 'Copy / Paste' button. To the right of the text area are fields for 'Primary Tech:', 'Assisting Tech 1:', and 'Assisting Tech 2:', each with a dropdown menu. Below these is a 'Last Menstrual Period:' field with a date picker and radio buttons for 'Pregnant' and 'Not Pregnant'. A 'Shielded Patient' checkbox is also present. The 'Procedure' section on the left includes fields for 'Scanner:', 'Performed Procedure:', 'Laterality/Body Part:', 'Change Reason Code:', and 'Change Reason Note:'. The 'Associated Radiologists' section on the right has a red box around the 'Assigned Radiologist:' field, which displays 'Preferred: Molyneaux, Levin Lloyd'. Below this are fields for 'Performing Radiologist:' and 'Assistant Radiologist:'. A 'No Report / Tech Only' checkbox is located at the bottom left of the 'Procedure' section.

Figure 4.15 – Preform exam with preferred reader defaulted

In a case where there is more than one preferred reader, the Assigned Radiologist field will not have a default value, but is marked with ! indicating that a preferred radiologist is configured and may be selected. The preferred radiologists will be prefixed with Preferred: as displayed in Figure 4.15

Scanned Documents at the Referring level

Storing scan documents for a referring doctor at the Personnel level has been implemented in build 1.21. A new document type of person level was added to scan types and will be the only available option for attachments within the Personnel Editor.

General	Scan type code	Display order	Description	Color flag	Duplex flag	Height	Width	Resolution	Document level	Auto deskew flag	Auto enhance flag
AbortedStudyReason	Contains:	Equals:	Contains:	Contains:	Contains:	Equals:	Equals:	Equals:	Contains:	Contains:	Contains:
AccessString	Demo	1	New Type	N	N	11	8	150	ExamLevel	N	Y
AddressDescription	InsuranceCard	1	Insurance Card	Y	N	11	8.5	150	ExamLevel	Y	N
CreditCardType	Other	1	Other	N	N	11	8.5	150	ExamLevel	Y	Y
EducationLevel	Referrer logo	1	Referrer logo	N	N	11	8.5	150	PersonLevel	Y	Y
EthnicOrigin	Script	1	Script	N	N	6	7.5	150	ExamLevel	Y	Y
Gender	Unknown	1	Unknown	Y	Y	11	8.5	150	ExamLevel	Y	Y
ImageMedium	Worksheet	1	Worksheet	N	N	11	8.5	150	ExamLevel	Y	Y
Language	Click here to add a new row										
PatientClass											
PatientContactType											
PatientPrefix											
PatientRelation											
PatientSuffix											
RaceType											
Recommendation											
Religion											
ScanType											

Figure 4.16 – Scan type at PersonLevel.

A new tab has been added to the personnel editor window conveniently labeled “Scan Docs”. Attachments are saved when you the person’s profile you are editing. The list of scanned attachments is downloaded to the person’s profile only when the scan docs tab is selected and the attachment itself is downloaded on a double click of the document row. Attachments can be scanned in or imported from file

General	UserName	First Name	
Insurance	darcyn	Darcy	Noye
Procedure			
Scheduling			
System			
User			
Affiliation			
Personnel			
Specialty			
UserCDSProfile			
UserGroup			
UserGroupPermission			

General	Resource	Account	Preferences	Scan Docs	Create
Attached	Type	Pages	Level	Attached By	
Equals:	Contains:	Equals:	Contains:	Contains:	
09-02-2011	Referrer logo	1	Personnel	darcyn	

Attach Document

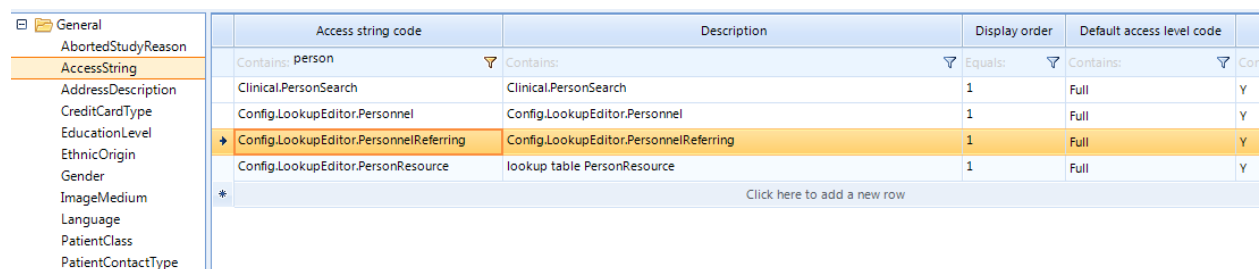
Document Type
Referrer logo
Referrer logo

Scan
Cancel

Figure 4.17 – Scan Docs tab in Personnel Editor

Separate Permissions for Editing Users vs. Referrers

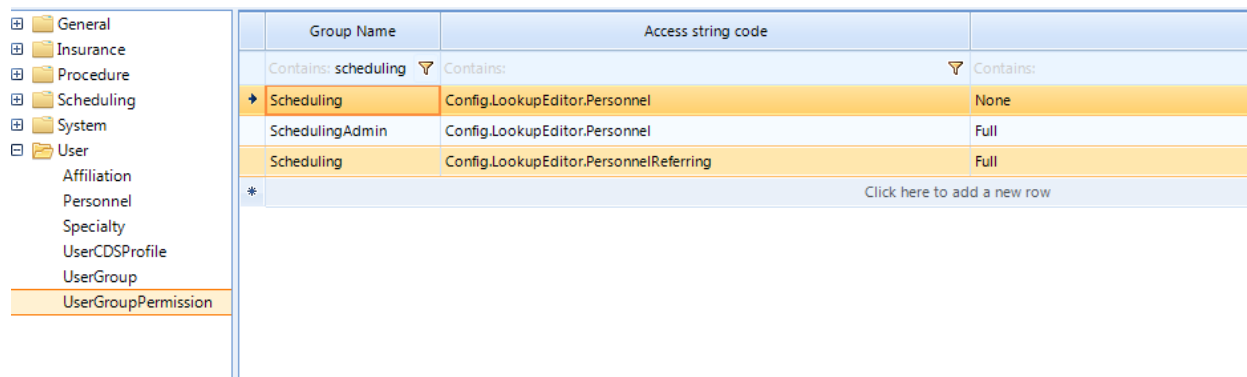
The ability for non admins to add / edit referring physicians has been added in build 1.21. The access string “Config.LookupEditor.PersonnelReferring” controls this ability. A look at the access string lookup table displays the new access string code Config.LookupEditor.PersonnelReferring with default access level to full as well as access to the Personnel Editor Config.LookupEditor.Personnel default access level to full. This currently gives all users access.



Access string code	Description	Display order	Default access level code
Contains: person	Contains:	Equals:	Contains:
Clinical.PersonSearch	Clinical.PersonSearch	1	Full
Config.LookupEditor.Personnel	Config.LookupEditor.Personnel	1	Full
Config.LookupEditor.PersonnelReferring	Config.LookupEditor.PersonnelReferring	1	Full
Config.LookupEditor.PersonResource	lookup table PersonResource	1	Full

Figure 4.18 – Access String lookup table highlighting new access string code

If we look at the lookup table for User Group Permission we see the User Group “Scheduling” is permitted access to edit Referrers, but will not be able to search for users that are not of the referring group.



Group Name	Access string code	
Contains: scheduling	Contains:	Contains:
Scheduling	Config.LookupEditor.Personnel	None
SchedulingAdmin	Config.LookupEditor.Personnel	Full
Scheduling	Config.LookupEditor.PersonnelReferring	Full

Figure 4.19 – User Group Permission for Scheduling only has access to edit Referrers in Personnel editor.

Logged in as a user of the Scheduling user group, you can see from Figure 4.20 that they do not have access to the Personnel Editor, but they can perform an Internal Person search for referrers. The user will only have the ability to change data on the General, Resource (resource type will be un-editable) and Scan Docs tabs. Fields on the Account and Preferences tabs are disabled to this user. If they search for a user that is not flagged as a referrer Resource type, the results will

be returned to the Internal Person search window, but they will not be permitted to view this user in the Personnel Editor.

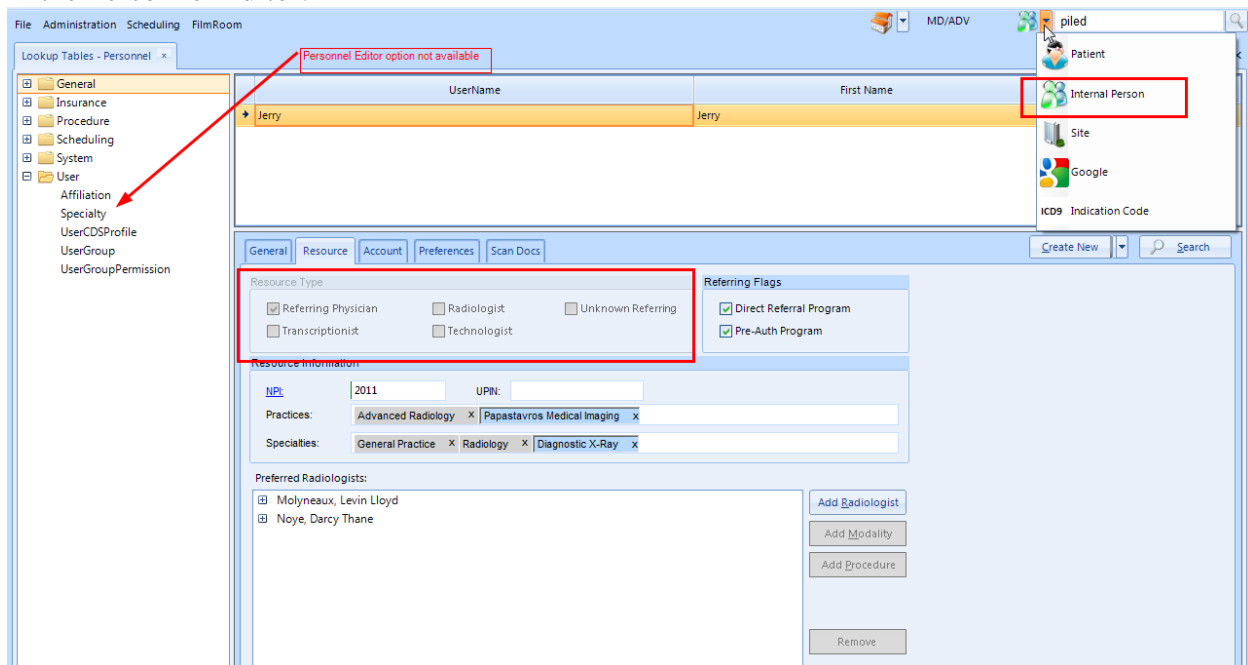


Figure 4.20 – Locked down Personnel Editor for editing Referring Physician only

Verbal Order Work Flow

Patients may arrive at registration / walk-in without a written order from a referring physician, or perhaps the tech needs to change it. To add this work flow to rRIS, Verbal order work flow has been added to build 1.21. Since all downstream users may want or need to see the verbal order, it has been created as an attached document (scan doc).

A button called “Verbal Order” has been added to the Attach Document window as displayed in Figure 4.21. The button is accessed via the drop down button to the immediate right of the Scan button in the Attach Document window.

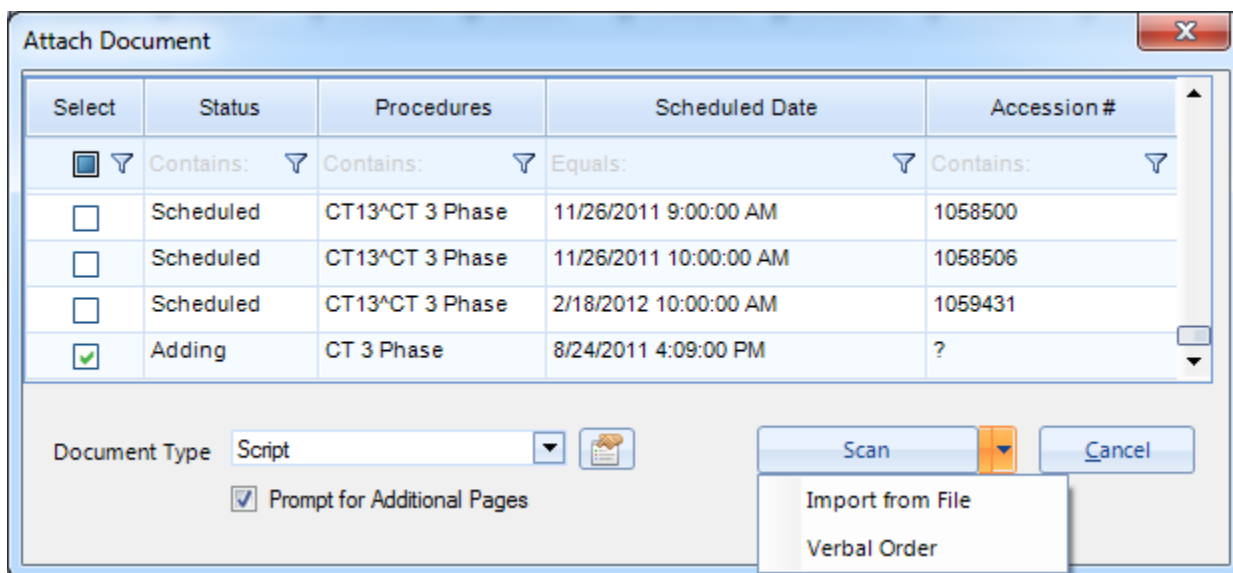


Figure 4.21 – Verbal order.

Selecting the Verbal Order button will open the Verbal Order window. Before the Verbal Order window opens, it checks for the patients data. If there is insufficient information a pop up window informs the user of the missing information.

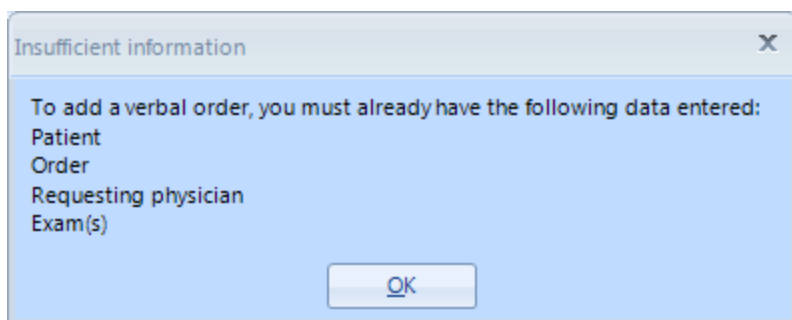


Figure 4.22 – Verbal Order missing data

Once sufficient information has been entered the user is prompted to complete information in the Verbal Order data window. The create order button is enabled when all of the fields have data and the check box is selected.

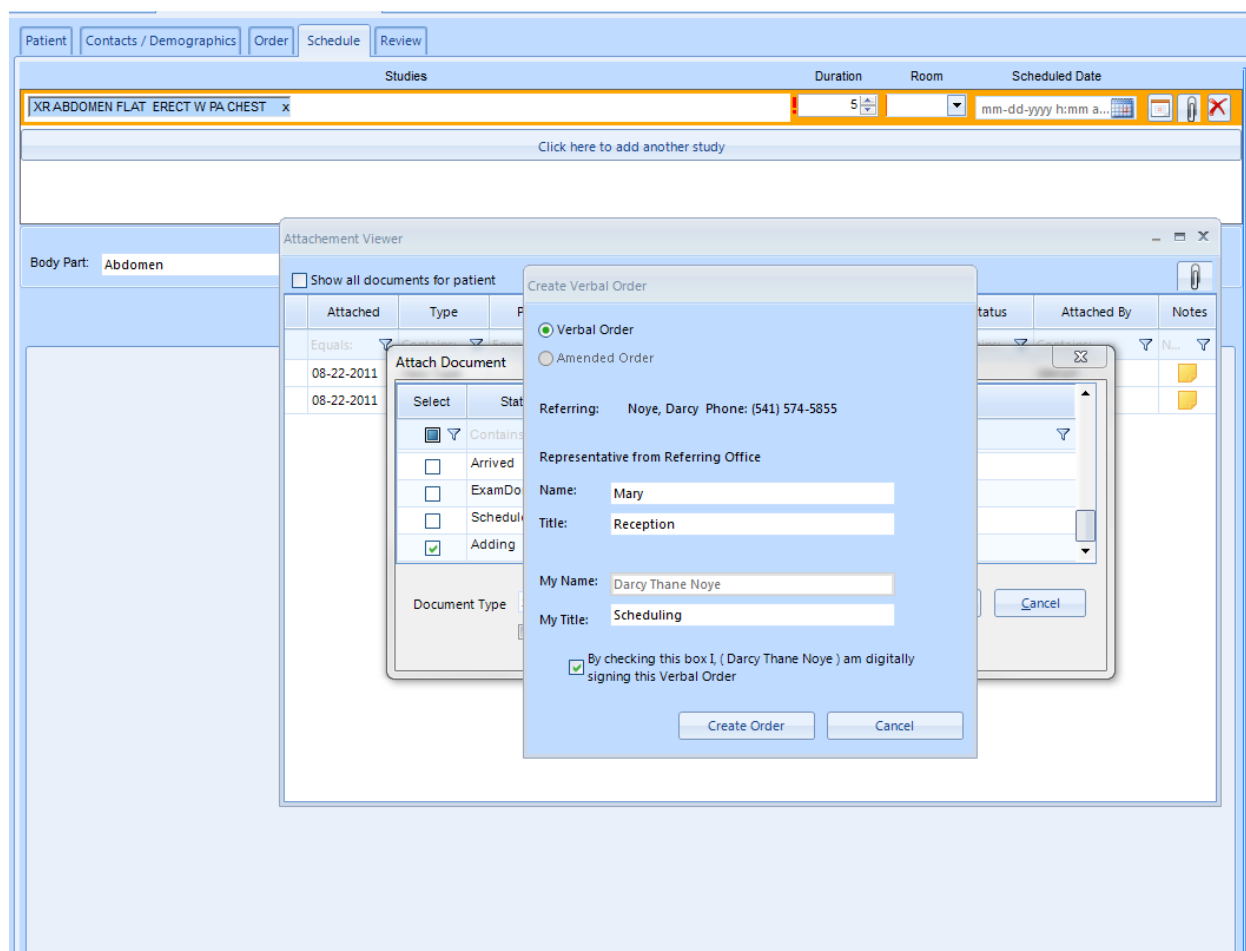


Figure 4.23 – Creating Verbal order

Selecting the Create Order button will render the data and saves it as a scanned document. The document is attached to the current order with a scan type of script. The regular attachment viewer will allow the order to be viewed

Acorn, Adele : Attached Documents

Script

Verbal Order Form

Created on 9/13/2011 11:57:21 AM

Patient Name	Adele Acorn	Phone Number
Date of Birth	20/07/2000	
Ordering Physician	Darcy Noye	Physician Phone # (541) 574-5855

Representative from Referring Physician Office:

Name	Mary	Title	Reception
------	------	-------	-----------

Exams Ordered

XR ABDOMEN FLAT & ERECT W PA CHEST

Reasons for Exam (Signs and Symptoms)

Team Member taking Verbal Order

Name	Darcy Thane Noye	Title	Scheduling
------	------------------	-------	------------

OK

Figure 4.24 – Verbal Order Form complete.

5. Known Limitations

Bugs, Suggested Features, and Support Issues are now tracked in a web based system called Redmine. The following is a snapshot of the issues found in Build 1.21.

#	Status	Subject	Category	Target version	% Done	Resolved Version
514	Resolved	Refresh issue on save personnel	Admin Tools	1.21	100	1.22
523	New	Apply Document type after scanning only showing patient level document types	Thick Client GUI	1.21	0	
524	Resolved	Scan docs - Classify Remaining - Scan notes on incorrect document	Thick Client GUI	1.21	100	1.22
526	New	Exception on diagnose / dictate	Thick Client GUI	1.21	0	
528	New	Create new report distribution job from Distribution History throws error	Thick Client GUI	1.21	0	
529	New	Reschedule study search returning incorrect times	Thick Client GUI	1.21	0	
531	Resolved	Availability template - adding time ranges start date not formatted	Admin Tools	1.21	100	1.22
532	Resolved	Time slot not released on reschedule	Thick Client GUI	1.21	100	1.22
534	New	Creating verbal order needs a user friendly message when missing DOB	Thick Client GUI	1.21	0	
535	New	Installer errors	Admin Tools	1.21	0	
536	New	Exception thrown for new user created	Thick Client GUI	1.21	0	
537	New	Preferred reader - cannot multi select when removing	Admin Tools	1.21	0	
538	New	Cannot edit modality code in modality lookup table	Admin Tools	1.21	0	
539	Resolved	Patient information - phone fields extention not retained	Thick Client GUI	1.21	100	1.22
540	New	Outside Read - Exception thrown on save	Thick Client GUI	1.21	0	
541	New	Error on perform exam when referrer has preferred reader assigned.	Thick Client GUI	1.21	0	
542	Resolved	Creating an Outside Read returns error	Thick Client GUI	1.21	100	1.22
543	New	Distribute report - can save distribute report	Thick Client GUI	1.21	0	
544	New	User with read only rights to Personnel cannot view their own account	Admin Tools	1.21	0	
545	New	User who has appropriate permissions cannot create unknown referring physician	Admin Tools	1.21	0	
546	New	Exception throw submitting appended dictation	Thick Client GUI	1.21	0	
547	Resolved	Diagnose window hides pop ups behind application	Thick Client GUI	1.21	100	

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548	New	Error logging in with some of our test users	Thick Client GUI	1.21	0	
549	Resolved	Duration Override - procedures added are not displayed and other suggestions	Admin Tools	1.21	100	1.22
550	Resolved	Issues when viewing available times when duration override applied	Thick Client GUI	1.21	100	1.22
551	Resolved	Removing a procedure from procedure picker that has a modality duration override will thrown exception	Thick Client GUI	1.21	100	1.22
552	New	Issues will editing time ranges on AvailabilityTemplate lookup.	Admin Tools	1.21	0	
553	Resolved	Diagnose window opening with incorrect patient information.	Thick Client GUI	1.21	100	
554	Resolved	Procedure plan min/max values ingnored when duration override applied.	Thick Client GUI	1.21	100	1.22
555	Resolved	Procedure plan throwing an error on schedule	Thick Client GUI	1.21	100	1.22
556	New	Add Outside Read missing required fields from tech workflow	Thick Client GUI	1.21	0	
557	New	Preferred Reader - user is able to assign non radiologists as preferred reader.	Admin Tools	1.21	0	
558	New	Verbal Order form - patient phone number	Thick Client GUI	1.21	0	
559	New	Personnel - Add / Edit address - Scrolling needed	Thick Client GUI	1.21	0	
560	New	Column filter range of same day - no results returned	Thick Client GUI	1.21	0	
561	New	Exporting audit history throws exception	Thick Client GUI	1.21	0	

User Pre-Release Notes

for RADNET rRIS

Build 1.22

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1. Purpose

This document describes some of the new features and changes implemented in rRIS as of the end of Sprint 22. This pre-release version of rRIS is referred to as Build 1.22.

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 rRIS Development team for the RadNet RIS management team.

3. Installing/Accessing the Application

The installation instructions for the rRIS client have been posted to the RadNet Wiki page at <http://mdbal01rdtweb/Wiki/>

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

Username: rRIS

Password: Summerside

Please note that Build 1.22 is considered a new core release of the application and will require a reinstallation of rRIS. This is accomplished by navigating to the rRIS 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 Features and Enhancements

Patient Merge Request Work List

Patient Merge has been enhanced in this build, to make it more accessible to all users. Not all users will have the ability to complete a patient merge. Who can perform a patient merge and who may only be able to suggest a patient merge will be controlled by the following access strings:

- Clinical.PatientMerge - All users should have this access string set to full. This will give them access to the patient merge screen but only for “Suggesting” merges, not submitting them.
- Clinical.PatientMergeAdmin – given to a specific admin type. Permits users to complete patient merge, or reject the suggestion
- WL.PatientMergeRequest – allows access to the patient merge request work list

The system allows users to recommend multiple or duplicate merge requests since the reason for a second request might include a different or additional comment.

Figure 4.1 – Patient merge data window for non admin users. Permitted to “Suggest” merge only.

Clinical.PatientMerge = full.

The screenshot shows a 'Patient Merge' window. It has two columns for 'Source' and 'Target' patients. Each column has fields for First Name, Middle Name, Last Name, Birth Date (mm-dd-yyyy), MRN, and Gender. There are buttons for 'Source Patient' and 'Target Patient'. A 'Contact Info' section is on the right of each column. Below these is a 'Clinical Data' section, which is currently empty and displays 'No data to display'. At the bottom right, there are three buttons: 'Suggest', 'Merge', and 'Close'. The 'Merge' button is disabled.

Figure 4.2 – Patient Merge data window for an Admin user that has Clinical.PatientMergeAdmin = full. Permitted to Merge as well as Suggest.

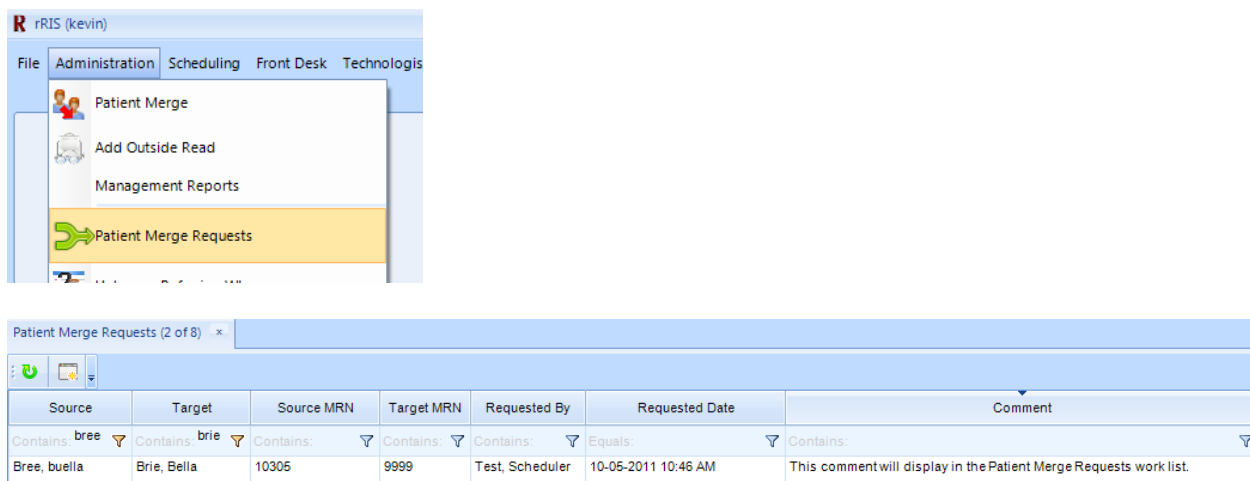


Figure 4.3 – Patient Merge access and work list.

Figure 4.3 above shows how to access the Patient Merge Requests work list. It is recommended that all users that have access to suggest patient merges as well as complete a merge have access to this work list. Figure 4.4 displays that Patient Merge data window for an admin user. The admin has the ability to “Reject” the suggestion, “Merge” the suggestion, or do additional searching, change source / target patient and complete merge or simply close the window.

The screenshot shows the 'Patient Merge (MRN 10305 to MRN 9999)' window. It is divided into two main sections: 'Source (This patient will be removed)' and 'Target (This patient will receive all clinical data)'. Each section contains fields for patient details (First Name, Middle Name, Last Name, Birth Date, MRN, Gender) and contact information. Below these are tabs for 'Clinical Data' with sub-tabs for Accession, Status, Procedures, Scheduled, Dictated, Transcribed, and Signed. A confirmation dialog box is overlaid on the Source section, stating: 'You are about to merge clinical data from MRN 10305 to MRN 9999. This will delete 'Joey9 Mercer (MRN 10305)'. It has 'Continue' and 'Cancel' buttons. At the bottom of the window, there is a 'Merge Requested By: Test, Scheduler' field and a comment box. At the very bottom are 'Reject', 'Merge', and 'Close' buttons.

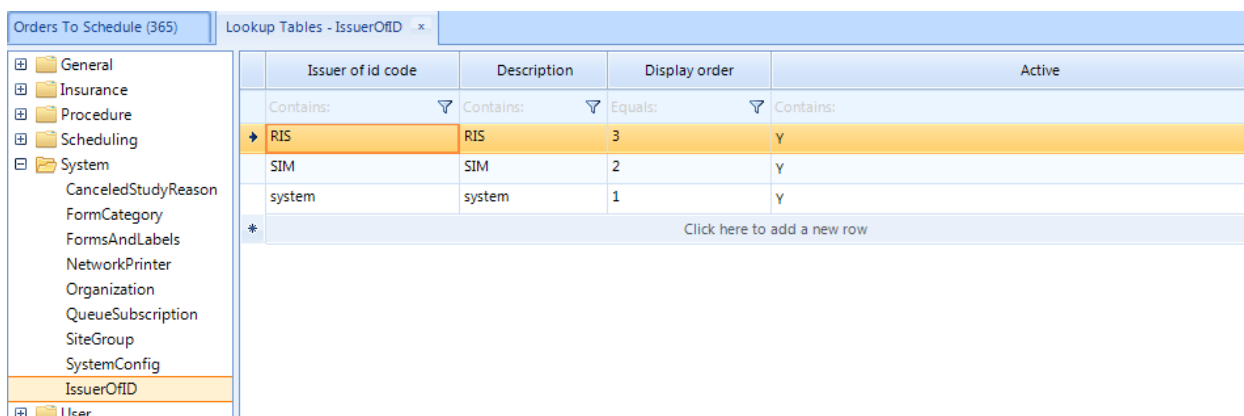
Accession	Status	Procedures	Scheduled
1009472	Arrived	73100^XR Wrist 2 Views	28/09/2011 12:00:00
1009444	Scheduled	70360^XR NECK SOFT TISSUE	26/09/2011 9:00:00
09434	Discontinued	72127^CT Cervical Spine W/Wo	19/09/2011 5:30:00
09359	ExamDone	74000^XR ABDOMEN AP, KUB	02/09/2011 12:00:00
09336	ExamDone	71022^XR Chest PA Lat, Obliques	31/08/2011 1:00:00
09332	Scheduled	71260^CT Chest W	30/08/2011 1:00:00
09328	Cancelled		26/08/2011 11:20:00
1009326	Cancelled		26/08/2011 11:00:00
1009284	Scheduled	70360^XR NECK SOFT TISSUE	23/08/2011 8:20:00

Figure 4.4 – Data window opened from figure 4.2. This admin type user can complete merge, reject or complete their own search for source and target patient.

If more than one merge request is created for a particular patient the admin must choose which one to select from the work list. If an admin completes a merge for the first request, the second request drops off the list.

Patient Search for Outside Orders

In Build 1.22 the rRIS application will determine if the order to be scheduled was received from an external system. It will compare the “Issuer of ID” with our internal, configurable value.



Issuer of id code	Description	Display order	Active
Contains: ▼	Contains: ▼	Equals: ▼	Contains: ▼
RIS	RIS	3	Y
SIM	SIM	2	Y
system	system	1	Y
* Click here to add a new row			

Figure 4.5 - IssuerOfID lookup table

If the “issuer of ID” does not match, the user is prompted with a message displayed in figure 4.6.

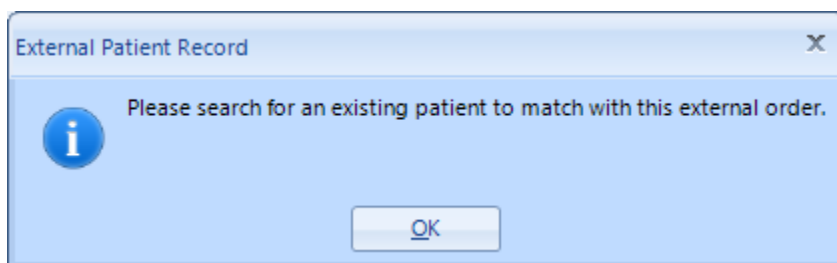


Figure 4.6 – External Patient Record – user is informed that the order is from an external system

Selecting OK will automatically open the patient search window displaying any matches and will also search for “Other Variations” of the name. As with the previous build, the user can try alternate search criteria (e.g. reversing the first and last name), if no patient matches are found the user may create a new patient from the “Patient Search New Order” window.

Search Criteria

First Name: Birth Date:

Last Name: Phone #:

☒ Search Other Variations

MRN:

Issuer of ID:

First Name	Last Name	Middle Name	Birth Date	MRN	Issuer	Gender	Address	City	State
No results found. Please refine the search criteria or click "New Patient"									

Figure 4.7 – Patient Search New Order

If the “New Patient” option is selected, the Schedule Order (patient name) will open. The user may proceed as if they were creating a new patient. This will issue an rRIS MRN for future orders. The patient record provided from the EMR is retained, and future messages coming in from the EMR will automatically reference the newly created internal patient. **Note:** if the user closes the search screen without selecting or creating a patient, the Schedule Order screen will close and the user will be returned to the “Orders to Schedule” work list.

If the Patient Search New Order does find a match to an existing patient record, the user must determine if they are indeed the same person.

The screenshot shows a software window titled "Patient Search: New Order". It contains a "Search Criteria" section with the following fields: "First Name" (Genie), "Last Name" (Deruyter), "Birth Date" (07-22-1995), "Phone #", "MRN", and "Issuer of ID" (system). There is a checkbox for "Search Other Variations" which is checked. Below these fields are "Search" and "Reset" buttons. A table below the search criteria displays the search results. The table has columns: First Name, Last Name, Middle Name, Birth Date, MRN, Issuer, Gender, Address, and City. The first row of the table is highlighted in yellow and contains the following data: First Name: Genie, Last Name: Deroyter, Middle Name: (blank), Birth Date: 07-22-1995, MRN: 11506457, Issuer: system, Gender: F, Address: (blank), and City: (blank). At the bottom of the window are buttons for "New Patient", "Select", and "Close".

First Name	Last Name	Middle Name	Birth Date	MRN	Issuer	Gender	Address	City
Genie	Deroyter		07-22-1995	11506457	system	F		

Figure 4.8 – Patient Search New Order finding a matching external order patient with internal patient with a similar name.

In this case, “Genie **Deruyter**” from the external system was a close match to internal patient “Genie **Deroyter**”. The user can press select to associate the current order with our internal patient and establish a link between “Genie Deruyter” and “Genie Deroyter” (based on the patient ID sent in from the external system). If the user selects an existing patient record, they will be presented with the following prompt to confirm:

The screenshot shows a dialog box titled "Replace Patient". It contains a yellow warning icon with an exclamation mark. The text inside the dialog box reads: "You are about to match this external order with an existing patient. Are you sure this is the correct patient?". At the bottom of the dialog box are two buttons: "Yes" and "No".

Figure 4.9 – Confirmatory message

Closing Pending Signature Option Removed

When a Radiologist logs into rRIS the Pending Signature window launches automatically displaying his/her list of exams to be signed off. In build 1.22 closing the Pending Signature window has been removed (except for one defect. See bug 565 in Section 5 of this document)

The X has been removed from the tab. The Pending Signature tab itself has had context menu items (right click on tab name) “Close” and Close All” removed. When “Closing All” or “Closing All But This” is initiated from another tab, it will not close the Pending Signature work list.

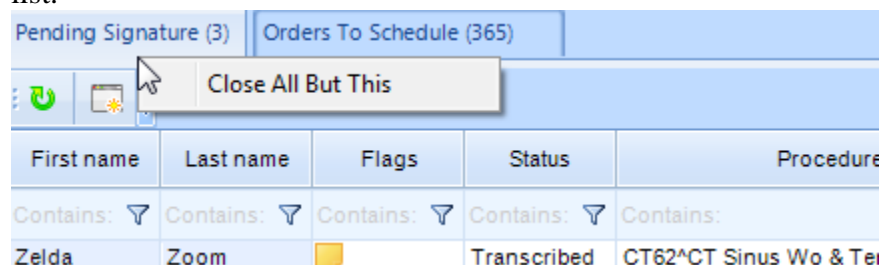


Figure 4.10 – Context menu on Pending Signature tab

Emergency Access

Emergency access to authorized users has been implemented in build 1.22. A flag has been added at the Personnel level

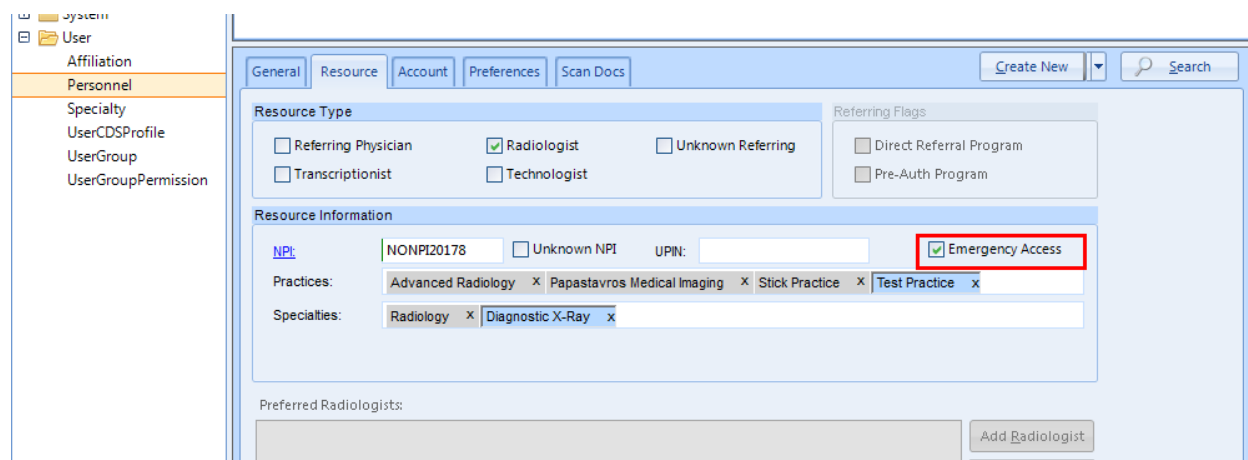


Figure 4.11 – Emergency Access flag in Personnel editor

If the user has the Emergency Access flag, they will be permitted to override a lock to an exam and continue workflow. Figure 4.11 shows the Dictate window open by a user that has the Emergency Access flag. This exam is not owned by this particular user. Selecting the Emergency Access button will enable the “Submit, Sign, and Suspend” buttons, permitting the user to continue workflow for this exam.

Accession ID: 10001
 Procedure: 71261
 MRN: 786
 Patient: Dann
 Date: 04/05
 Referring: YOLA
 Dictated by: Terry
 Tech notes:

Assign To
 Notes:

Assign to:
 Assign to WL: Get

Macro Browser
☐ Show All +

Macros
 Test

Template Browser
☐ Show All

Facility
 71260
 71260
 71260

Flags	Nuggets	Status	Procedures	Scheduled Date	Accession #	Dictated date
Contains: ▼	Contains: ▼	Contains: ▼	Contains: ▼	Equals: ▼	Contains: ▼	Equals: ▼
		Scheduled	RD20*XR Hand 2 Views & Finger 2 Views, Unilat	09-26-2011 9:00 AM	1009445	

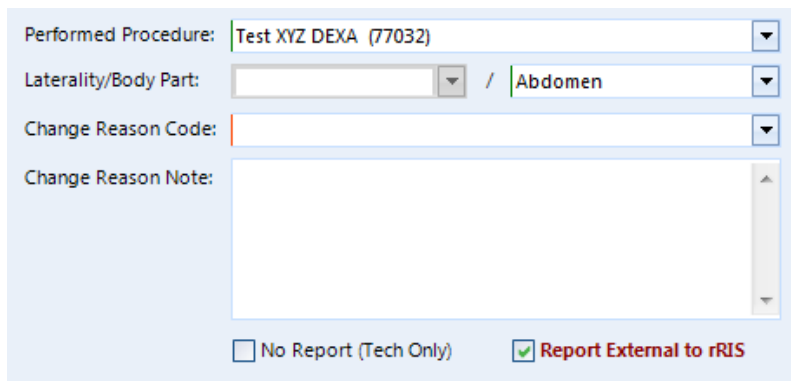
Emergency Access STAT Images Submit Sign Suspend

Figure 4.12 – Example of exam that may require Emergency Access

External Reporting Flag

In build 1.22 further enhancements have been made to “Outside Read” workflow. In the last build Tech Only workflow was added. In addition we have added “Reporting External to rRIS”. The tech data window Perform Exam will have checkboxes for

- No Report (Tech Only)
- Report External to rRIS



The screenshot shows a 'Perform Exam' data window. It contains several fields: 'Performed Procedure' with a dropdown menu showing 'Test XYZ DEXA (77032)', 'Laterality/Body Part' with a dropdown menu showing 'Abdomen', 'Change Reason Code' with a dropdown menu, and 'Change Reason Note' with a text area. At the bottom, there are two checkboxes: 'No Report (Tech Only)' which is unchecked, and 'Report External to rRIS' which is checked.

Figure 4.13 – Report External to rRIS in Perform Exam data window

If both of these check boxes are present when Performing Exam, only one will be permitted to be checked as they contradict one another. A warning message will be presented to the user when one of the checkboxes is selected.

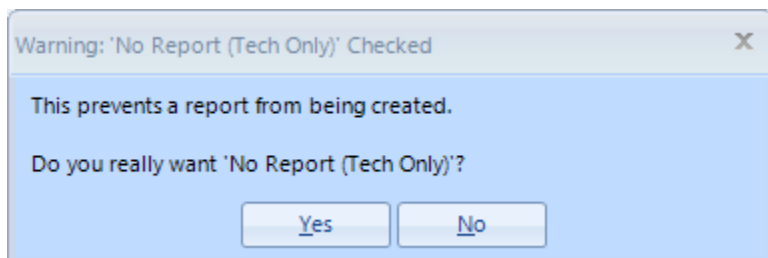


Figure 4.14 – Selecting No Report (Tech Only) checkbox

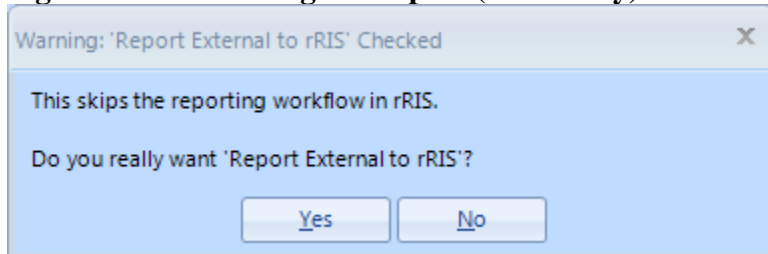
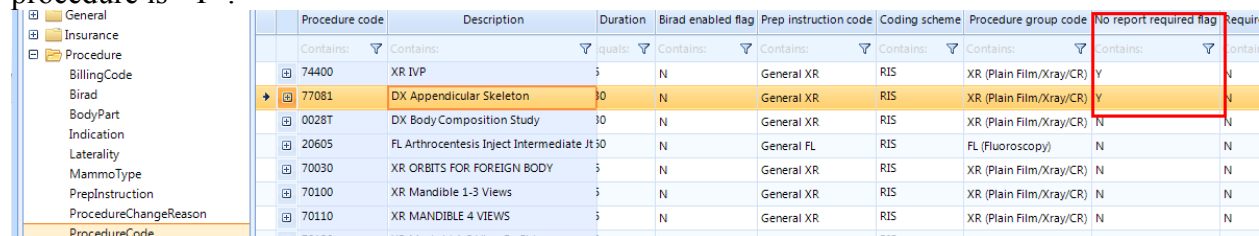


Figure 4.15 – Selecting Report External to rRIS checkbox

The “Report External to rRIS” flag will only appear if the “no_report_required_flag” for the procedure is “Y”.



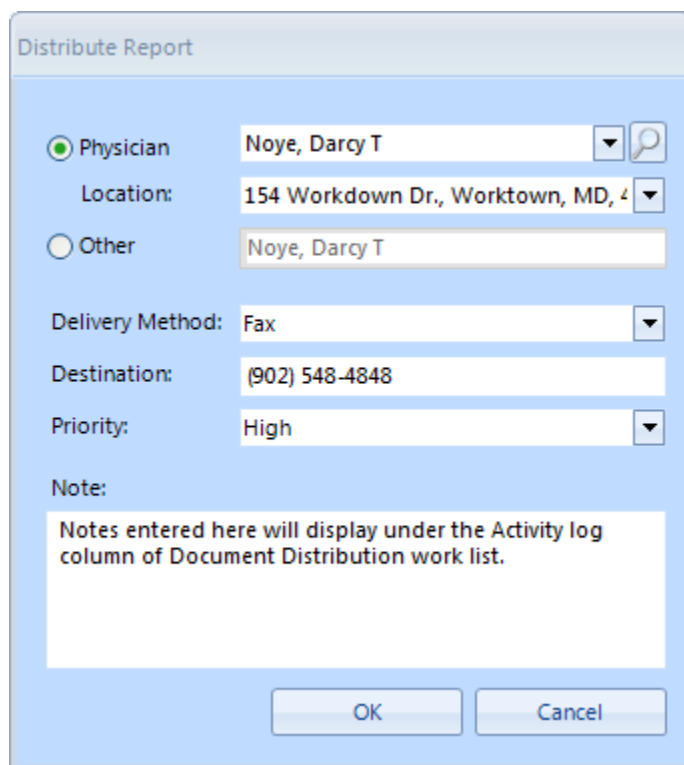
	Procedure code	Description	Duration	Birad enabled flag	Prep instruction code	Coding scheme	Procedure group code	No report required flag	Require
	74400	XR IVP	5	N	General XR	RIS	XR (Plain Film/Xray/CR)	Y	N
	77081	DX Appendicular Skeleton	30	N	General XR	RIS	XR (Plain Film/Xray/CR)	Y	N
	0028T	DX Body Composition Study	30	N	General XR	RIS	XR (Plain Film/Xray/CR)	N	N
	20605	FL Arthrocentesis Inject Intermediate Jt	30	N	General FL	RIS	FL (Fluoroscopy)	N	N
	70030	XR ORBITS FOR FOREIGN BODY	5	N	General XR	RIS	XR (Plain Film/Xray/CR)	N	N
	70100	XR Mandible 1-3 Views	5	N	General XR	RIS	XR (Plain Film/Xray/CR)	N	N
	70110	XR MANDIBLE 4 VIEWS	5	N	General XR	RIS	XR (Plain Film/Xray/CR)	N	N
	70120	XR Mandible 1-2 Views Pa Side	5	N	General XR	RIS	XR (Plain Film/Xray/CR)	N	N

Figure 4.16 – Flag “No Report required flag” flag added to procedure

Completing an exam with either “No report (Tech Only)” or “Report External to rRIS” will send the exam to a status of “ExamDoneTechOnly” and will not be added to the Radiologists work list of Exam Done.

Document Distribution Enhancements

Enhancements have been made for Distributing Reports and later editing Document Distribution. A lookup is still available for finding Referring personnel that already exist in the rRIS system. The “Other” text box is enabled by selecting the corresponding radio button. This is a free form text field allowing the user to enter the name of the recipient. The user is able to submit the job when the Destination / Fax field has a value.



The image shows a 'Distribute Report' dialog box with a light blue background. At the top, the title 'Distribute Report' is in a grey bar. Below the title, there are two radio buttons: 'Physician' (selected) and 'Other'. The 'Physician' section has a text field with 'Noye, Darcy T' and a search icon. The 'Location:' label is followed by a text field containing '154 Workdown Dr., Worktown, MD, 4' and a dropdown arrow. The 'Other' section has a text field with 'Noye, Darcy T'. Below these, the 'Delivery Method:' label is followed by a dropdown menu showing 'Fax'. The 'Destination:' label is followed by a text field with '(902) 548-4848'. The 'Priority:' label is followed by a dropdown menu showing 'High'. At the bottom, there is a 'Note:' label and a text area containing the text: 'Notes entered here will display under the Activity log column of Document Distribution work list.' At the very bottom, there are 'OK' and 'Cancel' buttons.

Figure 4.17 – Distribute Report

The Document Distribution work list displays all of the existing jobs that have not been completed or cancelled. A user may multi-select rows from this work list and change values that each job has in common. In the example in Figure 4.18, all three of the jobs presently selected have the same Physician, location and delivery method, all three of these jobs can have all of these fields edited at the same time. If two jobs exist for the same accession number and were sent to the same physician, but at different locations, then only the Priority and Note fields are enabled.

1009273	10-04-2011 9:28 AM	10-04-2011 9:28 AM	0					(902) 548-8564
1009273	10-04-2011 10:17 AM	10-04-2011 10:17 AM	0					(902) 555-5556
1009273	10-04-2011 10:36 AM	10-04-2011 10:36 AM	0					(902) 548-4848
1009159	10-04-2011 10:42 AM	10-04-2011 10:42 AM	0					(902) 548-7885
1009207	10-04-2011 10:42 AM	10-04-2011 10:42 AM	0					(902) 555-5557
1009159	10-04-2011 10:55 AM	10-04-2011 10:55 AM	0					(902) 555-5557
1009159	10-04-2011 11:28 AM	10-04-2011 11:28 AM	0					(902) -
1009432	10-04-2011 11:28 AM	10-04-2011 11:28 AM	0					(902) -
1009479	10-04-2011 11:28 AM	10-04-2011 11:28 AM	1					(902) -
1009159	10-04-2011 11:29 AM	10-04-2011 11:29 AM	0					(902) 185-4854
1009432	10-04-2011 11:29 AM	10-04-2011 11:29 AM	0					(902) 548-
1009479	10-04-2011 11:29 AM	10-04-2011 11:29 AM	0					(902) 548-
1009479	10-04-2011 11:44 AM	10-04-2011 11:44 AM	1					(902) 548-7854
1009119	10-05-2011 3:37 PM	10-05-2011 3:37 PM	0					(902) 436-2117
1009432	10-05-2011 3:38 PM	10-05-2011 3:38 PM	0					(902) 436-5145
1009432	10-05-2011 3:39 PM	10-05-2011 3:39 PM	0					(902) 154-8542
1009432	10-05-2011 4:00 PM	10-05-2011 4:00 PM	0					(902) 548-4848
1009159	10-05-2011 4:19 PM	10-05-2011 4:19 PM	0	Pending	Fax	Noye, Darcy T		(902) 548-4848
1009432	10-05-2011 4:19 PM	10-05-2011 4:19 PM	0	Pending	Fax	Noye, Darcy T		(902) 548-4848
1009479	10-05-2011 4:19 PM	10-05-2011 4:19 PM	0	Pending	Fax	Noye, Darcy T		(902) 548-4848

Distribute Report

☒ Physician
Noye, Darcy T

Location:
kdown Dr., Worktown, MD, 45742

☐ Other

Delivery Method:
Fax

Destination:
(902) 548-4848

Priority:
High

Note:

OK
Cancel

Figure 4.18 – Document Distribution work list editing multiple jobs from for different reports but sent to the same Physician, location and fax number

Unknown NPI Flag

In recent builds users that had the resource type of Referring Physician or Radiologist were required to have NPI identifier complete. The user can select the NPI label on the Resource tab and it will complete a NPI Registry Search. It became apparent that in some cases, an NPI number may not be found. To assist the user in completing the task at hand of creating the user account we have added an additional check box “Unknown NPI”. When this check box is selected the required NPI field may be by-passed and the user account may be created.

User
Affiliation
Personnel
Specialty
UserCDSPProfile
UserGroup
UserGroupPermission

General
Resource
Account
Preferences
Scan Docs

Resource Type
☐ Referring Physician
☒ Radiologist
☐ Unknown Referring
☐ Transcriptionist
☐ Technologist

Referring Flags
☐ Direct Referral Program
☐ Pre-Auth Program

Resource Information
NPI:
254478
☐ Unknown NPI
UPIN:
☐ Emergency Access
Practices:
Advanced Radiology x
Specialties:

Figure 4.19 – Unknown NPI flag

Diagnostic Reporting Forms

Using the Forms and Label editor, Diagnostic report forms may be configured to be used with a particular practice, procedure, etc. If a report does not exist under Label and Forms, the default report template will be used from the system config value. When previewing the report from Diagnose / Create report data windows, the report form specified will be used.

First a form category must be created.

Form category code	Description	Display order	
Contains: ▼	Contains: ▼	Equals: ▼	Contains: ▼
4	Diagnostic Report	4	Y
Exam	Exam	1	Y
Label	Label	2	Y
Questionnaire	Questionnaire	3	Y
* Click here to add a new row			

Figure 4.20 – Creating Form Category

Open the Forms and Label editor and add the form. The form must first exist on the report server

form	description	active	form category
/QE Current/Forms/Diagnostic Templates/SampleDiagnosticReport	Report	Y	Diagnostic Report
/QE Current/Forms/Exams/CT History Sheet	CT History Sheet	Y	Exam
/QE Current/Forms/Exams/Exam Form	Exam Form	Y	Exam
/QE Current/Forms/Exams/IV Contrast Consent	IV Contrast Consent	Y	Exam
/QE Current/Forms/Exams/Medicare Questionnaire	Medicare Questionnaire	Y	Exam
/QE Current/Forms/Exams/Patient Registration	Patient Registration	Y	Exam
/QE Current/Forms/Exams/Payment Receipt	Payment Subreport	Y	Exam
/QE Current/Forms/Exams/Stat Results Form	Stat Prelim Form	Y	Exam
/QE Current/Forms/Exams/Thyroid Ultrasound History Sheet Page 1	Thyroid Ultrasound History Sheet Page 1	Y	Exam
/QE Current/Forms/Exams/Thyroid Ultrasound Worksheet Page 2	Thyroid Ultrasound Worksheet Page 2	Y	Exam
/QE Current/Forms/Label/Mailing Address Label	Mailing Address Label	Y	Label
/QE Current/Forms/Receipt/Payment Receipt	Created this one today	Y	Exam
* Click here to add a new row			

name	description	active	stat exam form	action	carrier	carrier type	modality type	procedure	gender	practice	bir
Contains: ▼	Contains: ▼	C... ▼	Contains: ▼								
The Report	The Report	Y	N	(none)	(all)	(all)	(-)	(-)	(all)	(all)	(all)
* Click here to add a new row											

Figure 4.21 – Creating Diagnostic Report Form

NOTE: Although this functionality has been added QE has not been successful in getting the report form to be applied to only a particular Modality or Procedure. As a result when a report template exists and specified from Forms and Label lookup editor, all studies will use this report template. Defect 608 has been logged.

Diagnostic – Note to Radiologist

Note to Radiologist has been added in this build. Utilizing the pre-existing “Transcription Notes” data pane in the reporting data window, a checkbox was added. When checked it marks the notes are meant for the radiologist to review. Also when this checkbox is selected the “Assign to:” and Assign to WL:” are disabled.

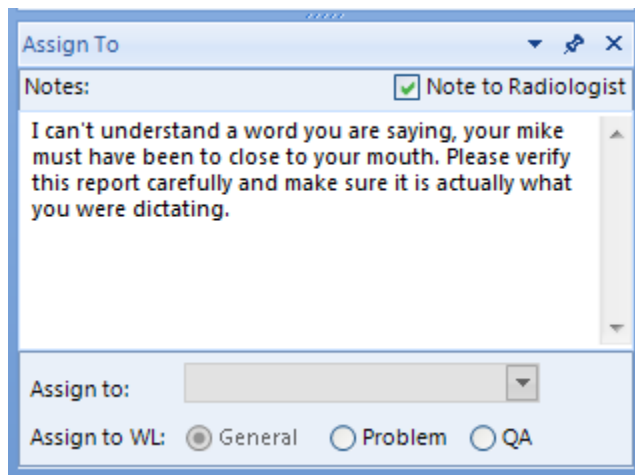


Figure 4.22 – Note to Radiologist selecting, disabling Assign to and Assign to WL

When the transcriptionist submits this study with “Note to Radiologist” checked, the Radiologist must acknowledge the note before the study can be signed off.

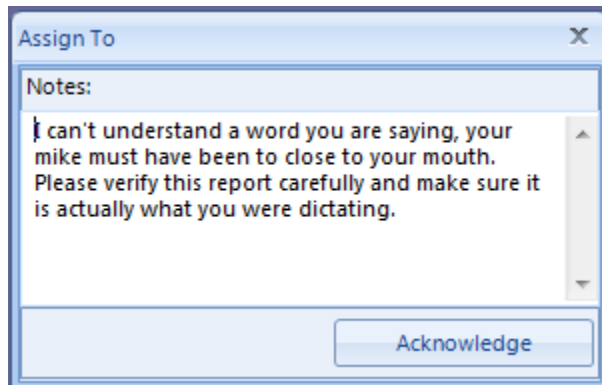


Figure 4.23 – Note to Radiologist – Note to be acknowledged.

The Radiologist can choose to re-dictate, edit report, or edit data window fields without having to acknowledge the “Note to Radiologist”. If the exam is moved to a status of Dictated or Report Drafted, the flag for “Note to Radiologist” is retained. The radiologist still has to acknowledge

the note before it can be signed. If the exam status was changed to Report Drafted by a radiologist, the transcriptionist can remove the “Note to Radiologist” flag and the exam will no longer have to be acknowledged by the Radiologist.

If the Radiologist attempts to sign off a report that has not been acknowledged, they will be presented with a confirmatory message that provides the option to acknowledge and sign off, or select No and return to the data window.

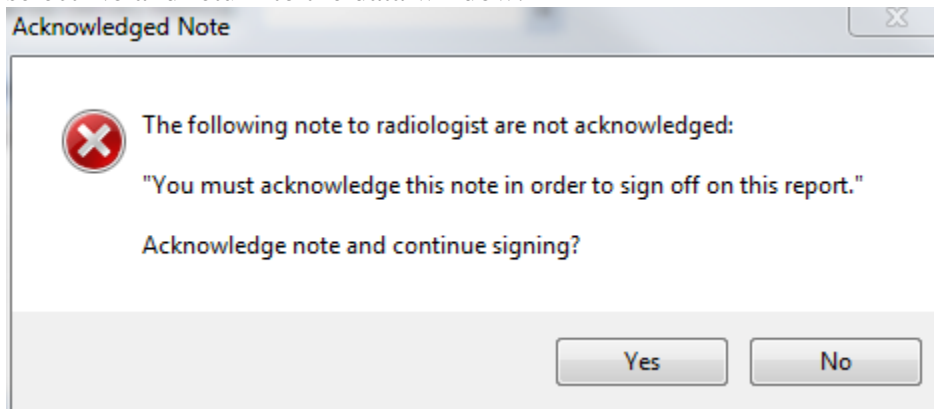


Figure 4.24 – Confirmation of signing before acknowledging Note To Radiologist

Toggle States for Dictation Buttons

A new dictation control has been added to the Dictate and Create Report windows and along with the new control the buttons in use will be lit to easily identify the current state. The buttons will light up in a blue color, with the exception of the record button which will be red. When no buttons are selected from either the Speechmike, or the dictation control, the stop button will be lit blue.



Figure 4.25 – Dictation control in a stopped state



Figure 4.26 – Dictation control in record state

Film Image Request (preliminary)

In the last sprint, Film Image Request was started but only included a data window. In build 1.22 additional functions have been added. The feature is not complete and a few outstanding bugs have been logged against this feature during Sprint 22 and can be seen in Section 5 of this document.

The request for images screen now includes a study list and an image request history list. The study list includes all studies that this request is being generated for. A user can check or uncheck studies that they do not want to request copies of images for. The image request history list shows a list of requests for the “selected” study in the study list. Note this is “selected” or the “highlighted” row and not necessarily the “checked” row. The user now has the ability to see if there is already an existing request before create a new request.

Date	Last Name	First Name	Study
9/13/11 8:15:00 AM	Test	DGI	CT13^CT 3 Phase
9/13/11 7:45:00 AM	Test	DGI	CT30^CT Knee Arthrogram

Date	Req. By	Source	Format	Delivery	Status
9/15/11 11:47:47 A...	Rick9 Smith	Referring	CD	Mail	Pending
9/15/11 10:55:52 A...	DGI Test	Patient	CD	Courier	Pending

Requested By

☐ Patient ☐ Referring ☐ Other Doctor ☒ Other

Doctor: [Smith, Rick9 a] [v] [i]

Location: [] [v]

Name: []

Organization: []

Phone Number: [0 -]

Details

Format: [] [v]

Notes: []

Delivery Instructions

Method: [] [v]

Instructions: []

Deliver To / Pickup By

☐ Patient ☐ Referring ☐ Other Doctor ☒ Other

☒ Same as requested by

Doctor: [Smith, Rick9 a] [v] [i]

Location: [] [v]

Prefix: []

First Name: []

Last Name: []

Suffix: []

Address: []

City: []

State: []

Country: []

ZipCode: []

Phone Number: [0 -]

Ok Cancel

Figure 4.27 – Image Request data window

Also, on this request form, a new radio button was added to allow the user to choose another doctor from the rRIS personnel database. This button behaves similarly to the “referring” radio button, but now the user can select another doctor instead of the referring.

This request form has the ability to have the requestor different from the delivery to. By default, the form behaves as if the delivery to is the same as the requestor. However, we can have the deliver to person different by un-checking the “Same as requested by” check box.

An “Image Request” tab page was added to the registration screen. This tab shows a list of image requests for the studies included in this registration process. From here, the user can choose to “Delete” image requests that are “New”. They will not be able to delete image requests that have been saved to the db. This will have to be done via the Image Request Worklist – Edit Request function.

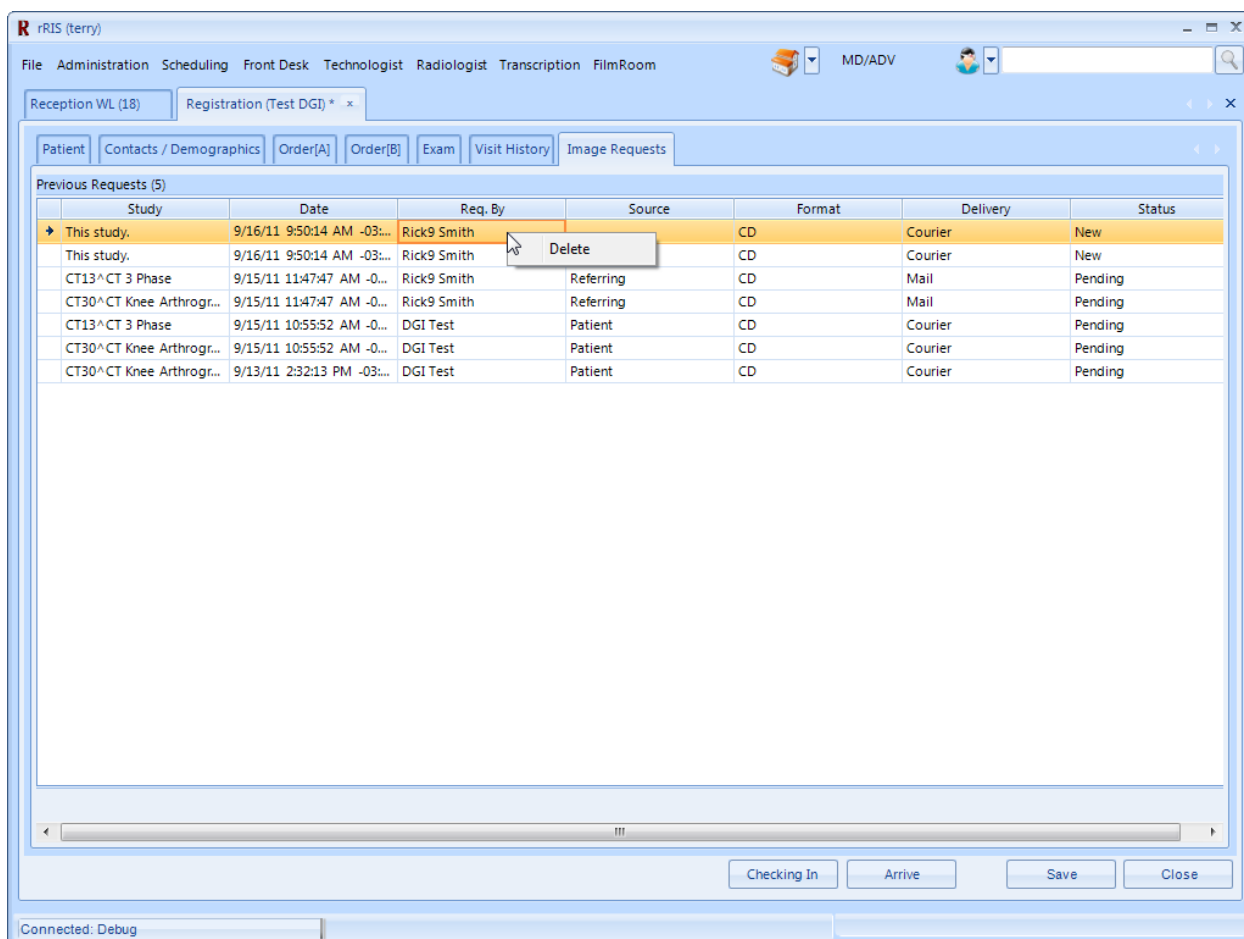


Figure 4.28 – New tab “Image Request” for Registration

The film request worklist now contains all images requests where the examination status is not “Scheduled” and the image request status is not “Cancelled” or “Completed”.

From the “Film Request” worklist, we can “Edit” an image request. This opens the “Request Copies” content form.

The screenshot shows the 'Request Copies' form in the rRIS application. The form is titled 'Request Copies (Hiedi Brelsford)' and is part of the 'Image Request' tab. It contains several sections for editing request details.

Previous Requests (1)

Date	Req. By	Source	Format	Delivery	Status
9/02/11 2:22:34 PM -03:00	e Clifton Harding	Referring	Film	Mail	Pending

Requested By

☐ Patient ☒ Referring ☐ Other Doctor ☐ Other

Doctor: [Harding, Clifton L] [v] [i]

Location: [(no address on file)] [v]

Name: [e Clifton Harding]

Organization: []

Phone Number: [0 -]

Details

Format: [Film] [v]

Notes: []

Delivery Instructions

Method: [Mail] [v]

Instructions: []

Image Request Status

☒ Pending ☐ Cancelled ☐ Copied ☐ Sent / Picked up ☐ Identification Verified

Deliver To / Pickup By

☐ Patient ☒ Referring ☐ Other Doctor ☐ Other

☐ Same as requested by

Doctor: [Harding, Clifton L] [v] [i]

Location: [(no address on file)] [v]

Prefix: [e]

First Name: [Clifton]

Last Name: [Harding]

Suffix: []

Address: []

City: []

State: []

Country: []

ZipCode: []

Phone Number: [0 -]

Buttons: Release Form, Save, Close

Footer: Connected: Debug

Figure 4.29 – Edit Image Request

Here the user can change any data element on the request and/or change it status. Changing the status to “Cancelled” or “Send / Picked up” will remove the item from the worklist.

This form also includes the request history for this study.

5. Known Limitations

Bugs, Suggested Features, and Support Issues are tracked in a web based system called Redmine. The following is a snapshot of the issues found in Build 1.22.

#	Status	Subject	Category	Target version
607	New	Disbtribute report - OK button enable with incomplete fax field	Thick Client GUI	1.22
606	New	Distribute Report - Selecting "Other" radio button from Physician will copy the Physician name to other text box	Thick Client GUI	1.22
605	New	Cannot remove some practices in Personnel editor	Admin Tools	1.22
604	New	Confirmation message for rejecting patient merge	Thick Client GUI	1.22
603	New	Add patient > Search returns existing patient and throws error	Thick Client GUI	1.22
602	New	My Dictated By Date worklist has duplicate column	Thick Client GUI	1.22
601	New	Document Distribution > Destination does not change to Fax	Thick Client GUI	1.22
600	New	Error scheduling order merging on patient search from outside order	Web Services/DB	1.22
599	Resolved	Patient merge must consider "Issuer of ID" as MRN are only unique if Issuer is the same	Thick Client GUI	1.22
598	New	Configure > Report Template > Selecting practice that does not have "cds_object_id" returns error	Web Services/DB	1.22
597	New	rRIS google search not working	Thick Client GUI	1.22
596	New	Dictate > Template Browser list cannot be expanded to see complete template name	Thick Client GUI	1.22
595	New	Request Image - MainApp error returned requesting image from Report Drafted work list.	Thick Client GUI	1.22
594	New	Request images from IVT work list throws error	Thick Client GUI	1.22
593	New	Edit image request workflow issue	Thick Client GUI	1.22
592	Resolved	Error message pop up can be hidden behind application	Thick Client GUI	1.22
591	New	Error replacing exteranl order with existing patient	Thick Client GUI	1.22
590	Resolved	Attempt to edit an order that is locked for scheduling returns error	Thick Client GUI	1.22
589	Resolved	Creating outside read that has laterality is not carried to Exam done.	Thick Client GUI	1.22
588	New	User is able to request images on order. Message returned is not user friendly	Thick Client GUI	1.22
587	New	Resuming a suspended study does present message with options to continue	Thick Client GUI	1.22
586	New	Cannot access "Closed Rooms Reschedule" work list if it has data.	Web Services/DB	1.22

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585	Resolved	Exam done work list Changes sort order when refreshed	Thick Client GUI	1.22
584	New	Dictation is not selecting the next patient in the work list.	Thick Client GUI	1.22
583	New	Exception thrown trying to access Unknown Referring work list.	Web Services/DB	1.22
582	New	Error returned trying to reschedule from appointment book	Thick Client GUI	1.22
581	New	Dictate > Report history > Add remove buttons > Names to be changed	Thick Client GUI	1.22
580	Resolved	Edit patient > returns error(s)	Thin Client GUI	1.22
579	New	IVT PreCert column does not update	Thick Client GUI	1.22
578	Resolved	Cannot dictate / diagnose or create / edit reports	Thick Client GUI	1.22
576	Resolved	Personnel > Edit User > removing resource types, no users can log in.	Web Services/DB	1.22
575	Resolved	Modality duration override ignored if the duration override is less than procedures default time	Thick Client GUI	1.22
574	Resolved	Schedule order > Remove procedure will throw error.	Thick Client GUI	1.22
573	New	Order can be created without Laterality when it is required.	Thick Client GUI	1.22
572	Resolved	Exception on reschedule	Thick Client GUI	1.22
571	New	Occasionally receive error attempting to perform exam	Thick Client GUI	1.22
570	New	Image Request	Thick Client GUI	1.22
569	Resolved	Cannot create new user in Personnel	Thick Client GUI	1.22
568	New	Cannot request copies of images from patient folder	Thick Client GUI	1.22
567	Resolved	User can check both Outside read flags	Thick Client GUI	1.22
566	Resolved	No Report Required flag	Thick Client GUI	1.22
565	New	Disallow closing pending signature work list still has "X" on the tab page	Thick Client GUI	1.22
608	New	Diagnostic Reporting Forms - assign to modality, procedure, etc... not working	Admin Tools	1.22

User Pre-Release Notes

for RADNET rRIS
Build 1.23

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1. Purpose

This document describes some of the new features and changes implemented in rRIS as of the end of Sprint 23. This pre-release version of rRIS is referred to as Build 1.23.

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 rRIS Development team for the RadNet RIS management team.

3. Installing/Accessing the Application

The installation instructions for the rRIS client have been posted to the RadNet Wiki page at <http://mdbal01rdtweb/Wiki/>

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

Username: rRIS

Password: Summerside

Please note that Build 1.23 is considered a new core release of the application and will require a reinstallation of rRIS. This is accomplished by navigating to the rRIS 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 Features and Enhancements

Radiologist Menu Changes

The radiologist menu has seen some changes in Build 1.23. As displayed in Figure 4.1 the menu options have been updated. Before we had “Exam Done” we now have “Pending Dictation” and “Transcribed” is now “Pending Signature”.

Also instead of prefixing user specific work list with “My xxx” work list we now simply state “xxx” work list To indicate a work list that is non-user specific we suffix the name with “(all)”, which would likely be seen by admin type users. The user specific work list would usually be the norm, and always be visible. This has the effect of reducing visual clutter on the items most likely visible and used by the user.

The new Pending dictation work list will show all items in exam done that are assigned to the user or not assigned to anyone AND suspended by the user or not suspended by anyone. In previous versions the current selected row was the starting point with the next exam in the work list loaded in Dictate window next. Now it will always start at the top available row, moving to the next available in the work list.

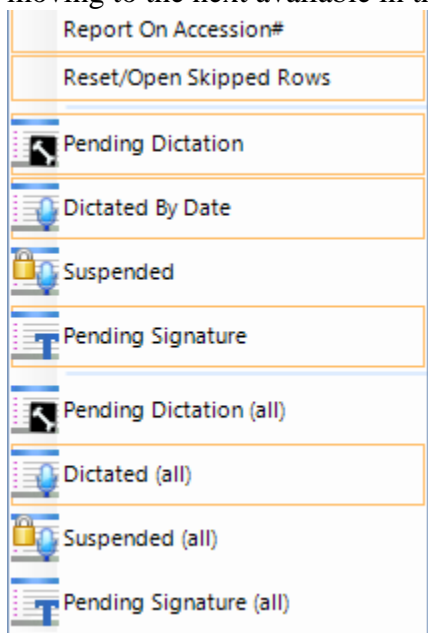


Figure 4.1 – Radiologist menu

Rad Drop Down Buttons with Ability to Assign Skip / Continue Session

New button controls have been added in Dictate and Sign Reports data windows for build 1.23. Next to the buttons is a downward arrow indicating that there is more than one potential action that can be completed on a particular button control. Figure 4.2 displays these buttons, with the Submit button menu expanded showing alternate actions. Hover the mouse pointer over the button will show its default value. Clicking directly on the button will perform the assigned default action.

You can see in Figure 4.2 that two option from this buttons drop down list have bypass VR. Selecting one of this menu options will submit the dictation skipping voice recognition.

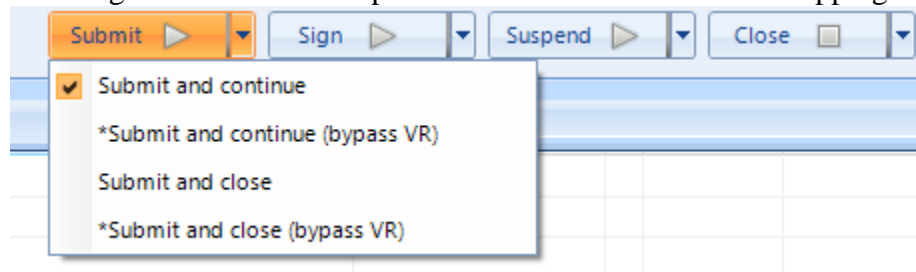


Figure 4.2 – Radiologist drop down buttons

To change the default action of the button, hold down the CTRL key on the keyboard and select the action from the drop down list. The option selected from the list will be performed as well as change the default setting for the button. When the default action is changed for a button, the text on the button will also change.

Some actions are preceded by an ‘*’ (as displayed in figure 4.2), these are the actions that cannot be defaulted. If the user attempts to default that action a message box would be displayed.

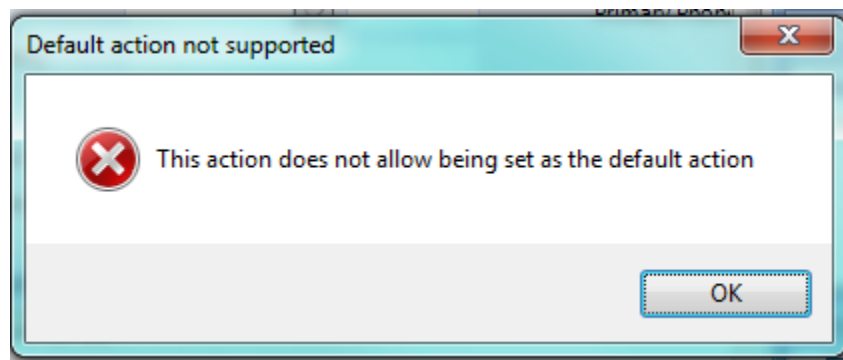


Figure 4.3 – Message informing user the action cannot be defaulted to the button

Actions are defined as “button action” and continue or “button action” and close. Referring to Figure 4.4, you will notice ICONS on the buttons as play ► or stop ◻. Assigning actions that are to continue to the next record on the work list display the play ICON, and actions that are to complete action and close data window to return to the work list will have the stop ICON.

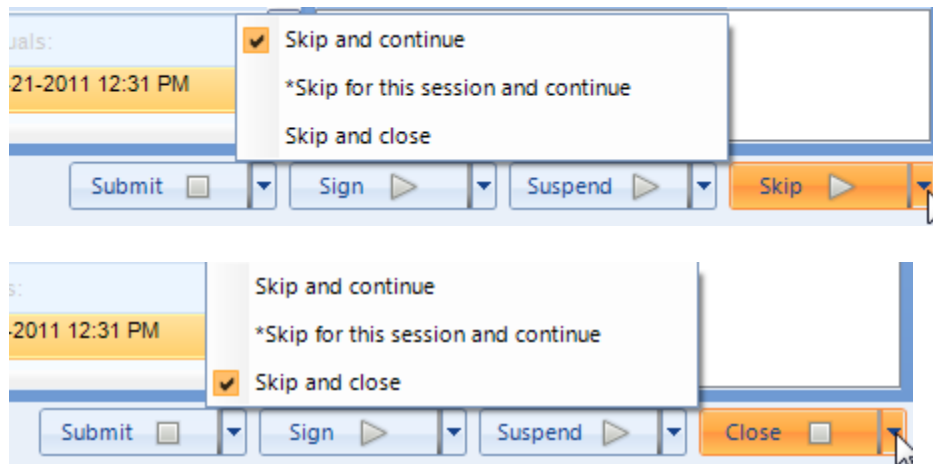


Figure 4.4 – Default button changed. Default action checked in drop menu with text on button also changed.

In figure 4.4 the menu options are to skip the current exam and a specified following action. In this example Skip and Close is defaulted with the action being to simply close the Dictate window.

Skip and continue will skip the item for the current workflow instance. To access this exam in the Dictate window again, it can be opened directly from the work list as normal, or if the user completes the entire work list, then the skipped rows are accessed next.

The final menu option of “*Skip for this session and continue” will mark this exam as such.

Unlike “Skip and Continue” once the user completes the work list, exams flagged “*Skip for this session and continue” will not be accessed during the normal “next available exam” work flow.

If the user so chooses, they can access the exam via the work list, or if the exam(s) are to be added back into the “next exam” work flow, the user does have the ability to manually add these skipped exams back into the workflow by resetting skipped rows via the Radiologist menu option displayed in Figure 4.5. Also in Figure 4.5 is the window that opens. The user can reset individual rows or all of the skipped rows in this list.

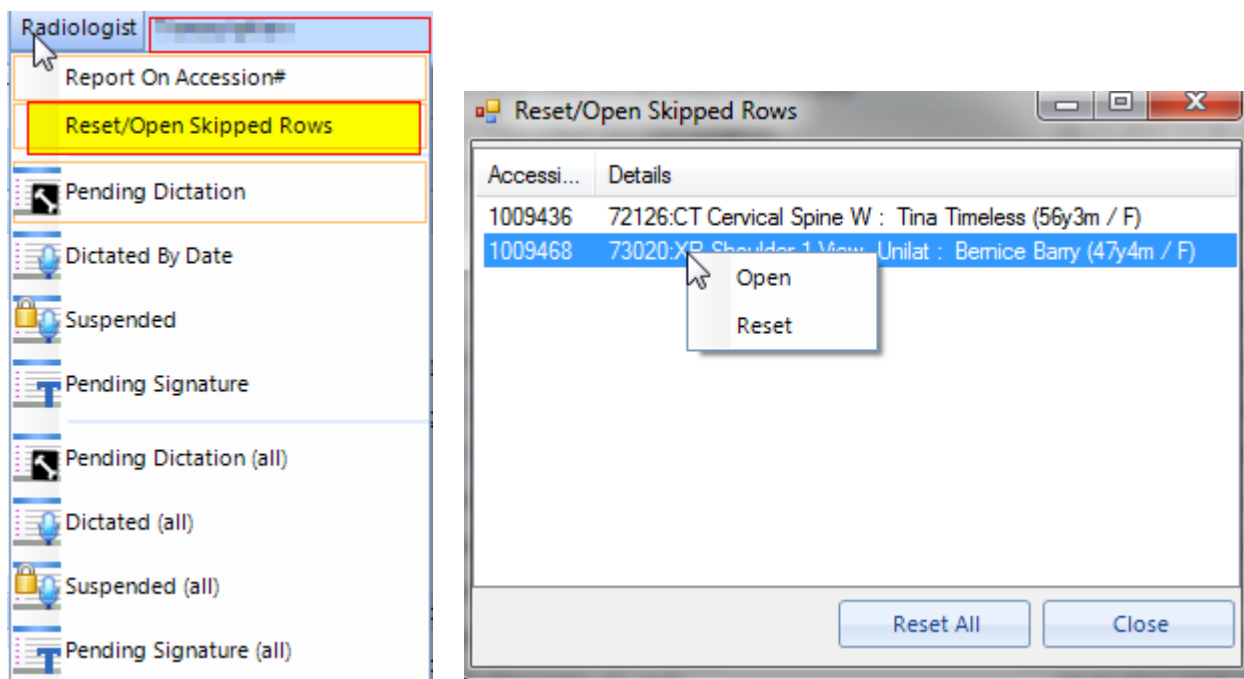


Figure 4.5 – Reset/Open Skipped Rows menu option and Window

Insurance Policy Mask

In build 1.23, the insurance policy number mask has been changed. The “@” sign now represents any letter and the “#” sign now represents any number.

As before, in the event that the policy mask is wrong and the patient insurance policy does not fit the mask, the user can prefix the policy with a “+” character to bypass the policy mask. Any study with an insurance policy that begins with a “+” will be flagged as a billing exception and held until the “+” is removed

	Carrier code	Description	Phone	Fax	Address1	Policy number mask	
	Contains: ▼	Contains: ▼	Contains: ▼	Contains: ▼	Contains: ▼	Contains: ▼	Cc
+	01400030	CHIDI / TQIWO AGBAJE ESQ.	4105662007	4105586417	1724 WOODLAWN DRIVE		
	01400046	CHASE CHASE & HAMMERSCHLAG	4104884100	4104884174	1190 W. NORTHERN PARKWAY		SL
	01400051	CSEK	4107521880	4105471996	347 N. CHARLES ST		
	0140265	KADISH & KADISH	4102961898	4103378504	11 E LEXINGTON ST	@#####	
	01406201	MOBLEY & BROWN	(410)385-0398	4103855851	1 NORTH CHARLES ST		SL
	0140621	PREVAS AND PREVAS	4107522340	4103320474	231 E. BALTIMORE ST.		SL

Figure 4.6 – Insurance Policy Mask

Multiple “Contains” Column Filter

A new work list filtering addition has been added in Build 1.23. The user can now filter a column within a work list by entering multiple search criteria. The separator “or” (case insensitive) or “|” (pipe) will separate multiple search criteria and apply a “contains”. Note the search string ‘’ (single quotes) will match empty entries or null. This can also apply to the “does not contain” filter if specified in the filtering list of options. This is achieved by selecting the filter ICON on the column header and selecting the “does not contain” option.

Orders To Schedule (19 of 361) x

Last name	First name	Status	Procedures	Order date	Re
Contains:	Contains:	Contains:	Contains: xr or ct 3	Equals:	Con
Hughes	Stuart	OrderSigned		07-21-2011 3:25 PM	
Hughes	Stuart	OrderSigned		07-28-2011 10:46 AM	
Acorn	Adele	OrderSigned		08-03-2011 8:55 AM	
Knotter	Harry	OrderSigned		08-10-2011 9:11 AM	
Hill	Monica	OrderSigned		08-10-2011 4:41 PM	
Jones	Abel	OrderSigned	70140^XR Facial Bones 1-2 Views	06-15-2011 2:08 PM	
Test20	John	OrderSigned	71010^XR CHEST PA ONLY	08-12-2011 3:04 PM	
Walsh	Brenda	OrderSigned	72050^XR CERVICAL SPINE MIN 4 VIEWS	10-19-2011 3:16 PM	
Xroller	Xena	OrderSigned	72100^XR LUMBAR SPINE 2 OR 3 VIEWS	10-19-2011 12:48 PM	
Cone	Clare	OrderSigned	73500^XR Hip Unilateral AP CT29^CT Hip Art...	08-03-2011 9:22 AM	
Smith	Kitt i o	OrderSigned	74000^XR ABDOMEN AP, KUB	07-19-2011 3:04 PM	
Barry	Mary7	OrderSigned	74020^XR ABDOMEN FLAT & ERECT OR DEC...	05-25-2011 10:09 AM	
Dwarf	Grumpy	OrderSigned	CT13^CT 3 Phase	05-10-2011 3:55 PM	
away	right	OrderSigned	CT13^CT 3 Phase	05-12-2011 4:08 PM	
zxcvsdf	zsdzxdf	OrderSigned	CT13^CT 3 Phase	05-12-2011 4:20 PM	
Jonah	Trudy	OrderSigned	CT13^CT 3 Phase	06-06-2011 11:40 AM	
Load	Heavy	OrderSigned	CT13^CT 3 Phase	07-19-2011 1:17 PM	
Mcwilliams	Carry	OrderSigned	RD9^XR Elbow, Bilat 2 Views	05-06-2011 1:05 PM	
Houphmeyer	Artie	OrderSigned	RD19^XR Hand 2 Views & Wrist 2 Views, Unilat	10-19-2011 8:27 AM	

Figure 4.7 – Multiple contains filter on procedure column. Notice “or” and “|” (pipe) is used.

Also implemented in this build is the ability to specify filter values via a multi select window. Currently this has only been applied to the Modality type column as displayed in figure 4.8. To

access the Filter Values for Modality Type window double mouse click the area of the column where the filter value would be entered.

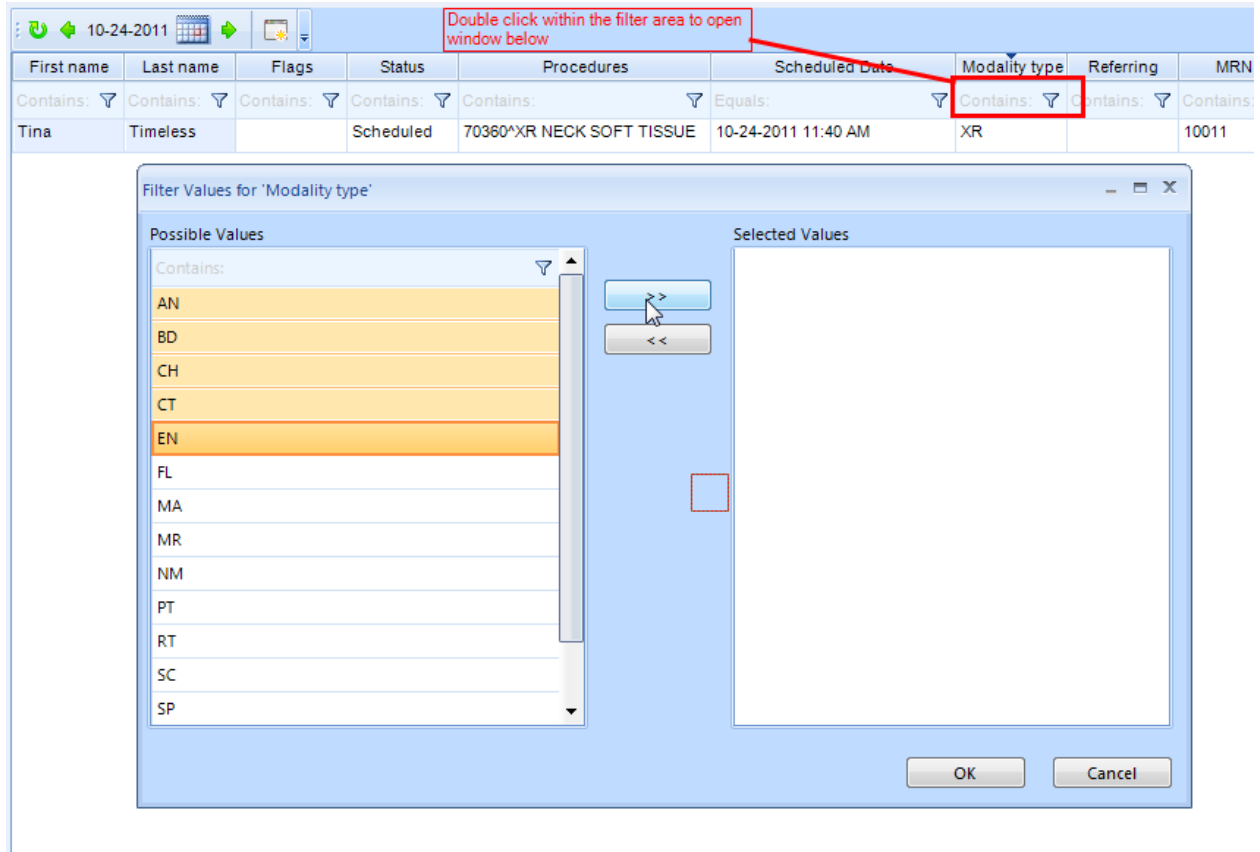


Figure 4.8 – Adding multiple filter values.

Verbal Order Changes

Verbal order was added in build 1.21. This build introduces a few changes. A multi-type control was added and mapped to our list of procedures. A checkbox was also added that allows the user to manually type free-form text instead of using the multi-type ahead

Create Verbal Order

☒ Verbal Order ☐ Amended Order

Referring: Noye, Darcy Phone: (541) 574-5855

Representative from Referring Office

Name:

Title:

Exams Ordered: ☐ Enter unlisted exam(s)

xr ch

- XR ABDOMEN FLAT & ERECT W PA CHEST (74022)
- XR Chest Min 4 Views (71030)
- XR Chest PA Lat & Ribs 2 Views Unilat (RD33)
- XR CHEST PA LAT (71020)
- XR Chest PA Lat, Obliques (71022)
- XR CHEST PA ONLY (71010)

Signs and Symptoms:

My Name:

My Title:

☐ By checking this box I, (Darcy Thane Noye) am digitally signing this Verbal Order

Create Order Cancel

Figure 4.9 – Create Verbal Order Exam selector. Adding check to “Enter unlisted exam(s)” allows for free form text.

Amended Order

Utilizing the Verbal Order feature, Amended Order will also have a fill-in form type of feature that is stored as a scanned document. A radio button will be added to the verbal order screen to allow it to be switched to an amended order. Upon selecting the Amended Order radio button the label for “Signs and Symptoms” (see figure 4.9 above) changes to “Comments” (See figure 4.10 below). The rest of the workflow is the same as Verbal Order. Of course the rendered document is altered to say “Amended order” at the top, and it also has the comments field, and does not have a signs and symptoms page

Create Verbal Order

☐ Verbal Order ☒ Amended Order

Referring: Noye, Darcy Phone: (541) 574-5855

Representative from Referring Office

Name:

Title:

Comments

Exams Ordered: ☒ Enter unlisted exam(s)

Selecting the check box "enter unlisted exam(s)" allows the user to enter text.

My Name:

My Title:

☐ By checking this box I, (Darcy Thane Noye) am digitally signing this Verbal Order

Create Order Cancel

Figure 4.10 – Report External to rRIS in Perform Exam data window

Amended Order Form

Created on 10-24-2011

Patient Name Yolanda Yeesh

Phone

Patient MRN

Date of Birth 07-21-1956

Ordering Physician Darcy Noye

Physician Phone # (541) 574-5855

Representative from Referring Physician Office:

Name Betty

Title Reception

Exam(s) changed to:

Selecting the check box "enter unlisted exam(s) allows the user to enter text.

Comments

The label above has changed to Comments after selecting the Amended order radio button.

Team Member taking Amended Order

Name Darcy Thane Noye

Title scheduler

Figure 4.11 – Amended Order

Film-Image Request Work Flow.

Additional enhancements have been made to Film – Image Request work flow in build 1.23. When the user is completing the Image Request they will now have the ability to change its status when creating a request. This will allow a user create and complete the request in one step. The “complete” status has been split. . Now there are “Sent” and “Picked Up”. This will allow the system to differentiate how a request was completed. Also, when a request is picked up, the “Identification Verified” check box is enabled and becomes required.

Image Request

Studies (1)

	Date	Last Name	First Name	Study
→ <input checked="" type="checkbox"/>	2011-10-12 11:05:00 AM	Tagg	Tamisha	78492^PT/CT Myocardial Multi...

Previous Requests (0)

Date	Req. By	Source	Format	Delivery	Status
------	---------	--------	--------	----------	--------

Requested By

☐ Patient ☐ Referring ☐ Other Doctor ☒ Other

Doctor:

Location:

Name:

Organization:

Phone Number:

Deliver To / Pickup By

☐ Patient ☐ Referring ☐ Other Doctor ☒ Other

☒ Same as requested by

Doctor:

Location:

Prefix:

First Name:

Last Name:

Suffix:

Address:

City:

State:

Country:

Zip Code:

Phone Number:

Details

Format:

Notes:

Delivery Instructions

Method:

Instructions:

Image Request Status

☒ Pending ☐ Cancelled ☐ Copied ☐ Sent ☐ Picked Up ☐ Identification Verified

OK Cancel

Figure 4.12 – Image Request

A user can edit request for images from the scheduling, registration and technologist screens. A new tab called “Image Request” has been added to aforementioned user’s windows. The tab will contain the number of image requests for the study. A study with no requests for images with show “Image Request (0)” in the tab page title.

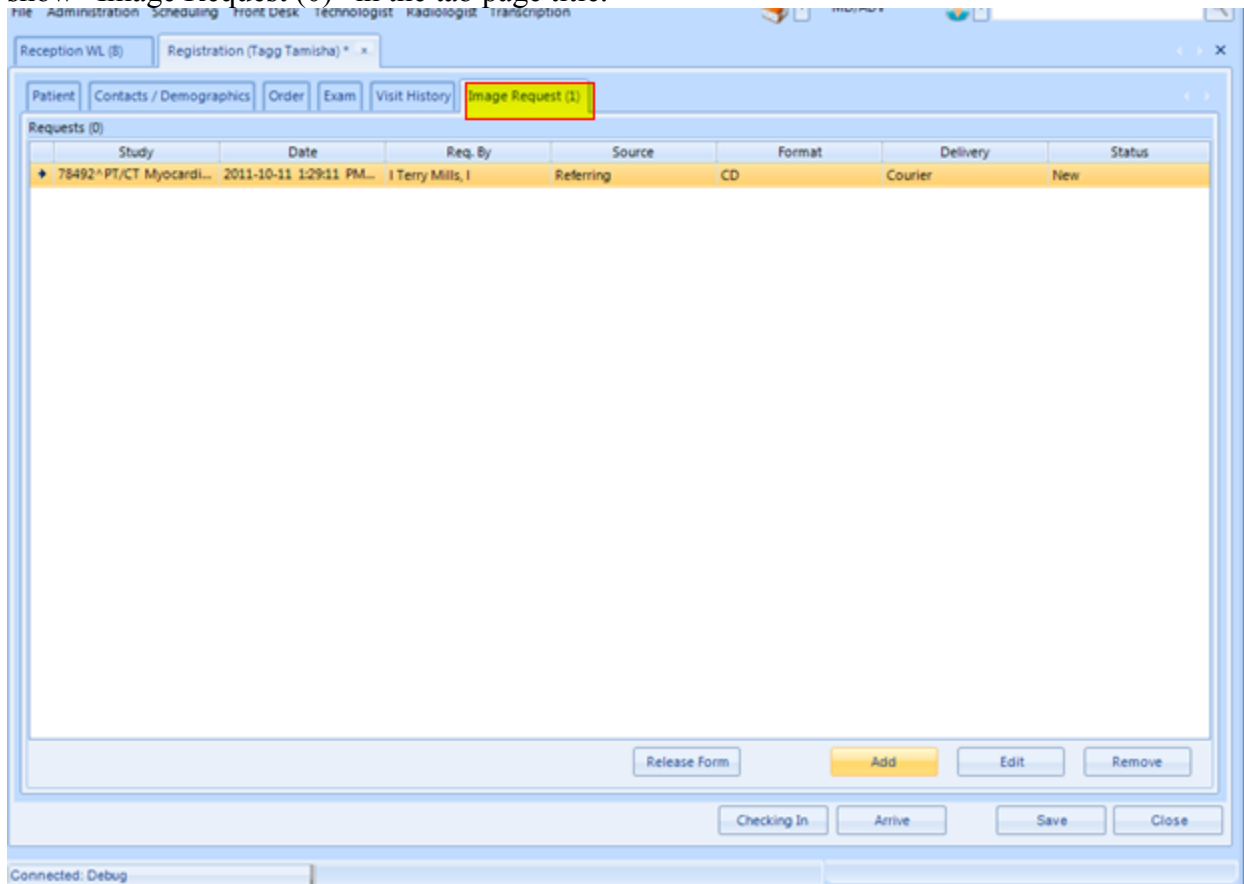


Figure 4.13 – Image Request tab in Registration data window

Only new requests can be removed (i.e. not save to the db). In order to “remove” other requests they have to be cancelled. This can be accomplished via the Image request tab or by editing the request from the Image Request work list.

Patient Relation Behavior Changes

When entering Insurance Policy Information, the Policy Holder Information fields must be completed. To help ease of use, when selecting “Self” from the list, all fields will be copied over from the patient record, provided the data exist.

If the user chooses “Spouse” or “Child”, all fields except the first name will be pre-populated. Any other relation type selected will have the field left blank.

The screenshot displays the 'Patient Insurance Policies' form. At the top, there's a 'Policies:' section with a table. The table has two columns: 'Use' and 'carrier'. A row is highlighted with a yellow background, showing a checked box in the 'Use' column and the text '050119 KEYSTONE AUTO INSURANCE, 8009450728' in the 'carrier' column. Below this table is a checkbox labeled 'Show Inactive Policies'. The 'Policy Holder Information' section contains several fields: 'Relation to patient:' with a dropdown menu set to 'Self'; 'First Name:' with the text 'Eura'; 'Last Name:' with the text 'Lungren'; 'Birth Date:' with a date range '11-13-1947' and a calendar icon; 'Gender:' with a dropdown menu set to 'Male'; 'Address 1:' with the text '23 Charlie St'; 'Address 2:' with the text 'PO Box 1444'; 'City:' with the text 'Beverly Hills'; 'State:' with the text 'California'; and 'Zip:' with the text '90210'.

Figure 4.14 – Insurance Policy Holder Information

Two other areas of the application also currently use this feature. The Contacts/Demographics tab / Responsible Party section will utilize the same features. Also approved medical access will use this feature with the exception of Self which is not an option.

Attachment / Scan Document Enhancements

In build 1.23 enhancements and clean up items were addressed for Attachment / Scan documents.

Clean up issues are:

- Re-classifying an attachment back to its original classification, it will join the attachment document entry for any other of that type that were scanned or attached at the same time.

- Re-ordering can now be accomplished when viewing scans through dragging and dropping the thumbnails.
- Previously, the popup's for the scan document list only closed with the 'x' in the top right corner, now we also have an ok button at the bottom of the screen.
- Notes added to the attachment are displayed in the lower left when viewing the attachment.
- The Attachment viewer list now has buttons to scan, import, verbal order, and a button for advanced scanning options.

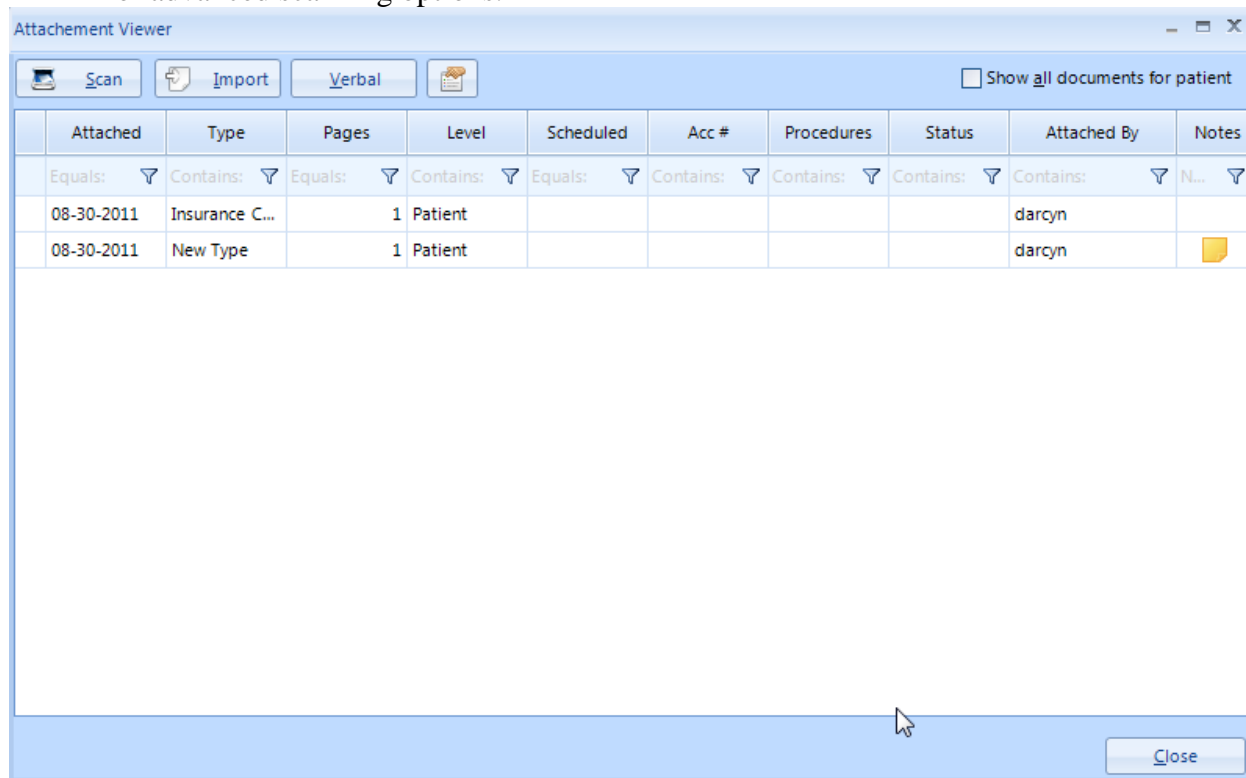


Figure 4.15 – Attachment Viewer button changes

Enhancements for Scanning / Attaching documents are:

- To **optimize the import workflow**, if the directory you are importing from contains in its name "**AutoDeleting**", then all the images in the directory will be auto selected when you open up the Import dialog and they will be deleted after the import.
- When viewing the scanned image or attachment the user can right click on an image and choose **Straighten**, next they are asked to underline a word in the image. The user has option to apply or cancel changes. When they choose Apply, the image will be rotated making the line they drew strait. An undo option is also available from context menu or keyboard shortcut <Ctrl>+ Z

- Also from the context menu an image cropping feature has been added. The user selects the menu option, click and drags the desired area, and select Apply or Cancel. Once applied the cropping can be reverted back by using the same Undo options for Straighten.

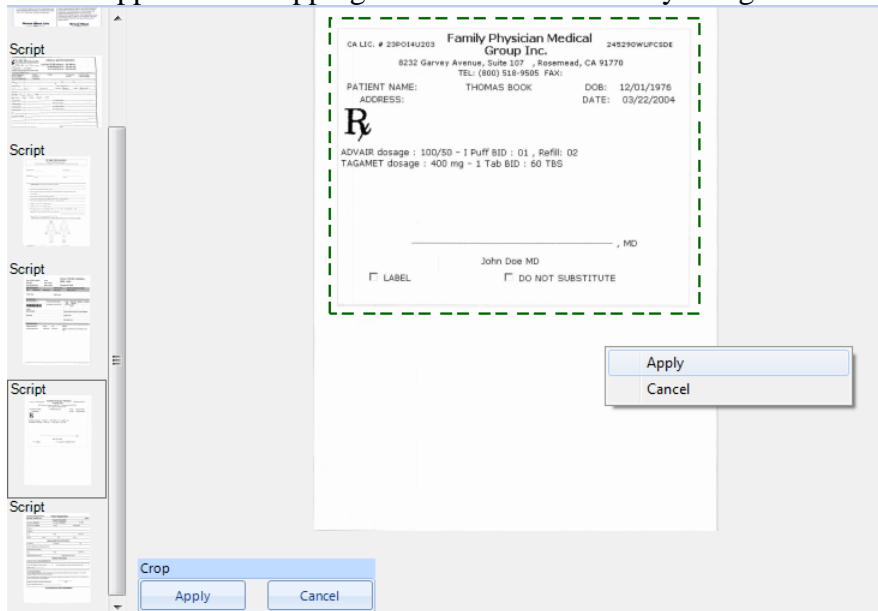


Figure 4.16 – Displaying scanned document using cropping feature.

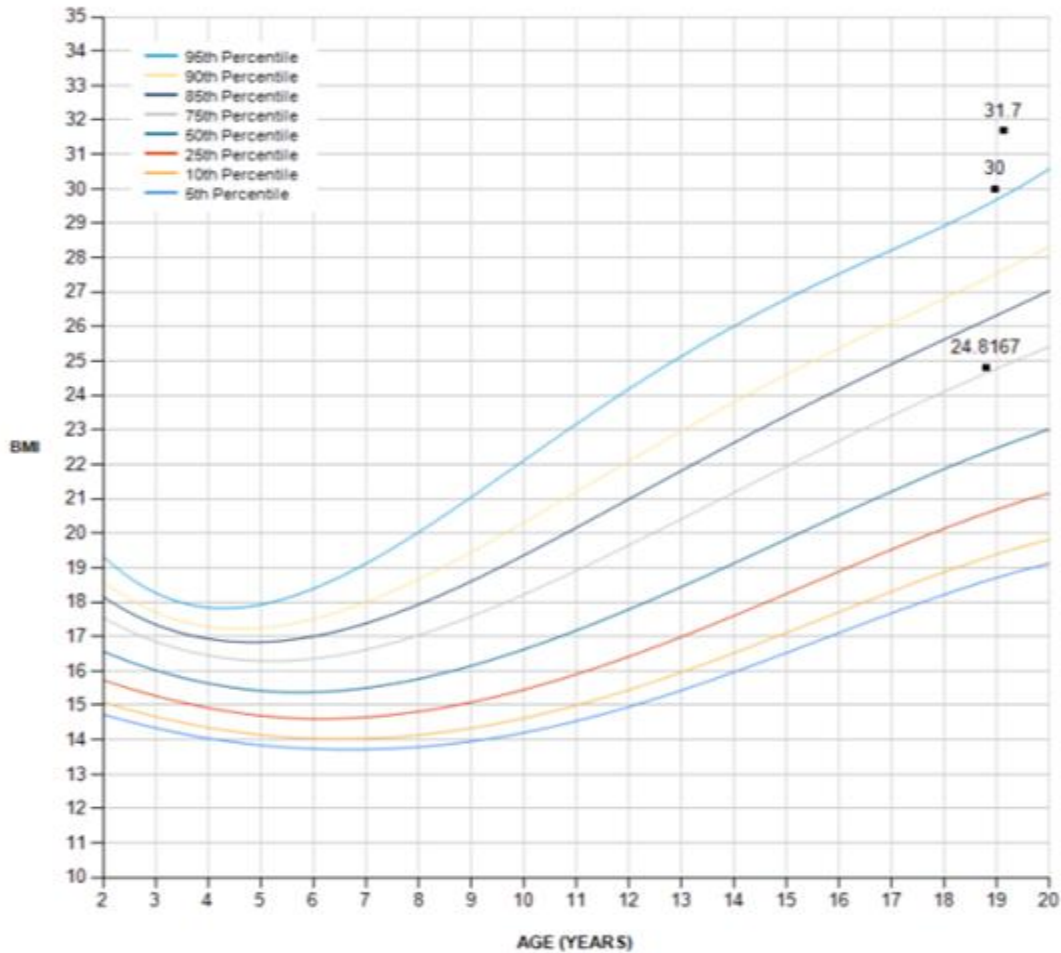
Patient Growth Chart

A part of the Meaning Use requirement 170.302 part of Vital Signs, the patient growth chart has been added in build 1.23. A new table called `l_bmi_percentiles` to hold the data table from the CDC in Atlanta, GA. This table provides the BMI to percentile values based on age and sex of the patient.

A management report has been created to first provide the standard values based on the patient sex. Applied plot marks to indicate the patient BMI on the grid against the CDC values as displayed in figure 4.17. If the patient has multiple visits and the age in months is the same then the calculation provides an average of those results for plotting to the chart.

2 to 20 years: Boys
Body mass index-for-age percentiles

Patient Name: [REDACTED] Sidney Bob1
MRN: 750



Exam Date	Age (years)	Age (Month)	Weight (lbs)	Height	BMI
5/2/2011 1:02 PM	19	225	180	5ft 4in	30.9
5/3/2011 6:25 AM	19	225	30	2ft 10in	18.2
5/3/2011 10:44 AM	19	225	70.4	4ft 3in	19
5/3/2011 10:44 AM	19	225	70.4	4ft 3in	19
5/6/2011 11:14 AM	19	225	165	5ft 1in	31.2
5/30/2011 1:48 PM	19	225	173	5ft 3in	30.6
7/20/2011 2:19 PM	19	227	180	5ft 5in	30
9/16/2011 1:36 PM	19	229	157	4ft 11in	31.7

Figure 4.17– Patient Growth Chart Management Report

Though not a requirement, the patient specific data in a table below the chart for data validation will also be displayed.

Educational Resources

Part of the Meaningful Use requirement 170.302 (m) Patient Education, Educational Resources. Previous versions had Google search functionality. The search has been extended, becoming configurable supporting multiple search providers.

Search providers code	Description	Display order	Url	Access string code	Launch external flag	Active
Contains: ▾	Contains: ▾	Equals: ▾	Contains: ▾	Contains: ▾	Contains: ▾	Contains: ▾
google	Google	1	http://www.google.com/search?q={0}		Y	Y
webmd	WebMD	2	http://www.webmd.com/search/search_results/default.aspx?query={0}&sourceType=undefined		N	Y
* Click here to add a new row						

Figure 4.18 – Lookup table SearchProviders entries

When adding a new search provider it is important to replace the search parameters with the placeholder {0} as this will be substituted for the text box on the main app when the search is called.

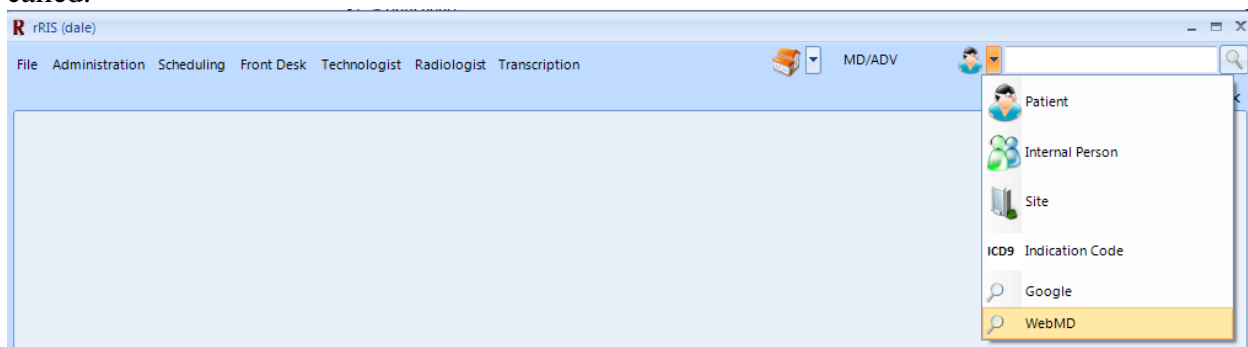


Figure 4.19 – Displaying Search Provider options

Prep Instructions Hyperlink

A hyperlink has been added to the Prep Instructions sections of the scheduling, registration, technologist windows

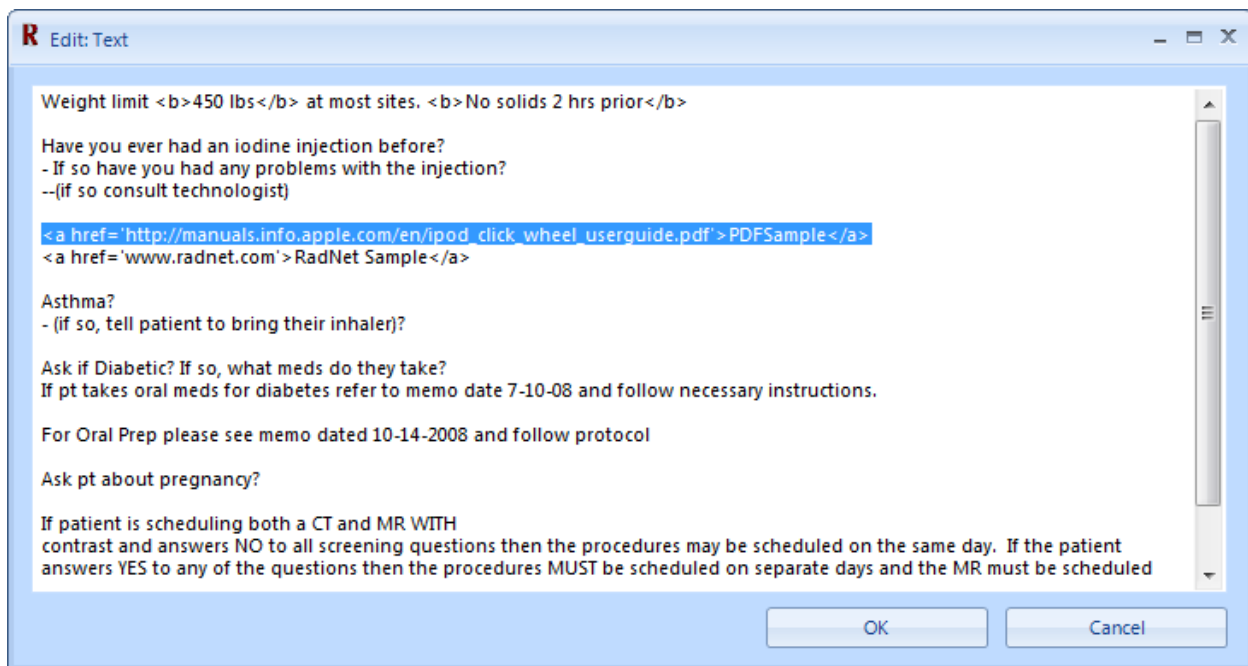


Figure 4.20 – Adding hyperlink to prep instructions

Hyperlinks are edited in the lookup editor for the prep instructions and are coded as shown above as standard a href (html) tags.

The screenshot displays the rRIS (kevin) application window. The top menu bar includes File, Administration, Scheduling, Front Desk, Technologist, Radiologist, and Transcription. The patient information bar shows 'Patient: ian power (19)' and 'Registration (power ian)'. The main window has tabs for Patient, Contacts / Demographics, Order[A], Order[B], Order[C], Exam, Visit History, and Image Requests. The 'Order' tab is active, showing a table of orders with columns for Order, Studies, Duration, Room, and Scheduled Date. Order C is selected, showing 'CT 3 Phase' with a duration of 30 minutes and scheduled for 09-13-2011 2:55 PM in room CT1LU. Below the table, there are fields for 'Body Part' and 'Laterality'. The 'Prep Instructions' section is expanded, showing a 'General CT' section with various instructions and hyperlinks. The hyperlinks are 'PDFSample' and 'RadNet Sample'. The 'Prep Instructions Reviewed' checkbox is unchecked. At the bottom, there are buttons for 'Checking In', 'Arrive', 'Save', and 'Close'. The status bar at the bottom left shows 'Connected: Debug'.

Order	Studies	Duration	Room	Scheduled Date
A	CT Head W_Ear, Orbit, Sella W(Head,)	30	CT1LU	09-13-2011 1:25 PM
B	CT Head W_Ear, Orbit, Sella W(Head,)	30	CT1FH	09-13-2011 1:25 PM
C	CT 3 Phase	30	CT1LU	09-13-2011 2:55 PM

Body Part: Laterality:

Prep Instructions: ☐ Prep Instructions Reviewed

General CT

Weight limit **450 lbs** at most sites. **No solids 2 hrs prior**

Have you ever had an iodine injection before?
- If so have you had any problems with the injection?
--(if so consult technologist)

[PDFSample](#)
[RadNet Sample](#)

Asthma?
- (if so, tell patient to bring their inhaler)?

Ask if Diabetic? If so, what meds do they take?
If pt takes oral meds for diabetes refer to memo date 7-10-08 and follow necessary instructions.

For Oral Prep please see memo dated 10-14-2008 and follow protocol

Ask pt about pregnancy?

If patient is scheduling both a CT and MR WITH contrast and answers NO to all screening questions then the procedures may be scheduled on the same day. If the patient answers YES to any of the questions then the procedures MUST be scheduled on separate days and the MR must be scheduled first.

All children must be accompanied by an adult other than the patient

Checking In Arrive Save Close

Connected: Debug

Figure 4.21 – Sample displaying hyperlinks in Prep Instructions.

Proxy Signing User Preference

A new user preference “Proxy Signing” has been added. Users can specify who will be able to proxy sign on their behalf. Also as a display only, it will inform who you (the user preferences of the user logged in) that you may sign for.

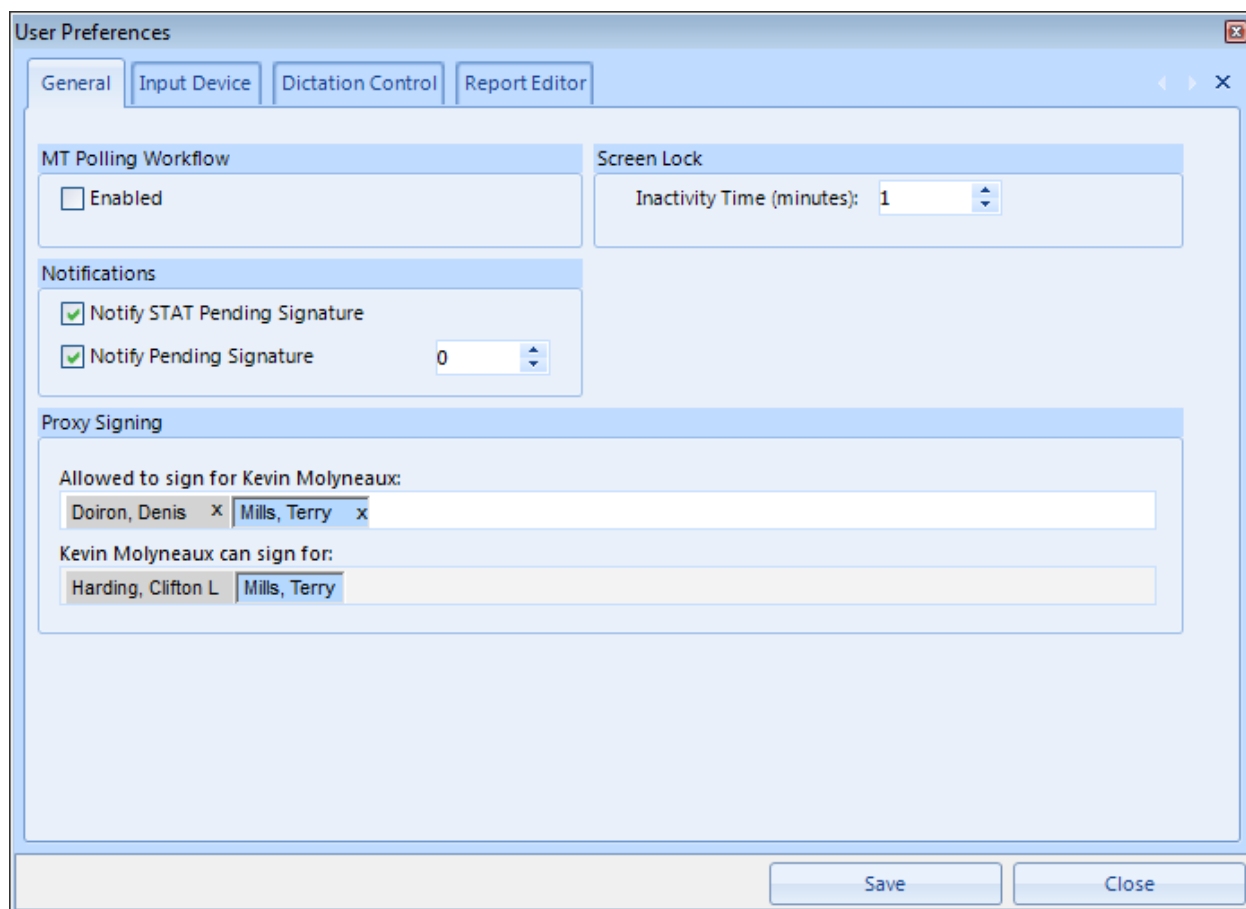


Figure 4.22 – Displaying User Preferences, Proxy Signing. Notice that the “Can sign for” is read only.

For admins, Proxy Signing can also be administered from the Personnel editor.

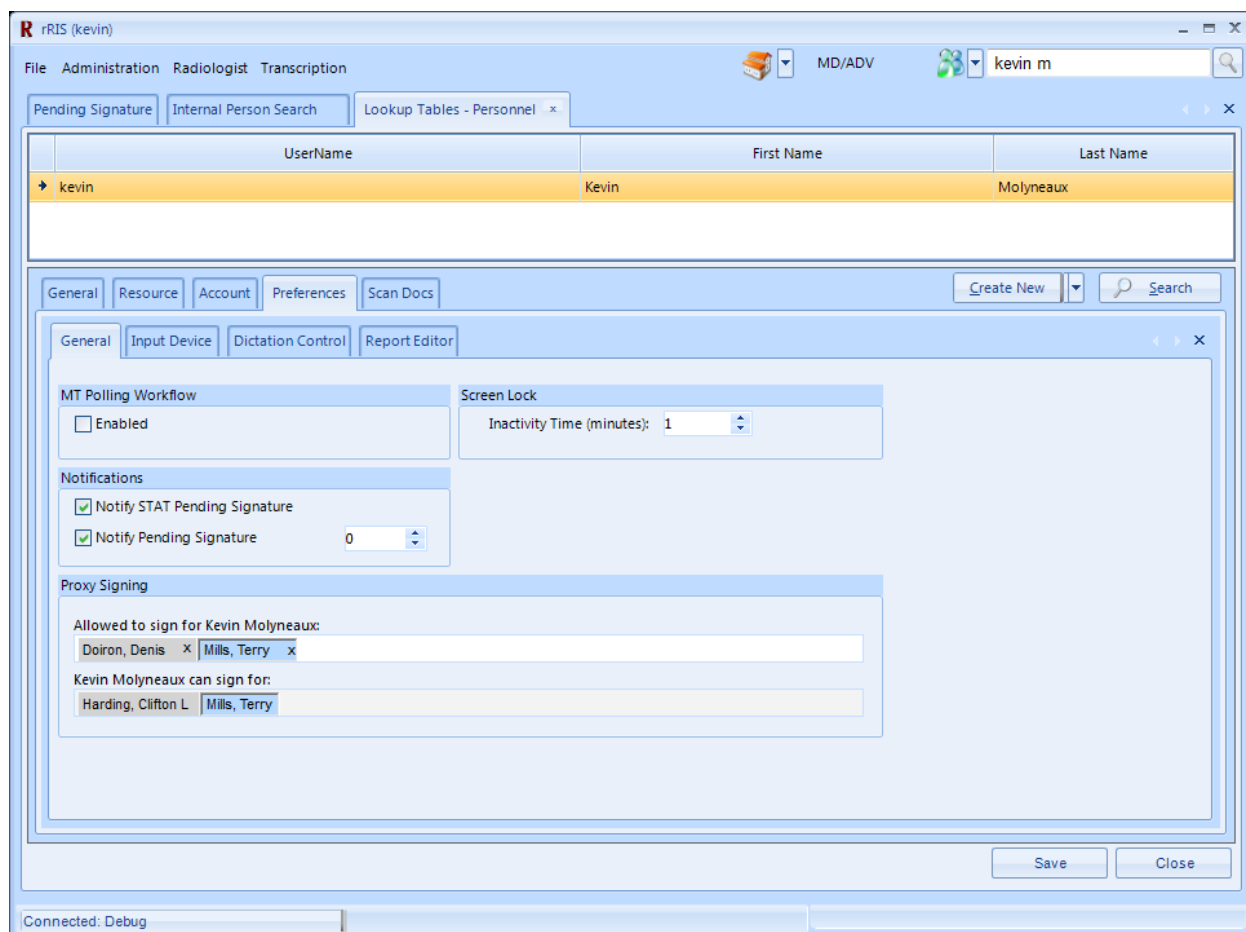


Figure 4.23 – Personnel editor

5. Known Limitations

Bugs, Suggested Features, and Support Issues are tracked in a web based system called Redmine. The following is a snapshot of the issues found in Build 1.23.

#	Status	Subject	Category	Target version
630	New	Manage policies that have policy number that begins with + symbol are not added to Billing Exception work list	Thick Client GUI	1.23
629	Resolved	Manage Policies - Policy Holder information fields don't populate everytime	Thick Client GUI	1.23
628	Resolved	IVT - Selecting a carrier returns error	Web Services/DB	1.23

626	New	Removing procedure will delete all attachments associated with procedure stored at exam level	Thick Client GUI	1.23
625	Resolved	Changing order at the time of scheduling	Thick Client GUI	1.23
624	New	Schedule exam, selecting time from Advance tab can make available times "jump"	Thick Client GUI	1.23
623	Resolved	Edit order > Attachments > selecting Scan or Import prompts to select document type.	Thick Client GUI	1.23
621	New	Attempting to create an order with a newly created unknown referrer throws exception	Thick Client GUI	1.23
619	New	Orders to Schedule > Attempt to Schedule on locked order then cancel throws exception	Thick Client GUI	1.23
618	New	Orders to Schedule > Attempt to Mark Order on locked order then cancel returns error on getdata	Thick Client GUI	1.23
617	New	Registration / scheduling / edit order open in read only mode from orders to schedule prompts to save changes	Thick Client GUI	1.23
616	Resolved	Radiologist > Diagnose > Skip and continue	Thick Client GUI	1.23
615	Resolved	Reset/Open skipped rows	Thick Client GUI	1.23
611	Resolved	Personnel > Edit contact information > Edit address can go blank if user removes text	Admin Tools	1.23
610	Resolved	Personnel Editor - Exception thrown from closing without saving first	Admin Tools	1.23
609	Resolved	Closing Personnel Editor throws exception	Admin Tools	1.23