

User Pre-Release Notes

for RADNET rRIS

Build 1.07

Table of Contents

1. Purpose.....	3
2. Intended Audience	3
3. Installing/Accessing the Application	3
4. New Features and Enhancements	4
Database Change Management.....	4
Modality Closure	4
Procedure Modality Mapping	5
User Schedule Group	8
Procedure Plan	9
Patient Merge	9
Display “Locked By” on the Worklist	11
Improvements to Broken Lock Workflow	11
Worklist Multi-Select.....	12
Patient Search Wild Card Support with Sounds Like	13
5. Known Limitations	14

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	XRay
	CR2	CR2		CR002	Y	Y	XRay
➔	CT	CT	HL7 CT	CT001	Y	Y	XRay
	DX	DX	HL7 DX		Y	Y	XRay
	MG1	MG1	HL7 Mammo	MG001	Y	Y	XRay
	MR1	MR	HL7 MR	MR001	Y	Y	XRay
	RG34	RG	HL7 RG	RG001	Y	Y	XRay
* 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.

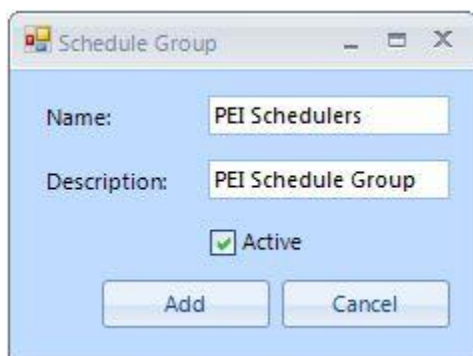


Figure 4.2 is a screenshot of a 'Schedule Group' dialog box. It has a title bar with a standard Windows icon and window controls. The dialog contains three input fields: 'Name' with the text 'PEI Schedulers', 'Description' with the text 'PEI Schedule Group', and a checkbox labeled 'Active' which is checked. At the bottom of the dialog 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.

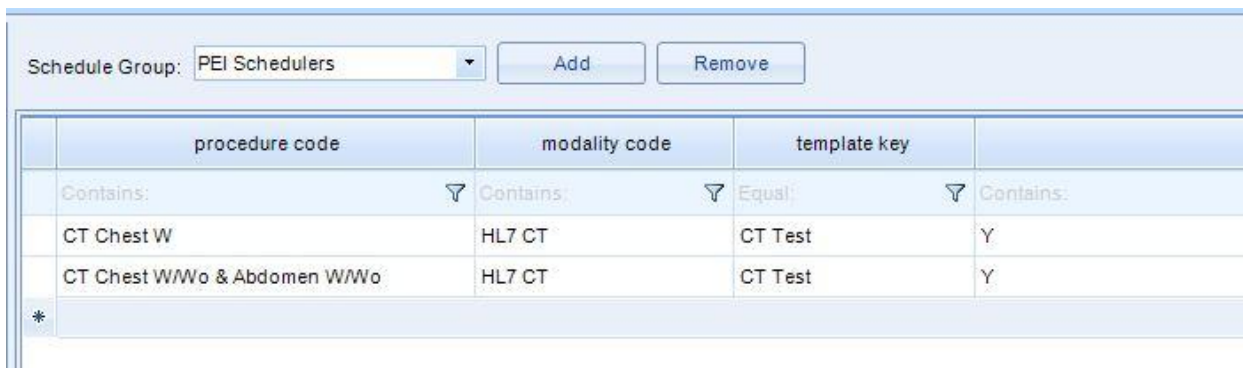


Figure 4.3 is a screenshot of the 'Schedule Group Configuration Screen'. At the top, there is a 'Schedule Group:' dropdown menu currently set to 'PEI Schedulers', followed by 'Add' and 'Remove' buttons. Below this is a table with four columns: 'procedure code', 'modality code', 'template key', and an empty column. The table contains two rows of data. Each row has a 'Contains:' label with a funnel icon to its left. 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 '*' symbol is visible in the bottom left corner of the table area.

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

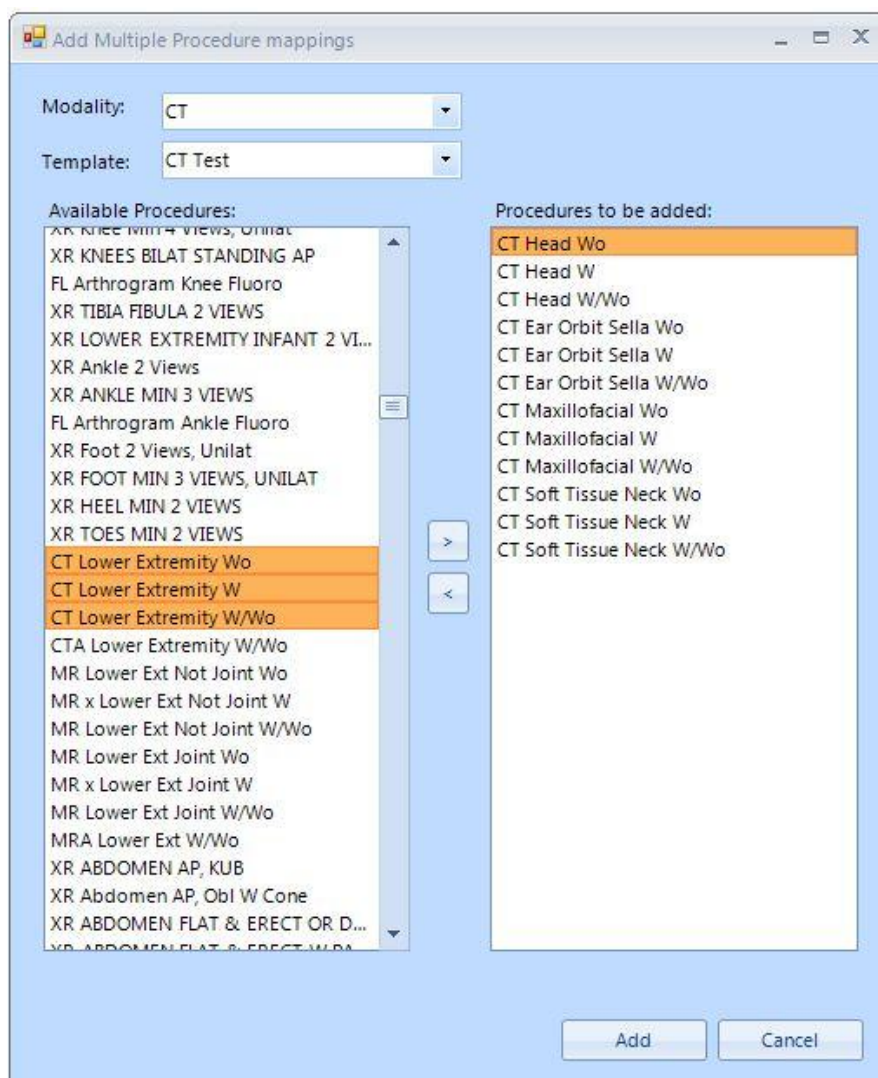


Figure 4.4 – Adding Multiple Procedures to Schedule Group

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 red box labeled 'Set Schedule Group'. Below the 'Schedule Group' dropdown are three buttons: 'Edit', 'Add', and 'Remove'. To the right of the form is a table with two columns: 'Address' and 'Contact'.

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	

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:		Plan Procedures:			
Drag a column here to group by this column:		Procedure	Min Wait Time	Max Wait Time	Sequence
+	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			

+	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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Lookup Tables - ProcedurePlan Patient Search Patient Merge (MRN 84659 to 46915) x

Source (This patient will be removed)

First Name: Yvonne3 Middle Name: 47417 Last Name: Macias Birth Date: 06-14-1988 MRN: 84659 Gender: Unknown

Contact Info: 674 Nobel Way 442 Nobel Parkway El Paso, Minnesota 38815 (Palau)

Source Patient

Destination (This patient will receive all clinical data)

First Name: Yvonne Middle Name: 25697 Last Name: Macias Birth Date: 05-22-1981 MRN: 46915 Gender: Male

Contact Info: 35 Fabien Avenue 12 White Cowley Blvd. Dayton, Oklahoma 65372 (Macao)

Destination Patient

Clinical Data: Accession Status Procedures Scheduled Dictated Transcribed Signed

Figure 4.8 – Patient Merge Screen showing Source and Destination Patient

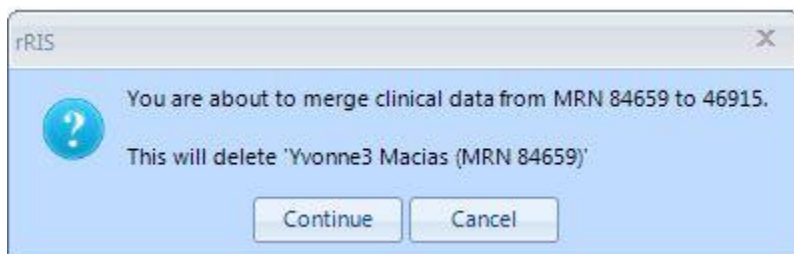


Figure 4.9 – Patient Merge Warning Message

Lookup Tables - ProcedurePlan Patient Search Pending Orders Technologist WL Reception WL Lookup Tables Audit (Elaine Boone) x

Show entries for:

☐ Patient ☐ Order ☐ Study ☒ Everything for this patient

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.

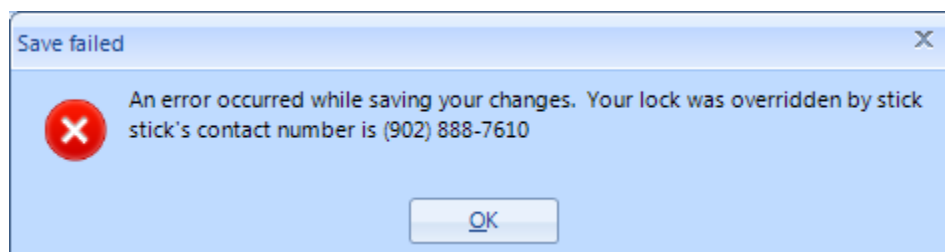


Figure 4.12 – Error Message when Saving a Broken Lock

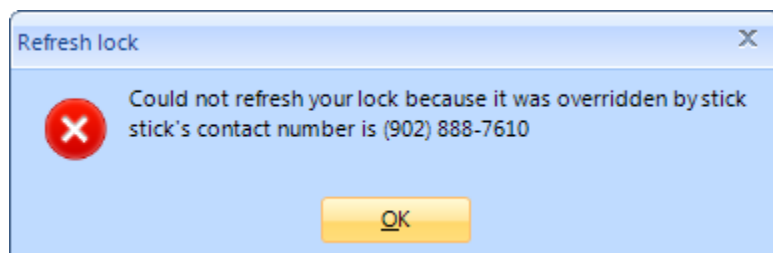


Figure 4.13 – Error Message when Refreshing a Broken Lock

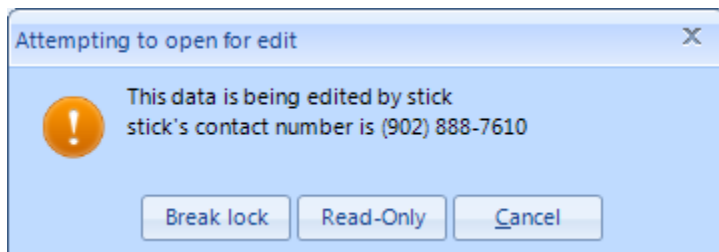


Figure 4.14 – Error Message when Opening Locked Data

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> (new) Refresh </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		
Tania963	Welch	469		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”.

The screenshot shows the 'Patient Search' window in the rRIS application. The 'Search Criteria' section includes fields for 'First Name' (a%), 'Last Name' (smythe), 'Birth Date', and 'MRN'. The 'Sounds Like' checkbox is checked. Below the search criteria is a table of search results.

	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

RADNET, Inc. – rRIS Pre-Release Notes

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	