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.

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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.

Figure 4.1 – Age Calculated Field

Figure 4.2 – Age Calculated Field for Infant

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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.

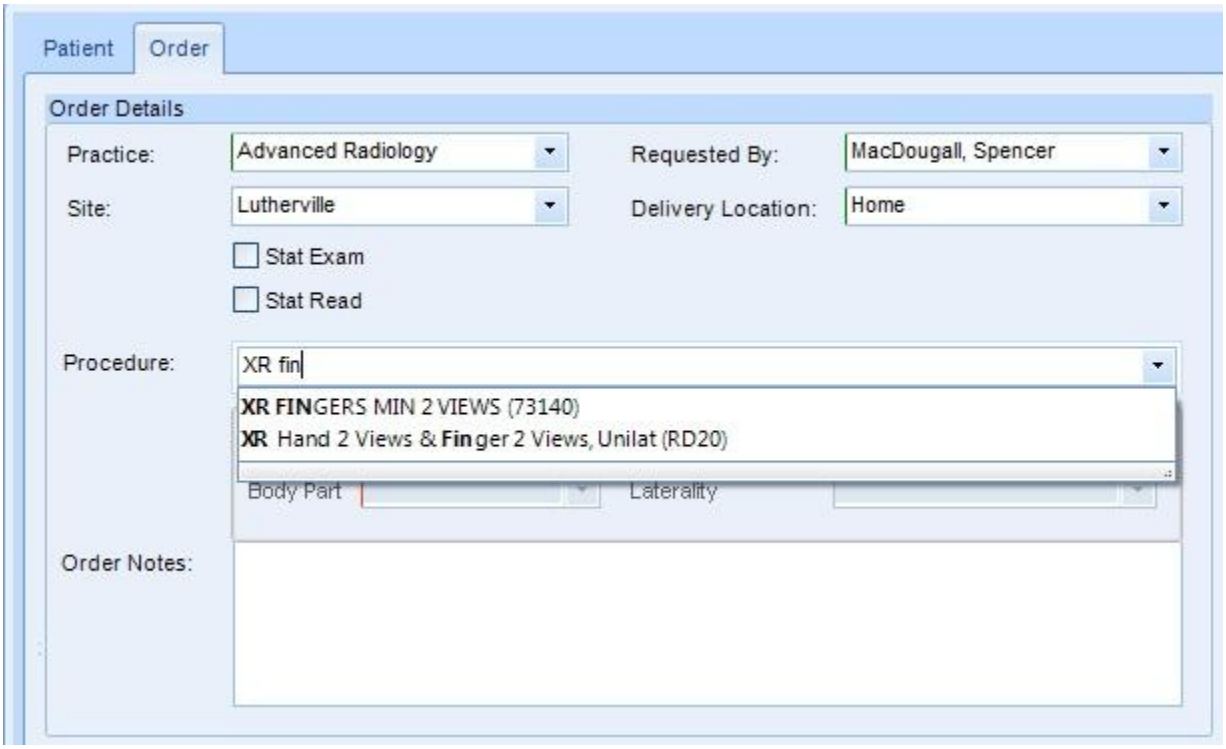

Figure 4.3 – Type Ahead Results for Procedure like "XR fin"

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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.

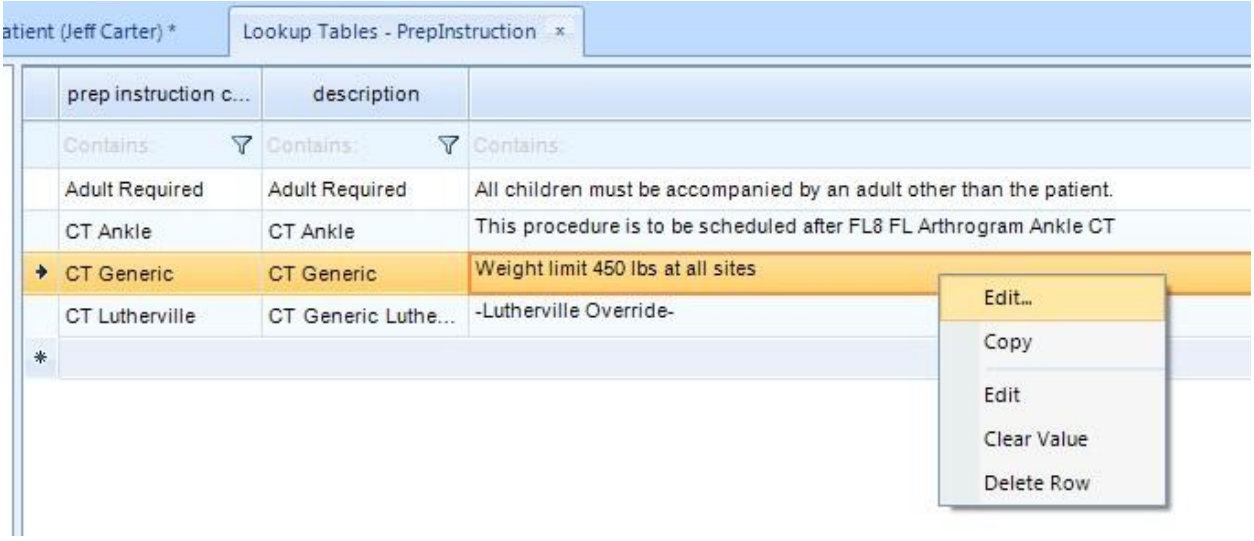

Figure 4.4 – PrepInstruction Lookup Table

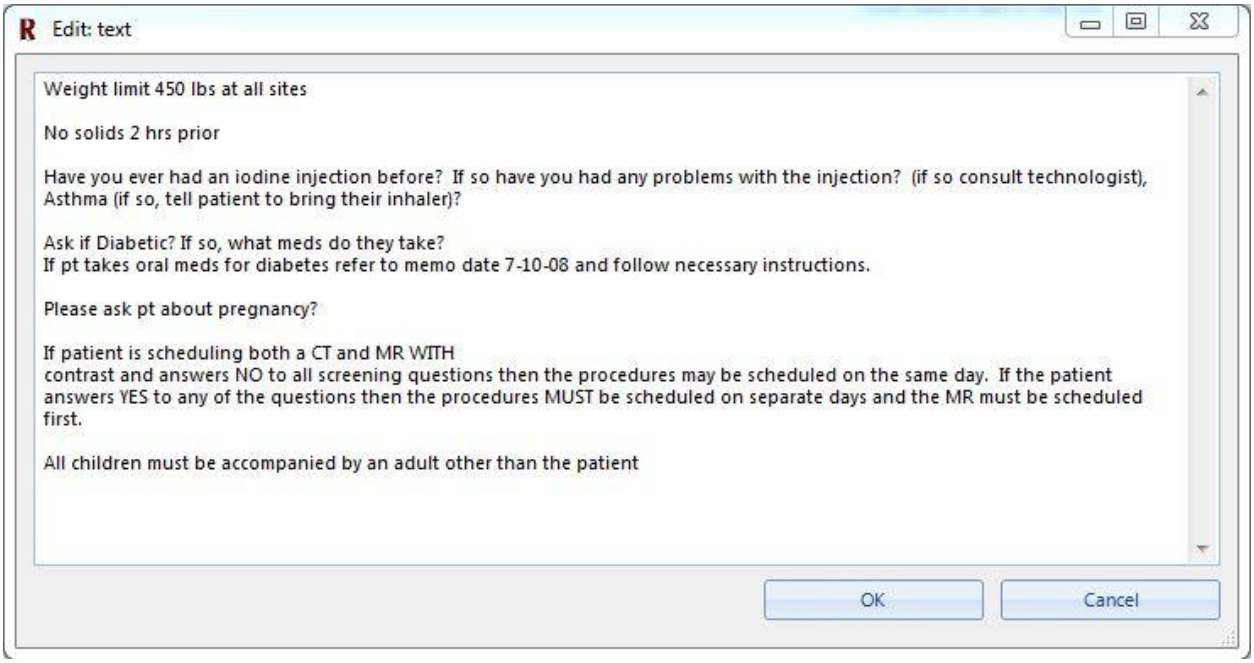

Figure 4.5 – Text Entry Form for CT Generic Prep Instruction

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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.

tient (Jeff Carter) * | Lookup Tables - ProcedureCode

procedure code	description	bo	late	acti	dis	duration	bir	prep instruction code
Contains:	Contains: CT A					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

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

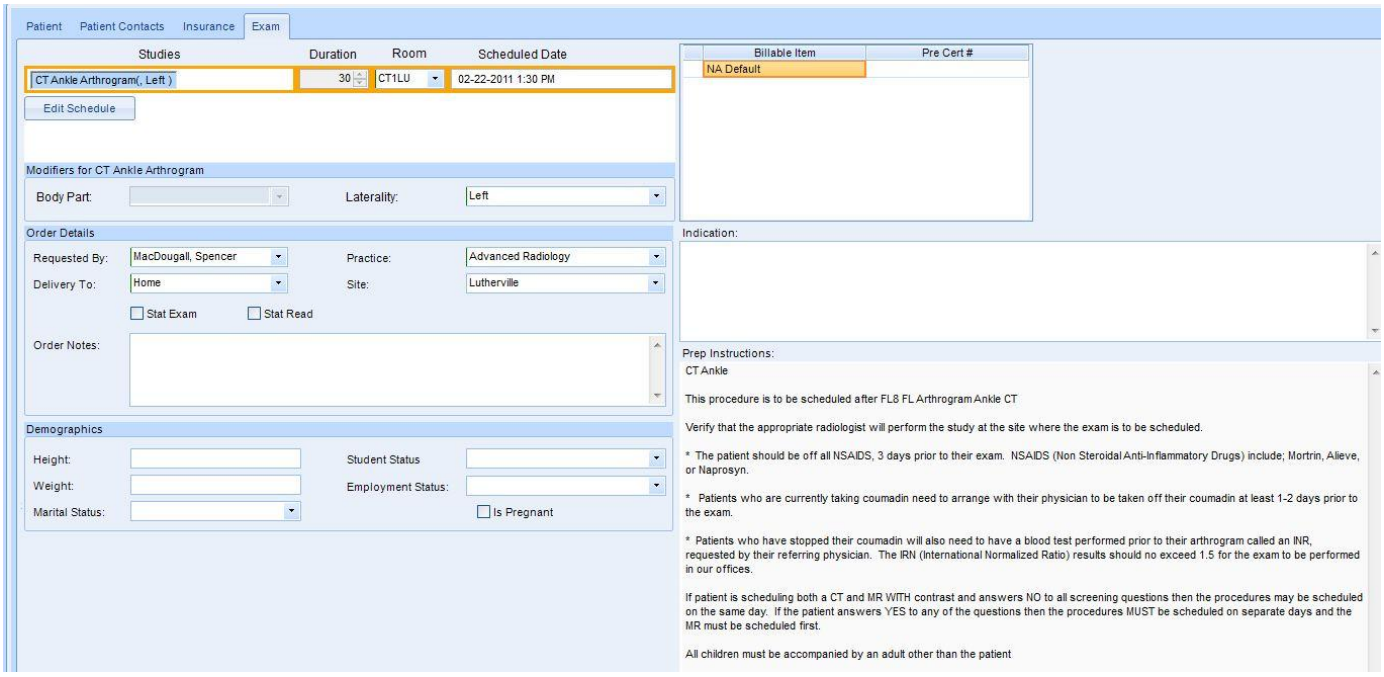

Figure 4.8 – Registration Screen Illustrating Prep Instructions for CT Ankle

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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

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 Thearpy
SC	Seconday Capture
SP	Special Procedures
UL	Ultrasound
XR	Plain Film/Xray/CR

Figure 4.9 – Modality Type Lookup Table Values

Lookup Tables - Modality

Modalities:

modality code	d	ae title	digital flag	active flag	site code	
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

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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.

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

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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 toge
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
20606	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.

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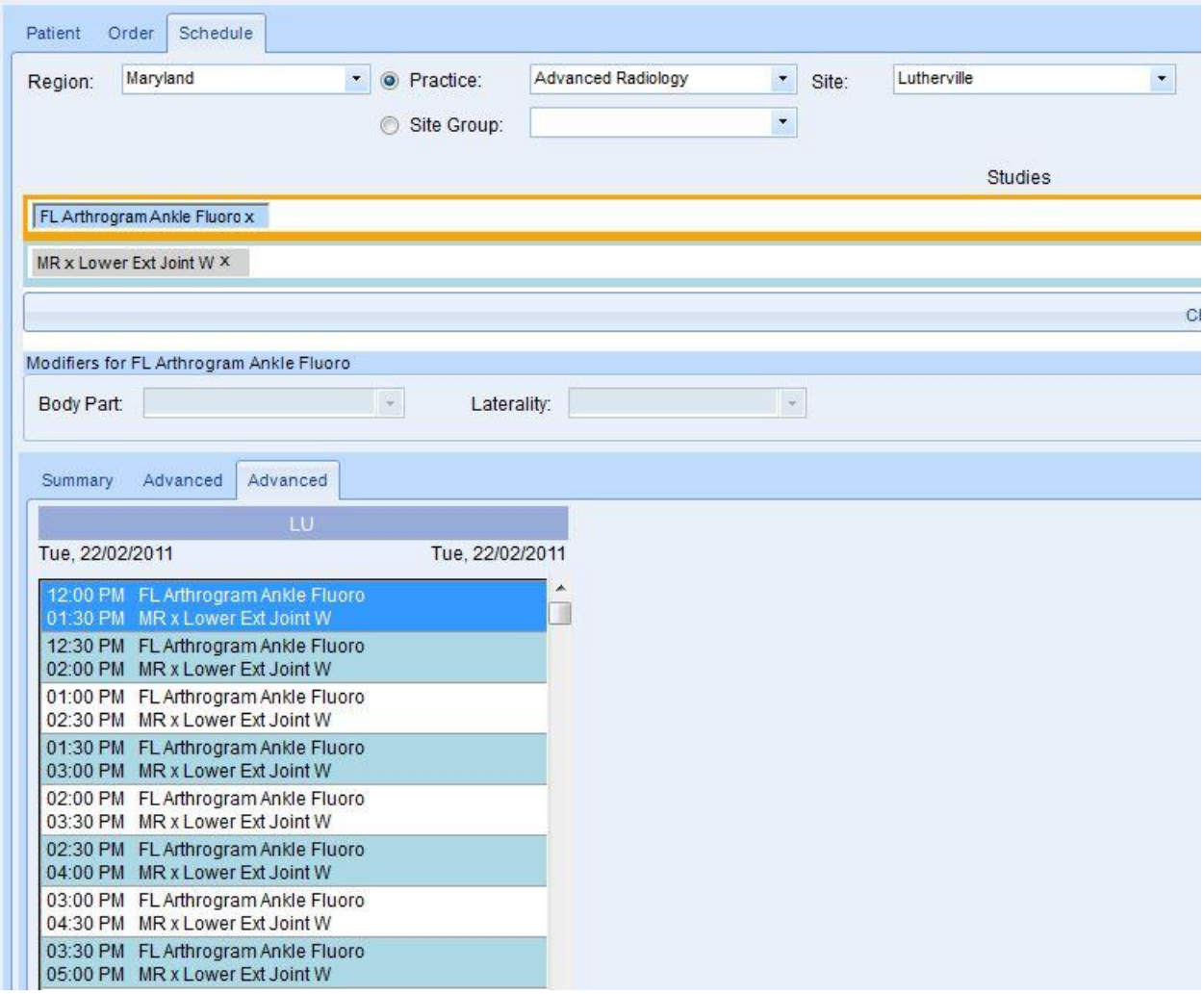

Figure 4.13 – Scheduling Search Results for Composite Code

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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.

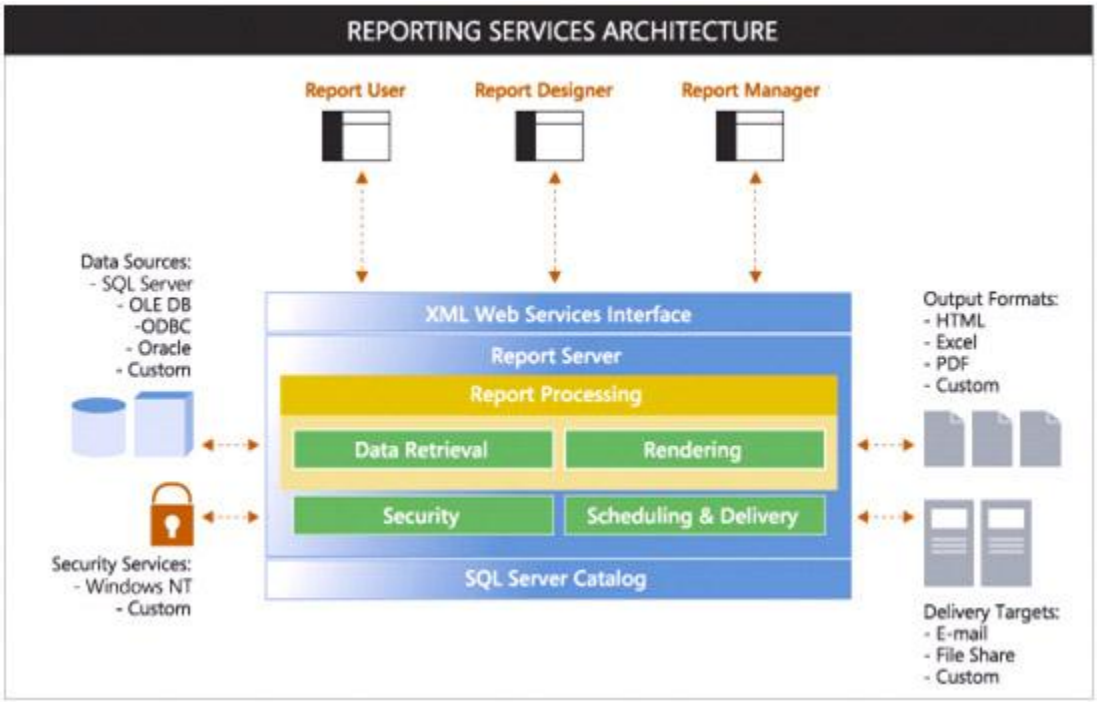

Figure 4.14 – Diagram of Microsoft Reporting Services Architecture

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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.

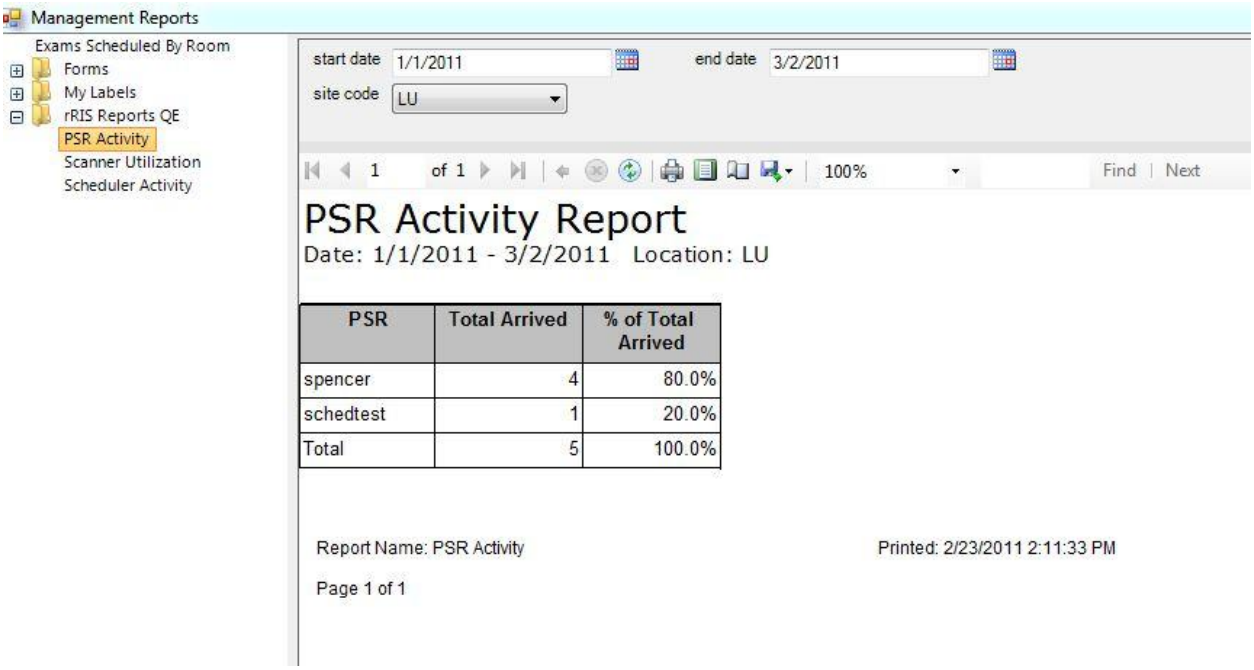

Figure 4.15 – Sample Management Report available in rRIS

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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 instuctions	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	Web 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	1.10	0	
205	Resolved	MRN - System allows duplicate Patient ID's	Web 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 instuctions	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	

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