

# **User Pre-Release Notes**

for RADNET rRIS  
Build 1.13 & 1.14

**Table of Contents**

1. Purpose..... 3

2. Intended Audience ..... 3

3. Installing/Accessing the Application ..... 3

4. New Features and Enhancements ..... 4

    Export to Microsoft Excel for Worklist Printing ..... 4

    Read-Only Notes Field ..... 5

    Availability Templates on the Schedule Calendar ..... 6

    Patient History Control ..... 7

    Scanning Control ..... 7

    Associating Scanned Documents ..... 13

    Bulk Printing of Forms ..... 16

    Mapping Forms and Labels ..... 18

    Data Nuggets..... 19

    IVT Workflow ..... 20

    Technologist Workflow ..... 25

5. Known Limitations ..... 29

## **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.

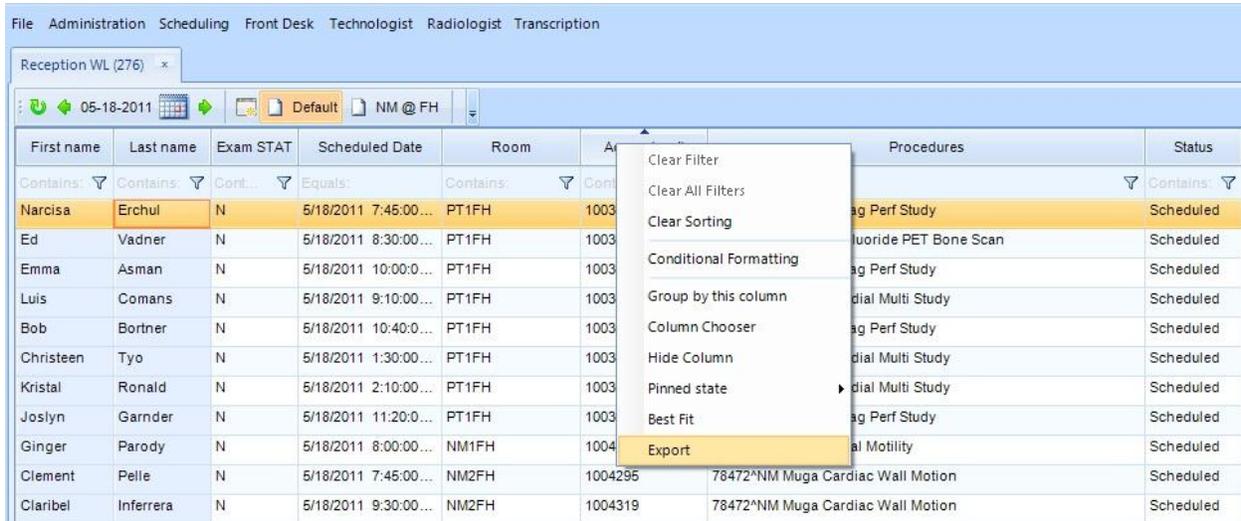


Figure 4.1 – Worklist Export Option

	A	B	C	D	E	F	G	H
1	<b>Reception WL (276)</b>							
2	05-18-2011 11:34 AM							
3	<b>First name</b>	<b>Last name</b>	<b>Exam STAT</b>	<b>Scheduled Date</b>	<b>Room</b>	<b>Accession #</b>	<b>Procedures</b>	<b>Status</b>
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.

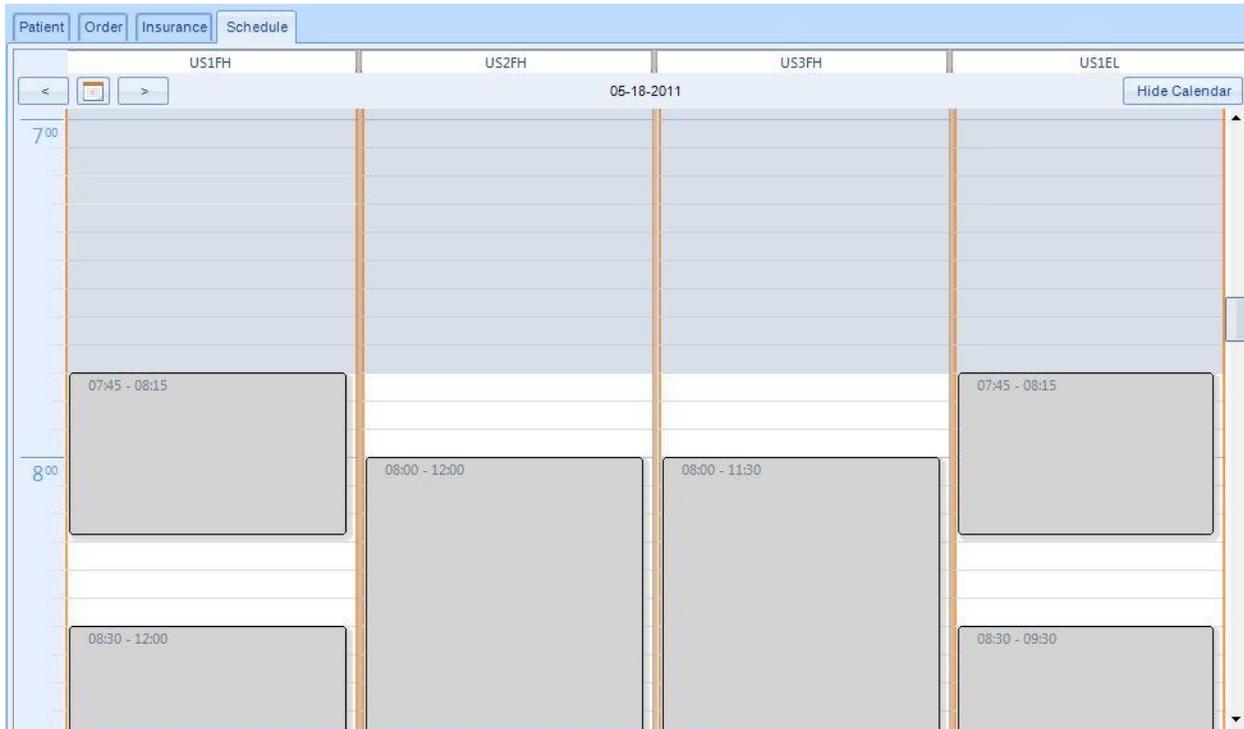
In Build 1.14 a new notes control has been introduced which allows any user to add notes in the top area of the control and everyone can see the past notes as read-only. Each log entry is prefixed with the date followed by the user's initials. Super users will have the ability to edit the notes so invalid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

The screenshot displays a web-based interface for a medical system. At the top, there are three tabs: 'Patient', 'Order', and 'Insurance'. Below these is a 'Referring Details' section with 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). Below that is the 'Exam Requested' section with fields for 'Practice:' (Advanced Radiology), 'Site:', 'Study(s):' (CT 3 Phase x), 'Body Part:', 'Laterality:', and checkboxes for 'Stat Exam' and 'Stat Read'. The bottom section is 'OrderNotes', which contains a list of four read-only notes, each starting with the date '05-18-11' and initials 'sbm': 'Patient requires an interpreter', 'Insurance was denied. Patient has been contacted', 'Patient called and is taking vacation, would like to move appt to the 25th', and '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.

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

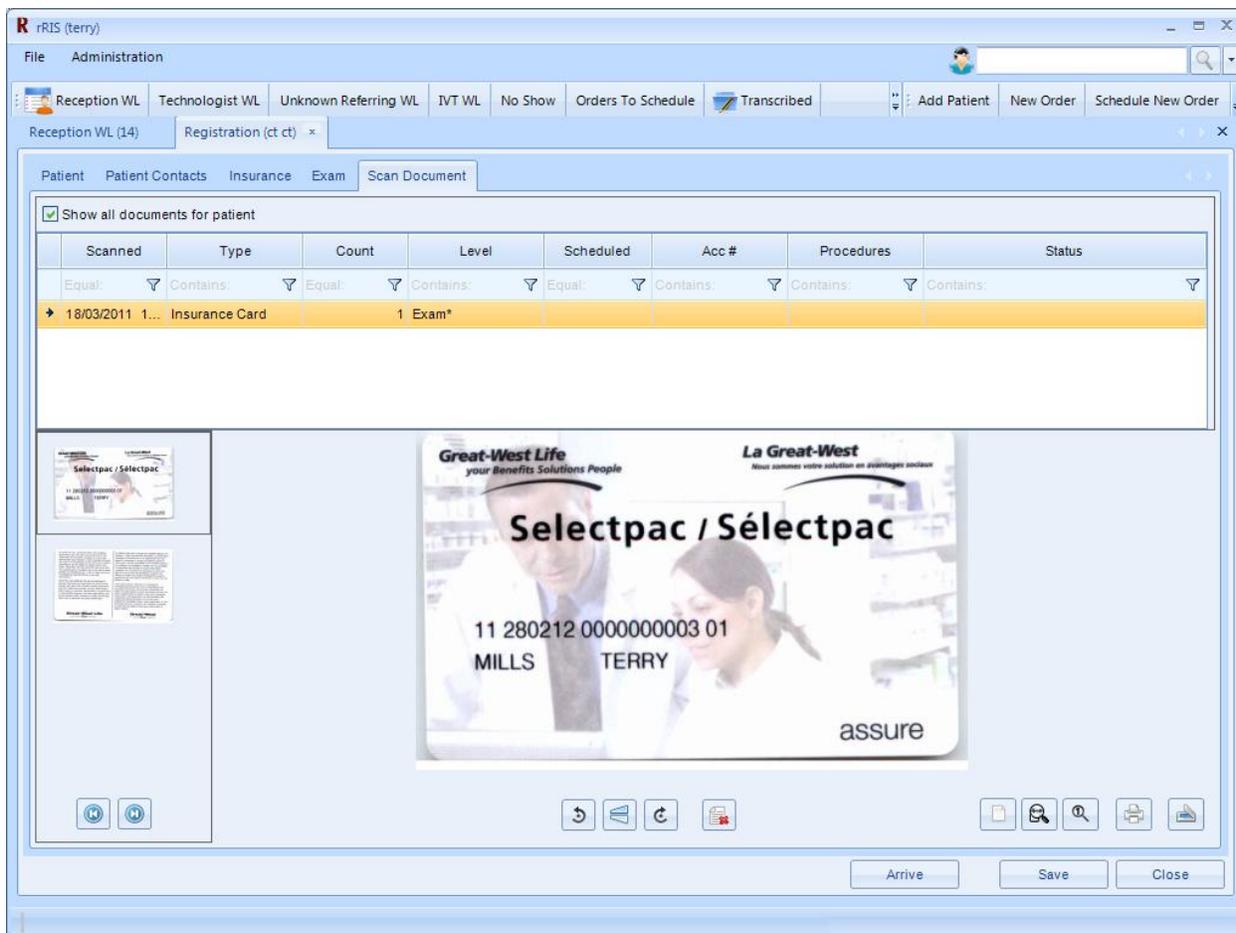
**Figure 4.5 – Patient History Control shown on Technologist Screen**

## 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.

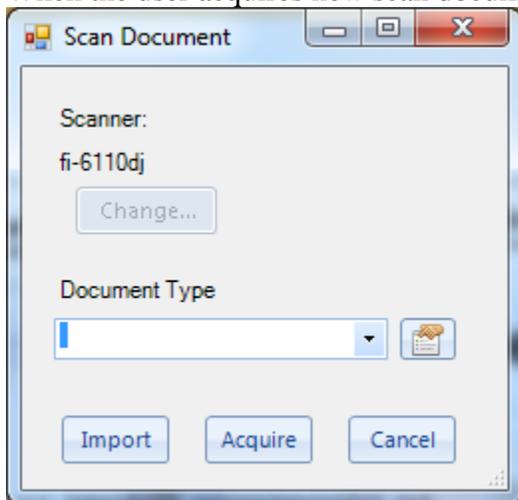


**Figure 4.7 – Scan Control Thumbnail Strip**

- 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.

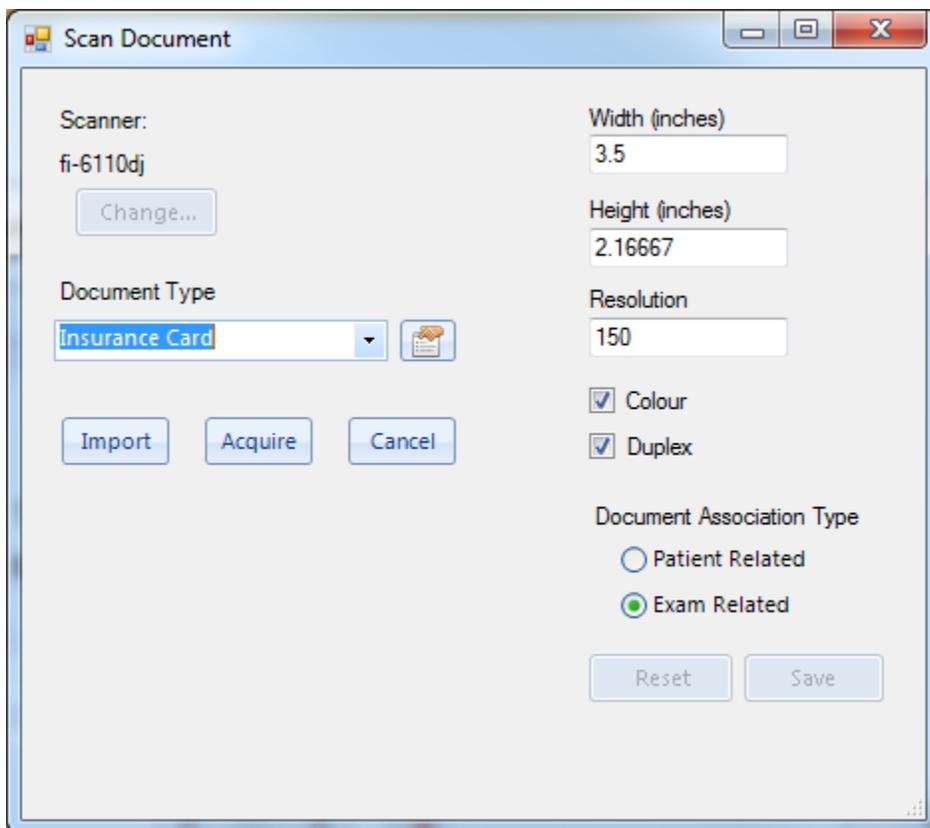
	Rotate the image 90 degrees to the right. This will always be enabled for newly acquired images to allow the user to correctly orient the image. However, it depends on permission if the button will be enabled for previously scanned documents.
	Flip the image on the horizontal axis (same as rotating it 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 used 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:



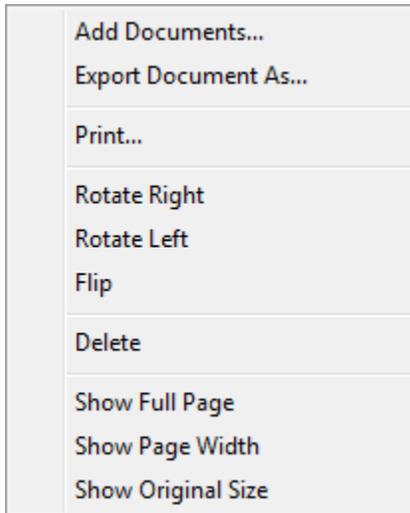
**Figure 4.9 – Scan Document Properties Screen**

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.

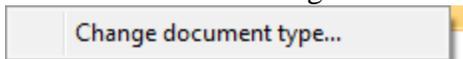
The image area of the control has the following context menu:



**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.

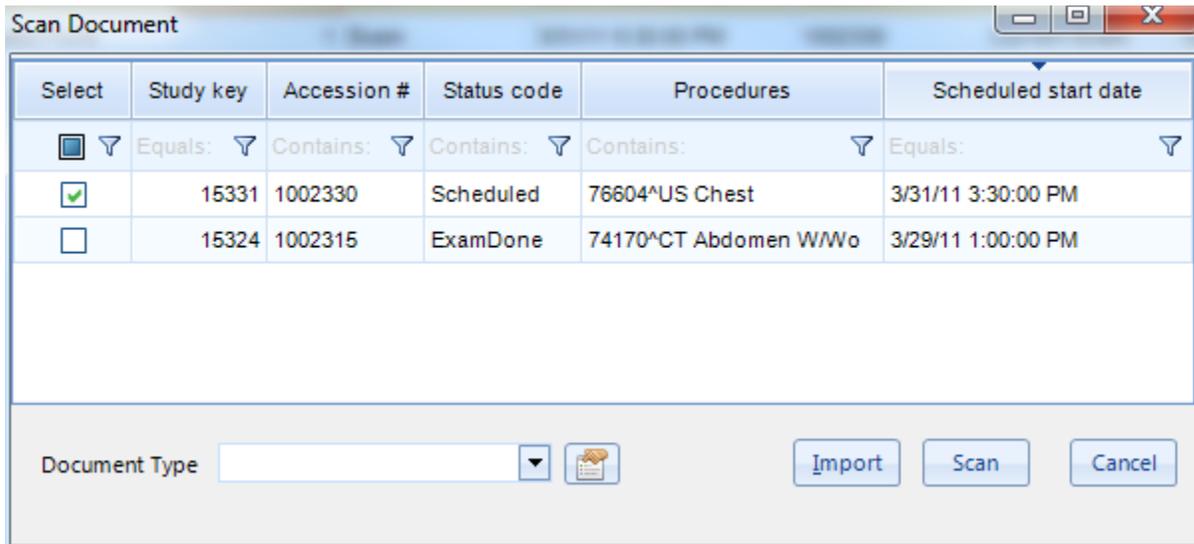
## Associating Scanned Documents

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.

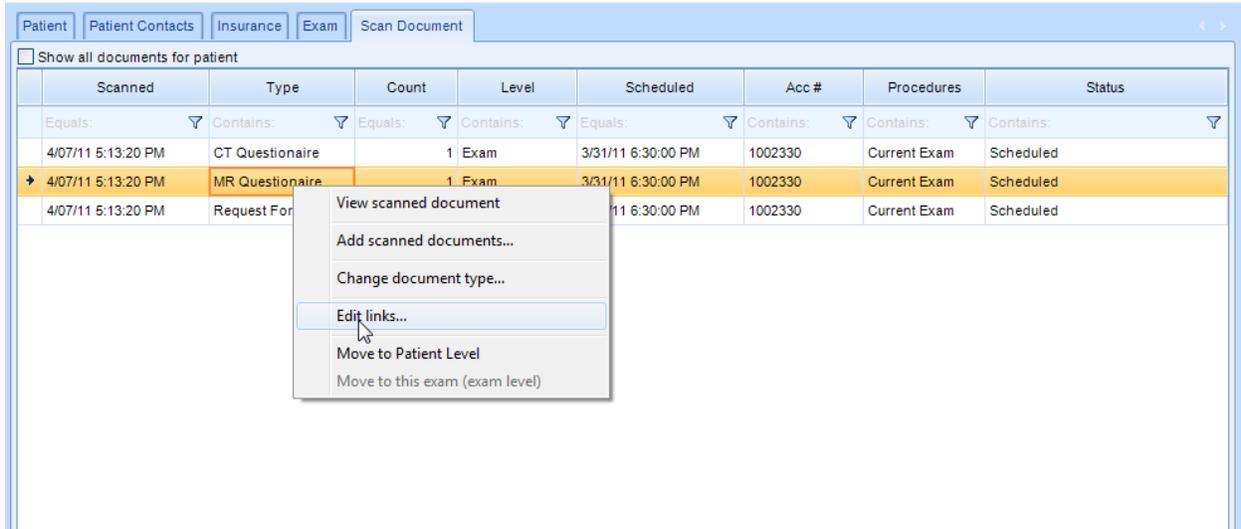


**Figure 4.11 – Associating a Scanned Document to a Study during Acquisition**

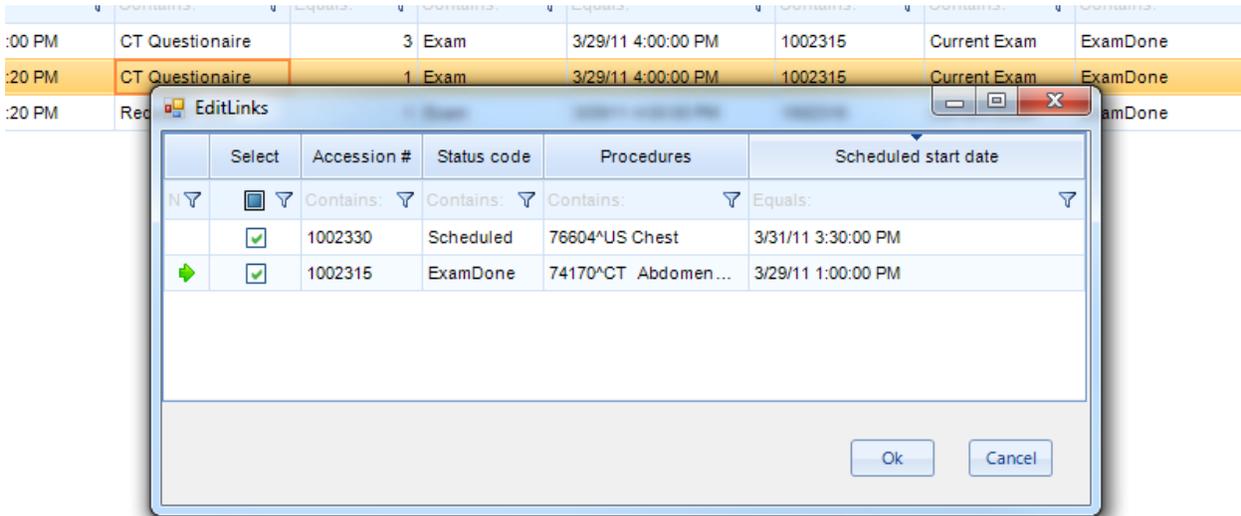
The patient jacket contains a complete list of the patient exams. A check box was added for each row. The current exam is always checked and cannot be unchecked. The user can check other exams. The newly acquired or imported image will be linked to every exam “checked” in the patient jacket. However, 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**

## RADNET, Inc. – rRIS Pre-Release Notes

---

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

<b>Function</b>	<b>Description</b>
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 software interface with a table of patient appointments. A context menu is open over the row for Cathi Griner. The menu includes options like 'Registration', 'Edit Patient', 'Forms and labels', 'Patient Folder', 'Audit History', and 'Copy Cell'. The 'Forms and labels' option is expanded, showing a sub-menu with 'Exams' and 'CT History Sheet'. The 'Exams' sub-menu is further expanded, listing various forms such as 'Exam Form', '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	76508*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...	US1FH	1005434	US62*US OB Follow Up 1 Fetus 2-3 Tri & OB TV	Scheduled
Lynne	Lage	N	5/19/2011 8:00:00...	US1FH	1005460	US11*US OB III 2-3 Tri TA TV 1 Fetus	Scheduled
Teodora	Feit	N	5/19/2011 8:00:00...	US1FH	1005786	77031*MA Stereotactic Biopsy	Scheduled
Luke	Llera	N	5/19/2011 8:00:00...	US1FH	1005984	73031*MA xDigi Mam Scr Bil & Diag Bil	Scheduled
Olympia	Stringfellow	N	5/19/2011 8:00:00...	US1FH	1005996	MF10*US OB III 2-3 Tri TA TV 1 Fetus	Scheduled
Ines	Welch	N	5/19/2011 8:00:00...	US1FH	1006034	70031*MA xDigi Mam Scr Bil & Diag Bil	Scheduled
Diedre	Pomiecko	N	5/19/2011 8:00:00...	MR1LU	1006034	70031*MA xDigi Mam Scr Bil & Diag Bil	Scheduled
Leonida	Perrett	N	5/19/2011 8:00:00...	MA2FH	1006835	77031*MA xDigi Mam Scr Bil & Diag Bil	Scheduled
Shawnta	Halpert	N	5/19/2011 8:00:00...	MA3FH	1006839	MA10*US OB III 2-3 Tri TA TV 1 Fetus	Scheduled
Hallie	Dopico	N	5/19/2011 8:00:00...	MA1LU	1006851	MA10*US OB III 2-3 Tri TA TV 1 Fetus	Scheduled
Lin	Vanlier	N	5/19/2011 8:05:00...	MA1EL	1006868	MA10*US OB III 2-3 Tri TA TV 1 Fetus	Scheduled
Ruthe	Pauda	N	5/19/2011 8:05:00...	MA1FH	1006898	77031*MA xDigi Mam Scr Bil & Diag Bil	Scheduled
An	Koria	N	5/19/2011 8:15:00...	US3FH	1005487	US10*US OB III 2-3 Tri TA TV 1 Fetus	Scheduled
Rosemarie	Vick	N	5/19/2011 8:15:00...	CT1LU	1005676	72129*CT Thoracic Spine W	Scheduled

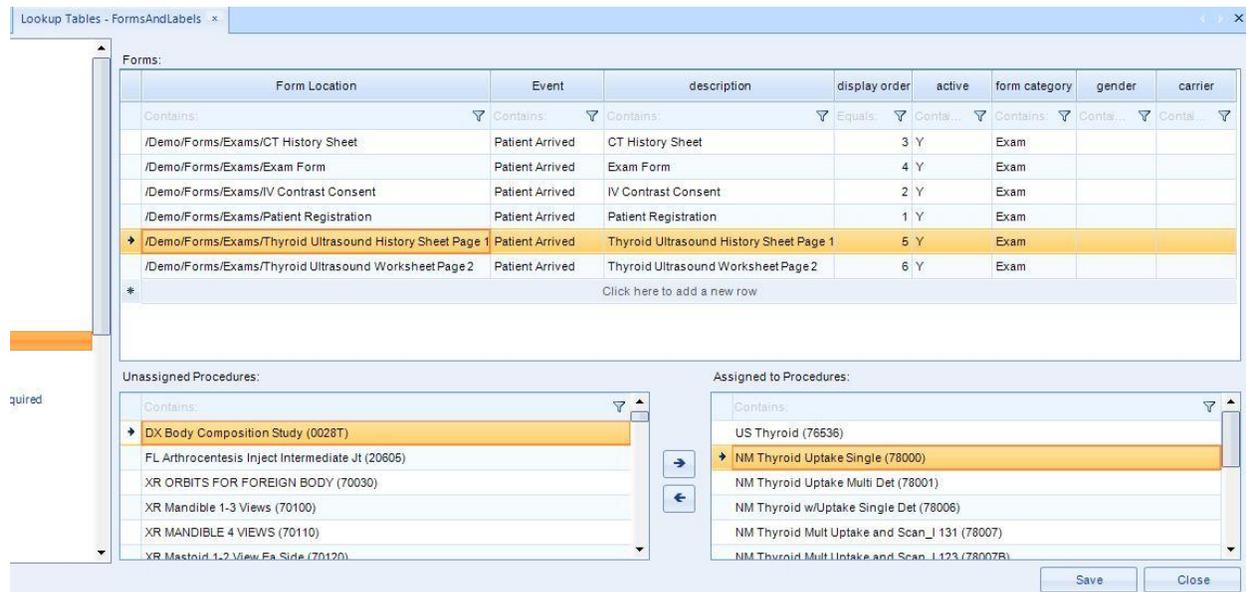
**Figure 4.14 – Dynamic Worklist Context Menu showing Forms and Labels**

Advanced Imaging Partners		<i>Patient Registration</i>	
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><b>To Our Female Patients:</b>                  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>			
_____ Signature of Patient or Personal Representative		_____/_____ Date	
Date of Last Menstrual Period : _____			
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.



**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.



### 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 “statuses” 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.

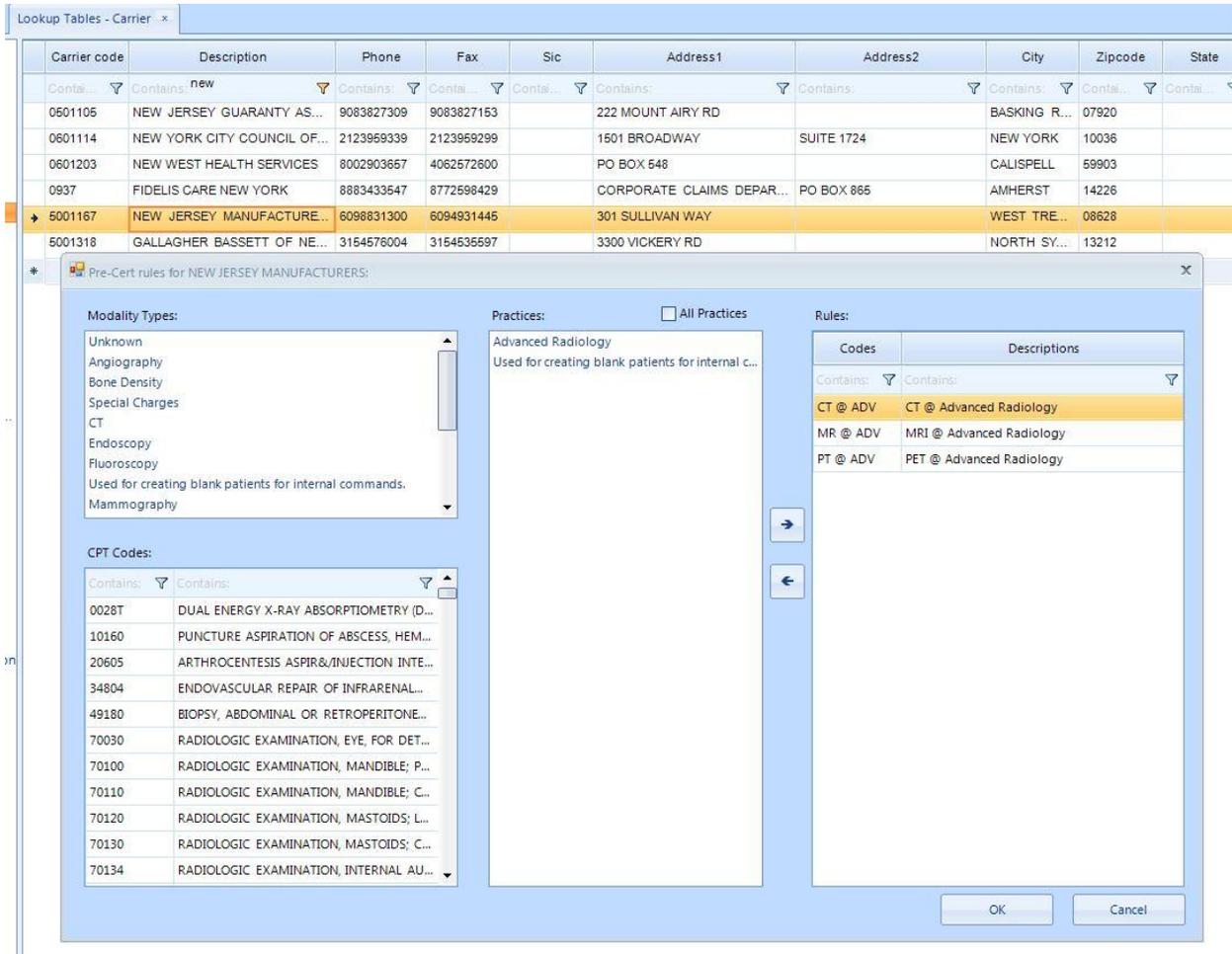
It is also a requirement that during the initial stages of the workflow (ordering, checking in, tech workflow) that studies and/or insurances may be altered. This may invalidate PC numbers and must be able to automatically send these orders back to the IVT worklist without losing any data that was already 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.

Last name	First name	IV required	Patient key	Pre-cert required	Order key	Procedures	Status	Insurer	Practice	Order date
Bellaire	Eisuko 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	156634	REQUIRED	18258	72130*CT Thoracic Spine W/Wo	OrderSigned	DEPARTMENT OF VETERANS AFFAIRS	ADV	5/5/2011 3:46:46 PM
Mcconnaughay	Marco	REQUIRED	156660	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	CT80*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	162379	REQUIRED	22836		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	161196	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.

**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

**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

Technologist WL (4) | Perform Exam (jeff carter) | Internal Person Search x

Search Criteria

First Name: YOLANDA      State:

Last Name: AJALA      City:

Phone #: 4437778300      Type:

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 E 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

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.

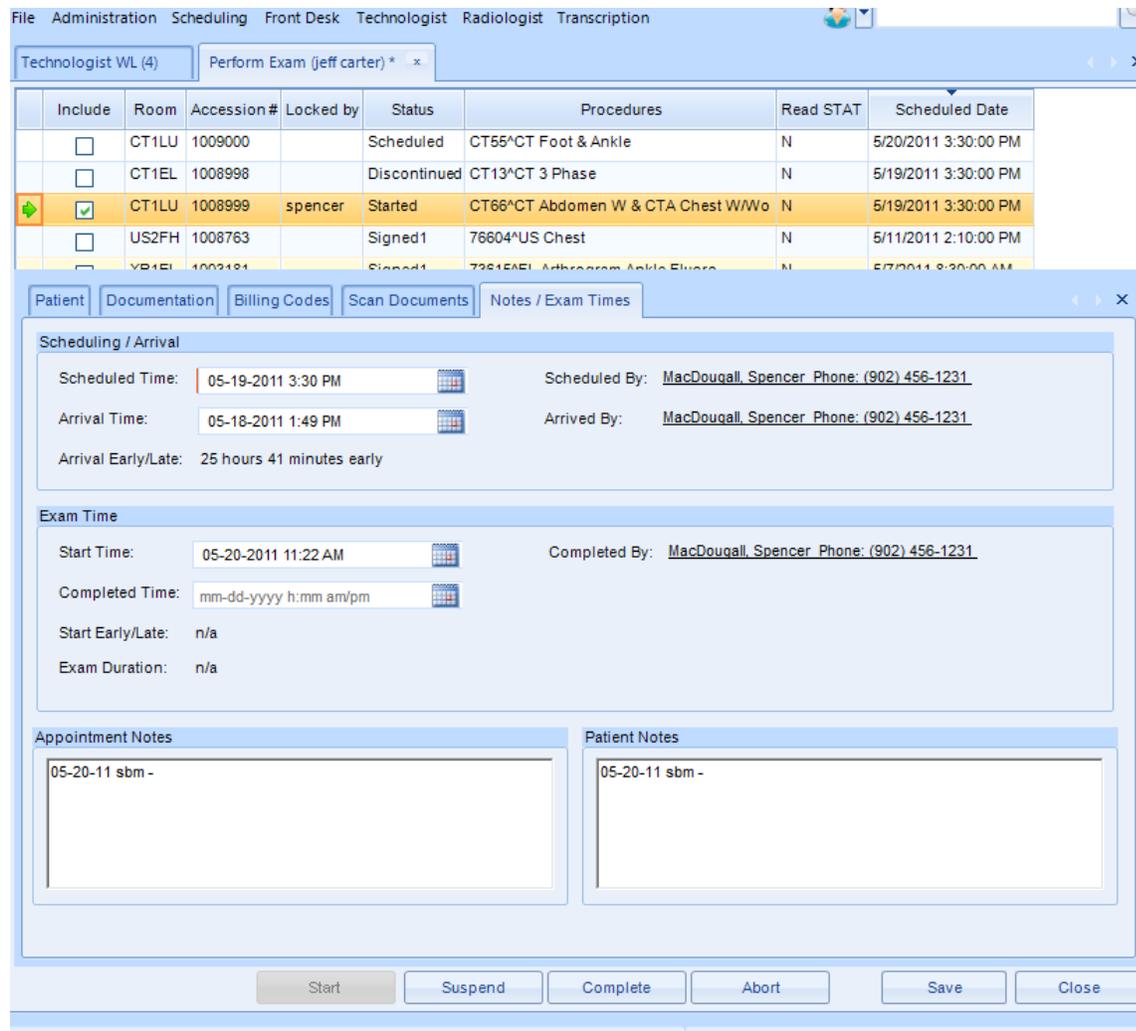
**Billing Code** – billing codes relate to procedures, the tech screen does not directly add new rows to this grid, but does call out to other IVT code libraries when the procedure changes.

**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.



**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 9<sup>th</sup>.

#	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