



Department of Radiology

Imaging Core/Service Centers Manual of Procedures

*(For The Hospital of the University of Pennsylvania)
Perelman School of Medicine Protocols only*

Purpose of the Manual

All research related radiology orders **must be ordered in the Epic system** if you are utilizing UPHS services regardless of payor (research grant or third party insurance) (See Appendix 1).

This manual has been developed to assist research staff with understanding the new research process for ordering and scheduling radiology tests when using an Imaging Core/Service Center. Tests that are NOT considered standard are to be performed through an Imaging Core (also known as a Service Center).

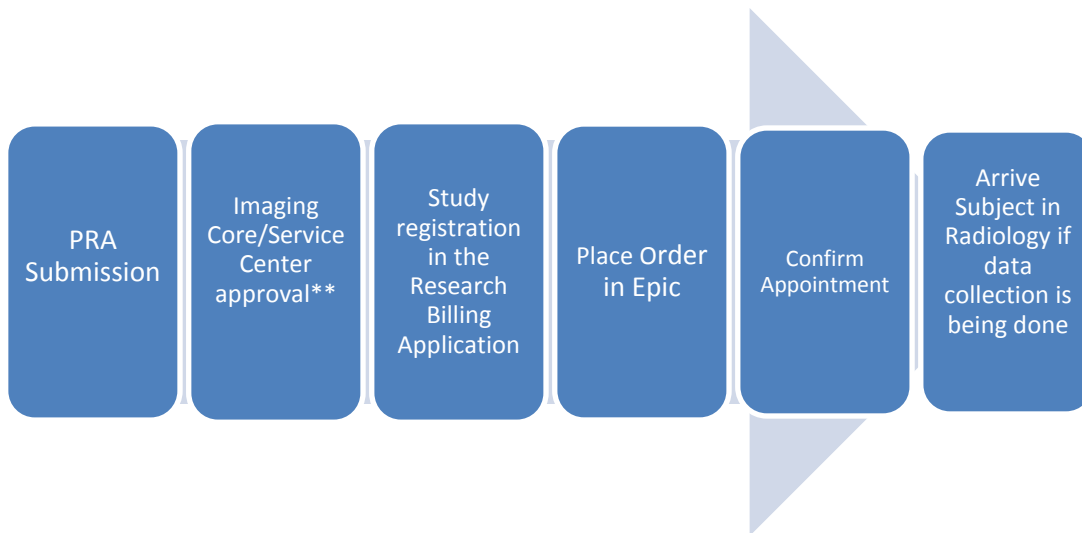
Imaging Core/Service Centers

Penn Center for Biomedical Imaging (CBI) administration operates a range of core facilities to support investigators interested in biomedical imaging. The Imaging Cores/Service Centers include MRI, PET, SPECT, US and CT and may have to be utilized for protocols that modify any type of standard of care imaging or patient management that is considered routine care at the Hospital of the University of Pennsylvania (See Appendix 2). If you are unsure if your protocol would require Imaging Core/Service Center utilization, please contact, CBI Administration (See Section 7).

In general, a radiology service center is utilized when a protocol includes radiology studies that specify standards through design and/or guidelines that DO NOT reflect the same standard imaging that UPENN patients would otherwise receive for their disease. If the protocol the Investigator is conducting requires changing aspects of already established policy and procedure of UPENN radiology clinical services, the investigator will need to conduct this study through a service center. Exceptions to this need to be vetted through CBI.

Non-Perelman School of Medicine protocols will follow an alternative process. Please contact the Core Imaging/Service Center Manager for more information (See Section 7).

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1 PRA Submission

All research protocols utilizing UPHS services/procedures and/or Radiology Service Center(s) must complete a Prospective Reimbursement Analysis (PRA). Please see Research Billing Initiative (RBI) website. For more information: www.med.upenn.edu/ohobjects/secure/prod/RBI/site/site.htm

2 Radiology Core Imaging/Service Center Regulatory Approval

The Study Coordinator must submit (via email) the following documents to Radiology Imaging Core/Service Center Administrators when applying for Core Imaging/Service Center(s) approval. For more information, www.penncbi.org

- Core application (CACTIS, CAMRIS, Nuclear Medicine, or Ultrasound)
- HS-ERA application
- Protocol
- Informed Consent Form (ICF)

3 Study Registration in the Research Billing Application

All studies utilizing UPHS services/procedures and/or Imaging Core/Service Center(s) will need to be registered in the Research Billing Application (RBA), regardless of the payor (insurance or research grant). A Research Billing Number (RBN) will be generated for those studies where all or a portion of visits/tests/procedures associated with the research protocol are being billed to the research grant.

For more information: www.med.upenn.edu/ohobjects/secure/prod/RBI/site/site.htm

The RBA will ask the requestor to identify what radiological services will be required for the protocol and to state if they are Service Center or Non-Service Center (Routine Care). See Screen Shot below. If unsure of whether or not to use a Service Center, please contact the particular Clinical Imaging Core Manager (See Section 7).

Research Billing Account Request

Please note: Items with asterisk * are required.

Service Information

- William Pepper Lab services require the approval of all test at the time of IRB submission. All correspondence with Path/Lab (Mike Weinberg (michael.weinberg@uphs.upenn.edu) needs to reference the IRB protocol number.

Services will be provided at: (Select one or more.) *

- HUP *
- PPMC *
- PAH *
- Pathology and Laboratory Medicine William Pepper Labs
- CTRC
- CCA

Services will be provided at the following Radiology service centers: (Select one or more.)

- Radiology - MRI **Service Center**
- Radiology - CT **Service Center**
- Radiology - Nuclear Medicine **Service Center**
- Radiology - Ultrasound **Service Center**
- Radiology - Intervention **Non-Service Center**

Patient type: (Select one or more.) *

- Inpatient
- Outpatient

Study Details

IRB Protocol *
[Text Box] < Begin by entering at least 5 digits of an IRB protocol number. If you can't match your IRB number, please use SEND FEEDBACK tab to let us know your issues with the IRB number you tried to enter.

Study Name *
[Text Box] < 25 characters or less

Study Start Date *
[Text Box] < mm/dd/yy ?

Study End Date *
[Text Box] < mm/dd/yy ?

Enrollment End Date *
[Text Box] < mm/dd/yy ?

4 Place Radiology Order in Epic

STEP 1- Enrolling Subject and Creating a Research Guarantor in Epic

Prior to placing the order in Epic, the Research Coordinator must enroll the research subject into the appropriate research study and link the research guarantor (RBN) to the research participant's registration (if applicable). For more information: www.med.upenn.edu/ohobjects/secure/prod/RBI/site/site.htm

STEP 2- Placing a Radiology Order in Epic

When placing the order in Epic, **regardless of who will be billed for the procedure, (routine care- third party payor, or research- research grant)**, the Research Coordinator must answer all of the Questions including these research-specific questions:

- Study to be performed/reviewed at HUP Perelman Center? Yes/No
- Responsible Party Account Type: Personal/Family or Research
- Which Research Study: Select the appropriate research study

IMPORTANT: The question, "Study to be performed/reviewed at HUP Perelman Center?" must be answered "YES" to ensure the order flows to the Radiology Scheduling Queue.

The diagnosis code(s) must be associated with the order.

STEP 3- Creating an Ordering SmartPhrase

For each study utilizing an Imaging Core/Service Center, the research coordinator must communicate specific information for the Radiology Schedulers when ordering the procedure. This information is to be provided using Epic functionality of SmartPhrases. The SmartPhrase needs to include the following study specific information:

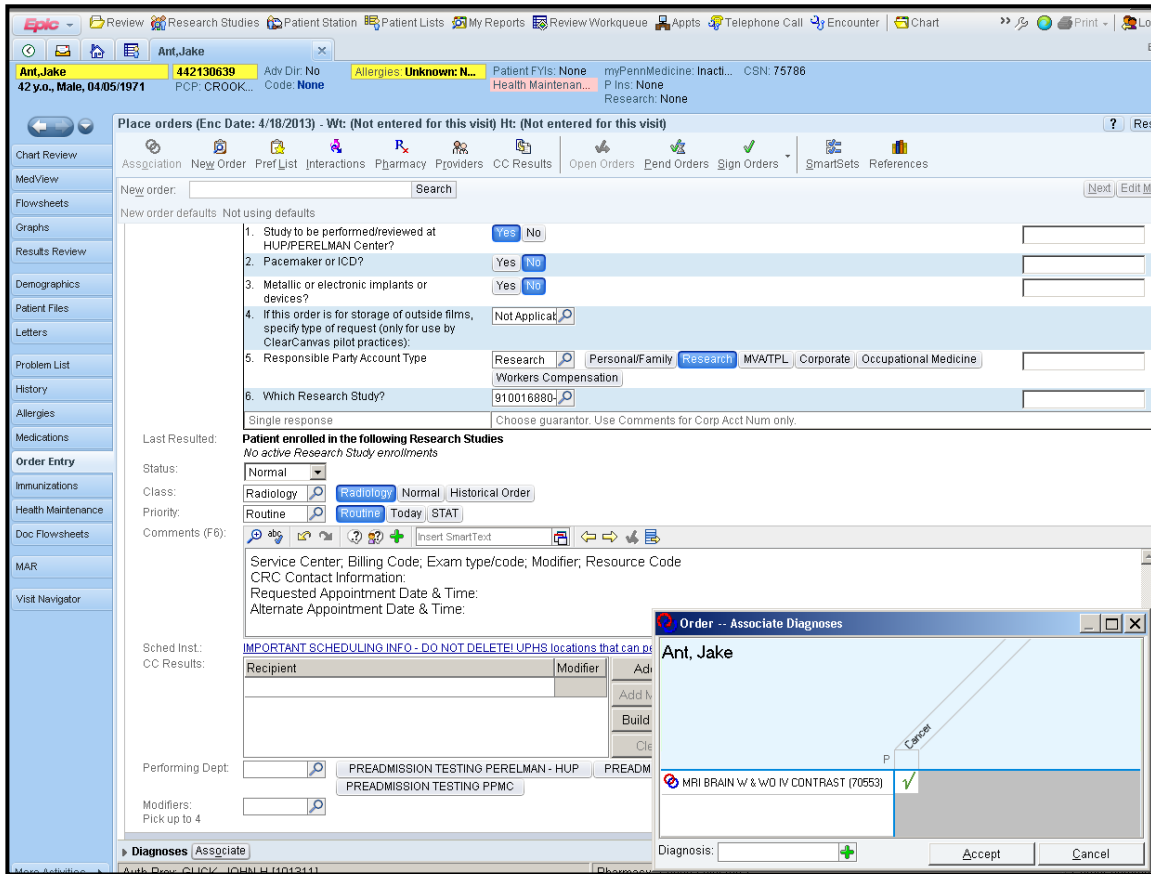
- Service center (CAMRIS, CACTIS, Nuclear Medicine, Ultrasound)
- Billing code (IRB Number)
- Exam type/code- *Included in the Imaging Core/Service Center Approval Letter*
- Modifier (RNR, RES, RESREPORT)- *Included in the Imaging Core/Service Center Approval Letter*
- Resource code (scanner)- *Included in the Imaging Core/Service Center Approval Letter*
- CRC Contact Information
- Requested and Alternate appointment date & time fields (*to be completed by CRC when placing an order*)

Any additional study specific information can be entered into the SmartPhrase. This information can always be edited at a later date. Instructions on creating SmartPhrases can be found in (Appendix 3).

Once the SmartPhrase is created the Research Coordinator can select the SmartPhrase **each time** a radiology order is placed on that particular study and the comment box will automatically be populated with the study-specific information.

The SmartPhrase will need to be titled so it can be accessed in the future. The research coordinator can choose any naming convention that will work for him/her. One suggestion might be RAD followed by the IRB number (RAD#####).

IMPORTANT: If a SmartPhrase is not created the Research Coordinator will need to type in the study specific information each time a radiology order is placed.



IMPORTANT:

- The order will appear in the Radiology Scheduler’s queue once the order has been signed.
- The Radiology Schedulers will schedule the appointment within 48 hours of the order being signed.
- If the Scheduler is unable to make the appointment for the requested date and time, or if they have any questions about the order, they will contact the CRC listed in the SmartPhrase.

IMPORTANT:

If the appointment needs to be scheduled within 48 hours –

Place the order in Epic and call Radiology Scheduling (215-662-3000) as soon as the order has been signed.

If the appointment needs to be scheduled that day

Place the order in Epic, call Radiology Scheduling (215-662-3000) and contact the Service Center Lead for approval prior to calling. (See Section 7 for Contact Information).

5 Confirm Appointment

Once the appointment has been scheduled it will appear on your patient's appointment desk in Epic. If you do not see the appointment within 48 hours of the requested appointment date, contact Radiology Scheduling (215-662-3000).

IMPORTANT: The Research Coordinator can call Radiology Scheduling to schedule the appointment if they do not feel comfortable waiting up to 48 hours for appointment confirmation; however, the order must be placed in epic and signed by authorized provider.

If an error was made in EPIC when ordering a procedure:

- If patient's appointment is not in the epic appointment desk–
 - o Cancel the order in Epic and call Scheduling (215-662-3000)
- If patient's appointment is scheduled in epic as seen in the epic appointment desk –
 - o **Do not** cancel the order in Epic and call Scheduling (215-662-3000)

If appointment needs to be cancelled:

- Call Radiology Scheduling (215-662-3000).

6 Arrive Patient in Radiology

Research Coordinators **must** accompany the participant to the reception area and the appropriate imaging area if data collection or additional procedures, beyond those routinely performed by Radiology Staff, are being conducted.

- All research participants are responsible for arriving at the appropriate reception area **thirty minutes** prior to their scheduled appointment.

IMPORTANT: If order is placed in Epic, the Radiology Script is no longer required to accompany the research participant.

7 Support and Contact Information

PRA Submission/Research Billing Application/Placing Orders in Epic:

The Research Billing Initiative Website:

www.med.upenn.edu/ohobjects/secure/prod/RBI/site/site.htm

The Office of Human Research

- ohr@mail.med.upenn.edu
- 215-746-7400

Radiology Core Imaging Administration & Service Centers: www.penncbi.org

The Center for Advanced Computed Tomography Imaging Services (CACTIS)

Deborah Arnold

- Deborah.Arnold@uphs.upenn.edu
- 215-662-4595

The Center for Advanced Magnetic Resonance Imaging Spectroscopy (CAMRIS)

Shannon Long

- Shannon.Long@uphs.upenn.edu
- 215-898-6557

Nuclear Medicine

Lisa Dunnwald

- Lisa.Dunnwald@uphs.upenn.edu
- 215-349-8149

Ultrasound

Susan Schultz

- SchultzS@uphs.upenn.edu
- 215-573-0972

Radiology/CBI Research Administration:

Kathleen Thomas

- Kathleen.Thomas@uphs.upenn.edu
- 215-746-0352

Norman Butler

- Norman.Butler@uphs.upenn.edu
- 215-615-8053

Radiology Scheduling:

Katie Sheldrick

- Katie.Sheldrick@uphs.upenn.edu
- 267-414-2432

Radiology Check-in:

Christina Mauger

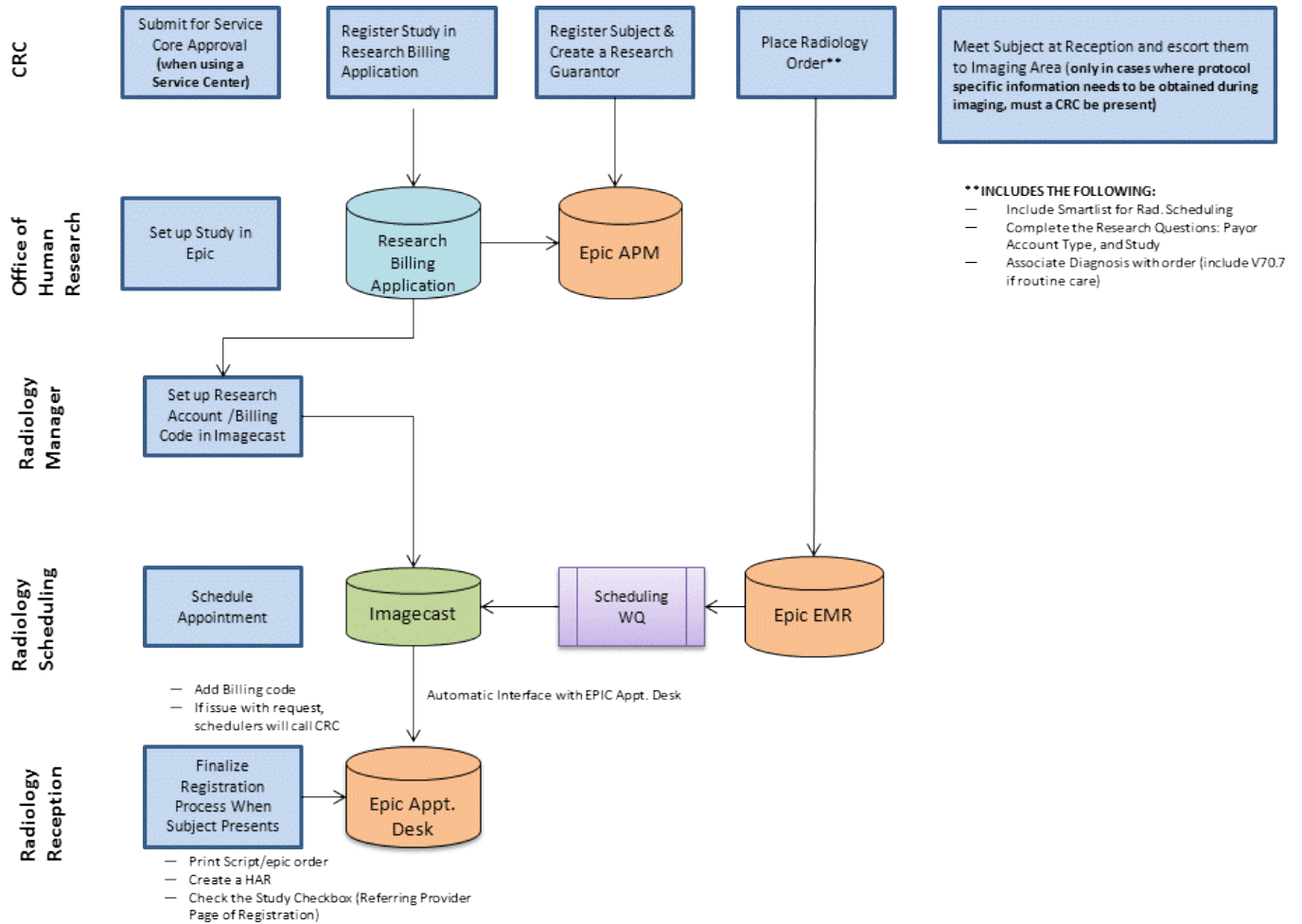
- Christina.Mauger@uphs.upenn.edu
- 215-615-5932

Radiology Billing:

Ronald Bright

- Ronald.Bright@uphs.upenn.edu
- 267-414-2731

8 Appendix 1: Radiology Services Research Process



9 Appendix 2: When to Use a Radiology Imaging Core/Service Center

1. Protocols requiring scans with specific guidelines and/or parameters described through Manuals
2. Protocols that specify which resource (scanner) is to be used
 - a. This specificity may be due to scanner capability
 - b. This specificity may be due to desired protocol stability
3. Protocols that specify that the same resource (scanner) must be used for each scan throughout the study
4. Protocols that require QA submissions
5. Protocols requiring specific Subject regulatory documentation and or patient care
6. Protocol requesting specific data manipulation or post-processing

****If you are uncertain as to when to use a Radiology service center/imaging core, please contact the CBI administration****

10 Appendix 3: Creating and Using SmartPhrases

Creating SmartPhrases

Place the order in EPIC via either a “Research Non-Chargeable” or “Orders-Only” encounter type based upon your credentialing.

When placing the order in Epic, the Research Coordinator must answer all of the Questions including these research-specific questions:

- Study to be performed/reviewed at HUP Perelman Center? Yes/No
- Responsible Party Account Type: Personal/Family or Research
- Which Research Study: Select the appropriate research study

IMPORTANT: The question, “Study to be performed/reviewed at HUP Perelman Center?” must be answered “YES” to ensure the order flows to the Radiology Scheduling Queue.

The screenshot shows the Epic EMR interface for a patient named Ant, Jake. The main window displays an order entry form for 'MRI BRAIN WO IV CONTRAST (70551)'. The form includes a 'Questions' section with a table of prompts and answers, and a 'Comments' section at the bottom.

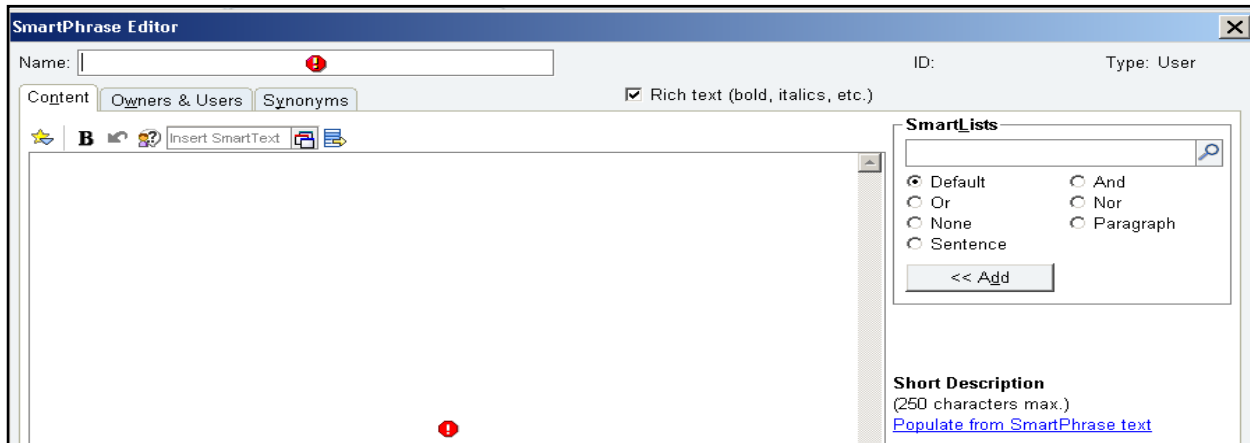
Prompt	Answer	Comments
1. Study to be performed/reviewed at HUP/PERELMAN Center?	Yes No	
2. Pacemaker or ICD?	Yes NO	
3. Metallic or electronic implants or devices?	Yes NO	
4. If this order is for storage of outside films, specify type of request (only for use by ClearCanvas pilot practices):	Not Applicable	
5. Responsible Party Account Type	Research Personal/Family Research MVATPL Corporate Occupational Medicine Workers Compensation	
6. Which Research Study?	910056324	

Below the questions, the 'Comments' section is visible, showing a green plus icon for 'Create SmartPhrase'.

Scroll down to the “Comments” section of the order and select the green + icon “Create SmartPhrase”.

This close-up screenshot shows the 'Comments (F-b)' section of the order entry form. The green plus icon for 'Create SmartPhrase' is highlighted, and the text 'Insert SmartText' is visible next to it.

This will open the “SmartPhrase Editor”.

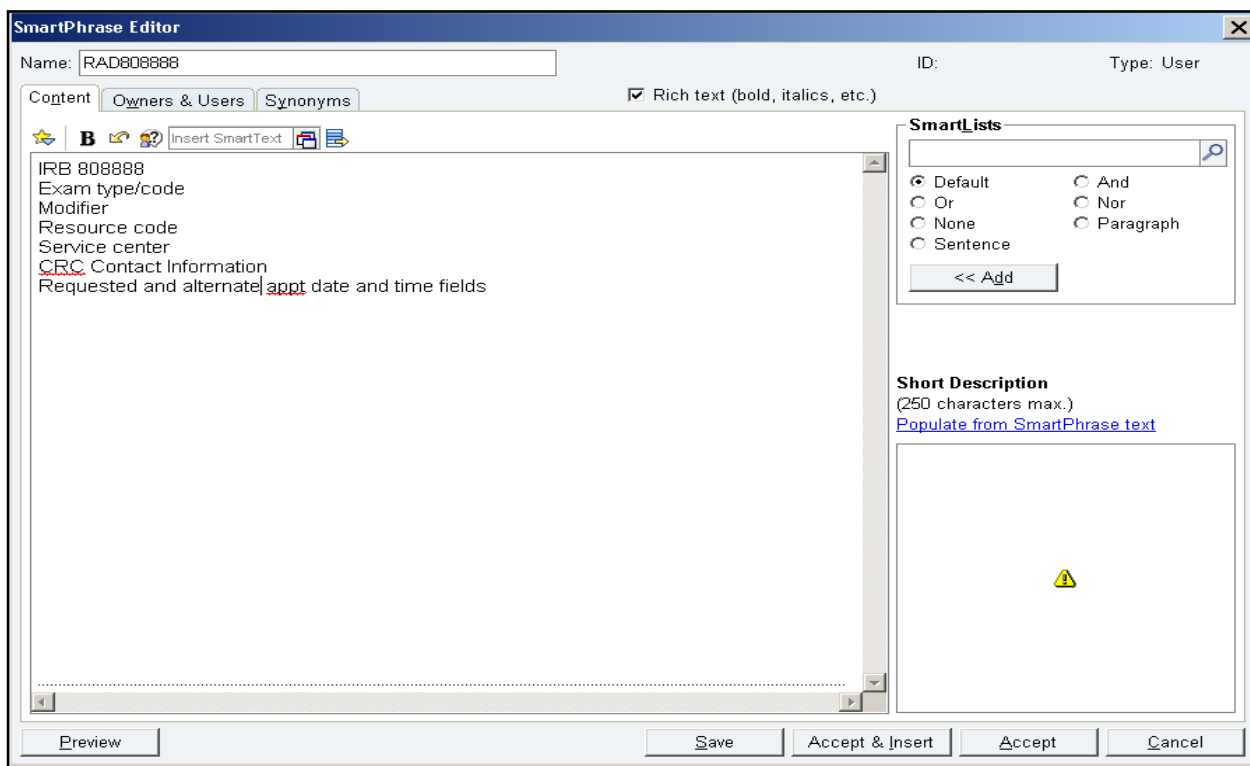


The SmartPhrase should be titled RAD followed by the IRB number “RAD8#####”.

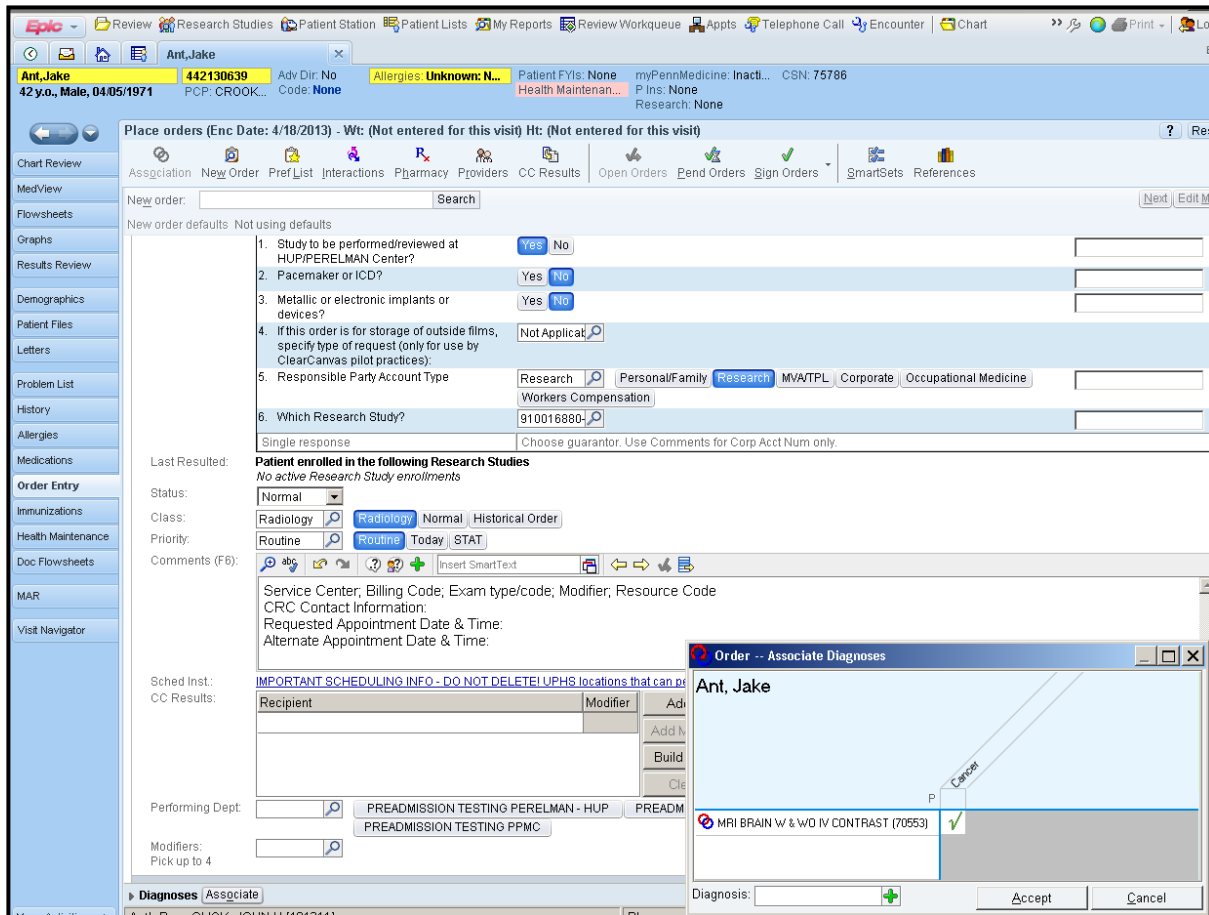
The SmartPhrase should include the following study specific information:

- Billing code (IRB Number)
- Exam type/code
- Modifier (RNR, RES, RESREPORT)
- Resource code (scanner)
- Service center (CAMRIS, CACTIS, Nuclear Medicine, Ultrasound)
- CRC Contact Information
- Requested and alternate appointment date and time fields (to be completed by the CRC each time an order is placed)

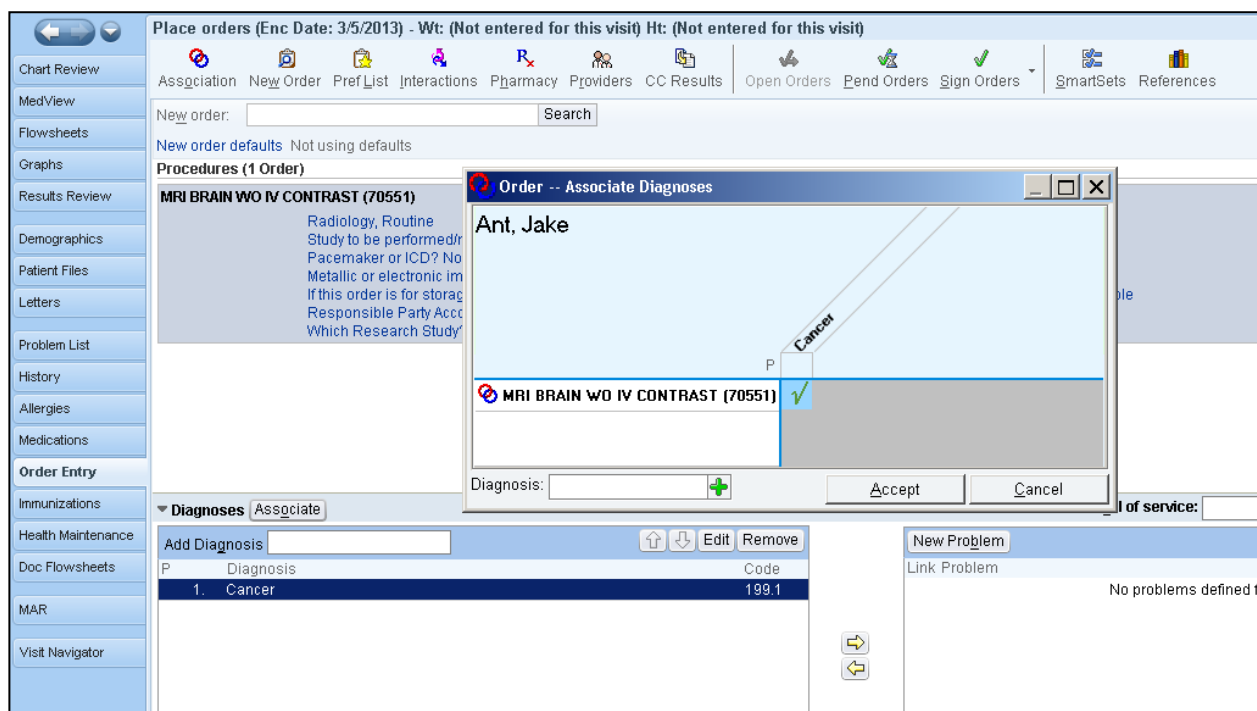
Select “Save” and then “Accept & Insert”.



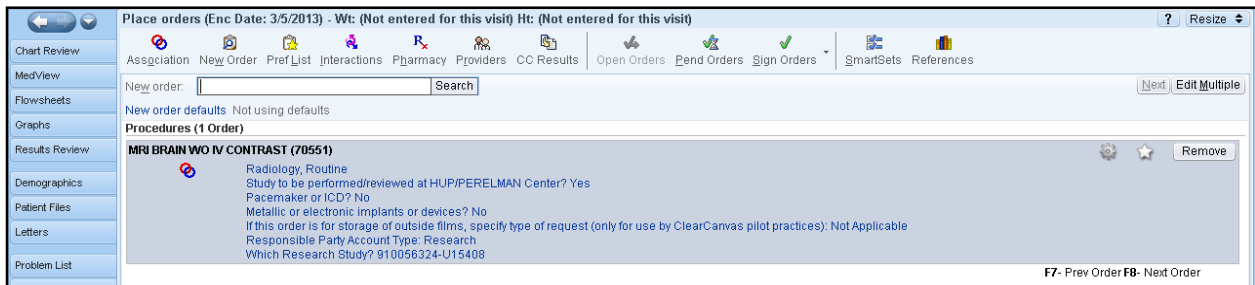
The "SmartPhrase" will now be listed in the Comments section of the order. This will be visible to Radiology Schedulers once the order is signed and hits their work queue.



Associate the order with the diagnosis code(s). Remember, if the research order is to be billed to the subject's insurance (P/F) you must also associate the V70.7 diagnosis code with the order – but not in the primary position.



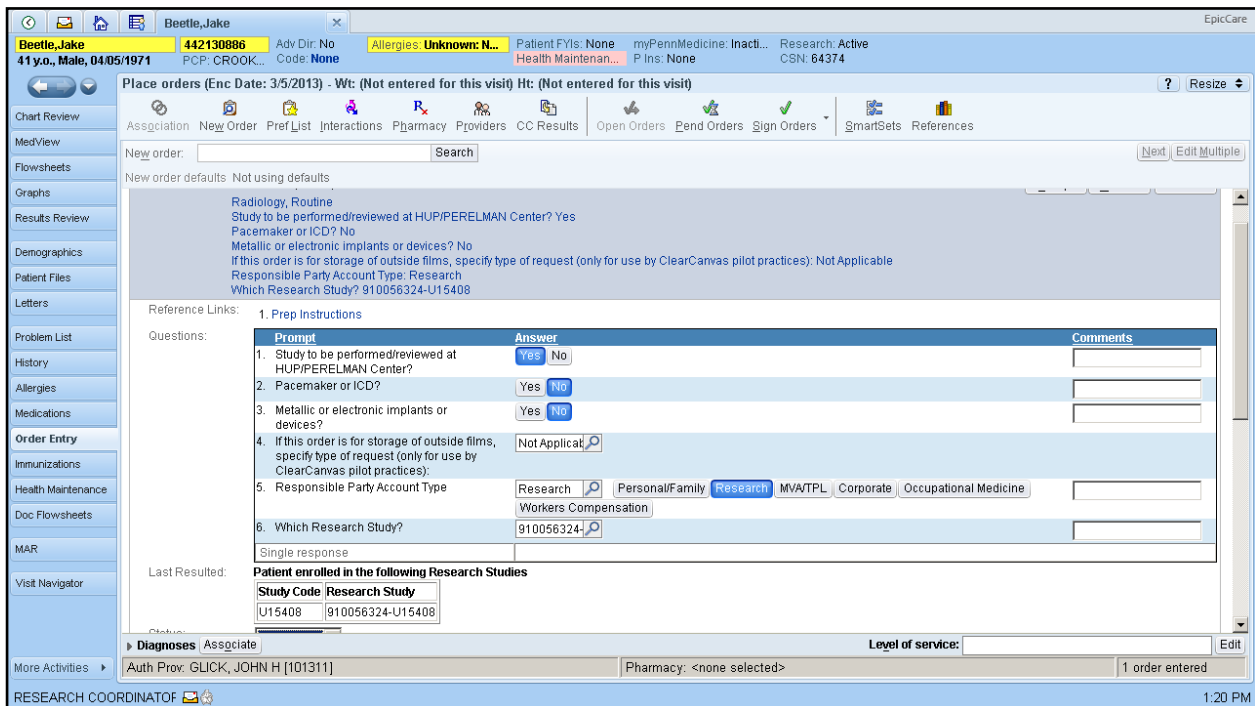
The order can now be pended or signed. The order will show up in the Radiology Scheduling work queue once it has been signed.




Using SmartPhrases

After a study specific SmartPhrase has been created you will place subsequent orders for that study in Epic following the same procedures:

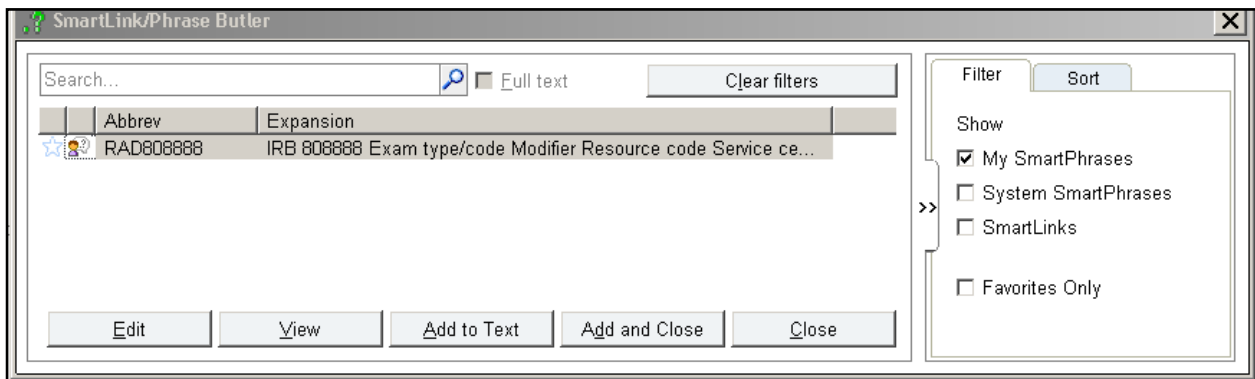
- Order will be placed in EPIC via either a “Research Non-Chargeable” or “Orders-Only” encounter type based upon your credentialing.
- Answer all of the Questions including the Research Specific Questions:
 - The question “Study to be performed/reviewed at HUP Perelman Center? Yes/No” must be answered “Yes” for the order to flow to the Radiology Scheduling Queue.
 - Responsible Party Account Type: Personal/Family OR Research
 - Which Research Study: Select the appropriate research study



Scroll down to the “Comments” section of the order and select the  icon “List My Phrases”.

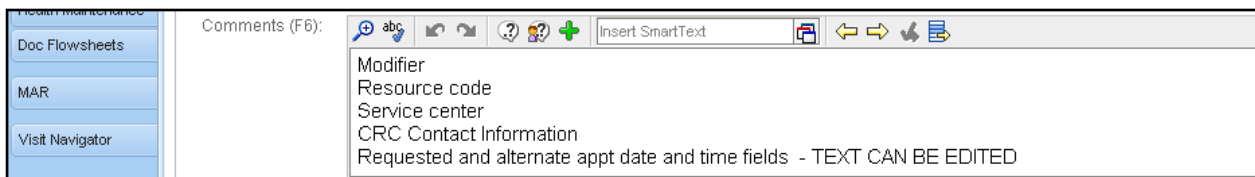


This will open the “SmartLink/Phrase Builder” which will list all of the phrases that you have created. Highlight the SmartPhrase that you want to insert into the Comments section and then select “Add and Close”.

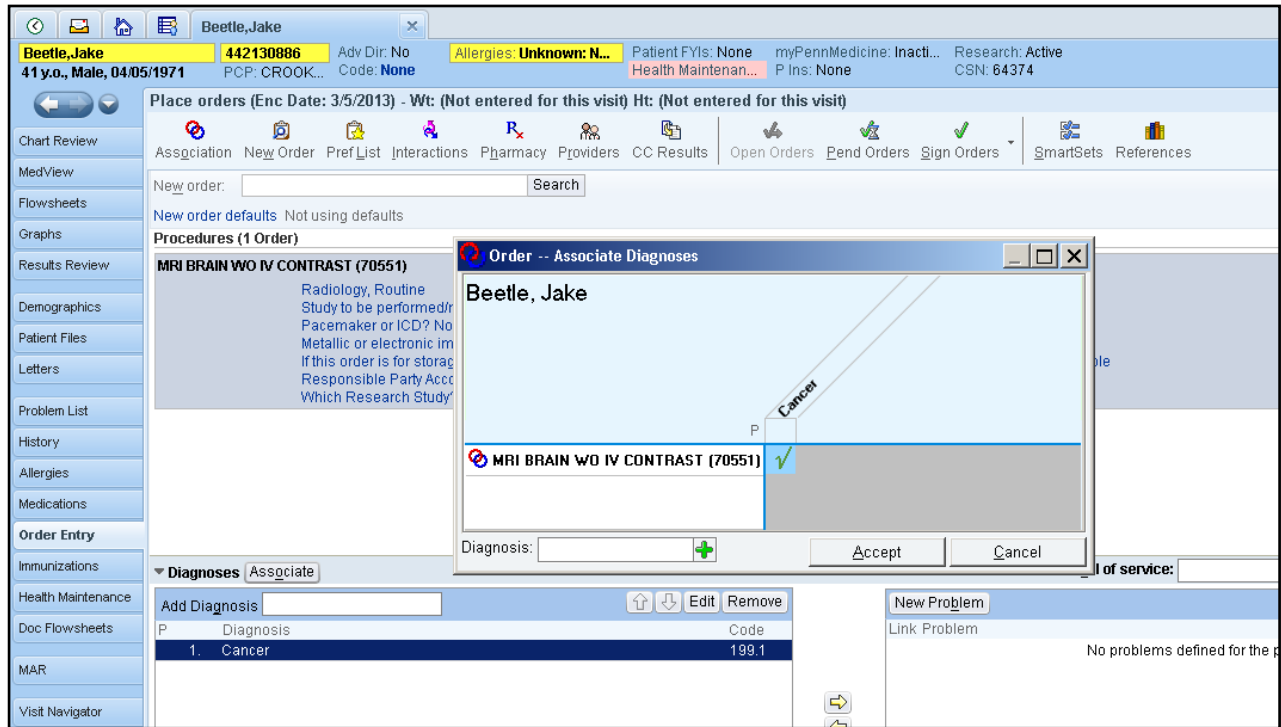


The SmartPhrase will now appear in the Comments Section.

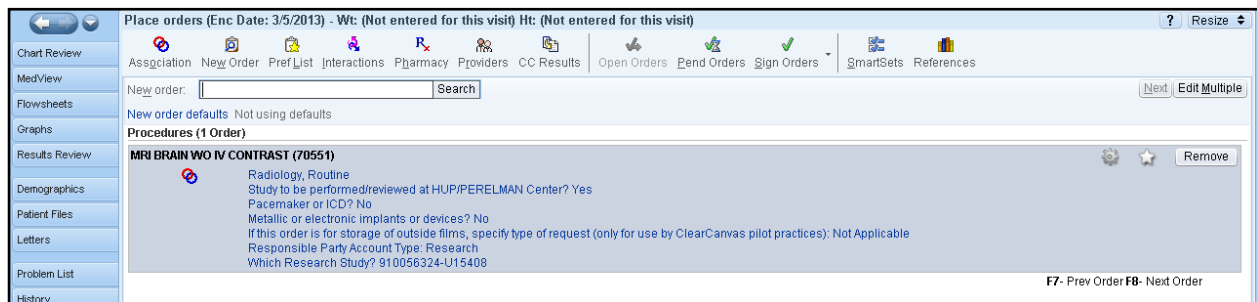
NOTE: the text in this field can be edited. For example: you can change the requested appt date and time fields each time you place another order.



Associate the order with the diagnosis code(s). Remember, if the research order is to be billed to the subject's insurance (P/F) you must also associate the V70.7 diagnosis code with the order – but not in the primary position.



The order can now be pended or signed. The order will show up in the Radiology Scheduling work queue once it has been signed.



11 Appendix 4: Responsibilities and Definitions

RESPONSIBILITIES

- The Principal Investigator (PI) is responsible for meeting Good Clinical Practices (GCP) and government regulations concerning clinical research conducted at this site.
- The Clinical Research Coordinator is responsible for submitting the Prospective Reimbursement Analysis (PRA) to the Office of Human Research, registering the study in the Research Billing Application (RBA), and completing all of the steps when ordering and arriving research participants within UPHS.
- The Business Administrator is responsible for entering the account information and approving the request from a financial perspective in the RBA.
- The Radiology Business Office (RBO) is notified of a new RBN request via email from the OHR web portal. For existing accounts that need to be updated to have Radiology services included, the RBO receives a call/email from the study coordinator. Once the RBO is notified an email is sent to the Radiology IS team (the Core Manager for the account is copied on the email) to add the IRB, RBN and Study name into Imagecast. Upon completion of the system setup, The IS team sends a f/u email back to all stating "Done". At this point Radiology exams can be scheduled for the protocol.
- The Office of Human Research is responsible for approving the PRA and registering the research study into Epic APM.
- Core Manager is the person responsible for managing the daily operations of the service center, and assigning approval of all research protocols.
- Radiology Reception is a central area in which patients must arrive to be checked-in for their scheduled exam.
- Radiology Scheduling is a central unit responsible for scheduling radiological exams within Imagecast (IDX v.10) system.

DEFINITIONS

- Imagecast is a RIS radiologic information system (includes 'PACS') that replaces paper requisitions with digital imaging & scheduling procedures/exams
- The new Epic APM system (Epic) is one database spanning clinical, access, and revenue functions across UPHS. Epic is replacing the IDX system currently in use. Epic software will be used for registering patients, placing orders, charge capture and patient management.
- Research Billing Application (RBA): a web tool used for tracking of protocols utilizing UPHS services.
- Research Billing Number (RBN): a protocol-specific number used by the University of Pennsylvania Health System (UPHS) billing systems to bill research only services/procedures to a School of Medicine (SOM) fund set up for the protocol (ex: research funds, departmental funds, etc...).