

D.27 DIAGNOSTIC IMAGING SERVICES

Department of Veterans Affairs
VA Healthcare Network
Upstate New York at Albany

Standard Operation Procedure D&T-114-11
February 1, 2015

1. **PURPOSE:** This document describes the imaging services available at the Stratton VA Medical Center and the processes used to obtain imaging services. These procedures are in place to assure appropriate requests are received with adequate clinical history to allow safe imaging of patients and optimal interpretation of studies.

2. **RESPONSIBILITY:**
 - a. **Licensed providers** are responsible for electronic ordering of appropriate diagnostic imaging exams including entering accurate date desired for exam, level of urgency and completion of imaging history forms. Providers are also responsible for ordering appropriate preparations including current labs, hydration and pre-medication regiment for allergies if required. Providers are also responsible for the communication of results to the patient or the need for additional imaging.

 - b. **Clinic/Ward administrative staff** are responsible for calling radiology to schedule radiology exams, except plain films ordered by physicians.

 - c. **Radiology clerical staff** are responsible for scheduling appointments per internal department guidelines.

 - d. **Radiology technical staff** are responsible for monitoring patient requests, schedules and prioritization of exams. They also are responsible for patient education regarding the medication reconciliation imaging procedure, assessing patient information to assure that the patient can safely tolerate contrast administration and performing the imaging procedure.

 - e. **Radiologists** are responsible for monitoring utilization of specialized exams, determining the appropriate contrast protocol to be used, obtaining signed informed consent for procedures deemed high risk and interpretation of studies.

3. **PROCEDURES:**
 - a. The Radiology Service provides access to the following imaging services as described:
 - (1) General Radiology Open access 24 hours a day

 - (2) CT Scanning Routine - scheduled appointments 8:00 AM–4:30 PM Mon – Fri
Emergent cases – (on call basis) 24 hours a day

 - (3) MRI Routine – scheduled appointments 8:00 AM – 4:30 PM Mon
7:00 AM – 5:30PM Tues - Fri
Emergent cases with pre-approval– (on call basis) 24 hours a day

- (4) Ultrasound Routine – scheduled appointments 7:00 AM – 4:30 PM Mon – Fri
Emergent cases– (on call basis) 24 hours a day

 - (5) Mammography Routine – scheduled appointments 8:00 AM – 4:30 PM Mon, Tue,
Thu, Fri and Wed 1200 – 4:30 PM
Diagnostic – scheduled appointments 8:00 AM to 11:00 AM Wed

 - (6) Nuclear Medicine Routine – scheduled appointments 8:00 AM – 4:00 PM Mon – Fri
Emergent cases – (on call 4-midnight weekdays/8-midnight weekends)

 - (7) Angiography Routine – scheduled appointments 8:00 AM – 4:30 PM Mon – Fri
Emergent cases– (on call basis) 24 hours a day
- b. All imaging studies must have a signed request entered in the CPRS system prior to scheduling the appointment and subsequent patient imaging. All requests must include pertinent patient history and the reason for the exam.

- (1) In CPRS, go to the Orders tab.
- (2) Click Radiology orders from the write orders list.
- (3) Select the exam to be ordered. CT scans, MRI, Ultrasound and Angio procedures open to a detailed history form. All questions must be answered and a complete history given.
- (4) Complete order as follows:

The screenshot shows the 'Order an Imaging Procedure' form with several callouts:

- Provide history and reason for exam:** Points to the 'History Reason for Exam' text area.
- Enter date desired for exam, urgency and other information:** Points to the 'Requested Date' (TODAY), 'Urgency' (ROUTINE), and 'Transport' (AMBULATORY) dropdowns.
- Choose modifier:** Points to the 'Available Modifiers' list (HIGH RESOLUTION, LEFT, Radiation treatment, RIGHT).
- Click if patient is on isolation:** Points to the 'Isolation' checkbox.
- Click accept order when complete:** Points to the 'Accept Order' button.

The form fields include:

- Imaging Type: CT SCAN
- Imaging Procedure: CT HEAD W/CONTRAST
- Requested Date: TODAY
- Urgency: ROUTINE
- Transport: AMBULATORY
- Category: OUTPATIENT
- Submit To: AL-CT SCAN I
- Exams Over the Last 7 Days: (Empty list)
- Isolation:
- Pregnant: Yes No Unknown
- PreOp Scheduled: (Empty field)
- Buttons: Accept Order, Quit

(a) Date desired – Enter exact date exam is required. Do not accept default of today for exams needed in the future. This is vitally important for three and six month follow-up studies.

(b) Urgency – Enter appropriate urgency of exam: STAT, URGENT or Routine

1. STAT – For use only when there is a critical medical decision pending the result of the exam.

2. URGENT – For use at a higher priority than routine, as appropriate to the patient’s condition.

3. Routine – For use when there is no clinical urgency for completion of this exam.

(5) Recent lab tests within 30 days of exam are required as follows to allow patients to be assessed for contrast administration. Place order to allow lab tests to be completed prior to scheduled date of exam.

Exam ordered	Recent Lab tests needed
CT scan	Serum BUN and Creatinine/eGFR
MRI	Serum BUN and Creatinine/eGFR

(6) Patient preparation as follows is recommended based on the patient assessment. The attending physician should assure the appropriate preparation or premedication is completed prior to the time of exam.

Exam	Criterion	Preparation
CT w/ contrast	eGFR <60	Hydration and possible acetylcysteine
	eGFR less than 50	Contact attending radiologist
	IV contrast allergy	Prednisone 50mg P.O. 24 hrs, 12 hrs and 1hr prior to exam.
	Diabetic on Metformin	Discontinue Metformin at time of exam and withhold 48 hrs.
MRI	eGFR less than 30	Contact attending radiologist

NOTE: Any patient who has sedatives ordered by their physician in order to undergo a radiology procedure must have arrangements made for travel.

c. Exams are scheduled based on the imaging modality and whether the patient is in-house or outpatient.

- (1) **Inpatient exams/ER – all modalities** - radiology staff will notify the ward when they are able to accommodate the patient for imaging. Ward staff will bring patient to control desk on 2A to register patient for exam. Radiology will notify the ward when imaging is complete and the patient is ready to return to the ward. NOTE: After regular business hours ward/ER staff must accompany and remain with the patient during imaging. This is necessary to ensure patient safety and to mitigate the risk of falls or injury to the patient and radiology staff while transferring patients from a wheelchair/stretchers/hospital bed for imaging. For patient safety, please transport patients who are designated a fall risk by stretcher.
 - (2) **Outpatient exam** – General diagnostic x-ray – Patient is to report to reception desk at A203 for imaging.
 - (3) **Outpatient exam** – Fluoroscopy, CT, MRI, Ultrasound, Mammography – Call extension 66350 to schedule patient for these exams. Radiology staff will give choice of the next available appointment unless a medical need is demonstrated for priority scheduling.
 - (4) **Mammography exams** – Patient is to report to reception desk at A203 to check in.
 - (a) Mammography screenings – facility location of previous mammography exams so priors can be requested for comparison. Physician's referral should include presence of breast implants and date of last clinical exam.
 - (b) Diagnostic mammography - Include information from above plus the concern noted by clock pattern on each breast. All diagnostic mammography must be accompanied by a breast ultrasound order.
 - (5) **Nuclear Medicine** – Patient is to report to reception desk in building 27. Call extension 66640 to schedule patient for these exams.
 - (6) **Interventional procedure** – Consult should be placed for interventional radiology. Contact Angio for details of scheduling these procedures.
 - (7) **On-call Emergent exams** – Contact the operator to page the on-call technologist and or radiologist to provide emergent services after routine business hours.
- d. Radiology staff will pre-screen all requests for CT and MRI to assure patient safety factors are met for these exams. The screening will include the following:
- (1) Renal function will be assessed for IV contrast or gadolinium administration using the creatinine/eGFR and serum BUN tests.
 - (2) Premedication or hydration if indicated.

- (3) Assessment of allergy history.
 - (4) Is the patient diabetic and on Metformin?
 - (5) For MRI does the patient have implants or internal steel fragments that contraindicate an MRI exam?
 - (6) For MRI is the patient claustrophobic?
 - (7) Is female patient pregnant?
- e. Reporting results: Imaging will be completed as scheduled and studies will be available in the patient's electronic medical record. Images can be assessed in the CPRS tools menu by choosing I-site radiology viewer.
- (1) Routine results - Radiologist's interpretation will be available within 48 hours in most cases.
 - (2) STAT requests – Please call department for STAT requests between the hours of 8:00 and 4:00 Monday through Friday. After hours and on the weekends STAT exams are sent to the VHA National Teleradiology Program (NTP). NTP's practice is compliant with VHA Directive 2010-018 "Facility Infrastructure Requirements to Perform Standard, Intermediate, or Complex Surgical Procedures" in that NTP radiologist are available 24/7 therefore available to provide image interpretation for critical tests with-in 30 minutes from the receipt of images.
 - (3) Critical tests will be communicated as:
 - (a) Cerebral hemorrhage
 - (b) Cerebral hematoma
 - (c) Acute stroke
 - (d) Subdural hematoma
 - (e) Intraparenchymal hematoma
 - (f) Epidural hematoma
 - (g) Subarachnoid hemorrhage
 - (h) Brain tumor with mass effect
 - (i) Depressed skull fracture
 - (j) Cervical spine fracture
 - (k) Epiglottitis
 - (l) Spinal cord compression
 - (m) Critical carotid stenosis
 - (n) Carotid artery dissection
 - (o) Tension pneumothorax
 - (p) Aortic dissection

- (q) Pulmonary embolism
- (r) Ruptured aneurysm
- (s) Impending aneurysm
- (t) Free Air in abdomen (if no recent surgeries)
- (u) Appendicitis
- (v) Portal venous gas
- (w) Ischemic bowel

4. REFERENCES:

- a. VHA Radiology OnLine Guide, October 4th, 2011
http://vaww.va.gov/RADIOLOGY/OnLine_Guide.asp
- b. VHA Directive 2010-018, May 6 2010 Facility Infrastructure Requirements to Perform Standard, Intermediate, or Complex Surgical Procedures.
http://www.va.gov/vhapublications/ViewPublication.asp?pub_ID=2227
- c. Memorandum of Understanding between VHA, NTP and Stratton VA Medical Center; August 2011
- d. FDA Alert: Gadolinium-Based Contrast Agents for Magnetic Resonance Imaging. 2007.
- e. Manual on Contrast Media – 9th edition. 2013. American College of Radiology

5. RESCISSIONS: SOP D&T-114-11, Diagnostic Imaging Services, dated February 1, 2012.

6. FOLLOW-UP RESPONSIBILITY: Chief of Radiology

7. REVIEW: This SOP is scheduled for review on February 1, 2018.

8. CONCURRENCE: Chief of Staff
Nurse Executive
Associate Director
Director