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## Diagnostic Services – Department of Radiology – Diagnostic Division

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### **Mission/Goal**

The primary purpose of the Diagnostic Services is to study anatomical structures and physiological processes of the human body by acquiring diagnostic images as well as performing therapeutic procedures.

The goals of the Division of Diagnostic Services are:

- To provide cost effective, convenient, efficient, and appropriate care for patients in need of radiologic diagnosis, therapy or intervention
- To provide pertinent education for patient and patient's family members
- To maintain and improve quality of care by performing quality control tasks, as well as, continually evaluating and improving upon key processes
- To provide training and education to all personnel to achieve excellence
- To exceed expectations of physicians and patients regarding quality of patient care
- To subscribe to ALARA standards, maintaining radiation levels As Low As Reasonably Achievable

### **Scope of Services**

Exams and procedures are performed on both inpatients and outpatients on neonatal, pediatric, adolescent, adult and geriatric patient age groups. Patients may be ambulatory or non-ambulatory.

The primary Diagnostic Imaging modalities are:

General Radiography

Fluoroscopy

Ultrasound and Doppler US

Neuroangiography/Interventional

Magnetic Resonance Imaging (MRI)

Breast Imaging

Computed Tomography (CT)

Peripheral Angiography/Interventional

Diagnostic Services provides support to all departments located within the medical complex including portable exams, as required. Imaging studies are performed upon receipt of a written or electronic request (Physician Order for Radiologic/Nuclear Medicine Consultation/Request for Procedure) from a licensed independent practitioner (LIP) within UIHC or an LIP from outside the UIHC with the review and approval of a staff Radiologist; a self referral for mammography ONLY; or, in some cases, a doctor of chiropractic care.

Exams and procedures are performed and/or scheduled according to priority and patient acuity. A centralized scheduling center provides on-line scheduling for future exam and procedure appointments.

Patient transportation occurs by departmental or unit/clinic transportation aids. More critical or unstable patients are to be accompanied by unit personnel that are competent to deal with the patient's condition. Imaging services may be provided utilizing a portable unit at the patient's bedside, in the OR, or in the emergency room.

Clerical, technical and/or physician staff depending upon the nature of the request reviews requests for a radiologic procedure or exam. A requesting entity is to be contacted when there is missing clinical information or if there are questions that surround the type of exam or procedure being requested. The patient's medical record should be available for review as needed, with the appropriate documentation made in the record, consistent with hospital practice. Staff radiologists are in attendance for all critical portions of interventional procedures.

Exams will be reviewed and dictated by a licensed radiologist. The report is available via the electronic medical record (EMR).

Nursing staff is available for patient monitoring, sedation, patient education, and patient preps within our division.

**Staffing Plan for Staff Technologists (does not include Clinical Chiefs)**

	M-F			Weekend		
	Day	Evening	Night	Day	Evening	Night
<b>Diagnostic Radiology</b>	23.5	5	3	5.5	3	3
<b>MRI</b>	11	6	Call	1	1	1
<b>US</b>	10	Call	Call	1	Call	Call
<b>CT</b>	13	3	1	2	1	1
<b>Interventional</b>	8	2	Call	1	Call	Call
<b>Iowa River Landing</b>	7	1	N/A	1	N/A	N/A

**Staffing Guidelines**

Adjustments are made to staffing levels based on exam volumes, procedure scheduling backlogs and number of rooms in the clinical areas. For exams/procedures needing to be performed on an emergent basis after routine clinical hours, an oncall/callback system is in place utilizing pagers. If additional technical staff is needed for general diagnostic, there is a technologist on-call during non-routine clinic hours. A staff list is located in the main department in the event that multiple technologists would be required to deal with an unexpected peak patient volume.

General Diagnostic and Portables: With the exception of management staff, technologists are on monthly rotations covering all general diagnostic areas. Staff is shifted daily from one area to another to assist with patient/exam peak times. Generally, there are 21-23 technologists that cover Fluoroscopy, Pediatrics, Portables, ETC, OR, Musculoskeletal, Family Care Center, and General Area.

CT, MRI and Angiography: Generally each unit is staffed with one to two technologists. Evening and after routine hours, there is typically one technologist operating a unit.

Ultrasound: Generally, each unit is staffed with one sonographer.

Breast Imaging: Typically the area is staffed with three mammography certified technologists.

ETC (Emergency Treatment Center): There is a technologist in-house carrying the ETC pager 24 hours/day, 7 days/week. If additional technical support is required, staff are pulled from other clinical areas or staff is called in.

OR: There is a technologist that carries a pager during the first, second and third shift hours, Monday through Friday. Two to three staff are assigned to the OR during this timeframe. During the weekend hours, the OR calls the Main Reception Desk. If additional technical support is required, staff is pulled from other clinical areas or staff is called in.

### **Hours of Operation**

General Radiology After normal business hours	7:00am to 11:30pm Covered by ETC	7 days/week
ETC	In house Covered by pager 24/7	7 days/week
Musculoskeletal	7:30am to 5:00 pm	Mon – Fri
Peripheral and Neurointerventional Weekends After normal business hours	7:00am to 11:00pm 8:00 am to 8:00pm On call	Mon – Fri Sat & Sun
Pediatric Radiology After normal business hours	7:30 am to 5:00 pm Covered by ETC	Mon – Fri
CT	In house 24/7 (urgent cases only 3 <sup>rd</sup> shift)	7 days/week
MRI	In house 24/7 (urgent cases only 3 <sup>rd</sup> shift)	7 days/week
Ultrasound After normal business hours	7:00 am to 7:00 pm On Call	Mon - Fri
Breast Imaging Center	7:30 am to 4:30 pm	Mon – Fri
Radiology Scheduling	8:00 am to 5:00 pm	Mon- Fri
Image Management	7:00 am to 9:00 pm	Mon - Fri
Iowa River Landing X-ray	7:30 am to 8:00 pm 8:00 am to 12:00 pm	Mon- Fri Sat
Iowa River Landing CT	7:30 am to 5:00 pm	Mon – Fri
Iowa River Landing Mammography	7:30 am to 5:00 pm	Mon – Fri
Iowa River Landing Ultrasound	7:30 am to 5:00 pm	Mon – Fri
IOSMR X-ray	7:30 am to 5:00 pm	Mon – Fri
IOSMR MRI	7:30 am to 4:30 pm	Mon – Fri

For all modalities, imaging services are available 24 hours/day, 7 days/week for emergent procedures (excluding Iowa River Landing).

## **Skill Levels and Competencies of Personnel**

All personnel will maintain the minimum certification or licensure as required for the classification. All personnel will participate in on-going continuing education to support the required renewal process.

Physician: All medical staff who interpret images and perform procedures are credentialed to do so by the appropriate governing bodies.

Technical: All technologists who operate ionizing equipment are registered with the American Registry of Radiologic Technologists (A.R.R.T.) and hold an Iowa Permit to Practice. Limited Technologists performing non-ionizing equipment are registered with either the A.R.R.T. or the American Registry of Diagnostic Medical Sonographers (ARDMS).

Nursing: All RNs performing patient care duties within the division are licensed with the State of Iowa and maintain the appropriate competencies for the patient population served. Nursing practice is consistent with UIHC Department of Nursing policies, procedures and standards of care.

## **Standards for Improvement**

Objective:

The Performance Improvement plan has been developed to provide ongoing development of processes, monitoring of the key components, and ultimate improvement in the services and patient care provided. The Radiology Department Chair and Head is ultimately responsible for the quality of care and services provided by the Division of Diagnostic Services.

Plan:

Performance Improvement activities are reported to the Department PICC (Process Improvement and Compliance Committee). The hospital Process Improvement Coordinator(s) provide guidance in maintaining appropriate levels of consistency throughout the medical facility. Process Improvement activities with the Diagnostic Radiology Division are submitted to Clinical Outcomes and Resource Management on a quarterly basis.

Current Monitors and Clinical/Management Activities:

1. Patient Safety Net Reports – Each event is reviewed by the Assistant Technical Director and sent to the appropriate area manager for followup.
2. Repeat Rate – Repeat rates are established by clinical area. The divisional rate requires further investigation when it exceeds 5%.
3. Repeat Rate by Technologist – As exams are completed notations are made by the technologist as to the number, size and reason for a repea during an exam. This information is entered into a database during the end exam process. For full-time staff, further investigation occurs if the rate is greater than 7% for two consecutive months (9% for hourly staff).
4. Exams Awaiting Results – Exams awaiting results for more than 7 days are monitored and reviewed by the Department of Radiology PICC.
5. Exam Scheduling – CT, MRI, and Mammography exams are closely monitored to assure that excessive delays are not experienced for non-emergent exams. Same day add-ons occur on a daily basis. Exam scheduling for future dates is typically accommodated within 3 days, unless a specific date and time are requested.

6. Personal Radiation Exposure Monitoring – The University Health Protection Office reviews the badge readings on a monthly basis, according to the ALARA regulations.
7. Continuing Education – Programs are designed to provide an ongoing review and new information to staff about technology development, new equipment installations, safety, patient care procedures, clinical operations, and related subjects that are pertinent to the division.
8. Equipment Maintenance Program – Equipment preventative maintenance work is scheduled for each unit at specific times throughout each year. Required work is performed primarily after routine clinical hours, as appropriate. The program minimizes unit downtime, and associated delays in performing patient procedures or exams.
9. Quality Control Program – Protocols are established for each unit as needed, whereby testing is performed at established timeframes to assure optimal equipment performance. (e.g. ultrasound, CT, MRI, mammography, film processors)
10. Staff Meetings – Typically monthly staff meetings are held in each clinical section or a combination of clinical sections. Agendas may include discussion related to various aspects of the Division Service, personnel, equipment operations, new procedures/protocols/projects, scheduling, etc. Problems can be identified and solutions collectively discussed to remedy the issue.
11. Collaborative Efforts with Patient Units/Clinics – An operational process modification may be needed, whereby, discussion will occur between Radiology and an inpatient unit or outpatient clinic. A joint effort may be required to assure adequate data collection, problem evaluation and resolution.

All Quality Assessment and Improvement processes in the Diagnostic Division are governed by the Hospital Confidentiality Policy.

**Revised:** 02/06, 7/07, 10/08, 2/10, 12/12, 11/14